

Shaping the Customer-Provider Relationship in Service: Frontline Employees as Key Drivers for the Improvement of Service Productivity

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LIST OF ABBREVIATIONS AND SYMBOLS

ATM	Automatic teller machine(s)
CEO	Chief Executive Officer
CI	Confidence interval
DEA	Data Envelopment Analysis
df	Number of degrees of freedom
Exp(B)	Odds ratio
Fig.	Figure
GENLIN	Generalized Linear Model
HR	Human resources
ICT	Information and communication technologies
KIBS	Knowledge-intensive business service
MC	Monte Carlo
OECD	Organization for Economic Co-operation and Development
PLUM	Polytomous Universal Model
SE	Standard error
Sig	(Statistical) significance
SPIN	Service Performance Index
SPSS	Statistical Package for the Social Sciences
VIF	Variance inflation factor
VHB	German Academic Association of Business Research
χ^2	Chi-square

1 INTRODUCTION

1.1 Motivation Behind This Dissertation

Between 2000 and 2015 the service sector in general in OECD countries grew by 23% (OECD, 2017, p. 149). The percentages of people employed in the service sector in OECD countries show that mostly two-thirds of a country's working population is employed in the service sector. For example, in the European Union, in 2018, 72.1% of the working population worked in the service sector (OECD, 2020, p. 22). These percentages kept stable over time or, in some OECD countries like Japan, Poland, and Turkey, rose (OECD, 2020, p. 22). Besides, there is a growing world population. In 2016 the world population grew by around 1.81% (Worldbank, 2017); OECD countries are foresaid to be growing at a rate of 1.5% per year between the years 2020 to 2029 (OECD/FAO, 2020, growth statistics).

To summarize, the service sector provides work for the majority of the working population in developed countries. With a growing world population at hand, there will be more people in need and demand for service. One way of facing rising demands is to improve service productivity, making the same a worthwhile research goal.

The providers of service are private and public service companies. Public service companies of the social, health and educational sectors hold a special role for the functioning and development of our society as their service accompanies people from birth to death (Knies, Boselie, Gould-Williams, & Vandenabeele, 2018, p. 1). Therefore, looking at how to improve productivity in public service is important.

Private and public service companies are subject to different kinds of incentive structures (Lane, 1993, p. 1; Parker, Waller, & Xu, 2013, p. 654). The difference in the incentive structures is mirrored in the so-far understood view on service productivity, which emerged from the manufacturing industry and was driven by the need to optimize one's way of doing business (Brynjolfsson & Hitt, 1998, p. 49). Apart from the objection, that this perspective on productivity is not transferable to service (e.g., Hill, 1999), Parker et al. (2013, p. 661) show that *“from an operational perspective, the two sectors may [have] become more aligned but strategically (...) still remain separate”*. Hence, secondly, the market pres-

sure of optimizing being the binding constraint for long-term survival in the market is more important for private service companies than for public ones or even hybrid ones (Jääskeläinen, 2010a, p. 3).

However, there is still pressure for optimizing that results from the urge to keep up with the rising demands or, additionally, with changing demands. For example, in 2016, the UN titled “The World needs almost 69 Million New Teachers to Reach the 2030 Education Goals” (Unesco Institute for Statistics, 2016). The Corona-pandemic demonstrated general insufficiencies in public service (e.g., Benjamin, 2020; Maani & Galea, 2020; Timmis & Bruessow, 2020) and, specifically, in human resources in health service (e.g., Emanuel et al., 2020).

Although demand for public service is increasing, the responsible providing institutions are in a compete- and justify-mode with other public service companies regarding necessary funding for resources or infrastructure, respectively ensuring the ability for facing rising and changing service demands. In addition, they have to compete about human resources. Potential employees eventually seek a more attractive working place regarding salary, development opportunities, and above all, the field of activity (Berman, Bowman, West, & Van Wart, 2020, pp. 14–15).

Compared to private service companies, the pressure for public service companies for productivity does not mainly arise from exogenous conditions like the market mechanism but endogenous ones. Elements of a culture for productivity and innovation include the people working for the organization, management and leadership culture (Aarons, Hurlburt, & McCue Horwitz, 2011; Akin & Hopelain, 1986, pp. 21–27). At the same time, these are the leverage-points for service companies that provide possibilities of setting impulses from within aiming at changes necessary to positively condition productivity improvements.

Following this idea, the actors in the service process and the factors influencing them to be more or less productive (Jääskeläinen, 2010a, p. 3) or willing to adopt changes for the sake of productivity (Aarons et al., 2011, pp. 14–15), are considered as one leverage-point for service productivity improvement and will be in the centre of attention in this dissertation.

There are three actors in a service process. They form the service triad, which consists of service customers, the service company, and the employees working in the frontline of service provision (Carson, Carson, Knouse, & Roe, 1997, pp. 100–102). The so-called frontline employees or customer contact employees (Chebat & Kollias, 2000; Hartline, Maxham, & McKee, 2000) actively participate

in the production of the service (Gummesson, 1998, p. 8; Nerdinger & Pundt, 2018, p. 4; Wirtz & Ehret, 2017, p. 32). In these “*moments of truth*” (Bitner, Brown, & Meuter, 2000, p. 139) (customer) value co-creation or value co-production (Gummesson, 1998, p. 8; Vargo & Lusch, 2004, p. 11) takes place. During these phases of co-creation, things can go wrong. Hence, there are several points in a service process where there can be co-destruction instead of co-creation (Echeverri & Skålén, 2011; Kashif & Zarkada, 2015; Plé & Chumpitaz Cáceres, 2010). For example, customers are not able to communicate their wishes correctly or forget to bring along an object or information needed for the service process. In such situations, it is the frontline employees’ job to anticipate these can-go-wrong-things and in any case, cushion and guide the customers along the steps of the service process to make it as productive as possible. Research has recognized the relevance of frontline employees (Larivière et al., 2017; Rafaeli et al., 2017) not only in their function as service process facilitators but also as essential for customer retention (Ganesh, 2016; Hennig-Thurau, 2004; Singh, 2000), word of mouth (Collier, Barnes, Abney, & Pelletier, 2018; Lim, Lee, & Foo, 2017; Verleye, Gemmel, & Rangarajan, 2016), service failure tolerance (Chebat & Kollias, 2000; Liao, 2007; Wenchao, 2009) and service recovery (Van Vaerenbergh & Orsingher, 2016), customer perceived quality (Dhar, 2015; Catherine Prentice, 2013), customer satisfaction (Jha, Deitz, Babakus, & Yavas, 2013; Rod, Ashill, & Gibbs, 2016), or interaction quality (Clemes, Gan, & Ren, 2011; Ekinci & Dawes, 2009) – to name a few.

From this, two research questions arise for this dissertation:

- I. Which factors influence frontline employees the most regarding their output in service interactions?
- II. How can improvements in frontline employees’ output arising from consciously managing frontline employee influence factors be expressed?

First, setting the focus on frontline employees acknowledges them as essential drivers for improving service productivity (Gummesson, 1998, p. 8; Liao & Chuang, 2004; Marinova, Ye, & Singh, 2008; Singh, 2000). Furthermore, it answers the call of service companies, as pointed out in previously, especially of public service companies, to improve their position on the market in general and on the market for human resources. Additionally, seeing their service offerings through the productivity lens may facilitate and perpetuate their funding. Then, public service companies will gain power and ability to answer growing and changing demands from the increasing population of service customers.

Frontline employees are not the only leverage-point for service productivity improvement. Others, such as technology, described by Ostrom et al. (2015, p. 129) as “cross-cutting” research priority, or customer participation in service processes (Jo Bitner, Faranda, Hubbert, & Zeithaml, 1997; Kelley, Donnelly, & Skinner, 1990), are as well leverage-points for service productivity but will not be addressed in this dissertation.

1.2 Expected Results and Structure of This Dissertation

This dissertation centers frontline employees as key drivers for improving service productivity, focusing on public service. It aims to gain more insights into the field of frontline employees’ role for service productivity improvements by analyzing output-relevant factors frontline employee influence factors.

As a start, in Chapter 2, the non-trivial comprehension of service productivity, as prefaced in the previous chapter (cf. Chapter 1.1), must be discussed. A review of service productivity models that account for frontline employees is conducted to create a theoretical basis (cf. Chapter 2.2). In a synopsis (cf. Chapter 2.3), commonalities and differences of the different approaches are touched upon, overlaps and linkages are outlined.

Building upon this foundation, the service productivity model of Grönroos and Ojasalo (cf. Chapter 2.2.1) was selected as the frame for the frontline employee influence factors to be examined. The frontline employee influence factors were systematically extracted from previous research and qualitatively reviewed, offering the reader insights into their properties (cf. Chapter 2.4). Identified research gaps were translated into hypotheses. The Grönroos-Ojasalo-service-productivity-model and the frontline employee influence factors were combined (cf. Chapter 2.8), contributing to the empirical validation of the model and its holistic application.

As shown in Figure 1, the outlined first part of the dissertation consists of the theoretical elements necessary for the second empirical part. The examination of the concept of service and service productivity, the review of the service productivity models relevant for the analysis of frontline employee influencing factors, and the systematically extracted frontline employee influencing factors provide an overview of previous research activities. The state of the art review allows the exact definition of the problem-to-be-tackled in this dissertation. It provides a scientifically sound foundation for practitioners for the resource-optimized project planning of productivity improvements in their entrepreneurial practice.

1 INTRODUCTION

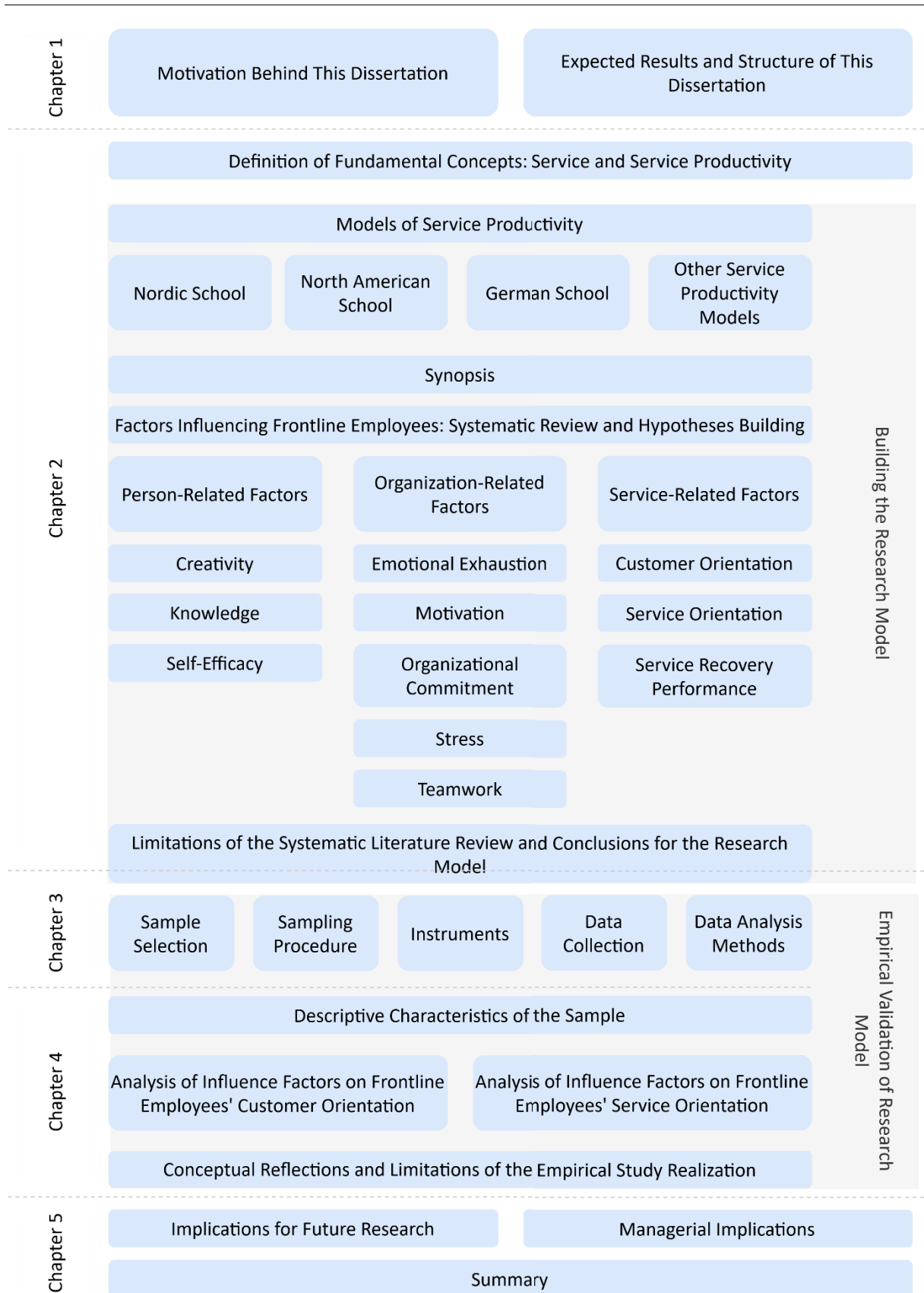


Figure 1: Structure of This Dissertation

For the second empirical part, data were collected mainly but not only from public service companies as they are, as laid out before, confronting increasing demands and are therefore in need of knowledge to become more productive in their service (cf. Chapter 3.1).

The designed questionnaire can be used as a starting point for developing a scale of one component of the Grönroos-Ojasalo-service-productivity-model. This dissertation' research activities can be considered as a starting point for analyzing possibilities for the operationalization of the other model components. Thus, step by step, the whole model gets to a stage where it can be empirically validated (cf. Chapter 3.3).

Subsequently, the results of the empirical study are presented and interpreted; limitations are elaborated (cf. Chapter 4). Recommendations for future research activities are deducted (cf. Chapter 5.1). Practitioners are provided with knowledge about the most relevant frontline employee influence factors and possible adjustment points to leverage these factors (cf. Chapter 5.2) before the summary (cf. Chapter 5.3).

2 SERVICE PRODUCTIVITY AND SELECTION OF A THEORETICAL FRAMEWORK

2.1 Definition of Fundamental Concepts: Service and Service Productivity

2.1.1 Service

Although there might be an intuitive understanding of what service is, it is essential to determine what constitutes a service. Readers shall build on the same comprehension as the writer does so that the following analysis and discussion focus on the same direction (Gadrey, 2000, p. 369).

There are several approaches to developing a service definition (Burr & Stephan, 2006; Gadrey, 2000). This dissertation draws on the particular characteristics of service: intangibility, inseparability (or simultaneity) of service production and service consumption, and the integration of an external factor (de Brentani & Ragot, 1996, p. 519).

Moreover, service industries are diverse, and the frontiers between “pure” service and “pure” products became blurred (Gallouj & Savona, 2009, p. 162; Hill, 1977, pp. 328–329; Miles, 2010, p. 512). Reflecting this blurredness, Vargo and Lusch (2004, pp. 6-8) campaigned for a paradigm shift in service research. They introduced the service-dominant logic as a counterpart of goods-dominant logic. Service-dominant logic centres the knowledge and skills of service providers and customers and exchanges of these competencies, e.g., in co-production processes (Vargo & Lusch, 2004, pp. 10–11). That is why “*embedded knowledge*” (Vargo & Lusch, 2004, p. 9) materialized into tangible products. The tangible products, e.g., buying a car to have a means of transport from one location to another, are acquired by customers to provide them with a (transportation) service (Vargo & Lusch, 2004, pp. 8–9).

Vargo and Lusch’s view complicates determining what constitutes service. Applying their logic challenges the often cited intangibility characteristic of service (de Brentani & Ragot, 1996; Flipo, 1988; McDougall & Snetsinger, 1990). As Gadrey (2000, p. 372-373) shows, service’s intangibility is doubtful and subject to discussion. In line with Hill (1977, p. 318), he demonstrates that the comprehension of the term “output” determines what is denoted as a service output

(“services” as denoted by Vargo and Lusch (2008, p. 26)) and settles its materiality or intangibility. Gadrey (2000, p. 372) argues that if a service output is “observable,” it is not intangible. For example, after visiting the hairdresser, customers have a new hairstyle. They can feel their hair and see their new hairstyle in the mirror. It is observable. In other words, there took place a “*change in the [...] condition of a person*” or a “*change in the state of some good*” (Hill, 1977, p. 319), which is tangible (Lovelock, 1983, p. 12). Lovelock (1983, p. 12) proposed a classification for service using two dimensions in this line of thought. He differentiates service in terms of their nature being tangible, such as the hairdresser example mentioned before, or intangible, e.g., education. The second dimension constitutes at whom or what the service is directed. These can be persons or things. Thus, there are four classes of service, which displays Figure 2. As can be seen by the given examples in Figure 2, a distinction between private and public service regarding their very nature is not possible. As said in the introductory part (cf. Chapter 1.1), differences lie in the environment in which they are operating. However, the classification demonstrates the service industry's diversity and emphasizes the difficulty of defining what constitutes a service. Furthermore, the classification shows that a service needs an object or person to conduct the service. This object or person is the so-called “*external factor*” (Hill, 1977, p. 337; Hill, 1999, p. 428). Lovelock showed in his classification that the external factor is diverse and can be of a tangible and intangible nature.

What is in the Nature of the Service Act?	Who or What is the direct Recipient of the Service?	
	People	Things
Tangible Actions	Service directed at People's Bodies: <ul style="list-style-type: none"> • Health Care • Passenger Transportation • Beauty Salons • Exercise Clinics • Restaurants • Haircutting 	Service directed at Goods and other Physical Possessions: <ul style="list-style-type: none"> • Freight Transportation • Industrial Equipment Repair and Maintenance • Janitorial Service • Laundry and Dry Cleaning • Landscaping/ Lawn Care • Veterinary Care
Intangible Actions	Service directed at People's Minds: <ul style="list-style-type: none"> • Education • Broadcasting • Information Services • Theatres • Museums 	Service directed at Intangible Assets: <ul style="list-style-type: none"> • Banking • Legal Services • Accounting • Securities • Insurance

Figure 2: Understanding the Nature of the Service Act

Source: Lovelock (1983)

Despite being processing an observable change with and at the service customer or some service customer's object, the inseparability of service production and service consumption is another characteristic of a service (Hill, 1999, p. 427; Parasuraman, 2010, p. 279; Parasuraman, Zeithaml, & Berry, 1985, p. 42). One has to be present at the hairdresser to get a new haircut, every type of consulting service requires the presence of the service customer, and in the case of repair service, the object that has to be repaired has to be present. Service, where the customers bring an object on which the service is performed, is mostly low contact. For example, when a car has to be repaired and brought to the car manufacturer, the act of bringing the car into the garage and picking it up when repairs are finished demands only a limited extent of customer-provider interaction. In consulting service, the extent of customer-provider interaction is much more significant, and such a service is considered a high-contact service (Chase, 1978, p. 178). More interaction with the customer goes together with a loss of control, and what is value co-creation can turn into value co-destruction (Chase, 1978, p. 138; cf. Chapter 1.1). With the rise of ICT, there took place a reduction in customer-provider interaction. At the same time, new ICT provided ways for service providers to interact with the customer, also reducing interactions with the customer (Bitner, 2001; Vuorinen, Järvinen, & Lehtinen, 1998). Therefore, the classification into low- and high-contact service

is no longer sufficient. Instead, the classification into low-, high-, and contact-only-when-needed-service better reflects the variability of service interactions in the different service industries. Supply service, e.g., energy and media, falls into this class of service. Apart from the fact that there is little customer-provider interaction in such a service, customer-provider interaction is often operated via online platforms. On these online platforms, the service provided by an energy supplier can be subscribed to and bought or changed, or like in the cases of telecommunications and IT service, there is remote service or call centres where customers can reach out.

The discussion above showed that the definition of what a service constitutes is ambiguous and subject to discussion. A detailed description of its peculiarities is recommended when diving deeper into a specific service class and a specific service sector. It will be given when the sample is described in Chapter 3.1. However, at this point, and to conclude this section, service is defined in a broader sense. Service is defined as a process producing an observable change at the external factor (customers or customer's objects).

2.1.2 Service Productivity

Closely related to the discussion about service definition is the definition of service productivity (Dobni, Brent Ritchie, & Zerbe, 2000, p. 92).

Taking a look at service productivity-research reveals that one possible reason for the missing consensual definition of service productivity might be missing "*conceptual clarity*" (Johnston & Jones, 2004; Lehmann & Kölling, 2010; Rutkauskas & Paulavičiene, 2005). Productivity embraces efficiency, efficacy, and performance, as well as utilization, quality, and predictability (Johnston & Jones, 2004, p. 202; Lehmann & Kölling, 2010, p. 4). Alternatively, when reflecting upon productivity detached from a service point of view, it is the other way around. It is "*the central core*" and "*purely a physical phenomenon*" (Tangen, 2005, p. 43) that is wrapped by profitability and then by performance in the triple P-model (Tangen, 2005, p. 43; firstly published in Tangen, 2002).

In conclusion, the differentiation of these concepts depends on the definition of what productivity is. Defining productivity as an output-input ratio, Vuorinen, Järvinen, and Lehtinen (1998, pp. 379–380) discuss the conceptual differences between productivity and efficiency. Productivity for them is a figure "*to compare output-input ratios across units and time, whereas in the case of an efficiency ratio, the comparison is made against a predetermined standard or ideal.*" (Vuorinen et al., 1998, p. 380).

Furthermore, the different notions of productivity and its concepts are understood and applied differently by researchers. According to their disciplines, the kind of industry that is looked upon (private vs public service companies), and the level of analysis (macro-, meso-, or micro-level) (Burger, 2008; Jääskeläinen, 2009; Rutkauskas & Paulavičiene, 2005), researchers' productivity definitions vary. Some researchers see productivity as a service firm's outcome (K. J. Lee, 2014, p. 142; McGuire & McLaren, 2009, p. 37). Others are more strict and see it as a decisive influence factor on the organizational outcome (Akin & Hopelain, 1986, p. 19; E. G. Harris, Brown, Mowen, & Artis, 2014, p. 172). Also, productivity is not considered as a concept embracing performance but being part of it. For example, Parasuraman (2002, p. 7) sees service productivity as “a set of *“performances”* [...]” characterized by interactions between the service provider and service customer that usually result in a simultaneity of service production and service consumption.

Then, as indicated by Jääskeläinen (2009, p. 448, 2010b, pp. 25–26), the analysis level differs. For example, Babin and Boles (1998, p. 82) defined productivity as part of individual job performance (micro-level). Many researchers adapted this definition, e.g., Karatepe and his peers (O. M. Karatepe & Uludag, 2008; Osman M. Karatepe, 2013; Osman M. Karatepe & Aleshinloye, 2009; Osman M. Karatepe, Beirami, Bouzari, & Safavi, 2014; Osman M. Karatepe, Uludag, Menevis, Hadzimehmedagic, & Baddar, 2006; Karatepe & Kilic, 2007) as well as Hussain, Khan, and Bavdk (2003, p. 2), and Gibbs and Ashill (2013, p. 306). Dewettinck and Buyens (2006, p. 11) considered productivity as part of the supervisor-rated performance (micro-level) and economic performance (macro- or meso-level). An example for a meso-level perspective would be staff productivity representing, amongst others, employee group performance or teams' performance or productivity as part of organizational performance (Harter, Schmidt, & Hayes, 2002, p. 271). Following this line of thought, Vandaele and Gemmel (2006, p. 8) considered service productivity and service quality as parts of the performance and, at the same time, included the fact that both parts have to be considered in conjunction (Vuorinen et al., 1998, p. 380). They created two constructs: performance productivity and performance quality (Vandaele & Gemmel, 2006, p. 8). Performance productivity is measured by figures relatively easy to extract, such as service level agreements. Performance quality “*is associated with the interactional performance in frontline employee-customer exchanges*” (Vandaele & Gemmel, 2006, pp. 8–9) and more difficult to operationalize. With these two constructs, there is a clear distinction between the numerical and quantifiable character of productivity and its softer

counterpart quality. Furthermore, Vandaele and Gemmel (2006, p. 8) assign performance quality to the service interaction and performance productivity to the processes surrounding the service interaction. In turn, this would mean that the service interaction could be of high or low quality but not of high or low productivity.

The acknowledgement of service productivity and service quality's interrelatedness indicates that the service provider's perspective on service productivity will be one-sided and thus sufficient for evaluating service productivity. The customer perspective is an obligatory part of productivity considerations (Grönroos & Ojasalo, 2004; Johnston & Jones, 2004; Matijacic & Däuble, 2014; Parasuraman, 2002).

Besides different levels of analysis of productivity and its unclear character, there is still the traditional view of productivity as a concept representing an output-input-relation (Vuorinen et al., 1998, p. 379). This concept evolved from the manufacturing industries. It does not give credit for the complexity of service and thus is not directly transferable to the service industry (Hill, 1999; Jääskeläinen, 2009; Johnston & Jones, 2004; Nordgren, 2009; Parasuraman, 2002, 2010; Sahay, 2005, p. 10; Vuorinen et al., 1998).

Drucker (1991, p. 72) admitted that there is more than one way to increase productivity in manufacturing, but *"In knowledge and service work, working smarter is the only key. What is more, it is a more complex key, one that requires looking closely [...]"*. This complexity is taken up by Grönroos and Ojasalo (2004, p. 416), who put it another way and stated that there are industries with closed and open systems. For example, manufacturing industries represent closed systems with rules, procedures, and processes that resemble a specific sequence to create value. In the service industry, one must differentiate between service being close to a closed system, e.g., call-centre service, where customer-provider interactions are vigorously predefined, and service with high amounts of service encounters less predefined. Grönroos and Ojasalo (2004, p. 416) talk of *"open systems."*

Finally, one could translate this discussion into a requirement for service productivity models. Service productivity models shall combine knowledge from several disciplines, e.g., operations management, human resource management, and service science. In other words, service productivity models should incorporate interdisciplinary learnings.

Of course, one could say that productivity “[...] refers to what is created by the employees from the inputs” (Brunetto & Farr-Wharton, 2007, p. 43) and by this, stick to the traditional view on productivity. However, seeing productivity as an output-input-relation leads to measurement problems when it comes to operationalization: although there are inputs and outputs in a service, it is difficult to measure them (Corsten, 1994; Grönroos & Ojasalo, 2004). For example, educational service output or educational service units are susceptible to debate. Even if the service output is more tangible (cf. paragraph “service”), e.g., a new haircut, it is not self-explanatory clear how to measure a new haircut. Also, on the input side, it is not easy to attribute value to the service employees’ empathy, experience, and motivation.

To sum up this discussion and conclude with a definition of service productivity for this dissertation, there are five things to keep in mind: Firstly, service productivity is an umbrella concept that is not defined. Secondly, service productivity can be analyzed on different levels, regarding different phases of the service process, and considering service-specific comprehensions of productivity originating from endogenous and exogenous conditions, e.g., non-supportive corporate culture and market dynamics. Thirdly, service productivity and service quality are intertwined, which, fourthly, indicates that service productivity is not a service provider-exclusive concept. The customer perspective has to be included in productivity analysis. Fifthly, service productivity is difficult to measure and cannot be transferred from the output-input-relation known from the manufacturing industries. Hence, an interdisciplinary point of view on service productivity is desirable. On top of these five issues, there is the point of context. For public service companies, the comprehension of productivity, as introduced in Chapter 1.1, may have different drivers but is in its core similar to that of private service companies (Parker et al., 2013, p. 655). Kelly (1980, p. 75) elaborates on two paradigms regarding the influence of politics on decision-making processes that also shape any measures to improve productivity. Further, the two paradigms mirror the before-mentioned two mainstreams of service productivity understanding. One is more technical, aiming at “*administrative efficiency and managerial control*” (Kelly, 1980, p. 77). In contrast, the other, more holistic perspective puts “*the value trade-offs problem*” (Kelly, 1980, p. 77) into the centre of attention.

In addition to these five aspects, each unique service sector has its characteristics that affect the definition of service productivity. This diagnosis is not intended to be a call for each service sector to develop its productivity definition.

When presenting the service productivity models, it will become clear that a service company needs to address its service portfolio's specificities to gain understanding and thus the power to improve its service productivity (cf. Chapter 2.2). Nevertheless, it is emphasized that at least the distinction between private and public service companies must be considered for this dissertation's purpose.

Grönroos and Ojasalo (2004, p. 421) proposed a definition that appropriately translates the issues above. For this dissertation, their definition of service productivity being “*the combined effect of how well a service provider manages the cost efficiency of its service production resources and processes (internal efficiency) and the perceived quality of its services (external efficiency) [...]*” is adopted. Furthermore, their perspective on service productivity is combined with the notion that productivity is part of a performance. Thus, the following definition of service productivity is proposed:

Service productivity is the sum of the performances of service providers and service customers. It expresses the service providers' ability, from the provider and customer perspective, to efficiently manage the provision and delivery of service so that its outcomes and the guidance of service customers' contributions (performances respectively) result in efficient value-co-creation.

As said in the introductory part (cf. Chapter 1.1), one way for guidance of the customers' contributions, are frontline employees. In the light of the definition presented in the box above, two tasks emerge from the focus on frontline employees as one leverage point for this dissertation's empirical study in Chapter 4. First, to find an expression for performance that is measurable, and second, to identify the factors that influence this expression of performance. As a final note, researchers question the validity of the service productivity concept as such. However, providing an essential part of the definition and theoretical framework for the empirical study in this dissertation, Grönroos and Ojasalo (2004, p. 422) question if service productivity is “*an abundant concept in services*” because service productivity and service profitability appear to be the same. Furthermore, Corsten (1994, p. 52) acknowledges that quantifying inputs and outputs of a service process might not only be difficult but as well “*above the edge.*” He quotes Reichwald (1986) (as cited in Corsten, 1994, p. 52), who points out that a paradigm of quantification is not suitable. The same do Laitinen, Kinder, and Stenvall (2018, pp. 64–66) with their framework for assessing public service performance.

Considering the conceptual impulses explained in the preceding paragraph, it appears evident that investigating the factors influencing frontline employees in

service interactions to improve service productivity precisely does, what the authors previously questioned. Is it really above the edge to consider frontline employees as an input of service processes and quantify them? No, it is not. Instead, it is a way to create improvement for all actors in a service process, usually a triad of service customer, service frontline employee, and the service provider company. Creating such a win-win situation necessitates knowledge about the interrelatedness of factors that influence these actors. Therefore, in this dissertation, one of these actors, the frontline employees, is examined carefully. Frontline employees are humans and complex, and one has to put up with the argument of whether it makes sense to quantify frontline employees. Still, quantification provides the possibility to explore patterns and advance in this research area. Additionally, practitioners can be given the knowledge to develop appropriate tools for managing their human resources that are essential drivers for their service businesses' productivity.

Being clear about service and service productivity concepts is considered the first step in research model building. The next step will be finding a theoretical frame for embedding the research questions introduced in Chapter 1.1 that is compatible with what constitutes service and service productivity. Therefore, in the following, service productivity models will be reviewed.

2.2 Models of Service Productivity

The dedication of marketing research to service industries started in the 1970s (Grönroos, 1997, p. 326; Gummesson, 1996, p. 31; Gummesson & Grönroos, 2012, p. 480). Today, service science includes various research areas that have emerged since then, e.g., service innovation research, service marketing, service quality research, and service productivity research (Maglio & Spohrer, 2008). Even within these research areas, there are separate but again scattered fields that target specific research questions, e.g., "How to measure the output of a service?" or "How can technology improve service transactions for more value co-creation?" (Ostrom et al., 2015).

Frontline employee research is another field within service research. Because of frontline employees' relevance for service interactions, frontline employee research connects service research areas and has an intermediary function. However, it is possible to consider frontline employees as a separate field within service research. Still, it is difficult to distinguish them from service productivity and quality research, service innovation research, or service marketing. In all

these fields, it is impossible to ignore frontline employees as essential actors and stakeholders.

This chapter summarises frontline employee integration in service productivity models to examine the extent to which the role of frontline employees for service productivity was understood so far. It refines the avenue for building a research model.

To promote a clear arrangement of the models, the differentiation between different schools of thought applied in service quality research (e.g., Barnes, 2017; Ekinci, Riley, & Fife-Schaw, 1998; Gummesson & Grönroos, 2012) was adopted for service productivity models and extended by a German School. This classification of service productivity models into schools of thought was considered appropriate because of the increased transparency and visibility of previous research contributions. Chapters 2.2.1, 2.2.2, and 2.2.3 present the schools of thought with the corresponding service productivity models. Models not assigned to any of these schools of thought are presented in Chapter 2.2.4.

Only those models are presented, which offer the possibility to account for frontline employees in some form. The fact that service productivity and service quality are to be researched jointly is also reflected in the research activities of the prominent representatives of the various schools of thought. Thus, some representatives' research activities are not limited to service productivity alone and include research in service quality.

2.2.1 Nordic School: Service Productivity Model of Grönroos and Ojasalo

As said in the introduction (cf. Chapter 1.1), the service productivity model of Grönroos and Ojasalo (2004) is the theoretical foundation for this dissertation. Therefore, this model is elaborated in detail. It belongs to the Nordic School, which is why this school is the first in this chapter. Prominent representatives of the Nordic School are, amongst others, Grönroos and Gummesson (Grönroos, 1991, p. 17; Gummesson & Grönroos, 2012, pp. 483–486).

Grönroos (1990) acknowledged that services have to be treated differently in marketing (and later productivity) than in the manufacturing industry. In his often-quoted (10,090 times on Google Scholar, 05.03.2020) service quality model, Grönroos (1984, pp. 36–37) elaborates on the gap between the expected and actual perceived quality by the customer. He points out that the image of the

firm models this gap. A superior image of the firm increases customer expectations that, when not met, widens the gap between expected and perceived service quality (Grönroos, 1984, p. 40). As apparent in Chapter 2.2.2, there is a connection between this model and the service gap model by Parasuraman et al. (1985). Furthermore, a firm's image is integrated into the service productivity model developed by Grönroos and Ojasalo (2004).

Gummesson (1991, p. 60) introduced the concept of part-time marketers. These can be customers or employees that do marketing – but not as their primary field of dedication. With this concept, Gummesson (1987, p. 17) assigned minor roles to marketing and sales departments of service companies and major relevance to other personnel, e.g., the frontline employees (Gummesson, 1998, p. 8). He emphasizes the necessity to see service marketing as a holistic and not as a unidirectional and isolated task (Gummesson, 1987, p. 17). Through his views on service marketing and associated research, he triggered the development of relationship marketing research. At the centre of his “*total relationship marketing approach*” (Gummesson & Grönroos, 2012, p. 486) are 30 relationships in four groups. One group targets special market relations, e.g., between frontline employees and customers (Gummesson, 1996, p. 33). Moreover, he sees the service encounter as one source for service productivity (Gummesson, 1998, p. 8). He supports this dissertation's claim that one of the leading actors in the service encounters – the frontline employees – are influential drivers of service productivity and, therefore, encompass a significant research object.

Of course, more researchers belong to the Nordic School, who contributed to service marketing, service quality, and service productivity research. An overview of the Nordic School's further influential researchers and summaries of its main contributions can be found in Grönroos (1991) and Gummesson and Grönroos (2012).

Grönroos and Ojasalo (2004, p. 417) created a service productivity model beyond the traditional productivity concept established in the manufacturing industries. Rather than a ratio of input and output, they understand service productivity as a function of three interrelated efficiencies (internal efficiency, external efficiency, and capacity efficiency). Internal and external efficiencies “*describe how efficiently a firm converts resources internally and how effectively it creates external interest in the conversion output*” (Grönroos & Ojasalo, 2004, p. 416). They adopted the concepts of internal and external efficiency from Ekholm (1984 as cited in Grönroos and Ojasalo, 2004, p. 416).

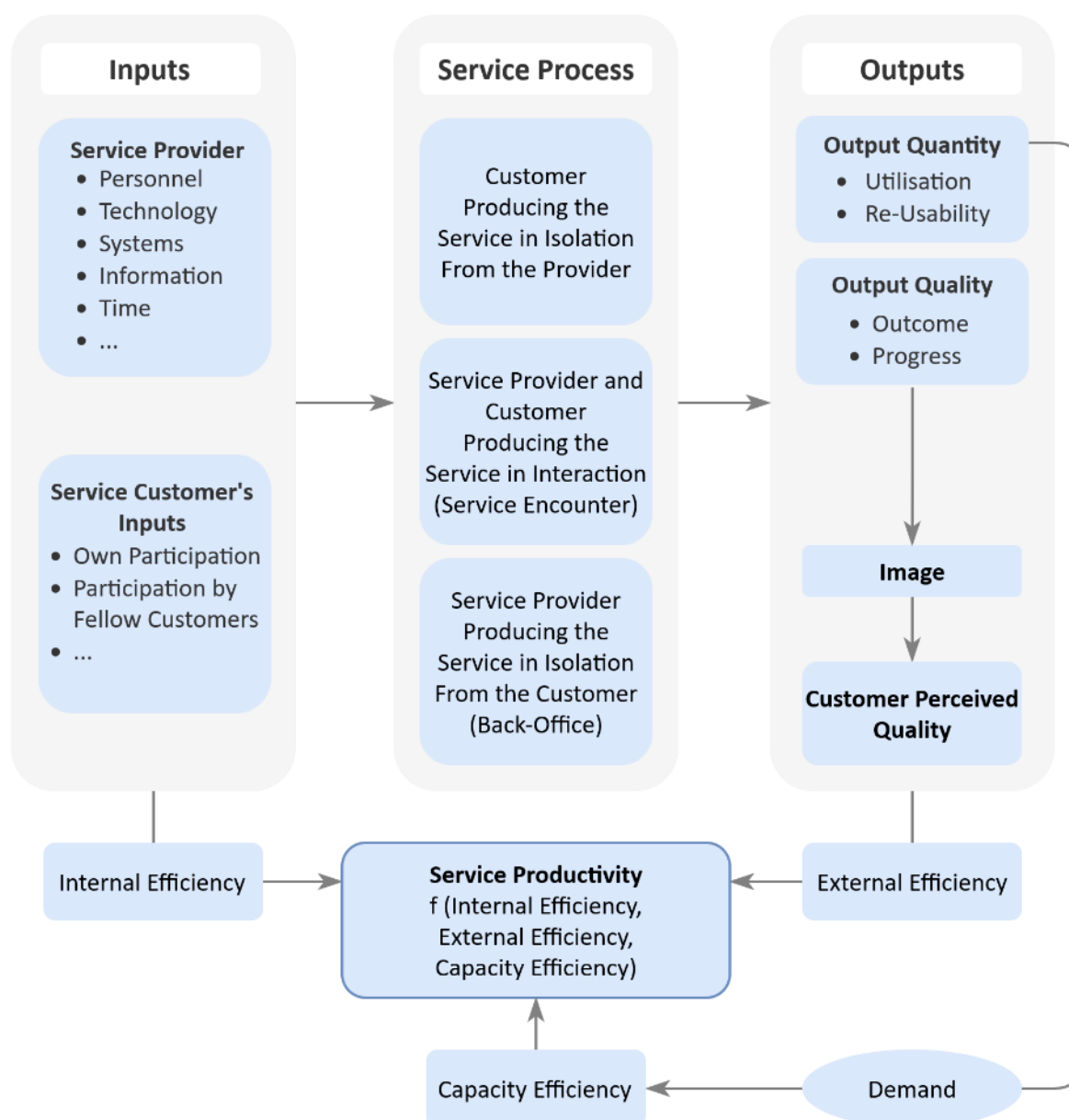


Figure 3: Service Productivity Model of Grönroos and Ojasalo

Source: Grönroos & Ojasalo, 2004, p. 418

Figure 3 displays the model showing an input- and an output-side. On the input side, there are two components: the service provider's inputs and the service customer's inputs. Personnel is listed as service provider input. Frontline employees form one group of personnel of service providers and, as such, are incorporated into the model. As indicated by the suspension points in the service provider input box, the list of service provider inputs is incomplete. It reveals the researchers' awareness that service productivity assessment may require the observation of different inputs and, depending on the service, more or fewer inputs.

The output side consists of four components: output quality, the service provider's image, customer perceived quality, and output quantity. The output quality is assumed to be directly related to the service providers' image and indirectly to customer perceived quality, making the service provider's image a mediator. The firm's image is a component of Grönroos' service quality model and consists of functional and technical quality. Technical quality points to the result of the service process, and functional quality denotes how the result of the service process is delivered to the customer (Grönroos, 1984, pp. 38–39). Thus, front-line employees are incorporated into the service provider inputs on the input and output sides. On the output side, functional quality embodies service delivery quality, which cannot do without frontline employees. In sum, generating “*a certain level of perceived service quality with a given resource structure*” (Grönroos & Ojasalo, 2004, p. 416) is the service organization's ability to uphold external efficiency.

The internal and external efficiency profit from mutual learning (Grönroos & Ojasalo, 2004, 2015; Lasshof, 2006). In these “*learning relationships*” (Grönroos & Ojasalo, 2004, p. 419), service customers gain knowledge of how to participate in the service process efficiently and become more competent over time (Grönroos & Ojasalo, 2015, p. 300). Service providers get to know how to guide customers efficiently through the service process and become aware that there are different types of customers with different needs (Grönroos, 1999). They learned by having managed many service processes with many different customers.

The third efficiency completing the service productivity function is the capacity efficiency that depicts the “management of demand” (Grönroos & Ojasalo, 2004, p. 417). Capacity efficiency has a direct relationship with the demand that, in turn, is directly related to output quantity. The output quantity is relevant for capacity efficiency. It serves to capture if the service can be utilized or re-utilized when not consumed (Grönroos & Ojasalo, 2004, p. 418).

As demonstrated in the discussion of service characteristics (cf. Chapter 2.1), technological developments made it possible to partly dissolve some of the constraining characteristics of a service, e.g., non-storageability, thus, improving capacity management. However, this is not true for every service. Hospitality and consulting service cannot be stored and consumed later, whereas a video-on-demand service stores content for customers, which can then be consumed when deciding to do so. A video-on-demand service also shows that technology partly dissolved the simultaneity-of-production-and-consumption-criterion. In

this matter, there seem to be three kinds of service. The service that cannot be stored when not consumed, e.g., empty hotel rooms in low season, the purchase advice-service in a shop that is not consumed by one customer but could be used by another, and the on-demand service that can be consumed on-demand, e.g., Netflix. Thus, capacity efficiency is an issue for the first and second named kinds of service, and a closer look at the output side is important.

Regarding the hotel example, the loss of turnover is not the only thing caused by empty hotel rooms and the salary payments for personnel that are not needed that arise from poor capacity management. Even more, poor capacity management may lead to unfavourable effects on frontline employees' customer orientation because they have nothing to do and suffer from job bore-out (Stock, 2016, p. 4264). Thus, in all three efficiencies forming the service productivity function, frontline employees are incorporated.

The inputs and outputs are combined during the service process, consisting of three phases: two phases where either customer or provider act alone and the service encounter (cf. middle column in Figure 2; Grönroos & Ojasalo, 2004, p. 417). Dependent on the service, one or two of these three phases dominate the other. For example, in low-contact service (cf. Chapter 2.1), the service encounter is rather short, whereas, in high-contact service, the service encounter is of great importance. Additionally, for a contact-only-when-needed-service, the service encounter might be of no importance at all when the service transaction proceeds without complications.

No matter to what extent one phase of the service process dominates the other, and no matter how pivotal the service encounter phase is, if a service encounter takes place, the frontline employee plays a crucial role in it. There are different contexts in which this can happen. For example, for a contact-only-when-needed-service, the relevance of the service encounter is low. However, it increases when there is a case when contact with the service provider is needed, e.g., complications with an energy supplier. The service encounter also can be provoked by failures caused in back-office processes or phases of the service where the provider produces the service in isolation from the customer. For example, suppose one booked holiday with a travel agency. In that case, one relies on the agency's efficient back-office processes. When one reaches the holiday destination, one ideally does not need to interact with the travel agency any further. In cases of service failures, there is demand for service recovery. Again, for service recovery, the frontline employee is one of the main actors (Johnston & Michel, 2008, pp. 86–87).

The importance of input and output components, e.g., technology being a service provider input, depends on a service's specificities. For example, technology is a vital component for many service industries' back-office processes and the essential component for self-service such as ATMs or any service processed online, e.g., online shopping. Technology's role for back-office processes also holds for educational and health care service where the personnel being indispensable will be relieved by it.

For the model of Grönroos and Ojasalo, there exists no empirical validation. In this matter, Grönroos and Ojasalo (2004, pp. 420–421) were aware that their model's operationalisation will be challenging. They considered the integration and measurement of service quality fluctuations and determining indicators that would make the model renderable as relevant issues open to discussion.

Although an empirical validation of the model is still missing, some works used the service productivity model of Grönroos and Ojasalo as a basis for their research. These works are presented in the following.

As indicated earlier, the model is flexible. Thus, it is possible to customize the model and choose between different inputs on the provider and customer sides. Borchert et al. (2012, p. 47) demonstrated how to do this for hospital nursing care service. They combined Grönroos' and Ojasalo's model with two approaches developed for hospital nursing care service (Pringle & Doran, 2003) and nursing care service (Curtin, 1995). They expanded and customized the model of Grönroos and Ojasalo, matching it to the study context. They stuck to the structure of the model. However, specified provider and customer inputs, e.g., included family members as customers (in the case of hospital nursing services, patients are the customers) (Borchert et al., 2012, p. 52). Furthermore, they complemented the three types of processes set up by Grönroos and Ojasalo (2004, p. 418) with encounters between patients, e.g., supporting each other with little service deeds like opening the window (Borchert et al., 2012, p. 51). Based on this model, a Data Envelopment analysis (DEA) was conducted (Borchert et al., 2014, pp. 192–197). With the DEA results and based on reviewing previous research (Borchert et al., 2012, pp. 108–122), they conducted a regression analysis proving the positive influence of the number of employees on productivity (Borchert et al., 2014, pp. 201–202). Furthermore, they confirmed the positive relationship between the patient's satisfaction with hospital nursing care service and hospital infrastructure and productivity (Borchert et al., 2014, p. 203). Both results confirm the critical role of frontline employees in service productivity.

Von Garrel, Tackenberg, Seidel, and Grandt (2014, p. 46) combined the service productivity model of Grönroos and Ojasalo with the productivity model of Lasshof (2006; cf. Chapter 2.2.3) and integrated success factors of project management to customize the model to knowledge-intensive service (KIBS). For example, they explicitly added quantity and quality of demand and supply as significant inputs for capacity efficiency. Moreover, they integrated customers' contributions to the outcome quantity dimension due to labour division between the service provider and service customer (von Garrel et al., 2014, p. 32), which is the central finding of Lasshof's research. Their goal was to create a tool for determining the influence factors of KIBS productivity and its actual productivity. Cross-sectional data were collected via online questionnaires (n=430) from organizations providing KIBS mainly in the fields of finance, communication, technical and non-technical research, and consulting (von Garrel et al., 2014, p. 67). One of their findings was to discard service productivity as a function of the three efficiencies that were not confirmed with their chosen operationalization of the model (von Garrel et al., 2014, pp. 82–83). Furthermore, they found out that the most relevant influence factors on KIBS productivity are conflicts such as interpersonal conflicts, information and communication issues, e.g., sharing and exchange of information, and management methods, e.g., continuous monitoring and adjusting of activities and goals (von Garrel et al., 2014, pp. 42–44, 93). Another qualitative elaboration in the area of KIBS is Banerjee's work. He took the Grönroos-Ojasalo-service-productivity model and the model of Corsten (1994, cf. Chapter 2.2.3) as the starting point for his research model targeting to determine the role of human motivation (Banerjee, 2015, p. 3596).

A recent approach was made by Lellek (2016, pp. 181–183), who developed a productivity model for facility service combining the models of Grönroos and Ojasalo and Corsten (1994; cf. Chapter 2.2.3). She excluded customer contributions to the service process and specified the different parts of the service process characteristic to facility service (Lellek, 2016, p. 182). A literature review revealed inputs and outputs specifically to facility service that served the model's operationalisation (Lellek, 2016, pp. 157–159). The model was tested for three months in two facility service organizations (Lellek, 2016, pp. 193, 196). Embedding the model's validation into a case study design enabled Lellek (2016, p. 189) to use various data collection methods. Her study's result was the positive model evaluation by the service firms who tested it, regarding, amongst others, operationalizability, applicability, cost-benefit ratio, and comprehensibility (Lellek, 2016, pp. 196, 200).

Although Grönroos' and Ojasalo's approach to define service productivity as a function of internal, external, and capacity efficiency is considered a novelty, there is still an input- and output-side as a clear link to traditional productivity concepts. It is open to discussion whether it is necessary to unplug service productivity models entirely from this component of traditional productivity concepts. Notwithstanding this argument, other researchers stuck to the "ratio aspect" of service productivity (e.g., Rutkauskas & Paulavičiene, 2005, p. 31; Vuorinen et al., 1998, p. 380). They view service productivity as a ratio of quantity and quality of output to quantity and quality of input. Both quantities and qualities consist of tangible and intangible elements, in which, e.g., also frontline employees have their place. Jääskeläinen (2010a, p. 8) came to the same conclusion by conducting a two-step study about the drivers of service productivity for public service. In the qualitative part, he identified the intangible input "employee" as one of the key productivity drivers. Similarly, Laitinen et al.'s (2018, pp. 64–66) framework for public service performance measurement adopted Grönroos and Ojasalo's service productivity model elements. For example, learning relationships between service customers and frontline employees and recognising the service process as a network of influences that all contribute to an outcome were taken over.

2.2.2 North American School

Similarly to the Nordic School, the North American School initially focused on service quality research. In service quality research, the need to research service quality and service productivity in conjunction was recognized.

In contrast to the Nordic School, the North American School developed service quality models ready to apply in practice. Hence, their spread and the echo in forms of modifications, further developments, and studies is bigger (Ekinci et al., 1998, p. 63). The main contributors to the North American School are Parasuraman, Berry, and Zeithaml (1985) with the service gap model (1), Cronin and Taylor (1992, 1994) with the SERVPERF approach (2), Johnston and Jones (2004) with their service productivity model (3), and Parasuraman (2002, 2010) with his Dual-Perspective Framework of Service Productivity (4).

Although the service gap model is a service quality model, it pops up inevitably when one does service productivity research. It is considered the starting point for developing the SERVPERV approach, so the service gap model is presented in the following subsection.

1) Service Gap Model by Parasuraman, Zeithaml, and Berry (1985)

The service gap model by Parasuraman et al. (1985) can be considered highly influential in service research (31,374 citations on Google Scholar, 06.03.2020). The influence of this model is also shown by the vast amount of replication studies (replication studies conducted between 1988 and 2008 are reviewed by Ladhari (2009); newer studies are, e.g., Ali and Raza (2015), Li et al. (2015), Roslan, Wahab, and Abdullah (2015)). Also, the critical appraisal (Babakus & Boller, 1992; T. J. Brown, Churchill Jr., & Peter, 1993; Buttle, 1996) resulted in the continuous development, modification, and improvement of the service gap model by Parasuraman and his colleagues (Parasuraman, Berry, & Zeithaml, 1993; Parasuraman, Zeithaml, & Berry, 1994; Parasuraman, Berry, & Zeithaml, 1991a; Parasuraman, Berry, & Zeithaml, 1991b) as well as by other researchers (e.g., Babakus & Boller, 1992; Frost & Kumar, 2000; Lai, Hutchinson, Li, & Bai, 2007; Luk & Layton, 2002; Murmann, 1999, p. 17) prove its relevance. Moreover, the publication and open discussion triggered the development of new models, e.g., SERVPERF by Cronin and Taylor (1992) or the model of service quality of direct and indirect customer contact scenarios by Murmann (1999, p. 77).

The service gap model aims to improve customer perceived service quality (Parasuraman, Zeithaml, & Berry, 1985, p. 46-48). By using qualitative research methods, five gaps were identified that target the difference between expectations and actual perceptions of different actors of the service triad (service customer, frontline employee, service organization) about different aspects of a service process (Parasuraman et al., 1985, pp. 43–45). Gap 1 stands for the difference between the “management perceptions of consumer expectations” and the customers’ “expected service” (Parasuraman et al., 1985, p. 44). Gap 2 denotes how the “management perceptions of consumer expectations” are rendered into “service quality specifications” (Parasuraman et al., 1985, p. 44). Gap 3 targets the service delivery and its incongruence with the firm’s service quality specifications concerning the delivery and performance of a service. In this gap, the researchers attribute the most critical role to the frontline employees. Gap 4 records the discrepancies between service delivery and “external communications to consumers” (Parasuraman et al., 1985, p. 44). Gap 5 finally captures the difference between customer expected and customer perceived service (Parasuraman et al., 1985, p. 44). The evaluation of the gaps is conducted using a questionnaire which contains two main sections: one for the service expectation, one for the actual service perception (Parasuraman, Berry, & Zeithaml, 1991, p. 446).

Each of the five dimensions in the questionnaire contains items targeting aspects regarding frontline employees. For example, in the dimensions “tangibles,” the outer appearance of frontline personnel is evaluated. In the reliability dimension, although not directly stated, items target the capability of problem-solving and problem-solving within a specified time (Parasuraman et al., 1991a, pp. 446–447). The remaining three dimensions, “responsiveness,” “assurance,” and “empathy”, also reflect the importance of frontline employees for leveraging service quality (Parasuraman et al., 1991b, p. 447).

However, the model was not considered appropriate for the aim of this dissertation. Although frontline employees are explicitly incorporated in this model, it was considered too few to deepen understanding of frontline employee influence factors.

As announced, the service gap model was subject to discussion (Babakus & Boller, 1992; Bitner, Zeithaml, & Gremler, 2010; Buttle, 1996; Rosene, 2003), which nurtured the further development of the model (Parasuraman et al., 1991b) as well as the conceptualization of new models such as the SERVPERF model.

2) SERVPERF Approach by Cronin and Taylor (1992, 1994)

Cronin and Taylor (1992, p. 59), who believe that service quality is a performance-based variable instead of the gap between expectation and perception of service (1992a, pp. 56–57), developed the SERVPERF scale assessing service quality.

Therefore, they adopted the SERVQUAL scale and complemented it with items asking for the importance of the service quality dimensions and overall measures for customer assessed service quality, satisfaction, and purchase intentions (Cronin & Taylor, 1992, p. 60). Comparing SERVPERF and SERVQUAL scales (weighted and unweighted) showed that unweighted scales performed better than weighted versions and that the unweighted SERVPERF scale performed best (Cronin & Taylor, 1992a, pp. 61–63).

The main difference between the service gap model and the SERVPERF approach is the perspective on service quality. Is it performance minus expectations or a broader comprehension of quality? SERVPERF maps service productivity by capturing the difference between customer expectations and perceived customer performance, the importance of the performance characteristics contained in the expectation and performance items, and three

global indicators of overall service quality, overall satisfaction, and purchase intent (Cronin & Taylor, 1992b, pp. 66–67).

As pointed out in Chapter 2.1, service productivity is an ambiguous concept, and one could interpret the performance component of SERVPERF as the incorporation of productivity. In other words, SERVPERF can be interpreted as a model of service productivity when considering performance as a productivity concept.

Like the SERVQUAL instrument, SERVPERF was subject to discussions (Brady, Cronin, & Brand, 2002). The follow-up research contains SERVPERF scale applications, e.g., in hospitality service (Unuvar, Kaya, Faculty, & Campus, 2016) and educational service (Abdelkrim & Salim, 2015; Adedamola, Modupe, & Ayodele, 2016). However, the field is dominated by comparisons between the SERVQUAL and the SERVPERF scale: H. Lee et al. (2000); Adil, Ghaswyneh, and Albkour (2013); Mitra (2012); Aydin (2017); Machado, Ribeiro, and Basto (2014).

Furthermore, some studies demonstrate the appropriateness of the SERVQUAL and SERVPERF approaches alike, e.g., Carrillat, Jaramillo, and Mulki (2007); Rodrigues, Barkur, Varambally, and Golrooy Motlagh (2011); Stafford, Prybutok, Wells, and Kappelman (2011).

As mentioned before, the SERVPERF scale can be matched to assess service productivity if the definition of service productivity is concordant with the performance assessed by the SERVPERF scale. In favour of such an application is the dominance of service quality in the model, which, as outlined previously (cf. Chapter 2.1), should be analyzed in conjunction with service productivity. Still, the frontline employees' perspective is not included in the model. It would be necessary to analyze the factors influencing frontline employees in their daily work separately, so the SERVPERF model was considered not appropriate to be the theoretical framework.

3) Service Productivity Model by Johnston and Jones (2004)

In line with Parasuraman (2002, 2010), Johnston and Jones (2004, p. 202) point out that customer and provider sides must be considered when looking at service productivity. Thus, there are two productivities (cf. Figure 4): operational productivity and customer productivity (Johnston & Jones, 2004, pp. 205–206).

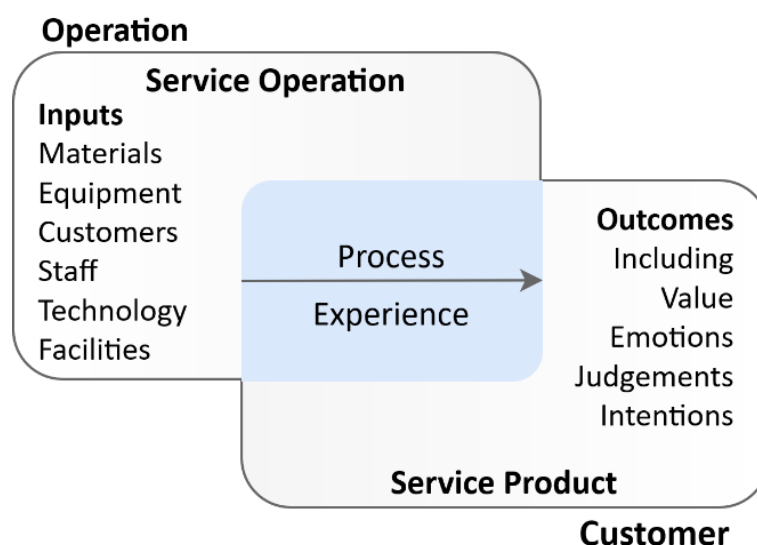


Figure 4: Service Productivity Model by Johnston and Jones

Source: Johnston, Clark, & Shulver, 2012, p. 7

Operational productivity is “a function of the ratio of operational outputs to inputs over a period, where inputs are materials, customers, staff, costs, etc. and outputs are customers, used resources, revenue, etc.” (Johnston & Jones, 2004, p. 205). Customer productivity is “a function of the ratio of customer inputs, such as time effort and cost, to customer [outputs] such as [...] experience, outcome and value” (Johnston & Jones, 2004, p. 206).

Thus, managing service productivity means balancing both operational and customer productivity. Johnston and Jones (2004, pp. 207–211) consider five main issues for this task: the consideration of the productivity paradox (not denounced as such by Johnston and Jones (2004, p. 207)), the systematic and purposeful management of bottleneck situations, proactive co-creation on the part of the customer, and meaningful task and job design to, e.g., compensate for the adverse effects on service customers’ satisfaction expected to result from fluctuations in capacity (Johnston & Jones, 2004, pp. 210–211).

In their discussion of crucial issues for balancing operational and customer productivity, Johnston and Jones (2004, pp. 207–211) point to frontline employees’ role in service encounters. For example, when talking about “bottlenecks” in service processes, frontline employees are the ones entertaining people queuing for attractions in theme parks (Johnston & Jones, 2004, p. 209). They approve the added value of frontline employees in banking service encounters in comparison to service executed by automats apart from ATMs (Johnston & Jones, 2004, p. 210), or the advantages of “multi-skilled employees” (Johnston & Jones, 2004, p. 211) in hospitality service.

Perse, this model would also provide a suitable theoretical framework for the empirical study in Chapter 4. Still, the model of Grönroos and Ojasalo was chosen because it describes in more detail how the customer perspective and service quality will be integrated into the productivity considerations and pays more attention to the process-related nature of services.

4) Dual-Perspective Framework of Service Productivity (Parasuraman, 2002, 2010)

Parasuraman (2002, p. 8) proposes “a conceptual framework for understanding the interplay between service quality and productivity.” In contrast to Grönroos’ and Ojasalos’ service productivity model (cf. Chapter 2.2.1), service quality is centred because of its importance for the overall evaluation of a service transaction/ process. In line with other researchers (cf. chapter 2.1), Parasuraman (2002, p. 7, 8; 2010, p. 279-280) sees service productivity as a concept beyond the output-input-relation present in the manufacturing industry. Figure 5 presents the dual-perspective framework and shows that, just as in Grönroos’ and Ojasalos’ model, he integrated the provider’s and customer’s perspectives and considered it compulsory to understand and leverage service productivity.

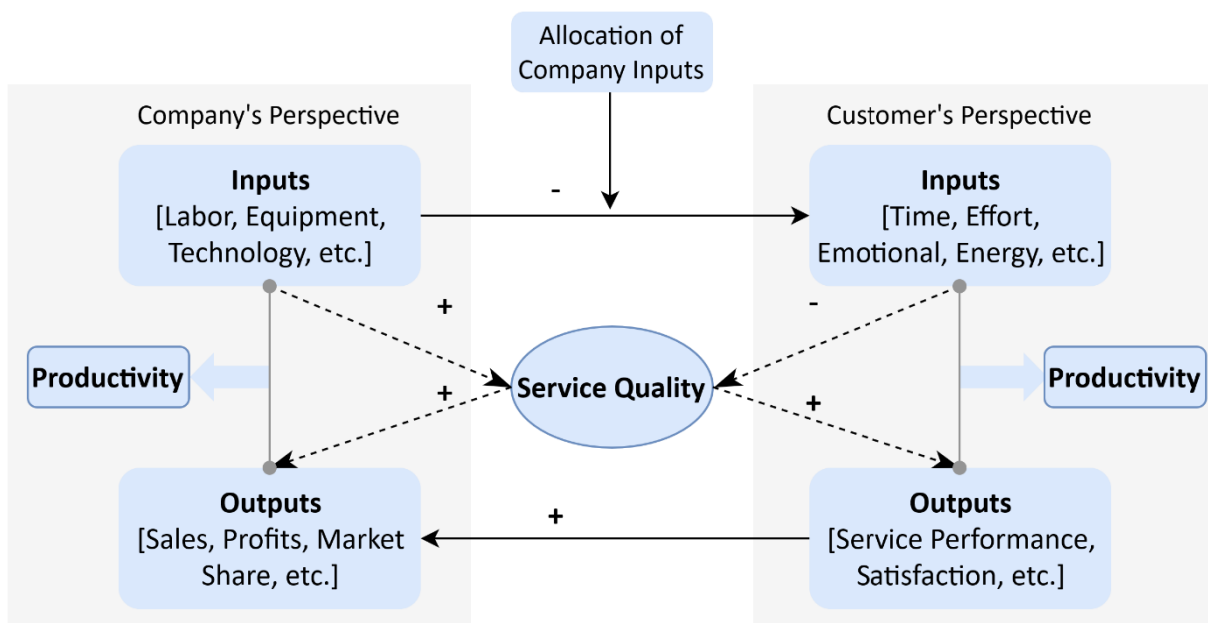


Figure 5: Relationship Between Service Quality and Service Productivity

Source: Parasuraman, 2002, p. 8

Both sides contribute inputs and achieve outputs due to a service transaction (Parasuraman, 2010, p. 279). Service firms contribute to each service process with several inputs. Apart from equipment and technology, there is labour personalized by management and frontline personnel (Parasuraman, 2002, p. 8).

The elements of the model are connected with three relationships that reflect known elements of service quality and productivity research, such as the co-creation processes between the service provider and service customer, the provision of resources for the service production on behalf of the service provider (Parasuraman, 2010, p. 280). The third relationship describes the positive influence of the service customers' satisfaction with the service on the service providers' outputs (Parasuraman, 2010, p. 281), e.g., by positive word-of-mouth or increased customer loyalty. Thus, the service provider's ability to efficiently combine the inputs necessary for providing and delivering the service is a crucial part of service productivity (Parasuraman, 2002, p. 8, 2010, p. 281). It involves "labour," which is embodied, amongst others, by frontline employees.

There is a connection between the service gap model of Parasuraman, Zeithaml, and Berry (1985) and the dual-perspective framework: Gaps 1-4 represent potential shortcomings that lie within the company's sphere of influence; Gap 5 depicts the difference between the service experience expected and perceived by the service customer. These are the two perspectives in the eponymous framework. Parasuraman (2010, p. 282) considers Gaps 1-4 as being the ones representing the allocation of the service organizations' resources that, as said previously, fundamentally influence service productivity.

Inputs and outputs of both sides are linked to service quality. Like in the service productivity perspective of Vuorinen et al. (1998) (cf. Chapter 2.1), there is a quality dimension for inputs and outputs.

Therefore, integrating a quality dimension for all inputs and outputs also enables analysing the frontline employee influence factors. An output-input-relation expresses service productivity, whereas Grönroos and Ojasalo use the efficiency concept. Centering service productivity, the Grönroos-Ojasalo-service productivity model was preferred over Parasuraman's dual-perspective framework.

2.2.3 German School

For the topic of service productivity, the German School of thought is newly introduced. Up to now, there was only a Nordic and a North American School of thought. One of the most prominent German service researchers is Corsten (1994), who developed a service productivity model, which divides the service process into two phases, of which each has its productivity (1). Building on this, Lasshof (2006) created a model that focuses on improving labour division between the service provider and service customer (2). A very different approach, the Koblenz Service Productivity Model (3), concludes the chapter.

1) Service Productivity Model of Corsten (1994)

In addition to its importance in the context of German service productivity research, the model of Corsten (1994, p. 60) is relevant because it was developed especially for services in which interactions between frontline employees and service customers play an essential role. Therefore, Corsten's model is notable for this dissertation centred on frontline employees as one of the key drivers for improving service productivity.

As presented in Figure 6, Corsten (1994, p. 1) depicted the service process in two phases: firstly, the pre-service encounter, and secondly, the service encounter. In the pre-service encounter phase, the service provider allocates all the resources necessary to serve the customer in the service encounter. During the service encounter, the allocated resources are used for serving the customer, and additional factors are combined into an output.

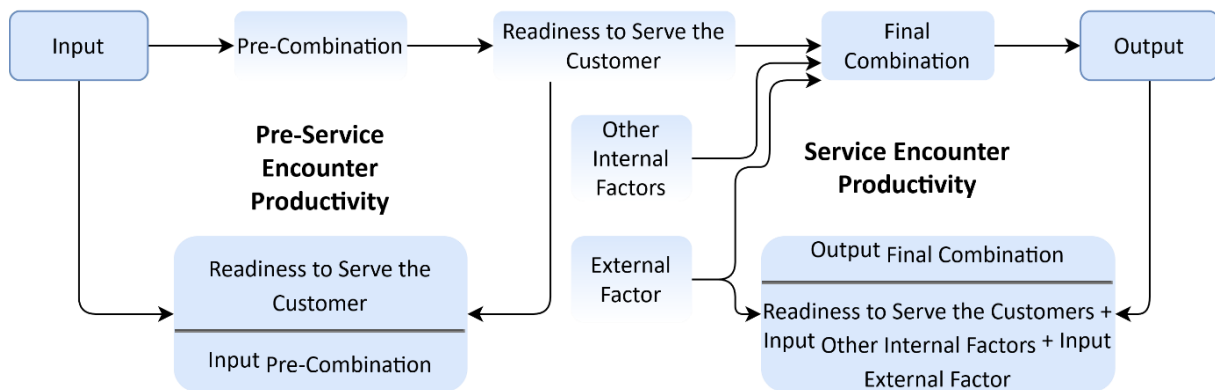


Figure 6: Two-Stage Service Productivity Model

Source: Corsten, 1994, p. 61

Corsten's (1994, p. 61) comprehension of service productivity is similar to that of Grönroos and Ojasalo (2004, p. 417; cf. Chapter 2.2.1) and Johnston and Jones (2004, pp. 205–206; cf. Chapter 2.2.2). Service productivity is a composite of several productivities. First, the productivity of inputs deployed before the service encounter occurs (pre-service encounter productivity). Second, the service encounter's productivity consists of the external factor's inputs: the customer or a customer's object, further inputs supplied by the service provider, and service personnel (service encounter productivity).

Furthermore, Corsten (1994, pp. 46–47) included a capacity dimension and is convinced that quality is another component of service productivity (1994, p. 52). He disagrees with a solely quantitative perspective on productivity (1994, p. 50) as concluded by Grönroos and Ojasalo (2004, p. 421), who consider a

financial perspective as the only one “*to incorporate the quality variations caused by the heterogeneity of services and the effects on perceived quality by customer participation in the service process.*”

The holistic evaluation of service productivity assumes a conjoint consideration and evaluation of both productivities. A fact that is even more important when keeping in mind that the pre-service encounter productivity, e.g., back-office processes, influences the productivity of the subsequent service encounter stage (Corsten, 1994, p. 60). Furthermore, the customer’s perspective shall be included in the productivity analyses because he or she is part of the service (Corsten, 1994, p. 52).

The integration of the customer in the service process is an element, which is only partially controllable. At the same time, it is also a leverage point for improving service productivity (Corsten, 1994, p. 66). In line with Johnston and Jones (2004, p. 209) and Parasuraman (2002, p. 7), Corsten (1994, p. 66) explains that the transfer of tasks from the service provider to the service customer is one possibility for improving service productivity. In this matter, he (1994, p. 66) pointed out two problems: firstly, the transfer of tasks from the service provider to the service customer extends the part of the service process that cannot entirely be controlled. Furthermore, it also extends the service provider's effort to ensure that the customer is doing what he or she is supposed to do so that there is value co-creation instead of value co-destruction (cf. Chapter 1.1). However, by taking over tasks in the service process, the service customer might reduce its uncertainty as he also overtakes control from the service provider (Johnston & Jones, 2004, p. 209), and the service provider possibly reduces his effort leading to productivity gains (Corsten, 1994, p. 66). Acting oppositely, secondly, might lead to productivity losses because more staff has to be mobilized or has a higher proportion of work to do. Still, the limiting of uncertainty by limiting the role of the customer he or she has to play in the service process might as well improve productivity (Corsten, 1994, p. 67). A decision on the extent to which service customers perform tasks within the service process depends strongly on the service context (see for e.g. Jo Bitner et al., 1997, pp. 194–195) and the customer’s willingness to participate in the service process as such generally (Corsten, 1994, pp. 67–68).

Working on this question, Lasshof (2006) designed a service productivity model aiming at the efficient labour division between the service provider and service customer. It can be considered as a further development of Corsten’s model and is explained hereafter.

Apart from the service encounter, Corsten discusses other leverage points for productivity, such as standardization, technology, and, similar to Johnston and Jones (2004, pp. 210–211), the appropriate task arrangement and task sequence (Corsten, 1994, pp. 68–70).

Concerning frontline employees, Corsten (1994, p. 68) acknowledged the existence of influence factors for frontline employees' motivation, job satisfaction, ability to communicate, interact, and compensate for emotional exhaustion. However, the model did not adequately integrate the customer's perspective and was not chosen as a theoretical foundation for this dissertation.

2) Service Productivity Model of Lasshof (2006)

Lasshof (2006, pp. 119–125) addressed the labour division between service providers and service customers that Corsten had raised with his service productivity model. As stated, the transfer of tasks onto the customer is a leverage-point for service productivity but poses advantages and disadvantages (Corsten, 1994, p. 66). Therefore, Lasshof (2006, pp. 150–152) centres her service productivity model on the improvement of labour division between the service provider and service customer, in particular for service where the customer or a customer's object plays a crucial role (Lasshof, 2006, pp. 122–124, 220). Lasshof fills a research gap with her work, as the discussion about labour division has always been carried out on a theoretical level (Lasshof, 2006, pp. 150, 154–155).

The discussion about the optimal division of labour between service providers and service customers is centred on the overriding goal of guiding service customers within the service process so that the process runs smoothly and optimally. The customer, as a co-producer, can jeopardize this in various ways (Lasshof, 2006, p. 158). Assuming a particular will and motivation to participate in the service process as a co-producer (Lasshof, 2006, p. 220; see Mustak, Jaakkola, Halinen, & Kaartemo (2016) for a review on customer participation), the service' productivity may still be influenced by the customer's participation as such (Corsten, 1994, p. 66). Customers can be late (Lasshof, 2006, p. 161) and, e.g., forget some objects necessary for the service process (Lasshof, 2006, p. 159). Also, information is crucial for capacity planning and customization and requires additional efforts by the service provider when incomplete or missing (Lasshof, 2006, pp. 159, 161). Besides, the customer's expertise in the service process plays a role (Lasshof, 2006, pp. 165–167): the higher the customers' know-how, the higher the productivity – up to a certain point. Then, increasing

customer know-how decreases productivity, e.g., a customer who is well-informed about a product, asks complicated and particular questions, and prolongs the service encounter (Lasshof, 2006, pp. 167–168). Therefore, Lasshof's model serves best for customers with little know-how (Lasshof, 2006, pp. 172, 220).

To answer the question of efficient labour division between the service provider and the service customer, Lasshof (2006, p. 189) chose to model this question as a knapsack problem. The effects of labour division on productivity and revenues were expressed by monetary utility consisting of customer satisfaction, general revenues, and revenues gained by non-used capacities used in another service process (Lasshof, 2006, Fig. 31). There is one constraint: the service providers' cost has to be smaller or at least equal to the service providers' cost when there is no customer participation at all (Lasshof, 2006, p. 193).

Lasshof shows a way to solve efficient labour division between the service provider and the service customer that has to be customized to the specific service. Therefore, she first analyses the service transaction via service blueprinting and then elaborates on the possibilities to shift some steps to the service customer (Lasshof, 2006, pp. 201–203).

Lasshof's model is based on Corsten's model (Lasshof, 2006, p. 176) and deals in detail with the optimal division of labour between service providers and service customers. The transfer of the model onto frontline employees, being the focus of this dissertation, is easily possible. Preliminary work for applying the model is always the analysis of the service process through service blueprinting. Recording a service process is the only way to clarify which tasks or sub-processes can be divided between the frontline employees and their service customers within the service process.

The model from Lasshof was presented here because it represents another module for a better understanding of service productivity among the other service models. Modelling the labour distribution problem as a knapsack problem does not correspond to this dissertation's goal: to increase knowledge about frontline employee influence factors. Therefore, Lasshof's model was not selected as a theoretical basis for this dissertation's empirical study.

3) Koblenz Service Productivity Model (2012)

Kutsch et al. (2012, p. 15) developed a similar comprehension of service productivity as Vuorinen et al. (1998) and Rutkauskas and Paulavičiene (2005) (cf.

Chapter 2.1). They stick to the output-input ratio. The model measured the output- and input factors regarding their degree of fulfilment and, multiplied by a weight, matching the specific service context. Thereby, the more critical factors share a more significant influence on the overall result than minor importance factors. The resulting ratio then informs about the service firm's productivity at one determined point in time (Kutsch et al., 2012).

In contrast to Corsten and Lasshof, Kutsch et al. (2012) do not see the service process as several phases. They measure fulfilment degrees of inputs and outputs and overall productivity multiple times during a service process. Thus, the model aims at the measurement of service productivity. In contrast, productivity management is seen as a subsequent step, for which it is especially helpful to determine the relationships between the different output- and input factors (Kutsch et al., 2012).

The model was tested successfully in an IT service company. The company had to decide on the input- and output factors and the weights for the factors (Kutsch et al., 2012). Allowing the company to decide this for themselves is considered one drawback of this model because it can be hard to make and be susceptible to subjective judgment. At the same time, this allows one to include frontline employees and the factors influencing them to match the specific service context.

It was decided not to pursue this model any further because it presupposes that companies who want to apply it have knowledge that should be scientifically backed up but presumably is not. The findings of this dissertation should be this scientific support. The factors extracted here from the literature (cf. Chapter 2.4) provide a wide-ranging and, to the best of the author's knowledge, approved depiction of what influences frontline employees in their actions, including positive and negative effects on service productivity.

2.2.4 Other Service Productivity Models

Apart from the service productivity models presented previously, there are service productivity models not assignable to any of the schools of thought. They are used for productivity analysis from researchers worldwide and do not represent one of the schools mentioned above.

In contrast to the conceptual nature of the models presented in the previous chapters, the following models were derived from different approaches: objective matrices (1), Data Envelopment Analysis (2), and Balanced Scorecard (3). All three approaches share divine suitability to be applied in business practice

with relatively little effort. Additionally, some of the following models used previously presented models as a theoretical framework.

1) Using Objective Matrices for Productivity Assessment

In the last decade, several researchers (Balkan, 2011; Jääskeläinen, 2009; Pfannstiel, 2016; Supic, Marinkovic, Vukasinovic, Spasovski, & Jaksic, 2012) assessed service productivity following the objective matrix approach by Felix and Riggs (1983). *“Productivity by objectives is a holistic approach to overcome the obstacles that inhibit productivity (Felix & Riggs, 1983, p. 173)”*. In other words, they propose productivity enhancement guided by objectives. Objectives that have been selected beforehand. Furthermore, productivity by objectives sees the inclusion of stakeholders influenced by these productivity enhancements as essential part of the productivity improvement process's success and sustainability (Felix & Riggs, 1983, p. 173).

Generally, all researchers followed the same procedure: together with the organization members whose service productivity was to be analyzed, it was discussed what influences productivity. Then, these productivity influences were weighted and, using a questionnaire, evaluated by service providers and service customers, resulting in a productivity score.

In the Bayreuth productivity analysis, Pfannstiel (2016, pp. 69, 72) combines the objective matrix by Felix and Riggs (1983) with the organization theory of Hatch (1997) to get a more precise picture of the productivity dimensions in a hospital setting. Supic, Marinkovic, Vukasinovic, Spasovski, and Jaksic (2012, pp. 660–661) combine the matrix approach with the Seven Steps of Determining Productivity Indices (Brinkerhoff & Dressler, 1990) to ensure developing a productivity tool customized for the correspondent health care setting.

Another course was taken by Jaaskelainen (2009), who let the service organization choose between the different approaches to productivity assessment. Finally, the organization decided on the matrix approach because of its perceived originality, easiness-to-understand and -apply, and flexibility (Jääskeläinen, 2009, pp. 452–454).

Jääskeläinen (2009, p. 454) considers the matrix approach useful for the productivity assessment of a service unit but not for a whole organization. Different service units' productivity might be influenced by different factors with different weights, which aggravates the comparison between service units.

Against the background of the above examples, each study also has limitations. Pfannstiel (2016, p. 71), e.g., has only indirectly taken the customer perspective

into account in his model development. Another limitation is time: Jääskeläinen (2009) and Pfannstiel (2016) presented their results of a one-time productivity assessment, whereas Balkan (2011) and Supic, Marinkovic, Vukasinovic, Spasovski, and Jaksic (2012) demonstrated the development of productivity over time.

Integrating frontline employees into this approach is straightforward. The question of the quantifiability of human beings and their contributions within the service process framework remains with models from previous chapters. Here, the process of finding and deciding which factors are to be included in the model is once again the critical point. A basis derived from already existing scientific results would again simplify the decision process and, by this, applying the model. The research of such a factor base is the goal of this dissertation. Thus, this model is considered unsuitable as a theoretical basis.

2) Service Productivity Measurement and Analysis with Data Envelopment Analysis

The measurement and analysis of service productivity with Data Envelopment Analysis (DEA) is an approach present in service research since the late 1980s (Avkiran, 2006; Emrouznejad & Cabanda, 2014). Initially published by Charnes, Cooper, and Rhodes (1978), it is an approach originating in mathematics and „*calculating the relative efficiency of objects on multiple criteria*“ (Weber, 1996, p. 29). Consequently, multiple inputs and outputs can be included (Sherman & Gold, 1985, pp. 300–301).

DEA is a non-parametric frontier approach comparing the productivity of so-called decision-making units (DMUs). These are units of an organization that operate under comparable conditions (Paradi, Sherman, & Tam, 2018; Sherman & Zhu, 2006). In the case of service, this could be service units or subsidiaries (McLaughlin & Coffey, 1990, p. 58) such as bank subsidiaries (e.g., Ebrahimnejad, Tavana, Hosseinzadeh, Shahverdi, & Yousefpour, 2014; Herrera-Restrepo, Triantis, Seaver, Paradi, & Zhu, 2016; Mavi, Saen, Mavi, Taleshi, & Majd, 2015) and hospital units (e.g., Cheng et al., 2016; Johannessen, Kittelsen, & Hagen, 2017; Silwal & Ashton, 2017).

The frontier calculated by DEA would be the best productivity in one of the considered service units or subsidiaries. Thus, being a non-parametric method, the frontier function is not subject to assumptions comparable with those that have to be met when conducting linear regression analysis (Paradi et al., 2018).

When finding out which unit or subsidiary is the most productive, DEA also provides information about the level of costs and resources needed to be reallocated to make a unit as productive as the most productive one. By this, calculations about the additional service provided with the resources at hand are included (Sherman & Zhu, 2006, pp. 50–51). To sum up, DEA is a tool for uncovering weak areas in a service firm and lead managers to take actions accordingly.

DEA is considered to account for the relationships between inputs and outputs in services in slightly more complete form as output-input ratios can (Avkiran, 2006, p. 337). Furthermore, inputs and outputs that are not handily expressible by a monetary value and inputs and factors that a firm cannot control can be integrated into DEA (Avkiran, 2006, p. 338). Simultaneously, including inputs and factors that cannot be controlled might end up finding the source of less productivity but not being able to do anything about it. What is more, the inclusion of such inputs and factors potentially blurs the DEA result (Avkiran, 2006, p. 194). Fundamental limitations of DEA reports Avkiran (2006, p. 338): When conducting DEA, attention must be paid to measurement errors and outliers. Additionally, calculated productivity scores are only comparable within one sample and not across several samples. Small sample sizes likely produce high productivity scores if the product of some inputs and outputs is comparably high (Avkiran, 2006, pp. 111–112).

Up to now, the field of application for DEA is vast. Liu, Lu, Lu, and Lin (2013) reported published articles presenting DEA applications in manufacturing and the service industry. A summary of works applying DEA as a tool for improving service productivity can be found at Emrouznejad and Cabanda (2014, pp. 7–12).

Similar to the Koblenz Service Productivity Model (cf. Chapter 2.2.3), DEA approaches for service productivity emphasize the measurement of service productivity, not its conceptualization. Again, the knowledge about the factors that may be best to include in the DEA ideally should be scientifically backed up by the research already conducted. Therefore, DEA is not suitable as the theoretical framework for this dissertation.

3) Service Productivity Analysis with Balanced Scorecard Analysis

Researchers also used the Balanced Scorecard methodology that goes back to Kaplan and Norton (1992) to analyse service productivity or its surrogates. In the following, two examples are presented.

Borchert, Koch, et al. (2012, p. 170) developed the Service Navigator for small and medium-sized service firms. It conceptually builds on an extensive comprehension of service productivity and the management model of St Gallen (Borchert et al., 2013).

The Service Navigator draws on three levels of understanding service productivity. Firstly, there is the output-input ratio. Secondly, indicators representing the degree of fulfilment regarding customer demands, e.g., customer satisfaction, customer perceived quality, or customer loyalty, extend the output-input ratio. Thirdly, indicators point to the internal efficiency as established by Grönroos and Ojasalo in their service productivity model (cf. Chapter 2.2.1).

Like the Skandia Navigator for intellectual capital (Edvinsson & Brünig, 2000, p. 58), the Service Navigator model consists of six predefined levels. The levels are designed to accentuate particular “perspectives” of the firm, e.g., the firm's general positioning in the market, essential issues between service customers and service providers, and a financial perspective. Each level is connected to specific targets, key indicators, decided by the firm applying the model, actions, and steps to achieve the targets (Borchert et al., 2013).

The service navigator was tested successfully in several firms revealing differences in applying the service navigator for small- and medium-sized firms (Borchert et al., 2013).

A second Balanced Scorecard method is the service scorecard by Gupta and Tyagi (2008). Influenced by other performance and quality assessment tools, e.g., six sigma methodology, their service scorecard has an overall service performance index (SPIN) consisting of seven elements. The seven elements represent “*the seven most important attributes of service businesses*” (R. Tyagi & Gupta, 2013, p. 5), aggregating information about the performance on the operational, tactical, and strategical level of the firm (R. Tyagi & Gupta, 2013, p. 5). The growth represents the strategical level indicating innovational success and leadership, including the firm's corporate social responsibility, attitude and performance. Furthermore, the strategical level comprises a firm's financial status and leadership culture and customer retention, speaking for itself (R. Tyagi & Gupta, 2013, pp. 5–7). Collaboration stands for the tactical level. It integrates the fact that firms, no matter their core business is a service or a manufactured good, shall pay attention to partnerships and innovation that focuses on employee-driven innovation and the setting of a condition for innovative employees. The operational level is represented by the acceleration that points to the control of success of methods of continuous improvement and execution, which centres

training, reflection, and improvement of all actions targeted at the satisfaction of the customer's service demands (R. Tyagi & Gupta, 2013, pp. 6–7). For every element, Tyagi and Gupta (2013, pp. 5–7, 10) propose concrete measures that have to be customized to the specific service context.

The service scorecard was tested and applied successfully in several service firms, including, amongst others, health care service, IT service, and a not-for-profit organization (R. Tyagi & Gupta, 2013, pp. 10, 13). Another application includes Drerup, Müller, and Wömpener (2016), who fitted the service scorecard to shared service centres.

The service scorecard targets service performance improvement and sees productivity as part of the service performance (R. Tyagi & Gupta, 2013, p. 4). The Service Navigator found a balance between applicability and crediting service productivity complexity through its comprehension of service productivity as a three-level construct.

The focus of the Balanced Scorecard methodology on service productivity measurement rather than management leads to the same conclusion that has been drawn previously for the Koblenz Service Productivity Model and DEA methods. The fact that the firms applying such an approach have to decide for themselves what to include is potentially not sufficiently backed up by thorough research and, therefore, not suitable for analyzing the factors influencing front-line employees in service in general. The result of this dissertation's analysis should be the basis on which firms select factors that have to be included in their service productivity analysis.

2.3 Synopsis

In the previous chapters, several service productivity models and approaches were presented. Apart from the Nordic School and North American School, the German School was added. Some models could not be assigned to any of these schools of thought.

Figure 7 depicts the evolution of the service productivity models presented in Chapter 2.2. Models or approaches that deal with service productivity are marked blue, blue gradients stand for service quality models and service quality approaches, and not-service-specific models or approaches are marked blue with a dotted line. The authors and the year of publication are shown with numbers in the legend.

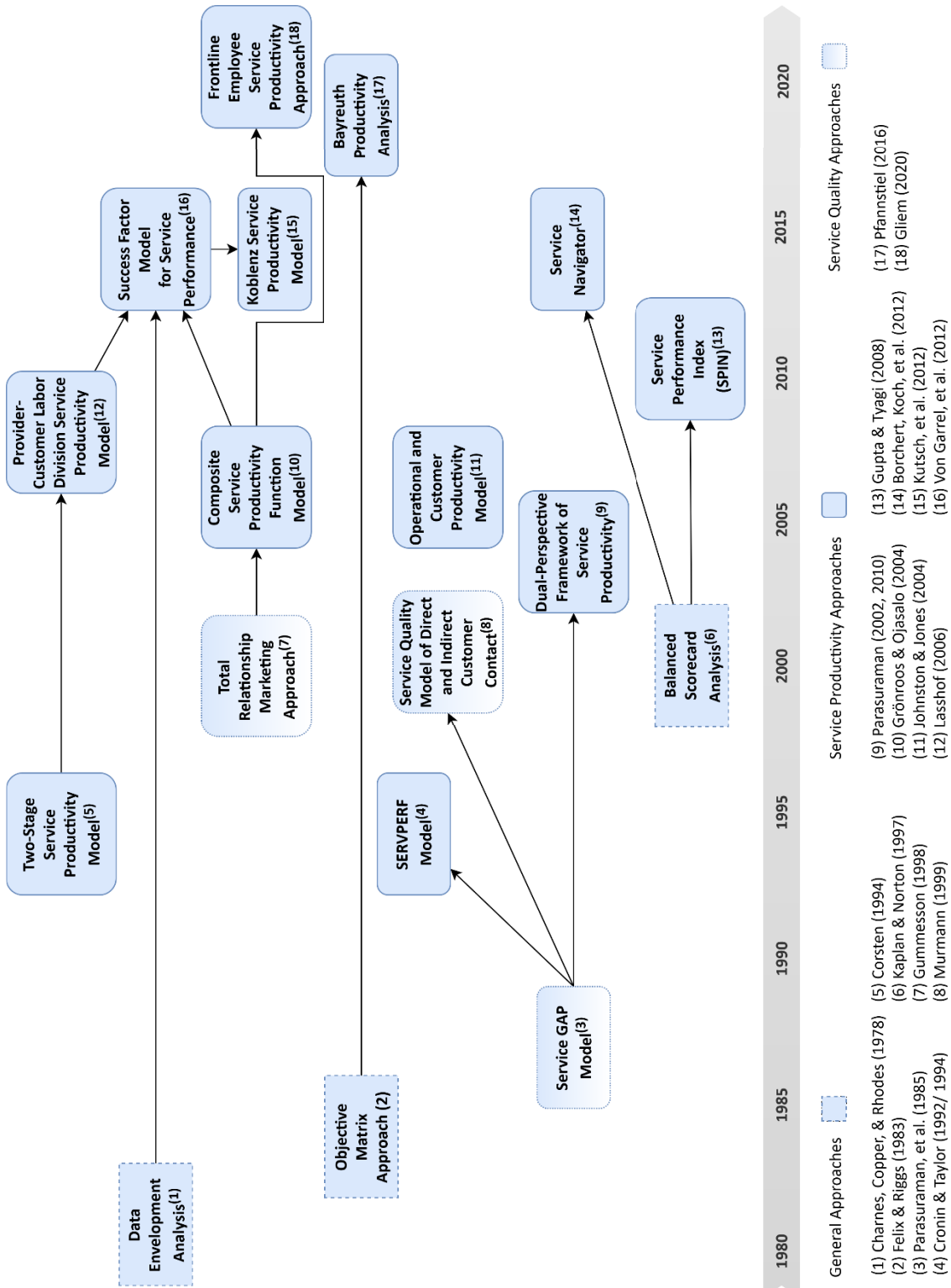


Figure 7: Evolution of Service Productivity Models and Related Approaches

The researcher could make one observation during the elaborations on the service productivity models. As soon as the research community granted that productivity paradigms and standards from the manufacturing industry could not be transferred to the service industry and service quality issues are related strongly to a service's productivity, it was clear that service productivity models always should incorporate the service customer's perspective. Thus, issues around service encounters, customer integration, and the roll-out of the service dominant-logic experienced much conceptual, qualitative, and quantitative research.

Moreover, researchers realized that the service industry's complexity necessitates productivity models mapping this complexity and, at the same time, balancing complexity and doability (Petz, Duckwitz, Schmalz, Meyer, & Schlick, 2019, p. 2020). Maybe this was the reason that all service productivity models see service productivity as a *composition* of either more than one *productivity* (matrix approaches, e.g., Jääskeläinen (2009), Pfannstiel (2016), and Supic, Marinkovic, Vukasinovic, Spasovski, and Jaksic (2012)), *efficiency* (Grönroos & Ojasalo, 2004), or the *difference between expected and perceived performance* (SERVPERF model by Cronin and Taylor (1992)).

In a way, the SERVPERF model and the matrix approach are very similar to each other. Both use a kind of target-performance comparison. SERVPERF does this via collecting data about the customer's expectation of the service and the customer perceived service performance. The matrix approach, especially the Bayreuth Productivity Analysis (Pfannstiel, 2016), collected data about the ideal manifestation of single productivities, the target, and the actual performance. Even the approaches that focus less on the holistic comprehension of service productivity and more on measuring and quantifying service productivity incorporate this complexity. This complexity is considered by assigning weights to inputs and outputs corresponding to their significance for the firm's productivity (e.g., Koblenz Service Productivity Model) and selecting inputs and outputs under the specific service context (e.g., DEA and Balanced Scorecard methods).

Table 1 shows the summary of service productivity comprehensions from the different models and approaches. In the end, it is to admit that the majority of the models presented here include in some way the fundamental perspective of productivity: the combination of inputs that are transformed into output and relating input and output to get productivity. Except for the matrix approach and the SERVPERF model, this holds for all other models.

Table 1: Service Productivity Perspectives

Author(s)	Description
Cronin & Taylor (1992, 1994) (SERVPERF Model)	Service productivity is part of service quality, which in turn is performance-based.
Corsten (1994)*	Productivity consists of two productivities: 1) productivity of the pre-service encounter phase, 2) productivity of the service encounter phase.
Vuorinen et al. (1998)*	Service productivity is an output-input ratio, considering quantity and quality.
Parasuraman (2002)* (Dual-Perspective Framework)	Service productivity is a construct evaluated by the service provider- and the service customer-side.
Johnston & Jones (2004)*	Service productivity consists of operational and customer productivity.
Grönroos & Ojasalo (2004)*	Service productivity is a function of internal, external, and capacity efficiency.
Rutkauskas & Paulavičienė (2005)*	Service productivity is an output-input ratio, considering quantity and quality.
Lasshof (2006)*	Service productivity consists of customer-dependent and customer-independent factors.
Borchert, Koch, et al. (2012) (Service Navigator)	Service productivity has multiple layers or components, which each is measured regarding its degree of fulfilment.
Gupta & Tyagi (2008) (Service Performance Index (SPIN))	
based upon Balanced Scorecard Methodology by Kaplan & Norton (1992)	
Liu, Lu, Lu, & Lin (2013) Emrouznejad & Cabanda (2014) based upon Data Envelopment Analysis by Charnes, Cooper, & Rhodes (1978)	Service productivity is a function generated from input and output data of a service process.
Kutsch et al. (2012) (Koblenz Service Productivity Model)	Service productivity is an output-input ratio considering degrees of fulfilment and weights reflecting the importance of inputs and outputs.
Balkan (2011); Jääskeläinen (2009); Pfannstiel (2016); Supic, Marinkovic, Vukasinovic, Spasovski, & Jaksic (2012) Based upon Objective Matrices Approaches by Felix & Riggs (1983)	Service productivity consists of weighed productivity dimensions worked out and evaluated by service providers and service customers, resulting in a productivity score.
Gliem (2020)	Service productivity is the sum of service provider and service customer performances that stand for the provider's service provision and management abilities in a way that assures efficient value-co-creation.

Source: with Asterisk taken from Kutsch et al., 2012, p. 7

So, which conclusions are drawn from the examination of the different service productivity models for building a research model for this dissertation's empirical part? Recalling the definition of service productivity from Chapter 2.1.2, namely, that service productivity can be seen as a set of performances. Considering the yet recurring and dominating form of translation of service productivity in the presented models, it seems reasonable to use a theoretical framework that combines these two components.

There are three reasons why this model was preferred over the other ones. Firstly, it incorporates the inseparability of productivity and quality in service. No matter what is done with the inputs of service, a service's quality has to remain constant. A manufacturer achieves an increase in productivity by, e.g., introducing new technology for production and producing more in less time. This easy-to-apply paradigm does not hold for services. Changing inputs of service to leverage the efficiency of production processes does not necessarily mean that a service will be more productive (maybe it will be more effective). The service customers have a different perspective on what service has to be like when its productivity is high, and this perspective probably varies from customer to customer. The inverse relationship between service productivity and service quality is called the productivity paradox (Corsten, 1994, p. 57). Former studies of call centre service organizations (Grönroos & Ojasalo, 2004, p. 415; Parasuraman, 2002, p. 7, 2010, p. 279) and public service (Boyne, 2003 as cited in Jääskeläinen, 2010, p. 6) observed this paradox. The special relationship between service productivity and service quality makes the second point all the more important. The model proves that service productivity is understood beyond the input-output-relation and from an interdisciplinary perspective through modelling service productivity as a function of three efficiencies. As frontline employees are at the centre of attention in this dissertation, it is obligatory that, thirdly, frontline employees are explicitly and adequately considered in the model. The consideration of frontline employees realizes this inclusion as a special group of personnel recognized as input on the service provider's side.

As explained before, the reviewed service productivity models vary in their degree regarding their feasibility. Researchers chose a holistic approach as, e.g., Grönroos and Ojasalo (cf. Chapter 2.2.1) and Parasuraman (cf. Chapter 2.2.2), or picked a particular problem within an already existent model and dealt with it, e.g., Lasshof (cf. Chapter 2.2.3). Also, some contributions integrated several approaches, e.g., Lellek (cf. Chapter 2.2.1) or made the approaches doable for practitioners, e.g., the Koblenz Service Productivity Model (cf. Chapter 2.2.3) or Bayreuth Productivity Analysis (cf. Chapter 2.2.4).

Regarding the Grönroos-Ojasalo-service-productivity-model, there are several contributions from other researchers. For example, the service encounter was the focal point for the German school's two service productivity models. Corsten's service productivity model differentiated between pre-service-encounter-stage productivity and service encounter-stage productivity and added depth to this part of Grönroos' and Ojasalo's model. Lasshof focused on the service encounter and centred on the labour division between the service provider and the service customer. Again, another detail for the service encounter element in Grönroos' and Ojasalo's model. Furthermore, she recognized the significance of the service customer's know-how regarding the service process for productivity and thus complemented the customer input side. On the output side, the elements targeting the service customer's point of view could be enriched by the service gap model by Parasuraman, Zeithaml, and Berry or the SERVPERF model by Cronin and Taylor. The contribution of this dissertation is the analysis of the relationships of factors influencing frontline employees. Thus, the service provider input "personnel" represented by frontline employees is specified.

Apparently, with the other researchers' contributions and the input from this dissertation, it would be challenging to operationalize and test this further developed service productivity model with real data. Even in the original state, the operationalization of the model is demanding. The fact that the model creators themselves acknowledge (cf. Chapter 2.2.1). Therefore, similar to Banerjee's (2015, pp. 3595–3596) approach, the author of this dissertation decided to feed a small part of the model. In concrete terms, this means that one component of the model, one input of the service provider – being the frontline employee – is becoming analyzed precisely.

Refining one of the service productivity model components is something Grönroos and Ojasalo themselves state as a worthwhile research goal. They state that testing the "*relative importance of the various components of the model [...]*" (Grönroos & Ojasalo, 2004, p. 422) is a future task.

As indicated in the introductory part of this dissertation (cf. Chapter 1.1), frontline employees are among the principal actors in service transactions, particularly in service encounters. They inhabit different roles during service encounters, e.g., facilitators, sources of information, and the customer and service organization's interface. Therefore, it is valuable to look at the factors influencing frontline employees.

Consequently, when gradually approaching building a research model serving to answer the research questions set up in Chapter 1.1, reviewing previous research about the factors influencing frontline employees is a must. Then, it will be possible to draw a more precise picture of what influences frontline employees in their everyday work, e.g., in dealing with the customers during service encounters.

The coming chapters present the results of the systematic literature review targeting frontline employee influence factors. The review results identify and describe the frontline employee influence factors adding another layer of detail to the research model.

2.4 Factors Influencing Frontline Employees: Systematic Review

2.4.1 Advantages and Disadvantages of a Systematic Literature Review

A literature review is said to be “*an essential feature of any academic project*” (Webster & Watson, 2002, p. xiii). In other words, a literature review is the start of any research project. Reviewing other researchers’ works means creating a knowledge base to start one’s research (Webster & Watson, 2002, p. xiii). Moreover, literature reviews serve as an instrument to condense previous research. Furthermore, they guide future research into the directions where research is needed (Cooper, 1998, p. xi) and uncover new research avenues (Stanley & Jarrell, 1989, p. 300; Webster & Watson, 2002, p. xiii).

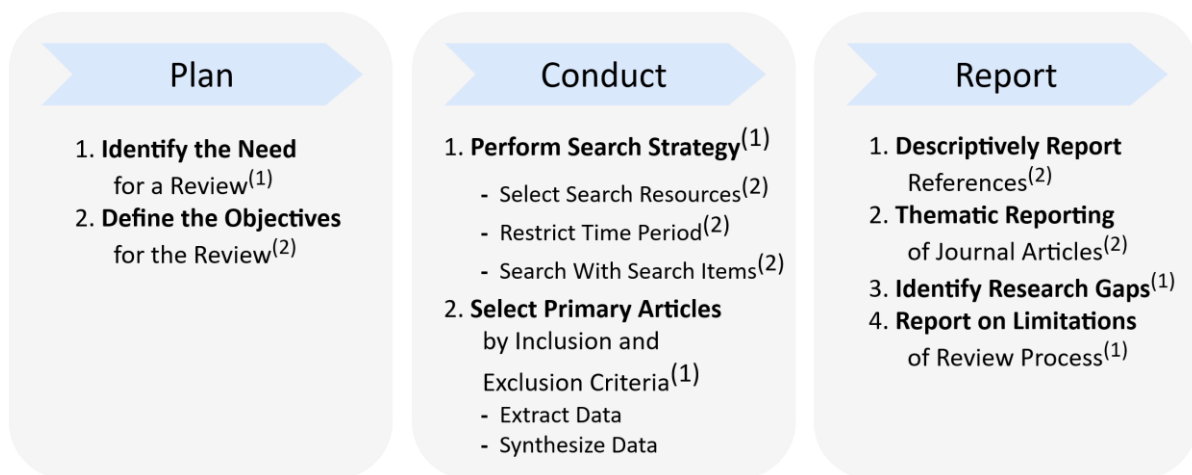
The drawbacks of literature reviews are that they take much time and bring researchers into a dilemma right at working out the search terms. They have two possibilities: on the one hand, they use relatively unspecific search terms or, on the other hand, they use specified search terms. Both possibilities pose advantages and disadvantages. Unspecific search terms are used when there is a concern to miss something and compensate for deficiencies in search algorithms and indexing of electronic databases. Naturally, broader search terms result in many search results (Ananiadou, Rea, Okazaki, Procter, & Thomas, 2009, pp. 510–511).

Narrower search terms cannot compensate for the deficiencies in connection with electronic databases mentioned before. Furthermore, something important may be missed. However, specific search terms lead to a manageable number of search results and are the chosen method for this dissertation.

The selection of publications within the search results requires inclusion and exclusion criteria usually subjectively defined and applied by the researcher (Kennedy, 2007, p. 139; Stanley & Jarrell, 1989, p. 300). *Systematic* literature reviews evolved (Kennedy, 2007, p. 139) to compensate for subjectivity. They are conducted following “*scientific principles and rules*” and “*can be replicated by others [...]*” (Cooper, 1998, p. xi). They permit the extension of a literature review from qualitative research to quantitative results using meta-analytic techniques (Stanley & Jarrell, 1989, p. 300). Hence, the literature review in this dissertation was conducted with narrow search terms to get a manageable number of results and systematically ensure reproducibility and high utilization of the results.

2.4.2 Conducting the Systematic Literature Review

In conducting the systematic literature review, the researcher applied the approach of Kitchenham (2004). In line with a previous systematic literature review about occupational safety in services (Gliem & Klabuhn, 2014), the researcher considered the approaches of Cooper (1998) as well as Tranfield, Denyer, and Smart (2003). Figure 8 presents the synthesis of these two approaches and the steps undergone for this review.



(1) Kitchenham (2004) (2) Cooper (1998)

Figure 8: Systematic Literature Review Process

As said in Chapter 2.4.1, a literature review is an obligatory part of any research. Besides, to the best of the researcher’s knowledge, there were no systematic literature reviews targeting factors influencing frontline employees in conjunction with their effects on service productivity. Thus, this systematic literature review closes this gap.

Nonetheless, there are literature reviews in service research. Johnston (2005, pp. 1300, 1301–1302) reviewed six years of service literature identifying undeveloped research areas, e.g., service productivity research, and under-researched service sectors, e.g., business-to-business services. Lehmann and Kölling (2010) systematically reviewed literature about service productivity. Ranjan, Sugathan, and Rossmann (2015) conducted a review about service interaction quality. Wirtz and Jerger (2016b) focus their review on research about service employees and conclude with research suggestions. These suggestions include ones for frontline employees that shall, e.g., deal with emotional exhausting work content (Wirtz & Jerger, 2016, pp. 777, 779).

The search was carried out in electronic databases presented in Table 2. The primary target of the search were articles published in scientific journals. Only databases that offer a wide range of publications within business administration, economics, and services were selected. Because of the issues raised in Chapter 2.4.1 concerning the databases' search algorithms and indexing deficiencies, all databases were tested regarding their search masks, search algorithms, and the quality of their results. If testing led to poor results, e.g., because of an insufficient number of hits or a high number of duplicates, databases were excluded. Further information on this testing can be found in the review protocol in Appendix 1: Notes on the Systematic Literature Review.

The search was restricted to articles published between 1986 and 2016. By this, three decades of research were covered. It resulted in a minor contribution to the results list when the search was extended to years earlier than 1986, which was the reason to set this limit.

The reviewing researchers' dilemma demonstrated in Chapter 2.4.1 requires carefully weighing the advantages and disadvantages of more open against closer search terms. In this systematic review, the challenge was to limit the number of search results to a manageable level and achieve good quality results about the content.

In defining the search terms, it was considered that the terms 'frontline employee' and 'service productivity' are not used consistently in research. As a start, productivity can be seen "*as an umbrella concept including efficiency and effectiveness*" (Lehmann & Kölling, 2010). Thus, not only 'service productivity' was applied as a search term but as well the, more or less, synonymous expressions 'service efficiency,' 'service efficacy,' 'service effectiveness,' and 'service performance.' The term 'frontline employee' was applied in the different notations (cf. Table 2) and singular and plural. Testing the search terms in different

databases revealed that not every search algorithm was sensitive enough to include the different notations and singular and plural forms. If the number and content of articles found seemed to result from the application of too narrow search terms, the term 'service' was discarded from the search terms (so happened in EconBiz).

It turned out that the databases that were used differ in their search algorithms and search masks. For example, the search for this review was conducted from May 2015 until August 2015, and at that time, GoogleScholar did not allow limiting the application of search terms in abstracts only. Instead, search terms were searched in titles only. A coding was applied that proved useful in a previous systematic literature review (Gliem & Klabuhn, 2014) to track these particularities. Further elaborations on the coding are included in the review protocol in Appendix 1: Notes on the Systematic Literature Review.

Table 2: Search Terms and Electronic Databases

Search Terms		No.	Database
Service Productivity	Frontline Employee	1	Business Source Premier
Service Efficiency	Frontline Employees	2	EconBiz
Service Efficacy	Front-Line Employee	3	Emerald Insight
Service Effectiveness	Front-Line Employees	4	GoogleScholar
Service Performance	Frontline Staff	5	IEEE Explore
Productivity	Front-Line Staff	6	SAGE
Efficiency		7	Science Direct
Efficacy		8	Springer Link
Effectiveness		9	Web of Science
Performance		10	Wiley Online Library

In sum, the search resulted in 2,038 hits. Subsequently, this list of results was reduced systematically to select articles for data extraction and synthesis finally. First, all duplicates were removed, which reduced the list down to 1,453 articles. Second, the inclusion and exclusion criteria were applied. Articles were included if the article's main topic was service productivity in conjunction with factors influencing frontline employees. Furthermore, a quantitative study had to be carried out to answer the article's research question, and the article was written in English and published between 1986 and 2016. Articles were excluded from the

review if the articles' full texts were not available or the article turned out to belong to another type of publication such as a poster, a dissertation, or a presentation.

Moreover, there had to be explicitly stated hypotheses in the article, and the sample had to include data from frontline employees and not service customers exclusively. Table 3 comprises the inclusion and exclusion criteria for the systematic literature review. After applying all inclusion and exclusion criteria, the list of articles decreased to 155.

Table 3: Inclusion and Exclusion Criteria

No.	Inclusion Criteria	Description of Inclusion Criteria
1	Subject	The article's subject is service productivity in conjunction with factors influencing frontline employees.
2	Method	The research question is answered using a quantitative study that is not a meta-analysis.
3	Language	The article is written in English.
4	Time	The article was published between 1986 and 2016.
No.	Exclusion Criteria	Description of Exclusion Criteria
1	Availability	The article's full text was not accessible or available until the completion of the review.
2	Type of Publication	The article is an abstract, a summary, a book chapter, a dissertation, or written notes for an oral presentation (working papers and conference proceedings were allowed).
3	Hypotheses	The article has no clear and explicitly stated hypotheses.
4	Sample	The sample exclusively consisted of service customers rather than frontline employees.

Through the whole process, starting from the initial search until the final selection of 155 articles, the Microsoft Office software Excel Version 2016 was used. For the qualitative synthesis of data, further data were extracted: country of origin of authors, service sector, qualitative or quantitative study, predictor and outcome variables, results of hypotheses testing.

There will be no statement about the distribution of articles across the databases. As there were almost 600 duplicates deleted from the list, such a statement would be biased and of no benefit. The distribution of articles across the reviewed period is presented in Figure 9. Notably, 26.4% of the final selection articles were published between 1994 and 2008 and 73.6% of the articles from 2009 until 2016. The first article fitting the inclusion and exclusion criteria was published in 1994, eight years after the period set for the review start, which

shows that the period under review could have been shorter and, at the same time, produce similar results. For example, if the review period would have been 2006 to 2016, 90.2% of the articles would have been captured by the review.

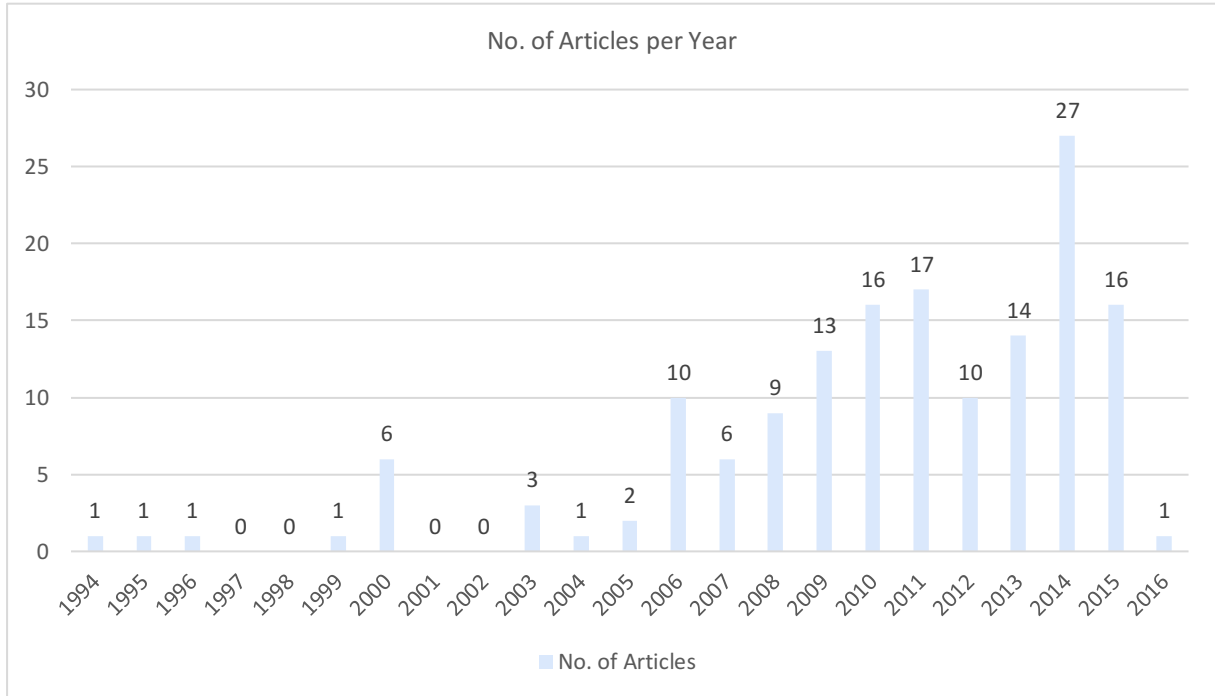


Figure 9: Number of Articles over Time

Looking at the distribution of the articles regarding country of origin reveals that most articles originate in the United States of America (36) and China (20), followed by Australia (10), New Zealand (9), South Korea (6), and Cyprus (5). Regarding the distribution across continents, Asia and Europe are dominant, followed by America and Australia/ Oceania (cf. Figure 10). However, China (20 of 47 articles) and the United States of America (36 of 38 articles) dominate the field.

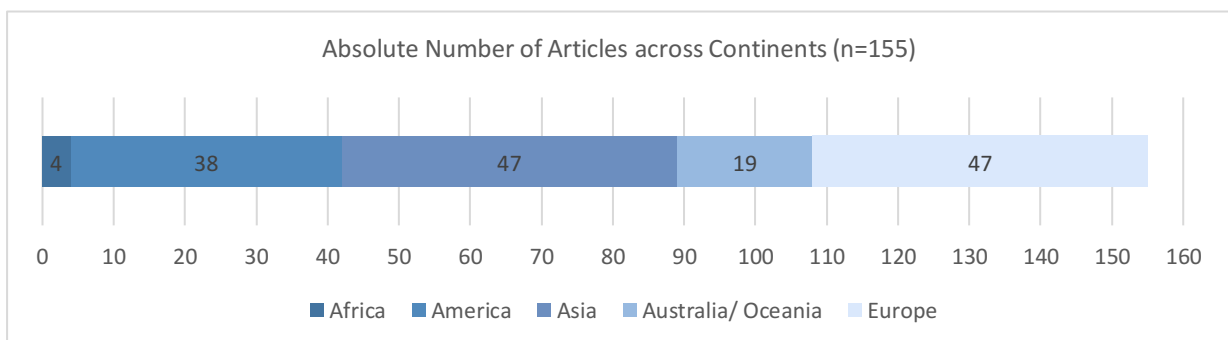


Figure 10: Absolute Number of Articles across Continents

The diversity of services is represented in the articles. The studies carried out took place in a variety of service industries (cf. Figure 11). Twenty-seven studies collected data for their study in more than one service sector. Nearly one-third of the studies targeted frontline employees in the tourism and hospitality industry, 33 studies used data collected from financial services, and 14 studies were carried out in health care services. Tourism and hospitality, financial services, and health care services traditionally encompass many frontline employees. Furthermore, the researcher assumes that these sectors also have an intrinsic motivation to improve their service and are more open to participating in a study or a research project.

From the 155 articles, only seven studies were carried out in public service organizations and only three in hybrid service organizations. Additionally, Vandaele and Gemmel (2006, p. 13) emphasize the lack of studies about frontline employees in B2B-service organizations. Studying Figure 11 reveals that there are a variety of sectors that offer service for private as well as business customers: facility, construction, and real estate service (3), knowledge-intensive business service (1), financial service (33), IT service (7), logistics (2). From 155 studies, only 46 may include data from B2B-service organizations mirrors Vandaele’s and Gemmel’s observations.

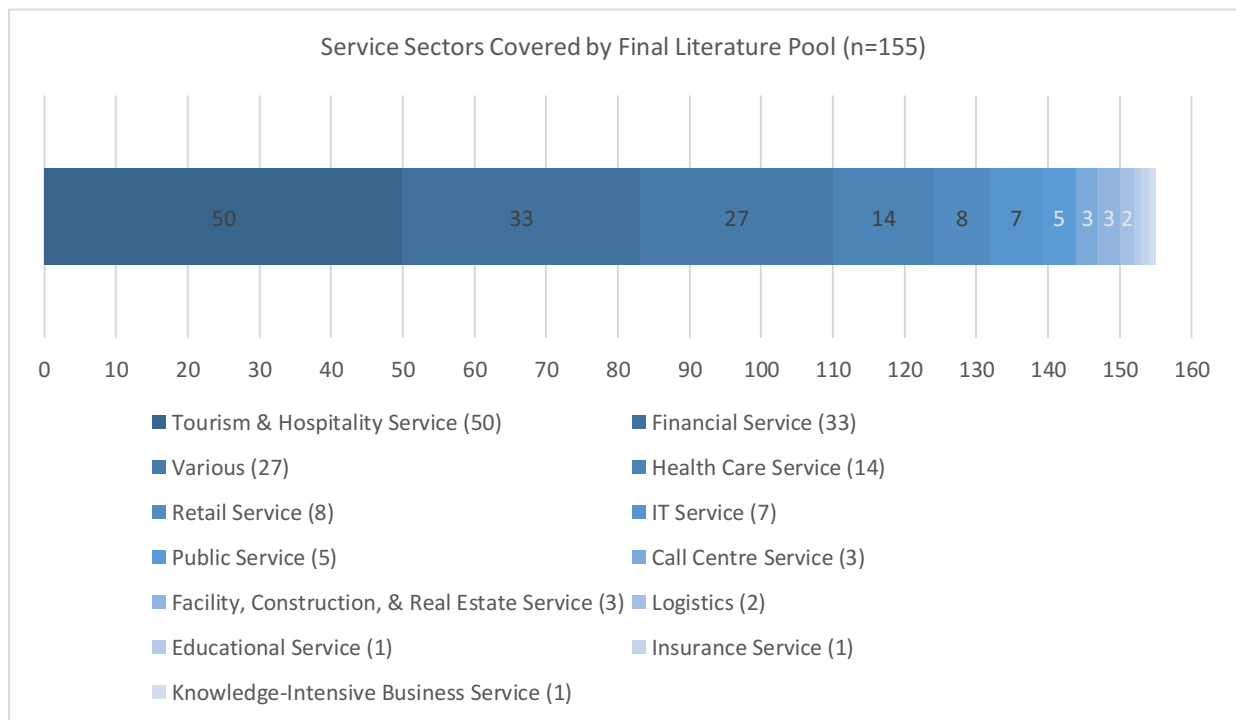


Figure 11: Absolute Quantities of Articles in Service Sectors Covered by Final Literature Pool

Figure 12 shows an alluvial diagram that connects two data sets from the data extraction: the service industries analyzed in the studies carried out in the articles and the author's country of origin (s). It can be seen that studies conducted in the tourism and hospitality industry make up significant or at least considerable parts of the total contributions that came from authors from one continent. For example, in America, studies conducted in this service sector account for one fourth and in Asia and Europe, one third. Financial service played a significant role in previous research in Europe. Karatepe, a researcher from Eastern Mediterranean University in Cyprus, and colleagues wrote many works in this area. His contribution to the field is also reflected in the dominance of studies carried out in a financial service context. America, Asia, and Europe share approximately equal amounts of studies that collected their data in more than one service sector ("Various").

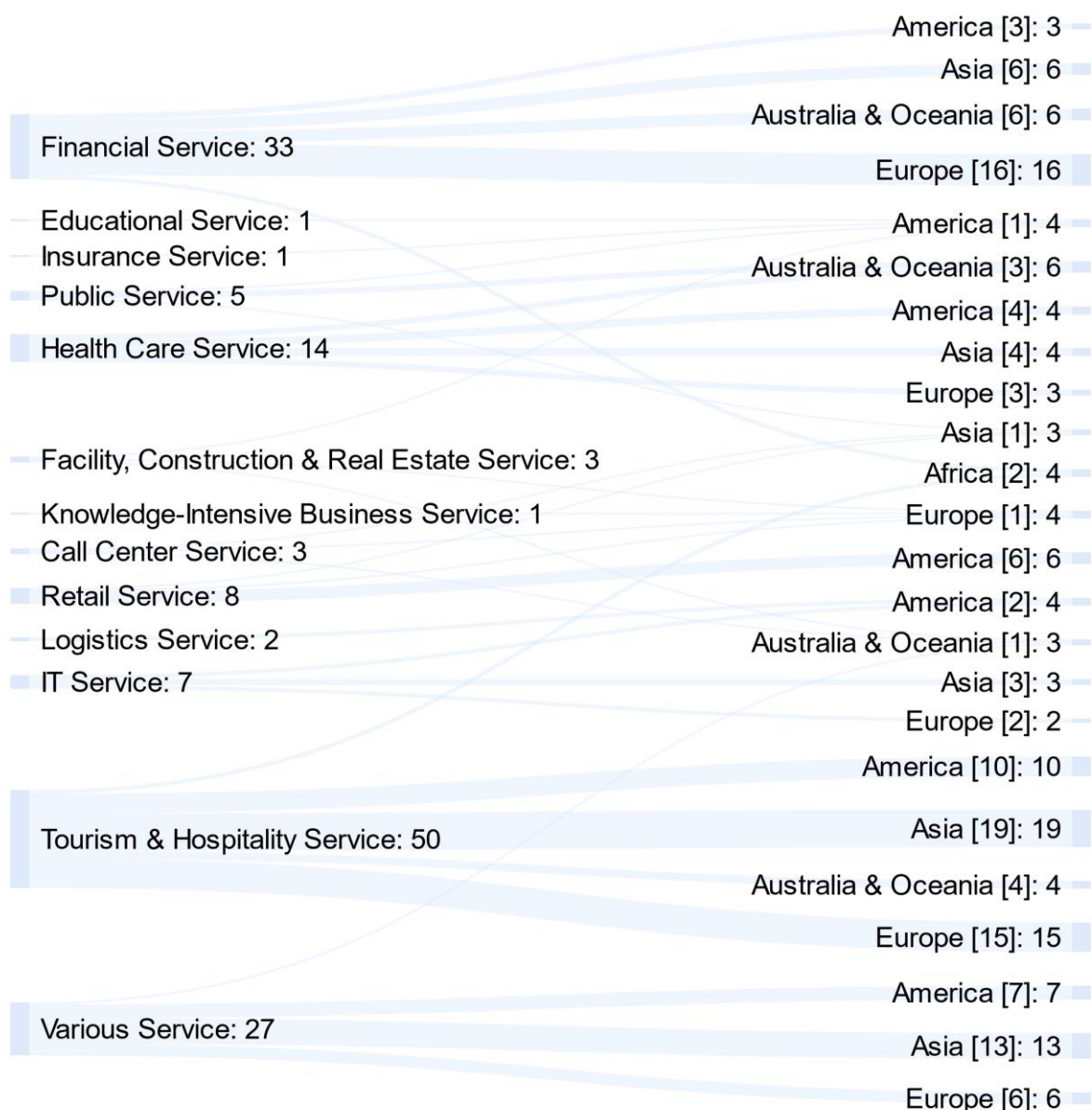


Figure 12: Alluvial Diagram Showing Service Industries and Countries of Origin of Author(s)

The final selection of articles was published in conference proceedings, working paper series, and 62 different journals listed in Table 4.

Regarding the articles' quality assessment, the quality of journal articles was assumed to have an appropriate level because of the review process connected with article publication in a journal. For conference proceedings (9 %, 14 articles) and working papers (3.8%, six articles), such a review process cannot be assumed. Still, both publication types were kept in the final literature pool as they represent latest research results.

Table 4: Journals Represented in the Review

Academica Turistica-Tourism and Innovation Journal	1	Journal of Hospitality and Tourism Research	5
Accounting, Organizations, and Society	1	Journal of Management	1
Australasian Marketing Journal	1	Journal of Management Studies	3
Australian Journal of Management	2	Journal of Marketing	2
Conference Proceedings	14	Journal of Occupational and Organizational Psychology	1
Cornell Hospitality Quarterly	7	Journal of Organizational Behavior	3
EMU Journal of Tourism Research	1	Journal of Product Innovation Management	1
Enhancing Knowledge Development in Marketing	1	Journal of Retailing	4
European Journal of Business and Management	1	Journal of Retailing and Consumer Services	2
European Scientific Journal	1	Journal of Service Research	22
Global Business and Organizational Excellence	1	Journal of Services Marketing	1
Group and Organization Management	2	Journal of Strategic Marketing	1
Health Services Research	1	Journal of the Academy of Marketing Science	5
Human Relations	1	Journal of Vacation Marketing	1
Human Resource Development Quarterly	2	Organizational Behavior and Human Decision Processes	1
Industrial Marketing Management	1	Performance Improvement Quarterly	1
International Journal of Productivity & Performance Management	2	Procedia - Social and Behavioral Sciences	1
International Journal of Bank Marketing	3	Production and Operations Management	1
International Journal of Business and Behavioral Science	1	Psychology and Marketing	1
International Journal of Hospitality Management	10	Public Personnel Management	1
International Journal of Marketing Studies	1	Resuscitation	1
International Journal of Nonprofit and Voluntary Sector Marketing	2	Revista Española de Investigación en Marketing	1
International Journal of Pharmaceutical and Healthcare Marketing	1	Safety and Health at Work	1
International Journal of Psychological Studies	1	Scandinavian Journal of Management	1

2 SERVICE PRODUCTIVITY AND SELECTION OF A THEORETICAL FRAMEWORK

International Journal of Research in Marketing	1	Scholars Journals of Business and Management	1
International Journal of Selection and Assessment	1	Science International	1
International Journal of Service Industry Management	1	Service Industries Journal	2
International Journal of Tourism Research	1	Team Performance Management	1
Journal of Business and Psychology	2	Tourism and Hospitality Research	4
Journal of Business Logistics	1	Tourism Management	4
Journal of Business Research	6	Turizam	1
Journal of Cross-Cultural Psychology	1	Working Paper	6

The predictors and outcome variables embedded in the studies' hypotheses were extracted to achieve this systematic literature review's primary objective – finding out about the factors influencing frontline employees. The predictor variables were considered as being the influence factors. In sum, there were 312 different predictor variables. In this pool of variables, some variables represent data from customers or supervisors, which means the variables had to be sorted first regarding their belonging to one of the service triad actors. For this purpose, the variables were coded using the software MaxQDA Version 11. The coded variables were then assigned to groups representing the actors in the service triad and their relationships. For example, the variable “frontline employee creativity” was assigned to the group “frontline employee,” whereas the variable “customer perceived interaction quality” was assigned to the group “customer.”

After the coding process, there were 81 variables in the frontline employee group. Eighty-one variables are too much to prove in one empirical study. A survey recording 81 variables would be too long and unhandy, especially in times of survey fatigue (Groves, Cialdini, & Couper, 1992). Furthermore, the researcher decided to prove the factors analyzed the most in previous research, implicating that these are most relevant to frontline employees' work outcomes. The 81 factors were sorted into eight groups to achieve a top list: 1) sociodemographic, 2) conditions or feelings, 3) character traits, 4) abilities, 5) performance variables, 6) knowledge, 7) skills, 8) attitudes. Finally, it was counted in how many studies the single factors were analyzed. The factors with the highest count were chosen as the factors being the most relevant. The first group presenting sociodemographic variables was set aside for this step. Sociodemographic data are necessary to control for effects of gender, age, or other varia-

bles and have to be considered in any case. Table 5 presents the eleven frontline employee influence factors and the studies they popped up. The absolute number of studies is in brackets where the factors were included as a predictor variable; studies written in italics analyzed more than one factor.

Table 5: Eleven Top Frontline Employee Influence Factors Extracted from Previous Empirical Research

<p>Creativity (5) <i>Agnihotri et al. (2014); Ashill, Rod, Thirkell, & Carruthers (2009); Coelho & Sousa (2011); Van der Heijden, Schepers, Nijsen, & Ordanini (2013); Wilder, Collier, & Barnes (2014)</i></p>	<p>Emotional Exhaustion (13) <i>Ashill, Rod, Thirkell, & Garruthers (2009); Ashill, Rod, & Gibbs (2015); Choi et al. (2014); Karatepe (2006); Karatepe (2011); Karatepe & Aleshinloye (2009); Karatepe & Uludag (2008); Nafees et al. (2015); Lings, Durden, Lee, & Cadogan (2014); Walters & Raybould (2007); Yavas, Babakus, & Karatepe (2013); Yoo, Kim, & Lee (2015); Zhao et al. (2014)</i></p>	<p>Organizational Commitment (16) <i>Ashill, Carruthers, & Krishnanous (2006); Ashill, Rod, Carruthers (2008); Boshoff & Allen (2000); Gibbs & Ashill (2013); Guerra & Sepulveda (2014); Han, Liu, & Dai (2010); Karatepe & Kilic (2007); Lages & Piercy (2012); Malhotra, Mukherjee, & Gilliland (2010); Noor et al. (2010); Parish et al. (2008); Rod & Ashill (2010); Sergeant & Frenkel (2000); Singh (2000); Walsh et al. (2015); Yavas, Karatepe, Avci, & Tekinkus (2003)</i></p>	<p><i>Gwinner, Bitner, Brown, & Kumar (2005); Karatepe & O-lugbade (2009); Karatepe & Sokmen (2006); Liang, Tseng, & Lee (2010); Noor et al. (2010); Pimpakorn & Patterson (2010); Vandaele & Gemmel (2006)</i></p>	<p>Stress (19) <i>Ashill, Rod, Thirkell, & Garruthers (2009); Ashill, Rod, & Gibbs (2015); Babin & Boles (1996); Boshoff & Allen (2000); Cano & Sams (2009); Chebat & Kollias (2000); Coelho, Augusto, & Lages (2011); Karatepe (2006); Karatepe, Yavas, Babakus, & Avci (2006); Karatepe & Uludag (2008); Lings, Durden, Lee, & Cadogan (2014); Parish et al. (2008); Rigopoulou, Theodosiou, Katsikea, & Perdakis (2012); Rod, Ashill, & Carruthers (2008); Schwepker & Hartline (2005); Singh (2000); Whiting, Dontu, & Baker (2011); Yavas, Karatepe, Avci, & Tekinkus (2003); Zhou, Yong, & Danling (2014)</i></p>
<p>Customer Orientation (14) <i>Acar, Zehir, Özgenel, & Özşahin (2013); Agnihotri et al. (2014); Babakus, Yavas, & Ashill (2009); Choi et al. (2014); Coelho & Sousa (2011); Gountas, Gountas, & Mavondo (2014); Harris, Brown, Mowen, & Artis (2014); Korschun, Bhattacharya, & Swain (2014); Lages & Piercy (2012); Lee (2014); Liaw, Chi, & Chuang (2010); Prentice & King (2011); Vandaele & Gemmel (2006);</i></p>	<p>Knowledge (4) <i>Agnihotri et al. (2014); Gwinner, Bitner, Brown, & Kumar (2005); Li, Wang, Teo, & Watson (2010); Van der Heijden, Schepers, Nijsen, & Ordanini (2013)</i></p>	<p>Service Orientation (5) <i>Aryee, Walumbwa, Seidu, & Otaye (2016); Guerra & Sepulveda (2014); Gwinner, Bitner, Brown, & Kumar (2005); Liang, Tseng, & Lee (2010); Vandaele & Gemmel (2006)</i></p>	<p>Service Recovery Performance (7) <i>Boshoff & Allen (2000); García et al. (2011); Karatepe (2006); Karatepe & Sokmen (2006); Van der</i></p>	

<i>Walsh et al. (2015)</i>	Chan & Lam (2011); <i>Coelho, Augusto, & Lages (2011)</i> ; Hosain (2014); <i>Karatepe (2006)</i> ; <i>Karatepe & Aleshinloye (2009)</i> ; Masoud & Hmeidan (2013); <i>Noor et al. (2010)</i> ; <i>Rigopoulou, Theodosiou, Katsikea, & Perdikis (2012)</i>	Self-Efficacy (8) <i>Aryee, Walumbwa, Seidu, & Otaye (2016)</i> ; <i>Chebat & Kollias (2000)</i> ; <i>Coelho & Sousa (2011)</i> ; <i>Gountas, Gountas, & Mavondo (2014)</i> ; <i>Guerra & Sepulveda (2014)</i>	<i>Heijden, Schepers, Nijsen, & Ordanini (2013)</i> ; <i>Yavas, Karatepe, Avci, & Tekinkus (2003)</i>	Teamwork (5) <i>Arndt et al. (2011)</i> ; <i>Boshoff & Allen (2000)</i> ; <i>Mahtab (2015)</i> ; <i>Vandaele & Gemmel (2006)</i> ; <i>Yavas, Karatepe, Avci, & Tekinkus (2003)</i>
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2.4.3 Using the Results of the Systematic Literature Review

The factors are divided into person-related factors, organization-related factors, and service-related factors. Person-related influence factors are in the frontline employees' scope of influence and, at the same time, not to consider separately from their workplace. Person-related factors are creativity, knowledge, and self-efficacy. Organization-related factors contain influence factors of which other organization members or the organization itself shape a significant proportion. Organization-related factors are emotional exhaustion, motivation, organizational commitment, stress (role conflict, role ambiguity, role overload), and teamwork. Service-related factors include influence factors that play a principal role in service and can indicate its excellence. They are integrated into the research model as output-relevant factors, which are, following the service productivity model of Grönroos and Ojasalo (cf. Chapter 2.2.1), decisive for a service's internal efficiency of which frontline employees are one leverage point. Internal efficiency, in turn, as one part of the service productivity, contributes to service productivity. Service-related factors are service orientation, customer orientation, and service recovery performance. The following hypotheses-building considers these factors as outcomes and person- and organization-related factors as predictors and influence factors. Table 6 provides a summary of the previous elaborations.

Table 6: Groups of Influence Factors and Their Role for the Research Model

Person-Related Factors	Organization-Related Factors	Service-Related Factors
<ul style="list-style-type: none"> alteration and modification possible by front-line employees themselves close connection between person-related factors and workplace integration in research model as predictors for output-relevant factors 	<ul style="list-style-type: none"> alteration and modification possible by the organization itself or organization members integration in research model as predictors for output-relevant factors 	<ul style="list-style-type: none"> play a principal role in service indicator of service excellence integration in research model as output-relevant factors
Creativity Knowledge Self-Efficacy	Emotional Exhaustion Motivation Organizational Commitment Stress Teamwork	Customer Orientation Service Orientation Service Recovery Performance

All factors, ergo person-related factors, organization-related factors, and service-related factors, will be described in the next three chapters. Previous research results embracing the factor's influences on frontline employees' outcomes are presented. As service-related factors are indicators of service excellence, the focus is on them and how they are influenced by person-related and organization-related factors.

The detailed analysis of previous research also served to identify appropriate scales for the operationalization of constructs necessary for the empirical part in this dissertation (cf. Chapter 4). Hence, in the following chapters, measurement scales were chosen and outlined. Hypotheses are drawn corresponding to identified research gaps about the influence factors on service-related factors.

The following chapters have a recurring structure. At the beginning, the factor described in it is defined. Subsequently, a selected scale for operationalization is provided to the reader. Then, the results of previous empirical studies selected in the systematic literature review are presented. From these, hypotheses are derived at the end of the chapters, which are then incorporated into the research model.

2.5 Person-Related Factors

2.5.1 Creativity

Creativity may result in something “*novel [...] that is accepted as tenable or useful or satisfying by a group in some point in time*” (Stein, 1953, p. 311). In service, creativity has different notions. For example, creativity comes into play when there is a necessity to adapt a service offering or service delivery. Thus, deviating from the usual ways of how service encounters go and delivering high-quality service to customers is one side of creativity in a service context (Ashill, Rod, Thirkell, & Carruthers, 2009; Wilder, Collier, & Barnes, 2014).

Still, a deviation from the “*usual*” is not considered an obligatory part to trigger creativity. Instead, creativity can be considered an immanent component of frontline employee behaviour (Agnihotri, Rapp, Andzulis, & Gabler, 2014). Generating ideas for improvement is another notion of creativity in the service context (van der Heijden, Schepers, Nijssen, & Ordanini, 2013, p. 518).

Without a doubt, creativity from the perspective of problem solving and creativity from the perspective of generating ideas for improvement exert conceptual proximity. However, problem solving seems to be more about recognizing problems and dynamically dealing with them. The generation of ideas for improvement suggests that these two steps are subsequent instead of simultaneous. Furthermore, creativity is not limited to situations where customers and providers interact with each other (Coelho & Sousa, 2011). Also, processes where the service provider acts in isolation of the customer, e.g., back-office processes, processes of documentation and analysis of service failure, are addressed (van der Heijden et al., 2013, p. 519).

In the study in this dissertation, creativity has its focus more on generating ideas for improvement. Therefore, the scale of Zhou and George (2001, p. 696) was used. It initially consisted of thirteen items and was shortened down to four items. During the pretest phase, the selection was made via discussions with a frontline employee team leader in a library and the library CEOs. Furthermore, thirteen items were thought to increase the total volume of items of the questionnaire disproportionately.

The scale for measuring frontline employee perceived creativity and the whole questionnaire was discussed with the frontline employee team leader and the CEO of one of the participating service companies belonging to the main target group of the survey, namely libraries. Furthermore, as introduced, it was also

carefully weighed between aspects of the questionnaire's reliability and length when selecting items.

In terms of the previous research results about creativity, there is a positive influence of frontline employee's perceived creativity on frontline employee performance (Agnihotri et al., 2014; Coelho & Sousa, 2011). Furthermore, high frontline employee creativity levels lead to increased customer problem-solving capabilities (Agnihotri et al., 2014). It also increases the capability to adapt a service offering (Wilder et al., 2014) – both qualities of frontline employees that are desirable and can be subsumed under a broader comprehension of a frontline employees' customer and service orientation.

There is also empirical evidence of the positive impacts of frontline employees' (quantitative) level of generated ideas for improvement, which was considered a surrogate for creativity. The generation of ideas for improvement points to "*novel responses that provide improved service delivery and solutions for failures of the products involved*" (van der Heijden et al., 2013, p. 518) and positively influences recovery speed and recovery quality. Additionally, the level of generated ideas for improvement moderates the relationship between recovery speed and recovery quality (van der Heijden et al., 2013, pp. 524–525).

Another surrogate for creativity is job resourcefulness, which is similar to the creativity notion of problem-solving. Ashill et al. (2009, pp. 344–345) found out that frontline employees' job resourcefulness is positively related to frontline employees' service recovery performance. It further moderated the relationships between role stressors, emotional exhaustion, depersonalization (removing oneself from the job, seeing it as necessary to do (Ashill et al., 2009)), and service recovery performance. As previous research carved out creativity as a predictor for service recovery performance, the relationships of creativity to the other two service-related factors, customer orientation and service orientation, are of interest. Therefore, the following hypotheses were derived.

H₁: Frontline employees' perceived level of creativity is positively related to frontline employees' perceived level of customer orientation.

H₂: Frontline employees' perceived level of creativity is positively related to frontline employees' perceived level of service orientation.

2.5.2 Knowledge

Knowledge is "*conveyed by instructions [and as] answer to how-to questions*" (Ackoff, 1999, p. 171). Fichtel, Blankenberg, and Ammler (2010, p. 168) report

on knowledge as one of three factors shaping frontline employee behaviour besides progressiveness and communication skills. Furthermore, it is essential for fostering frontline employees' creativity. The generation of novel ideas for different aspects of the service transaction resorts to the knowledge already there. The greater the knowledge base, the more potential for creativity (Agnihotri et al., 2014, p. 5).

Knowledge also means understanding customers and, by being able to understand them, providing superior service (Gwinner, Bitner, Brown, & Kumar, 2005). It is even more relevant when service customers and service providers originate from different countries and cultures. Knowledge about peculiarities that come with the customers' country of origin and the correspondent culture might improve service encounters (Fichtel et al., 2010, pp. 168–169; Yan, Wei, Hai, & Watson, 2010, p. 3).

In light of the importance of knowledge in its multiplicity, for its assessment, Behrman and Perreault's (1982, p. 366) scale was used. The scale was developed to measure industrial salespersons' performance (Behrman & Perreault, 1982, p. 355). Within their scale, there are five items about the knowledge of the salespersons. These were adopted for this study. Furthermore, the items were transformed into proper, easy-to-read phrases. The item "Being able to detect causes of operation failure of company products." was eliminated in the final questionnaire. During the feedback discussion with one of the participating libraries, this item was thought to represent such a rare case that frontline employees might get puzzled about answering this question.

Previous research has proven knowledge to be significantly related to the frontline employees' ability to identify with the customer (Yan et al., 2010, p. 6). Again a characteristic that is assumed to be strongly related to highly customer-oriented frontline employees. Additionally, their ability to adapt their behaviour during a service transaction increases with rising customer knowledge levels (Gwinner et al., 2005). Van der Heijden et al. (2013, p. 524) found a significant negative effect of frontline employees' knowledge sourcing behaviour on recovery speed. In other words, frontline employees keen on achieving a high understanding of customers' problems might delay the recovery process and extend the recovery processes' duration (van der Heijden et al., 2013, pp. 519–520).

2.5.3 Self-Efficacy

Being confronted with complaining customers or with service failure situations can pose a challenge to frontline employees. Self-efficacy plays an essential role in dealing with such situations (Bandura, 1977, p. 193). Self-efficacy *“influences people’s expectations about their abilities to perform successfully in new situations”* (Jones, 1986). These expectations are subject to change, e.g., when a frontline employee accumulates experiences with the firm’s service products, customers, and service failure situations, his or her self-efficacy increases (Coelho & Sousa, 2011, p. 15).

As said in the introductory part of this chapter, self-efficacy analysis is relevant for exploring frontline employee behaviour and its changes. Previous research considered this fact and analyzed self-efficacy as a predictor for variables representing organizational output or variables relevant to organizational output.

Taken over from Karatepe and Olugbade (2009, p. 508), self-efficacy is measured using the scale of Jones (1986, p. 279). Originally consisting of eight items, the scale was shortened to three items. Two items were thought to be puzzling respondents by targeting the perceived self-efficacy when beginning the job (“I did not experience any problems in adjusting to work in this hotel.”, “I have all the technical knowledge I need to deal with my job, all I need now is practical experience.”), three items were thought of causing response bias caused by social desirability (“I feel that I am overqualified for the job I am doing.”, “I could have handled a more challenging job than the one I am doing.”, “Professionally speaking, my job exactly satisfies my expectations of myself.”).

Increasing self-efficacy leads to higher frontline employee job satisfaction (Karatepe, Uludag, et al., 2006, p. 554). Karatepe and Olugbade (2009, pp. 504–505) analyzed self-efficacy as an antecedent of frontline employee work engagement. They used the three-dimensional work engagement construct of Schaufeli, Salanova, Gon Alez-ro, and Bakker (2002), consisting of vigour, dedication, and absorption. All three dimensions show congruencies with the definition of the construct “effort” utilized by Karatepe et al. (2006, p. 549). Whereas self-efficacy was proven to be significantly positively related to frontline employee effort (Karatepe, Uludag, et al., 2006), only the absorption dimension of work engagement could be predicted significantly by self-efficacy (Karatepe & Olugbade, 2009, p. 510).

Two studies analyzed the relationship between frontline employees’ self-efficacy and frontline employee performance, coming to mixed results of whether

or not there is a significant positive relationship (Coelho & Sousa, 2011, pp. 28–29; Karatepe, Uludag, et al., 2006, pp. 553–554). Another outcome variable of self-efficacy is customer orientation. In several studies, self-efficacy is positively related to customer orientation (Coelho & Sousa, 2011, p. 28; Gountas, Gountas, & Mavondo, 2014, pp. 116–117; Noor, Kasim, Scarlat, & Muhamad, 2010, p. 69). The two-dimensional self-efficacy construct of Pimpakorn and Patterson (2010, p. 62), which they derived from Hartline and Ferrell (1996), only shows a significant positive relationship with customer orientation in the second dimension (self-confidence towards coping with job demands and colleagues' capabilities). The following hypothesis explores a possible relationship between self-efficacy and the outcome variables service orientation and service recovery performance and complements the findings on the relationship between customer orientation and self-efficacy.

H₃: Frontline employees' perceived level of self-efficacy is positively related to frontline employees' perceived level of service orientation.

H₄: Frontline employees' perceived level of self-efficacy is positively related to frontline employees' perceived level of service recovery performance.

2.6 Organization-Related Factors

2.6.1 Emotional Exhaustion

Researchers analyzed emotional exhaustion as well as exhaustion. In every case, exhaustion either coincided (Karatepe, 2011, p. 248) or contained emotional exhaustion as a component (Zhao, Mattila, & Ngan, 2014, p. 425). The focus here is on emotional exhaustion, which is one component of burnout, the other two being depersonalization and decreased personal accomplishment (Maslach & Jackson, 1981, p. 99).

Emotional exhaustion is the most influential burnout component and is seen as initiating burnout (Bakker, Demerouti, & Verbeke, 2004, p. 84; Boles, Johnston, & Hair Jr., 1997, p. 19). It is the condition when the “*emotional resources [of workers] are depleted [and] they feel they are no longer able to give of themselves at a psychological level*” (Maslach & Jackson, 1981, p. 99). It “*occurs when an individual is facing seemingly overwhelming demands in his/ her time and energy*” (Boles et al., 1997, p. 19).

Emotional exhaustion is assessed via five items of Maslach and Jackson's nine-item emotional exhaustion scale. The item selection of Ashill, Rod, and Gibbs (2015, p. 62) was adopted.

High levels of emotional exhaustion of frontline employees should raise awareness in supervisors and managers because of its negative impacts on frontline employees' work outcomes and its impacts on customers during the service encounter (T. T. Kim, Paek, Choi, & Lee, 2012, p. 504).

If frontline employees feel high levels of emotional exhaustion, researchers found their service recovery performance decreasing (Ashill et al., 2009, p. 344; Choi, Kim, Lee, & Lee, 2014, p. 280) with customer orientation mediating this relationship (Yoo, Kim, & Lee, 2015). Furthermore, Choi et al. (2014, p. 280) found a negative relationship between emotional exhaustion and customer orientation. So, two service-related factors are negatively influenced by emotional exhaustion. If there is a negative influence on frontline employee perceived service orientation, it will be analyzed by the following hypothesis.

H₅: Frontline employees' perceived level of emotional exhaustion is negatively related to frontline employees' perceived level of service orientation.

Interestingly, the negative effects of emotional exhaustion on frontline employees' job performance could not be confirmed (Ashill et al., 2015; Karatepe & Aleshinloye, 2009). Instead, Karatepe and Uludag (2008, p. 120) found a significant positive relationship between emotional exhaustion and job performance. They comment on two other studies where such relationships were found to be significant (Advani, Sarang, & Kumar (2005); Van Dyne, Jehn, & Cummings (2002) as cited in Karatepe & Uludag (2008, p. 123)). In line with the other two studies mentioned before, Karatepe and Uludag (2008, p. 123) suspect that the fact that the frontline employees included in their sample receive tips from customers might be an explanation for their result. Advani et al. (2005, pp. 9, 11) analyzed IT professionals who work deadline-driven and might exert better performance when emotional exhaustion increases. Van Dyne et al. (2002, pp. 64, 69) analyzed hair stylists and explain the surprising findings with intervening factors like personality traits and work experience that makes employees focus on their job-related tasks instead of their level of emotional exhaustion.

2.6.2 Motivation

Motivation reflects *“the degree to which an individual wants and chooses to engage in certain specific behaviors”* (Mitchell, 1982, p. 82). Thus, service firms must uphold their employees’ motivation to achieve the firm's long-lasting success (Masoud & Hmeidani, 2013, p. 134). There are different kinds of motivation, e.g., motivation towards a specific task, a bundle of tasks (job), or a global measure (Cadwallader, Jarvis, Bitner, & Ostrom, 2010, p. 223). Furthermore, motivation can be differentiated into extrinsic and intrinsic motivation. Extrinsic motivation *“[...] arises from the desire to obtain some outcomes (such as rewards) that are apart from the work itself”* (Amabile, 2001). Intrinsic motivation in a work context originates in a feeling of satisfaction and accomplishment from the job a person is doing (Tyagi, 1985, p. 77). In the context of frontline employees, intrinsic motivation may be an essential factor when looking at the emotional work that has to be done by frontline employees in service encounters (Karatepe & Aleshinloye, 2009, p. 351).

Low, Cravens, Grant, and Moncrief (2001, p. 607) provided the scale for the factor motivation. In the first place, the scale was developed to measure intrinsic motivation (Low et al., 2001, p. 597) and goes back to several preliminary works of Anderson and Oliver (1987), Cravens, Ingram, LaForge, and Young (1993), and Oliver and Anderson (1994) (as cited in Low et al., 2001, p. 597). It was reduced from four to three items. The item *“When I do work well, it gives me a feeling of accomplishment.”* was considered too similar and therefore threatening for the respondent’s will to profoundly answer all the questions.

Intrinsic motivation revealed positive and significant influences on frontline employee creativity (Coelho, Augusto, & Lages, 2011, p. 39). The influence of intrinsic motivation in particular or motivation in general on frontline employees’ performance produced mixed results (Hosain, 2014, p. 166; Rigopoulou, Theodosiou, Katsikea, & Perdakis, 2012, p. 632).

Also, there is a positive relationship to service recovery performance (Karatepe, 2006, p. 50). In this line are the results of Chan and Lam (2011, pp. 616, 620), who could also confirm a positive relationship between frontline employees’ perceived motivation and their supervisor rated customer complaint handling behaviour. Noor, Kasim, Scarlat, and Muhamad (2010, p. 68) found a positive relationship between frontline employees’ perceived motivation and perceived customer orientation. Previous research points to the positive influence of front-

line employee perceived motivation on service-related factors. Therefore, a positive relationship between frontline employee perceived motivation and service orientation is assumed and tested using the following hypothesis.

H₆: Frontline employees' perceived level of motivation is positively related to frontline employees' perceived level of service orientation.

2.6.3 Organizational Commitment

Organizational commitment comprises “*a strong belief in and acceptance of the organization's goals and values[,] a willingness to exert considerable effort on behalf of the organization[,] and a strong desire to maintain membership in the organization*” (Mowday, Steers, & Porter, 1978, p. 4). It can also be denoted as “*feelings towards the organization*” (Rod & Ashill, 2010, p. 86). In other words, if employees are highly committed to their organization, they “*feel valued, supported, and conducive to their well-being*” (Walsh, Yang, Dose, & Hille, 2015, p. 4). Organizational commitment can be divided into three components: affective, continuous, and normative commitment (see Allen & Meyer, 1990, p. 1, for further definition). The three components are independent of each other. Employees can be highly affectively committed, while the other components do not have to have the same level (Allen & Meyer, 1990, pp. 3–4). However, this division of organizational commitment was not pursued in this dissertation.

The Organizational Commitment Questionnaire from Mowday, Steers and Porter (1978, p. 34) assessed the frontline employees' commitment. The scale consists of fifteen items, which were seen as too long for the final questionnaire. A selection of six items was included in the final questionnaire. During the selection process, items were eliminated that probably could cause bias. For example, respondents might hesitate or hold off their real opinion about a statement such as “There's not much to be gained by sticking with this organization indefinitely.” or “I feel very little loyalty to this organization.”

Organizational commitment is essential when looking at the relationship between a frontline employee and his or her service firm (Walsh et al., 2015, p. 2). As will be seen in the following elaborations, it generates positive outcomes for employees, firms, and customers.

Ashill and his peers carried out several studies in which they analyzed the outcomes of organizational commitment. The results show an unambiguously positive relationship between frontline employee perceived organizational commitment and service recovery performance (Ashill, Carruthers, & Krisjanous, 2006,

p. 279; Ashill, Rod, & Carruthers, 2008, p. 450; Rod & Ashill, 2010, p. 93). Furthermore, it is notable that there are no differences in public and private hospitals regarding the influence of frontline employees' perceived organizational commitment on service recovery performance. Due to different incentive structures between private and public service companies (cf. Chapter 1.1), the working climate and the corporate bond of frontline employees could be different. To create a greater knowledge base regarding this topic, whether frontline employees belong to a private or public service company will be determined by a control variable in the empirical study carried out in Chapter 4.

Furthermore, relationships are proposed between the components of organizational commitment and service orientation, revealing only a positive effect of affective commitment on service orientation (Guerra & Sepúlveda, 2014, p. 32). To confirm this result, using the concept of organizational commitment by Mowday et al. (1978) instead of the three-component concept by Allen and Meyer (1990) leads to the following hypothesis.

H₇: Frontline employees' perceived level of organizational commitment is positively related to frontline employees' perceived level of service orientation.

Also, customer orientation increases with higher levels of frontline employees' perceived organizational commitment (Noor et al., 2010, p. 68), as does the capacity to satisfy customers (Sergeant & Frenkel, 2000, p. 25).

Organizational commitment could not be confirmed as a significant predictor of job performance (Gibbs & Ashill, 2013, pp. 315–316). Still, Han, Liu, and Dai's (2010, p. 4) analysis revealed a positive relationship between affective commitment and work performance.

2.6.4 Stress

There are two prevailing views of stress: Firstly, stress is defined as consisting of three role stressors, which are role conflict, role ambiguity, and role overload. Frontline employees experience role conflict when interests are directed at them that are not in harmony with each other and cause problems because the frontline employee is unsure about the correspondent answers to such demands (Rizzo, House, & Lirtzman, 1970). Role ambiguity develops when, e.g., a frontline employee is in a service recovery situation with a customer and is unsure about his or her competencies about the compensation he or she is allowed to offer (Rizzo et al., 1970) – especially when it is an unusual service recovery

case. Role ambiguity, therefore, denotes a kind of insecurity originating in not knowing how to respond or behave (contrary to role conflict where there is uncertainty about which behaviour is appropriate) (S. E. Jackson & Schuler, 1985, p. 430). Role overload points to the *“individual’s lack of personal resources needed to fulfill commitments, obligations, or requirements”* (S. E. Jackson & Schuler, 1985, p. 430). The majority of the articles presented in the following used role stressors to describe stress. Mainly, the role stressors role conflict and role ambiguity are used more often than role overload. Perhaps this is because role conflict and role overload are not differentiated enough (Coverman, 1989, p. 967). Also, the relationship between role conflict and role overload demarcates role overload as *“a form of person-role conflict”* (S. P. Brown, Jones, & Leigh, 2005, p. 973). Role overload can lead to role conflict. Simultaneously, when there are high levels of role conflict, this does not allow to conclude that there is role overload (Coverman, 1989, p. 968). For the empirical study in Chapter 4, this means that role overload will be included as a distinct concept from role conflict. Consequently, the results of this study will either confirm previous research in not analyzing role overload or show that role overload indeed is a critical role stressor when it comes to factors influencing frontline employees in service interactions.

The second conceptualization of stress defines it as *“a situation wherein job-related factors interact with a worker to change (i.e., disrupt or change) his or her psychological and/ or physiological condition such that the person (i.e., mind-body) is forced to deviate from normal functioning”* (Beehr & Newman, 1978, pp. 669–670).

In this dissertation's upcoming empirical study, stress is assessed via role overload, role ambiguity, and role conflict. Role overload is measured using a three-item scale (Beehr, Walsh, & Taber, 1976). The scale for role ambiguity and role conflict was adopted from Rizzo, House, and Lirtzman (1970, p. 156). They originally consisted of 30 items (15 for role ambiguity, 15 for role conflict), the selection of Ashill, Rod, and Gibbs (2015, p. 64) was adopted. Ashill, Rod, and Gibbs (2015, p. 62) name the works of Singh, Verbeke, and Rhoads (1996) and Singh (2000) as sources for the role ambiguity and role conflict items. However, the items go back to Rizzo, House, and Lirtzman (1970), so the source is cited here. After the pretest phase, the items “I feel certain about how much authority I have.”, “I divided my time properly.”, “I know what my responsibilities are.”, “I work under incompatible policies and guidelines.”, moreover, “I receive an as-

signment without the manpower to complete it.” were eliminated due to the results of the discussion and feedback rounds with the employee supervisors who provide participants to the study.

Stressed frontline employees demonstrate lower levels of job performance (Ashill et al., 2015; Cano & Sams, 2009; Rigopoulou et al., 2012; L. Zhou, Yong, & Danling, 2014) and service recovery performance (Karatepe, 2006; Rod, Ashill, & Carruthers, 2008; Yavas, Karatepe, Avci, & Tekinkus, 2003).

Looking at the role stressor role conflict separately surprisingly reveals a positive impact on job performance (Babin & Boles, 1996, p. 290; Karatepe & Uludag, 2008, p. 120). Maybe this is because every time frontline employees dissolve a service encounter where they perceive high levels of role conflict, they surpass and, by this, enhance their job performance (Babin & Boles, 1996, p. 61; Karatepe & Uludag, 2008, p. 123). Furthermore, frontline jobs' nature is unavoidably connected with role conflict (Karatepe & Uludag, 2008, p. 123). When performance is operationalized and differentiated into performance productivity and performance quality, the results are, if significant, indicating a negative relationship between role conflict or role ambiguity and performance productivity or performance quality (Singh, 2000, p. 26).

Despite the positive effect of frontline employee perceived role conflict on their perceived job performance, the results for the impact of stress on frontline employees' service recovery performance were unambiguous. Therefore, a negative relationship between all role stressors, including role conflict, and frontline employee perceived customer orientation levels and service orientation levels is assumed and tested by the following hypotheses.

H₈: Frontline employees' perceived level of role conflict is negatively related to frontline employees' perceived level of customer orientation.

H₉: Frontline employees' perceived level of role conflict is negatively related to frontline employees' perceived level of service orientation.

H₁₀: Frontline employees' perceived level of role ambiguity is negatively related to frontline employees' perceived level of customer orientation.

H₁₁: Frontline employees' perceived level of role ambiguity is negatively related to frontline employees' perceived level of service orientation.

H₁₂: Frontline employees' perceived level of role overload is negatively related to frontline employees' perceived level of customer orientation.

H₁₃: Frontline employees' perceived level of role overload is negatively related to frontline employees' perceived level of service orientation.

2.6.5 Teamwork

Teamwork is the “*extent to which all employees pull together for a common goal*” (Parasuraman et al., 1991a, p. 339). Furthermore, teamwork is when all employees are “*working harmoniously as a group*” (Mahtab, 2015). Teamwork is thought to create a productive work environment (Berry (1995) as cited in Boshoff & Allen, 2000, p. 67), where employees work together to provide solutions to service customers' problems (Yavas et al., 2003, p. 258).

In service encounters, one frontline employee interacts with one customer or a customer group. Sometimes, there is a service where customers interact with more than one frontline employee. For example, at car dealerships, customers interact with sales agents and then with frontline employees responsible for the finance issues (Arndt, Karande, & Landry, 2011, p. 234), making teamwork even more important. When teamwork in such a frontline employee team does not work correctly, the result might be decreased customer satisfaction, sales revenue, and by this, overall productivity (Arndt, Karande, & Harkins, 2012, pp. 730–731).

Consequently, frontline employees rely on their colleagues if they need help on an issue in which they lack expertise. Moreover, frontline personnel count on the back office colleagues' support (Boshoff & Allen, 2000; Mahtab, 2015). In this matter, Boshoff and Allen (2000, p. 67) emphasize that service excellence results from a good value creation chain, at which front-end is the frontline employee.

Teamwork was measured using a scale with five items from Parasuraman, Berry, and Zeithaml's (1991, pp. 359–360) revised service gap model.

In three studies (Boshoff & Allen, 2000; Mahtab, 2015; Yavas et al., 2003), teamwork was operationalized using the items from Parasuraman, Berry, and Zeithaml's (1991) extended service quality model. Two studies used constructs subsumed during the coding process under teamwork: internal influence behaviour (Vandaele & Gemmel, 2006), cohesion, and relationship effectiveness (both Arndt, Karande, & Landry, 2011). Therefore, the studies are not comparable. There are two studies (Mahtab, 2015; Yavas et al., 2003) replicating the work of Boshoff and Allen (2000) without coming to the same conclusion.

Boshoff and Allen (2000, p. 64) analyzed teamwork as a predictor of frontline employees' service recovery performance in a bank. In advance of the study,

they conducted interviews with managers of the top-and middle-level. They found out that teamwork was identified as a possible factor of the working environment influencing frontline employees' service recovery performance (Boshoff & Allen, 2000). However, their results could not confirm the influence of teamwork on frontline employees' service recovery performance. Furthermore, they build their model on existing evidence (Boshoff & Allen, 2000).

Yavas, Karatepe, Avci, and Tekinkus (2003, p. 256) replicated the study of Boshoff and Allen (2000). As did Boshoff and Allen (2000, p. 72), Yavas et al. (2003, p. 258) collected their data from frontline bank employees. In the end, they came to the same result: an influence of teamwork on frontline employees' service recovery performance could not be confirmed. They see a possible reason for this because employee training of Turkish banks at the time the study was conducted did not include social skills such as teamwork (Yavas et al., 2003, pp. 261–262). Moreover, Turkish banks' working culture is different: superiors expect employees to follow orders; teamwork stays a thing for one's initiative and is not rewarded in any way (Yavas et al., 2003, p. 262). Furthermore, frontline bank employees' are considered to be in a somewhat competitive work environment compared to other frontliners in other service industries, e.g., health care and education (Gibbs & Ashill, 2013; Yavas, Babakus, & Karatepe, 2013; Yavas et al., 2003).

Mahtab (2015, p. 241) also replicated Boshoff and Allen's (2000) study and hypothesized a relationship between teamwork and service recovery performance. In contrast to previous studies' results (Boshoff & Allen, 2000; Yavas et al., 2003), the data confirmed the relationship (Mahtab, 2015, p. 245). Maybe this is due to some limitations of the study that Mahtab (2015, p. 247) comments on. Firstly, as a form of social desirability bias, employees showed behaviour, indicating that they kept private information relevant to the study for themselves. Therefore, it might be possible that they over-report teamwork to be good. Secondly, some employees' answers indicated their unfamiliarity with specific terms of research, which might be due to several reasons, e.g., the researcher's lack of time in elaborating them to the respondents (Mahtab, 2015, p. 247). Also, missing explanations and annotations for the respondents might be a reason for this.

All three studies collected data from frontline bank employees. They used the same conceptual model; the hypotheses are similar if not equal (in the case of Yavas et al. (2003), five hypotheses are equal with Boshoff and Allen's (2000)

study). Nevertheless, Yavas et al. emphasize that the studies are not comparable regarding their “*cultural context and socioeconomic environment*” (Yavas et al., 2003, p. 262). This argument holds for all of the three studies. All three studies were conducted in different countries (U.S., Turkey, and Bangladesh). As indicated by the researchers, there are peculiarities in corporate culture, such as training not containing social skills and socialization such as secrecy concerning uncomfortable information about how teamwork is, that cause bias in data and therefore aggravate a comparison. Maybe this explains the positive result in Mahtab's (2015) study. As a consequence, the country of the frontline employees' origin is considered in the study as a control variable to check for country-specific peculiarities.

In contrast to the previously presented studies, Vandaele and Gemmel (2006, p. 13) explicitly focused their study on business-to-business services and collected data from a security service company. As many studies about service concentrate on business-to-consumer service, their shift in focus complements service research, especially the area of business-to-business service (Vandaele & Gemmel, 2006, p. 3).

Vandaele and Gemmel (2006, p. 10) did not analyze teamwork as such, but internal influence behaviour. Following Bettencourt and Brown (2003) and Aldrich and Herker (1977), internal influence behaviour frames employees' get-up-and-go mindset to communicate about changes and opportunities in the firms internal and external environment with its different stakeholders (customers, co-workers, superiors, and others) and their needs and interests (Vandaele & Gemmel, 2006, p. 10). Keeping in mind the definition introduced at the beginning of this chapter that states teamwork relates to the “*extent to which all employees pull together for a common goal*” (Parasuraman et al., 1991a, p. 339), internal influence behaviour can be subsumed to the factor teamwork.

Internal influence behaviour is said to influence frontline employees' service delivery behaviour positively. Furthermore, Vandaele and Gemmel (2006, p. 11) hypothesize an indirect relationship between internal influence behaviour and performance productivity and internal influence behaviour and performance quality. Their results confirm the positive influence of internal influence behaviour on frontline employees' service delivery behaviour and the indirect relationship between internal influence behaviour and performance quality. Instead of an indirect relationship with performance productivity, internal influence behaviour and performance productivity have a direct relationship (Vandaele & Gemmel, 2006, p. 20). In their discussion, the authors explain that in business-

to-business services, customer-oriented behaviour is not comparable with its counterpart in business-to-consumer services. They state that frontline employees in business service see their customers more than employees than as customers and have more comprehension for their wants and needs (Vandaele & Gemmel, 2006, p. 22). Furthermore, they cite Singh's (2000) argument that performance productivity with its facts and figures is more effortless perceivable by frontline employees than performance quality (Vandaele & Gemmel, 2006, p. 23). Thus, frontline employees influence behaviour is more focused on productivity dimensions than on quality dimensions (Vandaele & Gemmel, 2006, p. 23).

In light of previous research regarding teamwork as a frontline employee influence factor, two more factors might be worthwhile checking their relationships with teamwork: customer orientation and service orientation. When thinking of frontline employees' daily work, customer orientation and service orientation are relevant variables. Suppose teamwork at a frontline employees' workplace is terrible, and much effort is wasted for this. In that case, it might be the case that there is less effort available for dealing with customers and acting service-oriented. Thus, the following hypotheses arise:

H₁₄: Frontline employees' perceived level of teamwork is positively related to frontline employees' perceived level of customer orientation.

H₁₅: Frontline employees' perceived level of teamwork is positively related to frontline employees' perceived level of service orientation.

2.7 Service-Related Factors

2.7.1 Customer Orientation

Customer orientation denotes "an employee's tendency or predisposition to meet customer needs in an on-the-job context" (T. J. Brown, Mowen, Donovan, & Licata, 2002). As the interaction between service providers and service customers is essential in service, the customer orientation of frontline employees is a critical quality (T. J. Brown et al., 2002). Having highly customer-oriented frontline employees is vital for service firms (T. J. Brown et al., 2002) and one factor influencing customer perceived service quality (L. C. Harris & Ogbonna, 2002, p. 171).

Korschun, Bhattacharya, and Swain (2014, p. 22) comment on the debate of how to conceptualize customer orientation. There are three ways of conceptu-

alizing customer orientation: Firstly, customer orientation may be conceptualized as a surface-level personality trait (Babakus, Yavas, & Ashill, 2009, p. 482; T. J. Brown et al., 2002, p. 110). Secondly, customer orientation can be seen as a “*behavioral self-regulation mechanism*” (Coelho & Sousa, 2011) or, thirdly, as employee-customer identification that is relative to the frontline employees’ and customers’ characteristics (Korschun et al., 2014, p. 22).

Customer orientation as a surface trait is divided into two dimensions. T. J. Brown et al. (2002, p. 110) follow Saxe's and Weitz' (1982, p. 347) definition of customer orientation. They define one dimension of customer orientation as the extent to which an employee is convinced of meeting customers’ needs. The second dimension is the extent to which an employee enjoys interacting with customers and meeting their demands (T. J. Brown et al., 2002, p. 110). The conceptualization of customer orientation as a surface trait is considered more or less constant over time. In contrast, the employee-customer identification approach is liable to the frontline employee and customer characteristics that are likely to change over time and, of course, from customer to customer.

Lastly, the behavioral approach sees customer orientation as a continually changing construct that, through constant adaptations and customizations of behaviour, is laid out to satisfy customer needs and include longer-term considerations (Korschun et al., 2014, p. 22). In this line, Bettencourt's and Brown's (2003, p. 395) conceptualization of customer-oriented boundary-spanning behaviour is noteworthy. In their conceptualization, there are three dimensions: external representation, internal influence, and service delivery. They represent the employees’ organizational commitment to insiders (internal influence) and outsiders of the organization (external representation), as well as service delivery behavior (punctuality, politeness, diligence in service encounters). Vandaele and Gemmel (2006, pp. 6–7) adopted this conceptualization. In their study, Acar, Zehir, Özgenel, and Özşahin (2013, p. 529) used a six-dimensional construct for customer orientation adopted from Berthon, Mac Hulbert, and Pitt (2004, pp. 1072–1073). It resulted in 24 items solely for customer orientation. A measure considered enlightening when exploring the factor of customer orientation in detail.

However, for data collection in the empirical study in this dissertation, a shorter scale was selected. Like the construct of customer-oriented boundary-spanning behaviour introduced by Bettencourt and Brown (2003), customer orientation is measured using a five-item scale by Susskind, Kacmar Borchgrevink (2003, p. 182, 186), which relies on a similar construct.

Customer orientation proved significant positive relationships to performance (Acar et al., 2013, pp. 531–532; Agnihotri et al., 2014, p. 11; Babakus et al., 2009, p. 486; Korschun et al., 2014, p. 31; C. Prentice & King, 2011, p. 59) and performance dimensions (Vandaele & Gemmel, 2006, pp. 20–21). Furthermore, customer orientation was positively related to service quality (K. J. Lee, 2014, p. 146), service delivery (Vandaele & Gemmel, 2006, p. 20), service recovery performance (Choi et al., 2014, p. 280), and customer response ratings (E. G. Harris et al., 2014, p. 180).

Co-worker support was proposed as an antecedent but did not significantly affect customer orientation (Gountas et al., 2014, p. 115). A surrogate for co-worker support is teamwork, which is part of the empirical study in this dissertation. Therefore, the relationship between teamwork and customer orientation is tested with hypothesis H₁₄ (cf. Chapter 2.6.5).

Korschun et al. (2014, p. 29) could not confirm a significant relationship between organizational identification and customer orientation. Organizational identification embodies “*that the organizational member has linked his or her organizational membership to his or her self-concept, either cognitively (e.g., feeling part of the organization; internalizing organizational values), emotionally (pride in membership), or both*” (Riketta, 2005, p. 361). The definition shares elements with the concept of organizational commitment, e.g., worth of organizational membership and overlap between own and organizational values (cf. Chapter 2.6.3). Still, between organizational commitment and customer orientation, a positive relationship could be confirmed by Noor et al. (2010, p. 68). It is thought to include another hypothesis in this dissertation to confirm the previous research results about the relationship between organizational commitment and customer orientation. Firstly, a new dataset represents the characteristics of frontline employees working in different service industries and countries. Secondly, all studies, including this dissertation, use different measures for organizational commitment and customer orientation. Therefore, the following hypothesis is derived.

H₁₆: Frontline employees’ perceived level of organizational commitment is positively related to frontline employees’ perceived level of customer orientation.

2.7.2 Service Orientation

Service orientation describes the “*disposition to be helpful, thoughtful, considerate, and cooperative*” (Hogan, Hogan, & Busch, 1984, p. 167). Cran (1994, pp. 37–38) comments on the importance of a basic level of service orientation

when hiring people for frontline jobs because the possibility to learn and train service-oriented behaviour is limited and varies from employee to employee. However, if management and organizational culture claim service orientation as pivotal, this will probably positively influence frontline employees' service orientation (Liang, Tseng, & Lee, 2010, p. 68).

Service orientation was measured via four items of the five-item-scale from Bettencourt, Gwinner, and Meuter (2001, p. 32, 40), who relied on the works of Cran (1994), Hogan, Hogan, and Busch (1984), and Muchinsky (1993) (as cited in Bettencourt et al., 2001, p. 32). The item "I believe that there are two sides to every question and try to look at them both." was eliminated from the final questionnaire. During the feedback rounds, this item was discussed as being potentially confusing for the respondents. Corresponding to the frontline employee team leader, not all frontline employees are confronted with issues that ask for a deliberate reflection of customer's requests as the eliminated items express.

Vandaele and Gemmel (2006, p. 11) analyzed the external representation behaviour of frontline employees. It can be seen as a surrogate for frontline employees' perceived service orientation and encompasses frontline employee behaviour towards non-members of the service organization, such as customers. Like service orientation, external representation behaviour expresses behaviour following the service firms' proclaimed service culture and commitment to their service offerings (Vandaele & Gemmel, 2006, p. 12). Frontline employees' external representation behaviour was hypothesized to predict frontline employees' service delivery behaviour, performance productivity, and performance quality. There are positive relationships between external representation behaviour and service delivery behaviour, as well as performance productivity. There was no significant relationship between external representation behavior and performance quality (Vandaele & Gemmel, 2006, pp. 20–21). A reason for this might be that they analyzed a security service firm being a business-to-business firm. Therefore, the frontline employee contact with these business customers differs (Vandaele & Gemmel, 2006, p. 22) and may be limited due to the nature of the service so that performance quality is not that salient.

Two studies confirmed that the frontline employees' service orientation positively influences frontline employee service performance (Guerra & Sepúlveda, 2014, p. 32; Liang et al., 2010, p. 70). Aryee, Walumbwa, Seidu, and Otake (2016, pp. 484, 489, 491) looked at aggregated service orientation (unit-wise) and could confirm a positive relationship with the frontline employees' individual

service quality (evaluated by a peer frontline employee) and the moderating effect of collective human capital on this relationship. Furthermore, interpersonal adaptive behaviour, frontline employees' ability to adapt "*the manner in which the service is delivered [...]*" (Gwinner et al., 2005, p. 134) as well as service-offering adaptive behaviour, pointing to the frontline employees' ability to customize the service offering to the customer, are hypothesized to be positively related to frontline employees' service orientation. However, service orientation is only positively related to service-offering adaptive behaviour but not to interpersonal adaptive behaviour. Possibly, the study context, customer service of a telecommunication firm, where the consultancy process of finding the best service offering is more important than the service delivery at that moment (Gwinner et al., 2005, p. 143). Counterintuitively, frontline employees' level of service orientation seems to be negatively related to customer loyalty (Liang et al., 2010, p. 70). Liang et al. (2010, p. 71) argue with the work of Carson, Carson, Knouse, and Roe (1997, p. 102), who applied the balance theory to service quality. Carson et al. (1997, p. 109) explain that in services where the frontline employee plays a more prominent role for the customer than the service firm, there might be situations where the customer is loyal to the frontline employee but not to the service firm. Thus, although the frontline employee exerts high service orientation levels in service encounters and the customer is satisfied, the customer might reject the service firm, which is exposed by decreasing levels of customer loyalty.

Looking at the antecedents of service orientation reveals that affective commitment as one dimension of organizational commitment in the scale of Allen and Meyer (1990), is positively related to frontline employee service orientation (Guerra & Sepúlveda, 2014, p. 32, cf. Table 24, cf. Figure 19). Moreover, a high-performance work system, a collective term for HR practices designed to get the best out of employees' potentials, positively impacts frontline employees' service orientation (Aryee et al., 2016).

2.7.3 Service Recovery Performance

Rising competition in the service market and increasing transparency for customers fostered, amongst others, by the diffusion and use of ICTs, leave no doubt about the relevance of service recovery (Boshoff & Allen, 2000; Rod et al., 2008). Service recovery performance describes the "*efforts made by the firm to return aggrieved customers to a state of satisfaction following a service failure*" (Boshoff & Allen, 2000). Frontline employees are crucial for service failures and are the primary actors of service recovery (Ashill et al., 2008). Therefore,

understanding which factors influence their service recovery performance is essential (Ashill et al., 2008).

Service recovery performance is assessed using three items of Boshoff and Allen's (2000, p. 90) scale for service recovery performance. Boshoff and Allen (2000, p. 73) initially derived five items from scales targeting job performance, e.g., Behrman and Perreault (1982).

Boshoff and Allen (2000, p. 74), Yavas et al. (2003, p. 257), and Mahtab (2015, p. 240) analyzed frontline bank employees based on the same theoretical model. However, their results are not congruent. A difference traced back, amongst others, to the different cultural contexts the studies were conducted in (Yavas et al., 2003, p. 262; cf. Chapter 2.6.5). Boshoff and Allen (2000, p. 80) found out that organizational commitment is significantly related to frontline employees' perceived service recovery performance. In contrast, Yavas et al. (2003, pp. 259, 261) found significant relationships between frontline employees' role ambiguity and service recovery performance. Mahtab (2015, pp. 243–245) proved that teamwork is significantly related to frontline employees' perceived service recovery performance. The empirical evidence about frontline employees' perceived teamwork as an antecedent of frontline employees' perceived service recovery performance is mixed but shows tendencies towards a non-significant relationship. For this reason, hypothesis H₁₇ proves if there is an influence of frontline employee perceived teamwork on service recovery performance.

H₁₇: Frontline employees' perceived level of teamwork is positively related to frontline employees' perceived level of service recovery performance.

Role ambiguity proved as having a significant negative relationship with frontline employees' perceived service recovery performance (Boshoff & Allen, 2000; Karatepe, 2006; Karatepe & Sokmen, 2006; Rod et al., 2008; Yavas et al., 2003). The same holds for role conflict (Karatepe & Sokmen, 2006, p. 264; Rod et al., 2008, p. 26). Karatepe and Sokmen (2006, p. 265) report on the influence of several control variables. Firstly, they comment that female employees perceive higher role ambiguity levels because it is assumed that they struggle harder in asking for support. Simultaneously, the longer the tenure (for both genders), the lower the perceived levels of role ambiguity and role conflict. Frontline employees having experienced more recovery situations, are more professional in resolving them. Also valid for both genders is the effect of education on role ambiguity that decreases with higher levels of education, which might originate in frontline employees greater competence and knowledge in pursuing expertise

when there are difficult situations for them. Although the variables gender, tenure, and educational level would have been included in the empirical study either way (in the collection of sociodemographic data). Now, previous research showed that there might be effects traceable to these control variables.

Karatepe (2006, p. 51) found intrinsic motivation to be significantly positively related to frontline employees' perceived service recovery performance. Emotional exhaustion exerted no significant relationship with frontline employees' perceived service recovery performance (Karatepe, 2006, p. 51).

2.8 Limitations of the Systematic Literature Review and Conclusions for the Research Model

The systematic literature review has limitations. In sum, there are four issues on which is commented hereafter.

Firstly, systematic literature reviews are conducted by several persons, e.g., Lehmann and Kölling (2010) or Ranjan et al. (2015). The word *review* already indicates that it should be conducted by several persons doing cross-examination of the other people's work. In this review, a cross-examination is considered reasonable for testing the search terms in the different electronic databases, the sorting of the articles, and, above all, when the inclusion and exclusion criteria' appliance did not result in a definite conclusion whether to include the article or not. In this dissertation, the researcher did all these steps by herself, accepting this approach's deficiency. The same argument holds for the steps where predictor variables were extracted from the articles' hypotheses, repeatedly sorted, consolidated, and accounted for, resulting in the eleven influence factors for frontline employees.

Secondly, one would assume that when extracting the most relevant factors that showed some influence in earlier research, a researcher would select the TOP TEN instead of the TOP ELEVEN. When the coding, sorting, and consolidation process of the variables was done, there were three variables or factors, respectively, that were analyzed in the same number of studies. Therefore, all these three variables (creativity, knowledge, and teamwork) were included in the study. In the end, the detailed analysis of one of the texts dealing with the factor "knowledge" took the service customers' perspective and only contained data from service customers. Although the inclusion and exclusion criteria were proven on all articles in the final selection, the researcher oversaw one. At this point in the whole research process, the eleven factors were already proposed to one of the potentially participating service firms and considered valuable. That

is why it was not excluded from the study and presents the eleventh factor. This second issue also includes the awareness of the publication bias, i.e. the fact that positive results or results that produce something "useful" for the general public are more likely to be written down and published (Card & Krueger, 1995, pp. 238–239).

Thirdly, during the data extraction and data synthesis, the researcher stumbled over search terms she did not consider. For example, Bettencourt and Brown (2003) brought up "boundary-spanners" and "frontline service employees." Furthermore, the terms "(service) frontliners" (Hau, Tram Anh, & Thuy, 2017) and "customer-contact (service) employees" (Malhotra, Mukherjee, & Gilliland, 2010) popped up. In the end, not including these search terms may have led to the non-consideration of relevant articles, as they were not found during the systematic search.

Lastly, for selecting the factors influencing frontline employees, the factors were chosen that were analyzed in the highest number of articles. Thereby, the researcher implied that the factors researched the most (and published) are the most relevant. Maybe some factors are higher in their inclusion in studies because there are better measures available than for other factors. Data on these factors are more easily collectable, or they are of higher interest for the service firms participating in the studies.

As far as the current state of research is concerned, many factors are investigated in the context of frontline employees and their performance in service interactions. Even if one looks at only the eleven selected factors, the result is a complex web of interdependencies that is confusing and no longer manageable for the service practitioner. The field of frontline employee research, in conjunction with service encounters, is cluttered. The limitation to eleven factors within the scope of this dissertation's empirical considerations is only one way of dealing with this clutteredness. Table 7 lists the extracted frontline employee influence factors and their descriptions.

Table 7: Descriptions of Frontline Employee Influence Factors

Frontline Employee Influence Factors	Description
<i>Person-Related Factors</i>	
Creativity	Creativity is needed to create a new service, adapt an existent service offering, service delivery, or react to unanticipated events during the service process.

Frontline Employee Influence Factors	Description
Knowledge	Knowledge is essential for frontline employees to react to different stakeholder demands, especially superiors, peers, and customers.
Self-Efficacy	Self-efficacy describes one's expectations about oneself to manage, e.g., the interaction with the service customer according to the demands of superiors, customers, and other stakeholders, which may change over time.
<i>Organization-Related Factors</i>	
Emotional Exhaustion	Emotional exhaustion depicts the condition when frontline employees can no longer respond to the customer adequately from a psychological point of view because the requested demands are higher than the time and effort at their disposal.
Motivation	Motivation conceptualizes the level of effort one puts into achieving a particular goal via specific behaviors.
Organizational Commitment	Organizational commitment involves frontline employees' congruence with the service firms' values and goals and the degree to which frontline employees are willing to put effort into their work for the service company and stay in the company.
Stress (Role Ambiguity, Role Conflict, Role Overload)	Stress is defined to consist of three role stressors: role ambiguity, role conflict, and role overload. Frontline employees experience role conflict when conflicting demands are directed at them, not knowing how to deal with this conflict appropriately. Role ambiguity develops when there is insecurity about how to behave in compliance with, e.g., the service company's regulations, competencies, or superiors' expectations. Role overload describes when the resources to fulfill one's role are insufficient, e.g., insufficient time to answer customer requests.
Teamwork	Teamwork denotes the degree of unity, integrity, and conformity to employees working together to achieve a common goal.
<i>Service-Related Factors</i>	
Customer Orientation	Customer orientation describes to which degree frontline employees can go with service customers' demands and individual characteristics.
Service Orientation	Service orientation is to which degree frontline employees see themselves as providers of a service and may indicate how helpful, empathetic, solution-oriented they are.
Service Recovery Performance	Service recovery performance describes how good a service company and its employees are at winning back customers who have had a bad service experience.

As previously explained, the current state of research creates a somewhat chaotic picture. The derived 17 hypotheses (cf. Table 8) attempt to sensibly supplement the network of relationships between these factors that have already been examined in previous research.

Table 8: Research Hypotheses

H₁:	Frontline employees' perceived level of creativity is positively related to frontline employees' perceived level of customer orientation.
H₂:	Frontline employees' perceived level of creativity is positively related to frontline employees' perceived level of service orientation.
H₃:	Frontline employees' perceived level of self-efficacy is positively related to frontline employees' perceived level of service orientation.
H₄:	Frontline employees' perceived level of self-efficacy is positively related to frontline employees' perceived level of service recovery performance.
H₅:	Frontline employees' perceived level of emotional exhaustion is negatively related to frontline employees' perceived level of service orientation.
H₆:	Frontline employees' perceived level of motivation is positively related to frontline employees' perceived level of service orientation.
H₇:	Frontline employees' perceived level of organizational commitment is positively related to frontline employees' perceived level of service orientation.
H₈:	Frontline employees' perceived level of role conflict is negatively related to frontline employees' perceived level of customer orientation.
H₉:	Frontline employees' perceived level of role conflict is negatively related to frontline employees' perceived level of service orientation.
H₁₀:	Frontline employees' perceived level of role ambiguity is negatively related to frontline employees' perceived level of customer orientation.
H₁₁:	Frontline employees' perceived level of role ambiguity is negatively related to frontline employees' perceived level of service orientation.
H₁₂:	Frontline employees' perceived level of role overload is negatively related to frontline employees' perceived level of customer orientation.
H₁₃:	Frontline employees' perceived level of role overload is negatively related to frontline employees' perceived level of service orientation.
H₁₄:	Frontline employees' perceived level of teamwork is positively related to frontline employees' perceived level of customer orientation.
H₁₅:	Frontline employees' perceived level of teamwork is positively related to frontline employees' perceived level of service orientation.
H₁₆:	Frontline employees' perceived level of organizational commitment is positively related to frontline employees' perceived level of service recovery performance.
H₁₇:	Frontline employees' perceived level of teamwork is positively related to frontline employees' perceived level of service recovery performance.

With the selection of a theoretical foundation, the extraction of the top eleven frontline employee influence factors analyzed in previous research, and the derivation of hypotheses, this dissertation's research model is displayed in Figure 13.

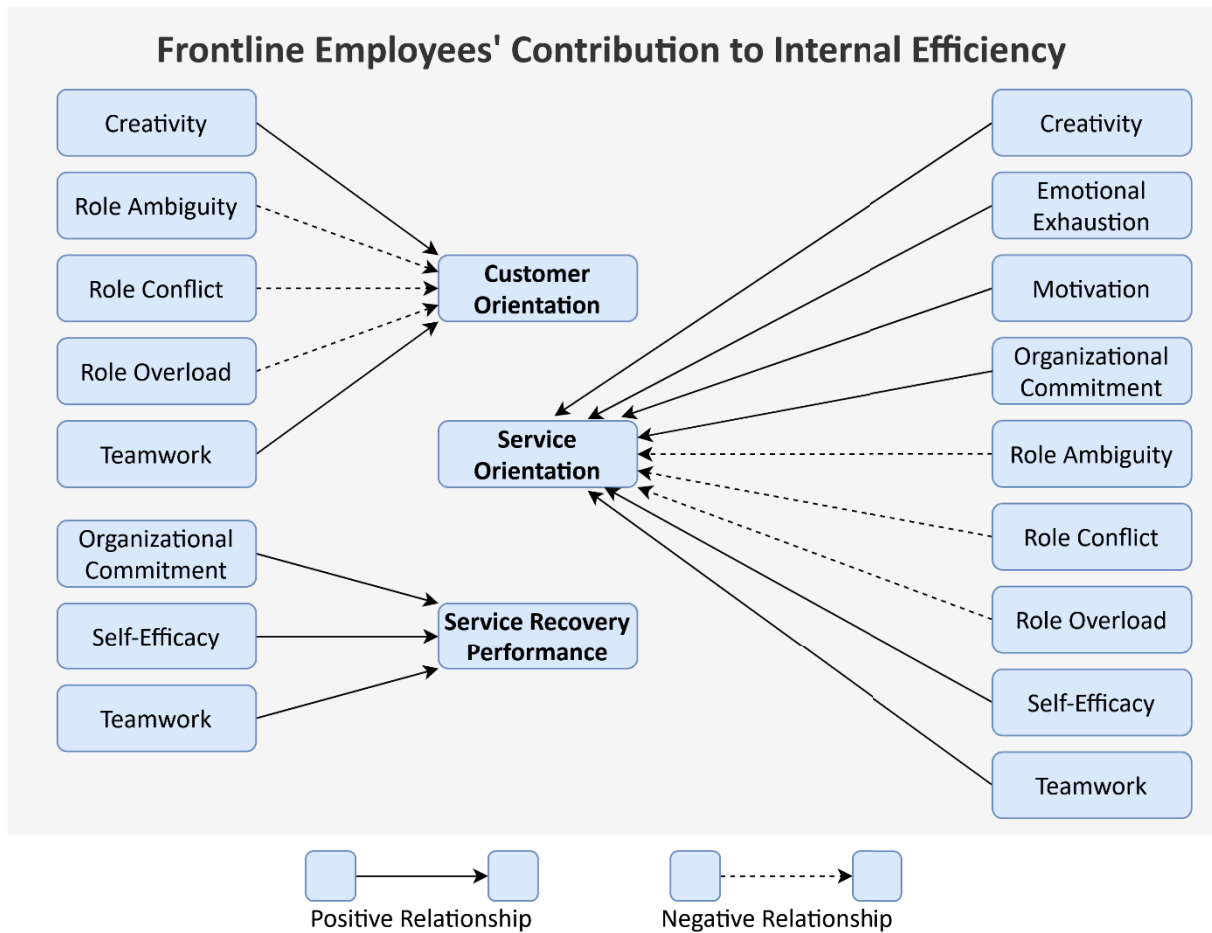


Figure 13: Research Model

The research model displayed in Figure 14 shows the combination of the research model stemmed from the Grönroos-Ojasalo-service-productivity-model (cf. Chapter 2.2.1) and the hypotheses deduced from the research gaps resulting from the systematic literature review (cf. Chapters 2.5, 2.6, 2.7).

2 SERVICE PRODUCTIVITY AND SELECTION OF A THEORETICAL FRAMEWORK

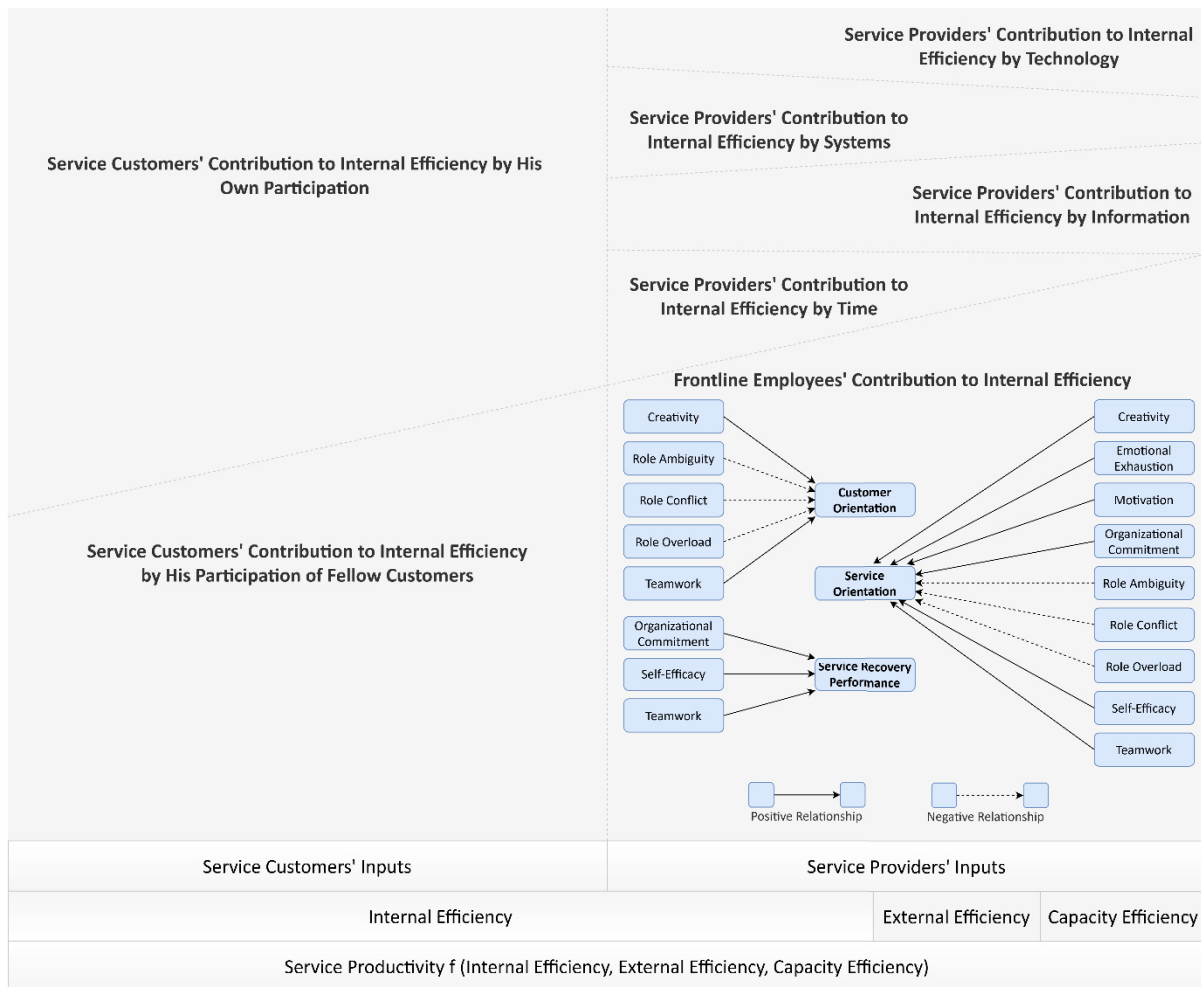


Figure 14: Research Embedded in Grönroos-Ojasalo-Service Productivity Model

In the forthcoming chapters, the focus will be on the empirical validation of the research model. Therefore, the research design will be introduced, the employed questionnaire presented and evaluated. Data analysis, results, and interpretation of results will be elaborated.

3 METHODS

As announced, Chapters 3 and 4 are dedicated to the empirical study in this dissertation. Chapter 3 will shed light on all methodological aspects preceding the data analysis, including sample selection and sampling procedure, questionnaire design and evaluation, and data collection. Furthermore, it will be discussed which methods will be applied for data analysis based on the questionnaire design format. Subsequently, Chapter 4 presents the data descriptively, also elaborating on the sample composition, before analyzing the data using ordinal regression. Interpretation of results follow.

3.1 Sample Selection

In the following, it will be explained why scientific libraries will make up the major part of the sample, especially in light of the issues outlined in the introductory part (cf. Chapter 1.1). Then, the service sector being selected for the study will be characterized shortly. Chapter 3.2 then explains the sampling procedure.

First, frontline employees were the target of this study as they are considered one of the key factors for improving service productivity (cf. Chapter 1.1).

Second, the public service sector will face rising demands in the years to come, and pathways for productivity improvements have to be explored more thoroughly. Third, the centre of attention in past research laid on the private service sector (cf. Chapter 2.4.2.) so that new empirical evidence from public service companies adds to the existent body of research (Parker et al., 2013, p. 662).

One of the main differences between service companies of the private and the public service sectors is the incentive structures that service organizations must submit. As private service companies' main duty is to do their business to survive the regulation of the market, the public service companies are not subject to this regulatory effect.

However, some countries started initiatives that partially diluted the right of existence of public service companies. This deliberate weakening aimed at path building for changes towards efficiency and efficacy that traditional incentive structures did not foster (Laing, 2003, pp. 437–438). Enveloped in this so-called New Public Management paradigm is the necessity to elevate public service organizations' way of doing their business considering management principles

and know-how from the private service sector. This topic found its way into research (Dunleavy & Hood, 1994, p. 9). However, public organizations' fundamental corpse is still present and will not be transformed into a private service company wearing a public label (Parker et al., 2013, pp. 660–661).

In contrast to private sector service companies, public service companies' service contributes to fulfilling an individual service customer's need and the common good (Laing, 2003, p. 432). In the case of public education service providers such as universities and their affiliated institutions, e.g., scientific libraries, the service customers, by using this service, become well-educated members of the society. Consequently, these well-educated former service customers participate in the societies' welfare creation system and establishment that beforehand financed their education. They do this by fulfilling their tasks, e.g., as a teacher at a public school or librarian at a scientific library, or as an engineer in a private sector company that pays taxes to the public purse.

One can see that there is a spectrum of different service organizations within the area of public service. Laing (2003, p. 438) considered public service companies contributing primarily to public welfare or contributing primarily to individuals' service demands. With the focus on social welfare or private demands, the possibility of output allocation of the service regarding a single service customer varies, as does the main service evaluation source. Table 9 shows the spectrum of public service developed by Laing (2003, p. 438) with the integration of scientific libraries into it made by the author of this dissertation.

Table 9: Spectrum of Public Service

Social Benefits Dominant			Private Benefits Dominant		
Customs & Excise	Criminal Justice	Education Scientific Libraries	Health Care	Public Transport	Public Housing
Professional Judgement Dominant			Consumer Judgement Dominant		

Source: Laing (2003, p. 438)

What is common for all public services is that there is no such thing as competition between public service organizations' customers. Although capacity and demand do not always fit, everybody has the right to demand public service (Butler & Collins, 1995, p. 87). Still, there are service offerings in the public service sector that demand a kind of access. For example, in scientific libraries,

users have to be enrolled as students at the affiliated scientific service organization, e.g., the university, or grant access by paying a user fee.

The service offerings of scientific libraries were classified as belonging to educational service that is located in the middle of the spectrum together with health care service. Thus, scientific libraries' service feeds private and public interests and is subject to professional and service customer's judgment.

The endogeneous push to the topic of productivity improvements via New Public Management (Düren, Landoy, & Saarti, 2017) and the exogenous pull by increasing demands for public service generally, and insufficient research in this service science area, substantiates carrying out this dissertation's empirical study sampling scientific libraries as an example for public service organizations. In the following, this particular sector of public service organizations will be described focusing on German conditions.

In Germany, in 2019, there were 730 scientific libraries, including subsidiaries and specialized libraries that belonged to 426 universities, universities of applied sciences, and other scientific institutions. In total, there were 2.36 million people actively using the service offerings of the scientific library. More than 11,000 people were employed by scientific libraries (Heugen-Ecker, 2020). Figure 15 presents the numbers over time; one can see that these numbers kept relatively stable.

In all 426 German universities, universities of applied sciences, and other scientific institutions, 2.89 million students were enrolled in October 2019, which increased since October 2004, about one-third from 1.96 million (Destatis, 2020). Apart from students and other universities and institutions, non-students and non-university members can also grant access to scientific libraries. Although the number of potential library users increased during the last fifteen years, the number of actual library users decreased from 2.95 million in 2015 to 2.36 million in 2019 (Heugen-Ecker, 2020).

3 METHODS

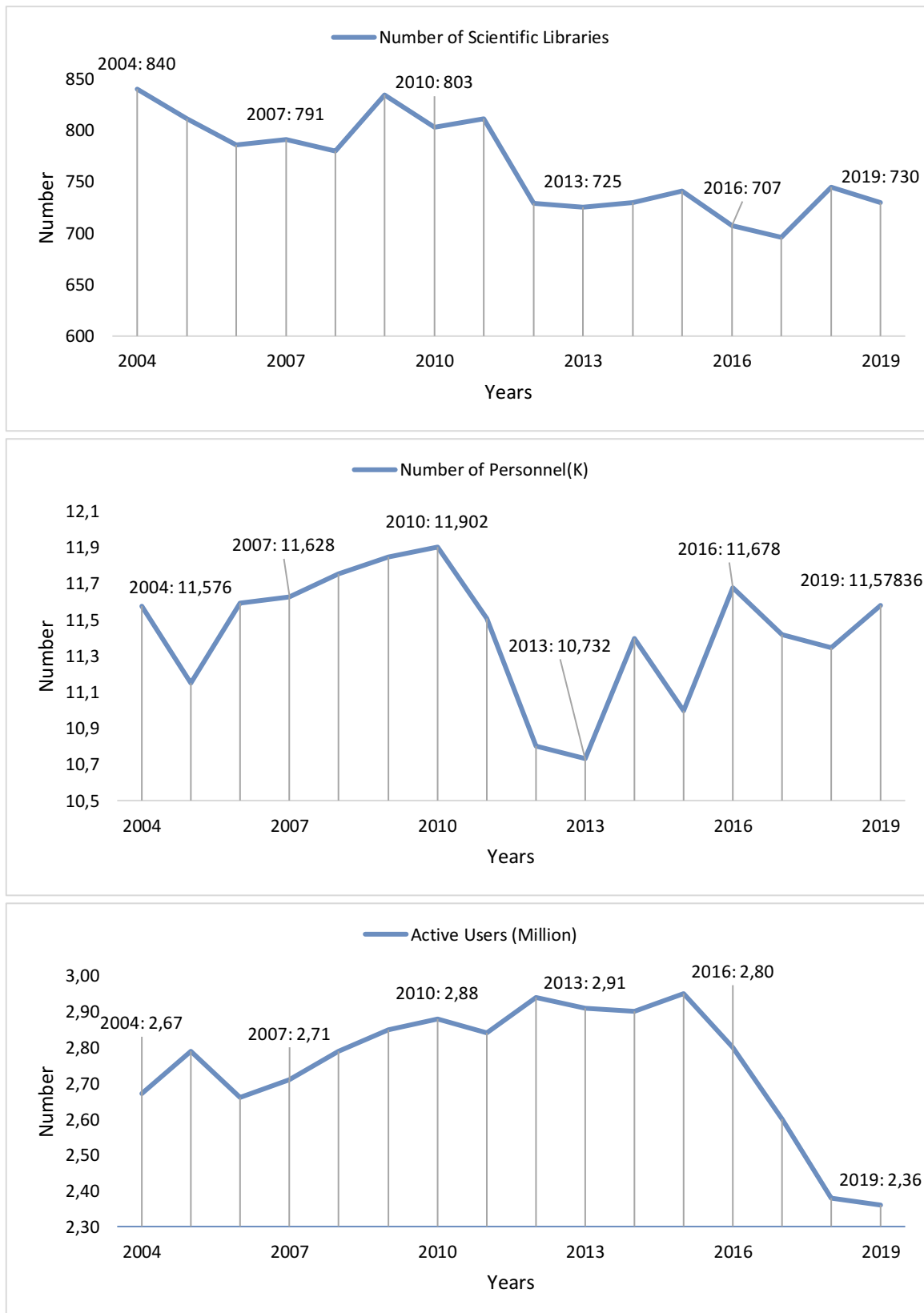


Figure 15: Number, Employees, and Active Users of German Scientific Libraries from 2004-2019

Source: Heugen-Ecker, 2020

This decrease of active users may be due to increased online availability of media that made information provided by a scientific library obsolete and the generation of users that grew up with today's standard technology (D' Couto & Rosenhan, 2015, p. 565). Still, especially the main target groups of scientific libraries, students and researchers (doctoral students, professors, and other research personnel), need the scientific library as a platform to access information that, without the library and its special position for negotiating with publishers, would be behind a paywall on the internet. Also, actively using a scientific library's service offerings is connected with a different quality of education. In interviews with faculty members of an Australian university, Yevelson-Shorsher and Bronstein (2018, pp. 543–544) revealed that there is an observable difference between students using the library and its service and the ones not using it.

However, scientific libraries undergo a developing process. The traditional library transforms from a place of finding information and dispensing it in printed form to a “hybrid library” (Seefeldt & Syré, 2017, p. 147), where users can access loads of information digitally and, also, still in analogue form. Consequently, also the tasks of a library and its personnel do change (Wasserman & Berkovich, 2020). Koltay (2016, p. 95) identified four tasks for future libraries: 1) information literacy education, 2) research data service, 3) supporting individual faculty members, and 4) raising awareness on different issues. Information literacy education and research data service are tasks showing that provision of information does not only mean providing media of all kinds in different forms. It also includes teaching competencies for dealing with this information (search, select, evaluate, process) (Koltay, 2016, pp. 95–97; Seefeldt & Syré, 2017, pp. 148–149). Also, scientific libraries are places where this information processing occurs, where users meet, discuss, work, and create new knowledge (Seefeldt & Syré, 2017, p. 142). Additionally, the management of information and research data moved more into the focus. Compared to the time thirty years ago, getting information is not a problem anymore, but managing is. One component is the abilities summarized as information literacy; another component is establishing infrastructure for storage, for publication and, therefore, creating visibility of research results and quality management (Christensen-Dalsgaard, 2012, as cited Koltay, 2016, p. 98). Supporting individual faculty members and raising awareness regarding specific issues are tasks showing that, despite the technological knowledge expected from future library personnel, frontline employees in libraries face changes in their roles. In the future, the proportion of consultancy and teaching work will increase. Fundamental technological comprehension mir-

rored in a high information literacy and competencies in research data management will be necessary for future librarians (Schulte, Tiffen, Edwards, Abbot, & Luca, 2018, p. 687).

The previous remarks on the transformation process of academic libraries and the associated changes in user behaviour in the library function as a place of knowledge and information management, of coming together, learning and educating, also show the new and increased demands on frontline employees in libraries. Accordingly, the academic library is less and less a pure distributor of knowledge, and more a platform with the function of managing the huge amounts of information and, as Seefeldt and Syré (2017, p. 148) put it, of being the "navigators on the ocean of knowledge".

In recognition of the increasing demand for education in the future (cf. Chapter 1.1) and the associated urge to make better use of existing resources to meet this increased demand, there are various levers to be tightened, one of which is the frontline employees, the librarians.

Apart from frontline employees in scientific libraries, it has been declared to analyze differences between frontline employees in private and public service companies (cf. Chapter 2.6.3). Thus, the sample also contains data from frontline employees working in German pharmacies and stores of a major German book retailer. The selection of service industries followed no explicit rule but pragmatism. There was the assumption that, in the case of pharmacies, survey fatigue would play a minor role, and, in the case of the book retail chain, the data was available due to contacts to the companies' CEO. Having the data of frontline employees from a book retail chain may be interesting as there are overlaps between frontline employees in scientific libraries and frontline employees working in book retail stores. Frontline employees in pharmacies may be a good contrast, and therefore having this data in the sample may also offer interesting insights.

As will be revealed in the elaborations on the sampling procedure, more possibilities to create a big dataset were used. Thus, besides data from scientific libraries in Germany, Russian scientific libraries could also be included in the dataset. Furthermore, data from one public library and diverse private companies are included in the dataset.

3.2 Sampling Procedure

As a sample design, a mixed design was chosen. As the descriptions of the sample's different subpopulations reveal, a random sample design would not have been appropriate. The population, e.g., of all German frontline employees working in service organizations, would have been too vast. That is why single service industries were chosen. Of course, one could consider why a random sample design was not used for the population of all German libraries or the subpopulation of all German university libraries. As the numbers will show, the response rate of frontline employees in German university libraries was low, so the sample's limitation to the population of German libraries or even the subpopulation of German university libraries would have resulted in too few participants.

Furthermore, missing data will be treated case-wise, meaning every survey with missing data will be deleted, diminishing the data basis. In turn, this makes every participant count. Additionally, populations that feel more comfortable with the internet are more likely to answer the survey invitation (Shih & Fan, 2008, pp. 258–259). In today's working environment, many work processes are supported and operated with the help of ICTs. It is assumed for all subpopulations of the sample that they are familiar with working with ICTs, and a relevant yet undefined part of their daily work is done with the help of ICTs. Consequently, it is supposed that they are more likely to participate in a web-based survey.

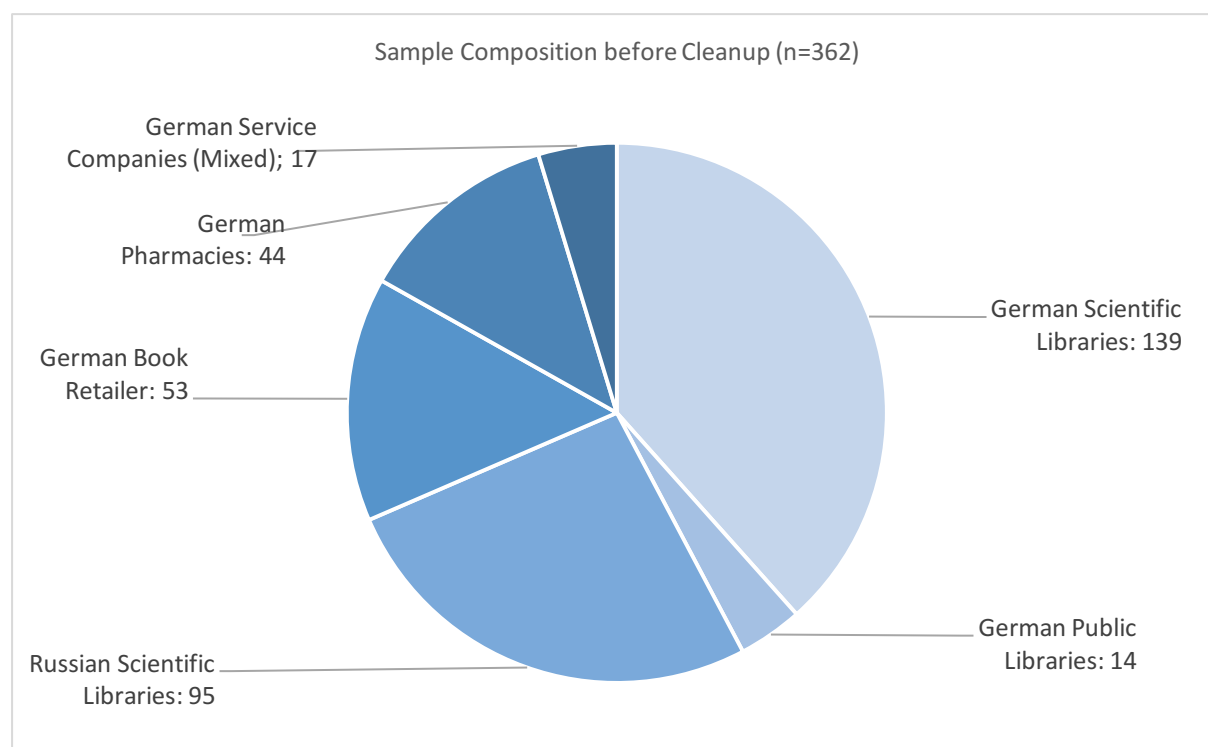


Figure 16: Sample Composition before Cleanup (n=362)

The subpopulations selected were frontline employees of German and Russian university libraries, a German book retail chain, and German pharmacies. Service firms of the German federal states of Berlin, Brandenburg, and Saxony were invited to the survey to reflect the service sector's diversity and the possible associated differences between frontline employees of different service industries.

Based on the number of students at universities and universities of applied sciences in Germany, all scientific libraries were selected to be contacted when their belonging university or university of applied sciences had at least 1,000 students. In this manner, a pool of 251 potential scientific university libraries was obtained. 30 of these 251 potential university libraries could not be contacted because they were either completely online or used the libraries of other higher education institutions. The management of the remaining 221 libraries was contacted. If there was no response, a reminder was sent after four weeks. Twenty-two libraries declined to participate in the study. Fourteen libraries explicitly confirmed their participation. That makes a response rate (reference point being the whole institution, not the number of frontline personnel) of about 6.3%. Nine libraries participated so their answers could be assigned to their institution, making for a response rate of about 4%. Of the others, it cannot be ruled out if frontline employees working there also took part in the survey and if library management sent the survey to subsidiary locations and professional libraries, e.g., for medicine.

In the end, 139 frontline employees from German scientific libraries participated in the survey, 98 from nine libraries and 41 from the remaining 212. Furthermore, one public non-university library participated in the study. From this library, fourteen frontline employees participated in the survey. A further rollout of the survey to public non-university libraries was considered but discarded due to public libraries' low response rate after the study plan was presented and advertised during a national library meeting¹.

The translation and roll-out of the study to Russian university libraries were realized with a Russian student research assistant's help during summer 2017. The invitation for study invitation was sent to the 200 most prominent Russian universities. 95 Russian frontline employees from university libraries participated.

¹ For further information please go to <https://lesewolke.wordpress.com/2017/03/16/tdbbb-2017/> ; 04.10.2018

Secondly, German pharmacies were selected because it was estimated that they are seldom invited to surveys, suffer less from survey fatigue, and are more willing to participate in the study. The survey was carried out as part of a bachelor thesis using the survey constructed by the author of this dissertation. Forty-four frontline employees of German pharmacies participated in the survey.

Thirdly, it was possible to distribute the survey within selected sectors of a German stationary book retailer. The selection of branches was made by one of the members of the management board. Fifty-three frontline employees participated in the survey.

Fourthly, service firms were contacted personally on a recruiting fair hosted by the Brandenburg Technical University Cottbus-Senftenberg, Germany. The response rate was unsatisfactory. Apart from small- and medium-sized service firms, there were also big service firms present. Unfortunately, no cooperation could be formed that permitted the survey's distribution within the whole service organization. Only seventeen frontline employees participated in the study who are assumed to have been the contact persons at the fair.

No matter which subpopulation, the participation of the survey was voluntary.

3.3 Instruments

3.3.1 Questionnaire Design

In total, the questionnaire comprises 58 items in twelve sections. Eleven sections present the factors influencing frontline employees that were extracted from the systematic literature review. Sociodemographic data were obtained through the questions in section twelve.

For the questionnaire constructed and employed in this dissertation, eleven questionnaire sections collect data about frontline employee influence factors. Each was measured by a particular scale presented in Chapters 2.5, 2.6, and 2.7. All scales with their basic information can be seen in Table 10.

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Table 10: Basic Information of Employed Scales

	Source	No. of Items [Original Scale Employed Scale After Questionnaire Evaluation]	Item Removal Because of ...
Person-Related Factors			
Creativity	J. Zhou & George, 2001	13 4 4	---
Knowledge	Behrman & Perreault, 1982	5 4 2	Feedback of participat- ing service organiza- tion; "conservation" of 40 datasets
Self-Efficacy	Jones, 1986	8 3 2	Feedback of participat- ing service organiza- tion; reliability analysis
Organization-Related Factors			
Emotional Exhaustion	Maslach & Jackson, 1981	9 5 4	Selection of Ashill et al., 2015; reliability analysis
Motivation	Low et al., 2001	4 3 3	Feedback of participat- ing service organiza- tion
Organizational Commitment	Mowday et al., 1978	15 6 4	Selection of researcher due to anticipated response bias (social desirability); reliability analysis
Stress: Role Ambiguity	Rizzo et al., 1970	15 3 2	Ashill et al., 2015; feedback of participat- ing organization
Stress: Role Conflict	Rizzo et al., 1970	15 3 3	Ashill et al., 2015
Stress: Role Overload	Beehr et al., 1976	3 3 3	---
Teamwork	Parasuraman et al., 1991b	5 4 4	Reliability analysis
Service-Related Factors			
Customer Orientation	Susskind et al., 2003	5 5 5	---
Service Orientation	Bettencourt et al., 2001	5 4 4	Feedback of participat- ing service organiza- tion
Service Recovery Performance	Boshoff & Allen, 2000	5 3 2	Feedback of participat- ing service organiza- tion; reliability analysis

Every one of these eleven scales consisted of items that captured the responses using a unipolar seven-point Likert format (ranging from “1” “strongly disagree” to “7” “strongly agree”). Regarding the factors influencing frontline employees, multi-item scales were preferred over single-item scales (Carifio & Perla, 2007, p. 110; J. a Gliem & Gliem, 2003). Every scale consisted of at least three items.

In this matter, Carifio and Perla (2007, p. 107) point out the importance of differentiating between scale and response format when designing a questionnaire. For the questionnaire at hand, a seven-point Likert response format was chosen. Using a seven-point format included having a midpoint. For some questions, e.g., “I feel a sense of responsibility to help my fellow employees do their jobs as well.” such a midpoint can cause respondents to answer like they think it would be expected from society (social desirability bias) (Garland, 1991, p. 66). Therefore, the mid-point of the scale should be eliminated (1991, p. 70). However, the bias is cushioned because only the extreme points of the scale were named. There was no designation for the midpoint “4”, e.g., “neither disagree nor agree.” Furthermore, social desirability bias is more relevant on scales with fewer steps and lower on scales with more steps (seven steps belong to scales with more steps; Matell & Jacoby, 1972, p. 508). Garland (1991, pp. 69–70) analyzed that answers changed when comparing results of a four-point Likert scale with a five-point Likert scale recalculated to a four-point scale. It is put into the researchers’ decisional power to eliminate the mid-point or not. Besides, a scale with seven steps is not considered to prolong testing time (Matell & Jacoby, 1972, p. 508).

Regarding the placement of sociodemographic questions at a questionnaire’s beginning or end, the research community did not find a consensus up to the researchers’ knowledge. However, awareness of this issue leads to an increased number of publications dedicated to this topic. For further reading on the mixed opinions and research regarding this placement see Hughes, Camden, and Yangchen (2016, p. 139). However, the questions targeting sociodemographical data were placed at the end of the questionnaire. By placing the sociodemographic questions at the end of the questionnaire, more priority was given to frontline employee influence factors. At the same time, this leveraged the effect of revealing information too personal when answering sociodemographic questions first. Furthermore, by this approach, the more difficult questions were asked first, and the sociodemographic questions served as a conclusion.

The questionnaire was preceded by an introductory part welcoming the participants and giving instructions for answering the questions and navigating throughout the survey.

Google Forms was used to implement the questionnaire and create an online survey. In Chapter 3.4, the reasons for carrying out the data collection via an online survey will be discussed.

The first draft of the questionnaire was evaluated with two domain experts with experience in research and industry. After incorporating this feedback, the questionnaire was discussed with four frontline employee supervisors of one of the participating German scientific libraries. The focus of these discussions laid on the length and comprehensibility of the questionnaire. Consequently, the wording of the questionnaire was customized to the library setting. Negatively worded items were reworded to avoid problems with the comprehension by survey respondents and problems with negatively worded items made in research (Babakus & Boller, 1992, p. 265). There were five iterations with the frontline employee supervisors. Then, peer researchers were invited to conduct the survey and test it regarding comprehensibility, undetected spelling and writing mistakes, usability, and completion time.

Regarding the customization of the wording, e.g., “company” or “organization” was replaced by “library,” “customers” were transformed into “library users” for the questionnaire sent to the libraries. Similar alterations were made for the questionnaire sent to pharmacies. The questionnaire for private companies was altered when there was a particular situation. For example, a big retailer participated in the study. Therefore, “company” or “organization” was replaced by the actual company name.

Sociodemographic data were collected using single choice questions. The respondents had to select the appropriate answer from a pool of possible answers. Still, there were open questions where respondents had to fill in a short written answer, such as their age or the number of years working for the company or organization they are currently working with. Additionally, a control question was included in this section to ensure respondents really were frontline employees.

The complete questionnaire can be seen in Appendix 5.

3.3.2 Questionnaire Evaluation and Measurement Characteristics

In psychology, characteristics, such as empathy or creativity, are measured using the correspondent scales. In this study, the questionnaire comprises several scales measuring the factors influencing frontline employees.

In the following, every step of evaluation always targets the different scales comprised in the questionnaire. Therefore, the term “scale” refers to every scale in the questionnaire, e.g., for measuring teamwork.

The quality and performance of the questionnaire are determined using three criteria: 1) objectivity, 2) reliability, 3) validity (Rammstedt, 2010, p. 240).

1) Objectivity

The objectivity of the scale is given if the respondent’s answers and questionnaire results are independent of test coordinators or persons conducting the analysis and interpretation of the results (Moosbrugger, 2012, p. 8). Furthermore, the survey situation might decrease objectivity (Rammstedt, 2010, p. 240). There are three types of objectivity: 1) operational objectivity, 2) the objectivity of analysis, and 3) the objectivity of interpretation (Moosbrugger, 2012, p. 8; Rammstedt, 2004, p. 2). The three types of objectivity, their demands, and this demand’s reflection in the present study are summarized in Table 11.

Table 11: Types of Objectivity and Their Meanings

Type of Objectivity		
Operational Objectivity	<ul style="list-style-type: none"> • Independence of test results from different test coordinators or interviewers (Moosbrugger, 2012, p. 9; Rammstedt, 2010, p. 240) • Independence of test results from the “level of continuity of test conditions” (Rammstedt, 2004, p. 2) which decreases due to interruptions while answering the test, the sequence of items influencing their context, and situational factors such as time day of the week, time of the day, weather, physical and mental state of the respondent (Rammstedt, 2010, p. 241) 	<ul style="list-style-type: none"> • Online survey, fill-out instructions • Potential source of bias by non-controllable setting while doing the survey
Objectivity of Analysis	<ul style="list-style-type: none"> • The necessity to avoid mistakes when transforming or coding answers (Rammstedt, 2004, p. 3), e.g., when different persons perform coding of data, these persons might code the same answer in a different way 	<ul style="list-style-type: none"> • Scales in Likert-scaled format • No open questions leaving room for interpretation
Objectivity of Interpretation	<ul style="list-style-type: none"> • The degree to which conclusions drawn from the results are similar, if not congruent, to each other when made by different persons (Moosbrugger, 2012, p. 10; Rammstedt, 2004, p. 4) or free from “individual notions” (Bortz & Döring, 2006) 	<ul style="list-style-type: none"> • Conclusions are drawn only by the author of this dissertation controlling the best way possible for personal connotations

As pointed out in Chapter 3.3.1, the questionnaire was an online questionnaire. As a result, the standardization level was high as there were no test coordinators potentially influencing the respondents while answering the questionnaire. Besides, every participant opening the online questionnaire received the same instructions on how to fill out the questionnaire (Bortz & Döring, 2006). Therefore, operational objectivity is given. Nonetheless, influences on the respondent’s side, such as day of the week, time of the day, general mood, setting and environmental influences of any kind when doing the survey, could not be controlled.

Regarding objectivity of analysis, the items in all scales are in a Likert scaled answer format. There are no items whose answers have to be coded. In the last section of the questionnaire targeting sociodemographic data, there are open questions such as “How old are you?” or “How long have you been working in

this company (years)?". However, the answers to these questions are considered easy to code. Finally, only the author codes the data. In conclusion, a sufficient level of objectivity of analysis is assumed.

One person only interprets the results of this study. There is no peer review. The conclusions drawn from the questionnaire can only be evaluated from this written dissertation and its materials. For this reason, the objectivity of interpretation is only given in a way that there will be no influences from different persons concluding the test results. The author ensured to exclude her notions to the best of her knowledge. As the author comprised this questionnaire, there are no preliminary data that might increase the objectivity of interpretation (Bortz & Döring, 2006). However, statistical parameters facilitating the interpretation of the results (Rammstedt, 2004, p. 4), such as the median as well as proper descriptions of the scales (cf. Chapter 3.3), are given (Moosbrugger, 2012, p. 10). Thus, this fraction of the objectivity of interpretation is given.

2) Reliability

The reliability level indicates the questionnaire's accuracy. That means reliability indicates if the scales employed in a questionnaire measure what they are supposed to measure (Bortz & Döring, 2006; Rammstedt, 2004). High reliability points to a low level of measurement errors meaning that the proportion of variance caused by measurement error is, ideally, near to zero (Cronbach, 1947, p. 1). The internal consistency method was applied to determine the reliability (Cronbach, 1947, pp. 7–9) by calculating the alpha coefficient by Cronbach (1951). Recent discussions showed the prominence and widespread use of Cronbach's alpha coefficient and its misconceptions (Sijtsma, 2009). Still, this dissertation's author stuck to this coefficient because alternative methods for the reliability analysis are difficult to access or put into use (Revelle & Zinbarg, 2009, p. 153).

In the following, issues about the interpretation of Cronbach's alpha are presented and discussed. First, regarding the level of the reliability coefficient from which it can be concluded that the scale's reliability is sufficient or not, there is no such level (Schmitt, 1996, pp. 351–352). Though, several recommendations exist that also differentiate the recommended reliability levels based on the purpose of the research (Peterson, 1994, p. 382, Table 1): First, are the results for individuals or groups? Second, are the results considered as part of preliminary, basic, or applied research? This dissertation's research results aim at the individual frontline employee ergo at an individual level. Whether the research carried out in this dissertation's empirical study can be considered preliminary,

basic, or applied is difficult. The systematic literature review in Chapter 2.4 showed that there has already been researched frontline employees and factors influencing their output-relevant variables, which is why the term “preliminary” research is considered not fitting. Applied research links to a very specific question so that research results can be translated into practical measures, e.g., in clinical research, which also has a strong and potentially vital impact on research subjects. Although this dissertation’s results do raise implications for practitioners, especially in service companies’ HR departments, this dissertation’s research results’ added value is considered more holistic. It aims to understand better the application of the already existent toolboxes for leaders and managers in service companies. Thus, this dissertation’s results are considered basic. Consequently, following Peterson’s (1994, p. 382, Table 1) recommendations regarding the reliability levels, a reliability level above 0.7 is suitable for basic research targeting individuals.

Cronbach’s alpha coefficient is not an indicator of unidimensionality (Schmitt, 1996, pp. 350–351). Still, all scales except the one for stress were assumed unidimensional scales. Stress is composed of three scales: one for role ambiguity, one for role conflict, and one for role overload. The reliability coefficients for these subscales were calculated separately. Exploratory factor analysis was performed to prove the unidimensionality of the scales but did not conclude. The results of the analysis could not be used. The determinant of the correlation matrix was too little. The number of factors was possibly too high for the sample size and multicollinearity not being the problem (Field, 2013, pp. 648–650). Since the scale design, as such, was not the focus of this dissertation and the scales employed were already tested, the author of this dissertation decided not to include the exploratory factor analysis.

Second, the alpha score is higher if the scale contains more items (Nunnally, 1967, p. 223). Ergo a shorter scale with fewer items tends to express a lower alpha (Cortina, 1993, p. 101). Still, excusing low alpha levels with the fact that the scale contains few items does not free from the fact that low alpha levels also indicate low reliability of the scale (no matter how many items it contains) (Schmitt, 1996, p. 352). Therefore, researchers have to decide when composing a questionnaire if the scales contain more or fewer items. To ensure good reliability, bringing in more items per scale is smart.

Table 10 shows with how many items per scale the author of this dissertation started to ensure reliability. Three measures reduced the scales: First, there were discussions with one of the participating service organizations, namely a

German scientific library, about the questionnaire as a whole and the scales and items in particular that also included feedback from the frontline employees themselves who previewed the questionnaire in one of the regular group meetings at the workplace (cf. Chapter 3.3.1). As a result, several scales were reduced to four or three items. Second, one part of the sample (cf. Chapter 3.1) containing data from frontline employees in pharmacies was causal for the reduction of the knowledge scale to two items. Most of the frontline employees in this subsample did not answer this one item (KNOWL3). By eliminating this item, 37 datasets could be kept. Third, the reliability analysis also may reduce the items per scale to improve questionnaire reliability.

The first two elaborated measures deteriorated, from a methodological perspective, the starting point for achieving high reliability. The author had to weigh up between methodological aspects of the questionnaire design, the discussion results with participating service organizations, sample size, which in any case influences subsequent analysis, and general aspects that would stand in the way of a high response rate. In the discussions with the participating service companies, besides aspects of data protection, the meaningfulness of some items about the concrete activity context of frontline employees and the questionnaire's length were a particular topic. The author accepted the disadvantages caused by reducing the items per scale down to a critical number to maintain the participant's partake will.

As a result, the scales reliability analysis was conducted in parts based on too few items. Ergo, starting the discussion with even more items or working on a compromise with participating service organizations to ensure a certain number of items per scale would have been better.

Third, an alpha level higher than 0.9 might indicate redundancy regarding the items and their target (Streiner, 2003, p. 102). Fourth, the corrected item-total correlation must be considered (Cortina, 1993, p. 101) and implicates good or poor internal consistency.

For the present reliability analysis, it can be concluded that item removal is done under consideration of the alpha level and the corrected item-total correlation. Thus, items with poor corrected item-total correlation below 0.3 were deleted (Field, 2013, p. 714). If the alpha level was below 0.6 and the corrected item-total correlation of one of the items was below 0.5, the whole scale was dropped for further analysis (Field, 2013, p. 709). Furthermore, items that appear to increase alpha levels by more than 0.10 when dropped were excluded from the scale to improve alpha levels.

The result of the reliability analysis can be seen in Table 12. It shows Cronbach's alpha and the corrected item-total correlation for the different scales measuring the eleven frontline employee influence factors.

Table 12: Reliability Analysis of the Top Eleven Factors Influencing Frontline Employees

Factors Influencing Frontline Employees	Items	Cronbach's Alpha	Corrected Item-Total Correlation (Lowest/ Highest)
Person-Related Factors			
Creativity	CREAT1, CREAT2, CREAT3, CREAT4 [None dropped]	0.933	0.815/ 0.866
Knowledge	KNOWL1, KNOWL4 [KNOWL3, dropped] – Scale dropped	0.569	0.490/ 0.490
Self-Efficacy	SELFE2, SELFE3 [SELFE1 dropped]	0.673	0.509/ 0.509
Organization-Related Factors			
Emotional Exhaustion	EMOTEXH1, EMOTEXH2, EMOTEXH4, EMOTEXH5 [EMOTEXH3 dropped]	0.871	0.696/ 0.758
Motivation	MOT1, MOT2, MOT3 [None dropped]	0.816	0.658/ 0.726
Organizational Commitment	COM1, COM2, COM3, COM4 [COM5, COM6 dropped]	0.840	0.558/ 0.789
Role Overload	ROOV1, ROOV2, ROOV3 [None dropped]	0.768	0.530/ 0.687
Role Ambiguity	ROAMB1, ROAMB2 [None dropped]	0.828	0.716/ 0.716
Role Conflict	ROCON1, ROCON2, ROCON3 [None dropped]	0.761	0.528/ 0.665
Teamwork	TEAMW1, TEAMW2, TEAMW4, TEAMW5 [TEAMW3 dropped]	0.723	0.462/ 0.604
Service-Related Factors			
Customer Orientation	CUSTOR1, CUSTOR2, CUSTOR3, CUSTOR4, CUSTOR5 [None dropped]	0.838	0.561/ 0.748
Service Orientation	SERVOR1, SERVOR2, SERVOR3, SERVOR4 [None dropped]	0.733	0.481/ 0.686
Service Recovery Performance	SRCP1, SRCP3 [SRCP2 dropped] – Scale dropped	0.567	0.401/ 0.401

With three exceptions (knowledge, self-efficacy, service recovery performance), all scales hold the lower boundary of the alpha score of 0.7. The scales for knowledge and service recovery performance were also dropped because of the low corrected item-total correlation. The self-efficacy scale was not dropped

because it held the boundaries of 0.6 for the alpha score and, although barely, the boundary of 0.5 for the corrected item-total correlation.

The creativity scale expresses an alpha coefficient above 0.9, indicating redundancy. However, none of the creativity items was dropped for further analysis. For ongoing research, the creativity scale should be altered due to this alpha coefficient and its implication.

Corrected item-total correlations are all above 0.3. The corrected item-total correlations reveal that the dropped scales have lower ones than the retained scales, except the scale teamwork contains one item with a lower corrected item-total correlation.

3) Validity

Validity indicates whether a scale measures what it is supposed to measure (Bortz & Döring, 2006; Rammstedt, 2004). For example, suppose there is a scale supposed to measure a person's creativity but only contains items asking how many and which types of books are read. In that case, it does not measure creativity but instead a person's likeability to read. There are three types of validity: 1) content validity, 2) construct validity, and 3) criterion-related validity (Rammstedt, 2010, p. 250; cf. Table 30).

Table 13: Types of Validity and its Meanings

Type of Validity	
Content Validity	Accuracy of measurement of scale items (Bortz & Döring, 2006; Rammstedt, 2004)
Criterion-Related Validity	Accuracy of measurement of a scale that intends to measure a variable with a "criterion" such as behaviour (Moosbrugger, 2012, p. 18; Rammstedt, 2004, p. 17); the degree to which the measurement result of the scale coincides with the criterion (Rammstedt, 2010, p. 251)
Construct Validity	Accuracy of measurement of a scale measuring a construct "which is not operationally defined" (Cronbach & Meehl, 1955, p. 282) while at the same time being selective to other constructs and not being liable to measurement error (Peter, 1981)

When constructing a scale, content validity is fundamental though complicated to prove (Rammstedt, 2010, pp. 250–251) and liable to the examiner's subjectivity (Bortz & Döring, 2006). In this study, several scales were adopted. There were no scales that the author constructed.

However, in this matter, the creativity scale may be an issue to discuss. As creativity itself is a very complex construct (Runco & Jaeger, 2012; Taylor, 1988),

the items representing the creativity scale might not adequately represent what constitutes creativity in the context of work. The items in the creativity scale are on a specific (“I suggest new ways of performing work tasks.”) and a general level (“I suggest new ways to achieve goals or objectives.”) and point to issues like the improvement of processes, customer satisfaction, and general work performance. They ask the respondent to what extent he or she contributes to these issues by making correspondent suggestions. Thus, for the creativity scale, content validity might be limited. For the other scales, content validity is ensured. To the best of her knowledge, the author selected appropriate scales. Furthermore, the questionnaire was discussed with frontline supervisors of one of the participating scientific libraries in Germany. These feedback sessions as well prove content validity.

It is stressed that content validity at a basic level is assumed for every scale, as is construct validity. All scales used in this study were applied in previous studies, thus being assumed to be tested for validity (cf. Chapters 2.5, 2.6, and 2.7). Criterion-related validity was not proven because there were no suitable criteria.

Another issue to consider is that all items were in the English language (source language) and had to be translated to German (target language) and Russian because frontline employees of German and Russian organizations were invited to participate in the survey. The dissertation author translated from English to German; a student assistant working at the dissertations’ author supervising chair translated from English to Russian. Any other person did not review both translations. As stated before, the final German wording was revised in several iterations during the survey construction.

Harkness, Pennell, and Schoua-Glusberg (2004, pp. 453, 456–457) notice missing standards for assessing the appropriateness of translations of questionnaires and elaborate on pitfalls likely to occur during a translation process. Sentences might be understood in various ways because of their structure, phrases, or words can be understood ambiguously, leading to potential misunderstanding, and there are groups of words with a similar but slightly different meaning (Harkness et al., 2004, pp. 456–457). Especially the last issues are considered relevant for the present questionnaire. Such words are “like,” “believe,” and “think” and caused difficulties during translation. For example, “believe” and “think” can be translated into German, both having the meaning of “having an opinion.” Answer scales were translated using guidelines provided by the German Leibniz Institute for the Social Sciences.

However, the translation's validity was not measured, and no method was applied to increase the objectivity of the translation.

After explaining the criteria of objectivity, reliability, and validity, further criteria will be briefly outlined (Moosbrugger, 2012, p. 8). Regarding test economy, the test is economical due to the use of an online survey tool. Furthermore, Likert-scaled items enable differentiation, meaning that frontline employees who assess themselves as less or more creatively can indicate this on the scale with less or more agreement and receive a correspondent score. The median of all item scores of one scale was used for further calculations in Chapter 7. Despite the high number of questions, the questionnaire is considered reasonable, fair, and trustworthy. At the end of the questionnaire, only the sociodemographic questions led some respondents to distrust, mainly because they feared being identifiable within their organization.

3.4 Data Collection

The questionnaire was created and administrated with Google Forms. It was distributed online via email. An invitation to participate in the survey was sent to the selected organizations' frontline employee supervisors via email. In this email, there was a link to the survey.

It was decided to conduct a web-based survey. There were several reasons for conducting a web-based survey from the researcher's and the participant's point of view (see Vaus (2002, pp. 170–171) for an overview). From the researcher's point of view, a web-based survey was chosen because the distribution of the survey via email demanded less time and cost than distributing and processing a paper-based survey. Additionally, the survey results are sent immediately to the researcher by clicking on a button; data are backed up online. The chance of losing data on the mailing route is low. Furthermore, processing data electronically decreases human error risk, e.g., by transferring paper-based survey results into data sheets to perform software supported statistical analysis, and saves time. From the survey participant's point of view, the survey's processing time is less in a web-based survey than in a paper-based survey. Ticking boxes in a web-based survey are faster and easier than filling out a paper form.

Self-selection bias must be considered when using web-based surveys for data collection (Bethlehem, 2010, pp. 161–162). It occurs when potential respondents select themselves to participate in the survey, e.g., because they are interested in the survey subject, and when researchers actively decide if certain

groups of the population, e.g., frontline employees of certain service industries, are called to participate in the survey (Heckmann, 1979, p. 153). Another disadvantage of a web-based survey is the non-controllable situation in which the participants complete the survey, e.g., the surveys can be filled out as a joint effort by two frontline employees of the same organization and cause biased results. However, when the participants' situation on responding to the survey is not controlled, it does not matter if it is web-based or paper-based. Also, web-based surveys achieve low response rates from 10 to 25% (Sauermann & Roach, 2013, p. 273).

To tackle low response rates, some considerations of Fan and Yan (2010), who collected empirical evidence about the factors influencing the response rates to web-based surveys, were adopted. The customized and personal addressing of frontline supervisors in the contacted service organizations in the email invitation was implemented (2010, p. 135). The survey was designed accordingly to the service organizations, e.g., libraries had a background full of books, to give the survey respondents a kind of exclusive feeling.

Incentives were not used. Research on the influence of incentives on response rates produces conflicting results (Cho, Johnson, & VanGeest, 2013, p. 388; Fan & Yan, 2010, p. 135; Yarger et al., 2013, p. 43).

The survey started in May 2017 and ended in November 2017. This period included an email with the first invitation to participate in the survey and an email reminding the invited to participate in the survey four weeks after the initial email invitation. Researchers considered the sending of a reminder as a substantial influence on response rates. However, there are mixed results regarding the influence on response rates (Fan & Yan, 2010, p. 135; Yarger et al., 2013, p. 43). During data collection, all questions sent by email or asked via phone by the potential participants were answered. The email invitation, the reminder, and the list with all contacted service organizations of every cluster can be found in Appendices 2, 3, and 4.

3.5 Data Analysis Methods

In the following, it will be discussed which data analysis methods will be applied in Chapter 4 concordant to the collected data's ordinal nature. The decision of which method or set of methods to analyze the collected data depends on the research question and the data format.

First, the research questions are re-capped. This dissertation aims, first, to explore the factors that influence frontline employees the most regarding their output in service interactions and, second, seek an appropriate expression for the improvements achieved by managing these frontline employee influence factors. The frontline employee influence factors are embedded in the service productivity model of Grönroos and Ojasalo as an input of the service provider; the factor's impact is expressed in the model component of internal efficiency (cf. Chapter 2.2.1).

The extraction of the influencing factors through a systematic literature review and the associated processing of the previous empirical research results provides the researcher with the information needed to identify research gaps and translate them into hypotheses (cf. Table 8). Apart from the derived hypotheses, it is also possible to translate the information about the relationships between the frontline employee influence factors into a web of relationships shown in Figure 17.

One can see the complexity that results from "only" eleven influencing factors and their relationships to each other. The complexity is increased if one looks at the relationships of customer orientation and creativity and role ambiguity and role conflict, running bi-directionally. Furthermore, mediating relationships are included, e.g., customer orientation being a mediator in the relationship between motivation and creativity.

3 METHODS

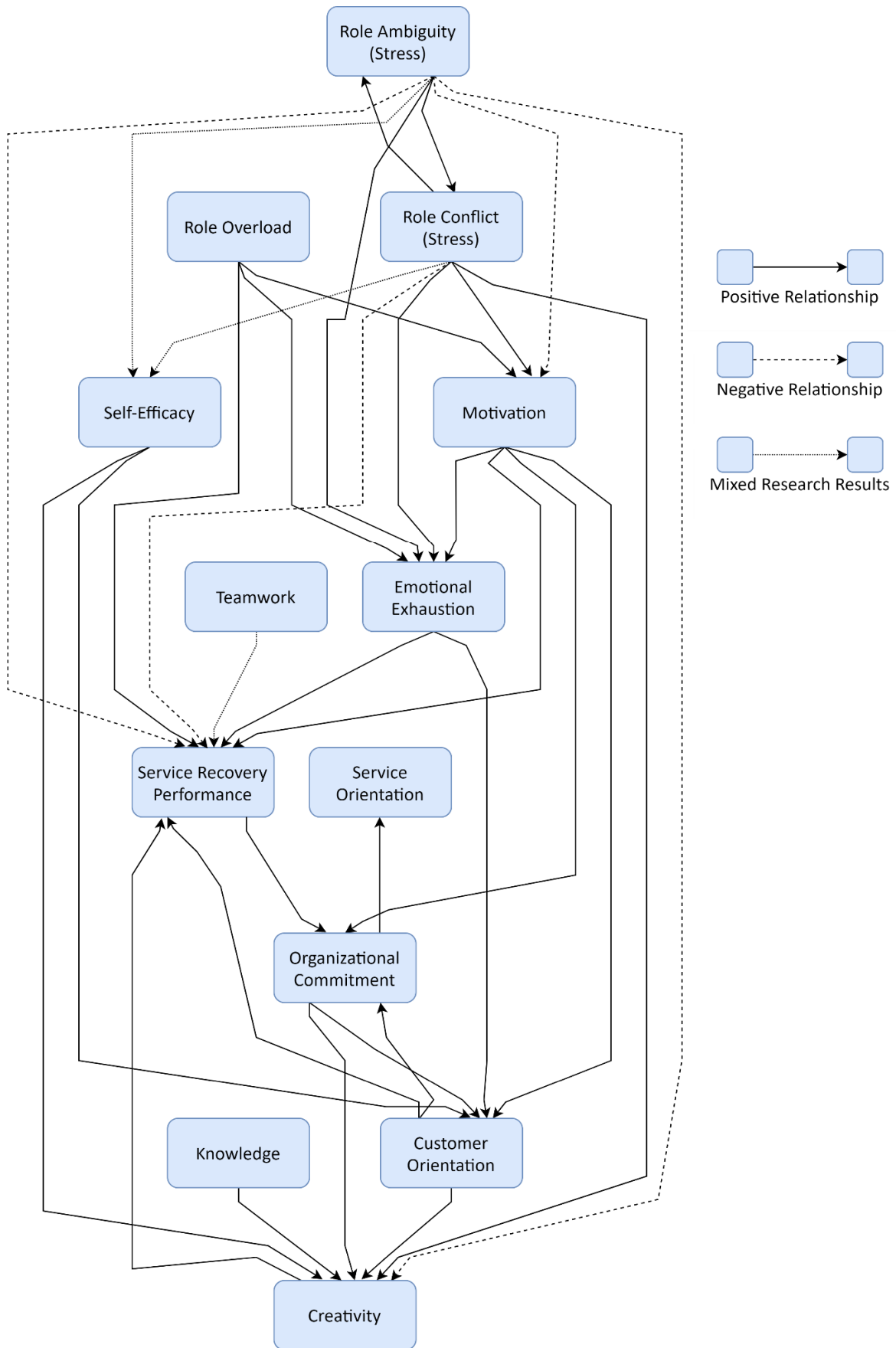


Figure 17: Web of Relationships Representing Previous Research Results Extracted From Systematic Literature Review

Coming back to the decision about data analysis methods, second, structural equation modelling and ordinal regression are appropriate data analysis methods for the given data format and research question. Structural equation modelling serves to model complex relationships and includes bigger numbers of variables (Hox & Bechger, 1998, p. 359). It needs a theoretical base on which the model building has its foundation (Schumacker & Lomax, 2010, p. 55). The model building is critical (Nachtigall, Kroehne, Funke, & Steyer, 2003). Additionally, and making structural equation modelling interesting for answering this dissertations' research question, is that it can model observable variables (also indicators) and constructs that are not observable (also latent constructs) (Schumacker & Lomax, 2010, pp. 2–3). Here, the frontline employees' contribution to internal efficiency would be the latent construct determined by the three service-related variables. The service-related variables, in turn, are influenced by the person-related and organization-related variables. All observed variables showed relationships with each other, as presented in Figure 17. Service-related factors would be indicators for the latent variable, and person-related and organization-related variables would be indicators for the service-related variables.

So far, structural equation modelling appears as the appropriate method for analyzing the collected data. Still, structural equation modelling was not performed. There were three issues. First, the data's ordinal format, second, the sample size requirements (Carvalho & Chima, 2014, p. 10), and third, complexity (Iacobucci, 2010, pp. 94–95). As outlined in Chapter 3.3.1, the items in the questionnaire are scaled in Likert format. Whether data gained from Likert-formatted items are of (quasi-)interval or ordinal nature is an ongoing debate (Jamieson, 2004, p. 1217). Those favouring the ordinal interpretation of the Likert-scale obtained data argue that the distances between the scale steps cannot be interpreted as being equal. This problem is especially arising when scales aim to collect data about feelings, opinions, or confirmation and disconfirmation (Cohen, Manion, & Morrison (2000) as cited in Jamieson, 2004, p. 1217) – which is the case for the data about the frontline employee influence factors collected in this dissertation's study. Still, defenders of the interval-data-position, e.g., Carifio and Perla (2008, p. 1150); Glass, Peckham, and Sanders (1972, p. 272); Norman (2010, p. 629), argue for the treating of Likert-scaled data as interval and emphasize the robustness of parametric tests and their overall power. However, statistical methods for ordinal data to analyze ordinal data exploit all available information (Scott, Goldberg, & Mayo, 1997, p. 46). Given the reasons explained before, the author decided to analyze the data as ordinal ones.

Regarding structural equation modelling, ordinal data require a different estimation method that asks for very large samples, such as n about 1,000 cases. Non-normal data (as can be seen in Figure 19, Figure 20, and Figure 21) also require a different estimation method that, again, requires large samples (Hox & Bechger, 1998, p. 8). As Iacobucci (2010, p. 95) shows, empirical evidence alleviates the problems of using ordinal data in structural equation modelling and its implications and having non-normal data. Still, having a minimum number of three indicators per factor and measures with good reliability helps (D. L. Jackson, 2001, p. 291).

Regarding sample size, in terms of the minimum for conducting structural equation modelling, there is no consensus among researchers (Weston & Gore, 2006, p. 734). Furthermore, D. L. Jackson (2003, p. 129), Iacobucci (2010, pp. 91–92), and Kyriazos (2018, pp. 2212–2215) present various research showing sample size has to be considered in conjunction with data characteristics. For example, format and normality of data, operationalization and quality of operationalization of observed variables (number of indicators per factors and reliability of measures). Also, the model's complexity makes bigger samples appropriate (Wolf, Harrington, Clark, & Miller, 2013, p. 924).

Concluding for this dissertation, the study comprises 224 cases. The data are nonnormal. There are factors with less than three indicators (after checking for reliability), e.g. self-efficacy and role ambiguity. Furthermore, reliability statistics are okay but not outstanding to compensate for a smaller sample size (cf. Table 12). Lastly, as shown in Figure 14, the model's complexity calls for a bigger sample size. Consequently, structural equation modelling was not performed.

Instead, ordinal regression was performed. Characteristic of ordinal data are different categories, e.g., the response categories of a Likert-scaled question. As discussed before, it cannot be assumed that the distances between the categories are equal. Thus quasi-interval scaled data would be obtained, which in turn would allow other statistical analysis methods. Ordinal regression allows a tentative prediction of when the outcome variable changes from one level to the next depending on various predictors' levels. That is, ordinal regression makes it possible to answer the question of when, e.g., customer orientation changes from, based on the Likert scale, "I agree" to "I fully agree" as a function of creativity.

Additionally, it can be argued that the binding condition for the establishment of structural equation models, namely, modelling based on sound theoretical foundations, e.g., previous empirical research results, will be decisive for the quality

of the analysis results. Following this line of argumentation, completing the existing web of relationships presented in Figure 17 would be the step before performing structural equation modelling, which can be accomplished with the present ordinal regression.

A final point related to the previously made explanations regarding the sample size is that exploratory factor analysis was conducted in the course of the questionnaire evaluation (cf. Chapter 3.3.2). The results of this analysis indicated that the sample was too small for the number of variables. Therefore, it is assumed, the structural equation modelling results would probably not be of adequate quality if complete modelling were possible due to the sample size and the complexity of the underlying model.

4 RESULTS AND ANALYSIS

In the following subchapters, the results of the study will be presented. First, there will be a description of the characteristics of the sample. Particularities that came to notice in the course of the descriptive analysis will be addressed. Second, the results of the data analysis are presented. Concordant of having two outcome variables, frontline employee perceived customer orientation and frontline employee perceived service orientation, two chapters present the results (cf. Chapters 4.2 and 4.3).

As seen in Chapter 3.3.2, the service recovery performance-scale did not fulfil the set reliability requirements and was dropped for analysis. As a result, hypotheses H₄ relating self-efficacy to service recovery performance, H₁₆ relating organizational commitment to service recovery performance, and H₁₇ relating teamwork to service recovery performance, were not tested (cf. Table 39). All statistical analyses were performed using IBM statistics software SPSS versions 25 and 26.

4.1 Descriptive Characteristics of the Sample

Sociodemographic Data

Frontline employees from different countries and different service industries were invited to participate in the survey about factors influencing frontline employees. In sum, 362 frontline employees participated in the survey. During cleanup, datasets were eliminated mainly due to the false answering of the control question (n=128). If respondents chose “no” as the answer to if they actually have direct contact with customers or not, it could not be ensured that they are frontline employees and belong to the target group of the study. Also, datasets were eliminated due to the reason explained in Chapter 3.3.2 (n=7).

The remaining 227 datasets still contained missing data. This missing data was identified as missing not at random instead of missing completely at random and missing at random (Harrell, 2015, pp. 45–46). The missing data were missings for the variables tenure in general and tenure in the current organization. As both variables did not pop up in the systematic literature review about the factors influencing frontline employees’ outcome (cf. Chapters 2.5, 2.6, and 2.7), there were considered as dispensable, especially when leaving them out in the following data analysis would conserve a higher number of data sets. By this, there were only three cases with missing data. These three cases were treated by list-

wise deletion, which resulted in 224 valid cases. The sample composition after cleanup is presented in Figure 18.

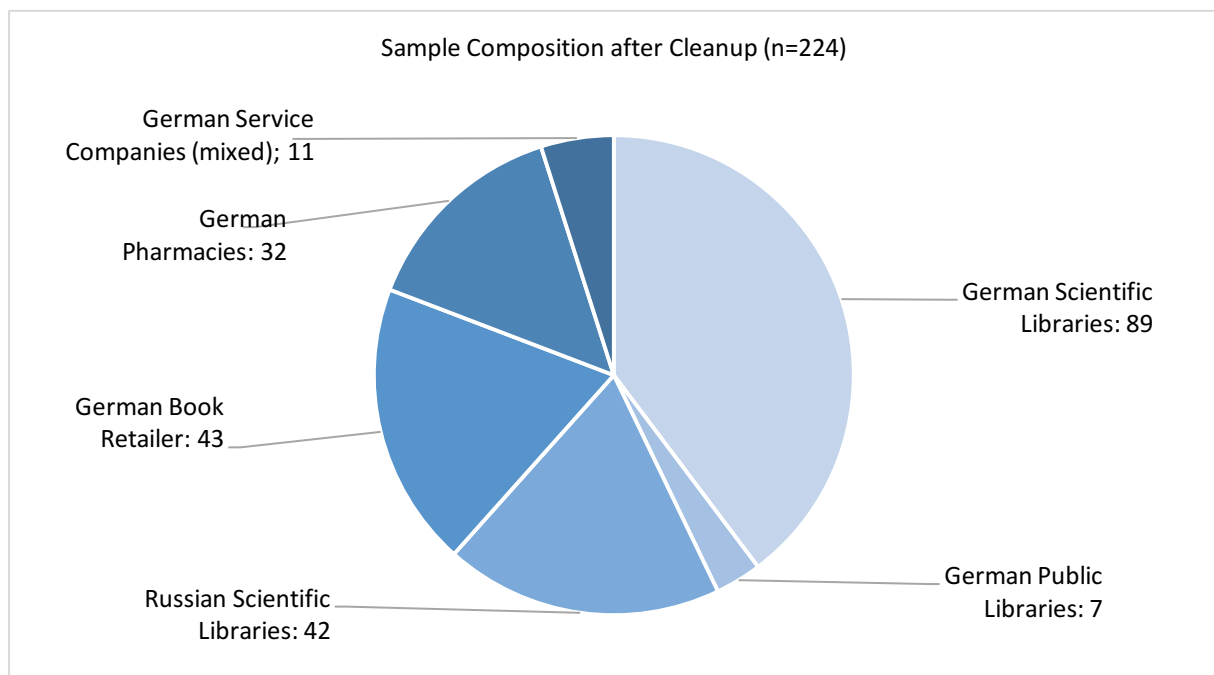


Figure 18: Sample Composition after Cleanup (n=224)

German frontline employees make up most of the participants with 81.3% (n=182), whereas only 18.8% (n=42) are Russian frontline employees. There are 61.6% (n=138) frontline employees working in a public organization and 38.4% (n=86) working in a private organization. There is no equal distribution between Russian and German frontline employees working in public and private organizations. From Russia, only frontline employees working in public organizations were invited for survey participation.

The youngest survey participant was 21; the oldest was 66 years old (mean=44.64, median=47.00). The variable age is not normally distributed. Instead, there is a right-skewed multimodal distribution. Also, there is no balanced distribution across genders. The majority of 82.1% of participants were female frontline employees (n=184); only 17.9% (n=40) participants were male. The imbalance of female and male frontline employees remains when viewed country-wise and by type of organization (cf. Table 14).

4 RESULTS AND ANALYSIS

Table 14: Summary of Sociodemographic Characteristics of the Sample (n=224)

Frequencies					
<i>Gender Total</i>		<i>Gender Germany</i>		<i>Gender Russia</i>	
Male	Female	Male	Female	Male	Female
40	184	38	144	2	40
<i>Age</i>					
21-30	31-40	41-50	51-60	61-99	Mean
44	30	69	65	16	44.64
<i>Country</i>					
Germany	Russia				
182	42				
<i>Educational Level</i>					
Certificate of Secondary Education	A-Levels	Vocational/ Industrial Training	Bachelor	Master	Doctorate
10	32	39	35	94	14
<i>Leadership Responsibilities</i>		<i>Leadership Responsibilities Germany</i>		<i>Leadership Responsibilities Russia</i>	
No	Yes	No	Yes	No	Yes
118	106	115	67	3	39
<i>Working Fulltime</i>					
No	Yes				
51	173				
<i>Type of Organization</i>					
Public	Private				
138	86 (only German Frontline Employees)				

Percentages (%)					
<i>Gender</i>		<i>Gender Germany</i>		<i>Gender Russia</i>	
Male	Female	Male	Female	Male	Female
17.9	82.1	20.88	79.12	4.76	95.24
<i>Age</i>					
21-30	31-40	41-50	51-60	61-99	
19.6	13.4	30.8	29.0	7.1	
<i>Country</i>					
Germany	Russia				
81.3	18.8				

4 RESULTS AND ANALYSIS

<i>Educational Level</i>					
Certificate of Secondary Education	A-Levels	Vocational/ Industrial Training	Bachelor	Master	Doctorate
4.5	14.3	17.4	15.6	42.0	6.3
<i>Leadership Responsibilities</i>		<i>Leadership Responsibilities Germany</i>		<i>Leadership Responsibilities Russia</i>	
No	Yes	No	Yes	No	Yes
52.7	47.3	63.19	36.81	7.14	92.86
<i>Working Fulltime</i>					
No	Yes				
22.8	77.2				
<i>Type of Organization</i>					
Public	Private				
61.6	38.4 (only German Frontline Employees)				

As most of the variables in this study are ordinal and the data analysis methods employed combine every manifestation of one variable with the manifestations of all other variables, age would produce many categories when not categorized. These many categories probably lead to problems due to combinations of variable manifestations that are very seldom or not present. Therefore, the variable age was categorized (21-30, 31-40, 41-50, 51-60, and 61-99).

Several contingency analyses were performed to understand the sample better after the first descriptive elaborations. The resulting crosstabulations (cf. Tables Table 15, Table 16, Table 17, and Table 18) contain two dimensions represented in the columns and rows, respectively. Then, absolute numbers and relative numbers (in percentages) are provided. The standardized residuals hint at the result's significance, as do the indices given in the row "count". Standardized residuals beyond ± 1.96 , ± 2.58 , and ± 3.29 point to significance levels with p-values at <0.05 , <0.01 , and <0.001 (Field, 2013, p. 699). If the indices in the row "count" are equal, then no significant difference between the two observed groups can be assumed; if the indices are different, this points to a notable difference between the two groups (Field, 2013, p. 741). Different indices were marked in red; notable rows are in bold.

It has to be noted that the contingency analyses are for the purpose of a more detailed description of the sample and do not serve to conclude onto the basic population from which the sample only contains one random part. Further going

conclusions would be biased by the multiple comparisons problem (Gelman, Hill, & Yajima, 2012, pp. 189–190).

Regarding their educational level, survey participants were asked to specify their highest obtained degree. The lowest degree was the certificate of secondary education, which was achieved by 4.5% of the frontline employees ($n=10$). To more or less equal parts, a-levels ($n=32$, 14.3%), vocational training ($n=39$, 17.4%), and bachelor degree ($n=35$, 15.6%) were obtained. Ninety-four frontline employees (42.0%) specified the master's degree as their highest educational level; 6.3% ($n=14$) obtained a doctorate. Looking separately at Russian and German frontline employees reveals that German and Russian frontline employees' educational level proportions are different for a-levels, vocational training, and bachelor's degree (cf. Table 15). There were more German frontline employees with these degrees as their highest educational level.

4 RESULTS AND ANALYSIS

Table 15: Crosstabulation of Educational Level * Country (n=224)

Educational Level		Country		Total
		GER	RUS	
Certificate of Secondary Education	Count	8 _a	2 _a	10
	Expected Count	8,1	1,9	10,0
	% within Educational Level	80.0%	20.0%	100.0%
	% within Country	4.4%	4.8%	4.5%
	% of Total	3.6%	0.9%	4.5%
	Standardized Residual	0.0	0.1	
A-Levels	Count	32 _a	0 _b	32
	Expected Count	26.0	6.0	32.0
	% within Educational Level	100.0%	0.0%	100.0%
	% within Country	17.6%	0.0%	14.3%
	% of Total	14.3%	0.0%	14.3%
	Standardized Residual	1.2	-2.4	
Vocational/ Industrial Training	Count	38 _a	1 _b	39
	Expected Count	31.7	7.3	39.0
	% within Educational Level	97.4%	2.6%	100.0%
	% within Country	20.9%	2.4%	17.4%
	% of Total	17.0%	0.4%	17.4%
	Standardized Residual	1.1	-2.3	
Bachelor	Count	16 _a	19 _b	35
	Expected Count	28.4	6.6	35.0
	% within Educational Level	45.7%	54.3%	100.0%
	% within Country	8.8%	45.2%	15.6%
	% of Total	7.1%	8.5%	15.6%
	Standardized Residual	-2.3	4.9	
Master	Count	79 _a	15 _a	94
	Expected Count	76.4	17.6	94.0
	% within Educational Level	84.0%	16.0%	100.0%
	% within Country	43.4%	35.7%	42.0%
	% of Total	35.3%	6.7%	42.0%
	Standardized Residual	0.3	-0.6	
Doctorate	Count	9 _a	5 _a	14
	Expected Count	11.4	2.6	14.0
	% within Educational Level	64.3%	35.7%	100.0%
	% within Country	4.9%	11.9%	6.3%
	% of Total	4.0%	2.2%	6.3%
	Standardized Residual	-0.7	1.5	

Each Subscript Letter denotes a Subset of Country Categories whose Column Proportions do not differ significantly from each other at the 0.05 Level.

4 RESULTS AND ANALYSIS

Table 16: Crosstabulation of Educational Level * Country in Public Organizations (n=138)

Educational Level of Frontline Employees in Public Organizations		Country		
		GER	RUS	Total
Certificate of Secondary Education	Count	4 _a	2 _a	6
	Expected Count	4,2	1,8	6,0
	% within Educational Level	66,7%	33,3%	100,0%
	% within Country	4,2%	4,8%	4,3%
	% of Total	2,9%	1,4%	4,3%
	Standardized Residual	-0,1	0,1	
A-Levels	Count	7 _a	0 _a	7
	Expected Count	4,9	2,1	7,0
	% within Educational Level	100,0%	0,0%	100,0%
	% within Country	7,3%	0,0%	5,1%
	% of Total	5,1%	0,0%	5,1%
	Standardized Residual	1,0	-1,5	
Vocational/ Industrial Training	Count	14 _a	1 _b	15
	Expected Count	10,4	4,6	15,0
	% within Educational Level	93,3%	6,7%	100,0%
	% within Country	14,6%	2,4%	10,9%
	% of Total	10,1%	0,7%	10,9%
	Standardized Residual	1,1	-1,7	
Bachelor	Count	13 _a	19 _b	32
	Expected Count	22,3	9,7	32,0
	% within Educational Level	40,6%	59,4%	100,0%
	% within Country	13,5%	45,2%	23,2%
	% of Total	9,4%	13,8%	23,2%
	Standardized Residual	-2,0	3,0	
Master	Count	52 _a	15 _b	67
	Expected Count	46,6	20,4	67,0
	% within Educational Level	77,6%	22,4%	100,0%
	% within Country	54,2%	35,7%	48,6%
	% of Total	37,7%	10,9%	48,6%
	Standardized Residual	0,8	-1,2	
Doctorate	Count	6 _a	5 _a	11
	Expected Count	7,7	3,3	11,0
	% within Educational Level	54,5%	45,5%	100,0%
	% within Country	6,3%	11,9%	8,0%
	% of Total	4,3%	3,6%	8,0%
	Standardized Residual	-0,6	0,9	

Each Subscript Letter denotes a Subset of Country Categories whose Column Proportions do not differ significantly from each other at the 0.05 Level.

Comparing Russian and German frontline employees in public organizations (as no Russian frontline employees working in private organizations are included in the sample) reveals that more German frontline employees completed vocational training or obtained a-levels or a bachelor's degree (cf. Table 16).

The differences in the educational level between German frontline employees in public and private organizations shows that there are more frontline employees with a higher educational level (bachelor and master degree, doctorate) in public organizations than in private ones. Plus, more frontline employees with completed vocational training and a-levels work in private organizations (cf. Table 17).

4 RESULTS AND ANALYSIS

Table 17: Crosstabulation of Educational Level * Type of Organization for German Frontline Employees (n=182)

Educational Level of German Frontline Employees		Type of Organization		
		Public	Private	Total
Certificate of Secondary Education	Count	4 _a	4 _a	8
	Expected Count	4.2	3.8	8.0
	% within Educational Level	50.0%	50.0%	100.0%
	% within Type of Organization	4.2%	4.7%	4.4%
	% of Total	2.2%	2.2%	4.4%
	Standardized Residual	-0.1	0.1	
A-Levels	Count	7 _a	25 _b	32
	Expected Count	16.9	15.1	32.0
	% within Educational Level	21.9%	78.1%	100.0%
	% within Type of Organization	7.3%	29.1%	17.6%
	% of Total	3.8%	13.7%	17.6%
	Standardized Residual	-2.4	2.5	
Vocational/ Industrial Training	Count	14 _a	24 _b	38
	Expected Count	20.0	18.0	38.0
	% within Educational Level	36.8%	63.2%	100.0%
	% within Type of Organization	14.6%	27.9%	20.9%
	% of Total	7.7%	13.2%	20.9%
	Standardized Residual	-1.3	1.4	
Bachelor	Count	13 _a	3 _b	16
	Expected Count	8.4	7.6	16.0
	% within Educational Level	81.3%	18.8%	100.0%
	% within Type of Organization	13.5%	3.5%	8.8%
	% of Total	7.1%	1.6%	8.8%
	Standardized Residual	1.6	-1.7	
Master	Count	52 _a	27 _b	79
	Expected Count	41.7	37.3	79.0
	% within Educational Level	65.8%	34.2%	100.0%
	% within Type of Organization	54.2%	31.4%	43.4%
	% of Total	28.6%	14.8%	43.4%
	Standardized Residual	1.6	-1.7	
Doctorate	Count	6 _a	3 _a	9
	Expected Count	4.7	4.3	9.0
	% within Educational Level	66.7%	33.3%	100.0%
	% within Type of Organization	6.3%	3.5%	4.9%
	% of Total	3.3%	1.6%	4.9%
	Standardized Residual	0.6	-0.6	

Each Subscript Letter denotes a Subset of Type of Organization Categories whose Column Proportions do not differ significantly from each other at the 0.05 Level.

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Table 18: Crosstabulation of Educational Level * Leadership Responsibilities (n=224)

Educational Level		Leadership Responsibilities		
		No	Yes	Total
Certificate of Secondary Education	Count	7 _a	3 _a	10
	Expected Count	5.3	4.7	10.0
	% within Educational Level	70.0%	30.0%	100.0%
	% within Leadership Responsibilities	5.9%	2.8%	4.5%
	% of Total	3.1%	1.3%	4.5%
	Standardized Residual	0.8	-0.8	
A-Levels	Count	24 _a	8 _b	32
	Expected Count	16.9	15.1	32.0
	% within Educational Level	75.0%	25.0%	100.0%
	% within Leadership Responsibilities	20.3%	7.5%	14.3%
	% of Total	10.7%	3.6%	14.3%
	Standardized Residual	1.7	-1.8	
Vocational/ Industrial Training	Count	29 _a	10 _b	39
	Expected Count	20.5	18.5	39.0
	% within Educational Level	74.4%	25.6%	100.0%
	% within Leadership Responsibilities	24.6%	9.4%	17.4%
	% of Total	12.9%	4.5%	17.4%
	Standardized Residual	1.9	-2.0	
Bachelor	Count	13 _a	22 _b	35
	Expected Count	18.4	16.6	35.0
	% within Educational Level	37.1%	62.9%	100.0%
	% within Leadership Responsibilities	11.0%	20.8%	15.6%
	% of Total	5.8%	9.8%	15.6%
	Standardized Residual	-1.3	1.3	
Master	Count	43 _a	51 _a	94
	Expected Count	49.5	44.5	94.0
	% within Educational Level	45.7%	54.3%	100.0%
	% within Leadership Responsibilities	36.4%	48.1%	42.0%
	% of Total	19.2%	22.8%	42.0%
	Standardized Residual	-0.9	1.0	
Doctorate	Count	2 _a	12 _b	14
	Expected Count	7.4	6.6	14.0
	% within Educational Level	14.3%	85.7%	100.0%
	% within Leadership Responsibilities	1.7%	11.3%	6.3%
	% of Total	0.9%	5.4%	6.3%
	Standardized Residual	-2.0	2.1	

Each Subscript Letter denotes a Subset of Leadership Responsibilities Categories whose Column Proportions do not differ significantly from each other at the 0.05 Level.

One hundred and six (47.3%) frontline employees have leadership responsibilities while 118 (52.7%) frontline employees do not. Around three-quarters of the frontline employees work full-time ($n=173$, 77.2%), and 51 frontline employees (22.8%) work part-time or are in training.

Regarding leadership responsibilities, there are fewer frontline employees with leadership responsibilities with a-levels or completed vocational training with a bachelor's degree or a doctorate (cf. Table 18). For German frontline employees, it can be stated that the mean age of frontline employees without leadership responsibilities is lower than the one of frontline employees with leadership responsibilities. This difference becomes more obvious when looking at the 25th quantiles which is 29 years for the group without and 39 years for the group with leadership responsibilities (cf. Table 19).

Table 19: Comparison of Descriptive Statistics for German Frontline Employees With and Without Leadership Responsibilities ($n=182$)

	Leadership Responsibilities		Total
	No	Yes	
Count	115	67	182
Age			
Mean [SE of Mean]	40.768 [1.128]	46.791 [1.233]	42.929 [0.871]
Standard Deviation	12.097	10.094	11.750
Minimum	Maximum	21.00 62.00	26.00 63.00
0.25-Quantile	0.75-Quantile	29.00 50.50	39.00 54.00
		21.00 63.00	31.25 52.00

All factors influencing frontline employees were collected using seven-point Likert-scaled items producing ordinal data. Thus, items forming a scale for one factor were combined using the median (cf. Table 21). Hence, all the following calculations are based on the median. Despite the ordinal nature of the data and the ongoing correspondent discussion about the type of data produced by Likert-scaled items (cf. Chapter 4.4), mean, variance, standard deviation, and quantiles were reported in Table 20.

Table 20: Mean, Variance, Standard Deviation, and Quantiles of Frontline Employee Influence Factors (n=224)

Frontline Employee Influence Factors	Mean [SE of Mean]	Variance	Standard Deviation	0.25-Quantile 0.75-Quantile
Creativity	5.5446 [0.0746]	1.247	1.1166	5.00 6.50
Self-Efficacy	5.9174 [0.0659]	0.972	0.9858	5.50 6.50
Emotional Exhaustion	5.2411 [0.1056]	2.500	1.5811	4.00 6.50
Motivation	5.7411 [0.0843]	1.592	1.2617	5.00 7.00
Organizational Commitment	5.5045 [0.0853]	1.630	1.2767	5.00 6.50
Role Ambiguity	5.0982 [0.0958]	2.055	1.4336	4.13 6.00
Role Conflict	4.7455 [0.1181]	3.123	1.7672	3.00 6.00
Role Overload	4.7723 [0.1121]	2.813	1.6773	4.00 6.00
Teamwork	6.2321 [0.0583]	0.762	0.8729	6.00 7.00
Customer Orientation	6.5089 [0.0502]	0.565	0.7516	6.00 7.00
Service Orientation	6.2500 [0.0541]	0.655	0.8091	6.00 7.00

It is striking that the role stressors and emotional exhaustion have higher variances and standard deviations than the other frontline employee influence factors. Also, their distributions are flatter and broader, as indicated by the quantiles and range of values given by the extrema in Table 21. Further, the standard error of means of these frontline employee influence factors is also higher than the rest of the factors, indicating that to these factors, the mean of the sample reflects the actual mean of the population worse than the means of the other factors.

Table 21: Median, Extrema, Kurtosis, and Skewness of Frontline Employee Influence Factors (n=224)

Frontline Employee Influence Factors	Median	Minimum Maximum	Kurtosis [SE of Kurtosis]	Skewness [SE of Skewness]
Creativity	5.7500	2.00 7.00	-0.138 [0.324]	-0.488 [0.163]
Self-Efficacy	6.0000	2.50 7.00	0.994 [0.324]	-1.114 [0.163]
Emotional Exhaustion	5.5000	1.00 7.00	-0.488 [0.324]	-0.706 [0.163]
Motivation	6.0000	2.00 7.00	0.721 [0.324]	-1.028 [0.163]
Organizational Commitment	6.0000	2.00 7.00	0.124 [0.324]	-0.869 [0.163]
Role Ambiguity	5.5000	1.00 7.00	-0.202 [0.324]	-0.718 [0.163]
Role Conflict	5.0000	1.00 7.00	-0.830 [0.324]	-0.459 [0.163]
Role Overload	5.0000	1.00 7.00	-0.823 [0.324]	-0.435 [0.163]
Teamwork	6.5000	3.00 7.00	2.049 [0.324]	-1.384 [0.163]
Customer Orientation	7.0000	1.00 7.00	12.627 [0.324]	-2.556 [0.163]
Service Orientation	6.5000	2.00 7.00	4.336 [0.324]	-1.582 [0.163]

In Table 21, median, extrema, kurtosis, and skewness are reported. The kurtosis of most frontline employee influence factors ranges from minus one to plus one. Except for teamwork (2.049), service orientation (4.336), and customer orientation (12.627) have higher positive kurtosis indicating a distribution that deviates from normality.

The negative skew for all factors influencing frontline employees indicates a left-skewed distribution, which is obvious when looking at the frequencies. Figure 19, Figure 20, and Figure 21 show the histograms of the person-related, organization-related, and service-related factors.

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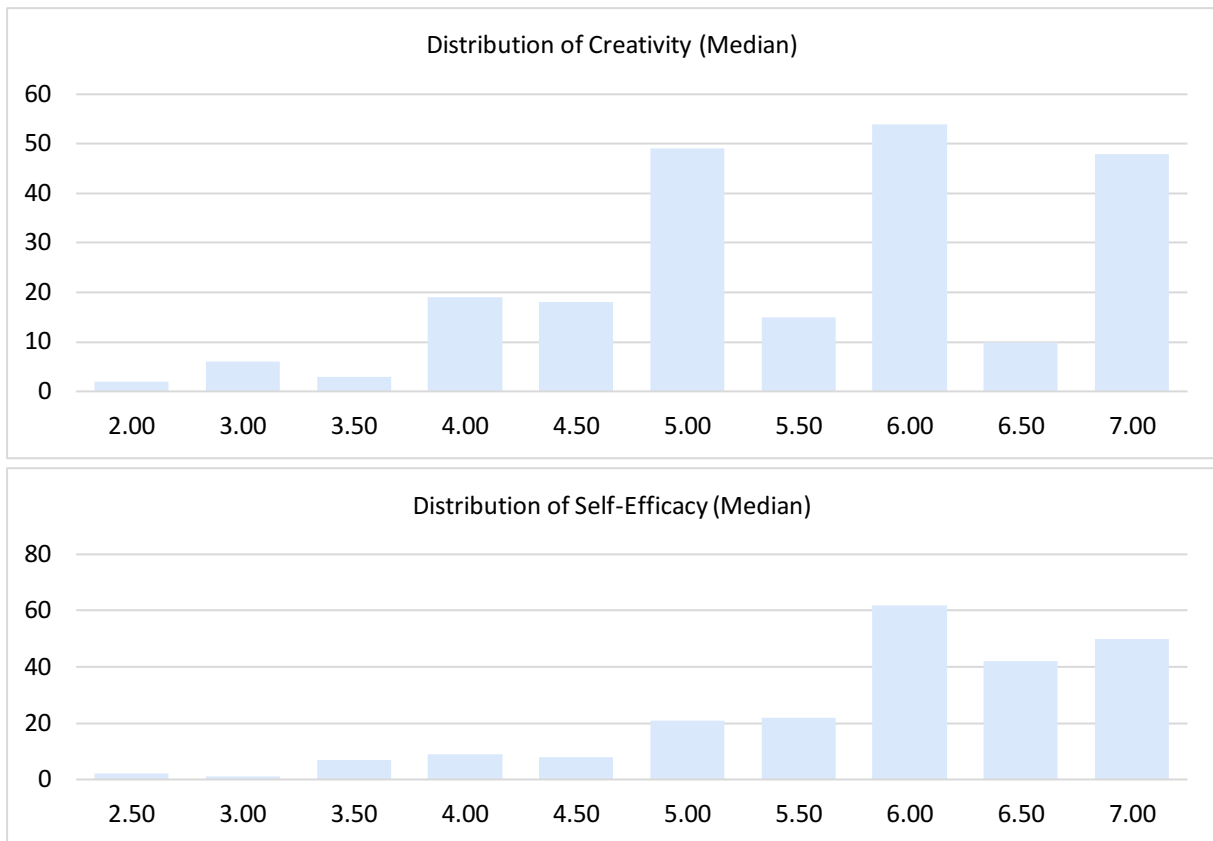
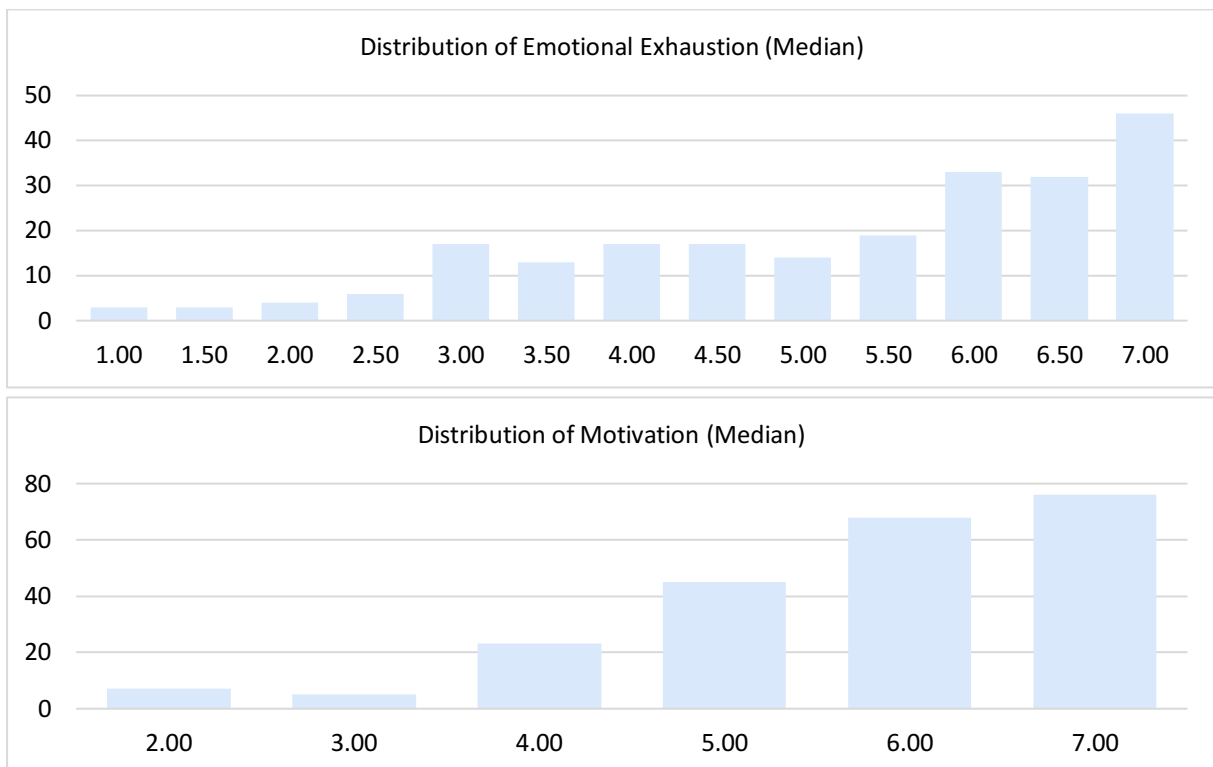
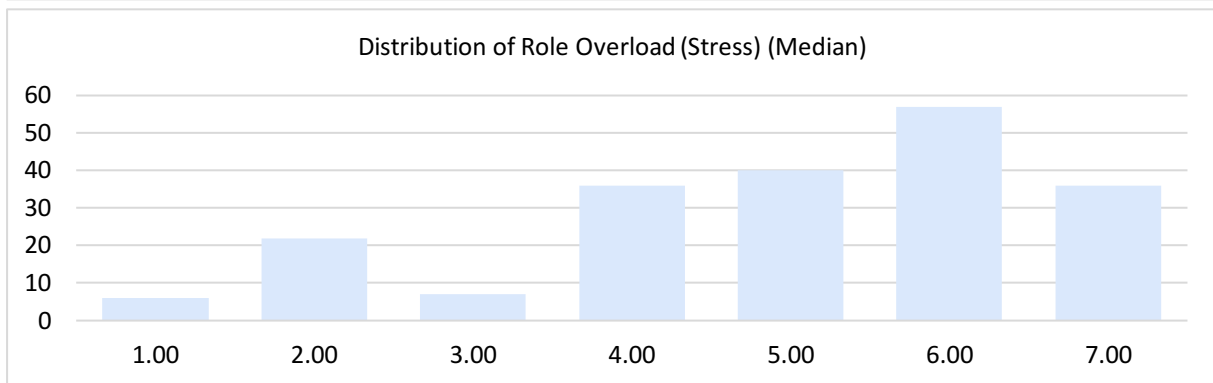
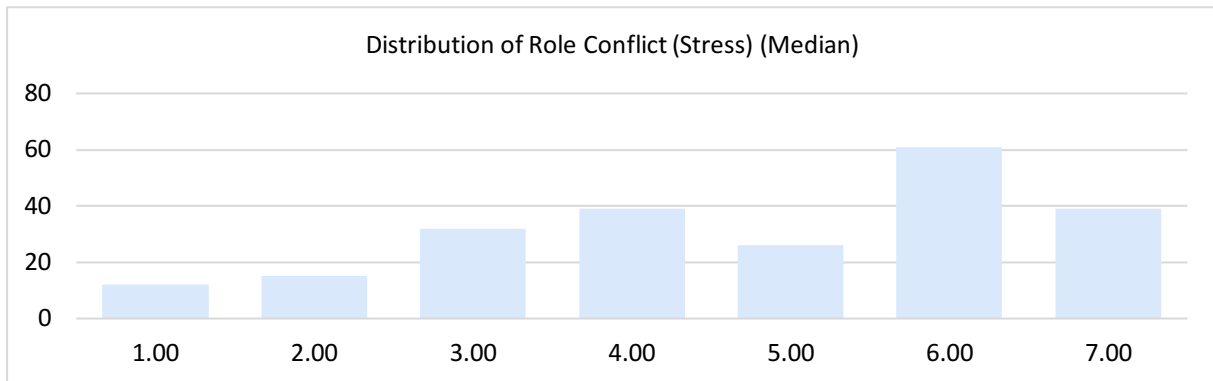
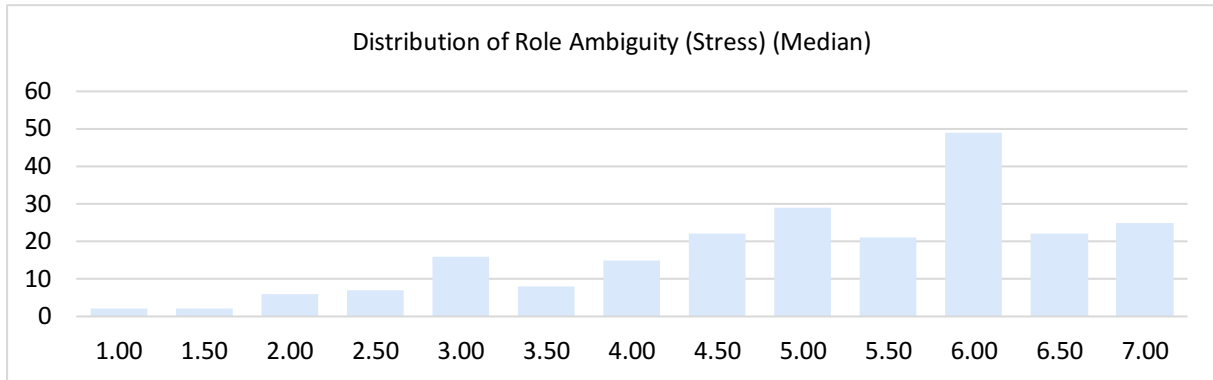
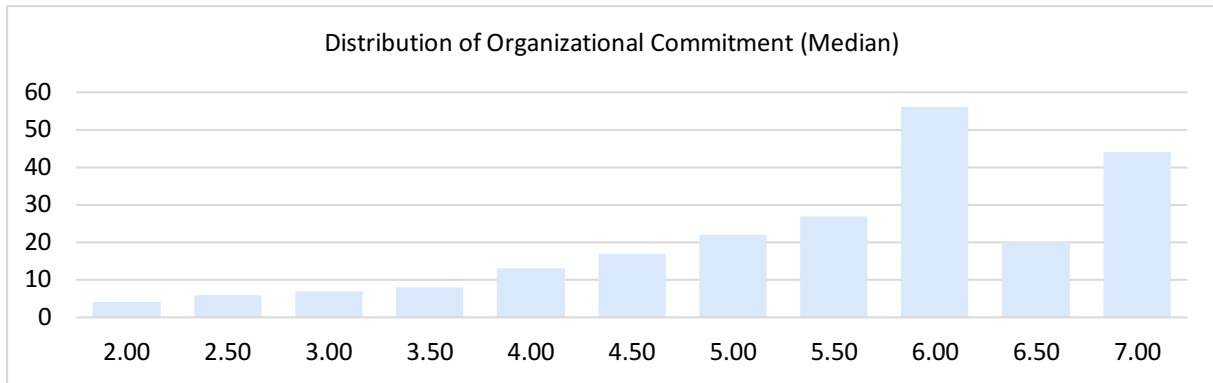


Figure 19: Distribution of Self-Rated Person-Related Factors Using the Median



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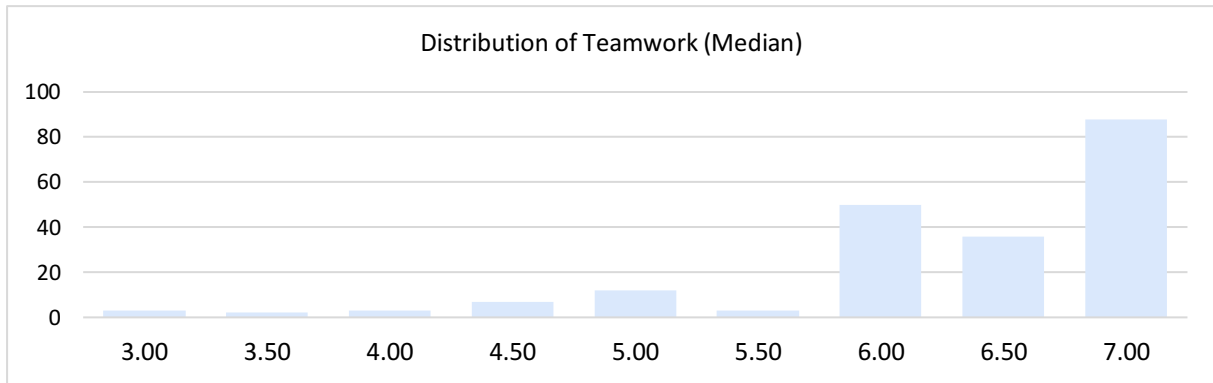


Figure 20: Distribution of Self-Rated Organization-Related Factors Using the Median

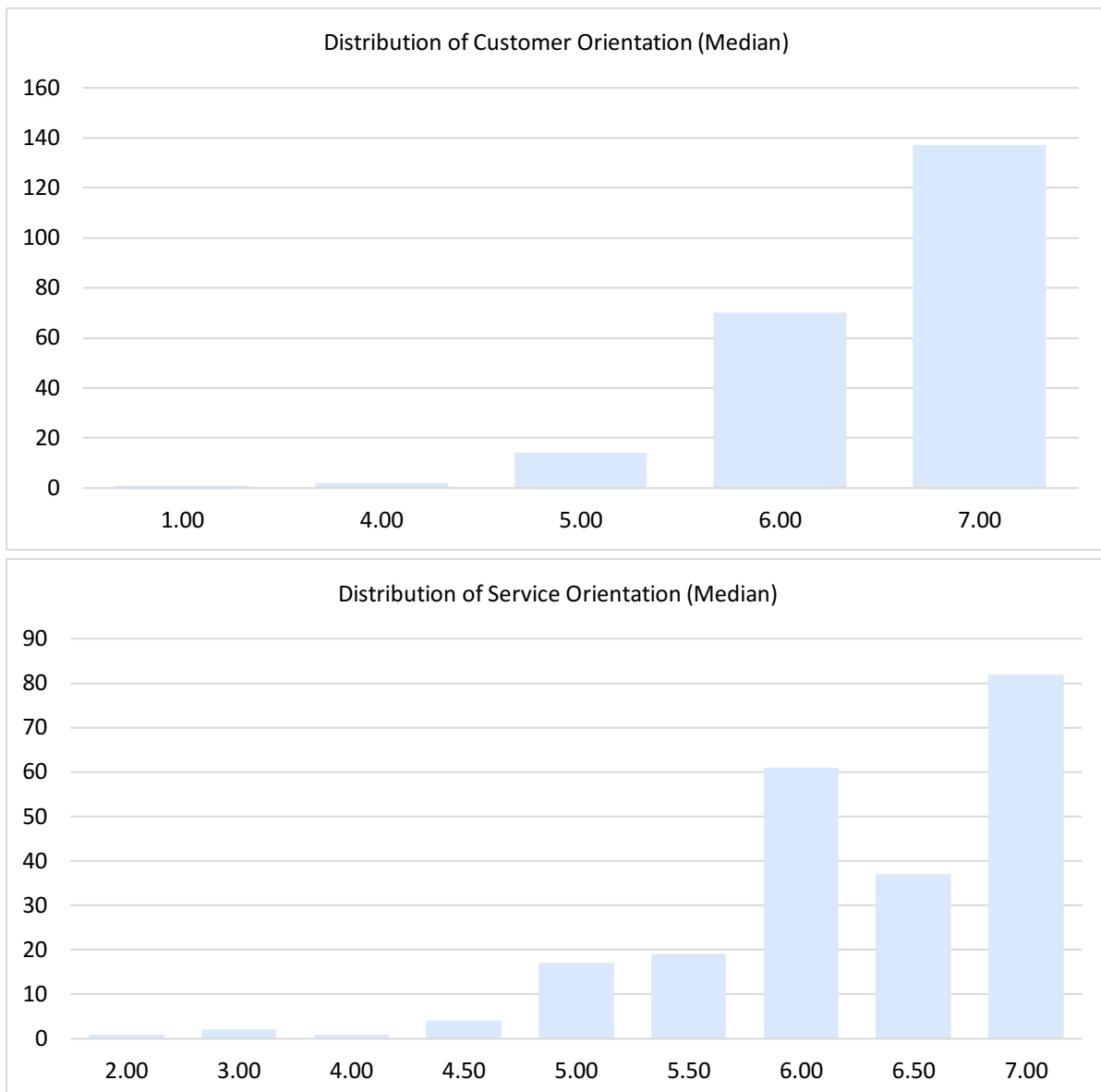


Figure 21: Distribution of Self-Rated Service-Related Factors Using the Median

The left skewness of the response distribution is accompanied by the fact that there are fewer responses in the low scale range, which can lead to problems when analyzing the multivariate relationships. Therefore, the seven categories representing the seven levels of the Likert-scale deployed for the items were collapsed. Collapsing the bottom two and top two categories did not fit the distribution presented in Figure 19, Figure 20, and Figure 21. Therefore, collapsing the three bottom categories was considered more appropriate but ended up not being sufficient. The bottom three categories (“1-3”) plus the neutral category (“4”) were collapsed into one category, which was coded as “1”. As there are most data in the top categories, it is the purpose of the following analysis to build best possible conclusions about these groups. Thus, categories “5-7” remained separate and coded as presented in Figure 22.

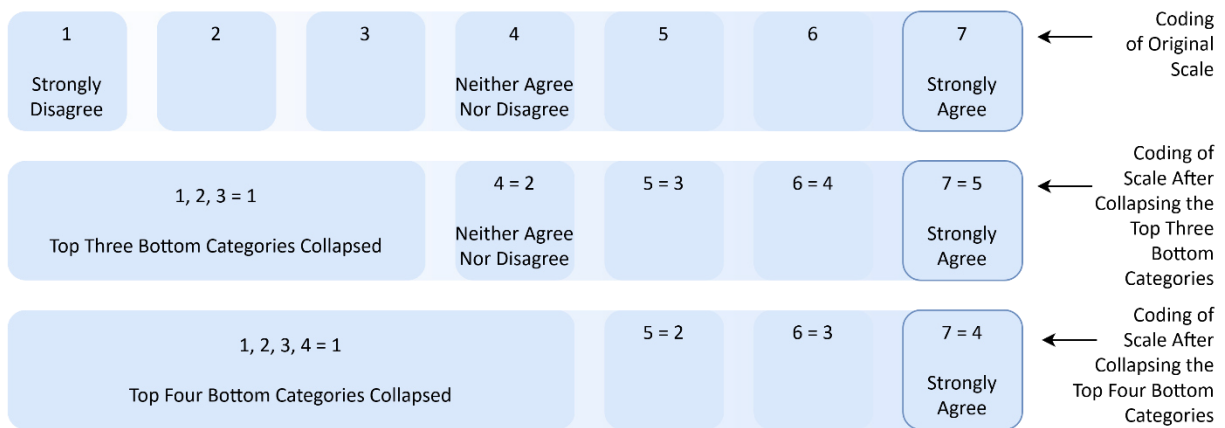


Figure 22: Scheme of How Categories from Likert-Scaled Items were Collapsed before Data Analysis

For every analysis to come, now for the frontline employee perceived predictors and outcome variables, the median was used from the now collapsed categories (cf. Table 22, 3rd row).

Analysis of Bivariate Relationships for Outcome Variables

The two outcome variables, frontline employee perceived customer orientation and frontline employee perceived service orientation, will be analyzed in separate regression models. As a preliminary work for regression analysis, the bivariate relationships between these two outcome variables with the predictor and control variables are examined.

Two analyses were performed as the data are of nominal, e.g., frontline employees' gender or educational level, and of ordinal nature, e.g., frontline employee

perceived creativity or customer orientation. First, a contingency analysis using χ^2 (cf. Table 22 and Table 23), second a correlation analysis (cf. Table 24) were performed.

The contingency analysis was performed using crosstabulations. The exact Fisher test is used assuming expected cell frequencies below five. The Monte Carlo method was employed for calculating the significance and 99% confidence intervals based on 10,000 samples; the exact method could not be computed.

Table 22: Contingency Analysis for Customer Orientation with Exact Fisher Test and Monte Carlo (MC) Significance and Confidence Intervals (CI)

	Value	Significance (2-sided)	MC CI 99% Lower Bound	Upper Bound	Cramer's V	Signifi- cance (2-sided)	MC CI 99%
<i>Person-Related Factors</i>							
Creativity	34.209	0.001	0.000	0.002	0.251	0.004	0.002, 0.005
Self-Efficacy	35.015	0.002	0.001	0.003	0.235	0.012	0.009, 0.015
<i>Organization-Related Factors</i>							
Emotional Exhaustion	18.531	0.286	0.275	0.298	0.167	0.403	0.390, 0.416
Motivation	27.743	0.000	0.000	0.001	0.205	0.001	0.000, 0.001
Organiza- tional Com- mitment	38.135	0.000	0.000	0.001	0.258	0.001	0.000, 0.001
Role Ambiguity	30.477	0.005	0.003	0.007	0.215	0.025	0.021, 0.029
Role Conflict	12.398	0.124	0.115	0.132	0.135	0.196	0.186, 0.206
Role Overload	4.643	0.883	0.875	0.891	0.079	0.923	0.916, 0.929
Teamwork	27.028	0.033	0.029	0.038	0.209	0.063	0.057, 0.069
<i>Service-Related Factors</i>							
Service Orientation	64.127	0.000	0.000	0.000	0.329	0.001	0.000, 0.002
<i>Control Variables</i>							
Age	15.224	0.144	0.134	0.153	0.158	0.152	0.143, 0.161
Gender	6.450	0.073	0.067	0.080	0.174	0.082	0.075, 0.089
Country	19.111	0.000	0.000	0.000	0.280	0.001	0.000, 0.001
Educational Level	11.926	0.641	0.629	0.654	0.142	0.549	0.536, 0.562
Leadership	3.199	0.368	0.356	0.381	0.119	0.394	0.381, 0.406
Worktime	0.844	0.895	0.887	0.903	0.076	0.744	0.733, 0.756
Type of Or- ganization	2.329	0.514	0.501	0.527	0.110	0.452	0.439, 0.464

Table 22 shows that frontline employee perceived customer orientation is related to frontline employee perceived creativity, self-efficacy, organizational commitment, motivation, role ambiguity, teamwork, and service orientation. In addition, there is a relationship between frontline employee perceived customer orientation and the country of origin of frontline employees. Only one relationship exceeds the 0.3 level for Cramer's V, indicating a medium strong relationship (Field, 2013, p. 743). There is also a medium strong relationship between frontline employee perceived customer orientation and frontline employee perceived service orientation where there is a Cramer's V of 0.329.

Table 23: Contingency Analysis for Service Orientation with Exact Fisher Test and Monte Carlo (MC) Significance and Confidence Intervals (CI)

	Value	Signifi- cance (2- sided)	MC CI 99%		Cramer's V	Signifi- cance (2- sided)	MC CI 99%
<i>Person-Related Factors</i>							
Creativity	37.446	0.227	0.216	0.237	0.181	0.166	0.157, 0.176
Self-Efficacy	59.750	0.000	0.000	0.001	0.218	0.006	0.004, 0.008
<i>Organization-Related Factors</i>							
Emotional Exhaustion	32.603	0.483	0.470	0.496	0.161	0.523	0.510, 0.535
Motivation	46.657	0.000	0.000	0.000	0.278	0.000	0.000, 0.000
Organizational Commitment	70.831	0.000	0.000	0.000	0.240	0.000	0.000, 0.001
Role Ambiguity	41.273	0.103	0.095	0.111	0.175	0.251	0.240, 0.262
Role Conflict	10.764	0.906	0.899	0.914	0.128	0.909	0.902, 0.916
Role Overload	15.863	0.555	0.542	0.568	0.159	0.547	0.534, 0.559
Teamwork	56.199	0.002	0.001	0.003	0.206	0.027	0.023, 0.031
<i>Service-Related Factors</i>							
Customer Orientation	64.127	0.000	0.000	0.000	0.329	0.001	0.000, 0.001
<i>Control Variables</i>							
Age	24.719	0.305	0.293	0.317	0.168	0.403	0.390, 0.416
Gender	18.197	0.003	0.001	0.004	0.292	0.006	0.004, 0.008
Country	21.969	0.001	0.000	0.001	0.325	0.001	0.000, 0.002
Educational Level	43.747	0.011	0.008	0.014	0.202	0.039	0.034, 0.044
Leadership	22.918	0.000	0.000	0.000	0.320	0.000	0.000, 0.000
Worktime	12.776	0.035	0.030	0.039	0.249	0.031	0.026, 0.035
Type of Organi- zation	10.257	0.102	0.094	0.110	0.208	0.138	0.130, 0.147

The significant bivariate relationships for frontline employee perceived service orientation presented in Table 23 reveal similarities to those found for frontline employee perceived customer orientation. Overlaps are the relationships with self-efficacy, motivation, organizational commitment, and teamwork. Also, there is a significant relationship between frontline employee perceived service orientation and customer orientation. In addition to the significant relationship between frontline employee perceived service orientation with the frontline employees' country of origin, there are also significant relationships with frontline employees' gender, educational level, leadership responsibilities, and worktime. Frontline employee perceived customer orientation, frontline employees' country of origin, and having leadership responsibilities or not are medium strongly related to frontline employee perceived service orientation. All other significant relationships have a Cramer's V below 0.3 and are considered weak.

Calculations of Spearman's Rho correlation coefficient use ranks of the data. Spearman's Rho is sensible to tied ranks in the data. Pre-screening the data for tied ranks showed that the data contains many tied ranks. Therefore, Kendall's-Tau b was preferred over Spearman's Rho for exploring the bivariate relationship between the variables.

Looking at the correlation coefficients in Table 24 reveals no high correlation between variables. All correlation coefficients stay below the absolute value of 0.5 with the highest correlation between frontline employee perceived motivation and frontline employee perceived organizational commitment of 0.490 ($p < 0.01$) and the lowest correlation of 0.115 ($p < 0.05$) between frontline employee perceived service orientation and frontline employee perceived emotional exhaustion.

In preparation for the regression, the dataset was checked for outliers. Therefore, the exploratory data analysis procedure in SPSS was used. Variables were checked individually in the whole data set and separately for German and Russian frontline employees. Furthermore, the composite scores (median) were checked for outliers, as well as the composite scores made from collapsed categories (median). All encountered outliers were analyzed. One case (case 138) was deleted due to conflicting data. All other outliers were kept in the dataset as there was no reason to delete them and falsify the data.

For Chapters 4.2 and 4.3, the structure for presenting the results of the ordinal regression analysis will be as follows. First, the ordinal regression model with model fitting information, pseudo-R-squares, and parameter estimates is

presented. Second, the steps of analysis and proving of the regression assumptions are disclosed. For reasons of clarity and structure, the interpretation and discussion of results follow its presentation.

Regarding the significance of estimates, a p-value of less than 0.05 was recognized as significant. Estimates with p-values less than 0.10 were taken into account if their confidence intervals did not cross zero. Therefore, an effect of zero on the outcome variable could be excluded.

For the ordinal regression procedure, the composite scores from the median with collapsed categories, as explained in Chapter 4.1, are used.

Ordinal regression was performed, building two regression models with the outcome variables customer orientation and service orientation. As a method for regression, forced entry was used. As a link function, complementary log-log was selected as higher categories were assumed more probable (cf. Figure 13).

The variables counting years of tenure (generally and in the organization front-line employees are currently working in) were excluded from the analysis as it turned out that there is a high correlation between them and the variable age ($r_{\text{general tenure}}=0.911$, $p=0.001$; $r_{\text{organizational tenure}}=0.737$, $p=0.001$). The two tenure variables and age were considered nearly redundant. Because a model with fewer predictors is desirable, the variable was excluded from the analysis. Additionally, the categories “part-time” and “in training” of the variable work time were put together into one variable (wtime4) so that only one dummy variable for worktime (wtime1) had to be included in the regression. Furthermore, the relationship between cases and predictors is considered okay but not outstanding. The calculations underlying ordinal regression become more difficult the more variables there are (especially if they have many categories).

Table 24: Correlation Matrix of Frontline Employee Influence Factors

	Creativity	Self-Efficacy	Organizational Commitment	Emotional Exhaustion	Motivation	Role Ambiguity	Role Conflict	Role Overload	Teamwork	Customer Orientation	Service Orientation
Creativity	1.000										
Self-Efficacy	0.302**	1.000									
Organizational Commitment	0.249**	0.283**	1.000								
Emotional Exhaustion	0.047	0.029	0.155**	1.000							
Motivation	0.191**	0.267**	0.490**	0.080	1.000						
Role Ambiguity	0.143**	0.219**	0.305**	0.262**	0.196**	1.000					
Role Conflict	0.030	0.002	0.143**	0.260**	0.053	0.209**	1.000				
Role Overload	-0.042	-0.007	-0.049	0.369**	-0.092	0.189**	0.338**	1.000			
Teamwork	0.293**	0.268**	0.342**	0.146**	0.287**	0.248**	0.140*	0.076	1.000		
Customer Orientation	0.209**	0.251**	0.268**	0.123*	0.275**	0.216**	0.054	0.055	0.214**	1.000	
Service Orientation	0.169**	0.285**	0.320**	0.115*	0.283**	0.165**	0.058	0.046	0.234**	0.373**	1.000

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

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

4.2 Analysis of Influence Factors on Frontline Employees' Customer Orientation

4.2.1 Ordinal Regression Model and Assumption Checking

Ordinal regression was performed using the SPSS procedure GENLIN and PLUM to test which factors influence frontline employees' perceived customer orientation. The factors were tested globally and, according to the ordinal nature of the data, on the different ordinal levels.

The examination of whether the predictor variables affect the outcome variable can be conducted via the Wald Chi-square test. The results are displayed in Table 25. One can see that none of the hypothesized factors frontline employee perceived creativity, role ambiguity, role conflict, and teamwork seems to have a significant effect on the outcome variable. Instead, frontline employee perceived service orientation and the control variables country of origin of frontline employees, type of organization, and leadership responsibilities have a significant effect on frontline employees' perceived customer orientation. It remains to be seen if this significance holds for all levels and manifestations of variables.

Table 25: Test of Model Effects for Customer Orientation

Influence Factor	Type III		
	Wald Chi-Square	df	Sig.
Creativity	9.174	6	0.164
Self-Efficacy	7.245	6	0.299
Emotional Exhaustion	5.671	6	0.461
Motivation	5.366	3	0.147
Organizational Commitment	12.323	6	0.055
Role Ambiguity	6.872	6	0.333
Role Conflict	0.673	3	0.880
Role Overload	0.878	3	0.831
Teamwork	6.521	6	0.367
Service Orientation	12.857	6	0.045
Age	4.358	4	0.360
Gender	1.719	1	0.190
Country	7.992	1	0.005
Educational Level	5.625	5	0.344
Leadership Responsibilities	4.864	1	0.027
Working Full Time	0.962	1	0.327
Type of Organization	7.170	1	0.007

Regarding the whole model, the Chi-Square value of 128.541 (65 df) is highly significant ($p < 0,000005$) and, therefore, indicates that the model with its variables significantly contributes to the outcome variable frontline employee perceived customer orientation. Because of many cells with zero frequencies (672, 75.00%), all Chi-Square statistics cannot be considered certain. Therefore, they are reported, but an interpretation was not deemed appropriate (Agresti, 2010). Pseudo R-Square values indicate a good model fit (cf. Table 26).

Table 26: Model Fitting Information for the Ordinal Regression Model (Outcome Variable: Customer Orientation)

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	401.068			
Final	272.527	128.541	65	0.000

Goodness-of-Fit	Chi-Square	df	Sig.
Pearson	967.532	604	0.000
Deviance	272.527	604	1.000

Pseudo R-Square	
Cox and Snell	0.437
Nagelkerke	0.524
McFadden	0.320

Link Function: Complementary log-log

The regression model is presented in Table 27. Significant relationships are in bold.

Table 27: Parameter Estimates, Odds Ratios, and Confidence Intervals (Outcome Variable: Customer Orientation)

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test			95% Wald Confidence Interval for Exp(B)		
			Lower	Upper	Wald Chi-Square	df	Sig.	Exp(B)	Lower	Upper
Threshold Customer Orientation = 1.00	-10.561	1.5629	-13.624	-7.497	45.655	1	0.000	2.592E-05	1.211E-06	0.001
Customer Orientation = 2.00	-8.639	1.4609	-11.502	-5.775	34.964	1	0.000	0.000	1.011E-05	0.003
Customer Orientation = 3.00	-6.079	1.3841	-8.792	-3.366	19.290	1	0.000	0.002	0.000	0.035
Creativity = 1.00	-1.256	0.6219	-2.475	-0.037	4.081	1	0.043	0.285	0.084	0.963
Creativity = 1.50	-1.477	0.6254	-2.702	-0.251	5.576	1	0.018	0.228	0.067	0.778
Creativity = 2.00	-0.327	0.5457	-1.396	0.743	0.359	1	0.549	0.721	0.247	2.101
Creativity = 2.50	-0.262	0.7393	-1.711	1.187	0.125	1	0.723	0.770	0.181	3.278
Creativity = 3.00	-0.415	0.5181	-1.430	0.601	0.641	1	0.423	0.660	0.239	1.823
Creativity = 3.50	-1.113	0.8109	-2.702	0.476	1.885	1	0.170	0.329	0.067	1.610
Creativity = 4.00	0 ^a							1		
Self-Efficacy = 1.00	-0.635	0.8740	-2.348	1.078	0.527	1	0.468	0.530	0.096	2.940
Self-Efficacy = 1.50	-1.107	0.7526	-2.582	0.368	2.165	1	0.141	0.330	0.076	1.444
Self-Efficacy = 2.00	0.064	0.6574	-1.224	1.353	0.009	1	0.922	1.066	0.294	3.867
Self-Efficacy = 2.50	0.108	0.6766	-1.218	1.434	0.025	1	0.873	1.114	0.296	4.196
Self-Efficacy = 3.00	-0.511	0.5735	-1.635	0.612	0.796	1	0.372	0.600	0.195	1.845
Self-Efficacy = 3.50	0.240	0.6067	-0.949	1.429	0.157	1	0.692	1.272	0.387	4.176
Self-Efficacy = 4.00	0 ^a							1		
Emotional Exhaustion = 1.00	-0.979	0.5966	-2.148	0.190	2.693	1	0.101	0.376	0.117	1.210

Parameter	95% Wald Confidence Interval				Hypothesis Test			95% Wald Confidence Interval for Exp(B)		
	B	Std. Error	Lower	Upper	Wald Chi-Square	df	Sig.	Exp(B)	Lower	Upper
Emotional Exhaustion = 1.50	-0.800	0.7698	-2.308	0.709	1.079	1	0.299	0.450	0.099	2.032
Emotional Exhaustion = 2.00	-0.624	0.6027	-1.805	0.558	1.071	1	0.301	0.536	0.164	1.746
Emotional Exhaustion = 2.50	-1.491	0.6478	-2.761	-0.221	5.296	1	0.021	0.225	0.063	0.802
Emotional Exhaustion = 3.00	-0.566	0.5576	-1.659	0.527	1.032	1	0.310	0.568	0.190	1.693
Emotional Exhaustion = 3.50	-0.790	0.6267	-2.018	0.439	1.588	1	0.208	0.454	0.133	1.551
Emotional Exhaustion = 4.00	0 ^a							1		
Motivation = 1.00	-0.564	0.5518	-1.645	0.518	1.044	1	0.307	0.569	0.193	1.678
Motivation = 2.00	-1.088	0.5036	-2.075	-0.101	4.664	1	0.031	0.337	0.126	0.904
Motivation = 3.00	-0.883	0.4880	-1.840	0.073	3.277	1	0.070	0.413	0.159	1.076
Motivation = 4.00	0 ^a							1		
Organizational Commitment = 1.00	-0.800	0.6911	-2.155	0.554	1.341	1	0.247	0.449	0.116	1.741
Organizational Commitment = 1.50	0.078	0.7592	-1.410	1.566	0.010	1	0.919	1.081	0.244	4.785
Organizational Commitment = 2.00	0.732	0.6793	-0.599	2.063	1.162	1	0.281	2.079	0.549	7.872
Organizational Commitment = 2.50	-0.162	0.6731	-1.481	1.158	0.058	1	0.810	0.851	0.227	3.182
Organizational Commitment = 3.00	0.949	0.5495	-0.128	2.026	2.983	1	0.084	2.584	0.880	7.585
Organizational Commitment = 3.50	-0.367	0.7246	-1.788	1.053	0.257	1	0.612	0.693	0.167	2.866
Organizational Commitment = 4.00	0 ^a							1		
Role Ambiguity = 1.00	-0.424	0.7786	-1.950	1.102	0.297	1	0.586	0.654	0.142	3.010
Role Ambiguity = 1.50	0.321	0.8507	-1.346	1.989	0.143	1	0.706	1.379	0.260	7.306
Role Ambiguity = 2.00	-0.694	0.8193	-2.299	0.912	0.717	1	0.397	0.500	0.100	2.490

Parameter	95% Wald Confidence Interval				Hypothesis Test			95% Wald Confidence Interval for Exp(B)		
	B	Std. Error	Lower	Upper	Wald Chi-Square	df	Sig.	Exp(B)	Lower	Upper
Role Ambiguity = 2.50	-0.890	0.8504	-2.557	0.777	1.096	1	0.295	0.411	0.078	2.174
Role Ambiguity = 3.00	-0.686	0.7702	-2.196	0.823	0.794	1	0.373	0.503	0.111	2.278
Role Ambiguity = 3.50	0.661	0.9729	-1.246	2.568	0.462	1	0.497	1.937	0.288	13.041
Role Ambiguity = 4.00	0 ^a							1		
Role Conflict = 1.00	-0.113	0.5059	-1.105	0.878	0.050	1	0.823	0.893	0.331	2.407
Role Conflict = 2.00	-0.428	0.6259	-1.655	0.798	0.469	1	0.494	0.651	0.191	2.222
Role Conflict = 3.00	-0.012	0.5133	-1.018	0.994	0.001	1	0.982	0.989	0.361	2.703
Role Conflict = 4.00	0 ^a							1		
Role Overload = 1.00	-0.084	0.6039	-1.268	1.099	0.020	1	0.889	0.919	0.281	3.002
Role Overload = 2.00	0.056	0.6411	-1.201	1.312	0.007	1	0.931	1.057	0.301	3.713
Role Overload = 3.00	-0.360	0.5791	-1.495	0.775	0.387	1	0.534	0.697	0.224	2.170
Role Overload = 4.00	0 ^a							1		
Teamwork = 1.00	-0.214	0.8010	-1.784	1.356	0.071	1	0.789	0.807	0.168	3.880
Teamwork = 1.50	-0.185	0.7426	-1.640	1.271	0.062	1	0.804	0.831	0.194	3.564
Teamwork = 2.00	0.149	0.6930	-1.210	1.507	0.046	1	0.830	1.160	0.298	4.512
Teamwork = 2.50	-0.157	0.5075	-1.151	0.838	0.095	1	0.758	0.855	0.316	2.312
Teamwork = 3.00	-0.997	0.4753	-1.929	-0.065	4.401	1	0.036	0.369	0.145	0.937
Teamwork = 3.50	-0.821	0.4937	-1.788	0.147	2.764	1	0.096	0.440	0.167	1.158
Teamwork = 4.00	0 ^a							1		
Service Orientation = 1.00	-1.482	1.0584	-3.557	0.593	1.960	1	0.161	0.227	0.029	1.809

Parameter	95% Wald Confidence Interval				Hypothesis Test			95% Wald Confidence Interval for Exp(B)		
	B	Std. Error	Lower	Upper	Wald Chi-Square	df	Sig.	Exp(B)	Lower	Upper
Service Orientation = 1.50	-1.125	0.8644	-2.819	0.569	1.694	1	0.193	0.325	0.060	1.766
Service Orientation = 2.00	-1.896	0.6037	-3.079	-0.713	9.866	1	0.002	0.150	0.046	0.490
Service Orientation = 2.50	-1.428	0.5655	-2.536	-0.319	6.374	1	0.012	0.240	0.079	0.727
Service Orientation = 3.00	-0.821	0.4656	-1.734	0.091	3.112	1	0.078	0.440	0.177	1.095
Service Orientation = 3.50	-0.774	0.5025	-1.758	0.211	2.370	1	0.124	0.461	0.172	1.235
Service Orientation = 4.00	0 ^a							1		
21-30 Years=1.00	-0.410	0.7695	-1.918	1.098	0.284	1	0.594	0.664	0.147	2.999
31-40 Years=2.00	0.106	0.7890	-1.441	1.652	0.018	1	0.894	1.111	0.237	5.217
41-50 Years=3.00	0.200	0.7026	-1.177	1.577	0.081	1	0.776	1.221	0.308	4.839
51-60 Years=4.00	0.590	0.7082	-0.798	1.978	0.694	1	0.405	1.804	0.450	7.227
61-99 Years=5.00	0 ^a							1		
Male = 1.00	-0.508	0.3873	-1.267	0.251	1.719	1	0.190	0.602	0.282	1.286
Female = 2.00	0 ^a							1		
Germany = 1	-1.857	0.6569	-3.145	-0.570	7.992	1	0.005	0.156	0.043	0.566
Russia = 2	0 ^a							1		
Certificate of Secondary Education = 1.00	0.360	1.1292	-1.853	2.573	0.102	1	0.750	1.434	0.157	13.111
A-Levels = 2.00	0.993	0.9661	-0.901	2.886	1.056	1	0.304	2.699	0.406	17.926
Vocational/ Industrial Training = 3.00	0.455	0.8683	-1.246	2.157	0.275	1	0.600	1.577	0.288	8.646
Bachelor = 4.00	0.451	0.9620	-1.434	2.337	0.220	1	0.639	1.570	0.238	10.349
Master = 5.00	-0.255	0.8205	-1.863	1.353	0.096	1	0.756	0.775	0.155	3.870

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test			95% Wald Confidence Interval for Exp(B)		
			Lower	Upper	Wald Chi-Square	df	Sig.	Exp(B)	Lower	Upper
Doctorate = 7.00	0 ^a							1		
No Leadership Responsibilities = 0.00	0.856	0.3883	0.095	1.617	4.864	1	0.027	2.355	1.100	5.040
Leadership Responsibilities = 1.00	0 ^a							1		
Working Part Time = 0.00	-0.392	0.3996	-1.175	0.391	0.962	1	0.327	0.676	0.309	1.479
Working Full Time = 1.00	0 ^a							1		
Public Organization = 1	-1.035	0.3864	-1.792	-0.277	7.170	1	0.007	0.355	0.167	0.758
Private Organization = 2	0 ^a							1		
(Scale)	1 ^b									

Outcome Variable: Customer Orientation
Model: (Threshold), Creativity, Self-Efficacy, Emotional Exhaustion, Motivation, Organizational Commitment, Role Ambiguity, Role Conflict, Role Overload, Teamwork, Service Orientation, Age, Gender, Country, Educational Level, Leadership Responsibilities, Work Time, Type of Organization

^a. Set to zero because this parameter is redundant. ^b. Fixed at the displayed value.

The confusion table (cf. Table 28) displays how well the model could predict the right categories of the outcome variable compared to the real category the outcome variable is assigned to. In sum, 77.68% $(=(3+48+123)/224)$ cases were assigned correctly. In category 1, the model fails to assign the cases correctly. In category 2, one-fifth of the cases are assigned correctly. In categories 3 and 4, the majority of the cases were assigned to the correct category (68.57% and 89.78%, respectively).

Table 28: Confusion Table (Crosstabulation) of Customer Orientation and Its Predicted Response Category

		Predicted Response Category			Total	Percentage of Correct Predicted Categories
		2.00	3.00	4.00		
Customer Orientation	1.00	1	1	1	3	0
	2.00	3	8	3	14	21.43
	3.00	0	48	22	70	68.57
	4.00	0	14	123	137	89.78
Total		4	71	149	224	77.68

Performing a correlation with Kendall’s tau b between the predicted response category and the actual category of frontline employee perceived customer orientation reveals a moderate relationship, which indicates a moderate fit of the model to the data ($\tau_b=0.609$, $p<0.0005$).

The assumptions of ordinal regression are met. Firstly, the outcome variable frontline employee perceived customer orientation is ordinal. Secondly, all predictor variables and control variables are ordinal or continuous. In this case, all other variables are ordinal. The variable age was a continuous variable but was transformed into an ordinal one to limit the problem with cells with zero frequencies in the ordinal regression procedure. As a third point, it was tested for multicollinearity using linear regression. Dummy variables had to be created for all categorical variables to use the linear regression to prove if there is multicollinearity or not. Then, a multiple linear regression was performed, and its collinearity statistics were analyzed (cf. Appendix 8). From the tolerance (≤ 0.142) and VIF values (≤ 7.037), it can be concluded that there is no multicollinearity.

The test of parallel lines proves if the proportional odds assumption is met. Table 29 shows that the test's significance is above 0.05 ($\chi^2(130)=93.512$), so the null hypothesis cannot be rejected.

Table 29: Test of Proportional Odds Assumption

Test of Parallel Lines^a				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	272.527			
General	179.016	93.512	130	0.993

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

^a Link Function: Complementary Log-log

4.2.2 Significant Influence Factors and Hypotheses Testing

To begin, Table 30 shows the hypotheses proven in this chapter and displays whether the factors influencing frontline employees were significant in the test of model effects and whether and which levels of the factors were significant.

Table 30: Results of Hypotheses Tests for Customer Orientation

Hypotheses	Test of Model Effects	Test of Parameter Estimates
H ₁ : Frontline employees' perceived level of creativity is positively related to frontline employees' perceived level of customer orientation.	False	Partially True
H ₈ : Frontline employees' perceived level of role conflict is negatively related to frontline employees' perceived level of customer orientation.	False	False
H ₁₀ : Frontline employees' perceived level of role ambiguity is negatively related to frontline employees' perceived level of customer orientation.	False	False
H ₁₂ : Frontline employees' perceived level of role overload is negatively related to frontline employees' perceived level of customer orientation.	False	False
H ₁₄ : Frontline employees' perceived level of teamwork is positively related to frontline employees' perceived level of customer orientation.	False	Partially True

Creativity. The test of model effects showed that frontline employee perceived creativity did not have a significant effect on frontline employee perceived customer orientation. However, when looking at the levels of frontline employees' perceived creativity, there is a significant negative effect on frontline employees' customer orientation when frontline employees perceive their creativity as low to medium (1 up to 4.5 on the collapsed Likert scale). In particular, the odds of perceiving customer orientation as higher as frontline employees perceiving creativity as highest ("7"), is 0.285 (95% CI, 0.084 to 0.963], Wald $\chi^2(1)=4.081$, $p=0.043$) and 0.228 (95% CI, 0.067 to 0.778], Wald $\chi^2(1)=5.576$, $p=0.018$). Thus, H_1 could not be confirmed for the overall model but for the level effect of creativity when perceived as low to medium and is considered partially true.

Emotional Exhaustion. Frontline employees who perceived their emotional exhaustion as medium ("2.5" on the reversed collapsed Likert scale) tend to perceive their customer orientation as lower as the frontline employees perceiving their emotional exhaustion as lowest ("4"). Their odds of perceiving customer orientation one category higher is one-fifth times that of the frontline employees belonging to the reference category ($\exp(B)=0.225$, 95% CI, 0.063 to 0.802, Wald $\chi^2(1)=5.296$, $p=0.021$).

Motivation. Frontline employees who perceived their motivation above medium ("5") have odds of one-fifth times that of frontline employees perceiving their motivation highest, to perceive their customer orientation one category higher ($\exp(B)=0.225$, 95% CI, 0.126, to 0.904, Wald $\chi^2(1)=4.664$, $p=0.031$). In other words, frontline employees perceiving their motivation as above medium tend to perceive their customer orientation as lower than the reference category who perceives their motivation highest.

Role Ambiguity, Role Conflict and Role Overload. All three self-perceived role stressors do not seem to relate to the level of self-perceived customer orientation of frontline employees. Therefore, H_8 , H_{10} , and H_{12} are not true.

Teamwork. H_{14} is also not true when considering the test for overall model effects. Looking at the different levels of frontline employee perceived teamwork reveals that frontline employees perceiving their teamwork as high ("6") have odds of one third perceiving customer orientation as one category higher than their colleagues perceiving their teamwork as highest ($\exp(B)=0.369$, 95% CI, 0.145 to 0.937, Wald $\chi^2(1)=4.401$, $p=0.036$).

Service Orientation. Frontline employees perceiving their service orientation as above medium ("5" and "5.5") tend to perceive their customer orientation as

lower as frontline employees perceiving their service orientation as highest. Their odds of perceiving customer orientation as one category higher as frontline employees perceiving service orientation as highest are 0.150 (95% CI, 0.046 to 0.727, Wald $\chi^2(1)=9.866$, $p=0.002$) and 0.240 (95% CI, 0.079 to 0.490, Wald $\chi^2(1)=6.374$, $p=0.012$) times that of frontline employees perceiving their service orientation highest.

Apart from the factors influencing frontline employees, three control variables showed a significant influence on the level of frontline employee perceived customer orientation and will be presented in the following.

Country of Origin. For German frontline employees, there is a negative coefficient of -1.857 (Wald $\chi^2(1)=7.922$, $p=0.005$), indicating that German frontline employees might perceive their customer orientation as lower as their Russian colleagues do. The odds of German frontline employees versus Russian frontline employees to perceive their customer orientation as one category higher is 0.156 (95% CI, 0.043 to 0.566) that of Russian frontline employees.

Leadership. Frontline employees without leadership responsibilities might perceive their customer orientation as higher as frontline employees with leadership responsibilities ($B=0.856$). The odds for frontline employees without leadership responsibilities of perceiving their customer orientation as one category higher than their colleagues with leadership responsibilities are 2.355 (95% CI, 1.100 to 5.040, Wald $\chi^2(1)=4.864$, $p=0.039$).

Type of Organization. Frontline employees working in public organizations might perceive their customer orientation as lower than frontline employees working in private organizations ($B=-1.035$). The odds for frontline employees working in public organizations to perceive their customer orientation as one category higher than those working in private organizations is 0.355 (95% CI, 0.167, 0.758, Wald $\chi^2(1)=7.170$, $p=0.007$).

The presentation of the previous parameter estimates and odds ratios is only valid if all other effects, but the one looked upon, are held constant.

4.2.3 Interpretation and Discussion of Results

Using the Pseudo R-square statistics (cf. Table 26) shows that the model represents the data moderately. The fact that the model predicted more than 75% of the values correctly (cf. Table 28) confirms that. The correlation coefficient

between predicted response category and actual response category in perceived customer orientation is 0.609, which is considered not “overwhelming” but acceptable.

Still, as human beings are very complex, there are more influence factors for frontline employees than the ones included in the study. Furthermore, due to the ordinal nature of the data and the resulting calculation method of ordinal regression, the seven-point Likert scale had to be reduced to a four-point scale. By this procedure, some of the information contained in the data was lost, and partly may be responsible for the moderate model fit.

None of the hypothesized relationships is true when looking at the test of model effects exclusively. Though from an intuitive point of view, all factors hypothesized to affect frontline employee perceived customer orientation appear related to frontline employee perceived customer orientation. Still, especially for frontline employee perceived teamwork previous research results, were mixed (cf. Chapter 2.6.5). Besides, there might be two-way and three-way effects that are not considered in the model.

H₁ proposed a positive relationship between frontline employee perceived creativity and frontline employee perceived customer orientation. Frontline employee perceived creativity appeared as an essential factor influencing frontline employees in previous research (cf. Chapter 2.5.1). Although not significant in the test of model effects, looking at the parameter estimates revealed a significant relationship to frontline employee perceived customer orientation when creativity is perceived as low. Thus, H₁ is partially true.

Furthermore, as the odds of these levels to perceive customer orientation one category higher are lower than the reference category (which are the frontline employees perceiving creativity as highest), a positive relationship between frontline employee perceived creativity and frontline employee perceived customer orientation could be concluded. Still, a linear relationship cannot be concluded.

The relationship between frontline employee perceived creativity and frontline employee perceived customer orientation is clear-cut. It is reasonable to think that highly customer-oriented frontline employees are also highly creative and thus ingenious when finding solutions for customer’s problems. However, the relationship did not appear in the test of overall model effects, which might point to an interaction effect. Considering previous research, frontline employee perceived self-efficacy (Coelho & Sousa, 2011; Gountas et al., 2014), motivation

(Coelho et al., 2011), and role conflict (Coelho & Augusto, 2010) might be a source of interaction with creativity.

The results regarding frontline employee perceived creativity have to be considered carefully as the present study drew on creativity with the connotation of being an output of thinking directed at improving workflow and provided services (cf. Chapter 2.5.1). Therefore, with a different connotation embedded in the items, the relationship may have been different.

The role stressors role ambiguity, role conflict, and role overload were hypothesized to have a negative influence on frontline employee perceived customer orientation (H_8 , H_{10} , H_{12}). However, the three role stressors were not significant predictors in the regression model. Frontline employees in the present study might perceive these role stressors, but this does not influence their way of seeing customers, their importance for their work, and going along with the customer's wishes and demands.

As diverse as the service industry is, frontline employees from different service sectors are. Therefore, the non-present significance of perceived role stressors for frontline employee perceived customer orientation might be due to the distinct service industries to which study participants belong. As stated in the sample description (cf. Chapter 3.1), most frontline employees in this study work in public scientific libraries. Possibly, their work activities and the whole work climate do not make them vulnerable for upcoming stress, or increases in role stressors are compensated by other factors such as creativity (which again points to a possible interaction effect).

Ultimately, it is not bad when role stressors do not have significant relationships with a relevant output variable such as customer orientation. Their negative influence on, e.g., frontline employees self-efficacy and job satisfaction (Karatepe, Yavas, Babakus, & Avci, 2006) and increasing power on sensitive factors such as emotional exhaustion (Ashill et al., 2009; Karatepe & Uludag, 2008), and alcohol use (Hight & Park, 2019) are not desired.

Hypothesis H_{14} assuming frontline employee perceived teamwork to be positively related to frontline employee perceived customer orientation is not true when considering the test of model effects exclusively. However, the relationship between teamwork and customer orientation is significant for frontline employees perceiving teamwork as high ("6"), proving H_{14} partially true. The relationship between frontline employee perceived teamwork, and frontline employee perceived customer orientation appears natural: teams working towards

a common goal might have more capacities exclusively for the caring of customers because they can rely on their teammates.

Previous research linked teamwork to service recovery performance and, although this example of previous research contains an initial study and two replication studies, the results were mixed (cf. Chapter 2.6.5). As discussed, the reasons for such inconsistent results might be mainly twofold: different working cultures in different countries and different service sectors (Yavas et al., 2003). Furthermore, the importance of teamwork differs across service sectors and within the range of tasks of frontline employees in a particular service sector. Also, as used in previous research and in this study, teamwork might not be an adequate construct. Therefore, the author proposes adapting or replacing the current construct of teamwork, e.g., by looking at the dimensions of teamwork proposed by Valentine, Nembhard, Edmondson, and Valentine (2012, pp. 4–6).

From the other factors influencing frontline employees that were entered into the model, frontline employee perceived emotional exhaustion, motivation, and service orientation turned out to be highly significant predictors of frontline employees' perceived customer orientation.

Although experienced on a medium level ("2.5"), emotional exhaustion drastically decreases the odds of perceiving customer orientation as one category higher. Emotional exhaustion strongly influences the customer orientation of frontline employees, which means that emotional exhaustion of frontline employees is threatening for output relevant factors. Hence, special attention must be paid to the emotional exhaustion of frontline employees and its links with other influencing factors.

If frontline employees perceive their motivation as low, it may result in lower odds of perceiving customer orientation higher as the reference group who perceived motivation highest. In other words, highly motivated frontline employees tend to be more customer-oriented than frontline employees experiencing less motivation. Similarly, researchers found out that highly motivated frontline employees perform better in service recovery (Karatepe, 2006, p. 51), are more satisfied with their job (Daskin, Arasli, & Kasim, 2015, p. 282), and perceive less emotional exhaustion (Karatepe & Aleshinloye, 2009, p. 354). Thus, motivation is an important factor influencing frontline employees in their interaction with customers, e.g., via service recovery performance or, as well, via customer orientation.

The result of frontline employee perceived service orientation being a highly significant predictor for frontline employee perceived customer orientation has to be evaluated considering that the concepts of service orientation and customer orientation are related and show overlap. However, customer orientation is more specific and a concept with the customer being the reference point. In contrast, service orientation is a broader concept and sees the provision of satisfying service as a reference point. Still, the regression analysis results might indicate that the conceptual proximity of customer orientation and service orientation may be accountable for the strong relationship of both variables. Furthermore, the numbers suggest that the relationship between frontline employee perceived service orientation and customer orientation is linear and positive. Thus, the more frontline employees are service-oriented, the higher they are customer-oriented.

Surprisingly, in the literature review, no study examined the relationship between service orientation and customer orientation. A possible reason for this may be the conceptual proximity. By using items from the selling orientation-customer orientation scale, Guerra and Sepúlveda (2014, p. 30) even use a scale to capture service orientation labelled as customer orientation. One study examined service orientation as a predictor for variables that show overlap with the concept of customer orientation. Gwinner et al. (2005) found a positive relationship between service orientation and service-offering behaviour but no relationship with interpersonal adaptive behaviour.

Regarding survey fatigue and survey economics, where more items in a questionnaire possibly might turn into a lower response rate or a participation denial, cutting items from two very similar concepts may be an important issue. Concluding, discussing the selectivity of both concepts, whether to maintain both concepts and if so, exploring the relationship between the both is a worthwhile future research avenue.

Three control variables turned out to be significantly related to frontline employee perceived customer orientation: country of origin of frontline employees, having leadership responsibilities or not, and working in a public or private organization.

It is not surprising that the country of origin of frontline employees is a significant control variable and influences frontline employee perceived customer orientation. Naturally, there are different working cultures in different countries, with employees having different demands for their work and workplace. In fact, there is a significant relationship between the country of origin of employees and the values considered important for work (Jaskyte, 2016, pp. 189–190). German

employees who work in public organizations cherish “a safe job with no risk” most, then doing a meaningful job second rather than preferring a satisfying income. In contrast, Russian employees in public organizations put a satisfying income first and consider a safe workplace as important (Jaskyte, 2016, pp. 190–191). These discrepancies in work values may manifest themselves and in differences in the factors influencing frontline employees. It can be suspected that the worth of work expressed by a good income influences Russian frontline employees (Khapova & Korotov, 2007, p. 77; Linz & Davidson, 2003, pp. 15–16; Puffer & Shekshnia, 1996, p. 233) and also incentivizes them regarding customer orientation.

The fact of having or not having leadership responsibilities affected the customer orientation perceived by frontline employees significantly. Seeing differences between frontline employees with and without leadership responsibilities is not surprising. Still, the tendency of frontline employees without leadership to perceive their customer orientation as higher than those with leadership responsibilities may be somewhat counter-intuitive. There may be several reasons for this that originate in the specificities coming with having leadership responsibilities. Firstly, frontline employees with leadership responsibilities have to deal with a different set of tasks. On top of the standard set of tasks connected to their frontline job, they have leadership tasks that, in consequence, leave less time and effort for dealing with customers. Hence, frontline employees with leadership responsibilities gradually move away from direct customer business over time. Because of this lack of daily training, they lose abilities such as empathy, patience, and lack the possibility to experience and manage new customer incidents that add to their repository of experiences. Furthermore, the leadership tasks also drain energy from them that then is missing in customer interactions. In turn, possibly leading to lower self-perceived customer orientation. The boundary-spanning nature of frontline jobs may be even more dominant when the frontline employee has to comply with more rules because he or she inherits leadership responsibilities. Being somewhat one more hierarchy level away from the rule setter then may lead to a more relaxed interaction with customers, thus being more successful and reflected in higher self-perceived customer orientation. Lastly, from a methodological viewpoint, leaders might be more self-critical and reflective, resulting in a lower self-rated customer orientation (Hougaard, Carter, & Afton, 2018).

Leaders, in general, have different personality traits. Kirkpatrick and Locke (1991, p. 49) state that six main traits characterize leadership personalities: drive, leadership motivation, honesty and integrity, self-confidence (including

emotional stability), cognitive ability, and knowledge of the business. So, theoretically, frontline employees with and without leadership responsibilities should score differently regarding these traits. In the present study, the only factor that comes close to one of the mentioned concepts above is the self-confidence that is closely intertwined with self-efficacy. A contingency analysis for self-efficacy revealed a significant positive relationship between having leadership responsibilities and self-perceived self-efficacy (cf. Table 31). In fact, leadership's relationship to self-efficacy exceeds the 0.4-level of Cramer's V, indicating a stronger relationship.

Table 31: Contingency Analysis for Creativity, Motivation, Organizational Commitment, Self-Efficacy and Leadership with Exact Fisher Test and Monte Carlo (MC) Significance and Confidence Intervals (CI)

Value	Significance	MC CI 99%		Cramer's V	Significance	MC CI 99%
		Lower Bound	Upper Bound			
<i>Creativity</i>						
28.441	0.000	0.000	0.000	0.356	0.000	0.000, 0.000
<i>Motivation</i>						
31.574	0.000	0.000	0.000	0.373	0.000	0.000, 0.000
<i>Organizational Commitment</i>						
31.531	0.000	0.000	0.000	0.373	0.000	0.000, 0.000
<i>Self-Efficacy</i>						
42.424	0.000	0.000	0.000	0.427	0.000	0.000, 0.000

Other factors positively and significantly related to leadership responsibilities are motivation, organizational commitment, and creativity. A contingency analysis with the present study data confirms that (cf. Table 31). Furthermore, crosstabulation revealed significant differences in the self-perception of frontline employees regarding these four variables relevant for leadership. In low and high levels of self-perception for these variables, frontline employees with and without leadership differ (cf. Appendix 7: Crosstabulations for Leadership with Creativity, Motivation, Organizational Commitment, and Self-Efficacy). Apart from creativity which is a trait not exclusively for leaders (Kirkpatrick & Locke, 1991, p. 56), motivation and organizational commitment can be interpreted as conceptual close with drive and leadership motivation.

Again, a group comparison was not possible due to the relatively small sample.

The third control variable having a significant effect on frontline employees' perceived customer orientation is the type of organization in which frontline employees work. Frontline employees working in public organizations tend to perceive their customer orientation as lower than frontline employees working in private organizations. Maybe this result is due to the nature of public and private organizations. Both types of organizations are subject to different incentive structures. Drawing from institutional economics, it can be said that public institutions operate less economically than private organizations. At the same time, the inefficient use of resources is not sanctioned consistently. Also, from an employee perspective, there are differences reflected by incentive structures that, e.g., foster employee motivation (Rainey & Bozeman, 2000, pp. 460–461). With such incentive structure not sufficiently established, employees might defect to undesirable behaviour such as work to rule, clockwatching, or worse.

4.3 Analysis of Influence Factors on Frontline Employees' Service Orientation

4.3.1 Ordinal Regression Model and Assumption Checking

Ordinal regression was performed using the same SPSS procedures GENLIN and PLUM. Also, the Wald Chi-square test was used to examine the predictor variables' effect on the outcome variable. Table 32 displays the correspondent results. It can be seen that from the hypothesized factors, frontline employee perceived creativity, emotional exhaustion, motivation, role ambiguity, and teamwork do not seem to have a significant effect on the outcome variable. Instead, frontline employee perceived self-efficacy, organizational commitment, and customer orientation, plus the control variables gender and leadership responsibilities, have a significant effect on the outcome variable. It remains to be seen if this significance holds for all levels and manifestations of variables. The regression model is presented in Table 34. Significant relationships are in bold.

Table 32: Test of Model Effects for Service Orientation

Influence Factor	Type III		
	Wald Chi-Square	df	Sig.
Creativity	6.874	6	0.333
Self-Efficacy	20.435	6	0.002
Emotional Exhaustion	1.266	6	0.974
Motivation	7.516	3	0.057
Organizational Commitment	27.025	6	0.000
Role Ambiguity	1.522	6	0.958
Role Conflict	5.640	3	0.130
Role Overload	1.786	3	0.618
Teamwork	12.150	6	0.059
Customer Orientation	27.374	3	0.000
Age	1.835	4	0.766
Gender	9.871	1	0.002
Country	0.266	1	0.606
Educational Level	9.564	5	0.089
Leadership Responsibilities	4.865	1	0.027
Working Full Time	0.035	1	0.851
Type of Organization	0.808	1	0.369

Regarding the whole model, the Chi-Square value of 166.679 (62 df) is highly significant ($p < 0,000005$) and therefore indicates that the model with its variables significantly contributes to the outcome variable of frontline employee perceived service orientation. Because of many cells with zero frequencies (1338, 85.7%), all Chi-Square statistics cannot be considered certain. Therefore, they are reported, but an interpretation was not deemed appropriate (Agresti, 2010). Pseudo R-Square values indicate a good model fit.

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Table 33: Model Fitting Information for the Ordinal Regression Model (Outcome Variable: Service Orientation)

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	702.077			
Final	340.315	361.762	62	0.000

Goodness-of-Fit	Chi-Square	df	Sig.
Pearson	1206.774	1276	0.917
Deviance	543.128	1276	1.000

Pseudo R-Square	
Cox and Snell	0.801
Nagelkerke	0.838
McFadden	0.515

Link Function: Complementary log-log

Table 34: Parameter Estimates, Odds Ratios, and Confidence Intervals (Outcome Variable: Service Orientation)

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test			Exp(B)	95% Wald Confidence Interval for Exp(B)	
			Lower	Upper	Wald Chi-Square	df	Sig.		Lower	Upper
Threshold Service Orientation = 1.00	-6.900	1.0061	-8.872	-4.928	47.036	1	0.000	0.001	0.000	0.007
Service Orientation = 1.50	-5.857	0.8974	-7.616	-4.098	42.594	1	0.000	0.003	0.000	0.017
Service Orientation = 2.00	-4.475	0.8431	-6.128	-2.823	28.173	1	0.000	0.011	0.002	0.059
Service Orientation = 2.50	-3.682	0.8285	-5.306	-2.058	19.748	1	0.000	0.025	0.005	0.128
Service Orientation = 3.00	-2.095	0.8116	-3.686	-0.504	6.663	1	0.010	0.123	0.025	0.604
Service Orientation = 3.50	-1.296	0.8029	-2.870	0.278	2.605	1	0.107	0.274	0.057	1.320
Creativity = 1.00	0.761	0.4588	-0.138	1.660	2.753	1	0.097	2.141	0.871	5.262
Creativity = 1.50	-0.298	0.4373	-1.155	0.559	0.463	1	0.496	0.743	0.315	1.750
Creativity = 2.00	0.109	0.3616	-0.600	0.818	0.091	1	0.763	1.115	0.549	2.266
Creativity = 2.50	0.310	0.4945	-0.659	1.279	0.393	1	0.531	1.364	0.517	3.595
Creativity = 3.00	-0.025	0.3428	-0.697	0.647	0.005	1	0.941	0.975	0.498	1.909
Creativity = 3.50	0.228	0.5791	-0.907	1.363	0.155	1	0.694	1.256	0.404	3.908
Creativity = 4.00	0 ^a							1		
Self-Efficacy = 1.00	-0.996	0.5957	-2.164	0.171	2.796	1	0.094	0.369	0.115	1.187
Self-Efficacy = 1.50	-0.729	0.5641	-1.834	0.377	1.670	1	0.196	0.482	0.160	1.458
Self-Efficacy = 2.00	-0.560	0.4464	-1.435	0.315	1.576	1	0.209	0.571	0.238	1.370
Self-Efficacy = 2.50	-1.421	0.4446	-2.293	-0.550	10.220	1	0.001	0.241	0.101	0.577
Self-Efficacy = 3.00	-1.456	0.3846	-2.210	-0.703	14.342	1	0.000	0.233	0.110	0.495
Self-Efficacy = 3.50	-0.966	0.3924	-1.735	-0.197	6.058	1	0.014	0.381	0.176	0.821

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test			Exp(B)	95% Wald Confidence Interval for Exp(B)	
			Lower	Upper	Wald Chi-Square	df	Sig.		Lower	Upper
Self-Efficacy = 4.00	0 ^a							1		
Emotional Exhaustion = 1.00	-0.248	0.3878	-1.008	0.512	0.410	1	0.522	0.780	0.365	1.668
Emotional Exhaustion = 1.50	-0.296	0.4831	-1.243	0.650	0.376	1	0.540	0.744	0.288	1.916
Emotional Exhaustion = 2.00	-0.141	0.4164	-0.958	0.675	0.115	1	0.734	0.868	0.384	1.963
Emotional Exhaustion = 2.50	-0.412	0.4448	-1.284	0.460	0.857	1	0.354	0.662	0.277	1.584
Emotional Exhaustion = 3.00	-0.269	0.3620	-0.979	0.440	0.553	1	0.457	0.764	0.376	1.553
Emotional Exhaustion = 3.50	-0.103	0.4189	-0.924	0.718	0.061	1	0.805	0.902	0.397	2.050
Emotional Exhaustion = 4.00	0 ^a							1		
Motivation = 1.00	-0.855	0.4019	-1.643	-0.067	4.524	1	0.033	0.425	0.193	0.935
Motivation = 2.00	0.012	0.3427	-0.660	0.684	0.001	1	0.972	1.012	0.517	1.982
Motivation = 3.00	-0.420	0.3171	-1.042	0.201	1.757	1	0.185	0.657	0.353	1.223
Motivation = 4.00	0 ^a							1		
Organizational Commitment = 1.00	-0.624	0.4989	-1.601	0.354	1.562	1	0.211	0.536	0.202	1.425
Organizational Commitment = 1.50	-0.437	0.5217	-1.459	0.585	0.702	1	0.402	0.646	0.232	1.796
Organizational Commitment = 2.00	-1.208	0.4682	-2.126	-0.290	6.656	1	0.010	0.299	0.119	0.748
Organizational Commitment = 2.50	-2.044	0.4831	-2.990	-1.097	17.893	1	0.000	0.130	0.050	0.334
Organizational Commitment = 3.00	-1.282	0.3816	-2.030	-0.534	11.288	1	0.001	0.277	0.131	0.586
Organizational Commitment = 3.50	-0.413	0.5588	-1.508	0.682	0.547	1	0.460	0.662	0.221	1.978
Organizational Commitment = 4.00	0 ^a							1		
Role Ambiguity = 1.00	0.284	0.4758	-0.649	1.216	0.355	1	0.551	1.328	0.523	3.374

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test			Exp(B)	95% Wald Confidence Interval for Exp(B)	
			Lower	Upper	Wald Chi-Square	df	Sig.		Lower	Upper
Role Ambiguity = 1.50	0.224	0.5281	-0.811	1.259	0.180	1	0.671	1.251	0.444	3.523
Role Ambiguity = 2.00	0.143	0.4764	-0.791	1.077	0.090	1	0.764	1.154	0.453	2.935
Role Ambiguity = 2.50	0.098	0.5255	-0.932	1.128	0.035	1	0.853	1.103	0.394	3.088
Role Ambiguity = 3.00	0.030	0.4602	-0.872	0.932	0.004	1	0.948	1.030	0.418	2.539
Role Ambiguity = 3.50	0.456	0.5452	-0.613	1.524	0.698	1	0.403	1.577	0.542	4.592
Role Ambiguity = 4.00	0 ^a							1		
Role Conflict = 1.00	-0.231	0.3710	-0.958	0.497	0.386	1	0.534	0.794	0.384	1.643
Role Conflict = 2.00	0.262	0.4519	-0.623	1.148	0.337	1	0.561	1.300	0.536	3.152
Role Conflict = 3.00	-0.584	0.3748	-1.318	0.151	2.426	1	0.119	0.558	0.268	1.163
Role Conflict = 4.00	0 ^a							1		
Role Overload = 1.00	0.017	0.4163	-0.799	0.833	0.002	1	0.967	1.018	0.450	2.301
Role Overload = 2.00	-0.026	0.4153	-0.840	0.788	0.004	1	0.950	0.974	0.432	2.198
Role Overload = 3.00	0.329	0.3731	-0.402	1.061	0.779	1	0.377	1.390	0.669	2.888
Role Overload = 4.00	0 ^a							1		
Teamwork = 1.00	-0.590	0.6198	-1.804	0.625	0.905	1	0.341	0.555	0.165	1.869
Teamwork = 1.50	-0.477	0.5258	-1.508	0.553	0.823	1	0.364	0.621	0.221	1.739
Teamwork = 2.00	-1.210	0.4933	-2.177	-0.244	6.021	1	0.014	0.298	0.113	0.784
Teamwork = 2.50	-0.221	0.3598	-0.926	0.484	0.378	1	0.539	0.802	0.396	1.622
Teamwork = 3.00	0.425	0.3188	-0.200	1.050	1.780	1	0.182	1.530	0.819	2.858
Teamwork = 3.50	0.078	0.3318	-0.572	0.729	0.056	1	0.813	1.082	0.564	2.073

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test			Exp(B)	95% Wald Confidence Interval for Exp(B)	
			Lower	Upper	Wald Chi-Square	df	Sig.		Lower	Upper
Teamwork = 4.00	0 ^a							1		
Customer Orientation = 1.00	0.763	0.9987	-1.194	2.721	0.584	1	0.445	2.145	0.303	15.190
Customer Orientation = 2.00	-1.811	0.4407	-2.675	-0.947	16.887	1	0.000	0.163	0.069	0.388
Customer Orientation = 3.00	-0.933	0.2384	-1.400	-0.466	15.317	1	0.000	0.393	0.247	0.628
Customer Orientation = 4.00	0 ^a							1		
21-30 Years=1.00	0.107	0.5190	-0.910	1.124	0.042	1	0.837	1.113	0.402	3.078
31-40 Years=2.00	0.379	0.5243	-0.649	1.406	0.521	1	0.470	1.460	0.523	4.080
41-50 Years=3.00	0.393	0.4640	-0.517	1.302	0.716	1	0.397	1.481	0.597	3.677
51-60 Years=4.00	0.104	0.4594	-0.797	1.004	0.051	1	0.822	1.109	0.451	2.729
61-99 Years=5.00	0 ^a							1		
Male = 1.00	-0.887	0.2824	-1.441	-0.334	9.871	1	0.002	0.412	0.237	0.716
Female = 2.00	0 ^a							1		
Germany = 1	0.215	0.4174	-0.603	1.033	0.266	1	0.606	1.240	0.547	2.810
Russia = 2	0 ^a							1		
Certificate of Secondary Education = 1.00	1.708	0.7594	0.219	3.196	5.056	1	0.025	5.516	1.245	24.433
A-Levels = 2.00	0.442	0.6038	-0.742	1.625	0.535	1	0.464	1.555	0.476	5.078
Vocational/ Industrial Training = 3.00	1.073	0.5565	-0.018	2.164	3.719	1	0.054	2.925	0.983	8.706
Bachelor = 4.00	0.955	0.5893	-0.200	2.110	2.628	1	0.105	2.599	0.819	8.251
Master = 5.00	0.950	0.5038	-0.038	1.937	3.552	1	0.059	2.585	0.963	6.938
Doctorate = 7.00	0 ^a							1		

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test			Exp(B)	95% Wald Confidence Interval for Exp(B)	
			Lower	Upper	Wald Chi-Square	df	Sig.		Lower	Upper
No Leadership Responsibilities = 0.00	-0.565	0.2563	-1.068	-0.063	4.865	1	0.027	0.568	0.344	0.939
Leadership Responsibilities = 1.00	0 ^a							1		
Working Part Time = 0.00	0.051	0.2707	-0.480	0.582	0.035	1	0.851	1.052	0.619	1.789
Working Full Time = 1.00	0 ^a							1		
Public Organization = 1	0.234	0.2599	-0.276	0.743	0.808	1	0.369	1.263	0.759	2.102
Private Organization = 2 (Scale)	0 ^a							1		
	1 ^b									

Outcome Variable: Service Orientation
 Model: (Threshold), Creativity, Self-Efficacy, Emotional Exhaustion, Motivation, Organizational Commitment, Role Ambiguity, Role Conflict, Role Overload, Teamwork, Customer Orientation, Age, Gender, Country, Educational Level, Leadership Responsibilities, Work Time, Type of Organization

^a Set to zero because this parameter is redundant. ^b Fixed at the displayed value.

The confusion table (cf. Table 35) displays how well the model could predict the right categories of the outcome variable compared to the real category the outcome variable is assigned to. In category 1, the model fails to assign the cases correctly. In category 2, less than a third of the cases are assigned correctly. In categories 3 and 4, four-fifths of the cases were assigned to the correct category (78.69% and 85.37%, respectively). In sum, 54.91% $(=(5+48+70)/224)$ cases were correctly assigned, which is considered to be a poor result.

Table 35: Confusion Table (Crosstabulation) of Service Orientation and Its Predicted Response Category

		Predicted Response Category			Total	Percentage of Correct Predicted Categories
		2.00	3.00	4.00		
Service Orientation	1.00	2	1	0	3	0
	1.50	1	4	0	5	0
	2.00	5	8	4	17	29.41
	2.50	3	14	2	19	0
	3.00	2	48	11	61	78.69
	3.50	0	17	20	37	0
	4.00	0	12	70	82	85.37
Total		13	104	107	224	54.91

Performing a correlation with Kendall's tau b between the predicted response category and the actual category of frontline employee perceived customer orientation reveals a moderate relationship, indicating a moderate fit of the model to the data ($\tau_b=0.583$, $p<0.0005$).

The assumptions of ordinal regression are met. The outcome variable frontline employee perceived customer orientation is ordinal and all predictor and control variables are ordinal as well. In this case, all other variables are ordinal. By means of linear regression it was tested for multicollinearity. Therefore, dummy variables were created for all categorical variables. The regression results (cf. Appendix 8) show tolerance (≤ 0.154) and VIF values (≤ 6.479) pointing to no multicollinearity.

The results of the test of parallel lines (cf. Table 36) proves that the proportional odds assumption is met. The test's significance is above 0.05 ($\chi^2(310)=101.322$), so the null hypothesis cannot be rejected.

Table 36: Test of Proportional Odds Assumption

Test of Parallel Lines^a				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	340.315			
General	238.993	101.322	310	1.000

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

^a Link Function: complementary log-log

4.3.2 Significant Influence Factors and Hypotheses Testing

To begin, Table 37 shows the hypotheses proven in this chapter and displays whether the factors influencing frontline employees' perceived service orientation were significant in the test of model effects.

Table 37: Results of Hypotheses Tests for Service Orientation

Hypotheses	Test of Model Effects	Test of Parameter Estimates
H ₂ : Frontline employees' perceived level of creativity is positively related to frontline employees' perceived level of service orientation.	False	False
H ₃ : Frontline employees' perceived level of self-efficacy is positively related to frontline employees' perceived level of service orientation.	True	True
H ₅ : Frontline employees' perceived level of emotional exhaustion is negatively related to frontline employees' perceived level of service orientation.	False	False
H ₆ : Frontline employees' perceived level of motivation is positively related to frontline employees' perceived level of service orientation.	False	Partially True
H ₇ : Frontline employees' perceived level of organizational commitment is positively related to frontline employees' perceived level of service orientation.	True	True
H ₉ : Frontline employees' perceived level of role conflict is negatively related to frontline employees' perceived level of service orientation.	False	False
H ₁₁ : Frontline employees' perceived level of role ambiguity is negatively related to frontline employees' perceived level of service orientation.	False	False
H ₁₃ : Frontline employees' perceived level of role overload is negatively related to frontline employees' perceived level of service orientation.	False	False
H ₁₅ : Frontline employees' perceived level of teamwork is positively related to frontline employees' perceived level of service orientation.	False	True

Self-Efficacy. Frontline employees who perceive their self-efficacy as high (“5.5”, “6”) and very high (“6.5”) tend to perceive their service orientation as lower as frontline employees perceiving their self-efficacy highest (“7”). Their odds to perceive service orientation as one category higher are around one quarter to one-third times that of frontline employees perceiving their self-efficacy highest. For example, frontline employees perceiving their self-efficacy as “6”, have odds of 0.233 times that of frontline employees belonging to the reference category and perceiving self-efficacy highest ($\exp(B)=0.233$, 95% CI, 0.110 to 0.495, Wald $\chi^2(1)=14.342$, $p=0.000$). Thus, H₃ is true.

Motivation. Frontline employees perceiving their motivation from low to medium (1, 2, 3, 4) tend to perceive their service orientation as lower than frontline employees perceiving their motivation as highest (“7”). Frontline employees who

scored low on motivation have odds of 0.425 (95% CI, 0.193 to 0.935, Wald $\chi^2(1)=4.524$, $p=0.033$) times that of frontline employees who perceived their self-efficacy as highest for perceiving their service orientation as one category higher. Although frontline employee perceived motivation showed no significant relation to frontline employee perceived service orientation in the test of overall model effects, low and medium levels of motivation were significantly related to frontline employee perceived service orientation. Therefore, H_6 is considered to be partially true.

Organizational Commitment. Frontline employees perceiving their organizational commitment as “5”, “5.5”, or “6”, are likely to perceive their service orientation as lower than frontline employees perceiving their organizational commitment as highest (“7”). For example, frontline employees perceiving their organizational commitment as “5.5” have odds of 0.130 (95% CI, 0.050 to 0.334, Wald $\chi^2(1)=17.893$, $p=0.000$) times that of frontline employees perceiving their organizational commitment as highest (“7”) to perceive their service orientation one category higher. Hence, H_7 is true.

Teamwork. Frontline employees who scored “5” on the teamwork scale have odds of 0.298 times (95% CI, 0.113 to 0.784, Wald $\chi^2(1)=6.021$, $p=0.014$) that of frontline employees who scored highest for teamwork (“7”) to perceive their service orientation one category higher. Thus, H_{15} is true.

Customer Orientation. Frontline employees perceiving their customer orientation as “5” or “6” tend to perceive their service orientation as lower than frontline employees scoring highest (“7”) for their perceived service orientation. The odds are 0.163 (95% CI, 0.069 to 0.388, Wald $\chi^2(1)=16.887$, $p=0.000$) and 0.393 (95% CI, 0.247 to 0.628, Wald $\chi^2(1)=15.317$, $p=0.000$) times that of frontline employees scoring highest for perceived customer orientation.

Gender. Male frontline employees tend to perceive their service orientation as lower than female frontline employees. Their odds of perceiving their service orientation as one category higher are 0.412 (95% CI, 0.237 to 0.716, Wald $\chi^2(1)=9.871$, $p=0.002$) times that of female frontline employees.

Educational Level. The reference category is the educational level “doctorate”. For frontline employees with a certificate of secondary education, there is a tendency to perceive service orientation as higher than frontline employees with a doctorate. The odds ratio for frontline employees with a certificate of secondary education are more than five times that of frontline employees with a doctorate

(Wald $\chi^2(1)=5.056$, $p=0.025$, $\exp(B)=5.516$, 95% CI, 1.245 to 24.433) to perceive service orientation as one category higher.

Leadership Responsibilities. Frontline employees without leadership only have odds half times that of frontline employees with leadership responsibilities to perceive service orientation one category higher. In other words, frontline employees without leadership tend to perceive service orientation lower than their colleagues with leadership responsibilities (Wald $\chi^2(1)=4.865$, $p=0.027$, $\exp(B)=0.568$, 95% CI, 0.344 to 0.939).

Frontline employee perceived creativity, emotional exhaustion, role ambiguity, role conflict, and role overload were not significant in any of their manifestations. Thus, H_2 , H_5 , H_9 , H_{11} , and H_{13} have to be rejected.

The presentation of the previous parameter estimates and odds ratios is only valid if all other effects, but the one looked upon, are held constant.

4.3.3 Interpretation and Discussion of Results

The relationships between frontline employee perceived self-efficacy, motivation, organizational commitment, and teamwork and frontline employee perceived service orientation were true (H_3 , H_5 , H_7 , H_{15}). There is no significant relationship between frontline employees' perceived service orientation and frontline employees' perceived creativity, emotional exhaustion, role ambiguity, role conflict, and role overload. Furthermore, frontline employee perceived customer orientation is significantly related to frontline employee perceived service orientation, as are the control variables gender, educational level, and leadership responsibilities.

The positive effects of frontline employee perceived self-efficacy appeared when testing the overall model effects and looking at single levels of self-efficacy. The higher frontline employees perceive their self-efficacy, the higher they perceive their service orientation.

According to Bandura's social cognitive theory, self-efficacy is enormously important for one's performance and performance evaluation, setting goals, and appreciating of and preference building for activities (Bandura, 1991, pp. 257–258). Thus, self-efficacy might lead to higher service orientation or, in other words, “*high self-efficacy will lead individuals to [...] actively search for effective task strategies*” (McCormick, 2001, p. 26).

Being willing and able from the roots to help customers, consider their needs, and cooperate with them coincides with being service-oriented (cf. Chapter

2.7.2). Achieving a successful completion of tasks or a sustainable solution of problems can reinforce the effects of self-efficacy (Bandura, 1998, pp. 53–54) on an outcome variable such as service orientation.

It appears intuitive that there is a significant relationship between frontline employee perceived service orientation and frontline employee perceived motivation. Previous research has shown that motivation has positive effects on frontline employees performance generally (Hosain, 2014) and specifically regarding frontline employees' service recovery performance (Karatepe, 2006; Masoud & Hmeidan, 2013) and complaint handling (Chan & Lam, 2011). Thus, it appears obvious that frontline employees who are motivated regarding their employer, work, and workplace (including work atmosphere, workplace, collegiality and cohesiveness), also perceive their service orientation as high.

The same argument holds for frontline employee perceived organizational commitment. Higher committed frontline employees tend to perceive their service orientation as higher. This result is in line with previous research (Guerra & Sepúlveda, 2014). Furthermore, the odds reveal that frontline employees perceiving their organizational commitment as "5.5" have the lowest odds of perceiving service orientation higher as the reference category, which indicates that certain levels of organizational commitment influence frontline employees differently regarding their perceived service orientation. This fact can be interpreted as follows: The will to act solution-oriented towards customers and offer good service does not always come together with organizational commitment. Maybe only at certain levels, the positive effects of organizational commitment on service orientation are unlocked. There might be several reasons for the special nature of the relationship between frontline employees' perceived organizational commitment and frontline employees' perceived service orientation. Firstly, when looking at previous research findings, it is noteworthy that hypothesized relationships between organizational commitment and customer orientation and related concepts were proven true (Noor et al., 2010; Sergeant & Frenkel, 2000). Still, the results are conflicting regarding frontline employees' general work or job performance (Gibbs & Ashill, 2013; Guerra & Sepúlveda, 2014; Han, Liu, & Dai, 2010). The question arises whether service orientation and customer orientation have connotations and if these connotations might be the reason for the lower odds of one level of frontline employee perceived organizational commitment.

Secondly, there might be other variables influencing the relationship that are not analyzed in this study. For example, Gibbs and Ashill (2013, p. 317) linked organizational commitment and work performance and found out that job satisfaction is more relevant for predicting performance than organizational commitment. Furthermore, they comment on the possible influences of working culture in different countries, different socialization in different generations of employees, and the type of tasks on organizational commitment (Gibbs & Ashill, 2013, pp. 317–318).

Another very intuitive relationship is the one between frontline employee perceived service orientation and frontline employee perceived teamwork. The relationship is positive, as hypothesized. It emphasizes the importance of teamwork for frontline employees. It can be considered a part that contributes to frontline employees' efficiency in interacting with customers (as shown by Vandaele and Gemmel (2006, pp. 7, 20), who detected a positive influence of internal influence behaviour, which was comprehended as teamwork, on service delivery behaviour). Good teamwork enables frontline employees to concentrate on the customer and his or her needs. A bad mood in the team, which leads to a lack of support and mutual helpfulness, might reduce the attention and effort frontline employees can spend to meet customer's demands because of rising stress levels (Yang & Lau, 2019, pp. 7–8). Naturally, organizational structure and work rules and procedures and the type of tasks influence the proportion and, by this, potentially the relevance of teamwork for frontline employees in different fields of the service industry. However, teamwork is an important issue for offering superior service (Wirtz & Jerger, 2016). For librarians, retail salespersons, and pharmacists who make out the largest groups in the present sample (cf. Figure 18), the O*Net, an occupational information database (U.S. Department of Labor, 2019a), lists cooperation and social orientation under work styles (U.S. Department of Labor, 2019b, 2019d, 2019c). Cooperation ("Job requires being pleasant with others on the job and displaying a good-natured, cooperative attitude.") and social orientation ("Job requires preferring to work with others rather than alone, and being personally connected with others on the job.") as applied by O*Net (U.S. Department of Labor, 2019e) can be considered as representations of teamwork. Thus, being able to teamwork is a relevant work style for the professions represented in the sample.

The significant relationship between frontline employee perceived customer orientation and service orientation does not come by surprise. Firstly, as proven in the previous chapter, frontline employee perceived service orientation is a strong predictor of customer orientation. Additionally, as the two concepts show

some overlap, the existence of a reverse relationship is expectable. Again, it might be worth discussing whether and how to retain both concepts or not. Besides, the numbers seem to confirm that the relationship between both variables is linear (cf. Table 34).

Male frontline employees tend to perceive their service orientation as lower than female frontline employees. Perhaps this result is due to gender stereotypes and the corresponding different understanding of service orientation. In an exploratory study, Mathies and Burford (2011, p. 646) prove that there is substantial overlap in the definition of good customer service by female and male frontline employees. Still, they illustrate differences: Female frontline employees are more focused on a good customer relation with high-quality interaction. Essential for male frontline employees is the answer to the customer's request and solving his or her problem (Mathies & Burford, 2011, p. 645).

The items for measuring service orientation in this study are expressed to put the result of the service interaction into the spotlight and the inner desire to meet the customers' demands pleasantly and obligingly (cf. Chapter 3.3.1). Therefore, the different understanding of good customer service might be why male frontline employees tend to perceive their service orientation as lower than their female counterparts do.

Additionally, previous research showed that there are differences between female and male frontline employees regarding the strength as well as the direction of relationships between role stressors and outcome variables such as job performance and job satisfaction (Babin & Boles, 1998, pp. 84–87; Karatepe, Yavas, et al., 2006, pp. 1089–1092; B. P. Kim, Murrmann, & Lee, 2009, pp. 616–617).

Regarding the educational level of frontline employees, the analysis revealed that frontline employees with a certificate of secondary education tend to perceive their level of service orientation as higher than frontline employees with a doctorate. Possible explanations for this result may be similar to that of frontline employees having leadership responsibilities and perceiving their customer orientation as lower than their colleagues without leadership responsibilities: a different set of tasks and specific skill set including the ability of self-reflection (cf. Chapter 4.2.1). Frontline employees with a doctorate more often have positions connected with a more complex and varying range of tasks. Being away from the core business depletes their resources differently, e.g., without having the

positive effects of having helped and solved a customer's problem. Consequently, when interacting with the customer, they might be less stress-resistant and less courteous than they would expect themselves to be.

Additionally, it can be assumed that frontline employees who have achieved a doctorate have specific methods for dealing with problems and are reflective personalities. Possibly a reflective personality will rate self-perceived outcomes such as service orientation lower. This effect could be amplified. They are also frontline employees who might overestimate their real service orientation because they think it is expected from them by superiors, customers, or, more generally, society.

Both groups, frontline employees with a certificate of secondary education and frontline employees with a doctorate, have the longest tenure (cf. Table 38).

Table 38: Median and Mean Tenure of Frontline Employees with Different Educational Levels

Educational Level of Frontline Employees	Median Tenure	Mean Tenure	Standard Deviation	n (=219)
Certificate of Secondary Education	28.00	28.8000	8.16224	10
A-Levels	10.00	12.0806	10.51990	31
Vocational/ Industrial Training	24.00	21.1081	11.47651	37
Bachelor	18.00	18.1029	13.35289	34
Master	26.00	24.8803	10.47858	94
Doctorate	30.00	27.2308	11.40288	13

Frontline employees with a certificate of secondary education have a tenure of about 28 years, frontline employees with a doctorate one that is about 30 years (when taking the median because of high standard deviations that probably are caused due to outliers). Thus, both groups have more years of service on their backs. Frontline employees with a certificate of secondary education have experience and simply know what is important in their job. At the end of their career development process, their job is probably secure. The need to climb up the career ladder is decreasing – and without these concerns, there are positive effects on their service orientation. At the same time, the fact that there is no possibility to climb the career ladder any further up might also cause frustration. Such frustration might be more immanent for frontline employees having achieved a doctorate and thus demonstrated a certain will and determination.

After all, being advanced in one's occupational life also can cause depleted resources for work and thus decreasing work motivation.

Surprisingly, the relationship between leadership and service orientation does not mirror the one found for customer orientation: frontline employees without leadership responsibilities tend to perceive customer orientation as higher than their colleagues with leadership responsibilities do. However, this relationship is not true for service orientation. Frontline employees with leadership responsibilities tend to perceive their service orientation as higher than frontline employees without leadership responsibilities. So, all arguments about the range of tasks, skillset, and reflective personality do not hold for service orientation.

4.4 Conceptual Reflections and Limitations of the Empirical Study Realization

After presentation and interpretation of the results, remarks will be made about the conceptual development of the study and the study limitations.

The development of any scientific work takes place in several phases. During the development of the present work, there were fundamental changes in the concept, which will be discussed in the following.

The service productivity model of Grönroos and Ojasalo was selected as the theoretical basis for this work. The initial concept of this dissertation aimed at providing the empirical proof of the Grönroos and Ojasalo model that had not been delivered previously. For this purpose, the pathways contained in the model were to be tested using structural equation modelling. The author knew that this had been an ambitious plan and could only be realized with a large amount of data. Ultimately, the realization of this plan failed because of the "empirical reality." In parallel to the sheer amount of data that had to be collected, the coupling of data sets between frontline employees and service customers was problematic. These should have been recorded as dyads. This recording of dyads would have meant that it should have been possible to trace which frontline employees would have served which customers. This actual condition raises problems within the context of data protection (certainly mitigable with proper data handling). It must also overcome institutional barriers within the participating organizations of the empirical study, e.g., workers' councils and staff councils. Furthermore, amid the dilemma of the need to record the frontline employee service customer-dyad, there is still the problem of needing a large sample to employ structural equation modelling with many variables as demanded

in the service productivity model of Grönroos and Ojasalo. One frontline employee usually serves more than one customer. Thus, a few frontline employee data records match many customer data records. From the author's point of view, this imbalance can only be resolved by selecting organizations that employ many frontline employees, or, in other words, have a certain size, to participate in the empirical study. This specific selection reduces the number of possible service organizations. At the same time, internal barriers preventing participation in the empirical study on the part of the organization increase by the organization's size.

Secondly, service productivity must be assessed from a frontline employee perspective and a customer perspective (cf. Chapter 2.1), which was not realized in this dissertation. The reasons for this coincide with those explained in the previous paragraph.

Finally, the third point to address is the missing joint consideration of service productivity and service quality. Firstly, the customer surveys could only be carried out in three of the 15 participating organizations and thus reflect only a fraction of the customers served by participating frontline employees. As stated, secondly, the data of the service dyad could not have been recorded.

Regarding the empirical realization of the study, there are five points to discuss: self-selection bias, weaknesses of the questionnaire, secondly, the selection of the statistical procedure to analyze the data, thirdly, the resulting re-coding of the Likert-scaled item answers to conduct the data analysis, and fourthly, the use of nested models.

Self-selection bias can occur in two ways, as explained in Chapter 3.4. A minor bias is assumed originating in the respondents itself because of general interest in the topic and in the results of the study. Furthermore, the insight and sympathy of approached respondents to help students gather their data might have been a reason for people to participate. Both of these possibilities apply to the present study. A major effect of self-selection is assumed by the researchers' decision to approach only certain service industries and certain subpopulations within these service industries, as presented in Chapter 3.1. The researcher took no counter-measure to compensate for the self-selection bias. Thus, the present study results are not generalizable to the population of German and Russian frontline employees.

A detailed evaluation of the questionnaire regarding its objectivity, reliability, and validity was provided in Chapter 3.3.2. Concerning the development of an internal efficiency scale for the service productivity model of Grönroos and Ojasalo, there are further points to consider. Firstly, the scales for service recovery performance and knowledge have to be revised, as they did not show satisfying properties regarding their reliability. Secondly, to get more detailed results, the scale for organizational commitment can be substituted by one that differs between affirmative, continuance, and normative commitment, e.g., Allen and Meyer (1990). Plus, thirdly, during the interpretation and discussion of results, the operationalization of the influence factors of creativity and teamwork were questioned, and alternative concepts such as creativity self-efficacy (cf. Chapter 4.2.3) or teamwork dimensions (Valentine et al., 2012, pp. 4–6; Weimar et al., 2017, pp. 19–20) were proposed.

Furthermore, there should be at least five items per factor. This is not a trivial decision to make when constructing the questionnaire, as using five items per factor would prolong the questionnaire.

Regarding social desirable responding because all measures are being self-reported, social desirability bias was considered when interpreting results. The scope of the bias could have been further determined, e.g., using the Marlowe-Crowne social desirability scale or short forms of it (Fischer & Fick, 1993; Reynolds, 1982; van de Mortel, 2008). However, such a determination has not been performed due to the length of the questionnaire.

Concluding, a careful balance must be made between the reliability of the questionnaire and the feasibility of the study. In other words, the service companies and participants in the study must accept a long questionnaire.

Another issue is the scaling of items in Likert format. One can use slide regulators that enable survey participants to select their answers on a continuum rather than on fixed scale points. Then, one would get interval rather than ordinal data and avoid the ongoing debate of whether data collected with Likert-scaled items are of (quasi-)interval or ordinal nature. Briefly outlined, researchers argue that the level of measurement of Likert scales is ordinal or interval (cf. Chapter 3.5; Jamieson, 2004, p. 1217). Those in favour of the ordinal interpretation of the Likert scale obtained data argue that the distances between the scale steps cannot be interpreted as being equal. This problem arises when scales aim to collect data about feelings, opinions, or confirmation and disconfirmation (Cohen, Manion, & Morrison (2000) as cited in Jamieson, 2004, p. 1217). Furthermore, defenders of the interval-data-position, e.g., Carifio and Perla (2008, p.

1150); Glass, Peckham, and Sanders (1972, p. 272); Norman (2010, p. 629), emphasize the robustness of parametric tests and their overall power. Statistical methods for ordinal data exploit this data type's information content (Scott, Goldberg, & Mayo, 1997, p. 46). Hence, the author decided to employ ordinal instead of linear regression.

Due to the mathematical characteristics of ordinal regression and the study characteristics (a large number of variables, small sample size), all data from the Likert-scaled items had to be recoded to impede a large number of empty cells causing separation or quasi-separation of the data. By recoding, data got lost. As explained in Chapter 4.1, the recoding procedure was conducted step-wise with the result that the reduction of the scale to four levels permitted the calculation of the results.

The sample consists of frontline employees that work in many different service organizations. For some frontline employees, it was possible to query the specific service organization they are working in so that, theoretically, more sub-populations within the sample could have been built and analyzed. This would have been possible to generate organization-specific findings and work out organization-specific implications and recommendations for the current frontline employee staff. Due to the ordinal data structure, the high number of predictor variables, and the small sample size per organization, an empirically thorough analysis was not possible. At this point, the consideration of the data as quasi-interval would have been a remedy. Through linear regression, the subsamples or nested models respectively could have been examined using bootstrapping, a technique to compensate for small sample sizes (Maas & Hox, 2005, pp. 91–92). Then, cutting data because of the reduction of scale points and the combination of levels could have been avoided.

5 IMPLICATIONS AND SUMMARY

5.1 Implications for Future Research

The empirical study in this dissertation consists of two conclusive analyses. Each analysis examined one outcome variable for its influencing factors. The results of hypotheses testing are summarized in Table 39.

Table 39: Summary of Hypotheses Testing Results

Hypotheses	Test of Model Effects	Test of Parameter Estimates
H ₁ : Frontline employees' perceived level of creativity is positively related to frontline employees' perceived level of customer orientation.	False	Partially True
H ₂ : Frontline employees' perceived level of creativity is positively related to frontline employees' perceived level of service orientation.	False	False
H ₃ : Frontline employees' perceived level of self-efficacy is positively related to frontline employees' perceived level of service orientation.	True	True
H ₄ : Frontline employees' perceived level of self-efficacy is positively related to frontline employees' perceived level of service recovery performance.	Not Tested	
H ₅ : Frontline employees' perceived level of emotional exhaustion is negatively related to frontline employees' perceived level of service orientation.	False	False
H ₆ : Frontline employees' perceived level of motivation is positively related to frontline employees' perceived level of service orientation.	False	Partially True
H ₇ : Frontline employees' perceived level of organizational commitment is positively related to frontline employees' perceived level of service orientation.	True	True
H ₈ : Frontline employees' perceived level of role conflict is negatively related to frontline employees' perceived level of customer orientation.	False	False
H ₉ : Frontline employees' perceived level of role conflict is negatively related to frontline employees' perceived level of service orientation.	False	False
H ₁₀ : Frontline employees' perceived level of role ambiguity is negatively related to frontline employees' perceived level of customer orientation.	False	False
H ₁₁ : Frontline employees' perceived level of role ambiguity is negatively related to frontline employees' perceived level of service orientation.	False	False

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H ₁₂ : Frontline employees' perceived level of role overload is negatively related to frontline employees' perceived level of customer orientation.	False	False
H ₁₃ : Frontline employees' perceived level of role overload is negatively related to frontline employees' perceived level of service orientation.	False	False
H ₁₄ : Frontline employees' perceived level of team-work is positively related to frontline employees' perceived level of customer orientation.	False	Partially True
H ₁₅ : Frontline employees' perceived level of team-work is positively related to frontline employees' perceived level of service orientation.	False	True
H ₁₆ : Frontline employees' perceived level of organizational commitment is positively related to frontline employees' perceived level of service recovery performance.		Not Tested
H ₁₇ : Frontline employees' perceived level of team-work is positively related to frontline employees' perceived level of service recovery performance.		Not Tested

One must consider how these results can be meaningfully combined or whether this is possible at all. After all, two analyses have examined different variables and naturally also have different influencing factors. The fact that customer and service orientation concepts overlap, but are not identical, looms over the whole issue.

The results of the test of model effects do not necessarily coincide with the test results for parameter estimates. To get a better overview, Table 40 shows which predictor variables influenced the outcome variables divided into the overall effect of a regressor for the model and the assessment of the effect of regressors regarding its different levels.

Creativity influenced customer orientation but not service orientation. It appears frontline employees' customer orientation benefits more when frontline employees are creative. In customer interactions, frontline employees may be required to develop creative solutions, which are then decisive for the perception of the own effort of solving customer issues and, thus, one's customer orientation.

Table 40: Frontline Employee Influence Factors for the Outcome Variables Customer Orientation and Service Orientation

	Customer Orientation		Service Orientation	
	Test of Over-all Model Effects	Test of Parameter Estimates	Test of Over-all Model Effects	Test of Parameter Estimates
Creativity	X	✓	X	X
Self-Efficacy	X	X	✓	✓
Emotional Exhaustion	X	✓	X	X
Motivation	X	✓	X	✓
Organizational Commitment	X	X	✓	✓
Role Ambiguity	X	X	X	X
Role Conflict	X	X	X	X
Role Overload	X	X	X	X
Teamwork	X	✓	X	✓
Customer Orientation	-----	-----	✓	✓
Service Orientation	✓	✓	-----	-----
Age	X	X	X	X
Gender	X	X	✓	✓
Country	✓	✓	X	X
Educational Level	X	X	X	✓
Leadership Responsibilities	✓	✓	✓	✓
Work-Time	X	X	X	X
Type of Organization	✓	✓	X	X

Considering that creativity is a dazzling construct (cf. Chapter 3.3.2), future studies should carefully evaluate measures for frontline employee creativity regarding the study's purpose. Furthermore, to increase reliability, self-perceived measures can be complemented by other data, e.g., ideas handed within employee suggestion programs.

Frontline employee perceived knowledge showed no significant influence on nor customer orientation neither service orientation. In this study, the focus of the measure knowledge was about general knowledge regarding the offered service. Concordant to previous research, researchers in the future should also

comprehend knowledge as manifestations of knowledge about customers, willingness and motivation for acquiring new or extending one's knowledge or thoroughly penetrating a problem.

Self-efficacy has a strengthening effect on the service orientation of frontline employees but not on their customer orientation. For service orientation, where the whole service process is relevant and not only meeting customer demands is central, self-efficacy appears to be more important for reinforcing frontline employees' service orientation.

The same argument holds for organizational commitment, which is more important to service orientation, representing overall willingness to perform service-like: courteous, friendly, helpful, cooperative. It has a positive effect on frontline employee perceived service orientation but not on customer orientation. The relationship between frontline employee perceived organizational commitment and service orientation does not appear linear. It seems as if the organizational commitment of frontline employees does not automatically come together with positive influences on frontline employees' service orientation. A more detailed analysis of the influences and characteristics of the non-linear relationship between the two and other relationships of organizational commitment on frontline employee output variables would clarify for which output organizational commitment is essential and for which it is negligible. Also, the usage of a different scale, as proposed in Chapter 4.3.3, would allow more insights into the interwovenness of the influence factor organizational commitment with frontline employee output relevant variables.

Service orientation appears to be more stable against the influence of different working cultures. This difference is expressed by the significant influence of frontline employees' different home countries and types of organizations, public or private, that supposedly express themselves more in the caretaking of the customers than in the overall disposition of providing and delivering service in a service-worthy manner. Besides, service orientation might be a variable that is, with its focus on the whole service process, better comparable – even beyond national and cultural frontiers. It is even more interesting that frontline employees' educational level and gender only influence frontline employees' service orientation but not their customer orientation. Possible explanations for these results have already been discussed in Chapters 4.2.3 and 4.3.3.

The deeper connection or, in other words, the disposition of frontline employees getting into a deeper connection with customers by dealing with their problems,

implied by the concept of customer orientation, also explains why emotional exhaustion negatively influences customer orientation and not service orientation. The establishment of this deeper connection to the customer demands more effort from frontline employees, causing, amongst others, emotional exhaustion.

The three role stressors, role ambiguity, role conflict, and role overload, do not significantly influence customer or service orientation. This result means that the frontline employees in the present study, with all the given peculiarities arising from the characteristics of the sample (cf. Chapter 4.1), are resilient to stress.

Frontline employee perceived motivation and teamwork play a role, as does the issue of leadership responsibility. It is reasonable to believe that, especially when considering output variables, the motivation of frontline employees is a significant influence factor. Of course, an "orientation," e.g., a disposition or predisposition, is based on a fundament that frontline employees inherently bring to their job. Nevertheless, such a disposition or predisposition must be cared for so that it does not wither away, and frontline employees are willing to put in the necessary will and energy to act customer- and service-oriented. In this matter, teamwork can be regarded as a time- and effort-reducing factor. After all, good teamwork generally makes it easier for all team members to work better, be more motivated, and mitigate the consequences of stress, emotional exhaustion, and other negative influences.

Having leadership responsibilities or not influenced frontline employees in the present study significantly in their customer and service orientation. However, if one looks at how having or not having leadership responsibilities affects frontline employees, one will notice the following: For customer orientation, it is detrimental also to have leadership responsibility as a frontline employee, whereas this is positive for service orientation. Having leadership responsibilities is detrimental to the caretaking of customer needs and wishes, as it requires resources for management tasks and the associated executive duties. It is precisely this other field of activity, e.g., the processing of tasks, that leads to a greater overall view of the work area and thus support and potentially improve the active management of the entire service process. Thus, frontline employees with leadership responsibilities may have a perspective beneficial to the service provision expressed in higher service orientation.

The role of having or not having leadership responsibilities offers interesting research avenues, e.g., in conjunction with work-and-life concepts that increase employers' and employees' flexibility, such as different forms of remote work resulting in virtual teams. Effective leadership of virtual teams received attention

in research (DasGupta, 2011; Pei & Piaw, 2018) and may pose valuable insights when combined with frontline employees as key drivers for improving service productivity.

Both customer orientation and service orientation significantly influence each other, which might be attributable to their conceptual overlap. No study appeared in the systematic literature review that examined the relationship between customer orientation and service orientation – supposedly because of the obvious conceptual proximity. Problems resulting from the lack of a clear distinction between the two concepts are illustrated by the example of Guerra and Sepúlveda (2014, p. 30). They used items of the selling orientation-customer orientation scale, a scale that even carries the label customer orientation, to operationalise service orientation. Also, some studies examined service orientation as a predictor for variables that show overlap with customer orientation and the hustle of concepts in this research area. For example, Gwinner et al. (2005) found a positive relationship between service orientation and service-offering behaviour but no relationship with interpersonal adaptive behaviour. Clarifying the two concepts, e.g., by realizing a clear-cut distinction, possibly facilitates future research efforts about frontline employee influence factors for output relevant variables.

Apart from the implications concerning the frontline employee influence factors, there are ones regarding the whole research approach. The scale for measuring the frontline employee influence factors and their influence on customer orientation and service orientation developed in this dissertation serves as a starting point. Future research can build on it to develop an internal efficiency scale (cf. Chapter 2.2.1) and, by this, operationalize one part of the Grönroos-Ojasalo-service-productivity-model.

Apart from frontline employees, Grönroos and Ojasalo indicated that there are other components on the part of service providers possibly relevant for measuring the internal efficiency of service. Thus, it needs to be discussed which components should be included in the measurement of internal efficiency. Similar to the approaches using objective matrices, Data Envelopment Analysis, and Balanced Scorecard methods, this is a challenging decision and has to be made following the specifics of a service, e.g., the degree of frontline employee integration into the service process, or at least the specifics of service offers in a certain service sector. Hence, more research is demanded to build more model components and approach an appropriate operationalization for the Grönroos and Ojasalo service productivity model.

Furthermore, the analysis using a nested model approach and the analysis of subsamples, especially in light of the significant effects of some sociodemographic characteristics, lays open future research paths. For example, the separate analysis of Russian and German frontline employees, the separate analysis of female and male frontline employees, and the analysis of frontline employees from public and private sector organizations would be reasonable. An appropriate size of the dataset is required.

Besides all this, one general issue is the further clarification of what service productivity is – especially in consideration of the recommendations to analyze service productivity in conjunction with service quality and using the dyads between service customers and frontline employees (cf. Chapter 2.1).

5.2 Managerial Implications

The variables of customer orientation and service orientation provide managers with a direct assessment measure for their frontline employees that shows them what the backbone of their frontline staff consists of and whether it is within a reasonable level.

Measuring service productivity remains a complicated endeavour and needs to be addressed in future service research. Nonetheless, managers can use both variables to operationalize a productivity component that plays a crucial role in services with significant customer interactions - the frontline employee. The addition of other factors that complement the self-assessment carried out by the frontline employees in this empirical study, e.g., turnover, customer feedback on service quality, complaint rates, and others, appears to be a viable and functional way to approach the actual measurement and management of service productivity.

Concrete implementation possibilities do not necessarily have to be based on the complex service productivity model of Grönroos and Ojasalo (cf. Chapter 2.2.1). The methods already used in practice with objective matrices, Balanced Scorecards, and Data Envelopment Analysis (cf. Chapter 2.3) can also be used for this purpose. The findings from the present work can be translated into these methods.

By analyzing the influencing factors of customer orientation and service orientation, practitioners can be given recommendations for starting points on how they can exert a positive influence on the customer orientation and service orientation of their frontline employees. There are influencing factors that they can

influence less and those with more opportunities to make a difference. For example, person-related factors such as creativity and self-efficacy can be influenced only to a limited extent. Organization-related factors, such as organizational commitment and motivation, are the ones where managers and supervisors have more power to change something.

As stated in Chapter 4.2.3, creativity interacts with other frontline employee influence factors such as self-efficacy, motivation (Coelho et al., 2011), and role conflict (Coelho & Augusto, 2010). Frontline employees perceiving a certain level of self-efficacy and motivation are probably more solution-oriented when solving problems of all kinds related to their work. Therefore, they are more creative than frontline employees with low levels of self-efficacy. Although situations where frontline employees perceive role conflict possibly trigger creative thinking and acting (Behrman & Perreault, 1984, p. 12), the author of this dissertation finds it troublesome to invoke role conflict deliberately. Role ambiguity decreases frontline employees' creativity (Coelho et al., 2011, p. 39).

Thus, fostering frontline employee creativity to enhance frontline employees' customer orientation is a complex issue that cannot be solved by stand-alone measures like introducing an employee suggestion program, e.g., in connection with rewards.

Instead, HR managers must use all their tools. Frontline employees that are up to date with their products and processes have a more extensive range of options to take care of customers and their needs. Such a state of mind can be achieved through continuous training. So, knowledge in the form of continuous and lifelong learning is an issue. Other forms may be job rotation, targeted internal networking, and communication initiatives. These measures can also provide impulses for broadening the knowledge base of frontline employees. In all this, it must be respected that there are different types of frontline employees who exhibit different behaviors when it comes to acquiring knowledge. Thus, learning orientation (Coelho & Sousa, 2011, pp. 27-29) and knowledge-sourcing behaviour (van der Heijden et al., 2013, p. 525) are decisive factors for creativity acted out by frontline employees. Furthermore, personality traits such as empathy and anticipation (Wilder et al., 2014, p. 449) and emotional intelligence (Agnihotri et al., 2014, p. 11) play a role, as do constructive and continuous feedback from managers to frontline employees (Agnihotri et al., 2014, p. 11) and freedom to make decisions (Wilder et al., 2014, p. 453). The latter two are instruments of leadership and employee development.

In this study, knowledge did not influence frontline employees' customer or service orientation. This result does not mean that employers and HR managers should neglect measures targeting the continuous perpetuation and upgrading of their frontline employees' knowledge. On the contrary, as stated in the case of creativity, knowledge is essential to provide frontline employees with the basis for finding creative solutions to challenging problems and dealing with customer requirements satisfactorily.

The fact that knowledge does not influence frontline employees' customer and service orientation also mean that frontline employees either have these orientations or do not - regardless of their specific knowledge. In other words, either frontline employees are fundamentally committed to addressing customers' needs and see themselves as service providers, or they are not. Accordingly, such characteristics must be taken into account in selecting personnel and assessed as part of the recruiting process.

When wanting to push frontline employees' service orientation, employers must strengthen frontline employees' self-efficacy. Measures for self-efficacy reinforcement are, e.g., the pursuit of supervisor support and recognition of frontline employees' trait competitiveness (Karatepe & Olugbade, 2009, p. 510), learning orientation, and performance orientation (Coelho & Sousa, 2011, p. 28). Fostering supervisor support, e.g., is one of the things being in the sphere where employers can take action. The other ones are the ones frontline employees have to bring with them, which points back to the issue of recruiting, like proving learning and performance orientation of frontline employees.

Also, organizational commitment is a relevant influence factor for frontline employees' service orientation. Committed employees believe in their work and their task. For employers, tackling commitment means seeing it on different levels. There is a commitment to the company, colleagues and teammates, supervisors, the task itself, and towards the customers. These different levels are not without overlap. For example, the commitment to the supervisor may overlap with the commitment to the company. For example, the supervisor stands for the corporate culture, living the principles upheld by the organization throughout his or her work and leadership style. In short, the supervisor represents a personified essence of the organization and what the organization stands for. So, there are other leverage points for this level of commitment than for the frontline employees' commitment towards the customers.

At all these levels of commitment, employers first must sort out which commitment is a possible cause of problems in their staff. Examples of leverage-points

for commitment reflect these different levels that can be labelled as proper management and support: training and rewards, e.g., (Malhotra et al., 2010, p. 288), technology and leadership (Ashill et al., 2006, p. 279, 2008, p. 450; Gibbs & Ashill, 2013, p. 314; Rod & Ashill, 2010, p. 93), and promotion of frontline employees satisfaction (Han et al., 2010, p. 4; Karatepe & Kilic, 2007, p. 248).

Furthermore, there are positive side effects when caring for frontline employees organizational commitment. For example, the willingness to report complaints (Walsh et al., 2015) and service recovery performance increase (Ashill et al., 2006, p. 279, 2008, p. 450; Boshoff & Allen, 2000, p. 80; Rod et al., 2008, p. 93).

For frontline employees' customer orientation, emotional exhaustion is a threat. The present study showed that frontline employees perceiving themselves as emotionally exhausted perceive themselves as well less customer-oriented. Besides the negative influence of emotional exhaustion on frontline employees' customer orientation, other negative consequences on output relevant variables (cf. Chapter 2.6.1) must not be ignored. Consequently, employers should be highly aware when their frontline employees show signs of emotional exhaustion.

If frontline employees are emotionally exhausted, this has negative effects. Decreasing performance (Karatepe, 2011, p. 253; Nafees, Kanwal, & Shoaib, 2015, p. 3625) within the scope of regular tasks to be performed (in-role performance) and the decline in performance outside the fixed framework of tasks and duties (extra-role performance) (Yavas et al., 2013), damages the accomplishment of organizational goals. Furthermore, frontline employees who are increasingly dissatisfied with their job due to emotional exhaustion (Karatepe, 2011, p. 253) also show stronger tendencies to leave the company (Karatepe, 2006, p. 52; Karatepe & Aleshinloye, 2009, p. 355). The ignorance of amplifiers of these tendencies can intensify problems in labour markets such as skill shortages and brain drain being a threat to public service with increasing demands.

Thus, employers of frontline employees are required to manage the causes of emotional exhaustion actively. Stress is a significant source of emotional exhaustion (Karatepe & Aleshinloye, 2009, p. 355). Also, putting frontline employees in situations that force them to feign positive emotions increases the degree of emotional exhaustion (Zhao et al., 2014, p. 427).

Partially influenceable by employers is family interfering with work, or, in other words, the impact of family on work (Frone, Yardley, & Markel, 1997, p. 146).

Here, employers can provide more freedom for the work-life balance to mitigate time issues. They cannot solve problems originating in missing spouse or family support when thinking of the overall family management (e.g., Frone et al., 1997, pp. 161–162; Greenhaus & Beutell, 1985).

Choi et al. (2014) investigated the influence factors of frontline employees' emotional exhaustion originating from customers. They found out that ambiguous customer expectations led to increased emotional exhaustion, as did the fact that customers were disliked and verbally aggressive (Choi et al., 2014, p. 280). One cannot choose the customers. However, employers can support their employees and prevent ambiguous customer expectations from the beginning, e.g., by aligning corporate communication with market research results and thereby proactively induce the right picture of service offers in customers' minds. To not limit this to marketing measures only, of course, frontline employees can also perform such communication during customer interaction backed up with appropriate training and supervisor support.

As is the case with emotional exhaustion, role stressors also play a role in frontline employees' motivation (Coelho et al., 2011, p. 39; Rigopoulou et al., 2012, pp. 631–632), which, in turn, influenced frontline employees' customer and service orientation in this study. That is why employers have to take care of their frontline employees' motivational ups and downs.

Good relationships with superiors, colleagues and customers are instrumental in motivating frontline employees (Coelho et al., 2011, p. 39). The complexity of the work task, meaning ambition and challenge instead of boredom and under-challenging (Coelho et al., 2011, p. 39), more responsibility and power (Chan & Lam, 2011, p. 620), can influence frontline employees' motivation positively. Also, the appreciation of the work through performance-based reward systems and the belief that one's work contributes to the company's overall performance (Hosain, 2014) have a positive effect on the motivation of frontline employees. In particular, personal contribution to overall company performance is a starting point for leveraging frontline employees' motivation. Especially if one's own activities successfully and visibly contribute to the overall company success, this contributes positively to stabilize frontline employees' motivation, like a kind of safety net to mitigate other negative influences on the motivation of frontline employees. Managers and corporate communications must work towards achieving a kind of IKEA effect, e.g., the effect that "*labor alone can be sufficient to induce greater liking for the fruits of one's labor*" (Norton, Mochon, Ariely, 2012, p. 453).

As discussed previously, stress or role stressors negatively influence factors relevant to frontline employees' customer and service orientation. However, the influence of stress on customer or service orientation was not observed. Although this result might appear counter-intuitive, it does not contradict previous research results. There also have been observed positive effects of role conflict on job performance (Babin & Boles, 1996, p. 96; Karatepe & Uludag, 2008, p. 123), intrinsic motivation, and creativity (Coelho et al., 2011, p. 39).

However, managers need not ignore stress, nor do they need to overestimate it. Stress management remains a tightrope walk for employers. Again, it is emphasized that employers should take great care to first select employees that have a basic set of suitable characteristics for frontline jobs, e.g., as outlined earlier, specific "orientations" are essential for the work as a frontline employee. Only employees who have particular essential suitability for a frontline job may have included stress resilience. Their customer orientation, e.g., willingness to help the customer and act in the customer's best interests, remains unaffected - even in stressful situations.

Teamwork and well functioning teams are critical components of a well-performing service company. The term "team" must be thought of flexibly. It is not just about teams that take turns with work, e.g., in shifts, and whose team members perform different tasks. It is also about teams that work well together across functional areas of a company. These could be, e.g., internal service providers (logistics, cleaning, IT infrastructure). They ensure that the company's frontline employees are free from other concerns in their work and can put all their effort into serving customers and solving their problems. The frontline employees and their supervisors also form a team, as do frontline employees and their management. They are all united by the vision and actions that bring them together towards a common goal. The search for teams within the company, as proposed by flexibly thinking the term "team," shows which leverage points there are for managers and HR personnel to strengthen teamwork among frontline employees and thus create a healthy working climate that is beneficial to the company's purpose.

As revealed in the previous paragraphs, the gained insights are relevant for the entire HR lifecycle, e.g., as presented in (Verive & DeLay, 2006, pp. 7–8). Regarding the attraction and recruitment stage, the approach to potential candidates can be more targeted when recruiters know the key features frontline employees should demonstrate. The findings, including the associated measuring

instruments, can be used to classify applicants to make the best possible selection concerning a position to be filled in the frontline area.

For onboarding, enablement, and development, HR developers can use the results of this dissertation to set the right focusses and emphasis on all programs that employees pass through until employees leave the company. Matching HR development programs to the specific characteristics of frontline employees (tasks within the job, career stage, and others) save financial resources and increases the sustainability of personnel development measures.

Besides the well-known HR instruments for personnel development, this work emphasizes the obligation of managers, supervisors, and HR responsables of service organizations to care about their frontline employees actively.

5.3 Summary

This dissertation draws upon frontline employees as one point of leverage for service productivity. Research questions were “Which factors influence frontline employees the most regarding their output in service interactions?” and “How can improvement in frontline employees’ output arising from consciously managing frontline employee influence factors be expressed?”.

Influence factors of frontline employees were analyzed and evaluated using new empirical data from different service industries to answer these questions. Customer orientation and service orientation were chosen as expressions for the results of proper frontline employee influence factor management. The results confirmed and complemented previous research results about frontline employees’ customer orientation and service orientation. Significant influence factors, future research paths and managerial implications, and won insights, were presented in Chapters 5.1 and 5.2.

Frontline employees are the most critical asset for service organizations whose service processes involve direct interaction with frontline employees, face-to-face or via a technological interface. They are the embodiment of the more or less abstract organization that provides the service. This embodiment gives the service organization a face that, in turn, forms an essential part for the building of customer relationships and transport an image that customers connect with service experience of a, at best, desired quality. The fulfilment of this multitude of roles and functions requires certain qualities and prerequisites that a frontline employee should have personally and that the service organization can also influence.

The study is embedded in the service productivity model of Grönroos and Ojasalo that considers service productivity as a function of three efficiencies of which one, the internal efficiency, is applicable for frontline employees' contribution to the productivity of a service process. In concrete terms, the frontline employee component, which is an integral part of many services and a determining contributor to the internal efficiency of service providers, has been further defined.

This further definition of the component "frontline employee" has been done by selecting the most researched influence factors for frontline employees on output-relevant variables. The findings of these influence factors were translated into a scale that can be considered the first draft of an internal efficiency scale for frontline employees. This internal efficiency scale has been applied in an empirical study with German and Russian frontline employees from public and private service organizations.

Considering previous research findings ensured that the model component "frontline employee" built on actual results. New findings generated with this study consolidated previous research results and aimed to close existing gaps in the network of frontline employee influence factors.

As stated in Chapter 2.2.1, to the author's knowledge, there is no empirical validation of the service productivity model of Grönroos and Ojasalo. The results of this dissertation allow service researchers to approach the goal of empirical validation of the model, albeit with a pragmatic and radical trimming of the original model.

Generally, this dissertation's results demonstrate the complexity of human nature. Therefore, eleven self-reported factors, two outcomes, and nine predictors served to picture the influences on frontline employees in service processes. Data from the public and private service sectors, from different service industries, from two countries, adds to previous research. Using established scales for construct measurement offers the possibility for meta-studies. Besides, in systematically reviewing three decades of frontline employee research, the complex and chaotic picture of research about frontline employee influence factors for output relevant outcomes were revealed.

This dissertation compiles 30 years of previous research, uses an established model of service productivity while examining alternative approaches to service productivity, and, as a result, produces a starting point for the empirical validation of the model in the form of a scale for the internal efficiency.

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APPENDIX

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Appendix 1: Notes on the Systematic Literature Review

Steps of the Review Process

Identification for the need of a review

There two reasons for conducting a systematic literature review:

- 1) To the best of the researcher's knowledge, there is no review covering and connecting the topics of factors influencing frontline employees and service productivity (and derivatives).
- 2) The results of the systematic literature review build the foundation for the empirical study carried out in this dissertation. It is the goal to find out which factors influence frontline employees the most. Therefore, the factors influencing frontline employees appearing in most studies are selected. On this basis a survey instrument is developed.

Define the objectives of the research

The objectives of the systematic literature review is to get an overview about the factors influencing frontline employees in their work and thereby affecting service productivity as well.

Perform the search strategy: Select search resources

In terms of the testing of search algorithms of databases, it turned out that the used databases differ in their search algorithms and search masks. For example, the search phase for this review was conducted during May 2015 until August 2015 and at that time GoogleScholar did not allow to limit the application of search terms in abstracts only. Instead, search terms were searched in titles only. To keep track of these particularities, a coding was applied that proved useful in a former systematic literature review (cf. Gliem & Klabuhn, 2014). Usually, the search masks in electronic databases offer different positions within publications in which search terms can be deployed such as title, abstract, full text, and keywords. To every of these positions a letter was assigned resulting in a four-digit combination (title = 1, abstract = 2, full text = 3, keywords = 4). If there was no search term deployed in one of these positions, the correspondent position(s) were assigned a zero. The Boolean operator "AND" was used to combine two or more search terms in one position. For example, if the term "Frontline employee" in combination with "efficiency" was searched for in the search field "title" combined with the Boolean operator "AND", the four-digit combination would be KG.0.0.0 (cf. Table 41).

Table 41: Search Terms and Electronic Databases

Search Terms		No.	Database		
A	Service productivity	K	Frontline Employee	1	Business Source Premier
B	Service efficiency	L	Frontline employees	2	EconBiz
C	Service efficacy	M	Front-line employee	3	Emerald Insight
D	Service effectiveness	N	Front-line employees	4	GoogleScholar
E	Service performance	O	Frontline staff	5	IEEE Explore
F	Productivity	P	Front-line staff	6	SAGE
G	efficiency			7	Science Direct
H	Efficacy			8	Springer Link
I	Effectiveness			9	Web of Science
J	Performance			10	Wiley Online Library

Data Extraction

After application of the inclusion and exclusion criteria, the articles were screened and data were extracted. The same person, who conducted the review, did data screening and extraction. The corresponding Excel sheet contained all the information included in a BibTex code, e.g., for a journal article this would be the title, author(s), journal, volume, number, pages, year, and publisher, plus the name of the database and the date when the publication was found and added to the data sheet.

For the purpose of the qualitative synthesis of data, further data were considered: country, service sector, predictor and outcome variables.

Appendix 2: Email Invitation to Participate in the Survey

Dear [name and title of library director],

I am doing research in the field of service management and work at the Chair of Organization, Human Resource Management and Corporate Governance at the Brandenburg University of Technology Cottbus-Senftenberg.

Why am I writing to you? The focus of my research is the staff members who have contact with your library users, either directly or by email or telephone. I intent to find out what influences this group of employees in their everyday work processes. This will address issues such as self-efficacy, teamwork, and creativity.

What is your benefit? First, you get an impression, a snapshot of what is going on with your employees. Furthermore, potential "pitfalls and leverage points" are uncovered which can be targeted by HR managers. If you are interested, library users can also be surveyed.

What is the plan? Surveys for both library staff and library users can be done digitally or in written form. The survey can be started immediately. Of course, you will receive an end-of-project evaluation.

Are you curious about the questionnaire?

You can find an excerpt of the questionnaire here: <https://goo.gl/forms/aapFXTe0lkAq8OU33>.

On the Day of Libraries of Berlin & Brandenburg on March 11 this year, I had the opportunity to present my research project to colleagues on site (see <https://lesewolke.wordpress.com/2017/03/16/tdbbb-2017/>). Among others, I was able to win the university library of the BTU Cottbus-Senftenberg as a research partner.

I would like to convince you and win your institution as a research partner. In the appendix you will find the key points of my project in a summarized form. Of course, if you have further questions, please let me know.

Kind regards

Silvia Gliem

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Appendix 3: Email Reminder to Participate in the Survey

Dear [name and title of library director],

a few weeks ago I sent you a request or a "call for participation" for a survey as part of my dissertation project.

Now I would like to follow-up again whether you are interested.

To give you an idea about my dissertation project, I have summarized the most important aspects in brief below.

What is the aim of the survey?

The aim of the survey is to find out which factors influence customer contact employees in their daily work, the interaction with customers.

Why is this important?

Even in times of increasing digitization and automation in customer service, there is still (still) a human being at the end of the day - the customer service representative. He or she has a significant influence on the quality of service perceived by the customer.

Who should be surveyed?

All employees who have customer contact should be surveyed. It does not matter whether the contact is face-to-face, via email or telephone.

How long does the survey take?

The survey is a one-time survey and lasts 10-15 minutes.

In what form is the survey conducted?

The survey can be conducted digitally (any device with internet connection is possible) or paper-based. A combination of both methods is also possible.

What does the questionnaire look like?

The questionnaire contains 13 sections and 58 questions. Eight questions collect socio-demographic data, the other 50 questions are distributed among the influence factors of the customer contact employees, e.g. creativity, self-efficacy and teamwork. The questionnaire will of course be made available to you after you have given me feedback.

What about anonymity?

The data is completely anonymous.

Naturally, there are subgroups that are very small, e.g. trainees or interns. Such data sets would be assignable under certain circumstances. I would remove these data records from the final evaluation that you receive and only use them for my overall survey, in which all data from all participating companies and organizations are included.

Do we get an evaluation?

Of course you will receive a final evaluation.

If you have any further questions, please do not hesitate to contact me. You are also welcome to call me at 0355/ 69 3050.

With kind regards

Silvia Gliem

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Appendix 4: List of All Libraries Invited to the Survey

No.	University Name	No. of Students	Library Director	E-Mail Address of Library Director
1	Fernuniversität in Hagen	68,429	Karin Michalke	direktion.ub@fernuni-hagen.de
2	Universität zu Köln	53,137	Dr. Hubertus Neuhausen	direktor@ub.uni-koeln.de
3	Ludwig-Maximilians-Universität München	51,025	Klaus-Rainer Brintzinger	direktion@ub.uni-muenchen.de
4	Johann Wolfgang Goethe-Universität Frankfurt am Main	46,867	Dr. Heiner Schnellling	h.schnelling@ub.uni-frankfurt.de
5	RWTH Aachen (RWTH)	44,517	Dr. Ulrike Eich	eich@ub.rwth-aachen.de
6	Westfälische Wilhelms-Universität (Münster)	44,016	Dr. Beate Tröger	troeger@uni-muenster.de
7	Universität Duisburg-Essen	43,281	Albert Bilo	albert.bilo@uni-due.de
8	Ruhr-Universität Bochum	42,463	Dr. Erda Lapp	erda.lapp@rub.de
9	Universität Hamburg	42,023	Prof. Dr. Gabriele Beger	gabriele.beger@sub.uni-hamburg.de
10	Technische Universität München	40,124	Dr. Reiner Kallenborn	reiner.kallenborn@ub.tum.de
11	Friedrich-Alexander-Universität Erlangen-Nürnberg	39,868	Konstanze Söllner	konstanze.soellner@fau.de
12	Rheinische Friedrich-Wilhelms-Universität Bonn	36,432	Dr. Ulrich Meyer-Doerpinghaus	Direktion@ulb.uni-bonn.de
13	Technische Universität Dresden	35,961	Prof. Dr. Thomas Bürger	Thomas.Buerger@slub-dresden.de
14	Duale Hochschule Baden-Württemberg (Stuttgart)	34,390	Elke Nehm	elke.nehm@dhw-stuttgart.de
15	Heinrich-Heine-Universität Düsseldorf	33,715	Dr. Irmgard Siebert	Irmgard.Siebert@ulb.hhu.de
16	Technische Universität Dortmund	33,594	Dr. Joachim Kreische	joachim.kreische@tu-dortmund.de
17	Humboldt-Universität zu Berlin (HUB)	33,540	Prof. Dr. Andreas Degkwitz	andreas.degkwitz@ub.hu-berlin.de
18	Johannes Gutenberg-Universität Mainz	33,132	Dr. Andreas Brandtner	A.Brandtner@ub.uni-mainz.de
19	Freie Universität Berlin (FUB)	33,000	Jiri Kende	leitung@ub.fu-berlin.de
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221	Katholische Hochschule Mainz	1,089	Sigrid Arenz	sigrid.arenz@kh-mz.de
222	Fachhochschule des Bundes für öffentliche Verwaltung (Brühl)	1,085	Ursula Mohr-Dietz	bibliothek@hsbund.de
223	MSH Medical School Hamburg	1,078	Katrin Wieckhorst / Nadja Kardel / Vanessa Isensee	katrin.wieckhorst@medicalschoo- hamburg.de / nadja.kardel@medicalschoo- hamburg.de vanessa.isensee@medicalschoo- hamburg.de
224	Hochschule für Bildende Künste Braunschweig	1,065	Frauke Stiller	f.stiller@hbk-bs.de
225	Burg Giebichenstein Kunsthochschule Halle	1,059	Petra Runge	runge@burg-halle.de
226	Hochschule für Musik und Theater „Felix Mendelssohn Bartholdy“ Leipzig	1,036	Anke Hofmann	anke.hofmann@hmt-leipzig.de
227	Hochschule für Musik und Theater München	1,033	Susanne Frintrop	susanne.frintrop@hmtm.de
228	Evangelische Hochschule Ludwigsburg	1,028	Doris Bastian	d.bastian@eh-ludwigsburg.de

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229	Hochschule für Telekom- munikation Leipzig	1,004	gleich zur Hochschule für Technik, Wirt- schaft und Kultur Leipzig	
230	Hochschule für Forst- wirtschaft Rottenburg	1,000	Günther Thomas	thomas@hs-rotten- burg.de

Appendix 5: Questionnaire

Introductory Section

Survey Title: Frontline Employee Survey

Introductory Text

address of welcome/ motivation for survey/ estimated time for survey completion/ navigation throughout survey/ privacy of data/ invitation for feedback & questions/ thank-you-message/ name

Instructions for the Completion of the Survey

structure of the survey/ how to answer the questions

Section 1: Teamwork

- "I feel that I am part of a team in an organizational unit."
 - "Everyone in organizational unit contributes to the team effort in servicing library customers."
 - "I feel a sense of responsibility to help my fellow employees do their jobs as well."
 - "My fellow employees and I cooperate more often than we compete."
 - "I feel that I am an important member of this organization."
-

Section 2: Service Recovery Performance

- "Considering all the things I do, I handle dissatisfied library users quite well."
 - "I don't mind dealing with complaining library users."
 - "No library user I deal with leaves with problems unresolved."
-

Section 3: Motivation

- "I feel a great sense of personal satisfaction when I do my job well."
 - "When I perform my job well, it contributes to my personal growth and development."
 - "My job increases my feeling of self-esteem."
-

Section 4: Self-Efficacy

- "My job is well within the scope of my abilities."
 - "I feel confident that my skills and abilities equal or exceed those of my colleagues."
 - "My past experiences and accomplishments increase my confidence that I will be able to perform successfully in this organization."
-

Section 5: Stress

- "I am given enough time to do what is expected of me on my job."
- "It often seems like I have too much work for one person to do."
- "The performance standards on my job are too high."
- "There are clear, planned goals and objectives for my job."
- "I know exactly what is expected of me."
- "I have to do things that should be done differently."
- "I have to bend a rule or policy in order to carry out an assignment."

- "I receive incompatible requests from two or more people."
-

Section 6: Service Orientation

- "I enjoy helping others."
 - "I pride myself in providing courteous service."
 - "It is natural for me to be considerate of others' needs."
 - "The best job I can imagine would involve assisting others in solving their problems."
-

Section 7: Creativity

- "I suggest new ways to achieve goals or objectives."
 - "I come up with new and practical ideas to improve performance."
 - "I suggest new ways to increase quality."
 - "I suggest new ways of performing work tasks."
-

Section 8: Knowledge

- "I know the scope of services the library offers."
 - "I know the applications and functions of our offered services."
 - "I am acting as a special resource to other departments that need my assistance."
 - "I keep abreast of our offered services and technology connected with it."
-

Section 9: Organizational Commitment

- "I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful."
 - "I find that my values and the organization's values are very similar."
 - "This organization really inspires the very best in me in the way of job performance."
 - "I am extremely glad that I chose this organization to work for, over others I was considering at the time I joined."
 - "Often I find it difficult to agree with this organization's policies on important matters relating to its employees."
 - "Deciding to work for this organization was a definite mistake on my part."
-

Section 10: Customer Orientation

- "When performing my job, the customer is most important to me."
 - "It is best to ensure that our customers receive the best possible service available."
 - "If possible, I meet all requests made by my customers."
 - "As an employee responsible for providing service, customers are very important to me."
 - "I believe that providing timely, efficient service to customers is a major function of my job."
-

Section 11: Emotional Exhaustion

- "I feel emotionally drained from my work."
- "I feel used up at the end of the workday."

- "Working with people all day is really a strain for me."
 - "I feel I'm working too hard on my job."
 - "I feel like I'm at the end of my rope."
-

Section 12: Sociodemographic Data

Please tick the circle corresponding to your current work situation.

- "How long have you been working in general (years of work experience)?"
 - "How long have you been working in this organization (years)?"
 - "Referring to your current work situation, do you have direct contact to customers (either face to face or via telephone or via email)?" [yes/ no]
 - "Do you have people directly reporting to you?" [yes/ no]
 - "What is the highest level of education you have completed?" [Certificate of Secondary Education/ A levels/ Vocational/ industrial training/ bachelor's degree/ Master's degree/ Master craftsman/ Doctorate degree]
 - "How old are you?"
 - "What is your gender?" [male/ female/ prefer not to say/ other]
-

Section 14: Finish of the Survey and Thank-You-Message

room for suggestions/ invitation to email for further questions

Appendix 6: Collinearity Statistics for Customer Orientation

	Collinearity Statistics	
	Tolerance	VIF
Creativity = 1.0	0,373	2,681
Creativity = 1.5	0,508	1,968
Creativity = 2.0	0,413	2,424
Creativity = 2.5	0,542	1,845
Creativity = 3.0	0,419	2,385
Creativity = 3.5	0,595	1,682
Self-Efficacy = 1.0	0,427	2,342
Self-Efficacy = 1.5	0,562	1,780
Self-Efficacy = 2.0	0,474	2,109
Self-Efficacy = 2.5	0,469	2,132
Self-Efficacy = 3.0	0,342	2,928
Self-Efficacy = 3.5	0,456	2,195
Emotional Exhaustion = 1.0	0,293	3,410
Emotional Exhaustion = 1.5	0,541	1,850
Emotional Exhaustion = 2.0	0,484	2,066
Emotional Exhaustion = 2.5	0,540	1,852
Emotional Exhaustion = 3.0	0,473	2,116
Emotional Exhaustion = 3.5	0,438	2,282
Motivation = 1.0	0,356	2,805
Motivation =2.0	0,432	2,315
Motivation =3.0	0,382	2,617
Organizational Commitment = 1.0	0,283	3,528
Organizational Commitment = 1.5	0,400	2,502
Organizational Commitment = 2.0	0,420	2,381
Organizational Commitment = 2.5	0,369	2,711
Organizational Commitment = 3.0	0,370	2,701
Organizational Commitment = 3.5	0,529	1,889
Role Ambiguity = 1.0	0,245	4,074
Role Ambiguity = 1.5	0,381	2,623
Role Ambiguity = 2.0	0,293	3,418
Role Ambiguity = 2.5	0,385	2,598
Role Ambiguity = 3.0	0,293	3,409
Role Ambiguity = 3.5	0,403	2,482
Role Conflict = 1.0	0,275	3,642
Role Conflict = 2.0	0,461	2,170
Role Conflict = 3.0	0,346	2,886
Role Overload = 1.0	0,194	5,151
Role Overload = 2.0	0,332	3,013
Role Overload = 3.0	0,288	3,466
Teamwork = 1.0	0,669	1,495
Teamwork = 1.5	0,650	1,537
Teamwork = 2.0	0,498	2,008
Teamwork = 2.5	0,597	1,676
Teamwork = 3.0	0,502	1,991
Teamwork = 3.5	0,527	1,898
Service Orientation = 1.0	0,716	1,396
Service Orientation = 1.5	0,672	1,488
Service Orientation = 2.0	0,548	1,824
Service Orientation = 2.5	0,549	1,823
Service Orientation = 3.0	0,450	2,224

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Service Orientation = 3.5	0,629	1,589
Age Years 60-99	0,205	4,874
Age Years 51-60	0,269	3,713
Age Years 41-50	0,213	4,691
Age Years 31-40	0,222	4,499
Country Germany	0,371	2,694
Gender Male	0,599	1,669
Educational Level	0,392	2,551
Certificate of Secondary Education		
Educational Level A-Levels	0,195	5,136
Educational Level Vocational/ Industrial Training	0,194	5,147
Educational Level Bachelor	0,212	4,723
Educational Level Master	0,142	7,037
No Leadership Responsibilities	0,457	2,189
Working Full Time	0,524	1,908
Public Organization	0,446	2,242

Appendix 7: Crosstabulations for Leadership with Creativity, Motivation, Organizational Commitment, and Self-Efficacy

Table 42: Crosstabulation of Creativity * Leadership Responsibilities (n=224)

Self-Perceived Level of Creativity		Leadership Responsibilities		
		No	Yes	Total
1.00	Count	22 _a	6 _b	28
	Expected Count	14.8	13.3	28.0
	% within Creativity	78.6%	21.4%	100.0%
	% within Leadership Responsibilities	18.6%	5.7%	12.5%
	% of Total	9.8%	2.7%	12.5%
	Standardized Residual	1.9	-2.0	
1.50	Count	14 _a	6 _a	20
	Expected Count	10.5	9.5	20.0
	% within Creativity	70.0%	30.0%	100.0%
	% within Leadership Responsibilities	11.9%	5.7%	8.9%
	% of Total	6.3%	2.7%	8.9%
	Standardized Residual	1.1	-1.1	
2.00	Count	34 _a	15 _b	49
	Expected Count	25.8	23.2	49.0
	% within Creativity	69.4%	30.6%	100.0%
	% within Leadership Responsibilities	28.8%	14.2%	21.9%
	% of Total	15.2%	6.7%	21.9%
	Standardized Residual	1.6	-1.7	
2.50	Count	5 _a	10 _a	15
	Expected Count	7.9	7.1	15.0
	% within Creativity	33.3%	66.7%	100.0%
	% within Leadership Responsibilities	4.2%	9.4%	6.7%
	% of Total	2.2%	4.5%	6.7%
	Standardized Residual	-1.0	1.1	
3.00	Count	24 _a	30 _a	54
	Expected Count	28.4	25.6	54.0
	% within Creativity	44.4%	55.6%	100.0%
	% within Leadership Responsibilities	20.3%	28.3%	24.1%
	% of Total	10.7%	13.4%	24.1%
	Standardized Residual	-.8	.9	
3.50	Count	3 _a	7 _a	10
	Expected Count	5.3	4.7	10.0
	% within Creativity	30.0%	70.0%	100.0%
	% within Leadership Responsibilities	2.5%	6.6%	4.5%
	% of Total	1.3%	3.1%	4.5%
	Standardized Residual	-1.0	1.0	
4.00	Count	16 _a	32 _b	48
	Expected Count	25.3	22.7	48.0
	% within Creativity	33.3%	66.7%	100.0%
	% within Leadership Responsibilities	13.6%	30.2%	21.4%
	% of Total	7.1%	14.3%	21.4%
	Standardized Residual	-1.8	1.9	
Total	Count	118	106	224
	Expected Count	118.0	106.0	224.0

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Self-Perceived Level of Creativity	Leadership Responsibilities		
	No	Yes	Total
% within Creativity	52.7%	47.3%	100.0%
% within Leadership Responsibilities	100.0%	100.0%	100.0%
% of Total	52.7%	47.3%	100.0%

Each Subscript Letter denotes a Subset of Leadership Responsibilities Categories (Yes/No) whose Column Proportions do not differ significantly from each other at the 0.05 Level.

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Table 43: Crosstabulation of Motivation * Leadership Responsibilities (n=224)

Self-Perceived Level of Motivation		Leadership Responsibilities		
		No	Yes	Total
1.00	Count	11 _a	0 _b	11
	Expected Count	5.8	5.2	11.0
	% within Motivation	100.0%	0.0%	100.0%
	% within Leadership Responsibilities	9.3%	0.0%	4.9%
	% of Total	4.9%	0.0%	4.9%
	Standardized Residual	2.2	-2.3	
1.50	Count	10 _a	2 _b	12
	Expected Count	6.3	5.7	12.0
	% within Motivation	83.3%	16.7%	100.0%
	% within Leadership Responsibilities	8.5%	1.9%	5.4%
	% of Total	4.5%	0.9%	5.4%
	Standardized Residual	1.5	-1.5	
2.00	Count	18 _a	5 _b	23
	Expected Count	12.1	10.9	23.0
	% within Motivation	78.3%	21.7%	100.0%
	% within Leadership Responsibilities	15.3%	4.7%	10.3%
	% of Total	8.0%	2.2%	10.3%
	Standardized Residual	1.7	-1.8	
2.50	Count	17 _a	7 _a	24
	Expected Count	12.6	11.4	24.0
	% within Motivation	70.8%	29.2%	100.0%
	% within Leadership Responsibilities	14.4%	6.6%	10.7%
	% of Total	7.6%	3.1%	10.7%
	Standardized Residual	1.2	-1.3	
3.00	Count	26 _a	36 _b	62
	Expected Count	32.7	29.3	62.0
	% within Motivation	41.9%	58.1%	100.0%
	% within Leadership Responsibilities	22.0%	34.0%	27.7%
	% of Total	11.6%	16.1%	27.7%
	Standardized Residual	-1.2	1.2	
3.50	Count	23 _a	19 _a	42
	Expected Count	22.1	19.9	42.0
	% within Motivation	54.8%	45.2%	100.0%
	% within Leadership Responsibilities	19.5%	17.9%	18.8%
	% of Total	10.3%	8.5%	18.8%
	Standardized Residual	.2	-.2	
4.00	Count	13 _a	37 _b	50
	Expected Count	26.3	23.7	50.0
	% within Motivation	26.0%	74.0%	100.0%
	% within Leadership Responsibilities	11.0%	34.9%	22.3%
	% of Total	5.8%	16.5%	22.3%
	Standardized Residual	-2.6	2.7	
Total	Count	118	106	224
	Expected Count	118.0	106.0	224.0
	% within Motivation	52.7%	47.3%	100.0%
	% within Leadership Responsibilities	100.0%	100.0%	100.0%
	% of Total	52.7%	47.3%	100.0%

Each Subscript Letter denotes a Subset of Leadership Responsibilities Categories (Yes/No) whose Column Proportions do not differ significantly from each other at the 0.05 Level.

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Table 44: Crosstabulation of Organizational Commitment * Leadership Responsibilities (n=224)

Self-Perceived Level of Organizational Commitment		Leadership Responsibilities		
		No	Yes	Total
1.00	Count	26 _a	10 _b	36
	Expected Count	19.0	17.0	36.0
	% within Organizational Commitment	72.2%	27.8%	100.0%
	% within Leadership Responsibilities	22.0%	9.4%	16.1%
	% of Total	11.6%	4.5%	16.1%
	Standardized Residual	1.6	-1.7	
1.50	Count	14 _a	4 _b	18
	Expected Count	9.5	8.5	18.0
	% within Organizational Commitment	77.8%	22.2%	100.0%
	% within Leadership Responsibilities	11.9%	3.8%	8.0%
	% of Total	6.3%	1.8%	8.0%
	Standardized Residual	1.5	-1.5	
2.00	Count	16 _a	7 _a	23
	Expected Count	12.1	10.9	23.0
	% within Organizational Commitment	69.6%	30.4%	100.0%
	% within Leadership Responsibilities	13.6%	6.6%	10.3%
	% of Total	7.1%	3.1%	10.3%
	Standardized Residual	1.1	-1.2	
2.50	Count	14 _a	13 _a	27
	Expected Count	14.2	12.8	27.0
	% within Organizational Commitment	51.9%	48.1%	100.0%
	% within Leadership Responsibilities	11.9%	12.3%	12.1%
	% of Total	6.3%	5.8%	12.1%
	Standardized Residual	-.1	.1	
3.00	Count	31 _a	25 _a	56
	Expected Count	29.5	26.5	56.0
	% within Organizational Commitment	55.4%	44.6%	100.0%
	% within Leadership Responsibilities	26.3%	23.6%	25.0%
	% of Total	13.8%	11.2%	25.0%
	Standardized Residual	.3	-.3	
3.50	Count	7 _a	13 _a	20
	Expected Count	10.5	9.5	20.0
	% within Organizational Commitment	35.0%	65.0%	100.0%
	% within Leadership Responsibilities	5.9%	12.3%	8.9%
	% of Total	3.1%	5.8%	8.9%
	Standardized Residual	-1.1	1.1	
4.00	Count	10 _a	34 _b	44
	Expected Count	23.2	20.8	44.0
	% within Organizational Commitment	22.7%	77.3%	100.0%
	% within Leadership Responsibilities	8.5%	32.1%	19.6%
	% of Total	4.5%	15.2%	19.6%
	Standardized Residual	-2.7	2.9	
Total	Count	118	106	224
	Expected Count	118.0	106.0	224.0
	% within Organizational Commitment	52.7%	47.3%	100.0%
	% within Leadership Responsibilities	100.0%	100.0%	100.0%
	% of Total	52.7%	47.3%	100.0%

Each Subscript Letter denotes a Subset of Leadership Responsibilities Categories (Yes/ No) whose Column Proportions do not differ significantly from each other at the 0.05 Level.

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Table 45: Crosstabulation of Self-Efficacy * Leadership Responsibilities (n=224)

Self-Perceived Level of Self-Efficacy		Leadership Responsibilities		
		No	Yes	Total
1.00	Count	11 _a	0 _b	11
	Expected Count	5.8	5.2	11.0
	% within Self-efficacy	100.0%	0.0%	100.0%
	% within Leadership Responsibilities	9.3%	0.0%	4.9%
	% of Total	4.9%	0.0%	4.9%
	Standardized Residual	2.2	-2.3	
1.50	Count	10 _a	2 _b	12
	Expected Count	6.3	5.7	12.0
	% within Self-efficacy	83.3%	16.7%	100.0%
	% within Leadership Responsibilities	8.5%	1.9%	5.4%
	% of Total	4.5%	0.9%	5.4%
	Standardized Residual	1.5	-1.5	
2.00	Count	18 _a	5 _b	23
	Expected Count	12.1	10.9	23.0
	% within Self-efficacy	78.3%	21.7%	100.0%
	% within Leadership Responsibilities	15.3%	4.7%	10.3%
	% of Total	8.0%	2.2%	10.3%
	Standardized Residual	1.7	-1.8	
2.50	Count	17 _a	7 _a	24
	Expected Count	12.6	11.4	24.0
	% within Self-efficacy	70.8%	29.2%	100.0%
	% within Leadership Responsibilities	14.4%	6.6%	10.7%
	% of Total	7.6%	3.1%	10.7%
	Standardized Residual	1.2	-1.3	
3.00	Count	26 _a	36 _b	62
	Expected Count	32.7	29.3	62.0
	% within Self-efficacy	41.9%	58.1%	100.0%
	% within Leadership Responsibilities	22.0%	34.0%	27.7%
	% of Total	11.6%	16.1%	27.7%
	Standardized Residual	-1.2	1.2	
3.50	Count	23 _a	19 _a	42
	Expected Count	22.1	19.9	42.0
	% within Self-efficacy	54.8%	45.2%	100.0%
	% within Leadership Responsibilities	19.5%	17.9%	18.8%
	% of Total	10.3%	8.5%	18.8%
	Standardized Residual	.2	-.2	
4.00	Count	13 _a	37 _b	50
	Expected Count	26.3	23.7	50.0
	% within Self-efficacy	26.0%	74.0%	100.0%
	% within Leadership Responsibilities	11.0%	34.9%	22.3%
	% of Total	5.8%	16.5%	22.3%
	Standardized Residual	-2.6	2.7	
Total	Count	118	106	224
	Expected Count	118.0	106.0	224.0
	% within Self-efficacy	52.7%	47.3%	100.0%
	% within Leadership Responsibilities	100.0%	100.0%	100.0%
	% of Total	52.7%	47.3%	100.0%

Each Subscript Letter denotes a Subset of Leadership Responsibilities Categories (Yes/No) whose Column Proportions do not differ significantly from each other at the 0.05 Level.

Appendix 8: Collinearity Statistics for Service Orientation

	Collinearity Statistics	
	Tolerance	VIF
Creativity = 1.0	0,376	2,657
Creativity = 1.5	0,504	1,986
Creativity = 2.0	0,419	2,384
Creativity = 2.5	0,557	1,795
Creativity = 3.0	0,428	2,334
Creativity = 3.5	0,609	1,641
Self-Efficacy = 1.0	0,459	2,180
Self-Efficacy = 1.5	0,568	1,759
Self-Efficacy = 2.0	0,489	2,043
Self-Efficacy = 2.5	0,497	2,011
Self-Efficacy = 3.0	0,378	2,645
Self-Efficacy = 3.5	0,473	2,112
Emotional Exhaustion = 1.0	0,296	3,376
Emotional Exhaustion = 1.5	0,560	1,787
Emotional Exhaustion = 2.0	0,504	1,984
Emotional Exhaustion = 2.5	0,542	1,846
Emotional Exhaustion = 3.0	0,478	2,091
Emotional Exhaustion = 3.5	0,443	2,255
Motivation = 1.0	0,370	2,703
Motivation =2.0	0,441	2,269
Motivation =3.0	0,391	2,556
Organizational Commitment = 1.0	0,285	3,512
Organizational Commitment = 1.5	0,410	2,437
Organizational Commitment = 2.0	0,434	2,304
Organizational Commitment = 2.5	0,384	2,602
Organizational Commitment = 3.0	0,379	2,637
Organizational Commitment = 3.5	0,536	1,867
Role Ambiguity = 1.0	0,244	4,105
Role Ambiguity = 1.5	0,376	2,663
Role Ambiguity = 2.0	0,316	3,165
Role Ambiguity = 2.5	0,386	2,589
Role Ambiguity = 3.0	0,297	3,369
Role Ambiguity = 3.5	0,403	2,483
Role Conflict = 1.0	0,273	3,668
Role Conflict = 2.0	0,456	2,192
Role Conflict = 3.0	0,342	2,921
Role Overload = 1.0	0,199	5,034
Role Overload = 2.0	0,336	2,980
Role Overload = 3.0	0,305	3,281
Teamwork = 1.0	0,658	1,519
Teamwork = 1.5	0,683	1,464
Teamwork = 2.0	0,515	1,942
Teamwork = 2.5	0,616	1,625
Teamwork = 3.0	0,504	1,984
Teamwork = 3.5	0,542	1,844
Customer Orientation = 1.0	0,735	1,361
Customer Orientation = 2.0	0,594	1,683
Customer Orientation = 3.0	0,606	1,651
Age Years 60-99	0,210	4,759
Age Years 51-60	0,274	3,650

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Age Years 41-50	0,215	4,645
Age Years 31-40	0,226	4,419
Country Germany	0,365	2,738
Gender Male	0,628	1,591
Educational Level	0,405	2,470
Certificate of Secondary Education		
Educational Level A-Levels	0,196	5,095
Educational Level Vocational/ Industrial Training	0,205	4,886
Educational Level Bachelor	0,218	4,587
Educational Level Master	0,154	6,479
No Leadership Responsibilities	0,479	2,088
Working Full Time	0,574	1,743
Public Organization	0,450	2,224

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