

## **Influence of Business Strategy on Firm's Capability to Innovate –**

Investigation into employee perception of Business Strategy, Market Orientation, Learning Orientation and the favourability of the Innovation Implementation Context on multiple hierarchical levels in a single multi-national organization in the FMCG industry

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## Abstract

This research is informed by the implications of Disruptive Innovation Theory, which posits that incumbent firms tend to fail in the face of disruptive threats.

A framework is developed based on the aim to identify controllable parameters of firm's innovation capability to ultimately contribute to the longevity of incumbent organizations. It integrates the conceptualization of Innovation Orientation with a processual perspective on innovation and the Dynamic Capabilities View to gain a holistic perspective on a firm's innovation. Furthermore, it emphasizes the role of managers and strategy makers to determine the level and composition of an organization's overall Capability to Innovate.

Research constructs for Business Strategy, Market Orientation (with separate measures to assess the firm's distinct focus on Current Customers and/or Future Markets), as well as Learning Orientation were supplemented with a measure to assess the favourability of the Innovation Implementation Context of the firm. In their combination, these constructs are posited to provide a holistic account of the firm's overall Capability to Innovate. The research setting provides a framework to determine the influence of Business Strategy on the configuration of these constructs and to illustrate the interplay among them.

A survey of 182 respondents based in a single organization in the Fast Moving Consumer Goods Industry was taken to validate the framework. Its objective was to investigate into the individual linkages between Business Strategy and Market Orientation, Learning Orientation and the favourability of the Innovation Implementation Context. Moreover, the perceptions of employees on 4 different hierarchical levels are assessed. Ultimately this setting allows to determine the degree of strategic alignment throughout the organization, which was shown to result in higher performance in prior research.

The findings of this research contribute to extend existing knowledge in an evolutionary manner. It contributes to the integration of prior research in the field of Innovation Orientation, innovation and the Dynamic Capabilities View towards a holistic understanding of a firm's Capability to Innovate. Moreover, the findings provide insights into the interrelationship between Business Strategy and the organization's propensity for Market Orientation in the Current Customer domain and into the Future Market domain, its Learning Orientation and the arrangement of its Innovation Implementation Context. It revealed a synergistic interplay between these constructs. The research provides directions for practitioners in outlining the importance of a holistic appreciation of innovation and by illustrating specific mechanisms how Business Strategy may influence a firm's overall Capability to Innovate.

### Key words:

Capability to Innovate (CTI), Market Orientation (MO), Current Customer Orientation, MO (CCO), Future Market Orientation, MO (FMO), Learning Orientation (LO), Innovation, Innovation Orientation (IO), Business Strategy, STROBE, Strategic Orientation of Business, Christensen, Disruptive Innovation Theory (DIT), Ambidextrous Organization Theory (AOT), Innovation Implementation Context, Multiple Informant, Single Organization Research

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## Dedication

To those, good or evil, who inspired me.

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### Abbreviations

AOT	Ambidextrous Organization Theory
BS	Business Strategy
CCO	Current Customer Orientation/ Current Customer Oriented
CTI	Capability to Innovate
DCV	Dynamic Capabilities View
DIT	Disruptive Innovation Theory
EFA	Exploratory Factor Analysis
e.g.	For Example
FMCG	Fast Moving Consumer Goods
FMO	Future Market Orientation/ Future Market Oriented
i.e.	In other words / that is to say
IIC	Innovation Implementation Context
IO	Innovation Orientation
IS	Information Services
LO	Learning Orientation
MO	Market Orientation
MO (CCO)	Market Orientation Current Customer Orientation (Component Construct)
MO (FMO)	Market Orientation Future Market Orientation (Component Construct)
n.a	not available
OL	Organizational Learning
RBV	Resource Based View
RQ	Research Question
R&D	Research and Development
STROBE	Strategic Orientation of Business Enterprises (Measuring Instrument)

## Chapter 1: Introduction

### 1.1 Problem Statement

Innovation is the only source of renewed profitability for organizations<sup>1</sup> (e.g. Bessant, 2005; Schumpeter, 1911: 212). Thus for firms, innovation provides a source of competitive advantage (e.g. Keupp, Palmié & Gassmann, 2012: 367; Stock & Zacharias, 2011: 881) and growth (e.g. Wong, 2013: 709-710; Hauser, Tellis & Griffin, 2006: 687, Jiménez-Jimenez, Sanz Valle & Hernandez-Expallardo, 2008: 389). Without economically successful new factor combinations<sup>2</sup>, which lead to either the creation of new products or services, the application of altered processes, the emergence of new markets, the identification of new sources of raw materials or semi-finished products or a reorganization aimed to either establish or to break a monopoly (Schumpeter, 1911: 100-101), current sources of a firm's profitability will eventually be marginalized through competition and ultimately cease to exist. For example, product innovations allow firms to differentiate themselves from their competitors with new products or product features and holds the potential to open up (or even create) new markets and profit pools (Kim & Mauborgne, 2005; He & Wong, 2004; Christensen, 1997). Moreover, process innovations, or innovative changes to the business model allow to enhance efficiency and reduce the cost base on which firms operate (He & Wong, 2004; Jansen, van den Bosch & Volverda, 2006; Menguc & Auh, 2008).

Therefore, firms which do not innovate inevitably age, decline and ultimately die (Drucker, 1985; Jiménez-Jimenez, Sanz Valle & Hernandez-Expallardo, 2008: 392), as the basis for their current success is continuously melted away (e.g. Schumpeter, 1911). Consequently it appears commonsensical that organizations should aim to achieve the highest levels of innovative outputs in order to prosper and survive. However, despite the long standing tradition of innovation research, the life span of organizations remains relatively short (Tushman & O'Reilly, 2002). For example, de Geuss (2002: 1) provides evidence that "the average life expectancy of a multinational corporation – Fortune 500 or its equivalent – is between 40 and 50 years."<sup>3</sup> Overall it seems, that a great majority of firms, at some point, lose the ability to innovate at a sufficient level necessary to maintain a position of competitive advantage. This is, when "success [is] followed by failure [and] innovation followed by inertia (Tushman & O'Reilly, 2002: 2)". The effect is a loss in multifarious dimensions on a microeconomic level<sup>4</sup>, for example represented by a decline in shareholder

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<sup>1</sup> Note, that throughout this thesis the terms "organization" and "firm" are used interchangeably.

<sup>2</sup> Schumpeter's (1911) alternative expression for the term 'innovation.'

<sup>3</sup> Includes firms which were acquired, merged or failed in business.

<sup>4</sup> An assessment of the outlined effects on a macroeconomic level are beyond the scope of this research.

value, employment and economic value added when firms, once presented as great, chase to exist.

The phenomenon of incumbent organizations failing to identify and capitalize on innovation opportunities is not new (see for example Schumpeter, 1911: 101; Tushman & O'Reilly, 2002). However the publication of Christensen's "The Innovators Dilemma" (1997) marked an academic re-discovery of the subject and lead to the formation of Disruptive Innovation Theory<sup>5</sup> (DIT) which subsequently received wide attention from academia and practitioners alike. The central insight of DIT is that incumbent firms excel in an environment of relative stability but often fail, when confronted with innovations that change the "rules of the game."

According to Bessant & Tidd (2011: 19) innovations can take several different forms, which may be represented by four dimensions: (1) product/service innovations (changes to a firm's processes which allow for enhanced value creation and higher rents), (2) process innovations (changes in which product innovations are created and offered), (3) position innovation (changes in the context in which products/services are introduced) and (4) paradigm innovation (changes in the way in which an organization thinks and operates, e.g. its business model).

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<sup>5</sup> "[A] theory is an interrelated set of constructs (or variables) formed into propositions, or hypotheses, that specify the relationships among variables (typically in terms of magnitude or direction). A theory might appear in a research study as an argument, a discussion, or a rationale, and helps to explain (or predict) phenomena that occur in the world (Creswell, 2009: 51)."

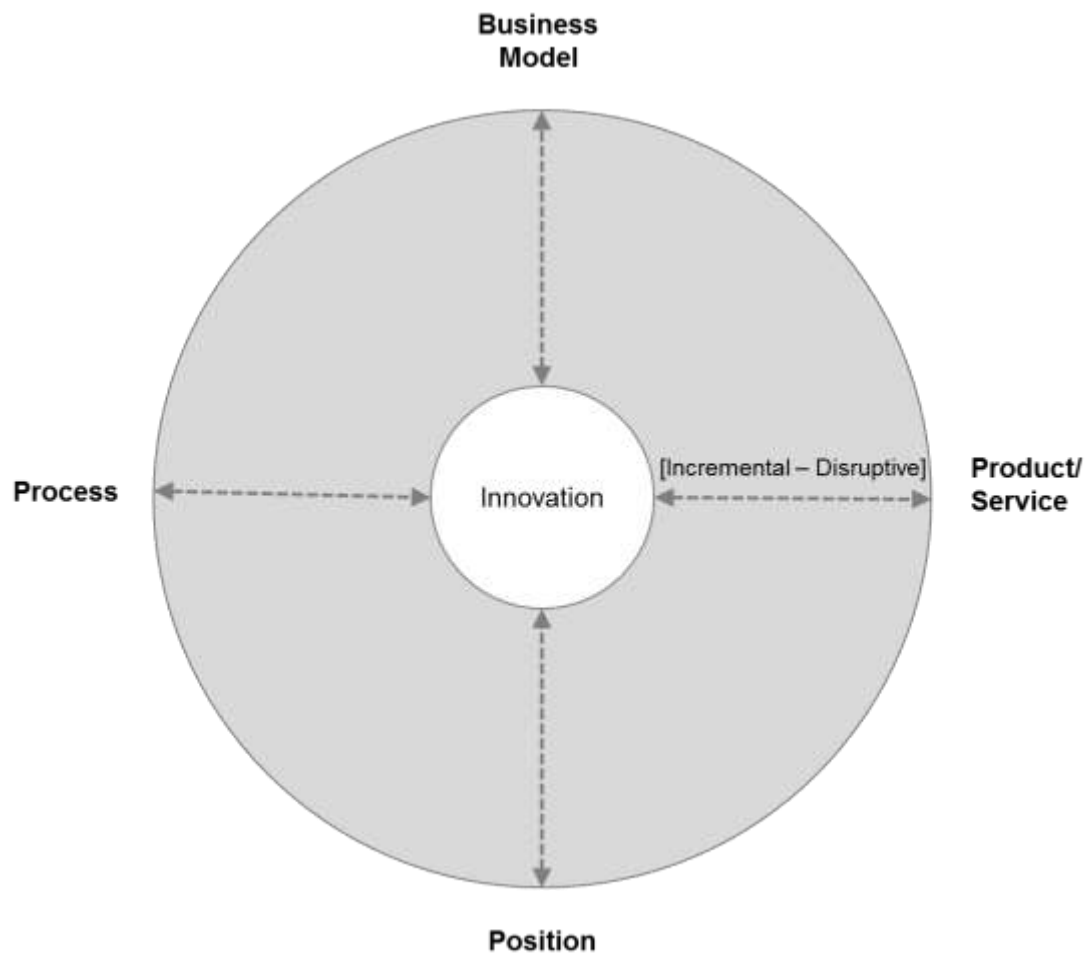


Figure 1: The innovation spectrum (based on Bessant & Tidd, 2011: 33)

Among this innovation spectrum, Christensen (1997) differentiates between two fundamental types of innovations: *Sustaining* innovations and *disruptive* innovations. Christensen's research investigates into how incumbent organizations relate to each of these types. The key differentiating criteria lies in the magnitude of change resulting from an innovation and takes a position on a continuum ranging from incremental (sustaining) innovations to disruptive innovations (Bessant & Tidd, 2011; Christensen, 1997).

- *Sustaining innovations* are focused to serve an organizations' existing customer base and to continuously extend the offering of its established product/service/business model<sup>6</sup> in an evolutionary manner by enhancing and extending its core features. For example, incremental innovations are changes to existing products, services and routines aimed to "enhancing processes, making operations more effective, improving quality and decreasing cost (Forsman, 2009: 502)".

<sup>6</sup> When speaking in the following of innovation, this includes all types of innovation described as part of the innovation spectrum following for example Van de Ven (1986: 592).



- Disruptive innovations on the other hand are solutions which initially underperform the predominant, incumbent product and its core features. Yet these innovations serve the needs of current underserved customers or non-customers who seek different, more basic value attributes at a lower price and attribute a much higher value to the core features of the new solution than to the features of the incumbent proposition. Disruptive innovations subsequently transform existing products, services or activities fundamentally (Forsman, 2009). They frequently utilize a radically different technological base and represent a fundamental departure from the persistent performance dimensions of the incumbent solution (Christensen, 1997) by involving existing technologies which are applied to a new context or pose a new approach to tackle an existing problem from a different angle that deviates significantly from the perspective which was previously taken (Christensen, 1997; Govindarajan, Kopalle & Danneels, 2011: 122-123). Initially these innovations are introduced with a worse performance in the core features which are most valued by mainstream customers but offer new and previously unheard of features and performance dimensions which are not provided by the existing predominant product. Over time the disruptive innovation starts to present a threat to established product as the acceptance of the new features spreads and performance improves. According to the insights gained by Christensen (1997: xviii), “[p]roducts based on disruptive technologies are typically cheaper, simpler, smaller, and, frequently, more convenient to use.” For example, the introduction of smart phones (Apple<sup>7</sup>) posed a disruptive threat for established mobile phone producers/marketers in the early years of 2000 (e.g. Nokia). Online retailing (e.g. Amazon) represented a disruptive threat to classical retailers and electronic cigarettes represented a disruptive threat to big tobacco. As did digital printing to offset printing and digital watches to mechanic watches (Tushman & O’Reilly, 2002) and Laserjet printers to Inkjet printers (Christensen, 1997: 135).

The dilemma outlined by DIT is, that in the context of intra-firm innovation, “the very decision-making and resource-allocation processes that are key to the success of established companies are the very processes that reject disruptive technologies (Christensen, 1997: 112).” Ironically, by acting in the best interest of their core customers (i.e. emerging in a symbiotic relationship which provides ever greater performance for continuous profitability), incumbent organizations tend to ignore emergent disruptive opportunities or threats initially and fail to respond timely and adequately (e.g. Cole &

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<sup>7</sup> Note that Apple was not the one to invent smartphones, however can be attributed with successfully bringing the proposition to wide use and thus having successfully commercialized the concept.

Matsumiya, 2007; Day, 1994: 48; Droege & Johnson, 2010). Consequently firms miss out on disruptive business opportunities which “frequently offer greater rewards and performance improvements [versus sustainable innovations] if they succeed (Gilbert, 1994: 19).” According to Christensen (1997), there are several reasons why incumbents act as they do. The most critical are that incumbents are (1) very close to their lead customers to serve their specific needs; that (2) incumbents allocate their resources based on expected financial returns and perceived certainty of their accumulation, and that (3) potentially disruptive concepts are tested with lead customers who frequently resent the new proposition; that (4) organizational capabilities and disabilities are shaped by the history of the organization and that (5) there is a low tolerance to failure within these organizations which inhibit trial and error driven experimentation. All of these incumbent behavioural patterns, which are discussed in more depth in Chapter 2, make perfect sense from the perspective of an incumbent organization. Good businesses aim to deliver superior value to their current customers by adhering to their established organizational routines and decision making processes which have proven to be successful in the past. These proven procedures are “meant not to change – or if they must change, to change through tightly controlled procedures. This means that the very mechanisms through which organizations create value are intrinsically inimical to change (Christensen, 1997: 188).” Consequently, in the context of disruptive innovations, these behavioural patterns repeatedly prove to be fatal and to have an, often unobvious, adverse effect when potentially disruptive opportunities are to be addressed (Henderson, 2006: 6). It remains a focal point to adequately manage the opposing objectives to provide stable and continuous performance on one hand and to enable “frame breaking opportunities (Andriopoulos & Lewis, 2009: 703)” on the other (Cole & Matsumiya, 2007; Farjoun, 2010: 207).

The implications of DIT highlight the importance of clearly separating two distinct concepts when investigating the determinants that enhance the level of innovation and thus unleash sources of a firm’s longevity (Christensen, 1997; Berghman, 2012: 20): (1) An organizations *Current Customer Orientation (CCO)*, which is customer-lead and aims to serve existing mainstream customers’ explicit and latent needs in an attempt to “exploit” existing market opportunities through introducing sustaining innovations (Christensen, 1997). And (2), an organizations *Future Market Orientation (FMO)*, which is aimed to unveil future market opportunities by “exploring” into uncharted territories and introducing disruptive innovations which change the “rules of the game“ (e.g. Kim & Mauborgne, 2005). As both concepts appear to require fundamentally different organizational pre-conditions and the willingness to pursue paths of facilitating sustaining and/or disruptive innovations (Govindarajan, Kopall & Danneels, 2011). It appears crucial that decision makers in organizations are aware of the implications of DIT and the importance of different types of innovations for the wellbeing

of the organization to avoid missing out on the opportunities of disruptive innovations and proactively shape the innovation capabilities of the organization (Christensen & Overdorf, 2000).

Despite prior research in the field, the link between how business strategy (BS) influences an organizations disposition to bring forward sustaining – and/or disruptive innovations remains scarce (Govindarjan, Kopalle & Danneels, 2011: 122) and conclusions drawn from it are ambiguous at best. One stream of research, Ambidextrous Organization Theory (AOT) for example, investigates into how organizations can most effectively balance their capabilities to deal with exploration, which is associated with the emergence of disruptive innovations, and exploitation, which is linked with sustaining innovations (Tushman & O'Reilly, 2002). AOT argues that firms can achieve excellence in both, the CCO- and the FMO disciplines simultaneously. Tushman & O'Reilly (2002: 2) assert, that successful firms invest their short-term gains into longer-term capabilities for strategic renewal which strengthen their overall economic position. Other research draws the conclusion that organizations should be focused exclusively on current customers (e.g. Danneels, 2004), while others come to just an adverse assessment and recommend to exclusively focus on future market opportunities (Denning, 2012: 8), or suggest that there are no observable performance differences among firms which engage in either CCO or FMO (Stock & Zacharias, 2011: 881). Thus recommendations on how to harness the insights of DIT for the benefit of an organization remain contested and inconsistent (e.g. Christensen, 2006). As a consequence, resulting from these contradictions, it is difficult for researchers and practitioners to obtain a coherent picture of the subject and take action in their favour.

The inconsistent recommendations of prior research in the field reveal shortcomings of prior publications and approaches in three key dimensions:

- (1) Most prior research did not take the *individual situation* of the organization into consideration to a satisfactory level. This is to illustrate that it appears that there is no optimal level of CCO and/or FMO that will fit to all organizations universally at any given time (Gilbert, 1994). For example, the individual situation of an organization may be characterized by the state of maturity the organization is in (e.g.: start-up vs. incumbent organization), by the specificities of the industry the organization operates in, by the rate of technological change (e.g.: short vs. long product life cycles) by the level of competitive intensity (e.g. monopoly vs. oligopoly vs. polypoly), by differences in the trends in consumer preference, entry hurdles (Christensen, 1997) or the availability of substitutes and so on (e.g. Stock & Zacharias, 2011: 882; Elenkov, Judge & Wright, 2005: 666-669; Matsuno & Metzner, 2000: 2–3; Zhou et al., 2005: 1050; Ambrosini, Bowman & Collier, 2009: 10). While, for example, it appears

rational in an industry with low rates of change and moderate dynamism in the market that firms will choose a BS which centres on the exploitation of current profit pools and de-emphasizes the need to enter into disruptive opportunities associated with higher levels of risks (Gilbert, 1994: 19). On the other hand, in industries which are characterized by high rates of technological change, short product life cycles and competitive pressure (e.g. consumer electronics industry) the business model of an organization would most likely incorporate high levels of explorative activities in order to maintain a competitive edge (Jansen, Van den Bosch & Volberda, 2006: 1670). Similarly, a newly founded organization is very likely to exhibit a higher level of FMO than most mature organizations in an attempt to identify and secure a market niche and to tap previously underserved consumer needs in an effort to gain momentum (Kim & Mauborgne, 2005).

- (2) Most prior research did not take the *intentions* of the organization into consideration to a satisfactory level. An optimal level of CCO and/or FMO of an organization cannot be obtained without taking specifically into consideration what the organization as such *wants* to achieve in terms of innovation and ultimately growth. As argued by Gilbert (1994: 19), "[t]he execution of a proactive innovation strategy may even be harmful for an organization" when it operates in an environment characterized by stability and profitability. Thus, ultimately firms will "choose an innovation strategy which places them on a continuum between proactive innovation strategy and reactive innovation strategy. [...] Some companies chose a strategy that involves constant innovation [...] Other companies chose a strategy that emphasizes stability, reliability, and a clear implication that the old familiar product or service will be there when the customer wants it (Gilbert, 1994: 18-19)." For example, Ward & Lewandowski (2008: 231) and Matsuno & Metzner (2000: 3) posit that each organization needs to assess its specific business environment and then is required to choose a BS, which appears the most adequate for the given situation of the firm and the intended direction the firm wants to take (i.e. to define its performance criteria). And while most for-profit organizations will aim to expand their range of business and grow, it may well be that other firms view their current size, revenue and profitability as fully sufficient and thus decide to maintain the status quo by securing a small market niche (Simon, 2007). Therefore it appears reasonable to argue, that the individual BS an organization selects has an influence on the level of CCO and/or FMO the organization exhibits and requires to achieve its individual objectives (Matsuno & Metzner (2000: 3).

- (3) Most prior research did not take a *dynamic perspective* which explicitly aimed to *maintain* the competitive edge of an organization and to keep it prosperous over long periods of time. As the great majority of prior research in the field of AOT is time based, adaption of firms over time is systematically under researched (Farjoun, 2002). Therefore, the insight that what may be good today may bring failure in the long run, which is emphasized by DIT and others (e.g. Schumpeter, 1911; Leonard-Barton, 1992; Teece, 2007), is not sufficiently reflected in most consecutive research. The evident omission of a dynamic perspective in prior research is observable when organizations that were once presented as role models were unable to maintain their capability to innovate over time (e.g. Peters & Waterman, 2006; Tushman & O'Reilly, 2002; de Geuss, 2002). For example, Nokia and Dell were praised at one time as highly innovative organizations but widely failed in the face of disruptive changes entering into their field of business at a later stage. And similar observations were made for IBM, General Motors and Xerox (Tushman & O'Reilly, 2002: 1-2) and are observed in numerous other enterprises which do not manage to adapt quickly when the “rules of the game” change (Christensen, 1997).

## 1.2 Research Aim

Despite evidence, that perpetually excellent companies or industries do not exist (Kim & Mauborne, 2005:11), the field of innovation holds various opportunities for firms seeking to proactively and systematically enhance their competitive position and aim to ensure long-term survival and prosperity (Hauser, Tellis & Griffin, 2006: 693). Consequently, the strategic management of innovation received much attention from academia and practitioners for quite some time (e.g. Schumpeter, 1911; Drucker, 1985; Bessant et al, 2005; Jaruzelski, Loehr & Holman, 2010; Jaruzelski & Dehoff, 2007; Broekstra, 2002) and represents a focal topic within the strategic management field (Keupp, Palmié & Gassmann, 2012: 367). Accordingly, there is an ever increasing interest into the findings of innovation management research that may support practitioners to take the optimal decisions to enhance the quality and quantity of innovations their firm brings forward and to ultimately ensure business success and longevity by utilizing a favourable innovation strategy (e.g. Kim & Mauborgne, 2005; Chandy & Tellis, 1998; Danneels, 2004: 257).

The above outlined importance of innovation for the economic wellbeing of an organization and the presented omissions from prior research, it appears that additional research is required to investigate into how the innovation capability aimed at current customers and – future markets of an organization is being influenced through the unique BS of the organization and how a sustainable dynamic innovation capability, which accounts for the specific individual situation and the strategic intention of an organization, can be fostered in practice (Roberts, 2010: 125). Such a framework would be useful in practice and could contribute to

the economic wellbeing and longevity of a firm by outlining organizational levers to upraise a firm's Capability to Innovate (CTI) and by that mitigating the adverse effects that "many companies are not organised to give new ideas a chance, to recognise trend breaking points in the market, to adapt quickly to changing market circumstances, or to cause market changes in the first place" (Markides, 1999 in Assink, 2006: 217). Thus this thesis argues that only an increased insight into the underlying mechanisms of how BS influences the propensity of an organization to innovate enables management to take distinct actions to build organizational capacities indispensable for an increased chance of long-term survival and to define a unique BS which fits organizational needs and intentions.

Therefore, the aim of this research is to

*Identify the interrelations that exist between Business Strategy making and a firm's Capability to Innovate<sup>8</sup> to understand how this contributes to the economic sustainability of incumbent organizations.*

### 1.3 Research Principles

Given that the overall area of research has received extensive attention from academia and that "you can't do it all (Roberts, 2010: 49)", 7 research principles are introduced and serve to narrow down the scope of this thesis to a manageable size and ensure an adequate focus. The research principles are as follows:

- Research principle 1: Clear *focus on innovation* as ultimate objective of the organization. In the context of this thesis, innovation is defined as: *The organization wide intentional acquisition of information and knowledge, its -dissemination and the subsequent successful implementation of derived concepts new to the relevant unit of adoption designed to economically benefit the organization.* This working definition acknowledges that, while there are different forms of innovation, all of them share the idea that something new is introduced and there is an economic benefit associated for whoever successfully introduces the innovation which offsprings from this act (Schumpeter, 1911). Therefore, the thesis does not specifically focus on product or process innovations but aims to preserve an open mind towards value creating innovations which reside within the wide range of the innovation spectrum (Bessant & Tidd, 2011: 33). In line with prior research in the field of Innovation Orientation (IO; Siguaw, Simpson & Enz, 2006), this thesis argues that the key objective of any organization should be to yield high rates of innovative outputs overall, which ultimately allow to achieve a state of economic prosperity and longevity. Consequently, the focus to upraise the overall level of innovations does not demand a

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<sup>8</sup> When speaking in the following of innovation, this includes all types of innovation described as part of the innovation spectrum following for example Van de Ven (1986: 592).

measure of absolute innovation output<sup>9</sup>, but presumes that results will eventually follow when an organizations CTI is adequately nourished (Johnson & Bröms, 2000: 179).

- Research principle 2: *Dynamic perspective*. Evidence outlined by Schumpeter (1911), Christensen (1997) and many others suggest that firms which were once great started to decline at a later stage (e.g. Tushman & O'Reilly, 2002; Peters & Waterman, 2006; de Geuss, 2002). For example, Peters & Waterman (2006) state that many of the firms which were recognized as “excellent” in 1982 had failed when their long term performance was assessed in a later study. In a similar fashion, Tushman & O'Reilly (2002: 12-13) provide a list of firms which were once in leadership position in their industry and later lost their competitive edge or were overthrown by the entry of a disruptive entrant into their business domain. As many publications in management literature focus on organizations which are deemed role models of their time and which are described in a case study approach (Eisenhardt, 1989) there is limited attention to validate the long-term performance of these organizations. However, it appears that some of these organizations did not manage to adapt themselves to uphold the necessary rates of change in a dynamic environment. Therefore, it appears essential that the intended research model is grounded in a perspective which emphasizes the dynamic capabilities of the organizations which are necessary to ensure continuous adaptation and renewal (e.g. Teece, 2007). To adequately reflect this notion, the dynamic capabilities view (DCV) provides the theoretical foundation for this cornerstone of the research. It posits that only if organizations take appropriate strategic actions to fully capitalize on the potential of their firm-specific resources through leveraging their organizational capabilities, will sustainable competitive advantage and superior performance be possible under changing environmental conditions and will rents accrue to the firm (Teece, Pisano & Shuen, 1997: 513; Harrel, O'Reilly & Tushman, 2007: 24-25). The DCV with its emphasis on adaptation over time conceptually overlaps with an organic view of BS which stresses the “dynamic notions of constructs, relationships, reciprocal causation and interaction (Farjoun, 2002: 576)” over time.
- Research principle 3: *Holistic<sup>10</sup> approach* to take into consideration all key elements of the innovation process. This perspective incorporates (1) all relevant stages of an

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<sup>9</sup> See criticism concerning the measurement of innovation output in Saunila & Ukko (2012: 360-361)

<sup>10</sup> In the context of this thesis, the term ‘holistic’ describes an approach, which is concerned with complete systems, rather than with individual parts.

idealized process which are required to take an innovative concept from idea generation to the final implementation or commercialization of the innovative concept. As economic value can only be created when the concept comes to life and economic benefit can be drawn from its introduction (Schumpeter, 1911). Therefore, the research model reflects the key requirements to successfully move from idea generation to innovation implementation in a holistic fashion which allows to outline fundamental interdependencies amongst the elements of a sketch innovation process. Furthermore, (2) this perspective encompasses all members of an organization irrespective of functional membership and hierarchical rank. Contrary to some prior research which takes a narrow focus on the relationship between Research & Development (R&D) spending and innovative output, this thesis acknowledges that all members of the organization are ultimately stakeholders, contributors and facilitators in an effort to upraise and uphold the level of innovative output of an organization (Siguaw, Simpson & Enz, 2006; Christensen, 1997; de Geuss, 2002: 157; Zhou et al, 2005: 1052).

- Research principle 4: *Integrate research model with prior research*. The research at hand is intentionally related closely to prior research in the field. This is especially visible and desired with regards to component constructs (i.e. research variables) and related instrumentation which were previously validated and utilized in research. By reverting back to existing structures, the findings of this research are placed in the context of the overall research in the field and it allows to integrate and contrast the findings with insights obtained previously. Furthermore, this approach adheres to the reasoning of Blaikie (1993) and Kuhn (1962) who emphasize that “normal science” should essentially build on – and extend prior research and avoid fully new perspectives unless specifically warranted by the findings obtained throughout a research project.
- Research principle 5: *Influenced from a managerial perspective*. Management with their statements and actions identifies the focal areas of the organization and determines organizational support and how resources and talents are allocated to reach organizational objectives (e.g. Matsuno & Metzner, 2000; Miles et al, 1978). Much prior research in the field of innovation and management did not clearly outline the interdependencies between managerial actions and unique organizational specificities which are shaped by employees being encouraged to participate in the achievement of innovation objectives. Therefore it is considered an essential element of the research at hand to clearly outline the link between BS and the specificity



of the component constructs conducive to innovation in organizations. This allows to investigate into rent creating effects resulting from building superior organizational capabilities (Makadok, 2001; Teece, 2007) through strategic management action. Moreover, based on the implications of DIT (Christensen, 1997) and the warranted conceptual separation of CCO and FMO based innovations, additional empirical investigation into the link between BS and CCO and between BS and FMO appears desirable both for science and practice to obtain an advanced understanding how management action may shape the capabilities of an organization and its willingness to engage in CCO and/or FMO (Chandy & Tellis, 1998: 479).

- Research principle 6: *Auditable and representative*. The research framework, which evolves from the theoretical grounding of this research is intended for the application in practice and allows an organization to outline key interdependencies and thus to enhance its overall CTI contingent on its unique situation and individual BS of the organization. In line with the requirements illustrated in the previous paragraphs, key constructs conducive to bring innovative concepts into economic use are reflected in the model. Moreover, the interdependencies between the inherent component constructs are illustrated and interactions between the constructs are auditable given the quantitative research approach taken. The operationalization of the research model in a purely quantitative fashion is especially important given the implications of DIT and the warranted conceptual separation of the CCO and FMO perspectives conducive to sustaining and disruptive innovations, respectively. Furthermore, in order to obtain a representative account of the configuration of the overall organization, the research design provides insights into the specificities of the organization across multiple levels of organizational hierarchy in a generalizable fashion (Pallant, 2005; Saunders, Lewis & Thornhill, 2007) through statistical analyses.
- Research principle 7: *Incumbent organization context*. The research framework shall be validated in the context of an incumbent, multi-national organization in the Fast Moving Consumer Goods (FMCG) industry. Due to the relative stability in market conditions, BS, and line of products, it is assumed that the strategic intent of the organization is well communicated and transpired throughout the hierarchical ranks of the organization and as a result strategic alignment (e.g. Sabherwal & Chan, 2001; Johnson & Lederer, 2010; Dobni, 2010b; Jaruzelski, Loehr & Holman, 2010) is expected to be confirmed by statistical analyses. Due to restrictions im-

posed by the target organization, full anonymity was granted to the participating organization, as well as to its members who contributed their observation as part of the research project inherent to this thesis. Thus, in accordance with the imposed restrictions on the use of data, no further description of the organization under research is provided in this thesis.

#### 1.4 Research Framework and Key Constructs

Based on the above presented research aim and research principles, the following framework is derived. It encompasses four key variables: BS, Market Orientation (MO), Learning Orientation (LO) and the Innovation Implementation Context (IIC).

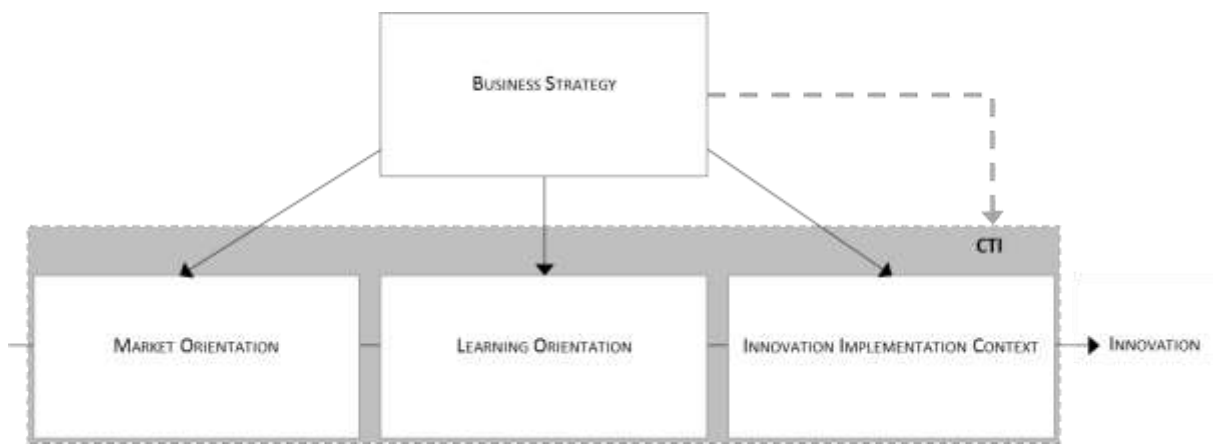


Figure 2: Research framework and key components

Following the suggestions of Roberts (2010: 129), the underlying concepts are briefly outlined in the following paragraphs and are extensively covered in the literature review presented in chapter 2:

Independent variable:

- **Business Strategy** (BS) reflects the decisions and strategic choices taken by a firm with regards to how it conducts business and what actions it takes in an attempt to create and maintain a position of superior performance and competitive advantage (Theodosiou, Kehagias & Kasikea, 2012: 1059; Slater & Olson, 2001: 1055–1056; Francis, 2000: 84; Day, 1994: 38; Harreld, O'Reilly & Tushman, 2007) and to effectively serve a firm's customers or develop new markets (He & Wong, 2004). Therefore, the model posits that BS is a key determinant of the specificity of the MO, the LO and the IIC of an organization. The strategic choices available to an organization range from an exclusive CCO to an exclusive FMO and may take on any position on the continuum market between those extreme positions.

Dependent variables:

- The Market Orientation (MO) of an organization “involves devoting effort to understanding and analysing the environment, and probing it with experimental activities (Govindarajan, Kopalle & Danneels, 2011: 123)”. In the context of this research, MO is separated into two separate component constructs, representing the extent that an organization devotes to understand and serve the explicit and latent (Narver, Slater & MacLachlan, 2004) needs of current customers (MO (CCO)) and to understand and serve the emergent needs of potential future markets (MO (FMO)). This separation adheres to the insights of DIT and the conceptual separation warranted by prior research in the field (e.g. Morgan & Berton, 2008). Prior research in the field emphasized that higher levels of MO (CCO) and MO (FMO) are positively related to organizational performance (Govindarajan, Kopalle & Danneels, 2011: 131). Therefore the research model allows to investigate into how BS may influence higher levels of MO (CCO) and MO (FMO) respectively in order to enhance the level of innovative output an organization brings forward. In the context of this thesis, MO reflects the organizational ability and willingness to engage in CCO-related and/or FMO-related activities to obtain information on innovative opportunities.
  
- Learning Orientation (LO) represents organizational values that determine and organizations willingness and ability to engage in knowledge creation and –use (Sinkula & Baker, 1997: 309; Mavondo, Chimhanzi & Steward, 2005: 1237–1238). Organizations with the ability to learn at an increased level and speed versus their competitors exhibit higher level, complex capacities (Baker & Sinkula, 1999: 411; Sinkula & Baker, 1997: 314) which can bring them into an excellent position to take on emergent challenges faster and more effectively than their peers (Lee & Tsai, 2005: 326) and to creating a positional advantage (Hult & Ketchen, 2001: 905) through changes in their knowledge base (Teece, Pisano & Shuen, 1997: 520) and their behaviours (Slater & Narver, 1995: 63–64; Sanz-Valle, Naranjo-Valencia, & Jiménez-Jimenez, 2011: 998). In the light of DIT, organizational learning resembles one of the levers which allow an organization to “assemble the capabilities to confront the change *before* it has affected the mainstream business [...] and to gear an organization [...] toward the new challenge before the old one, whose processes are tuned to the existing business model, has reached a crisis that demands fundamental change (Christensen, 1997: 201).” In the context of this research, LO reflects the ability of the organization to dissect new information, to make sense out

of it and to renew or replace outdated theory in use, if necessary (Agyris & Schön, 1978; Senge, 1990).

- The *Innovation Implementation Context* (IIC) of an organization represents the facilitators for developing/implementing innovations in organizations. The IIC in practice thus includes, among others, items touching upon organizational infrastructure, culture and resources (Gaynor, 2002) which include mechanisms of resource allocation, technologies, human resource practices and expertise in operations (Siguaw, Simpson & Enz, 2006: 561). This variable accounts for the necessary “step” to develop and then implement or commercialize an innovative concept to ultimately free its economic potential by successfully introducing it to the economic domain. Based on the findings of DIT (Christensen, 1997) the resource allocation of an organization is one of the key determinants to enable or inhibit the progress of innovative concepts to implementation and thus provides support for the inclusion of a separate IIC measure into the research model. In the context of this research, the concept of IIC represents the availability of infrastructure and resources to commercialize or implement innovations. As seen in DIT, such resource allocation practices are crucial elements which allow or inhibit experimentation and determine which projects receive organizational support.
  
- In combination, the three dependent variable constructs are assumed to represent an organization's overall *Capability to Innovate* (CTI), which is, by design of the framework and based on prior reasoning, contingent on the unique BS of the organization. This 2<sup>nd</sup> order component construct comprises of an organization's MO, its' LO and its' IIC, is then a holistic concept which aims to encompass an organization's 1) ability to sense, 2) to learn and 3) to act. Given the alleged synergistic nature of their interrelation it is argued that an organization's overall CTI requires adequate levels of performance in each of the three dimensions and alignment between the organization's capabilities to sense, learn and act and between BS making and BS implementation across all organizational ranks in an effort to execute the intended BS for the organization and to ultimately facilitate innovative output in line with the intentions formulated by the organization in an effective fashion (Cambrá-Fierro et al, 2012).

Consequently, the ambition of this research is to determine the influence of BS on the unique configuration of a firm's Capability to Innovate (CTI<sup>11</sup>; i.e. the resources/-capabilities it develops and holds and the types and levels of innovation it intends to pursue and is capable of executing). The research approach intends to contribute to the understanding of how BS influences the CTI of a firm and thus the capabilities it develops and holds and to what types and levels of innovation it is willing and capable of pursuing. Hence, the purpose of this thesis is to develop a framework to assess and reconcile the alignment between BS and the set of current innovation capabilities supportive of innovations and to validate the model in practice. It thus follows the findings of Ambrosini, Bowman & Collier (2009: 22) who state that "it is vital that we place managers at the centre of the discussion on dynamic capabilities." In line with Makadok (2001) this thesis emphasizes the role of managers in shaping such dynamic capabilities (DCs) and emphasizes the underlying Schumpeterian perspective on rent-creation from favourable new factor combinations which emphasizes the role of the "entrepreneur" to actively identify and pursue new factor combinations to generate entrepreneurial profits through innovation (Schumpeter, 1911).

Given that broad conceptual context and the multitude of prior research in the areas upon which this thesis touches, there are clear delimitations made on aspects which are beyond the scope of this research aim (Roberts, 2010). While these delimitations are already bounded by the introduction of the relatively specific 7 research principles introduced above, there are two additional key delimitations to this research:

First, this thesis acknowledges that the assessment of the potential of disruptive concepts *ex ante* is still contested (e.g. Adner, 2002: 667; Yu & Hang, 2010: 440; Danneels, 2004: 250; Sandström & Magnusson, 2009: 9–10; Hausner, Tellis & Griffin, 2006: 697). Not every potentially disruptive concept is ultimately translated into a disruptive innovation (i.e. it fails to be commercialized or to reach a sufficient level of acceptance). This thesis does not aim to resolve the difficulties in assessing such an innovative potential before it actually effects the disruption but to increase the level of sensitivity in science and management to this topic. Thus it aims to increase the overall awareness of the most dominant mechanisms for decision makers and to potentially upraise the quality of their decision making under uncertain conditions. This aspect also includes that the thesis does not aim to resolve the

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<sup>11</sup> CTI in this thesis is defined as *a firm's ability to sense the explicit needs of current customers and/or the latent needs of emerging future markets, as well as its ability to process such information towards adaptive and generative learning and its ability to successfully implement and commercialize various types of innovations* (Hurley & Hult, 1998: 43; Lawson & Samson, 2001).

debate on the inescapability of incumbent failure in the face of disruption (e.g. Danneels, 2004: 251).

Second, this thesis does explicitly not attempt to provide any indication of “optimal” levels of BS or CTI an organization should aim to achieve. This delimitation is in line with the presented argumentation, that it is not useful or even counterproductive to advice on organizational configuration without specifically taking the *unique* situation and *intentions* of the organization under research into consideration (Gilbert, 1994).

### 1.5 Research Objectives and Questions

From the research aim and the 7 research principles, 5 research objectives emerge. They are informed by omissions identified among publications of prior research in the field as well as resulting from the influence of DIT on the way the constructs under research are approached. Consequentially, DIT may be considered as the “lens” through which the research problem is viewed and approached (Creswell, 2009).

Based on these, 5 research objectives and a corresponding number of main research questions are presented, which indicate the nature of relationships expected between the variables present in the research framework (Roberts, 2010: 136).

The research framework is validated in the context of a single organization with multiple informants representing all levels of the organizational hierarchy. The survey thus investigates into the perceptions of the individual employee. Subsequently, the unit of analysis is the participating member of staff.

Research aim, research principles, research objectives and research questions are summarized in the table below:

Research Aim	Identify the interrelations that exist between Business Strategy making and a firm's Capability to Innovate to understand how this contributes to the economic sustainability of incumbent organizations.	
Research Principles	<ul style="list-style-type: none"> <li>(1) Innovation focus</li> <li>(2) Dynamic perspective</li> <li>(3) Holistic approach</li> <li>(4) Integration with prior research</li> <li>(5) Influenced by managers</li> <li>(6) Auditable and Representable</li> <li>(7) Incumbent organization context</li> </ul>	
Research Objectives		Main Research Questions
<u>Research Objective 1</u> : What is the relationship between a firm's BS, which is contingent on its unique situation and – intention, and the level of MO (CCO) and MO (FMO) it exhibits?		<u>Research Question 1</u> The BS of an organization is significantly and positively linked with the MO of the organization.

Research Aim	Identify the interrelations that exist between Business Strategy making and a firm's Capability to Innovate to understand how this contributes to the economic sustainability of incumbent organizations.
Research Principles	(1) Innovation focus (2) Dynamic perspective (3) Holistic approach (4) Integration with prior research (5) Influenced by managers (6) Auditable and Representable (7) Incumbent organization context
Research Objectives	Main Research Questions
<u>Research Objective 2</u> : What is the relationship between a firm's BS, which is contingent on its unique situation and – intention, and the level of LO it exhibits?	<u>Research Question 2</u> The BS of an organization is significantly linked with the LO of the organization.
<u>Research Objective 3</u> : What is the relationship between a firm's BS, which is contingent on its unique situation and – intention, and the level of favorability its IIC exhibits?	<u>Research Question 3</u> The BS of an organization is significantly linked with the configuration of the IIC of the organization.
<u>Research Objective 4</u> : Is there a synergistic relationship between an firm's MO (CCO), MO (FMO), its LO and its IIC, which support the holistic perspective of this research?	<u>Research Question 4</u> : The perceived MO (CCO), MO (FMO), LO and IIC in an organization are significantly related (with near zero correlation between MO (CCO) and MO (FMO)).
<u>Research Objectives 5</u> : Do the perceptions of high-ranking key informants provide a representative account of the condition of the organization, as perceived by lower- ranking members of the firm who are concerned with BS implementation and execution on a daily basis?	<u>Research Question 5</u> : Given an effective BS implementation, the perceived BS and perceived peculiarities of MO (CCO); MO (FMO), LO and IIC do not deviate significantly across organizational ranks and/or organizational functions.

Table 1: Research aim, Research Objectives and Research Questions

In below figure, the strategic focus of the research questions is reflected graphically to illustrate the locus of research among the previously introduced research framework (note: Research Question 5 is intentionally not reflected as it investigates into between group differences across 4 hierarchical levels and functional boundaries):

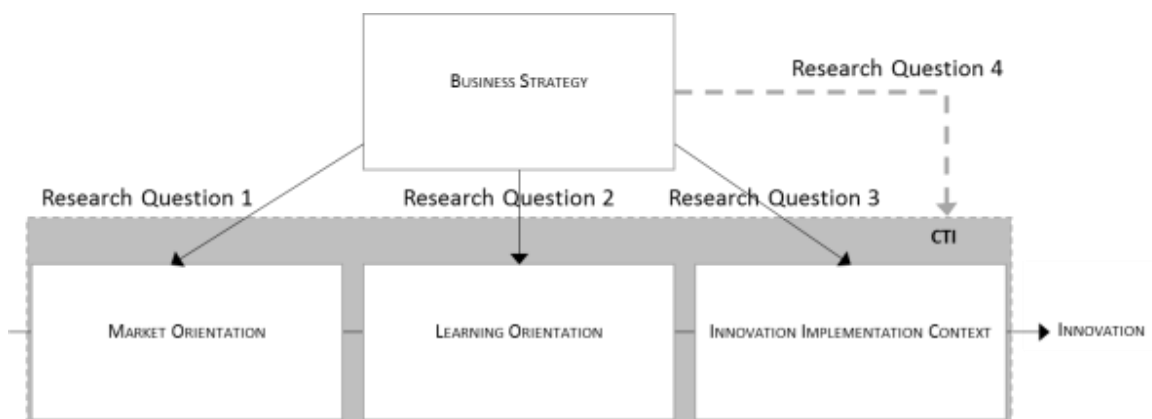


Figure 3: Research Framework and Research Questions

### 1.6 Significance of the Study/ Contributions from Research

The scope of the study is significant as it is inherently centered on the domain of innovation which is a focal area for sustained organizational prosperity and longevity. Therefore, additional research into the mechanisms which enable an organization to more effectively achieve its innovation objectives and thus contribute to a firm's survival is highly relevant for academia and practitioners alike.

Based on a systematic review of 342 articles on the strategic management of innovation published between 1992 and 2012, Keupp, Palmié & Gassmann (2012: 378-379) identified several areas of research within the field of strategic management of innovation which merit additional scholarly attention. For example, the authors concluded that the influence of (senior) management on the successful implementation (i.e. execution) of innovatory concepts in firms remains scarcely researched. An inability to effectively implement innovative concepts, however, reflects a significant disadvantages for firms aiming to benefit from the rents accruing from successfully implemented or commercialized innovations. Furthermore, Keupp, Palmié & Gassmann (2012) highlight the need for further research into the internal organization of firms (i.e. their resource allocation, routines, mental models, communication etc.), as "the most powerful strategic levers available to the top management of the modern corporation (Gulati et al, 2009: 575, cited in Keupp, Palmié & Gassmann, 2012: 379)."

Given the scarcely researched areas outlined by Keupp, Palmié & Gassmann (2012) additional research into the levers to influence the level of organizational innovation and to influence its determinants are warranted.

Moreover, the scope of the research project at hand is influenced by the outlined demand for further research which is reflected in the table below. In their combination the numerous calls of prior researchers serve as an additional illustration of the timeliness and significance of this study:

Suggested focus of future research	Author(s)
Need for research on the influence of (senior) management on the successful implementation (i.e. execution) of innovation concepts in firms	Keupp, Palmié & Gassmann (2012: 379)
Need of research into the execution of innovations. Importance of understanding organizational practices of resource creation and –allocation as well as organizational strategy to ultimately enhance the transformation of raw materials into marketable products and services and ultimately organizational performance	(Baker & Sinkula (2005: 498); Siguaw, Simpson & Enz (2006: 558-570); Baer (2012: 1102)
Need for research to determine the role of top managers in influencing innovations	Hoffman & Hegarty (1993: 549); Elenkov et al (2005: 669)
Need for further research into the determinants of the propensity of an organization to innovate	Wolfe (1994)
Need for further research on innovation strategy	Stock & Zacharias (2011)



Suggested focus of future research	Author(s)
Need for additional research in multiple component research to link MO, LO and other constructs and determine the influence of BS on their configuration	Matsuno & Metzner (2000: 3); Baker & Sinkula (2005); Lee & Tsai (2005); Menguc & Auh (2006)
Need for research with a separate constructs for (1) current customer orientation and (2) future market orientation; Furthermore to highlight how higher levels of both can be achieved; implications of DIT are not operationalized in academic research	Hausner et al (2006); Govindarajan, Kopalle & Danneels (2011); Dobni (2008); Lee & Tsai (2005); Chandy & Tellis (1998: 479); Darroch & McNaughton (2002: 212); Grinstein (2008: 127); Govindarajan & Kopalle (2006: 190); Jansen, Van den Bosch & Volberda (2006: 1669)
Need for multiple informant strategies and investigation into differences between hierarchical ranks and acceptance of BS throughout the organization	Kohli & Jaworski (1993: 65); Zhou et al (2005: 1056); Stock & Zacharias (2011: 881); Yu & Hang (2010: 448); Dobni & Luffman (2000); Jiménez-Jimenez, Sanz Valle & Hernandez-Expallardo (2008: 406)
Need for research which integrates dynamic capabilities aspects in practice and to link with innovation	Vogel & Güttel (2012: 16)
Need to conduct further research on how managerial beliefs influence the development of dynamic capabilities.	Easterby-Smith, Lyles & Peteraf (2009: 5)
Need for the development of a standard measure of innovation orientation	Siguaw, Simpson & Enz (2006: 570)
Need for further research into the concept of innovation orientation as a strategic orientation	Zhou et al (2005)
Need to identify levers to higher performance	Tohidi et al (2011); Hoe (2011)
Need to better understand the antecedents of MO to provide levers to management to implement a MO	Van Raij & Stoelhorst (2008: 1272); Johnson, Martin & Saini (2012: 716)

Table 2: Need for future research outlined in prior publications

### 1.7 Structure of this Thesis

This thesis consists of 6 individual chapters. The following tables provide an overview of the thesis structure, the content and key deliverables of each chapter. In their combination, they serve to thoroughly answer the research aim of this thesis.

Chapter 1 – Introduction		
Overall, this chapter provides an introduction to the topic of the thesis and highlights the importance of innovation for the sustained business success of organizations. Based on the findings of DIT (Christensen, 1997), which serves as a “lens” through which the research problem is approached (Creswell, 2009: 58), it then illustrates omissions in prior research. Furthermore, the research aim, research principles and the significance of this study are outlined.		
Chapter Aims	Activities	Outcomes
To provide an overview of this	Introduction of the research problem, research aim and research principles.	Illustration of the significance of this study and its structure

thesis and outline its structure		
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Table 3: Chapter 1: Content and deliverables

Chapter 2 – Literature Review		
<p>This chapter touches upon innovation as a concept and justifies the selection of the constructs of BS, MO, LO and the IIC from a holistic, processual and dynamic perspective. It then introduces the underlying conceptualization of these constructs and reviews prior publications in the field. Furthermore, the 2<sup>nd</sup> order conceptualization of firm CTI is presented in more detail and the perspective of strategic alignment is introduced, which is especially relevant for the single organization, multiple informant research design employed in this thesis. Together with each variable, research questions 1- 5 are introduced based on prior publications and research omissions in the face of DIT. The chapter is concluded with a short summary which contrasts the selected research model and – variables with the research principles outlined in chapter 1.</p>		
Chapter Aims	Activities	Outcomes
To provide background on existing research, identify omissions and present research objectives and research questions	Review of relevant literature to: <ul style="list-style-type: none"> <li>- approach firm innovation from a holistic and dynamic angle</li> <li>- identify gaps in knowledge</li> <li>- formulate research objectives which resonate the research aim and guiding criteria</li> <li>- derive testable research questions</li> </ul>	<ul style="list-style-type: none"> <li>- Integrated view on firm innovation</li> <li>- identify omission in prior research and research objectives</li> <li>- 5 research questions</li> </ul>

Table 4: Chapter 2: Content and deliverables

Chapter 3 – Research Paradigm		
<p>This chapter first presents the choices made in order to select an appropriate research design to answer the central research objectives guided by research aim and – principles. To outline the available choices among the most prominent ontological, epistemological, methodological positions an overview is provided which contrasts the most dominant positions. The chapter then illustrates the selection of adequate research instruments utilized for data collection and justifies the choice of additional test variables included in the final survey instrument. Moreover, it touches upon the refinement of the research instrument through pilot testing.</p>		
Chapter Aims	Activities	Outcomes
To outline the most prominent research approaches and justify the selection of a research design for this study	<ul style="list-style-type: none"> <li>- Systematically review and consider epistemological, ontological and methodological choices available</li> <li>- Identify previously validated research instruments in line with the research principles</li> </ul>	Selection of an adequate research design to satisfy the research aim, research principles and allow statistical assessment of research questions

Table 5: Chapter 3: Content and deliverables

Chapter 4 – Data Collection and Data Analysis		
The chapter provides account of the process of data collection, the quality and characteristics of the obtained data and the methods available for data analysis. Furthermore, it introduces sub research questions to allow statistical analyses and significance tests across the obtained empirical data. In the last section of the chapter the results of the statistical testing are provided followed by a summary of the findings.		
Chapter Aims	Activities	Outcomes
To outline the process of data collection and data analysis	<ul style="list-style-type: none"> <li>- Descriptive statistics to gain in depth knowledge of available data</li> <li>- Systematically review and consider techniques available for data analysis</li> <li>- Perform statistical analyses to test the alleged interrelationship between variables</li> </ul>	Understanding of the nature of the data, choices of statistical techniques and results of statistical analysis of research questions

Table 6: Chapter 4: Content and deliverables

Chapter 5 – Discussion and Future Research		
In this chapter, the findings presented in chapter 4 are placed in the context of the literature review presented in chapter 2. The emergent patterns are then discussed in consecutive order and the contributions to science are outlined. The chapter then touches upon strengths and limitations of the selected research design and the researchers overall contribution to practice are presented. Chapter 5 is then concluded by outlining potential avenues for future research, followed by a short summary which captures the main contributions of the research.		
Chapter Aims	Activities	Outcomes
To generate new knowledge by placing the results of data analysis in the context of prior research	<ul style="list-style-type: none"> <li>- Contrast findings from research question testing in chapter 4 with the literature in chapter 2 and derive contributions to science, methodology and practice</li> </ul>	Contributions to science (i.e. conceptual advancements and insights from the data), – to methodology and – to practice from research questions 1-5

Table 7: Chapter 5: Content and deliverables

Chapter 6 – Conclusions		
The chapter re-iterates the most prominent findings and contributions to science, methodology and practice and their contribution to answer the research aim.		
Chapter Aims	Activities	Outcomes
To ensure that the research aim and guiding criteria are met and to re-iterate the most prominent contributions to science and practice	<ul style="list-style-type: none"> <li>- Reflect upon research activities and outcomes to ensure satisfaction of research aim</li> <li>- Reflect upon key contributions of the research</li> <li>- Illustrate potential avenues for future research</li> </ul>	Recapitulation of research outcome and research aim; identify areas for future research

Table 8: Chapter 6: Content and deliverables

The thesis structure and the purpose of each chapter to ultimately answer the research aim of this thesis in a coherent manner are illustrated graphically in the following figure:

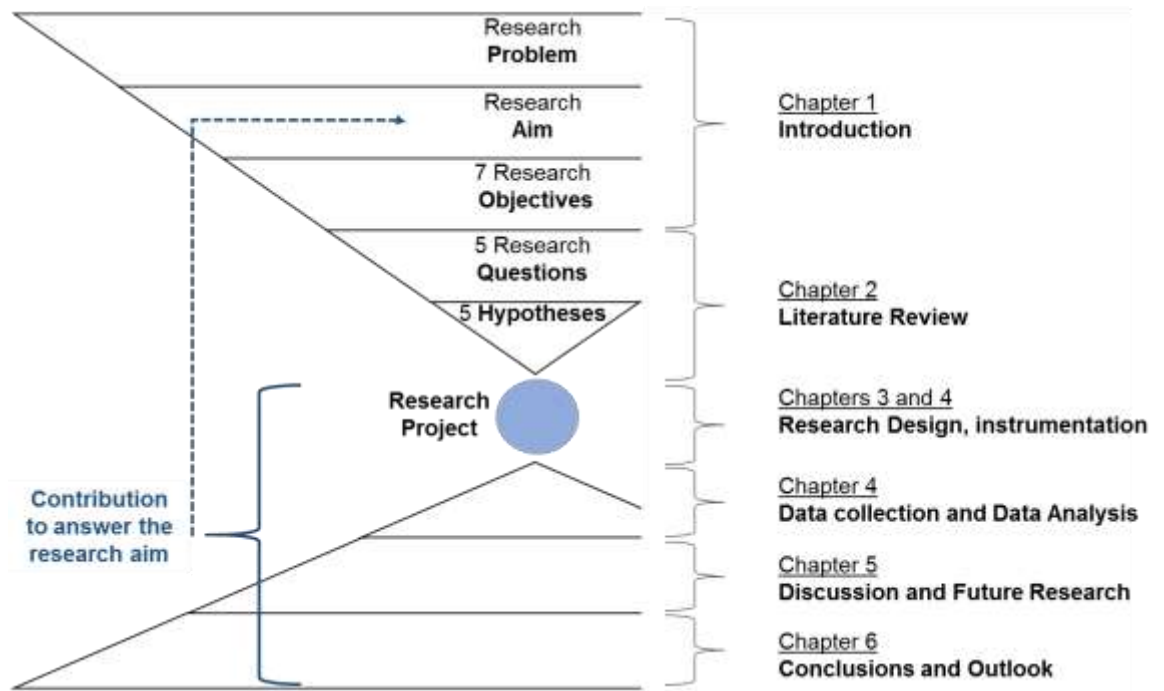


Figure 4: Illustration of thesis structure and interrelations

## Chapter 2: Literature Review

### 2.1 Introduction

In the previous chapter the importance of innovation for the sustained economic success and longevity of an organization were outlined. In this chapter the literature review is presented. Its structure follows broadly the suggestions made by Creswell (2009: 44) to include separate sections on the discussion of studies and concepts relevant to the research approach taken and to introduce and discuss the reasoning underlying the independent variable and the dependent variables.

In the 1<sup>st</sup> part of this chapter the framing of the research as a holistic, dynamic and innovation oriented approach is illustrated in compliance with the research principles No 1 (“Innovation Focus”), No 2 (“Dynamic Perspective”) and No 3 (“Holistic approach”). Furthermore, the focal areas of prior academic work are outlined in adherence to research principle No 4 (“Integration with prior research”) and to place this thesis in the context of prior publications.

In the 2<sup>nd</sup> part of this chapter, the research framework is presented, followed by an introduction and review of the conceptualizations underlying the 4 variables and the reasoning underlying the proposed holistic concept of Capability to Innovate (CTI). Along with the introduction of the research variables, research omissions are illustrated. Based on these omissions and under consideration of research aim and – principles, research objectives and research questions are introduced. The 2<sup>nd</sup> part of this chapter specifically adheres to the research principles No 5 (“Influenced by managers”) and No 6 (“Auditable and representative”).

The key deliverables of this chapter are re-captured in the table below:

Research Principles	(1) Innovation focus (2) Dynamic perspective (3) Holistic approach (4) Integration with prior research (5) Influenced by managers (6) Auditable and Representable (7) Incumbent organization context	
Chapter Aims	Activities	Outcomes
To provide background on existing research, identify omissions and present research objectives and research questions	Review of relevant literature to: - approach firm innovation from a holistic and dynamic angle - identify gaps in knowledge - formulate research objectives which resonate the research aim and guiding criteria - derive testable research questions	- Integrated view on firm innovation - identify omission in prior research and research objectives - 5 research questions

Table 9: Key deliverables of chapter 2

## 2.2 Framing of this thesis – Holistic, Dynamic and innovation focussed

In increasing numbers, research in the field of innovation and organizational capabilities takes a holistic, multi-component approach to the research problems in focus (e.g. Lee & Tsai, 2005). In line with the criteria outlined in chapter 1, this thesis approaches innovation from a holistic perspective which transparently accounts for major elements of successful firm innovation and highlights the required dynamic adaptation of the innovative capabilities of an organization over time.

In the following, 3 perspectives on innovation are reviewed which are all grounded in the innovation discipline but touch upon the different aspects of innovation by explicating the elements of *holistic* (“Innovation Orientation”), *process* (“sketch process”) and *dynamic* adaptation (“Dynamic Capabilities”) required to fully appreciate the subject and to comply with the thesis’ research aim.

### 2.2.1 Perspective of Innovation Orientation

The conceptualization of Innovation Orientation (IO), which was advanced by Siguaw, Simpson & Enz (2006) warrants a holistic, firm wide perspective to understanding the propensity to innovation as an organization-wide phenomenon which comprises all organizational functions and levels (e.g. Siguaw, Simpson & Enz, 2006). This perspective is also echoed by other authors who emphasize that innovation management is about a good overall ability of a company to make innovation happen (Tidd & Besant, 2007; Dobbin, 2010b: 332-333). These authors suggest that successful innovation requires a multitude of contributing factors and pre-conditions to be met for innovation to drive in organizations and emphasize that added value results from the synergistic interplay among these constructs. For example, Dobni (2010b: 335) posits that top innovating organizations effectively link their BS to clear innovation objectives and take all steps of the innovation process into consideration. Therefore a systematic approach towards fostering a rich set of conditions that will eventually result in innovative output is crucial. In this respect, IO research argues, that a firm’s long-term success depends more on its overall willingness and CTI than on specific innovations (Siguaw, Simpson & Enz, 2006: 557). Subsequently, IO extends its scope beyond product/service innovations, which have historically received most attention from innovation research (Keupp, Palmié & Gassmann, 2012), to other types of innovation such as process- or business model innovations and posits a holistic perspective to firm innovation. This approach is consistent with the findings of Damanpour (1992: 582), who argues, that the distinction between different types of innovation is not essential, and - Keupp, Palmié & Gassmann (2012: 378) who criticise the overly focus of prior research on product innovation. For example, In order to identify patterns of how successful organizations innovate and to translate them into day to day management, much research in the field of innovation was undertaken. However, most of it has focused on narrow

segments within the overall topic (Keupp, Palmié & Gassmann, 2012). For example, specific innovation types were examined, R&D spending was associated with the innovative outcome an organization yielded, while other research focussed on the diffusion process of innovations throughout firms or society (Siguaw, Simpson & Enz, 2006: 556). More rarely has research taken on the quest to uncover successful - and sustainable patterns in firm innovation from a more holistic, firm level perspective, in order to assess an organisations' overall capability and propensity to innovate (Siguaw, Simpson & Enz, 2006: 556). Such a holistic approach is associated with more precise insights into firm capabilities and their interdependencies, and could enable advanced levels of alignment of firm capabilities with overall business objectives (Baker & Sinkula, 2005; Gaynor, 2002). For example, Gaynor (2002: 103) suggests that for innovation to occur, several organizational preconditions need to be available. If only one of these components is unavailable or scarce, it will reduce the overall CTI. As a company wide perspective of innovation, which reaches beyond the scope of the narrowly focussed prior research, the concept of IO is posited as an underlying philosophy which encourages alignment between the various functions and members of an organization and fosters cross-functional interaction across departments and ranks.

According to Siguaw, Simpson & Enz (2006: 561), IO comprises of (1) a learning philosophy, (2) strategic direction and (3) transfunctional acclimation, and builds on organizational competencies, such as market focus and resource allocation. Learning philosophy is conceptualized as “a pervasive set of organization-wide understandings about learning, thinking, acquiring, transferring, and using knowledge in the firm to innovate (p 562).” Strategic direction of the firm is described as “a future-oriented concept of the business, captured in the strategic beliefs and understandings that define who the firm is and how the activities of the organization are assembled to ensure that innovation happens in a timely fashion (p 562).” While transfunctional acclimation is conceptualized as a knowledge structure which “encourages and facilitates knowledge transfer across and within subunits to retain diversity of views and foster cooperative beliefs and understandings among all functional areas to direct them toward innovation (p 563).” The concept of IO is flanked by organizational competencies, such as a firm’s unique abilities and routines to allocate resources and deploy technologies as well as the utilization of employee and market competencies to facilitate achieving the desired level and specificity of innovations in line with the organizations BS.

### 2.2.2 Perspective of Sketch Innovation Process

The conceptualization of IO advises to take all relevant steps into consideration, which contribute to the success of organizations to effectively bring forward innovations (Dobni, 2010b). Based on this notion, key organizational determinants of successful innovations are presented as a sketch process including 4 key components. These components emerge from the analysis of definitions of “innovation”, which are discussed in more depth below.

Even though a causal sequence among the identified factors is implied (Rueckert, 1992: 244) the proposed components do not aim to provide a universal process flow which "may tell us relatively little in terms of the richness and complexity of the quite varied phenomena it supposedly refers to" (Alvesson & Deetz, 2000) or suggest a purely linear sequence in practice, but allow to understand core components of successful innovation processes which are available to more or less extend in the majority of innovations.

Due to the grounding of innovation research in different scholarly disciplines and underlying conceptualizations, there are various different definitions of the concept available in academia (Hauser, Tellis & Griffin, 2006: 687). The following table presents a selection of definitions of the term "innovation" and the inherent concept:

Definition of Innovation	Source
"Implementation of discoveries and interventions and the process by which new outcomes whether products, systems, or processes, come into being."	Sharifirad & Ataei (2012: 496)
"application of ideas that are new to the firm to create added value, either directly for the enterprise or indirectly for the customers, regardless of whether the newness and the added value are embodied in products, processes, work organization or management, or marketing systems"	Weerawardena & O'Cass (2004: 421) cited in Lee & Tsai (2005: 328)
"the generation, acceptance and implementation of new ideas, processes, products or services."	Thompson (1965: 36) cited in Mavondo, Chimhanzi & Steward (2005: 1239)
"Intentional introduction and application within a role, group, or organization of ideas, processes and products or procedures, new to the relevant unit of adoption, designed to significantly benefiting the individual, the group, organization, or wider society."	West & Farr (1990: 9)
"a process that involves the generation, adoption, implementation and incorporation of new ideas, practices or artefacts within organizations"	Axtell et al (2000: 266)
"[...] adoption of an internally generated or purchased device, system, policy, program, process, product, or service that is new to the adopting organization."	Damanpour (1991: 556)
"an iterative process initiated by the perception of a new market and/or new service opportunity for a technology-based invention which leads to development, production, and marketing task striving for the commercial success of the invention."	Garcia & Calantone (2002: 112)
"generation, development and adaptation of new ideas, processes or products aiming at increasing competitiveness of organizations"	Forsman (2009: 501)

Table 10: Definitions of Innovation

Most available definitions converge on four fundamental elements of innovation. They propose that the innovation process comprises an (1) intentional (2) information acquisition or generation, (3) sense making/dissemination of knowledge and (4) use of new knowledge



as part of the successful implementation, diffusion or exploitation of the concept in an economic sense (Calantone, Cavusgil & Zhao, 2002: 515; Damanpour, 1992: 562; Schumpeter, 1911; Ahmed, 1998). Therefore, innovation can be pictured as an intentional, ongoing strategic exercise that transports organizational objectives and directs an organizations actions towards specific types of innovations and levels of intensity.

Subsequently, the element of “intention” is posited as a key determinant of the likelihood of organizations to pursue innovative activities and the specificities it engages in. West & Farr (1990) especially emphasize the importance of the focus on bringing forward innovations. According to them, the *explicit will* to innovate provides a strategic direction for the innovator (or innovating organization) to introduce and apply new knowledge and bring forward new and economically favourable factor combinations. Thus the intention of the innovator to bring forward innovations defines to what extent the entrepreneur or the entrepreneurial organization is prepared to engage into innovation-related endeavours and what role the idea of bringing forward such concepts into economic use plays. For example Chandy & Tellis (1998: 481) conclude, based on a survey in 3 high- tech industries, that a firm’s *willingness* to cannibalize its own business in an attempt to tap future markets appears to be a key determinant of their success with bringing forward FMO-related innovations.

The stage of information acquisition or information generation relates to the areas which are defined as potential sources of “discoveries” (Sharifirad & Ataei; 2012: 496) for the need of novel solutions. For example a firm may obtain information from current lead customers seeking solutions to a business problem they face and thus discover the potential need for and innovative proposition. Or companies may engage into R&D activities and experimentation which provide inventions, products with yet no field of application or other sources for new ideas.

In the phase of sense making and learning the innovative idea obtained through the information acquisition stage is refined into an innovative concept. This may require to consciously part from current organizational routines, to recombine previously separated fields of business or organizational resources in order to generate practical solutions which allow to capitalize on an innovative idea or an invention.

The phase of innovation implementation represents and supports the transition of an innovative concept towards its implementation. The implementation or execution is an important determinant in the Schumpeterian concept of innovation, as only the commercially successful launch of an innovative concept will accrue rents to the entrepreneur/organization and will therefore assure economic wellbeing (Schumpeter, 1911; Teece, 2007; Garcia

& Calantone, 2002: 112)<sup>12</sup>. However, this last step of innovation implementation or commercialization is regularly taken for granted and not specifically attended to in academic research (Keupp, Palmié & Gassmann, 2012). This omission was criticised by Axtell et al (2000: 266) who point out that most prior research displays an overly focus on the idea generation phase but neglects the essential phase of bringing it to economic use (Axtell et al, 2000: 266).

### 2.2.3 Dynamic Capabilities

The underlying idea of the dynamic capabilities view (DCV) is to foster the ability of a firm to constantly renew the source of its competitive advantage in times of change and turbulence (Teece, 2007). In the words of Teece, it's a useful theory "with some descriptive validity that helps integrate and relate disparate ideas that you know are important [...and] provides an intellectual structure for businesspeople to start thinking systematically about why companies succeed – or fail (Teece, 2013)." Based on the threat that incumbent firms fall to organizational inertia and -core rigidities (Leonard-Barton, 1992; Peters & Waterman, 2006) resulting from their outdated mental models (Senge, 1990) or theory in use (Argyris & Schön, 1978), and fail, as highlighted by DIT (Christensen, 1997), organizations are in need of capabilities which allow for constant renewal, adaptation and transformation (Teece, 2007) to avoid being trapped in the routines of past success.

The DCV framework is utilized in an exponentially growing number of publications in multiple streams of research, among them academic publications in the domain of innovation (Easterby-Smith, Lyles & Peteraf, 2009: 1–2; Vogel & Güttel, 2012: 1). For example, the DCV is an inherent perspective to the IO approach (Siguaw, Simpson & Enz; 2006: 561). Even though it is closely connected to the resource based view (RBV; Wernerfeldt, 1984; Barney, 1991), its main focus is on the development, evolution and renewal of firm capabilities and resources under the dynamics of change in volatile, unpredictable business environments (Easterby-Smith, Lyles & Peteraf, 2009: 1; Akwei, 2007: 22; Wang & Ahmed, 2007: 32, McKelvie & Davidsson, 2009) and the influence of strategic management on shaping organizational capabilities to successfully handle such dynamics (Tidd & Bessant, 2007: 174; Harreld, O'Reilly & Tushman, 2007: 24-25; Augier & Teece, 2008: 1187), to achieve superior performance (Theodosiou, Kehagias & Kasikea, 2012: 1060; Day, 1994: 38) and competitive advantage (Teece, 2007: 1320).

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<sup>12</sup> An important differentiation at this point of time should be made between *invention* and *innovation*. While invention can be seen as a creative action which does not necessarily aim at generating profits, it is innovation that successfully implements or commercializes a new idea and generates (entrepreneurial) profits. (Kamasak, 2010: 308 ; Gaynor, 2002; Schumpeter, 1911)

Wernerfeldt (1984), pointed out a company's resources as an important subject to strategy research and ultimately to organizational performance (Newbert, 2007: 122–123; Priem & Butler, 2001: 23; Hult & Ketchen, 2001: 905). RBV and subsequently the DCV take the vintage point of an inside-out approach (Wang & Ahmed, 2007: 41) and explicit focus on the importance and development of internal capabilities of the firm to (1) develop and (2) utilize unique combinations of resources, which result in superior organizational performance (Paladino, 2007: 535–536).

The DCV framework is based on the understanding, that firms possess assets and capabilities, which combine into its stock of resources (Day, 1994: 38):

- Assets are described as the stock of resources available to the deployment of a firm (Day, 1994: 38). Assets include the investments taken into tangible objects, such as “scale, scope, and efficiency of facilities and systems, brand equity, and the consequences of the location of activities for factor costs and government support (Day, 1994: 38).” For example Teece, Pisano & Shuen (1997: 521-522) posit various types of assets, such as: “Technological assets, complementary assets, financial assets, reputational assets, structural assets, institutional assets [and] market (structure) assets (p 521-522).”
- Capabilities are frequently referred to as the “glue” which brings assets together and which firms deploy for their own advantage (Day, 1994: 38; Theodosiou, Kehagias & Kasikea, 2012: 1060). They refer to integrated organizational routines and processes which allow to perform business routines (Teece, Pisano & Shuen, 1997: 516; Christensen & Overdorf, 2000). In contrast to assets, capabilities are intangible and do not hold a market value. Capabilities are pictured as the coordinated patterns of organizational processes, practices and routines which comprise of specific skills and procedures to leverage assets and move products or services along the value chain and ultimately create a position of competitive advantage (Baker & Sinkula, 2005: 485–486; Day, 1994: 38; Lisboa, Skarmeas & Lages, 2011: 1276; Teece, Pisano & Shuen, 1997: 515). It is organizational capabilities that allows for firm processes to be conducted successfully (Day, 1994: 38). At the same time, given the multitude of processes and routines within any business organization, there are infinite opportunities for firm capabilities to develop (Day, 1994: 40) as they are tightly interwoven into the organizational fabric and are frequently influenced by past commitments and the market environment in which an organization operates and the strategic direction it follows. Superior capabilities are difficult to create, identify, assess and imitate (Day, 1994: 38; Theodosiou, Kehagias & Kasikea, 2012: 1060).

Contrary to most assets, capabilities are intangible not directly observable and “hidden until exercised (p. 3)” (Easterby-Smith, Lyles & Peteraf, 2009: 3–5). They will only become sizeable, when inferred from other indicators. If capabilities result in outputs which are perceived as superior versus competitor offerings, they pose a source of competitive advantage and higher profitability for the firm (Day, 1994: 40; Menguc & Auh, 2008: 455; Hult & Ketchen, 2001: 900).

- Subsequently, resources are the result of an integration of firm assets and capabilities (Day, 1994: 38). Resources are frequently defined as “tacit, socially complex, and non-substitutable” (Baker & Sinkula, 2005: 485–486) and described as difficult to transfer between entities (Teece, Pisano & Shuen, 1997: 516). One of the central arguments of the RBV/DCV is that companies may derive superior performance, - profits and sustainable competitive advantage from the deployment of certain resources as part of a unique value-creating organizational strategy, which are “valuable, rare, difficult to imitate and non-substitutable” (Priem & Butler, 2001: 23–24; Barney, 1991; Day, 1994: 38).

The framework therefore proposes to identify and nourish the generation of a stock of unique resources within the firm which qualify to be ‘VRIN’ (Barney, 1991; Wang & Ahmed, 2007: 36) (1) valuable, (2) rare, (3) imperfectly imitable and (4) non-substitutable (Priem & Butler, 2001: 23) and to utilize and exploit those resources to address emergent opportunities or threats resulting from changes in the internal and external business environment (Paladino, 2007: 535–536; Day, 1994: 40) and differentiate firms from their competitors (Hult & Ketchen, 2001: 900).

- Valuable resources allow the organization to create value-added outputs which either enhance an organizations efficiency and effectiveness or result in demanded products or services (Akwei, 2007; Priem & Butler, 2001: 24) for which customers are willing to pay a price premium (Hult & Ketchen, 2001: 902) which results in rents accruing to the owner of the resources (Bowman & Ambrosini, 2003: 291).
- Rare resources put the organization into a competitive advantage. Rare resources are not widely held or easily available. Furthermore, buyers cannot readily acquire the product or service resulting from such resources from a competitor (Priem & Butler, 2001: 24; Hult & Ketchen, 2001: 902). Therefore, firms holding rare resources derive either superior margins or superior sales volumes at the same cost base as their competitors (Bowman & Ambrosini, 2003: 291)

- Imperfectly imitable, unique resources are those which are not easily replicated by competitors (Hult & Ketchen, 2001: 902), once the advantageous relationship between resource and superior output are observed (Priem & Butler, 2001: 24). For example, patents and firm reputation qualify as unique and difficult to replicate firm resources (Hult & Ketchen, 2001: 900). Such resources are frequently described as heterogeneously distributed across firms (Wang, 2007: 32) and difficult to transfer between organizations (e.g. even if acquired it is difficult to fully utilize their potential; Priem & Butler, 2001: 24–25).
  
- Non-Substitutable resources are those which do not have a readily available alternative. Superior competitive advantage is only possible, if there is no other resource available that can yield the same superior outcomes (Akwei, 2007; Priem & Butler, 2001: 24).

The DCV/RBV framework enables organizations to assess and exploit the potential of available resources and knowledge from the inside in order to create value from favourable recombination of these resources - instead of primarily acquiring costly resources from the outside (Priem & Butler, 2001: 36; Lisboa, Skarmeas & Lages, 2011: 1276). Thus, DCV is predestined for Schumpeterian business environments, which is based on the idea of rent creation from capability building (Makadok, 2001: 387-388; Teece, Pisano & Shuen, 1997: 509) and emphasizes the role of strategic management to generate value *after* the acquisition of assets by enabling a superior exploitation through firm-internal created higher level capabilities.

While valuable and rare resources will result in a competitive advantage, it is the fact that resources are also difficult to imitate and –transfer as well as non-substitutable, which will then combined result in a *sustainable* competitive advantage which prevails over time (Priem & Butler, 2001: 24–25; Wang, 2007: 32). The essence of VRIN resources therefore is their scarcity which does not allow competitors to quickly assemble their equivalents through markets (Teece, Pisano & Shuen, 1997: 517).

However, in practice and given constantly changing competitive environments, the comparative advantage which is built on VRIN resources will erode over time and the cost of maintaining these capabilities will not result in competitive advantage but only enable the organization to continue operating (Theodosiou, Kehagias & Kasikea, 2012: 1058; Eisenhardt & Martin, 2000: 1117). Therefore it is an imperative of firms to renew their resource base in an ongoing manner in order to uphold their competitive edge in a sustainable fashion. The element of dynamic adaptation of resources is the central contribution of the DCV. The term

'dynamic' describes a firm's capacity "to renew competences so as to achieve congruence with the changing business environment (Teece, Pisano & Shuen, 1997: 515)."

There are various definitions on what comprises dynamic capabilities available in academia (Akwei, 2007: 27; Teece, Pisano & Shuen, 1997; Eisenhardt & Martin, 2000). In the context of this research the most illustrative is the definition of Wang & Ahmed (2007: 35), who posit that dynamic capabilities are "a firm's behavioural orientation constantly to integrate, reconfigure, renew and recreate its resources and capabilities and, most importantly, upgrade and reconstruct its core capabilities in response to the changing environment to attain and sustain competitive advantage (Wang & Ahmed, 2007: 35)." Therefore, they provide the firm with the ability to gather- and share knowledge and to challenge its own fundamental business assumptions and –processes which results in an enhanced quality of decision making (Easterby-Smith, Lyles & Peteraf, 2009: 6–7).

The DCV acknowledges, that capabilities and resources need to be approached from the strategic objectives of the firm and emphasize the importance of aligning the development of organizational resources with the overall strategic objectives of the company. Thus, only if organizations take appropriate strategic actions to repeatedly capitalize on the potential of their firm-specific resources through leveraging their organizational capabilities, will sustainable competitive advantage and superior performance be possible under changing environmental conditions and will rents accrue (Teece, Pisano & Shuen, 1997: 513; Harreld, O'Reilly & Tushman, 2007: 24-25). Theodosiou, Kehagias & Kasikea (2012: 1060) emphasize, that the level of efficiency and effectiveness an organization achieves in utilizing its stock of resources will be more important than the absolute levels of unique resources available to the firm (p 1060). This statement highlights the importance to acknowledge that while firms may possess a multitude of capabilities and resources, many of them are most likely not critical to achieve the organizational objectives and to put the organization into a position of competitive advantage and sustainable superior performance. Subsequently, the organization should identify its most essential resources and focus on their development. Therefore, for resources to be successfully utilized, a firm must foster value-creating capabilities to recombine assets and enhance capabilities in order to generate unique resources and to translate them into a determinant of differentiation and sustainable competitive advantage (Baker & Sinkula, 2005: 485–486; Lisboa, Skarmeas & Lages, 2011: 1276).

According to Teece (2007) there are 3 Types of dynamic capabilities which have the potential to effect a renewal of the current capabilities of the organization and its subsequent resource configuration: The ability to (1) sense, to (2) seize and (3) to transform. Sensing describes an organizations ability and propensity to detect new opportunities and to explore

across technologies and markets and beyond known routines and to determine latent demands which might translate into business opportunities. The capability to seize describes the its competencies to address newly emergent business opportunities by taking decisions, making adequate investments of firm resources and implementing or commercializing new concepts in an environment of uncertainty. The capability to transform inherently highlights the role of management action in shaping the capabilities of the organization and providing strategic direction for the development of the firm. It is the “ability to recombine and to reconfigure assets and organizational structures as the enterprise grows, and as markets and technologies change, as they sure will. Reconfiguration is needed to maintain evolutionary fitness and, if necessary, to try and escape from unfavorable path dependencies (Teece, 2007: 1335).”

Thus, the DCV emphasizes the essential role strategic leadership plays for the development and maintenance of value-creating firm capabilities (Salunke, Weerawardena & McColl-Kennedy: 1252), described as the basis for firm level competitive advantage in increasingly dynamic business environments (Teece, 2007: 1341), and to contribute to a firm’s ability to sense and seize opportunities by developing existing – or creating new firm competencies (Harreld, O’Reilly & Tushman, 2007). Therefore, dynamic capabilities are associated with continuously preventing organizations from falling into the trap of core capabilities (Leonard-Barton, 1992) that turn into core rigidities which hinder an organization’s adjustment to face fundamentally shifting business requirements. Furthermore, core capabilities and dynamic capabilities are the outcome of an increasing alignment between complementary assets (Teece, Pisano & Shuen, 1997: 516; Teece, 2007), firm resources, –capabilities and BS (Wang & Ahmed, 2007).

The interrelation between assets, capabilities, resources, and dynamic capabilities are represented in the figure below. It specifically emphasizes the role of transformative (Teece, 2007) management action (represented by BS) to determine the direction that is taken by the organization and which prioritize the development of certain capabilities over others:

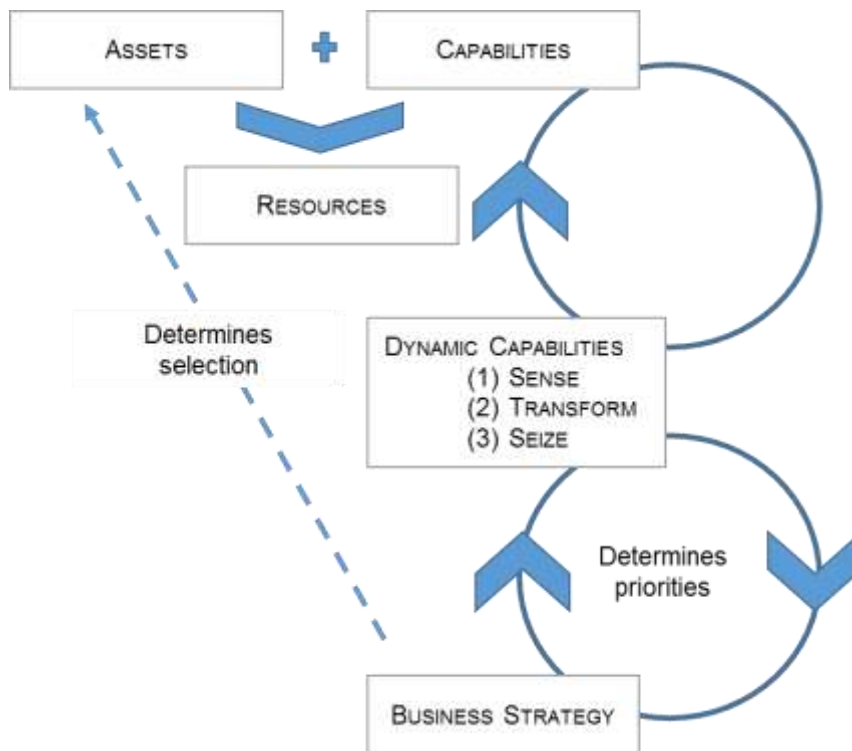


Figure 5: Resource based view, Dynamic capabilities view and Business Strategy

### 2.3 Presentation of Research Framework and Variables

The research grounding provides an integrative approach to the 3 different perspectives on innovation residing in the IO approach, the processual perspective and the DCV, which were presented above. For example, IO emphasizes that innovation is an all-encompassing task which touches upon all members of an organization (Siguaw, Simpson & Enz, 2006; Ahmed, 1998: 30). Therefore this perspective acknowledges that the ability of an organization to bring forward innovations reaches well beyond the boundaries of the R&D department of an organization. The perspective underlying the sketch innovation process also outlines the importance of a holistic perspective but specifically emphasizes the importance of a coordinated and synergistic interplay between various organizational abilities which are of limited use individually but in their combination provide the ability of an organization to bring forward innovative concepts and to launch them into economic use (Cambra-Fierro et al (2012: 858; Vera & Crossan, 2004: 222; Hult, Hurley & Knight, 2004: 436; Van de Ven, 1986: 599). Consequently, the process perspective emphasizes the interplay between an organizations ability to sense, to disseminate, learn and part with outdated routines and to implement or execute innovations. Furthermore it highlights that the specificities of these abilities are all contingent on the intended direction of the organization which is determined by the BS of the organization. The DCV then emphasizes the importance of maintaining and renewing VRIN resources over time to stay competitive. Thus this perspective highlights that continuous adaptation of the capabilities of an organization is required to bring forward resources with a higher innovative potential. Therefore dynamic capabilities, described as the ability of the organization to sense, seize and to transform (Teece, 2007)



essentially transport the Schumpeterian notion of deriving new factor combinations by successfully combining entrepreneurial thinking and acting with the assets and capabilities to shape new, rent generating VRIN resources. Thus inherently the DCV posits that it is at the heart of management to ensure that organizational capabilities are fostered which enable the organization to continuously innovate in order to achieve economic prosperity and longevity. Ultimately, the entrepreneurial capabilities of an organization are an essential contributor to the sustained success of an organization. However, to fully capitalize on these capabilities, management knowledge of the underlying conceptualizations behind innovations and the influence of BS on the subsequent shaping of the CTI of an organization appear essential.

In order to place the research in the context of prior research and to contribute to the knowledge building in the field, the variables of related prior publications were reviewed (Research Principles No 4). While the overall attention of academia towards multi-component or holistic models and their linkages is still limited (Lee & Tsai, 2005: 329) it is increasingly recognized that business performance itself is a multi-component construct and requires equally composited research conceptualizations which take similar approaches to decipher patterns of organizational success (Kyrgidou & Spyropoulou, 2012: 2).

Author	Learning	Strategy	Market Orientation	Context	Innovation	Innovativeness/ Culture	Performance
Baker & Sinkula (2005)	X	X	X		X		
Cambra-Fierro et al (2012)	X	X	X				X
Calantone, Cavusgil & Zhao (2002)	X					X	
Despandé & Farley (2004)			X		X	X	X
Dobni (2008)	X	X	X	X	X	X	X
Grinstein (2008)	X		X				X
Hurley & Hult (1998)	X		X		X	X	
Keskin (2006)	X		X			X	X
Jimenez- Jimenez & Sanz-Valle (2011)	X				X		X
Jimenez- Jimenez, Sanz-Valle & Hernandez-Espallardo (2008)	X		X		X		
Lee & Tsai (2005)	X		X			X	
Mavondo, Chimhanzi & Stewart (2005)	X		X		X		X
Noble, Sinha & Kumar (2002)	X	X	X			X	
Siguaw, Sipson & Enz (2006)	X	X	X	X	X		X
Hult, Hurley & Knight (2004)	X		X			X	X
Hult & Ketchen (2001)	X		X			X	X
Dobni (2010b)	X	X	X	X	X	X	X
Morgan & Berton (2008)	X	X	X				X

Table 11: Selected prior multi-construct innovation research

In the past years, studies have emerged that linked Market Orientation (MO), entrepreneurship, innovativeness, learning (i.e. organizational learning or Learning Orientation (LO); for a review see for example Cambra-Fierro et al, 2012) to determine the combined impact on firms' competitive position (Hult & Ketchen, 2001: 899–902) or various other measures of performance (measured with single- or multiple construct measures) and innovation (e.g. Jiménez-Jimenez, Sanz-Valle & Hernandez-Expallardo, 2008; Baker & Sinkula, 2005). More rarely are measures of BS (e.g. Morgan & Berthon, 2008), context and organizational culture (e.g. Dobni, 2008; Dobni, 2010b). The conceptualizations of MO, LO and BS are well established in academia, and their significant impact on firm innovation and – performance was previously validated (e.g. Jiménez-Jimenez, Sanz-Valle & Hernandez-Expallardo, 2008). Especially the link between MO and firm learning is extensively researched and the synergistic effect of both orientations on firm performance were frequently confirmed (Grinstein, 2008: 116/124; Ali et al, 2010: 363). For example, Jiménez-Jimenez, Sanz-Valle & Hernandez-Expallardo (2008) used a survey to 744 firms with combined measures of MO, OL, innovation and company performance to test the relationship and interdependencies between these constructs. The results of their study support the role of MO and firm learning as being important antecedents of innovation and ultimately performance. And Baker & Sinkula (2005: 483) suggest synergistic effects for firms coordinating a strong MO with complementary capabilities and resources to enhance innovation and new product success. Lin et al (2013) suggest a mediating effect of firm learning and the innovative output an organization creates. Furthermore, Morgan, McGuinness & Thorpe (2000) acknowledge that “a market oriented firm is one that recognizes needs of current and future customers, generates and disseminates information and is able to respond to exploit opportunities (p 345).” And Cambra-Fierro et al (2012) remark that their “research confirms that higher levels of competition and market activity call for conceptualizing Market Orientation, Learning Orientation and performance holistically, not separately; that is, the data indicates the need to approach relationships between Market Orientation, Learning Orientation and performance jointly rather than independently (p 865).”

Overall, despite the level of attention, BS receives in academia (e.g. Miles et al, 1978; Porter, 1981) there is a surprisingly little amount of empirical research into the BS-MO or BS-OL/LO link (Dobni & Luffman, 2000: 912). Furthermore, and despite the evidence presented from research in the field of DIT, the degree to which an organization's resource allocation practices and its organizational structures, routines and managerial supportiveness are conducive to innovation are almost exclusively neglected in prior research and warrant additional attention from academia.

Based on the above, the constructs of BS, MO, LO and IIC were selected for admission into the final research framework. Overall in their composition these constructs are deemed adequate to answer the aim of this research. Moreover they represent significant frameworks in the context of the 3 perspectives on innovation previously reviewed and in their relevance to researchers in prior works. In their combination, these components are posited to represent (1) an organization's intention to be innovative, (2) its ability to sense, (3) to learn and to (4) act and implement innovative concepts for the economic benefit of the organization.

In their combined form, MO, LO and IIC are depicted to represent an organizations overall CTI, which is contingent on the strategic intent of the organization, expressed through its BS. This conceptualization emphasizes that BS is a key determinant of the intra-organizational emphasis on learning and innovation and subsequently influences the continuous creation and reconfiguration of firm resources supportive of its strategic objectives (Harreld, O'Reilly & Tushman, 2007). This conceptualization adheres to the insights of the 3 perspectives on innovation outlined earlier in this chapter. Specifically, the component constructs represent key frameworks from the IO conceptualization (Siguaw, Simpson & Enz, 2006), which place emphasis on the importance to include aspects of strategic direction, learning philosophy and firm specific competencies, such as resource allocation and the ability to execute into a holistic model. Furthermore, the selection allows to posit individual constructs as representatives of the individual stages of the 3-step sketch innovation process outlined further above. In line with this conceptualization, MO is posited as the notion of idea acquisition, LO as the notion of sense making and information dissemination and renewal of firm knowledge (Ali et al, 2010: 369) and the IIC as the ability of the firm to execute an innovation into a commercially successful application (Axtell et al, 2000: 266). The addition of aspects of innovation implementation (Dobni, 2008; Gaynor, 2002; Ahmed, 1998), such as the innovation context prevailing in firms, allows to broaden the emergent framework and to answer the call by Keupp, Palmié & Gassmann (2012: 379) and Baer (2012: 1116) to draw more attention of strategic management research on the implementation/commercialization aspect of innovations. Furthermore the selection follows the implications of DIT, which found that the failure, especially of disruptive innovative concepts, is attributable at large to the lack of sponsorship, inadequate availability of resources and missing supportive infrastructure (Christensen, 1997). Lastly, the selected constructs integrate with the DCV of the firm by reflecting an organizations capability to sense, to seize and execute and to transform the company through strategic management decisions. All three constructs are in general capable of being influenced by BS and thus in line with the objectives of this research to identify key levers to enhance the innovation capability of a firm through better alignment with BS. Thus the conceptualization follows the work of Baker

& Sinkula (2005: 498) who advocate that “it is important to study the resources, practices, and business strategies that moderate the conversion rate of new product success into market share gains and generative learning into actual [...] innovations. These factors, once identified, are important partners to Market Orientation that should be integrated into more complete models of new product development and profitability.”

Therefore, the following framework emerges, which links BS with MO, LO and IIC:

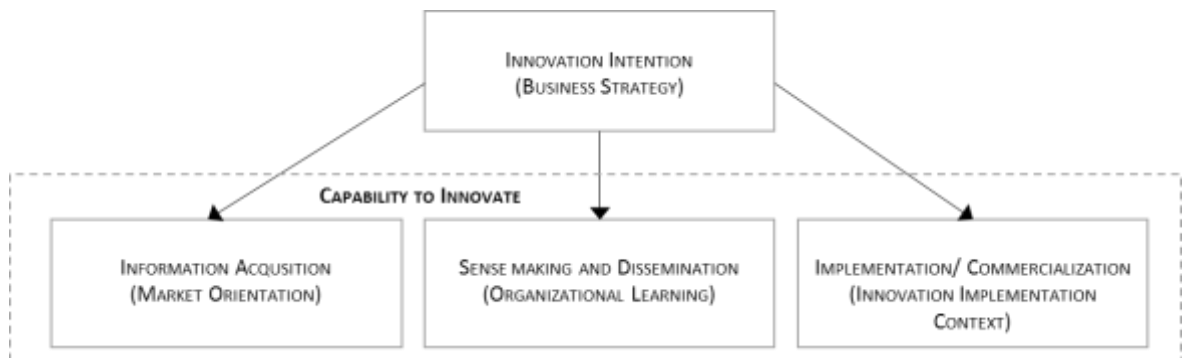


Figure 6: Thesis framework, key constructs and interrelationships

The 4 variables are reviewed and discussed in the following in consecutive order. Given the fact that literature on BS, MO and LO is very rich, the confined scope of this thesis consciously limits the subsequent review of BS literature (Bowman & Ambrosini, 2003: 290) to aspects deemed relevant with regards to the research aim and principles stated in chapter 1.

### 2.3.1 Business Strategy

A firm’s BS is grounded in the desire to achieve a specific future organizational- and positional state (Venkatraman, 1989: 948) and reflects the conscious (Morgan, McGuinness & Thorpe, 2000: 342) and ongoing (Farjoun, 2002: 570-572) decisions and strategic choices taken by a company with regards to how it conducts business and what actions it takes (Matsuno & Metzner, 2000: 2) in an attempt to create, appraise (Gilbert, 1994: 16) and maintain a position of superior performance and competitive advantage (Theodosiou, Kehagias & Kasikea, 2012: 1059; Slater & Olson, 2001: 1055–1056; Francis, 2000: 84; Day, 1994: 38; Harreld, O’Reilly & Tushman, 2007) and to effectively serve its customers or develop new markets (He & Wong, 2004). Therefore, BS is a key determinant for the selection, configuration and continuous co-alignment (Farjoun, 2002: 572) of resources, process and systems an organization fosters and utilizes to achieve its strategic objectives (Akman & Yilmaz, 2008: 73; Augier & Teece, 2008: 1188; Harreld, O’Reilly & Tushman, 2007: 22).

Despite the multitude of theoretical options for an organization to pursue, given the inherent finiteness of a company’s resources (e.g. financial resources, human resources etc.) firms must ultimately implement and communicate a BS which prioritizes certain performance

dimensions and organizational objectives over others (Hult & Ketchen, 2001; Menguc & Auh, 2006; Augier & Teece, 2008). This prioritization subsequently determines the focus of the organization and resembles the vintage point for continuous business adaptation (Lukas, 1999: 147; Farjoun, 2002). As part of the overall BS of an organization, its innovation strategy then “determines to what degree and in what way a firm attempts to use innovation (Gilbert, 1994: 16)” to achieve its overall business objectives (Dobni, 2010b). However, especially with game changing, FMO- related innovation strategies, the alignment with the overall BS of the organization in a conscious manner is essential (Dobni, 2010a).

According to Gilbert (1994: 18-20) and Berthon, Hulbert & Pitt (2004: 1066-1069) any organization needs to ultimately select a BS and subsequent innovation strategy which is located on a continuum between exclusively concentrating on serving current customers (Current Customer Orientation; CCO) and exclusively concentrating on the identification and seizure of new market opportunities (Future Market Orientation; FMO). In practice, the selected BS represents the context and characteristics of the individual organization and is often a combination comprising of some levels of CCO and some levels of FMO.

#### *2.3.1.1 Characteristics of Business Strategy*

While there is no universally accepted ‘optimal’ BS and neither an exclusive CCO, nor an exclusive FMO or a mixed BS is favoured per se (Berthon, Hulbert & Pitt, 1999: 49-50), it is the main function of strategic management to select and implement a BS that most adequately adheres to the overall strategic *intention* of the organization and its *unique* situation (Gilbert, 1994: 20; Ward & Lewandowski, 2008: 231; Dobbin & Luffman, 2000: 910; Jaruzelski & Dehoff, 2007: 8). Strategic management, can therefore be defined as “the superordinate and continuous organizational process for maintaining and improving the firm’s performance by managing, which is enabling, formulating, and realizing strategies (Farjoun, 2002: 578).” According to Farjoun (2002: 578-580) strategic management includes two main phases, (1) *strategy formulation* and subsequent (2) *strategy realization/strategy implementation* (Vera & Crossan, 2004: 233; Harreld, O’Reilly & Tushman, 2007: 41).

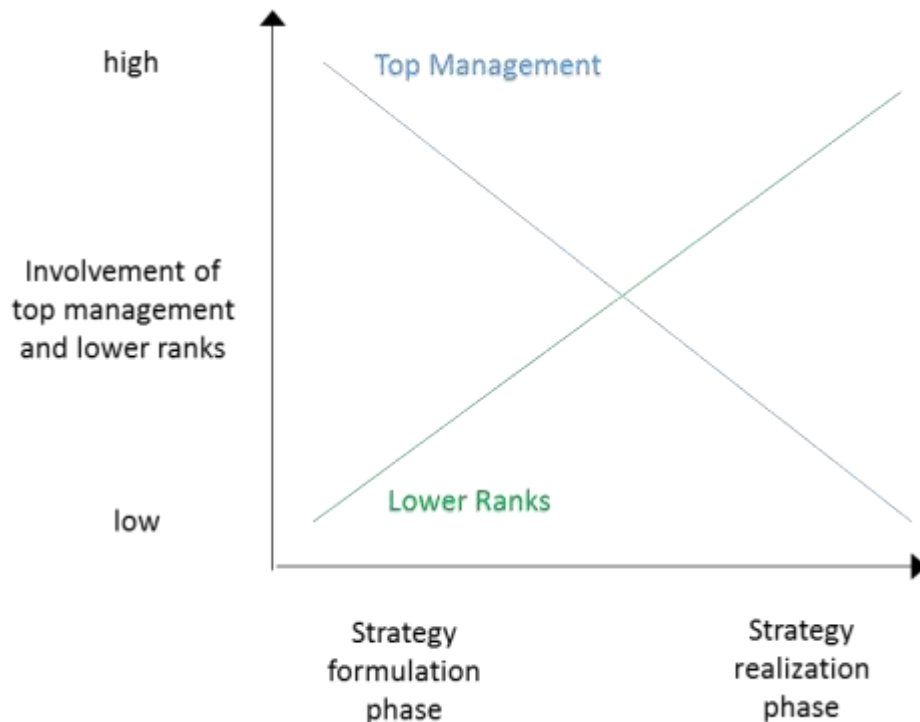


Figure 7: Phases of BS and involvement of hierarchies

In the context of this research, the conceptual separation of these two phases is important. Even though their manifestation may be less clear in practice, it highlights the importance of a coordinated effort of BS formulation and BS execution in order to ultimately *enact* the developed BS in practice. The two phases are subsequently reviewed:

- (1) Strategy Formulation Phase. The formulation phase is characterized by “scanning, problem finding, analysis and evaluation (Farjoun, 2002: 579)” and implementation planning. This phase is contingent, among others, mainly on the (1) unique situation of the firm (Gilbert, 1994: 20) and (2) its strategic intention (Matsuno & Metzner, 2000: 3; Ward & Lewandowski, 2008: 231).
- Strategy selection based on unique *situation of the firm*. Authors agree, that the formulation of BS of firms are significantly influenced by the external business environment in which organizations operate (Miles et al, 1978; Stock & Zacharias, 2011: 882; Elenkov, Judge & Wright, 2005: 666-669; Matsuno & Metzner, 2000: 2–3; Zhou et al., 2005: 1050; Ambrosini, Bowman & Collier, 2009: 10; Desarbo et al, 2005: 26). Such environmental aspects might be the competitive landscape, change in technologies or –customer preferences, as well as fundamental shifts in product demand, the supply chain (Li, Zhou & Si, 2010: 301; Ward & Lewandowski, 2008: 231; Berthon, Hulbert & Pitt, 1999: 49-

50), or a general level of uncertainty. In broader terms, it includes “political, economic, social, institutional, informational, technological, and demographic aspects, conditions, and developments (Farjoun, 2002: 574).” However, as BS is essentially formulated by individuals whose perception of the reality is influenced by their mental models (Senge, 1990) and the underlying business culture in which they operate (Schein, 2010), it is the *subjective* perception of the environmental conditions which ultimately determine an organizations’ strategic positioning and specific capabilities created to serve the purpose of the organization given the specific context it operates in (Ambrosini, Bowman & Collier, 2009: 10). As each organization faces a unique set of determinants of its business context, there is no “optimal” BS per se, but rather a BS which seems to best fit the individual situation (e.g. a firms’ specific structure, culture and processes) and strategic orientation under which the specific organization operates (Zhou et al., 2005: 1050; Jaruzelski & Dehoff, 2007: 8). The essence of BS selection is therefore the intention to fit a firm in the presence and expected future to its specific and unique position within its (perceived) environment (Matsuno & Metzner, 2000: 2–3). Therefore, the formulation of a specific BS serves to (i) place the organization in an optimal position relative to the *perceived* environment, (ii) outlines specific performance dimensions deemed crucial to achieve strategy objectives and (iii) serves as a catalyst to focus the company on trying to excel in the defined performance dimensions (Matsuno & Metzner, 2000: 2–3; Dobni, 2010b: 336).

- Strategic orientation based on unique strategic *intention* of the firm. It is posited that BS plays an important role in determining the optimal degrees of CCO, FMO or balancing CCO and FMO companies aim to achieve, as it specifically relates the strategic direction of a firm to the environment in which it operates, operated or will operate (Farjoun, 2002: 575). Therefore, if BS makers deem a strategy of CCO more adequate, given the current unique situation of the specific firm and its anticipated future situation, it is a legitimate choice of strategy makers who are well informed about market dynamics, unique challenges to the firm they preside and its unique mix of capabilities to address its business objectives.

As previously noted, the appropriate level of FMO and CCO is contingent on the perceived environmental turbulence and the BS chosen to most appropriately achieve the desired firm performance (Song, 2009: 157; Berthon & Hulbert, 1999: 53; Venkatraman, 1989: 948). Despite a wide range of strategic options

organizations have in practice, they tend to privilege exploitation strategies over exploration strategies or vice versa (Berthon & Hulbert, 2004: 1066).

Strategic orientations are the guiding principles and deeply founded beliefs on business conduct of an organization, which ultimately influence a firm's strategy formulation process and the subsequent activities taken to implement BS in pursue of superior performance (Theodosiou, Kehagias & Kasikea, 2012: 1059; Zhou et al., 2005: 1049). While there seems to be no universally applicable rule what BS an organization should pursue, it is the responsibility of top management to formulate an adequate BS and thus to take a choice in two main categories: First of all, top management needs to determine the emphasis the organization places on the importance of innovation for the organization in general. This choice will determine the quality and quantity of innovative endeavours within the organization (Siguaw, Simpson & Enz, 2006: 559). Second, it needs to determine the emphasis the firm places on serving its current customers and/or attempting to explore into future markets (Miles et al, 1978; Zhou et al., 2005: 1049).

Both choices, on the emphasis on the importance of innovation to the organization in general and the organizational focus on current customers and/or future markets, subsequently determine the structures and processes which underlie the current or intended business model of the firm and its mechanisms of value creation, which are reflected in their administrative structures (Elenkov, Judge & Wright, 2005: 666), such as strategic planning and controlling, as well as enhancement of intra-organizational coordination (Elenkov, Judge & Wright, 2005: 669). Furthermore, they will inform the organizational behaviours which offspring the BS the organization employs to achieve its objectives (Olson & Slater, 2005: 52).

The strategic choices of firms are illustrated in the figure below and place its BS within the following continuum:



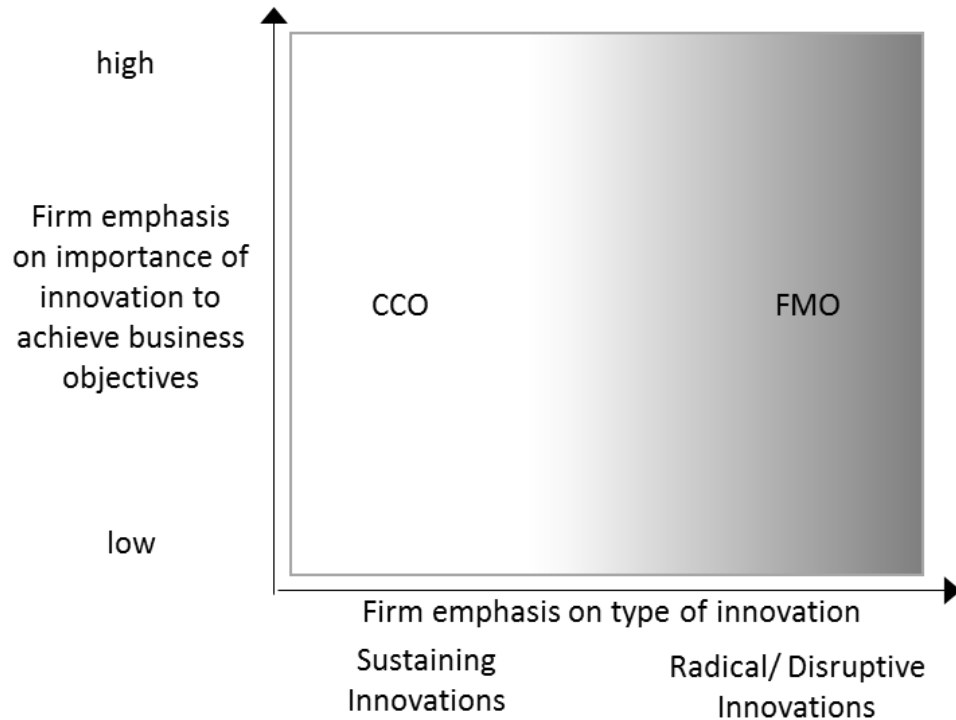


Figure 8: Choices: Scope of innovation – and Business Strategy

For example, in less competitive environments, firms frequently take the decision to engage in exploitation of their current product- and customer base to skim off the profit pools underlying their current business model. Thus they opt to enhance the effectiveness and efficiency of their current business models, and to deliver a steady flow of innovations derived from- and close to their existing propositions. These companies may rely on their accumulated business capabilities which allow them to generate yields in a fast and accurately projectable manner (Christensen, 1997). These types of organizations are associated with environmental scanning mainly into the domain of current customers and their explicitly stated needs and wishes (Hoffman & Hegarty, 1993: 555–556; Zhou et al., 2005: 1050). While firms pursuing a future market oriented BS posit that their current customer base is frequently incompetent in identifying- and articulating latent demands (Berthon, Hulbert & Pitt, 2004: 1068; Christensen, 1997) and hence the impulses for fundamental changes to the innovation landscape need to be obtained from other sources. For example, if environments are perceived as being highly dynamic and threaten to render existing products, processes or business models as low-margin commodities or even obsolete, firms frequently react with the introduction of exploratory innovations. Within this business context, innovative activities are required to constantly deliver products and services with superior value-for-money attributes to customers

(Berthon & Hulbert, 2004: 1067). Such firms principally believe that innovations, which break with the way things have been before, have the potential to attract new customers by revealing previously latent demands and thus create new markets and tap future profit pools (Kim & Mauborgne, 2005; Li, Zhou & Si, 2010: 301). These types of organizations are mainly associated with high levels of FMO and game-changing innovations to achieve their strategy. For example, they alert management to watch out for opportunities (Chandy & Tellis, 1998: 479) and place high emphasis on the role of future customers and on uncovering and satisfying their unarticulated desires through extensive environmental scanning activities (Hoffman & Hegarty, 1993: 555–556; Miles et al, 1978).

(2) Strategy Implementation Phase. The BS implementation phase is characterized by “a series of primarily administrative activities and includes the design of organizational structure and processes [...], and the absorption of policy into the organization’s social structure (Farjoun, 2002: 564).” Therefore, there is a focus on “processes, such as formulation, and emergence, by which strategies are created, realized and managed, and the process by which information is created, acquired, developed, maintained, organized, disseminated, transmitted, and communicated (Farjoun, 2002: 574).” There is wide consensus in literature, that the challenge in the field of BS is not the creation of a BS, but lies in its implementation (Dobni & Luffman, 2000: 896).

➤ Strategy making and – implementation as a dynamic, ongoing activity. BS making and implementation involves a continuous engagement of an organization’s leadership team (Farjoun, 2002; Teece, 2007). This approach represents a supplementation of the initial concepts of BS which inherently approached the domain as a relatively stable configuration and viewed strategic management “as a one-time sequence of formulating and implementing a single choice rather than a continuous process (Farjoun, 2002: 565).” As outlined by Farjoun (2002), these initial conceptualizations widely ignored the dynamic consequences of strategy making, (i.e. BS which leads to changes in the environment which then demand an adaptation of the initial strategy to account for the new situation). Increasingly BS is being approached as a source of change and simultaneously as an organizational response to change in a continuous, adaptive fashion over time (Farjoun, 2002: 576). In the context of this research, this organic strategy perspective provides the grounding for the selection of the concept of BS as the independent variable for the research model at hand. It emphasizes that BS is a

continuous process which requires periodic re-assessment and a potential adaptation of conclusions drawn in the past. Furthermore, given that this perspective also emphasizes the role of the expected conditions prevailing in an anticipated future environment, it takes into consideration that strategic choices made today may initially be misfit with the current BS of an organization, however allow it to reach a more favourable strategic position in the future, which would not have been possible without the temporary acceptance of a disharmonious strategic choice (Farjoun, 2002: 575). Considering the implications of DIT for example, strategy makers in an organization could take a decision to leave the path of exclusive CCO in order to build capabilities for FMO. This choice might have adverse effects on the efficiency and effectiveness of current organizational processes at first, but may lead to enhanced adaptive- and dynamic capabilities in the long-run which may then provide a basis for sustainable competitive advantage in times of turbulent market changes and disruptive threats.

- *Strategy and the role of leadership.* The organic strategy perspective outlined above emphasizes the importance of recurring decision making and involvement of top management for shaping the awareness and creating and directing the capabilities of the organization to move it into the intended strategic direction (Vera & Crossan, 2004: 222). While the role of environmental peculiarities are important, management choices are ultimately the key determinant of business adaptation (Lukas, 1999: 147). Without active and repetitive management attention and the provision of clearly defined strategic directions, firms are ultimately only reactive in nature (Miles et al, 1978) and their focus will be uncoordinated and ineffective. Matsuno & Metzner (2000: 2) highlight the explicit influence top management has on the specificity of an organization: “Because implementing a strategy requires control and monitoring of its effectiveness in the market, a particular strategy pursued by an organization may determine the kinds of performance dimensions it strives for and attends to and the level of performance relative to competition with other strategic orientations.” As a result, this thesis asserts that top management is obliged to closely monitor the direction the organization takes and to frequently align the intended BS with the level and extend of CCO/FMO prevailing within the organization. Bessant et al (2005: 1368) posit that “[t]he challenge is in building the capability within the firm so that it is prepared for, able to pick up on and proactively deal with innovation opportunities and threats created by emerging discontinuous conditions.” However, it

remains a question of the specific whereabouts of the organization and its unique competitive environment to determine the perceived *need* to prepare the company for events which change the “rules of the game”. And to transport this need into the organization by effectively communicating the firms BS.

Consequently, top management plays an important role to formulate and implement BS (Hoffman & Hegarty, 1993: 550). (Top) managerial factors, such as demonstrated leadership and repeatedly emphasizing commitment to key strategic objectives and the explicit formulation of improvement targets (Day, 1994: 48) represent important aspects for the formulation and implementation of organizational innovation strategies (Elenkov, Judge & Wright, 2005: 666; Reid, 2011; Ahmed, 1998) as part of the overall BS of a firm (Hoffman & Hegarty, 1993: 549; Elenkov, Judge & Wright, 2005: 669). Such leadership behaviour is a key determinant for the recognition of opportunities to innovate and their exploitation (Elenkov, Judge & Wright, 2005: 665) through underlying structures and processes (Miles et al, 1978: 548) and the aim of the organization to serve the needs of its customers (Berthon, Hulbert & Pitt, 2004). Other scholars have argued that top management may influence the organizations’ orientation towards innovation by selecting, continuously supporting (Elenkov, Judge & Wright, 2005: 669–670), and prominently rewarding innovation champions and by fostering an organizational culture that is supportive of innovations and aspires to identify and pursue opportunities for exploitative and explorative innovations (Zhou et al., 2005: 1050; Stock & Zacharias, 2011: 874).

As such, management encourages behaviours at the employee-ranks which uplift the willingness to participate in the organizations quest for innovation (Siguaw, Simpson & Enz, 2006: 565; Dobni, 2010b). For example, it is increasingly recognized that managers inspire their organization through formulating, communicating and exercising an inspiring vision, which allows to combine organizational forces towards reaching a unifying- and motivating organizational objective (Elenkov, Judge & Wright, 2005: 668) and shaping organizational culture (Day, 1994: 48; Ahmed, 1998). Thus, the emphasis an organization, through its top management team, places on certain organizational behavioural and performance measures will subsequently inform its overall development and shape the behaviour it fosters, the capabilities, processes and organizational routines it nourishes and implements (Dobni, 2010b: 347). As emphasized by Reid (2011): “Organizations who wish to innovate need to make

it a strategic priority and ensure that there are the mechanisms to support, measure and reward innovation (p. 3).”

The clear commitment of leadership and their risk tolerance serves as an important signal to the lower ranks, that innovation is a number game and failure part of the process (Jaworski & Kohli, 1993: 55–56). On the contrary, if top management propagates an atmosphere of risk aversion and intolerance to failure, will the workforce less willingly engage in explorative activities. As a result of a positively reinforced IO, an innovation mentality emerges and sensibilises organizational members for the importance of innovation for sustainable competitive advantages (Stock & Zacharias, 2011: 874). The link between organizational strategy and behaviour is enacted through control activities and frequent measurement of management (i.e. input control, output control and behavioural control) to effectively align the actions of the work force with the desired outcome of a firms operations (Matsuno & Metzner, 2000: 2–3) and compliance with the company’s objectives will be rewarded.

Thus this inside-out perspective on the role of management on the strategic direction of the organization (Wang & Ahmed, 2007) emphasizes that BS may influence the configuration of capabilities which determine a firms level of competitiveness and adaptability. This perspective outlines the importance of management proactively shaping organizational competencies to strengthen its overall competitive position (Teece, 2007). Dobni (2010b: 348) posits in this respect that “the challenge for management is to identify and develop [...] behaviours or capabilities, and then subsequently harness them so that they are deployed in a manner that will foster the development of a sustainable competitive advantage.” Such foresighted BS development resembles a strongly influence able lever for firms to proactively address the evolution of capabilities to cope with potentially emerging competence destroying discontinuities (Leonard-Barton, 1992: 112/123). Therefore, BS qualifies as a key determinant in shaping an organization with regards to what it is willing and able to recognize and – execute (Pulendran & Speed, 1996: 61). For example, management influences and emphasizes the directions taken through its workforce by conducting specific training of employees in business domains which are perceived as more important than others, by defining and monitoring performance indicators and specific actions of organizational members.

- *Importance of alignment*<sup>13</sup>. Research on innovation strategy argues, that those firms will be most successful which achieve a state of close alignment between their overall BS and their innovation strategy (Jaruszelski & Dehoff, 2007: 1; Elenkov, Judge & Wright, 2005: 665). Similar observations were made by Sabherwal & Chan (2001) who investigated into the effect of fit between BS and information services strategies on business performance and found evidence that higher levels of alignment lead to better firm performance. Independent of the specific BS favoured by a firm, its effect on business performance is determined by the level of effectiveness and efficiency the given BS is actually implemented (Olson & Slater, 2005: 49; Dobni & Luffman, 2000: 896; Vorhies & Neil, 2003; Sabherwal & Chan, 2001; Johnson & Lederer, 2010: 138). In line with these observations and with the notion that BS comprises of two inherent conceptualizations of BS formulation and BS implementation, this thesis argues that strategic alignment amongst all levels of organizational hierarchies and across all organizational functions that represents the strategic fit between strategy makers (mainly top management) and executors of strategy (mainly middle managers and frontline employees). The central argument is, that BS can only be effective if it is *executed* effectively and appropriate actions are taken to achieve the desired organizational state through the planned actions inherent in BS. For example, Andriopoulos & Lewis (2009: 704) recognize the importance of communication and reiteration of strategic intentions throughout the organization to ensure employee buy-in and commitment. Therefore, in the context of this thesis, alignment is treated as the degree of similarity in the perceptions of employees on all levels of the organizational hierarchy and across all functional boundaries (Johnson & Lederer, 2010: 138).

#### 2.3.1.2 *Disruptive Innovation Theory*

DIT provides a fresh perspective to the existent literature and prior research on BS and will consequently remedy deficiencies of prior studies (Creswell, 2009: 106) with regards to its emphasis on the inclusion of not only serving existing customers but also scanning for latent, unserved customer needs and emergent technologies.

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<sup>13</sup> While Morgan, McGuinness & Thorpe (2000: 341) indicate that there are 3 Levels of Strategy (i.e. Corporate level, business level and functional level) in the context of this thesis there is no separation between these layers, as the level of investigation in the research project approaches BS from the direction of BS attributes (Venkatraman, 1989) which are believed to be widely similar perceived throughout the firm under research.

The notion that firms, which position themselves too close to their customers and thus neglect to maintain a business scope which reaches beyond their current scope are frequently prone to failure when market distortions occur has been subject to research since the 1980s (Berthon, Hulbert & Pitt, 2004). Incumbent failure in the face of fundamental changes to the business environment has increasingly received scholarly attention since then. In light of the emergence of disruptive innovation theory (DIT), following the publication of Clayton Christensen's book "The innovator's dilemma" (1997) and subsequent research, the overly focus of the most utilized MO constructs on the explicit needs of *current* customers and widely neglects the exploration aimed FMO perspective. This omission is important, for those organizations that aim to converge their organizations capabilities to the "best possible" level of MO, especially if existing measuring constructs do not allow a differentiated view on individual firm's emphasis on current customers and/or future markets.

Based on his study of the hard drive- and excavation industry, Christensen (1997) reveals a dilemma that incumbent organizations frequently face. He states that "blindly following the maxim that good managers should keep close to their customers can sometimes be a fatal mistake" (p 4). And (Christensen & Bower, 1996: 198) "primary reasons why [...] firms lose their positions of industry leadership when faced with certain types of technological change [is that they] listen too carefully to their customers." Both statements contain the notion, that "doing everything right" from a marketers' or managers' perspective might just be the wrong thing to do (Matsuno & Metzner, 2002: 18) in certain business situations. Furthermore, what is seen as another main contribution to research, those innovations with the highest potential to ultimately transform industries are frequently not introduced by incumbent industry leaders, but by newly emerged market entrants (Danneels, 2004: 251; Yu & Hang, 2010: 441), who capitalize on their smaller size and their flexibility to target new customers segments with a fundamentally different value proposition (Yu & Hang, 2010: 440–441).

Christensen (1997) claims that, when the existing customer base of an organization is being closely involved in the process to assess the market potential of un-proceeded technological developments, they will frequently encourage the developing firm to *not* pursue this market opportunity but to further enhance current product attributes, which perpetuate the current way of doing business (Slater & Narver, 1998: 1002). Only innovations, which are dwelling on existing organizational competencies and in line with the expectations of lead distributors and –buyers are rapidly and commercially successful introduced (Govindarajan & Kopalle, 2006: 196).

However, such businesses, which only listen to their existing customer base in the development of their products and services, demonstrate a short-sighted BS which narrows their

view and their organizational capabilities to seeing and serving only what is important to their current customers (Slater & Narver, 1998: 1002). As a result, businesses are prone to price competition, when other providers introduce innovations that provide similar performance attributes, aiming at an existing customer base (Narver & Slater, 2004: 334) and price remains one of the few means of differentiation.

Contrary to prior categorizations of innovations (e.g. Yu & Hang, 2010: 437–438; Tidd & Bessant, 2007), Christensen (1997) differentiates between such innovations, which are sustaining-, and such which are disruptive<sup>14</sup> in nature (p xviii). Sustaining are those, which “improve the performance of established products along the dimensions of performance that mainstream customers in major markets have historically valued” (p xviii), while disruptive are those, which initially “underperform established products in mainstream markets. But they have other features that a few fringe (and generally new) customers value. Products based on disruptive technologies are typically cheaper, simpler, smaller, and, frequently, more convenient to use (p xviii)”. Assink (2006: 218) observes that “[d]isruptive innovation frequently results from a combination of the emergent qualities of several smaller ideas based on observing the world differently, challenging presuppositions, expanding boundaries, spotting the ‘white space’, discovering the as yet unrealised needs of customers, setting challenging targets, thinking the unthinkable and challenging our underlying mental models”.

DIT includes the notion that, driven by competition, in search of higher prices and/or margins, performance attributes of products are developed at a faster pace than the growth of the underlying market demand would suggest necessary (p xix). This will subsequently lead to outperformance of mainstream customer demands, or stretch their willingness to pay for product features which they do not need in their basic application of the product (Droege & Johnson, 2010: 243), in core performance dimensions.

Outperformance of customer demands however, opens the door for disruptive innovations often brought about by new market entrants. Initially, disruptive innovations will show different value propositions, at a lower price, which do not appeal to - or are unattractive for, the mainstream customers served by the incumbent market player. However, lean cost structures of the new market entrant and its unique mix of performance attributes will initially

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<sup>14</sup> Christensen (1997) speaks of disruptive technologies and sustaining technologies. In later publications (Christensen & Raynor, 2003), this scope is broadened to disruptive innovations and sustaining innovations in an attempt to further enhance DITs applicability Danneels (2004: 250) to other contexts than technology, such as service- and business model innovations Yu (2010: 436–437). For means of simplification, clarity and consistency, the terms “disruptive innovations” and “sustaining innovations” are applied throughout this review and describe not only product, but also service and business model innovations.



allow it to target unserved or underserved markets at a margin that is perceived as unattractive by the incumbent market player. Govindarajan & Kopalle (2006: 191) stress the point that niche markets should not be confused with early adopter segments, as the latter can be seen as the vanguard of the mainstream market, while niche markets relate to truly unserved or underserved market segments. Furthermore, these niche market segments are usually seen as highly demand-elastic and price sensitive (Droege & Johnson, 2010: 244-245) but, under the notion that different customer groups may well appreciate different propositions (Danneels, 2004: 249), value the non-standard attributes of the offer they receive from the market entrant (Adner, 2002: 668). Over time, however, as product attributes are enhanced based on sustaining innovations and a higher slope than those alternatives provided by the incumbent market player, the performance attributes of the products improve and increasingly appeal to the low-end of the mainstream market as they allow to increasingly serve mainstream customer's performance demands (Govindarajan & Kopalle, 2006: 190–191). The overall performance of the disruptive product, however, remains below that of the established incumbent proposition which is continuously enhanced, as well (Yu & Hang, 2010: 436–437). At this point in time, the disruptive market player obtains an early foothold in the lower segment of the mainstream market, which is now increasingly attracted by the value for price proposition and the new performance dimensions available. Once the secondary performance attributes of the incumbent offer reach levels which are acceptable to the market, the incumbent's customer base will steadily migrate to the disruptors offer. The incumbent increasingly realizes that factually, the new market entrants have changed the "rules of the game" by introducing and competing on performance dimensions that have historically not been in the scope of any market participant (Danneels, 2004: 249). Incumbents are forced to act, as the new market entrant has captured not only low-margin niche markets, but is increasingly threatening the profit pools of the incumbent. Therefore, the dilemma for the incumbent lies in the notion that the rules upon which the market now competes run contrary to its historically established business model and by extensively listening to the current customer base, the incumbent has been widely unaware of the materialized threat to its existence (Markides, 2006: 21).

Literature differentiates between "new-market-disruptions" and "low-end disruptions" to differentiate between either a newly emerged customer segment which has not been served by any incumbent organization before, or the most price sensitive and over-served bottom end of the mainstream market who initially see value in the different attributes and lower price dominating in the disruptive proposition (Govindarajan & Kopalle, 2006: 191; Yu & Hang, 2010: 436–437; Danneels, 2004: 250).

The development of the propositions of incumbent market player and new market player over time in relation to the corridor of mainstream market demand is depicted in the following outline of performance trajectories. Disruption occurs, when the performance trajectory of disruptive offers intersect with the lower threshold of the mainstream market demand corridors (Yu & Hang, 2010: 436–437). The described relationships are illustrated below (based on Christensen, 1997: xix):

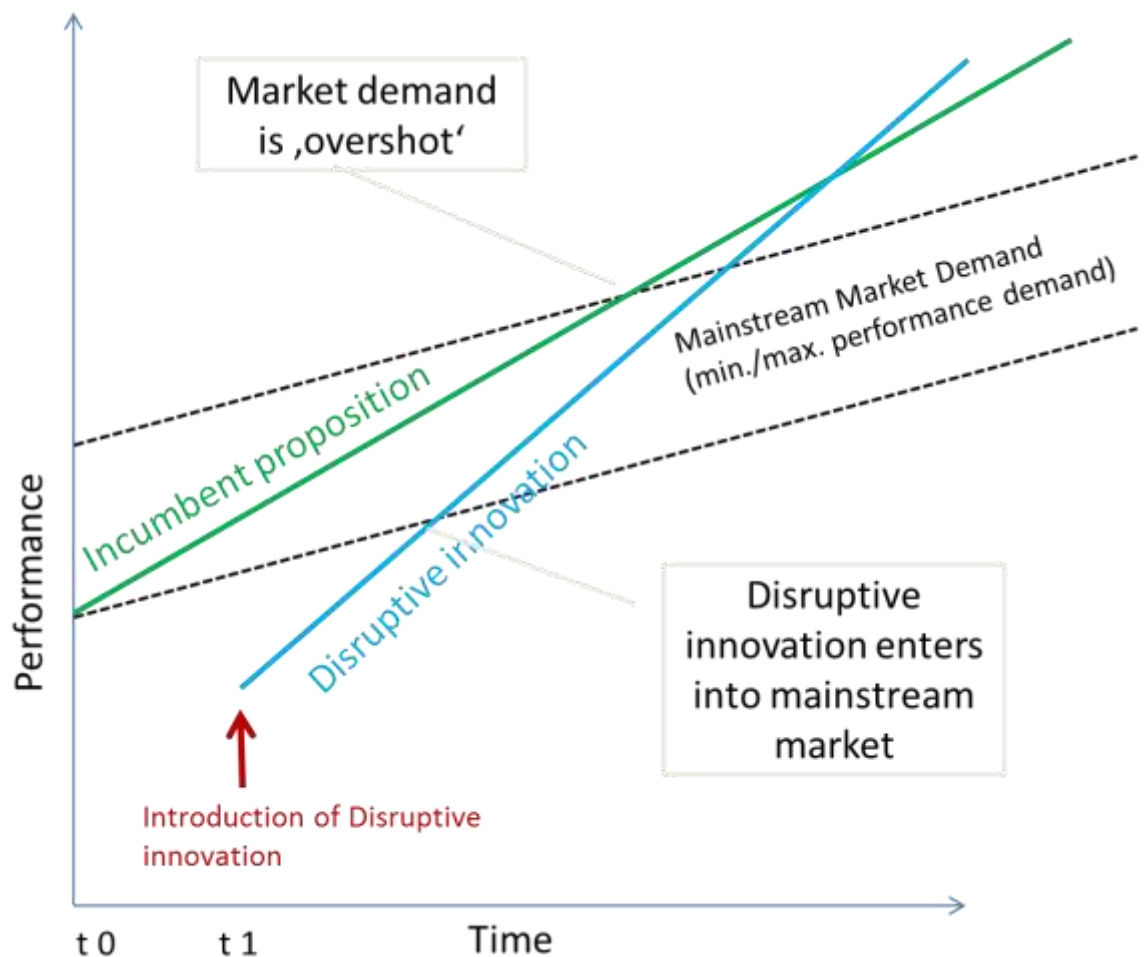


Figure 9: Impact of sustaining- and disruptive change

Typically, according to Christensen (1997), the incumbent market player will react by re-creating into serving those most demanding market segments, which value its unique offer and still promise higher margins and profits in exchange for value-added attributes (Droege & Johnson, 2010: 244–245). However, given the ongoing incremental enhancement to the disruptor's offer, ultimately the incumbent market player might be squeezed out of its market or left with a comparable small nice segment in the high demand/ high margin area. Following DIT, the continuous migration of firms and their offerings in an attempt to tap upstream profit pools will subsequently produce a cycle that will allow the next generation of disruptive new entrants to gain a new foothold (Droege & Johnson, 2010: 244–245) by stripping offers

from attributes which the incumbents perceived as essential (Droege & Johnson, 2010: 243).

Govindarajan & Kopalle (2006: 191) summarize five reasons that underline the incumbents' dilemma in the face of disruption: "(i) the mainstream market does not value the innovation's particular package of performance attributes at the time of product introduction; (ii) the innovation performs poorly on the attributes mainstream customers value; (iii) the innovation is first introduced in an emerging or insignificant niche market; (iv) there is not necessarily a word-of-mouth effect, or opinion leadership, or respect among peers at play for the niche customer segment that finds disruptive innovations attractive; and (v) the disruptive product offers a lower margin and may therefore be ignored by incumbents who are serving larger and more attractive segments" (Govindarajan & Kopalle, 2006: 191).

Initial publications on the emergent DIT framework by Christensen (1997) and others (e.g. Christensen & Raynor (2003)) have brought about important impulses for management practice and led to a rich and extensive debate in academia (Yu & Hang, 2010: 435), which helps to clarify the underlying theory of DIT (Christensen, 1997). His work was extensively cited by scholars in various disciplines (Danneels, 2004: 246), and numerous authors have noted their criticism and proposed enhancements to DIT (Yu & Hang, 2010: 436–437; for an extensive review see Adner, 2002; Danneels, 2004; Yu & Hang, 2010; Hausner, Tellis & Griffin, 2006: 697). These criticism and suggestions can be aggregated into five major categories relating to the: (1) theoretical and methodological founding of DIT, (2) vagueness of the concept and its predictive power, (3) categorization of disruptive innovations being subject to the perspective from which the innovation is seen, (4) notion of incumbent failure and (5) suggested measures to counter disruption in incumbent market players. For example, Danneels (2004) noted that the case study samples underlying the research which led to the founding of DIT (Christensen, 1997) were subject to a selection bias (p 250), as only case studies were chosen, which represented successfully introduced disruptive innovations which led to incumbent failure. Danneels observes, that retrospective selection of specific cases does not fully reconcile with theory building principles (e.g. Eisenhardt, 1989) and "presents an analytical problem" (Danneels, 2004: 250). Furthermore, the vagueness of the concept and its subsequently limited predictive power were criticized and echoed by various authors (e.g. Adner, 2002: 667; Danneels, 2004: 250; Markides, 2006: 19; Govindarajan & Kopalle, 2006: 196), even though Yu & Hang (2010: 440) suggest, that DIT has increased the position of incumbents to take on disruptive challenges (p 440). The criticism included the notion that an ex-ante differentiation between inferior technologies without disruptive potential and such which develop into disruptive innovations for various performance dimensions and levels (Yu & Hang, 2010: 440) is impossible, based on the

current DIT framework (Adner, 2002: 667) and may simply be attributed to lucky technology choices (Danneels, 2004: 250). Furthermore, an objective, clear definition (Sandström & Magnusson, 2009: 9–10) and subsequent delimitations of criteria inherent to the disruptive innovation versus those which are sustaining in nature does not exist (Danneels, 2004: 247), the theory remains ill-defined in numerous aspects (Danneels, 2004: 246) and its extension from disruptive technologies towards general disruptive innovations does not contribute to the clarity of DIT but fails to acknowledge fundamental differences between disruptive technological-, business-model, and product innovations and their unique incumbent-response requirements (Markides, 2006: 19; Sandström & Magnusson, 2009: 8). Adner (2002: 669) noted, that the preference shift of customers towards previously un-noted innovation attributes must be considered together with the notion of price. Furthermore, the perception of an innovation as disruptive is criticized as not being universally clear, but subject to the perspective of the organization confronted with the specific innovation. Depending on the existing capabilities of an organization, technologies which frequently result from a re-combination of previously existing components, may be perceived as disruptive for some but sustaining for others (Danneels, 2004: 247; Yu & Hang, 2010: 437–438). More criticism relates to the notion that incumbents will fail in the face of disruption and subsequently go out of business. As some authors have stated, cases exist where incumbents survive the introduction of disruptive innovations by new market entrants (Danneels, 2004: 251–252), where incumbents themselves have developed and introduced a disruptive innovation (Yu & Hang, 2010: 440–441), or where incumbent organizations and their unique value proposition co-exist, serving the most demanding customer segments, with disruptors who have taken over parts of the mainstream market (Hauser, Tellis & Griffin, 2006: 697; Yu & Hang, 2010: 437–438; Ansari & Krop, 2012). In this respect, some have argued that core capabilities of an organization do not turn into core rigidities when faced with disruptive innovation (Danneels, 2004: 253). Finally, DIT was criticized for suggesting too extreme counter-measures, for incumbents to counter disruptive threats (Markides, 2006: 24). And most recently, Downes & Nunes (2013: 4) introduce the concept of ‘Big Bang Disruption’ into the debate and criticise that DIT does not account for cheaper disruptive innovations which outperform current product features from the first moment of their introduction (as seen for example with smart phone navigation apps rendering standalone navigation systems widely redundant).

The differentiation between sustaining- and disruptive innovations allows managers to approach certain performance dimensions from a differentiated direction and to take specific actions required for the type of innovation and the situation the organization faces from a DIT perspective (Yu & Hang, 2010: 441):

- Source of innovations: Sustaining innovations are most frequently associated with a high level of current customer orientation, while disruptive innovations mainly gain momentum with current non-customers or underserved customers (Christensen, 1997). The source of innovation determines the approach an organization needs to apply in order to obtain valuable market information. For example, while the demand for sustaining innovations can be identified with traditional measures of market research, to discover latent needs market experiments and other methods will be advisable (Slater & Narver, 1995: 71). Successfully sustaining technologies requires a close relationship with an organization's key customers to advance the functionality of a product, service or business model; however, this poses a severe hurdle for the evolution of disruptive innovations, as organizations are focused to serve their existing customer base and extend the offering of its established product/service/business model<sup>15</sup>. In search of higher market share and higher margins, customer demands are ultimately 'overshot' and thus customers are offered more than they actually require and – are willing to pay for. The exclusive focus on the existing customer base leads to a discount of potential customers that seek different, more basic, value attributes, at a lower price and promising lower margins than the existing solution. This situation allows disruptive innovation to serve as the initial beachhead and then subsequently conquer increasing shares of the incumbent's market. This development is supported by a sustaining innovation pathway of the newly introduced innovation. Subsequently, as the disruptive technology is enhanced on a sustaining innovation basis, the value attributes increasingly serve those customers that previously exclusively preferred the incumbent, yet, now, 'overshot' offer. Incumbent market players are subsequently taken by surprise when their key customers start shifting towards the disruptive technology and lose control over their traditional markets and sources of profit. At an extreme, the previously prevailing product/process/-business model is completely cut out and the incumbent market player goes out of business. The described development opens the door for disruptive technologies that underperform the incumbent product/process/business model, but serve the needs of those customers that have been seeking for different, more basic value attributes at a lower price.

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<sup>15</sup> When speaking in the following of disruptive innovation, this includes innovation on product, process and/or business model, unless specified differently.

- *Influence of value networks*: Drawing on the notion of architectural innovation (Henderson & Clark, 1990), Christensen (1997) proposes that an organization's structure and its grouping of work facilitate the effective and efficient design of its *dominant* product, and form its context, which may be described as a value network. Value networks essentially comprise tightly interwoven, nested, links (p 36) of the organization with its countless direct and indirect suppliers, and its direct and indirect buyers which all share and reinforce basic assumptions about the future development and direction of offerings and demands within their unique network. These value networks essentially incorporate "each firm's competitive strategy, and particularly its past choices of markets, determines its perceptions of the economic value of a new technology. These perceptions, in turn, shape the rewards different firms expect to obtain through pursuit of sustaining and disruptive innovations. In established firms, expected rewards, in their turn, drive the allocation of resources toward sustaining innovations and away from disruptive ones" (p 36). Viewed from the perspective of the value network, DIT provides a possible explanation for the notion that incumbent firms are good at sustaining innovations that essentially utilize the core capabilities of the organization, in a widely known fashion, for the exploitation of existing opportunities within the value network and filling the expectations of members of the value network, but frequently fail to shift their organizational scope when confronted with fundamental changes in the "rules of the game." Current customers, entangled in the current value networks, prefer basic improvements of the incumbent's offerings versus disruptive changes to the underlying functionality and architecture and the value attributes on which the product compete (Adner, 2002: 669). Current customers frequently lack the foresight to recognize the potential longer-term merits that might offspring from fundamentally different approaches (Slater & Narver, 1998: 1002). As incumbents are dependent on revenues generated from its customer base, and unwilling to risk displeasure of their lead customers (Slater & Narver, 1998: 1002), they are locked into their current business model and invest in order to strengthen their lead position (Yu & Hang, 2010: 442). Christensen (1997) refers to this interdependence as "resource dependence." New market entrants, on the other hand, are not guided by the preferences of any existing lead-customer, but are forced to uncover a new customer group which values the new performance attributes.
  
- *Firm capabilities*: Specialized and highly specific capabilities of organizations determine what an organization is able to do and what members of the organization

or value network are able to recognize (Teece, Pisano & Shuen, 1997: 520; Teece, 2007). With established mental models of the world in mind, disruptive innovations frequently do not make any sense from a viewpoint of the value network the organization is entangled in. Firm capabilities are adapted through internal processes aimed to increasingly optimize the firm's activities towards achieving its distinct requirements within the value network it operates (p 40). Therefore, in an effort to enhance the economies of serving their existing customer base through ever enhanced sustaining innovations incumbent firms tend to focus on aspects of efficiency, but blind them to engage in future market oriented behaviours. Close cooperation and interchange with lead customers and suppliers disables the organization to see potential developments in current non- markets or underserved niche markets and might turn into core rigidities (Leonard-Barton, 1992) when attempting to change the current mode of operation (Sandström & Magnusson, 2009: 13). Christensen (1997) states, that "disruptive technologies rarely make sense during the years when investing in them is most important" (p 261). Value networks and capabilities associated with it allow an organization to operate efficiently and effective under steady-state conditions. However, they pose a severe hurdle when faced with uncertainty from entering uncharted territory. Those hurdles might be risk aversions and the inability to operate under changed economic conditions (p 259), such as different cost structures or low-margin revenue models.

- *Forecasting markets*: Market sizes of markets which are currently not existing are very difficult, if not impossible, to be estimated and subject to high uncertainty (Christensen, 1997). This is contrary to those practices which prevail in the business of sustaining innovations, where existing markets and known trends allow the organization to project developments with a higher forecasting accuracy. Subsequently, the strategic approach towards potential disruptive innovation market should be one of exploration, discovery and learning. Sustaining innovations, however, warrant precise analysis of customers' explicit demands, effective and efficient development of innovations and -execution. If practices (e.g. investment-, marketing-, management processes) from existing markets are applied to potential future markets most incumbent organizations will fail to develop the market. Disruptive technologies frequently fail, if they are offered to an existing customer base as an alternative to an incumbent proposition. According to Christensen, the most promising approach is to find a new market for a new disruptive technology: "If history is any guide, companies that keep

disruptive technologies bottled up in their labs, working to improve them until they suit mainstream markets, will not be nearly as successful as firms that find markets that embrace the attributes of disruptive technologies as they initially stand." (Christensen, 1997) He argues that markets are not initially available, as potential beneficiaries of the newly available offer need to emerge themselves. For new disruptive innovations, a different approach of learning, discovering and adapting to the emergent market, with dimensions which are not predictable as the full potential range of customers of an emerging innovation can usually not be foreseen with disruptive innovations, is advisable. If incumbent market players act out, based on the behaviours involved with sustaining innovations, where 'good management' is defined fundamentally different than in disruptive situations, they will most likely fail as they neglect areas of management that are critical to successfully operating in an disruptive innovation set-up.

- First to market: First mover advantages frequently only exist for disruptive innovations. As for sustaining innovations, a first mover advantage can seldom be observed. While Christensen's research shows, that there seems to be a significant first mover advantage for disruptive innovations, it reveals that in sustaining innovation situations a first mover advantage does not necessarily yield better results. This insight suggests that a differentiated and informed market entry strategy is advisable for organizations when pursuing both, sustaining – and disruptive innovations to avoid market entry decisions based on conventional wisdom.
- Resource allocation/ Team composure/ internal management of innovations: Internal management of innovations is strongly influenced by resource allocation processes, conscious and unconscious, which favour investments into "the known" domain of sustaining innovations (Yu & Hang, 2010: 442). In fact, many of those technologies that later turned into disruptive innovations were *developed* by the R&D departments of incumbent market participants, but never rolled out in the markets when initial feedback from current customers, who frequently prefer incremental enhancements of their current solutions over fundamentally new approaches, was discouraging (Danneels, 2004: 254). Further more, middle managers behaviours and risk aversion influence the resource allocation of the firm by selecting only innovation projects which can be evaluated with the existing sustaining-innovation procedures and discounting projects with a higher likelihood of failure (Yu & Hang, 2010: 441; Teece, 2007:



1328). Subsequently, as the returns of sustaining innovations are predictable with less deviations and available closer in time than those of their disruptive counterparts, firms with sustaining-innovation focus obtain more stable returns in the short run, however might fail in the face of disruption (He & Wong, 2004: 481). Others have suggested, that a strong market position of current brands will increase a firm's risk aversion to cannibalize their assets (Sandström & Magnusson, 2009: 13). In light of lower prospective margins and a higher perceived risk, disruptive innovation opportunities are discriminated by staff and management. This is influenced by an intrinsic presupposition of what best serves the organization financially and leads to a bias towards pursuing sustaining innovations. Hence, as long as there are ostensibly safer and more attractive opportunities within the spectrum of sustaining innovations, possibilities rendering up disruptive innovations are neglected. Seemingly it's almost always easier to hold on to something that is known versus an opportunity that is perceived less save as, with following an unknown road, it might materialize or lead to a dead end. Christensen identifies the theory of research dependence, the closeness of an organization to its main customers and contributors of profit, as one key explanatory construct for the phenomenon of inadequate resource allocation for the pursuing of disruptive innovations.

- *Failure tolerance*: Contrary to the known "rules of the game", the creation of new markets require the ability and willingness to accept failure and learn. There is a severe difference between managing sustaining – and disruptive opportunities. Christensen states that, "successful organizations, which ought not and cannot tolerate failure in sustaining innovations, find it difficult simultaneously to tolerate failure in disruptive ones." (Christensen, 1997) Thus organizations need to build the capacity to enable, foster and tolerate quick and inexpensive failures in a safe environment, which pose the potential of a steep learning curve when experimenting with disruptive innovations. Only if members of the organizations feel that failure is a safe and wanted way to accumulate new information and capture new markets, will the organization be able to pursue disruptive opportunities alongside their core, sustaining, working patterns.
  
- *Business Strategy and Incentivisation*: Incumbent market players who perceive their business environment as less dynamic, potentially render their organizations unprepared for sudden disruptive threats aiming at their current profit pools. Risk aversion frequently results in adherence to the current business

models and a path of sustaining innovations with predictable outcomes. Yu & Hang (2010) suggest, that long-term oriented incentive plans which also include subjective measures should be installed to stimulate a differentiated executive behaviour and result in proactive explorative innovation in order to mitigate the risk of disruption (p 441). Other authors have added, that the ownership structure of a firm and its willingness to balance short-term and long-term business objectives affect the ability of a firm to take on disruptive opportunities and threats (Sandström & Magnusson, 2009: 13).

The following table provides an overview on the main differences underlying the concepts of sustaining- and disruptive innovations as described in the previous paragraphs and identified by Christensen (1997):

	Sustaining Innovations	Disruptive innovations
Source of innovations	Current customers	Non-customers; underserved customers
Influence of value networks	Supportive of continuous enhancement of core value propositions	Dismissive of new business models/processes
Existing firm capabilities	Highly efficient in the context of existing business models and processes  Disadvantage for new market entrants	Rarely supportive  Advantage for new market entrants
Forecasting markets	Forecasting accuracy evolves based on historic experiences	New and emerging markets are potentially difficult to forecast as no knowledge of the true potential is available given the new-to-the-world conceptualization
First to market	No first mover advantages	First mover advantages
Resource allocation/ Team composure / internal management of innovations/ organizational implications	Light-weight to heavy weight teams/ Favour the known <ul style="list-style-type: none"> <li>• Within core organization and current hierarchy</li> <li>• any market size</li> </ul>	Heavy weight teams/ Unfavour the unknown <ul style="list-style-type: none"> <li>• New organizational unit with different reporting lines (to CEO);</li> <li>• fit size of the organization to market</li> </ul>
Failure tolerance	Low failure tolerance in an environment which emphasizes efficiency and controls	High failure tolerance; innovation as a numbers game which encourages try and error
Firm strategy and incentivisation	Short-term CCO does not allow to anticipate/enact	FMO allows to anticipate/enact disruptive change; long-term incentives

	Sustaining Innovations	Disruptive innovations
	disruptive change; short-term incentives	

Table 12: Sustaining- vs. disruptive innovations (based on Christensen, 1997)

Over the course of the recent years, much of the above mentioned constructive criticism on DIT was accepted as reasonable extension to the theoretical foundation of DIT (Christensen, 1997; Christensen, 2006); however, as (Droege & Johnson, 2010) note, theory building and refining process in the comparably young DIT discipline remains an ongoing process (e.g. Droege & Johnson, 2010: 248; Govindarajan & Kopalle, 2006; Hang, Chen & Yu, 2011; Henderson, 2006).

### 2.3.1.3 Business Strategy Summary

The central findings of DIT and the light they shed on the importance of a differentiated view on CCO and FMO, merit further investigation into the discourse between finding the right understanding and –balance between the two opposing perspectives. In the context of this research, there are two recurring patterns observable in prior BS related publications:

*First, research which calls for a better understanding of the link between BS and a CCO and/or FMO.* Despite much prior research in the domain of BS, and the advancements brought forward from the discussion involving DIT, there are areas related to the research at hand which warrant additional attention from academia. This thesis therefore follows the argumentation of Danneels (2004), who argues that a clear distinction between current customer focus and future customer focus needs to be made to further enrich the debate and its quality (Danneels, 2004: 255). Such a differentiation between exploration (FMO) and exploitation (CCO) is present in a range of scholarly disciplines, such as organization theory, OL, BS research (He & Wong, 2004: 482), innovation and entrepreneurship (Jansen & Van den Bosch, 2006: 1661). Inherent in the debate is the assumption that there are structures designed for efficiency and exploration, and others which are supportive of innovation and exploration beyond the current scope of the organization (He & Wong, 2004: 482).

The specificities warrant certain implications for incumbent organizations and their management teams, looking for opportunities to mitigate the risk for incumbents to be overthrown by sudden disruption. To determine the strategic direction of the firm to do this, managers must first be aware of where specifically the conflicts in their current business conduct lie (Christensen, 1997: 261). The insights of DIT thus serve managers as disconfirming information (Schein, 2010) and allow them to question their current assumptions on the management of innovations and their contribution to firm success (Yu & Hang, 2010: 441). For example, most managers are trained at successfully managing existing products or customer relationship, however lack the knowledge to handle managerial challenges imposed

from pursuing disruptive innovations. As proposed in DIT, a translation of management practices in sustaining innovations to disruptive innovations could have fatal consequences.

*The second observation relates to inconsistent observations and recommendations with regards to beneficial BS orientations.* In the academic discourse, the question whether organizations that pursue a BS strongly focussed on CCO are necessarily subject to demise is not yet fully resolved. There are 3 schools thought in this domain:

- In the first research stream, some authors provide evidence, that a strong focus on CCO is either beneficial or at least not harmful for an organization or that they are unable to pursue a CCO and an FMO at the same time (Matsuno & Metzner, 2002: 18). For example, Denning (2012: 8) argues that a strong current customer focus is not negative for the organization and its long-term prosperity per se (Denning, 2012: 8). Others find evidence that the financial performance of CCO and FMO organizations suggests, that firms which demonstrate a high level of CCO are equally successful as FMO-focussed companies (Stock & Zacharias, 2011: 881). Moreover, King & Tucci (2002: 181) assert that great experience in either exploration or exploitation will not limit a firm to what is known but may even increase the likelihood of success in new domains. And Stock & Zacharias (2011: 871) add that an exclusive view on future customers and – markets might lead to a highly innovative organization but not necessarily translates into a financially successful firm (Stock & Zacharias, 2011: 871) as capabilities for the successful commercialization and exploitation of rents might be under developed. Furthermore, organizations, which are aimed at exclusively concentrating on exploration, underestimate the important role of exploitation for the short-term financing of long-term explorative- and frequently cost intensive activities of the firm (Stock & Zacharias, 2011: 882).
- In the second stream of research, it is argued that strong FMO is beneficial for firms or that a strong CCO is harmful for organizations. For example, some authors argue, exclusive organizational focus on satisfying current customer needs is insufficient for attracting new customers and even retaining current customers in the long-term (Narver & Slater, 2004: 336) or even that companies should not engage in CCO at all (Danneels, 2004: 255). Others argue, CCO is not enough to break away from me-too competition and to avoid commoditization and subsequent, margin eroding price competition as the last available measure of differentiation in highly competed markets (Augier & Teece, 2008: 1189). Exclusive CCO traps an organization in mental models that reinforce the acceptance of

existing boundaries and shared assumptions about markets and market participants, which will reduce the level of courage and proactivity of the organization to step beyond what is currently known (Matsuno & Metzner, 2002: 27). Others note, that innovation strategies, which exclusively focus on pursuing exploitative innovations, result in firms being trapped into their current routines and unable to react to more hostile operating conditions (Christensen, 1997; Li, Zhou & Si, 2010: 301). In that regard, research supports the notion that the level of FMO of a business unit is positively associated with its ability to develop disruptive innovations (Yu & Hang, 2010: 444) and to tap potential new profit pools. However, it is noted that firms which do not pay attention to the differences between CCO and FMO and their potential long-term implications, the focus of the organization will eventually tilt to extensively supporting *either* CCO *or* FMO (Andriopoulos & Lewis, 2009: 697). As emphasized by Andriopoulos & Lewis (2009: 697) “leveraging current capabilities may immediate profits, but foster eventual stagnation, leaving firms vulnerable to market and technological changes.”

- A third stream of research, which is the most dominant, found evidence that CCO and FMO are independent constructs and that firms may prosper from engaging in both simultaneously (Yu & Hang, 2010: 444) and achieve long-term survival (Govindarajan, Kopalle & Danneels, 2011: 124; Andriopoulos & Lewis, 2009: 703). This view is reflected in Ambidextrous Organization Theory (AOT; Tushman & O'Reilly, 2002), emphasizes that firms need to find the right balance between exploration and exploitation of innovative opportunities (Hult & Ketchen, 2001: 899–900; Farjoun, 2010: 204) and develop the necessary underlying firm capabilities. Ambidexterity then is approached from either a structural perspective (i.e. with a focus on providing the right firm structure to address exploitation and exploration in different framings), or a contextual ambidexterity (i.e. which aims to enhance the understanding of individuals that exploration and exploitation should be approached with different expectations and performance criteria in mind; Berghman, 2012: 4)<sup>16</sup>. CCO is posited as providing the short-term funds of an organization (Christensen, 1997), which are essential for its short- and mid-term survival; as such, there is an impetus for organizations to fulfill current customer demands to supply their goods or services to the market in exchange for revenues and ultimately organizational profits and to maintain or extend their

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<sup>16</sup> Note, that the usefulness, application and especially measurability of AOT in managerial practice is contested, as illustrated in Durisin & Todorova (2012). Despite the ongoing debate, the theoretical implications remain of high value in the context of this thesis.

market position. Those profits, which are generated from the exploitation of existing customer-supplier relationships pose a fundamental source of funding for exploitation of potential disruptive future innovations, which reach beyond the current value network.

According to AOT (Peters & Waterman, 2006), firms must be capable to compete in mature markets with incremental/sustaining innovations which are improvements to the existing base of products/services/processes and build on efficient processes and favourable cost structures, as well as in newly emerging markets where superior future market sensing capabilities, speed and flexibility determine the success of an organization (He & Wong, 2004: 483; Jansen & Van den Bosch, 2006: 1662). However, exploration and exploitation warrant (He & Wong, 2004) “substantially different structures, processes, strategies, capabilities, and cultures to pursue and may have different impacts on firm adaptation and performance (He & Wong, 2004: 481)”. For example, exploitation is frequently linked with (He & Wong, 2004) “mechanistic structures, tightly coupled systems, path dependence, predictable routines, control and bureaucracy, and stable markets and technologies (p 481)” while exploration is associated with “organic structures, loosely coupled systems, path breaking, improvisation, autonomy and chaos, and emerging markets and technologies (p 481).” Reaching ambidexterity in simultaneously and successfully managing sustaining- and disruptive innovations in one organization, is posited as a highly demanding management discipline (Tushman & O'Reilly, 2002).

A co-existence of explorative- and exploitative structures within an organization results in tensions which then need to be managed in a balancing approach by management (He & Wong, 2004: 482). To achieve such a balanced state, an organizational culture which is supportive of a fine grained interplay between a stretching vision, discipline and trust is required (Menguc & Auh, 2008: 460). Furthermore, management needs to acknowledge the importance of internal resource allocation to explorative and exploitative initiatives when implementing an ambidextrous BS (He & Wong, 2004: 492). Failure to balance exploration and exploitation will lead to over emphasizing of one component over the other. Excessive exploration, for example will lead to a continuous search of the organization to uncover new sources of game changing, disruptive innovations (He & Wong, 2004: 482). However, if firms lack the ability or the desire to exploit these newly discovered ideas and to translate them into commercially successful offerings, it will over allocate its resources to constant exploration and thus fail

to accrue rents. As Baker & Sinkula (2005: 498) note, exploration and exploitation both have merit at their time but none of them is universally optimal (Gilbert, 1994). Despite the infrequent occurrence of disruptive innovations they pose an important source of competitive advantage to the firm and involve higher risks, but also promise higher returns in the case of success (Gilbert, 1994). While, during the absence of disruptive opportunities, exploitation will allow for continuous improvement and incremental innovations and provide a source of continuous rents.

Based on these inconsistent recommendations, additional research in the domain of BS selection and its consequences for firms is desirable. Furthermore, due to the nature of the analysis across various enterprises, never was the question actually considered if firms deliberately choose to pursue a CCO, FMO or CCO/FMO centred BS in a holistic model context of firms. This omission merits further investigation into the subject. Therefore, it is posited that BS is a key determinant of the market sensing capabilities an organization develops, its propensity to learn, and its ability and willingness to successfully execute specific innovations. As such, the importance of fostering an optimal level of firm capabilities to identify and translate explicit and/or latent current customer needs and future market related needs into innovations may pose one of the greatest hurdles to an organizations' long-term success (Yu & Hang, 2010: 444) and is contingent on the specific environmental situation (e.g. perceived level of competitive intensity, potential from substitution of goods/services etc.; Porter, 1981) an organization operates within and the BS it deploys. Subsequently the influence of senior managers' attitude towards CCO and/or FMO may act as a determinant of the specificity a CTI an organization brings forward (Verhees & Meulenbergh, 2004: 140). For example, in an ever increasing competitive environment, there seems to be no alternative than to engage in some levels of FMO and to foster higher-order capabilities (Yu & Hang, 2010: 444) needed to bring forward and introduce innovations that significantly change the landscape of competition based on exploring customers latent needs (Narver & Slater, 2004: 344; Slater & Narver, 1998: 1003–1004) in order to avoid price-based competition and constantly unlock new profit pools (Kim & Mauborgne, 2005). However, in markets which are perceived as stable and with sufficient profits available, firms which operate exclusively within these markets might not sense the importance to further explore new opportunities and will subsequently choose a BS of exclusive CCO and increase of operating efficiency.

The key observations of the review of BS formulation and – execution are summarized in the next table:

Point of attention/ Omission	Key Literature	Research implication
Conceptual separation into CCO/FMO required in more research	Danneels (2004: 255); He & Wong (2004: 482); Govindarajan & Kopalle (2006: 190)	<ul style="list-style-type: none"> <li>- Conceptual separation of CCO and FMO important in future research</li> <li>- BS link with level of CCO and FMO under-researched</li> <li>- Control for environmental peculiarities or single organization research to identify recurring patterns</li> </ul>
Limited amount of research to assess the relationship between the BS of an organization and the level of CCO and/or FMO associated with it.	Chandy & Tellis (1998)	
Mixed recommendations for organizations with regards to what BS should be pursued (i.e. 3 schools of thought).	Yu & Hang (2010: 444); Peters & Waterman (2006)	

*Table 13: Key omissions in Business Strategy research*



### 2.3.2 Market Orientation

In the context of the holistic, innovation oriented approach of this research, the construct of MO is posited as the notion of idea acquisition and represents an organizations ability and propensity to “sense” for the needs of its current customers and/or potentially emerging future markets.

The MO of an organization is frequently cited as an important antecedent of firm innovation (i.e. their quantity and success) in small and large firms (Lee & Tsai, 2005: 331) and associated with increased levels of performance (e.g. Jiménez-Jimenez, Sanz-Valle & Hernandez-Espallardo, 2008: 390; Keskin, 2006; Baker & Sinkula, 2005; Hurley & Hult, 1998; Lee & Tsai, 2005)). MO is especially linked to innovations in products and processes (He & Wong, 2004: 487; Renko, Carsrud & Brännback, 2009: 335), which offspring from the close interaction between firms and their customers. These linkages frequently result in products and services that satisfy customer demands in a more elaborate way (Jaworski & Kohli, 1993: 57). MO is attributed positively with new product performance, profitability and higher market share (Baker & Sinkula, 2005: 485) as well as return on assets, sales growth, product quality (Noble, Sinha & Kumar, 2002: 27) and product-, process- and administrative innovations (Mavondo, Chimhanzi & Steward, 2005: 1256) and others (Farrell & Oczkowski, 1997: 30). Therefore MO is associated with business performance directly or indirectly via firm innovation (Lee & Tsai, 2005: 331; Jiménez-Jimenez, Sanz-Valle & Hernandez-Espallardo, 2008: 390). Some authors note, however, that the link between MO and innovation is less well researched as the direct MO – performance relationship (Mavondo, Chimhanzi & Steward, 2005: 1256). Furthermore most studies on the MO – performance- and MO – innovation link are based on short-term measures and the long-term implications of MO and subsequent innovative output of an organization were not assessed to a sufficient extend (Berthon & Hulbert, 2004: 1068).

Despite the widely positive association of MO with firm performance, an analysis of 50 studies on the MO – performance linkage conducted by Langerak (2003: 447-448) concluded with inconsistent findings providing mixed results or even negative consequences from implementing a MO on specific measures of performance (e.g. market share growth, profit margins) and with varying results across different MO measuring constructs and sample compositions (e.g. different national contexts, single industry vs. cross industry). Therefore, the predictive power of MO constructs for firm performance remains a focal point for further research to address and further enhance (Langerak, 2003: 460). These mixed results on the MO- performance link obtained across various studies warrant further analysis. To mitigate the potential bias of prior research, this thesis posits that MO therefore should be approached from the perspective of BS in order to further explore the effect of the characteristics of firm’s MO on innovation by approaching the subject from the perspective

of BS and investigating into the impact of strategic intent on the MO mechanisms prevailing in organizations.

### *2.3.2.1 Origin of the concept of Market Orientation*

Essentially, the concept of MO traces its roots back to the introduction of the management philosophy of the “marketing concept” which was brought forward by Peter Drucker in 1954 (van Raaij & Stoelhorst, 2008: 1266–1267). The marketing concept proposes that marketing should inherently approach “the whole business [...] from the point-of-view of its final result, that is, from the customer’s point of view” (Drucker, 1954: 37). Thus, it implies that those companies will thrive and generate a sustainable competitive advantage (Narver & Slater, 1990: 20–21), which are not only able to identify target customer needs but also -to satisfy them in a more advanced manner than its competitors (Mavondo, Chimhanzi & Steward, 2005: 1238–1239; Slater & Narver, 1998: 1001–1002) by offering goods or services which the customer perceives as providing the greatest value versus any other obtainable alternative (Narver & Slater, 1990: 20–21; Berthon, Hulbert & Pitt, 2004: 1066). MO is considered as the central element for translating the marketing concept into action (Tajeddini, Trueman & Larsen, 2006: 533–534). Therefore organizations which encourage and translate supportive behaviours of MO into their organizational mode of operation foster a cultural attitude (Jiménez-Jimenez, Sanz-Valle & Hernandez-Espallardo, 2008: 390) that is constantly on the outlook for most effectively and efficiently creating superior customer value (Narver & Slater, 1990: 21) and subsequently superior organizational performance (Tajeddini, Trueman & Larsen, 2006: 533–534).

According to van Raaij & Stoelhorst (2008), the marketing concept appealed to “generations of managers” (p 1266-1267). It is posited as an influential theory and strategic framework (Kumar, Jones, & Venkatesan, 2011: 16; Paladino, 2007: 536) of organizational success that relates a firm’s performance and its “long-term profitability” (Deshpandé, 2004: 5) to its achieved level of MO. However, scholarly research into the domain of MO was “not undertaken until the academic ‘rediscovery’ of the concept” (van Raaij & Stoelhorst, 2008: 1266–1267) which began in the late 1980s and found an early culmination in the works of Kohli & Jaworski (1990), Jaworski & Kohli (1993) and Narver & Slater (1990) which represent the first and most popular operationalization of the MO concept (Kumar, Jones, & Venkatesan, 2011: 16; Day, 1994: 37). Since then, literally hundreds of research articles have emerged on the definition of MO, the measurement of MO and subsequent scale development, a discussion of the models created in an attempt to identify antecedents and consequences of MO, and the interrelation of MO with a wide range of variables of business performance (Baker & Sinkula, 2005: 485; Kumar, Jones, & Venkatesan, 2011: 16; Kirca, Jayachandran & Bearden, 2005), such as “profitability, sales growth and new product

success” (Slater & Narver, 1998: 1001–1002) , as well as the enhancement of the implementation of the concept in firms (van Raaij & Stoelhorst, 2008: 1266–1267; Song, 2009: 146). The conceptual framework surrounding the research on the marketing concept, and specifically MO leaves room for scholarly research to the present day (e.g. Govindarajan, Kopalle & Danneels, 2011).

Due to the vast number of studies on MO since 1988 it is neither intended nor possible to provide a detailed description or overview on the research approaches taken in MO research in this literature review (for a meta-analysis of MO research see Kirca, Jayachandran & Bearden, 2005). However, as the majority of studies have either directly adopted, or only slightly adjusted Kohli & Jaworski’s (1990) or Narver & Slater’s (1990) definitions (Tajeddini, Trueman & Larsen, 2006: 533–534) and measuring scales (van Raaij & Stoelhorst, 2008: 1268–1269), those will be used for a subsequently review of the main concepts and criticism.

### 2.3.2.2 *Review of popular Market Orientation constructs*

As previously pointed out, the most influential approaches to MO were brought forward by Narver & Slater (1990), Kohli & Jaworski (1990) and Jaworski & Kohli (1993) (Gauzente, 1999). The following definitions of MO are provided in their conceptualizations:

*Market Orientation is the organization culture [...] that most effectively and efficiently creates the necessary behaviours for the creation of superior value for buyers and, thus, continuous superior performance for the business. [...] [M]arket orientation consists of three behavioural components— customer orientation, competitor orientation, and interfunctional coordination—and two decision criteria—long-term focus and profitability. (Narver & Slater, 1990: 21)*

*Market Orientation is the organization wide generation of market intelligence pertaining to current and future customer needs, dissemination of the intelligence across departments, and organization wide responsiveness to it. (Kohli & Jaworski, 1990: 6)*

Based on the definition of Narver & Slater (1990) a cultural view on MO emerged, while Kohli & Jaworski (1990) inspired a behavioural view of MO (van Raaij & Stoelhorst, 2008: 1268–1269; Jiménez-Jimenez, Sanz-Valle & Hernandez-Espallardo, 2008: 392–393; Langerak, 2003: 448). Those research perspectives are the two predominant frameworks in the MO literature. The cultural view emphasizes the importance of organizational culture (e.g. its norms and values; Schein, 2010) for effecting organization-wide behaviours of customer orientation (including the organizational aim to understand the customers current value chain and market dynamics to anticipate how preferences might branch out over time; Narver & Slater, 1990: 21–22; Jiménez-Jimenez, Sanz-Valle & Hernandez-Espallardo, 2008: 390). Furthermore, it emphasizes a company’s, competitor orientation (i.e. the analyses of existing and potential customers with regards to their “short-term strengths and weaknesses and long term capabilities” (Tajeddini, Trueman & Larsen, 2006: 533–534) and

its inter-functional coordination (combined effort of the organization to utilize its resources for creating customer value; Tajeddini, Trueman & Larsen, 2006: 533–534 ), which help an organization to pursue a MO (Jiménez-Jimenez, Sanz-Valle & Hernandez-Espallardo, 2008: 392–393). While the behavioural view concentrates on process-based activities that facilitate the generation- and dissemination of market intelligence and subsequent organizational action (Kirca, Jayachandran & Bearden, 2005: 24), as the organizations' ability to develop- and implement plans based upon obtained market intelligence (Jaworski & Kohli, 1993: 54; Langerak, 2003: 448). This view emphasises on “top management, interdepartmental, and organizational system variables” (Song, 2009: 146). Mavondo, Chimhanzi & Steward (2005: 1238–1239) have suggested that “information-processing activities are a product of a Market Orientation rather than the orientation per se.”

Given that most studies trace their origins back to either Kohli & Jaworski (1990) or Narver & Slater (1990), comparisons of the studies were conducted, which have found the models to be widely similar, with respect to their main components, and equally useful (Mavondo, Chimhanzi & Steward, 2005: 1238–1239). Van Raaij & Stoelhorst (2008: 1268-1269) concluded that most authors involved in MO research “agree that Market Orientation contains elements of market intelligence generation, dissemination and use, with the aim to create value for customers” enabling the concept to be well grounded and normative. Therefore, the two approaches can be seen as two sides of the same coin (Cambra-Fierro et al, 2012: 857), describing MO as a cultural- and behavioural construct with a clear customer-focused business operating mode (Jiménez-Jimenez, Sanz-Valle & Hernandez-Espallardo, 2008: 392–393).

### *2.3.2.3 Criticism on Market Orientation and its operationalization*

Narver & Slater (1990) introduced the so called “MKTOR” scale as part of their ground breaking research paper, while Kohli et al (1993) separately proposed the “MARKOR” scale based on the theoretical work of Kohli & Jaworski (1990)<sup>17</sup>. Both scales attempt to broadly assess an organizations fundamental orientation towards its market(s) and customer(s) (Baker & Sinkula, 2005: 484). MKTOR comprises of three sub-measures of customer orientation, competitor orientation and inter-functional coordination with an overall 19 measuring items (based on version utilized by Kayhan et al, 2011: 540), while MARKOR is

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<sup>17</sup> Resulting from a synthesis of MARKOR, MKTOR and a third MO measuring construct operationalized by Despondé, Farley & Webster (1993) and Despondé & Farley (1998) have introduced the MORTN scale as an alternative measure of MO which is frequently utilized in MO research (Langerak, 2003: 448).

operationalized with 32 questions that are categorized into three sub-measures for intelligence generation, intelligence dissemination and responsiveness. For both scales, the level of MO of an organization results from the unweight sum of the responses to the three component constructs (van Raaij & Stoelhorst, 2008: 1269–1270).

MKTOR and MARKOR were repeatedly criticized by scholarly authors with regards to internal validity and fit (Matsuno & Metzner, 2000: 5; Sigauw & Diamantopoulos, 1995; Gauzente, 1999: 81), single informant strategy, the process of scale development neglecting established principles (e.g. Churchill, 1979) to ensure high standard measuring scales (van Raaij & Stoelhorst, 2008: 1269–1270), the overly focus on the organizational level versus the individual level of analysis (Hurley, 2002: 271), its usefulness as a diagnosing framework for practice (van Raaij & Stoelhorst, 2008: 1269–1270) and the “potential dominance of the customer dimension [...], possibly diminishing the importance of other MO components (Noble et al, 2002: 27)” (Farrell & Oczkowski, 1997; Sigauw & Diamantopoulos, 1995; Gauzente, 1999; Ward & Lewandowska, 2008: 223). Furthermore, some authors criticized the limited scope of market factors leaving key stakeholders (e.g. competitors and suppliers) and other determinants of market development (e.g. regulatory-, macroeconomic- and social/cultural factors) out of scope (Matsuno & Metzner, 2000: 5). Others suggested to separate the individual components of MO and not to address market intelligence acquisition, -dissemination and -use as operationalized by Narver & Slater (1990), Kohli & Jaworski (1990) and Jaworski & Kohli (1993) but in separate constructs (e.g. Johnson, Martin & Saini, 2012: 723; Lukas & Feerrell, 2000: 244).

In the context of this research the most relevant criticism is (1) the overly attention of the established MO measures on the current customer domain and resulting therefrom a (2) limited amount of research into how BS is linked with an organizations conceptually separated MO (CCO) and MO (FMO).

- (1) Despite the theoretical foundation of the concept as including a focus on the *stated and latent needs* of current customers (Kohli & Jaworski, 1990: 6) the dominant operationalization of the constructs almost exclusively focus on how closely an organization listens to its current customer base. Most items display a clear “current customer focus”, while only some qualify to *potentially* assess dimensions related to current non-customers or potential future customers (Berthon, Hulbert & Pitt, 2004: 1067). Measuring items that clearly address future customers were not identified<sup>18</sup>. This is especially noticeable, as the importance of latent and future customer needs are explicitly acknowledged in the theoretical foundation- (Kohli & Jaworski, 1990:

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<sup>18</sup> Please refer to review of measuring constructs and items in the appendix (6.6).

4) and one of the original definitions of MO, provided by Kohli & Jaworski (1990: 6), which aims at addressing “*current and future* customer needs.” In that regard, (Slater & Narver, 1998: 1001–1002) argue, that since its introduction, the concept of MO theoretically comprises of two separate constructs, each representing one end of a continuum (Narver & Slater, 2004: 336), holding quite different implications for business, pursuing (1) CCO as a short-term, responsive (Narver & Slater, 2004: 344) business philosophy which aims to exploit customers expressed desires through close observation and interaction with their current customer base and (2) FMO. FMO in this context is described as a proactive (Narver & Slater, 2004: 344), long-term philosophy aiming at understanding and filling customers explicitly stated *and* latent needs, those of which the customer is unaware until confronted with it (Narver & Slater, 2004: 336), through exploration (Slater & Narver, 1998: 1001–1002) of implicit needs. However, even though not entirely ignored by the leading scholars in MO research (e.g. more recently Govindarajan, Kapalle & Danneels, 2011), the notion of anticipating and satisfying latent- and future customer needs were not operationalized in the final measuring construct (Narver & Slater, 2004: 334). This omission resulted in measuring constructs which represent an almost exclusive focus on serving the current customer base (Berthon, Hulbert & Pitt, 2004: 1067) and thus discount the importance of the future market domain for the emergence of disruptive innovations (Christensen, 1997; Atuahene-Gima & Ko, 2001).

Furthermore, the view on FMO advocated by Slater & Narver (1998) acknowledges the idea of “latent needs”, but relates them to customers in general. Kumar (2011: 17) observed that the overly focus of the MO constructs on the current customers and their stated needs might lead to firms overlooking fundamental changes to customer preferences and the competitive environment, which go beyond the traditional sources of information emphasized by the frequently used measuring constructs. This position is echoed by Menguc & Auh (2006: 70) who observe that the scale operationalized in their research is “closer to a market- driven view [as it] mentions nothing about either latent customer needs or proactive behaviour to uncover customer and competitor information better.” The resulting conceptual ambiguity (i.e. the integration of the two distinct types of current customer orientation vs. future market orientation in one single construct) have brought forward statements that “strong market orientation may lead to imitations and marginally new products (Lukas & Ferrell, 2000: 239)”, which may be true for organizations exhibiting an overly current customer focus (Christensen, 1997), but runs contrary to the reasoning underlying a future market oriented MO.

Subsequently, the current customer perspective has received literally exclusive attention in analyses conducted on the subject of MO (Narver & Slater, 2004: 335; Berthon, Hulbert & Pitt, 2004; Grinstein, 2008: 126; Rueckert, 1992). As noted by Berthon, Hulbert & Leyland (2004), with regards to the dominance of the current customer perspective in MO research, scholarly research and management practice might have interpreted Drucker's conceptualization of firm purpose unidirectional towards nearly exclusively focusing organizational activities towards serving current customers, excluding the aspect of exploration required for new "customer creation (p 1067)."

In relating its findings, that disruptive innovations based on inferior technologies may overthrow incumbent firms, to the MO research, DIT continuously nourished a rich debate and warranted a reassessment of the relationships firms should have to their current customer base with regards to their long-term prosperity (Adner, 2002: 667) and their complex interdependencies (Hult & Ketchen, 2001: 899–900). The implications from DIT for the practice of management of sustaining- and disruptive innovations are multi-layered, difficult to grasp and -implement (Assink, 2006: 219). Therefore, further research into the subject is necessary to obtain higher levels of clarity on the subject for academia and management practice.

With the exception of the work of Govindarajan, Kopalle & Danneels (2011: 123), there is very limited research available which builds on the findings of DIT (Christensen, 1997) and empirically investigates into the distinct characteristics of MO (CCO) and MO (FMO).

- (2) Given the dominance of the current customer perspective in the research on MO, there is little empirical research into the link how BS may influence an organizations conceptually separated MO (CCO) and its MO (FMO) systematically (Lukas, 1999; Slater & Narver; 1998: 59) and to the type and level of innovation an organization brings forward (Govindarajan, Kopalle & Danneels, 2011: 123). While some researchers assert that proactive, MO (FMO) oriented firms are in a position of advantage when changes to the market dynamics occur (e.g. Cambra-Fierro et al, 2010: 855-866), the subject warrants additional research based on the implications of DIT.

Past research, was mainly concerned with cross organizational/ cross sectorial studies (Theodosiou et al, 2012: 1056), assuming as a pre-condition (with the exception of Song & Parry, 2009) that business would always attempt to achieve the *maximum* level of MO possible. They did *not* take into consideration that an organization would

actually *willingly* not aim to achieve the highest level of MO possible. Yet, as suggested by the literature on BS and corporate survival, firms might envision an optimal level rather than a maximal (de Geus, 1997) of MO which positions the firm in anticipation/reaction to its unique situation placed within a specific business environment (Song & Parry, 2009).

In line with the determinants of BS (as presented in the previous section), this thesis argues that the optimal level of MO is contingent on the competitive environment an organization operates in and the strategy it deems adequate to achieve its business objectives (Dobni & Luffman, 2000: 90). This approach implies that there is no optimal level of CCO and/or FMO per se but the level of MO prevailing in a firm must be approached from the unique situation and context an organization operates in and by taking its unique strategic intention into consideration. As suggested by Morgan & Strong (1998: 1053), it is “likely that the strategy pursued will reflect the extent of the market orientation exhibited by the firm.” Therefore, market dynamism and competitive intensity qualify as external determinants of MO, while the selection and recruitment of customer oriented employees, market oriented training and – reward systems contribute as internal determinants towards the successful introduction of a MO (van Raaij & Stoelhorst, 2008: 1271–1272). Other internal determinants include for example the emphasis of top management on the importance of developing a MO, the willingness to take risks (Christensen, 1997) and the degree of centralization and –departmentalization (van Raaij & Stoelhorst, 2008: 1271–1272). Furthermore, authors in the past recognized, that top management shapes values and orientation of firms and their emphasis on specific aspects of MO determine the degree and direction of MO exhibited by the firm (Kirca, Jayachandran & Bearden, 2005: 25). However, research on the link between BS and MO is very scarce (Lukas, 1999: 155; Johnson, Martin & Saini, 2012: 715) and of limited informative value on the link between BS and CCO/FMO. For example, Lukas (1999) does not differentiate between CCO and FMO oriented strategies but examines the overall level of MO displayed by an organization. This undifferentiated perspective resulted in confirming that exploration-oriented firms *and* firms which balance their approaches exhibit high levels of MO. However, it did not provide insights into the levels of CCO/FMO of the organization to provide an indication of the level of emphasizes on exploration- or exploitation exhibited in their individual firm BS. Further research is needed to explicitly link the BS of the organization with their performance in the CCO and/or FMO domain of MO. In order to extend the insights into this relationship, as warranted by Grinstein (2008: 127), the differentiation between CCO and FMO as



two components of MO is essential to gain enhanced insights on the implications from the alignment of strategic orientation in firms in future research.

The shortcomings of the MO conceptualization is recognized, for example, by Morgan & Berton (2008). Morgan & Berthon (2008: 1337-1338) utilize a multi-construct research to investigate into the interrelations of current customer centred MO (represented by MARKOR; Kohli & Jaworski (1993)) and future market oriented generative learning with explorative and exploitative firm strategies. Consequently their theoretical reasoning is in favour of a conceptual separation of MO (CCO) and MO (FMO), however their operationalization does not result in a separate MO (FMO) construct but is approximated with a construct of generative learning.

#### 2.3.2.4 Market Orientation - Omissions and Research Question 1

The most relevant omissions in prior research are summarized in the table below. These observations are the foundation for the formulation of the 1<sup>st</sup> research question presented below:

Point of attention/ Omission	Key Literature	Research implications
Most MO research utilizes constructs which do not differentiate into current customer perspective vs. future market perspective	Morgan & Berton (2008); Govindarajan, Kopalle & Danneels, 2011); (Christensen, 1997); (Narver & Slater, 2004: 335; Berthon, Hulbert & Pitt, 2004; Grinstein, 2008: 126; Rueckert, 1992).	Conceptually vague and imprecise conclusions are drawn (e.g. Lukas & Ferrell, 2000: 239; Cambra-Fierro et al, 2012: 866) and a conceptual separation into MO (CCO) and MO (FMO) is warranted especially given findings of DIT
Link between MO (CCO), MO (FMO) and BS is unclear, not sufficiently researched and did not take the specific situation and intention of the organizations under research into consideration	Slater & Narver (1996: 59); Lukas (1999); Govindarajan, Kopalle & Danneels (2011: 131); Dobbin & Luffman (2000: 911); Johnson, Martin & Saini (2012: 716)	Future research should investigate into the linkage between BS and the levels of MO (CCO) and MO (FMO) exhibited in order to identify levers to upraise the level of MO and subsequently of organization effectiveness and potentially innovative output.

Table 14: Key omissions in Market Orientation research

Based on the research aim in combination with the above presented omissions and contradictions, the 1<sup>st</sup> research objective and testable research question emerge. They address the link between the firms unique BS and the level of MO (CCO) and MO (FMO) it pursues. Therefore they posit that a firms BS has a direct and positive link with the level of MO (CCO) and MO (FMO) the organization exhibits. Research aim, research principles, research objective 1 and the corresponding research question are illustrated in the next table:

Research Aim	Identify the interrelations that exist between Business Strategy making and a firm's Capability to Innovate to understand how this contributes to the economic sustainability of incumbent organizations.	
Research Principles	<ul style="list-style-type: none"> <li>(1) Innovation focus</li> <li>(2) Dynamic perspective</li> <li>(3) Holistic approach</li> <li>(4) Integration with prior research</li> <li>(5) Influenced by managers</li> <li>(6) Auditable and Representable</li> <li>(7) Incumbent organization context</li> </ul>	
Research Objective		Research Question
<u>Research Objective 1:</u> What is the relationship between a firm's BS, which is contingent on its unique situation and – intention, and the level of MO (CCO) and MO (FMO) it exhibits?		<u>Research Question 1:</u> The BS of an organization is significantly and positively linked with the MO of the organization.

*Table 15: Research Objective 1 and Research Question 1*

### 2.3.3 Organizational Learning/ Learning Orientation

In the context of the research model inherent to this thesis, a firms' LO represents its ability to learn (i.e. to make sense from data and information and to disseminate its knowledge throughout the organization) is posited as another important determinant of the overall CTI of an organization. Given that the LO of an organization is closely related to the conceptualization underlying Organizational Learning (OL), the reasoning inherent to OL is reviewed first. Firm learning and effective knowledge management is frequently cited as an essential capability to facilitate organizational change for firms operating in increasingly turbulent and –competitive business environments (Easterby-Smith, Lyles & Peteraf, 2009: 1–2).

“Learning is a process by which repetition and experimentation enable tasks to be performed better and quicker. It also enables new production opportunities to be identified (Teece, Pisano & Shuen, 1997: 520).” The concept of OL roots in various scholarly disciplines, such as psychology, strategic management and sociology and draws from organizational theory to explain mechanisms which facilitate or inhibit superior learning behaviours in organizations (Mavondo, Chimhanzi & Steward, 2005: 1237–1238; Morgan, 2004: 71). As such the concept appeals to scholars and managers alike and was applied in various contextual constellations, for example MO, new product development and strategic marketing (Mavondo, Chimhanzi & Steward, 2005: 1237–1238). Consequently, the number of publications on OL and topics associated with it have recently grown exponentially (Sanz-Valle, Naranjo-Valencia, & Jiménez-Jimenez, 2011: 998).

Authors have suggested a hierarchical perspective on characterizing different levels of learning and sense making (Morgan, 2004: 69). They differentiate between: (1) Data, (2) information, (3) knowledge, (4) understanding and finally (5) wisdom. *Data* act as “a carrier of both information and knowledge and can be stored, transferred and processed (p 69).” *Information* is derived by combining and interpreting data in a specific context such as “organizational routines, processes, practices and norms. While information is descriptive in nature, related only to past and present events and situations, *knowledge* is specifically predictive in that it allows future insights to be gained from past and current circumstances (p 69).” Higher order cognition forms from coherence in *understanding* and ultimately results in ‘*wisdom*’. The interrelations are illustrated below (Based on Morgan, 2004: 70):



Figure 10: Hierarchy of Learning

Several authors (e.g. Hult & Ketchen, 2001; Baker & Sinkula, 1999; Sinkula & Baker, 1997) have noted that superior OL is recognized as a potential source of sustainable competitive advantage in an ever increasing competitive, unpredictable and turbulent environment (Mavondo, Chimhanzi & Steward, 2005: 1237–1238; Tohidi, Seyedaliakbar & Mandegari, 2012: 221). Organizations with the ability to learn at an increased level and speed versus their competitors exhibit higher level, complex capabilities (Baker & Sinkula, 1999: 411; Sinkula & Baker, 1997: 314) which allow them to achieve an excellent position to take on emergent challenges faster and more effectively than their peers (Lee & Tsai, 2005: 326) and to create a positional advantage (Hult & Ketchen, 2001: 905) through changes in their knowledge base (Teece, Pisano & Shuen, 1997: 520) and their behaviours (Slater & Narver, 1995: 63–64; Sanz-Valle, Naranjo-Valencia, & Jiménez-Jimenez, 2011: 998). Authors in the past pointed out that in the short-run, only if the level of OL reaches at least that of the competitors then superior market performance is expected (Sinkula & Baker, 1997: 307). In the long-run however, the key determinant of organizational profitability and success lies in the firm's ability to learn at a faster rate than its overall environment changes (Sinkula & Baker, 1997: 307). Only then will they be able to build and sustain organizational core capabilities which contribute to a strategic competitive advantage of the firm (e.g. Teece, 2007). Organizations which purely focus on their competitors to determine the level of organizational performance required to sustain or enhance the current market position otherwise risk to be overthrown by new market entrants penetrating into their market segment (Christensen, 1997). If firm learning exhibits lower levels than the learning of competitors and the environment, the implicit learning deficiency will be a determinant of the future failure of the firm to sustain its market position and maintain its profit pools (Sinkula & Baker, 1997: 307).

Numerous studies directly or indirectly link OL with firm performance, innovativeness (Calantone, Cavusgil & Zhao, 2002: 516) or innovation (Jiménez-Jiménez & Sanz-Valle, 2011: 414). Their results indicate, that a firm's LO is positively linked to innovative behaviour and firm performance. At the same time, others criticize the concept of OL to be vague. They

note that learning in organizations was associated with a large number of conceptual attributes (Mavondo, Chimhanzi & Steward, 2005: 1237–1238; Vera & Crossant, 2004: 224) and research into “organizational learning” versus “learning organizations” has contributed to complicating the subject considerably (Mavondo, Chimhanzi & Steward, 2005: 1237–1238). Therefore, given the multitude of disciplines which are involved in research on the concept of OL, a uniformly accepted, standardized model of OL is currently not available (Tohidi, Seyedaliakbar & Mandegari, 2012: 221; Campbell & Cairns, 1994). Discussion in academia is ongoing whether learning of organizations occurs on individual-, group-, and/or organizational levels (Mavondo, Chimhanzi & Steward, 2005: 1239; Hurley, 2002: 271; Sinkula & Baker, 1997: 306). However, this discourse is not decisive for this thesis.

Despite the conceptual ambiguities, OL is increasingly seen as holding great merit as a critical component of organizational strategy, which deserves more attention from business leaders (Marsick & Watkins, 1999: 208) as part of their ambition to reach their overall business objectives. Some authors even argued that the institutionalization of OL should be the key objective of management (Lee & Tsai, 2005: 326) in an attempt to proactively foster organizational capabilities which will allow it to respond faster and more effectively to changes in the competitive environment of the organization (Jiménez-Jimenez, Sanz-Valle & Hernandez-Espallardo: 390). It is understood that OL holds the potential to influence the behaviour of members of an organization, which is associated with higher levels of performance (Slater & Narver, 1995: 63–64). As such, it is proposed that people who are engaged in learning are able to release higher levels of motivation and energy which are expected to transform organizations to the better (Marsick & Watkins, 1999: 207).

#### *2.3.3.1 Definition of Organizational Learning and Key Elements*

There are numerous definitions of OL available in academia (Tohidi, Seyedaliakbar & Mandegari, 2012: 222). One, which is frequently cited is that of Argyris & Schön (1978: 23) stating that:

*"Organizational learning occurs when members of the organization act as learning agents for the organization, responding to changes in the internal and external environments of the organization by detecting and correcting errors in organizational theory in use, and embedding the results of their inquiry in private images and shared maps of organization"*

Authors agree that OL is a cyclical process which includes the notion of individuals facilitating interaction of an organization with the outside world (Hurley, 2002: 273). OL is demonstrated by organizations which (1) facilitate the learning of its members and (2) continually transform its capabilities and its actions based on reflections on its newly acquired knowledge and insights (Mavondo, Chimhanzi & Steward, 2005: 1237–1238; Slater & Narver,

1995: 63–64; Senge, 1990). Even though OL may occur in various forms and through different processes suitable to the specific situation, it always includes elements that allow the detection of errors in explicit or implicit (depending on the level of OL achieved) organizational knowledge and their correction (Sinkula & Baker, 1997: 306).

As such, the process of OL includes (1) the acquisition and generation of information and knowledge from the internal and external environment which directly links the conceptualization with the concept of MO introduced earlier in this chapter, (2) the horizontal- and vertical distribution of such information within the organization, (3) the interpretation and dissemination of the information to provide meaning and context and (4) physical- or cognitive storage of knowledge for future use as part of the organizational memory (Jiménez-Jiménez, Sanz-Valle & Hernandez-Espallardo: 393; Sinkula & Baker, 1997: 308; Sinkula 1994; Jiménez-Jiménez & Sanz-Valle, 2011: 409).

Sinkula & Baker (1997) argue, that information acquisition and -generation is the most crucial aspect of the OL process, as it provides the required data and information about customers, competitors and the underlying dynamics of the business environment which then have the potential to influence the OL process and its outcomes (Sinkula & Baker, 1997: 308). Therefore, the quality and foresight which is displayed in the acquisition/generation step of OL determines what the organization will ultimately grasp about the fundamental developments and dynamics of its surroundings. Subsequent knowledge generation and – dissemination will ultimately revert back to the data and information absorbed during the acquisition/generation phase. As such, the quality of OL as an overall output strongly depends on the quality of the organizational sensing and the scope intended of its information acquisition activities. Information may be obtained through direct- or indirect experience or result from the organizational memory (Slater & Narver, 1995: 64–65). For example, indirect experiences may be the exchange of information through benchmarking with other organizations, close interaction with lead customers or strategic alliances (Slater & Narver, 1995: 64–65).

Efficient information interpretation and subsequent dissemination throughout the organization is a necessary precondition to detect- and potentially correct a mismatch in the theory in use (Sinkula & Baker, 1997: 308) and the underlying mental models. While the acquisition-, generation- and distribution of information may be seen as rather mechanical, it is the interpretation and dissemination aspect of OL which contributes qualitative and cognitive aspects to the OL framework (Sinkula & Baker, 1997: 308). Information interpretation and dissemination comprise the important step of reconciling the newly obtained insights from the learning process with the organizations' current understanding of the world and its mental models. As such, this step of OL assures a shared organizational interpretation and

enables other organizational members to increase the quality and accuracy of the knowledge outcome by contributing their feedback, by suggesting modifications or providing novel insights through their unique frame of reference (Slater & Narver, 1995: 64–65). This step holds the possibility, depending on the level of learning prevailing within the organization (Baker & Sinkula, 2002: 12), to detect obsolete assumptions, behaviours and routines and to correct them in the context of the newly acquired information and knowledge (Sinkula & Baker, 1997: 306). Furthermore, it reduces intra-organizational barriers to information flows and exchange and thus increases the organizations ability to make effective decisions and derive effective actions (Slater & Narver, 1995: 64–65) based on complete and accurate mental models. Such mental models are defined throughout literature as an explicitly (formally stated) and/or implicitly (not formally stated) shared interpretation of information and act as frequently unrecognized subconscious guiding framework for members of the organization to interpret situations and to conduct their daily operations (Schein, 2010), (Baker & Sinkula, 2002: 9). Mental models include, but are not limited, to internal and external organizational actions and behaviours (e.g. organizational norms, routines and behavioural patterns, as well as applied strategies and tactics; Sinkula & Baker, 1997: 306). Based on Argyris & Schön (1978) mental models are frequently referred to as “theory in use” (Sinkula & Baker, 1997: 306). Mental models determine behaviour and perception of the world (Sinkula & Baker, 1997: 308; Senge, 1990) for individuals, groups and subsequently firms. The quality of the current mental models and the underlying theory-in use determine the assumptions upon which the newly acquired information is reviewed. As such, incorrect mental models of the world will not be helpful to detect obsolete assumptions about actions and outcomes (Sinkula & Baker, 1997: 308). Therefore, it lies in the interest of the organization to frequently reconcile their views of the world to detect mismatches and obsolescence and to find a shared understanding of the realities that guide the actions of the firm (Slater & Narver, 1995: 64–65). Mechanisms to effectively detect such mismatches and to enhance the OL capabilities in a constructive manner need to be developed and supported throughout the organization (Senge, 1990).

In its last phase, the process of OL translates the newly acquired organizational knowledge into a collectively shared organizational memory. Organizational memory represents implicit and tacit theories-in-use and shared mental models and will influence procedures, routines and ultimately the organizational culture prevailing within the organization (Jiménez-Jiménez, Sanz-Valle & Hernandez-Espallardo: 393; Schein, 2010). The ability to store and access lessons from prior learning will enable it to accumulate knowledge and continuously extend its knowledge frontier. Such grown knowledge will enable the organization to efficiently translate the learning into long-term performance (Sinkula & Baker, 1997: 308).

### 2.3.3.2 *Levels of Learning*

Generally speaking (Baker & Sinkula, 1999: 412) “[o]rganizational learning occurs by detecting a mismatch of outcome to expectation, which disconfirms theory in use.” The level of OL defines to what regard the organization is able to (1) proactively or reactively (2) detect errors in its explicit theory-in-use (3) and to change the underlying implicit organizational norms (e.g. mental models, dominant logics). Especially with regards to tacit theory in use, it is often difficult to detect obsolescence in the underlying mental models as their influence on decision making is obscured and not easily recognized (Baker & Sinkula, 2002: 15). OL theory differentiates distinguishes different types of learning: Out of those, Meta learning, generative learning and adaptive learning form a hierarchy (Baker & Sinkula, 2002: 11) with meta learning being the most desirable:

(8) *Adaptive learning*, also titled as single-loop learning (Senge, 1990; Baker & Sinkula, 1999: 412), incremental learning or exploitative learning (Auh & Menguc, 2004: 1652), occurs within learning boundaries, which form recognized and unrecognized constraints for OL. Learning boundaries are determined by the firm’s assumptions about itself and the environment and define a limited scope of organizational interest for the outside world (Slater & Narver, 1995: 63–64). Such narrow boundaries frequently restrict the organization to incremental learning, which is focused on aspects within the existing frameworks of within-paradigm improvements (Baker & Sinkula, 1999: 411–412). The focus of the organization is on increasing its efficiency within the current scope of the business model (Slater & Narver, 1995: 63–64), and employs measures as continuous improvement to enhance the exploitation of current markets, products and abilities (Lisboa, Skarmeas & Lages, 2011: 1274). For example, organizations described as adaptive learner frequently focus on achieving and maximizing their economies of scale through continuously modernizing and automating processes (Menguc & Auh, 2008: 457–458). As a consequence, knowledge and inherent capabilities accumulate within a closely defined domain and at a learning level which only allows for detection of errors in explicitly stated assumptions and theory in use (Baker & Sinkula, 2002: 12). However, by definition, adaptive learning does not include the critical review of implicit theory in use and therefore promotes “group think” when incorrect implicit mental models influence decisions of the organization (Baker & Sinkula, 2002: 12; Hurley, 2002: 273). Thus, adaptive learning might result in core rigidities (Leonard-Barton, 1992) when fundamental shifts from the outside world render the current mental models and business operation mode of the organization obsolete. Adaptive learning follows the notion of exploitation vs. exploration and may be categorized as a level of learning which facilitates exploitative learning (Menguc & Auh, 2008: 460).



Exploitative learning allows organization to detect and correct errors in *explicit* theory-in-use; however, this learning level does, by definition, not enable the organization to identify *implicit* theory-in-use or mental models which are the underlying determinants and origins of explicit theory-in-use (Baker & Sinkula, 2002: 12; Baker & Sinkula, 1999: 412). As such, adaptive learning cannot lead to “the rejection of existing technical and administrative paradigms” (Baker & Sinkula, 2002: 12) or to the generation of ground breaking disruptive concepts (Baker & Sinkula, 1999: 411–412).

	Reason for learning	Detect/correct errors in explicit theory-in use	change implicit organizational norms
Adaptive Learning	reactive	Yes	NO

Table 16: Specificities of Adaptive Learning

- (9) Generative learning, which is frequently referred to as double-loop learning (Senge, 1990), qualifies as exploratory learning (Auh & Menguc, 2004: 1652) and enables the organization to detect and correct errors in explicit theory-in-use, as well as to identify the underlying organizational norms that have led to obsolete explicit theory-in-use. Essentially the concept behind generative learning suggests that individuals recognize an error in the organizational norms which cannot be corrected simply by proceeding with already known routines. Thus, to proceed an alteration to existing norms and beliefs is necessary and generative learning takes place (Ambrosini, Bowman & Collier, 2009: 12-13). Therefore generative learning provides the ability and disposition (Baker & Sinkula, 1999: 415) to question such fundamental and long-held assumptions as the mission, capabilities or BS of an organization and the way it views its current customers and to re-define the way business is conducted (Slater & Narver, 1995: 63–64). It is the ability to unlearn obsolete knowledge and inherent perceptual filters, which is stressed as an important determinant of higher order learning by leading scholars in the field, which enables an organization to successfully perform paradigm shifts (Baker & Sinkula, 1999: 413; Baker & Sinkula, 2002: 10). Unlearning will ultimately allow it to let go of obsolete implicit and explicit mental models and underlying assumptions and to renew the base upon which an organization builds its processes and behaviours. However, as authors note, research on the act of unlearning and its underlying conceptualization is still very rare (Sanz-Valle, Naranjo-Valencia, & Jiménez-Jimenez, 2011: 1008). Generative learning qualifies as higher-order learning (Baker & Sinkula, 1999: 411–412) and enables the combination of lower-order information into something meaningful (Menguc & Auh, 2008: 460). As such, learning which

reaches the level of generative learning holds the ability to identify and reject existing organizational paradigms and to fundamentally change the business operation mode of an organization based on newly acquired knowledge (Baker & Sinkula, 2002: 12) and deconstruction of established routines (Menguc & Auh, 2008: 457–458). Furthermore, generative learning enables an organization to proactively go beyond its current scope and to questioning and extending the organizational knowledge frontier by identifying new markets, products and technologies and acquiring new skills and capabilities (Lisboa, Skarmeas & Lages, 2011: 1274; Menguc & Auh, 2008: 457–458) towards envisioning and implementing un-preceded breakthrough or disruptive concepts (Baker & Sinkula, 1999: 411–412). Senge (1990) emphasizes, that double-loop learning allows an organization to seek understanding of complex relationships and thus provides a greater level of understanding how input-output relations develop. Such frame-breaking learning allows to achieve a level of higher competitive advantage than provided by adaptive learning (Slater & Narver, 1995: 63–64) and demonstrates a conscious effort of the organization to move towards unexplored territory (Lisboa, Skarmeas & Lages, 2011: 1276). High levels of explorative learning are attributed with firms acting proactively and facilitating radical innovation (Jiménez-Jimenez, Sanz-Valle & Hernandez-Espallardo, 2008: 44).

	Reason for learning	Detect/correct errors in explicit theory-in use	change implicit organizational norms
Generative Learning	proactive	Yes	Yes

Table 17: Specificities of Generative Learning

- (10) Meta learning is described as the best possible composition of OL (Baker & Sinkula, 2002: 11). It comprises of the balanced combination of adaptive- and generative learning capabilities within one organization. It is suggested, that firms which continuously balance their adaptive- and generative learning efforts achieve the most effective combination of learning (Slater & Narver, 1995: 64–65). Organizations, which exclusively focus on exploitative learning, put themselves in a very vulnerable position and risk the obsolescence of their inherent mental models. On the other hand, excessive focus on exploration will lead to high levels of OL, but may result in an excess supply of concepts and propositions which the organization cannot pursue all at a time (Slater & Narver, 1995: 64–65). Therefore, the concept underlying meta learning proposes a combination of proactive (explorative) and reactive (exploitative) types of learning. As Menguc & Auh (2008: 458) suggest, the balance between ex-

ploration and exploitation reflects a combination of efforts which are directed towards the development of the competitive position of the organization in the long-run (exploration) and the exploitation of the current competitive position and profit pools in the short-run. It allows the organization to leap forward, based on infrequent major discoveries (exploration) and to sustain the enhanced knowledge base and competitive position by continuously extending the knowledge base through adaptive learning until the firms' exploitative learning yields another leap (Slater & Narver, 1995: 63–64). In that tradition, effective managers rely on multiple sources of internal- and external information and set their scope deliberately beyond the current formal boundaries of the organizational operation mode to anticipate fundamental changes in the business environment (Slater & Narver, 1995: 64–65). Such managers might exercise personal mastery, the self-motivated quest of continuously enhancing and extending the individual horizon beyond the current, common sensual understanding (Senge, 1990).

	Reason for learning	Detect/correct errors in explicit theory-in use	change implicit organizational norms
Meta Learning	reactive & proactive	Yes	Yes

*Table 18: Specificities of Meta Learning*

In summary, research on balancing explorative and exploitative learning in firms is scarce and literature lacks well established scales to differentiate between the types of learning introduced in this chapter (Auh & Menguc, 2005: 1656; Jyothibabu, Farooq & Pradhan, 2010). Available insights however carefully point towards suggesting that a well-balanced approach to learning is most beneficial for organizations under most environmental contexts (Auh & Menguc, 2005: 1660).

Frequently research on OL utilized a derivate approach to the subject by investigating into an organizations overall learning orientation to draw conclusions on a firms' overall learning conditions.

### *2.3.3.3 Learning Orientation*

LO is conceptualized as multiple components which represent organizational values that determine and organizations willingness and ability to engage in knowledge creation and – use (Sinkula & Baker, 1997: 309; Mavondo, Chimhanzi & Steward, 2005: 1237–1238; Cambra-Fierro et al (2012: 857). Therefore, the components of LO determine (Sinkula & Baker, 1997: 309) “the degree to which an organization is satisfied with its theory in use and, hence, the degree to which proactive learning occurs. In this respect, LO affects the information that it attends to, interprets, evaluates, and ultimately accepts or rejects” (p 309). Mavondo,

Chimhanzi & Steward (2005) as well as Cambra-Fierro et al (2012: 857) note that, while OL is frequently associated with staff training and enhancement of knowledge and skills of the organization, LO is a much wider concept and comprises of elements which represent its propensity to learn and to facilitate adaptation and change of the organization in light of variations in its business environment (Mavondo, Chimhanzi & Steward, 2005: 1237–1238).

Numerous scholars reported upon the important contribution of LO to overall firm performance. For example, firms with high levels of LO are likely to engage in higher-order generative learning and meta learning and to create sustaining competitive advantage through unique organizational capabilities (Calantone & Cavusgil, 2002: 518).

Based on literature, an organization which displays a LO fosters three main components: A (1) Commitment to Learning, (2) Open-mindedness and (3) Shared Vision (Sinkula & Baker, 1997: 309). Others have argued, that learning cannot occur without an effective and efficient way of sharing information within the organization (Calantone, Cavusgil & Zhao, 2002: 516; Mavondo, Chimhanzi & Steward, 2005: 1237–1238). Therefore, academia increasingly operationalizes (4) Intra-organizational knowledge sharing as the fourth component which determines an organizations LO.

(11) An organization's commitment to learning is reflected in the emphasis that the organization, and its underlying culture place on learning (Sinkula & Baker, 1997: 309) and the resultant learning climate (Calantone & Cavusgil, 2002: 516). As such, the commitment to learning determines if – and to what level - the firm promotes the learning behaviour and reflection on underlying dynamics and mental models that guide the organizations' actions. It reflects its understanding, that OL marks a crucial investment into the organization's capabilities that ensure long-term survival (Calantone & Cavusgil, 2002: 516). A strong commitment to learning actively encourages and even requires (Baker & Sinkula, 1999: 413) the individuals within the company to learn and that the outcomes of such learnings are truly valued. Therefore, OL, and the commitment of the firm to achieve high levels of OL, reflect an organizations strategic orientation towards preparing for the future (Calantone & Cavusgil, 2002: 516).

(12) Open mindedness represents the degree to which an organization is prepared to proactively question and -change its current mental models (Sinkula & Baker, 1997: 309). Open mindedness emphasizes that one crucial aspect of OL is its ability to unlearn obsolete implicit behavioural patterns which are reflected in its theory-in-use and the underlying mental models. Companies which do not hold the capability to question and unlearn their long-held believes and historically grown guiding principles, will have a

limited capability to learn and enhance their future competitive position. This is especially important, given the increasing speed of technology change and – market turbulence which result in high levels of knowledge obsolescence (Calantone & Cavusgil, 2002: 517). Therefore, commitment to learning and open-mindedness determine the level of intensity that a firm engages in OL.

(13) *Shared vision*, on the other hand, directs the learning efforts of an organization towards an underlying, shared, purpose (Sinkula & Baker, 1997: 309). Both aspects, intensity of learning and direction, combine into OL as an overall construct and is in line with suggestions from learning theory. Shared vision provides motivation to organizational members and sparkles commitment to the common purpose and challenging vision (Hurley, 2002: 278) of an exceptional quality and level of OL. Furthermore, it contributes direction and formulates expectations with regards to the focus of learning. Such a focus is important to provide a background against which the increasing success of the learning is measured or enhancements are decided to mitigate barriers to learning. Additionally, it acts as a common ground upon which the firm may determine which innovative projects may be implemented as part of the overall vision (Calantone & Cavusgil, 2002: 516–517). A shared vision allows the organization and its members to exchange their thoughts and find common ground which is translated into mental models that are widely understood throughout the organization. As such, the organization provides structure and focus which allows its members to reduce perceptual barriers and friction amongst them and speak in one, shared language (Calantone & Cavusgil, 2002: 516–517).

(14) *Intra-organizational knowledge sharing* refers to (Calantone & Cavusgil, 2002: 517) “collective beliefs or behavioural routines related to the spread of learning among different units within an organization” (p 517). It ensures an availability and circulation of knowledge gathered through members of the firm across all hierarchy levels and across functional boundaries. Therefore, intra-organizational knowledge sharing may be seen as continuous enhancement of the organizational memory and its active utilization as a company-wide source of knowledge.

Overall, LO is frequently associated with innovative attitudes and innovative capabilities in products and processes, effective- and open leadership, decentralization (Mavondo, Chimhanzi & Steward, 2005: 1237–1238) and the possession of superior technologies (Calantone & Cavusgil, 2002: 516). A high level of LO allows an organization to be receptive to changes in its business environment (e.g. shifts in customer preferences) and to enact new behaviours which are associated with firm innovation and ultimately higher firm performance

(Lee & Tsai, 2005: 330). However, to be effectively implemented, firms must regularly overcome OL barriers. For example they need to create an atmosphere, of trust and understanding (Pérez López, Montes Peón & Vázquez Ordás, 2004: 94) which supports a continuous questioning of current organizational practices (Paladino, 2007: 536), experimentation and early failure. Prior literature has explicitly emphasizes the importance of top management support and emphasis on aspects such as risk taking, appreciation of good ideas and unconventional thinking (Hurley, 2002: 275; Buckler, 1996), as well as the role of engaging firm visions highlighting the importance of a mind-set appreciative of continuous change and improvement (Sanz-Valle, Naranjo-Valencia, & Jiménez-Jimenez, 2011: 1001) as facilitators of individual and firm learning. Especially with regards to explorative learning, a learning oriented organization must acknowledge that a high failure ratio is associated when experimenting on grounds which were never touched upon before (Marsick & Watkins, 1999: 208). The understanding, that experimentation and failure ultimately pose a learning opportunity, needs to be communicated effectively throughout the firm in order to upraise motivation and supportive sentiment. Therefore, it is crucial to understand that words and actions need to be aligned in OL. Organizations which emphasize their will to learn as part of their vision statement, but fail to *enact* learning behaviour within their company eventually discourage their workforce to participate in the learning effort and lose their credibility (Marsick & Watkins, 1999: 210; Hurley, 2002: 278). Others note, that organizations which aim to enhance their LO need to keep an eye on proliferating bureaucratization (Hurley, 2002: 278) and organizational culture as a critical determinant of organizational behaviours (Marsick & Watkins, 1999: 208; Schein, 2010)

In the context of this thesis the most relevant theme in the LO/OL research is that, “[s]trategic leadership and organizational learning have largely remained disconnected fields of inquiry (Vera & Crossan, 2004: 222)”. Thus the link between OL and the unique BS of an organization was widely ignored by academia. This thesis proposes that the level of LO displayed by an organization is contingent on its strategic intention and the emphasis it places on CCO and/or FMO. Following the argumentation, that the necessity for firms to learn needs to be related to the changes within its business environment (Sinkula, 1997: 307), it is proposed that the perceived competitive pressures and market dynamism inform the BS of an organization and subsequently its intention to exploit (adaptive learning), explore (generative learning) or engage in both (meta learning). These decisions then influence the level of LO an organization exhibits and the level of “exchange, synthesis, and application of knowledge” (Lin et al, 2013: 267) thus is truly desired for the organization, given its strategic intentions and necessities. For example, earlier studies in the domain of OL/LO (e.g. Sinkula, Baker & Noordewier, 1997; Baker & Sinkula, 1999; Mavondo, Chimhanzi & Stewart, 2005) and others which associate MO and OL/LO and their combined

effect on for instance performance (e.g. Baker & Sinkula, 2005; Paladino, 2007, 2008; Calantone, Cavusgil & Zhao, 2002) suggested that emphasis on FMO results in a higher level of importance the organization places on firm learning as an essential determinant of achieving its strategic objectives and ensuring/attaining future economic success.

#### 2.3.3.4 Learning Orientation - Omissions and Research Question 2

The most relevant omissions in prior research are summarized in the table below. These observations are the foundation for the formulation of the 2<sup>nd</sup> research question, which is presented below:

Point of attention/ Omission	Key Literature	Research implication
Link between OL/LO and BS has been widely ignored in academia	Vera & Crossan (2004); He & Wong (2004)	Investigate into link between BS and LO of an organization is warranted
Explorative/Prospective strategies are associated with higher levels of OL	Morgan & Berton (2008: 1342-1343); Sinkula, Baker & Noordewier, 1997; Baker & Sinkula, 1999; Mavondo, Chimhanzi & Stewart, 2005	Assess the level of LO for different compositions of BS

Table 19: Key omissions in Learning Orientation research

Based on the research aim in combination with the above presented omissions and contradictions, the 2<sup>nd</sup> research objective and testable research question emerge. They address the link between the firms unique BS and the level of LO it pursues. Based on the implications of prior literature, they posit that a firms BS has a direct link with the level of LO the organization exhibits. Research aim, research principles, research objective 2 and the corresponding research question are recaptured in the following table:

Research Aim	Identify the interrelations that exist between Business Strategy making and a firm's Capability to Innovate to understand how this contributes to the economic sustainability of incumbent organizations.	
Research Principles	(1) Innovation focus (2) Dynamic perspective (3) Holistic approach (4) Integration with prior research (5) Influenced by managers (6) Auditable and Representable (7) Incumbent organization context	
Research Objective		Research Question
Research Objective 2: What is the relationship between a firm's BS, which is contingent on its unique situation and – intention, and the level of LO it exhibits?		Research Question 2: The BS of an organization is significantly linked with the LO of the organization.

Table 20: Research Objective 2 and Research Question 2

#### 2.3.4 Innovation Implementation Context – Omissions and Research Question 3

In the context of the research model the construct of IIC represents the implementation/-commercialization phase of an innovative concept and enables to develop and ultimately

launch, thus to economically exploit, the inherent added value of an innovative concept. Therefore, this phase is a necessary precondition to release the economic potential of an innovation and to accrue rents to the innovator or innovating organization (Schumpeter, 1911; Gaynor, 2002; Keupp, Palmie & Gassmann, 2012; Hauser, Tellis & Griffin, 2006: 688; Van de Ven, 1986: 591). However, the conditions required to successfully move innovative concepts to their implementation may differ based on the type of innovation (e.g. product vs. process vs. business model etc.) and on the degree of novelty of the concept (Abratt & van Altena Lombard, 1993: 170).

The concept underlying the construct of IIC is based on the awareness amongst most scholars in the field, that successful innovation requires at least two stages, namely the development or invention of useful new ideas or -concepts resulting from a re-combination of knowledge ("creativity") and their subsequent utilization in practice through implementation or commercialization (e.g. in the form of novel products, - processes, -services, - business models or markets; Schumpeter, 1911; Drucker, 1985; Gaynor, 2002; Baer, 2012: 1102; Magadley & Birdi, 2012: 2; Damanpour, 1992; Axtell et al, 200: 281). Therefore, contrary to the colloquial use of the word "innovation" as a synonym for anything that is new, innovation in its initial conceptualization refers to a creative idea which is *successfully implemented* or commercialized (Magadley & Birdi, 2012: 2; Gaynor, 2002: 16) so "entrepreneurial profits" can accrue to the organization. Consequently, innovation is inseparable from a successful implementation and commercialization (Schumpeter, 1911; Ahmed, 1998: 30).

Scholars frequently suggested, that the act of idea creation and the act of idea implementation/ commercialization require fundamentally different preconditions and should, thus, be approached separately (Axtell et al, 2000). Despite the awareness of distinct differences between knowledge creation and implementation, frequently prior research on the subject did not separate between the inherent constructs, concentrated on the act of creativity only, or assumed that idea implementation is a routine process automatically following the decision to implement which does not merit further analysis or academic attention (Baer, 2012: 1102; Magadley & Birdi, 2012: 2; Keupp, Palmie & Gassmann, 2012). Given the interest of academia in the topic of innovation as a source for organizational survival and –renewal, the relative scarcity of research on determinants of successful idea implementation is notable and warrants further empirical analysis (Baer, 2012: 1102). Further attention is especially warranted as authors note that the sole production of new ideas/ concepts is not sufficient by itself to result in economically successful innovations. It needs to be complemented by firm capabilities which allow an efficient and effective implementation/ commercialization of creative outcome (Baer, 2012: 1114; Keupp, Palmié & Gassmann, 2012).



While the act of idea creation is alleviated especially through individual factors, such as creativity, (Magadley & Birdi, 2012: 3), idea implementation is strongly influenced by organizational level factors, such as group composition and top management support for innovation (Magadley & Birdi, 2012: 3; Axtell et al, 2000; Axtell, Holman & Wall, 2006; Damanpour, 1991). Due to the influences of social processes such as support, involvement and approval of other players, the idea implementation stage is frequently referred to as a social- (Magadley & Birdi, 2012: 3) or social-political process which can be influenced to increase the probability of successful innovation implementation (Baer, 2012: 1102–1103; Dahlggaard-Park & Dahlggaard, 2010: 164; Farjoun, 2010: 212). Axtell et al (2000: 281) emphasize that team and management support is a critical determinant of the successful implementation of ideas.

Given that “[o]nly those new product development projects that do get adequate funding, staffing, and management attention have a chance to succeed; those that are starved of resources will languish [and ...] the pattern of innovation in a company will mirror quite closely the patterns in which resources are allocated (Christensen, 1997: 119).” The role of management is a critical component which shapes the configuration of an organizations’ CTI. Thus, the central observation in the context of this research and DIT is that organizational routines, such as resource allocation, are a central determinant of what innovative concepts and types of innovations receive support in an organization (Christensen, 1997). Accordingly, the perceived support employees obtain from organizational practices, procedures and policies (i.e. represented in the overall organizational climate for innovation and the firm culture; Schein, 2010; Ahmed, 1998: 32) relating to the development of innovations contributes to an organizational climate in favour of innovation and increases the likelihood of successful rent generation from the successful implementation of new concepts/ideas (Magadley & Birdi, 2012: 6; Dahlggaard-Park & Dahlggaard, 2010). Such supportive climates were frequently associated with high overall levels of innovation in organizations and reward innovative behaviour and foster shared commitment towards new ideas (Magadley & Birdi, 2012: 5–6). For example, Ahmed (1998: 37-38) lists the level of “trust and openness”, “cross functional interaction”, “freedom and risk-taking”, “awards and rewards”, “innovation time and training” and a top management team committed to achieve innovation as key determinants of successfully innovating firms. And Dewar & Dutton (1986) found that innovation is additionally fostered by “communication frequency (p. 1424).”

Prior literature recognizes facilitators for developing/implementing innovations in organizations, such as organizational infrastructure, culture and resources (Gaynor, 2002; Capon et al, 1992: 161) which include mechanisms of resource allocation, technologies, human resource practices and expertise in operations (Siguaw, Simpson & Enz, 2006: 561). For

example, Damanpour (1991: 558-559) identified and assessed 13 organizational variables associated with firm innovation in a meta-analysis and provides supportive results for 10 of these dimensions. Despite the academic attention to innovation research, rarely was the degree of their supportiveness to incremental innovation or potentially disruptive innovation concepts assessed before the insights of DIT (Christensen, 1997) and research conducted produced inconsistent recommendations (e.g. Damanpour, 1991: 582-583). Given the inherent interest of researchers and practitioners in understanding how organizational factors may enhance the innovative output of an organization, “[t]his lack of systematic attention is especially surprising given that innovation, particularly in dynamic contexts, is widely recognized as being critical to the growth and competitiveness of organizations (Baer, 2012: 1102).“

Therefore, the differentiation between the implementation of *sustaining* ideas (those which are close to the knowledge base and processes of the firm and are of limited newness to the organization) and potentially *disruptive* ideas (those which are far from the current knowledge base) is crucial. This separation emphasizes explicitly that “[d]ifferent support systems (culture, structure, reward systems) are required for success in executing different innovation strategies. The system with which a company finds itself as a result of its history will be more supportive of some approaches to innovation and less supportive of others (Gilbert, 1994: 21).”

Research suggests, that individual motivation and, as a result the emphasis management, puts on the importance of out-of-the-box thinking are important determinants for the implementation of explorative innovations. Because of the potentially fundamental changes to power structures, roles and status within an organization, inherent to creative, game changing ideas, the probability of resistance and ultimately rejection is higher than with sustaining ideas (Baer, 2012: 1105). Despite the objective potential of some of the most creative concepts, their emergence holds the potential to result in obsolescence of grown power structures and are thus more likely to be treated with initial hostility (Baer, 2012: 1105; Dewar & Dutton, 1986: 1425). While, on the other hand, innovations which were close to the current mode of operation of the organization were implemented more smoothly and with individual motivation playing a by far less crucial role than with game changing ideas (Baer, 2012: 1105). Subsequently, innovative ideas which are game-changing or disruptive in nature are more likely to be implemented, if individuals exhibit high levels of motivation to pursue their idea despite organizational resistance and successfully obtain organizational support to do so (e.g. based on advanced networking skills; Baer, 2012: 1114–1115).

Furthermore, according to (Baer, 2012), the ability of individuals to mobilize support from their network and of top management are more likely to influence resource allocation processes in favour of the implementation of their ideas, both exploitative and explorative in nature (Baer, 2012: 1105). Subsequently, the strategic direction of top management taken towards fostering explorative and/or exploitative concepts and ideas and paving their way to implementation is a key determinant of successful innovations (Hoffman & Hegarty, 1993: 555). After all, top management decisions are a crucial determinant of the availability and allocation of resources, such as financial- and human resources as well as decision power, sponsorship, formal guidance and the influence on overall organizational sentiment towards innovation and their adoption (Hoffman & Hegarty, 1993: 550–555). Furthermore, the BS of a firm will influence the specific organizational competencies developed to support the implementation of innovations which are in line with the overall objectives of the firm (Siguaw, Simpson & Enz, 2006: 561). Research suggested, that top management support is especially crucial for innovations in the early stage of their implementation. It is this support which allows the initiative to gain a critical mass and attract enough supportive resources to subsequently pass organizational hurdles in the innovation implementation process (Axtell, Holman & Wall, 2006: 515).

Thus, the IIC prevailing in a firm is posited as the firm specific environment which allows the efficient and effective implementation of innovations in line with the specific BS of the company. Subsequently, firms will encourage the development of organizational competencies that facilitate the implementation/ commercialization of innovations (sustaining vs. radical/disruptive) in line with their strategic intent. Therefore, the climate that fosters the implementation of sustaining- or radical/disruptive innovations or both will be contingent on the BS and innovation strategy an organization deems necessary to achieve its strategic objectives.

The most relevant omissions in prior research are summarized in the table below. These observations are the foundation for the formulation of the 3<sup>rd</sup> research question, which is provided in the following table:

Point of attention/ Omission	Key Literature	Contribution
Despite the accepted importance of support systems for the success of innovation, research on the IIC of organizations is scarce	Baer (2012: 1102); Schumpeter (1911); Dobni (2008); Keupp, Palmie & Gassmann, (2012)	Additional research into the IIC of organizations is warranted

Point of attention/ Omission	Key Literature	Contribution
Despite the importance of alignment between organizational capabilities and BS to enhance the effectiveness of bringing forward innovation, the link between BS and IIC was widely ignored by prior research	Dobni (2008); Keupp, Palmie & Gassmann, (2012)	Research into the link between the unique BS of an organization and the configuration of its IIC is desirable to determine mechanisms which will enhance the level of alignment.

Table 21: Key omissions in Innovation Implementation research

Based on the research aim in combination with the above presented omissions and contradictions, the 3<sup>rd</sup> research objective and testable research question emerge. They address the link between the firms unique BS and the level of favourability of the IIC prevailing within company. Based on the implications of prior literature, they posit that a firms BS has a direct link with the characteristics and favourability of the IIC the organization exhibits, which determines the level of support received from the organization when advancing and implementing evolutionary and/or revolutionary innovative concepts. Research aim, research principles and research objective 3 are illustrated together with the 3<sup>rd</sup> research question in the following table:

Research Aim	Identify the interrelations that exist between Business Strategy making and a firm's Capability to Innovate to understand how this contributes to the economic sustainability of incumbent organizations.	
Research Principles	(1) Innovation focus (2) Dynamic perspective (3) Holistic approach (4) Integration with prior research (5) Influenced by managers (6) Auditable and Representable (7) Incumbent organization context	
Research Objective		Research Question
<u>Research Objective 3:</u> What is the relationship between a firm's BS, which is contingent on its unique situation and – intention, and the level of favorability its IIC exhibits?		<u>Research Question 3:</u> The BS of an organization is significantly linked with the configuration of the IIC of the organization.

Table 22: Research Objective 3 and Research Question 3

### 2.3.5 Capability to Innovate – and Research Question 4

The proposed construct of CTI is posited to ultimately facilitate firm innovation through 1) organizational capabilities to sense the explicit needs of current and the implicit needs of future customers and to acquire information about developments within the firm environment and beyond the traditional scope of the organization and to stimulate innovation through superior streams of information (Stock & Zacharias, 2011: 874). The value of sophisticated skills in anticipating shifts in customer preferences (explicit and latent) and continuous proactive market surveillance and openness to new discoveries is especially valuable in increasingly dynamic business environments (Teece, Pisano & Shuen, 1997: 520).

2) The ability of the firm to learn and subsequently to adjust, extend and renew explicit and tacit routines, processes and mental models through explorative and exploitative endeavours. And for inter-organizational coordination and sharing of important knowledge across divisions, which is an element of the original MO construct, as well as 3) the ability to execute various forms of innovations by translating them into commercial application and rent-generation (Menguc & Auh, 2006: 65; Hurley & Hult, 1998: 43). IIC represents the third step of the proposed framework. Therefore, the IIC provides the capability of the organization to implement actions of renewal and thus innovations that will bring forward the organization as a whole. Such innovations may take the role of incremental innovations or disruptive innovations.

Irrespective of the specific BS, it is of interest how the CTI component constructs interrelate. In line with the work of (Baer, 2012) it is suggested that innovation as an organizational performance output may be described as a multiplicative function in the form:  $\text{Innovation} = f \{(\text{BS} \times \text{MO} \times \text{LO} \times \text{IIC})\}$ . Therefore, the CTI construct is intended to contribute to greater understanding of the complex interrelationship of constructs resulting in an organization's CTI and to ultimately help create and maintain a position of sustainable competitive advantage (Siguaw, Simpson & Enz, 2006: 558; Hult & Ketchen, 2001: 902; Menguc & Auh, 2006: 64; Baker & Sinkula, 2005: 498). Frequently, authors argue, that the emphasis of management should shift from focus on specific innovations (e.g. product-, service-, process-, administrative innovations) towards obtaining an overall, collective organizational orientation towards innovation and fostering capabilities and mindsets which effectively and efficiently facilitates all types of innovations to occur within an organization and across all ranks and functions to ensure a sustainable long-term firm advantage through innovation (Theodosiou, Kehagias & Kasikea, 2012: 1062; Siguaw, Simpson & Enz, 2006: 570; Teece, 2007: 1344). Thus, the strategic aim of the organization should focus on most effectively orchestrating its assets and capabilities towards achieving value-enhancement (Teece, 2007: 1344). Subsequently, CTI is posited as a meta-competence which reaches beyond pure operational competence. Continuous firm renewal in the face of market dynamism requires the effective composition and alignment of multiple firm resources (Olson & Slater, 2005: 49), such as organizational structure, processes, people and knowledge management (Lisboa, Skarmeas & Lages, 2011: 1276; Siguaw, Simpson & Enz, 2006: 558) and ultimately top managements *explicitly* stated will to take the organization to new shores.

Based on the research aim in combination with the above presented evidence in favor of a holistic and synergistic perspective on firm innovation, the 4<sup>th</sup> research objective and testable research question emerge. They address the alleged synergistic interplay between MO (CCO), MO (FMO), LO and IIC as an antecedent of firm innovation. With the exception

of the link between the constructs of MO (CCO) and MO (FMO), which was reported in prior research to be insignificant, a positive and synergistic relationship amongst the constructs is expected (Yu & Hang, 2010: 444; Tushman & O'Reilly, 2002; Hult & Ketchen, 2001: 899-900; Peters & Waterman, 2006).

Research aim, research principles, research objective 4 and the corresponding research question are provided in the following table:

Research Aim	Identify the interrelations that exist between Business Strategy making and a firm's Capability to Innovate to understand how this contributes to the economic sustainability of incumbent organizations.	
Research Principles	(1) Innovation focus (2) Dynamic perspective (3) Holistic approach (4) Integration with prior research (5) Influenced by managers (6) Auditable and Representable (7) Incumbent organization context	
Research Objective		Research Question
Research Objective 4: Is there a synergistic relationship between an firm's MO (CCO), MO (FMO), its LO and its IIC, which support the holistic perspective of this research?		Research Question 4: The perceived MO (CCO), MO (FMO), LO and IIC in an organization are significantly related (with near zero correlation between MO (CCO) and MO (FMO)).

Table 23: Research Objective 4 and Research Question 4

### 2.3.6 Strategic alignment – and Research Question 5

In line with the framework outlined in chapter 1 which identifies the proposition of the research model and the specific requirements of the research model to serve as a diagnostic framework in the context of an incumbent organization in the FMCG industry, a representative, multiple informant approach is desirable for the research at hand. Such an approach allows to (1) assess the diffusion and acceptance of BS across all hierarchical levels within the single organization context of this research and to (2) enhance science by utilizing a research design which is rarely used in prior research.

Throughout this chapter, the role of BS for the direction and intensity taken in MO, LO and in the availability of a supportive IIC within an organization is highlighted (Ahmed, 1998). Thus, a universal acceptance of the communicated BS across all organizational ranks appears paramount for the implementation and successfully aligned (Sabherwal & Chan, 2001; Johnson & Lederer, 2010: 138; Bergeron, Raymond & Rivard, 2004; Dobni & Luffman, 2000: 910; Harreld, O'Reilly & Tushman, 2007: 25) execution of a given BS. Leaders of a firm may think and act strategically, yet, without employees to implement its strategies, the firm will not achieve its goal. It is thus critical for the company to obtain the support of employees from all ranks to successfully facilitate its BS and associated

activities. (Zhou et al., 2005: 1052). However, most prior research in the field on the interplay between BS, MO and LO and their effect on firm innovation and – performance was conducted cross organizational and relied on single informant/key informant strategies to obtain results (Theodosiou, Kehagias & Katsiekea, 2010: 1059). These approaches adopted the understanding that one or few key informants are knowledgeable of the *factual* configuration of firm capabilities on all levels of the organization and ultimately (partially) determining the innovation capability in focus of the respective research projects.

Only a limited number of research in recent years emphasized the need to assess the perception of multiple informants on multiple levels of the organization to strengthen the results obtained from a quantitative research project and mitigate measurement error and common method bias (e.g. Theodosiou, Kehagias & Katsiekea, 2010; Zhou et al, 2005; Song & Parry, 2009; Stock & Zacharias, 2011; Bergeron, Raymond & Rivard, 2004: 1005; Dobni & Luffman, 2000: 910). Therefore, this thesis follows the reasoning of Theodosiou, Kehagias & Katsiekea (2010: 1059) and Zhou et al (2005: 1056), who call for additional research on the subject of strategy translation to all hierarchical levels. They argue that effective strategy making incorporates the act of execution, which is achieved through a diffusion of the strategic objectives to all members of the organization and ultimately enactment. Furthermore, multiple-informant designs are furthermore preferable to single informant designs due to the expected superiority of data quality achieved (Zhou et al, 2005: 1053) and the conclusions they allow to be drawn on the specific characteristics of the firm.

Consequentially, this research project aims to investigate into the effect of the *perceived* BS on the *perceived* CTI of the organization. It thus takes into account the hierarchical level of the individual respondents to the questionnaire in order to determine potential differences in perception across the ranks. This allows to draw inferences on the effectiveness and efficiency of strategy diffusion to people throughout the organization, and the subsequent effect on the configuration of organizational capabilities. This argumentation follows the logic that the more stringent and clear a BS is transported to all members of the company, the less will confusion arise in its interpretation and an effective and implementation of strategic objectives is possible (Lukas & Ferrell, 2000:245).

Hence, the presented framework of BS and CTI allows the organization to reconcile its desired level of FMO and CCO, as reflected in the communication and enactment of its BS, with the actual levels achieved in FMO and CCO (Berthon & Hulbert, 2004: 1069). The measure is thus a means of reviewing the effectiveness of strategy implementation (Song, 2009: 145) and allows for potential proactive adjustment of BS to influence different aspects of firm CTI by means of emphasis on FMO and CCO (Berthon & Hulbert, 1999: 49) in face of the unique environmental context the firm operates in (Berthon & Hulbert, 2004: 1071).

Based on the research aim in combination with the above presented impetus to achieve strategic alignment throughout the organization to effectively bring to live BS (e.g. Sabherwal & Chan, 2001), the 5th research objective and testable research question emerge. They aim to investigate into the level of alignment between the perceptions of the configuration of BS, MO (CCO), MO (FMO), LO and the favorability of the IIC of the organization reported from its members. The participants represent members on 4 different hierarchical levels and across various functional boundaries and represent in their composition the overall population of the firm. Thus the research findings are intended to provide insights into the whereabouts of the organization in an “auditable” and “actionable” fashion and allows to investigate into how well the strategic intentions and subsequent perceptions of top management are echoed across other hierarchical ranks. Given the relative stability of market dynamics and established strategic direction of the target organization, it is expected that the perceptions of BS, MO (CCO), MO (FMO), LO and IIC are similar across all ranks of the organization and thus indicate a high level of alignment, which was previously associated with higher organizational performance (Sabherwal & Chan, 2001; Jaruzelski, Loehr & Holman, 2010).

The following table provides an overview on the research aim and research principles together with research objective 5 and research question 5:

Research Aim	Identify the interrelations that exist between Business Strategy making and a firm's Capability to Innovate to understand how this contributes to the economic sustainability of incumbent organizations.	
Research Principles	(1) Innovation focus (2) Dynamic perspective (3) Holistic approach (4) Integration with prior research (5) Influenced by managers (6) Auditable and Representable (7) Incumbent organization context	
Research Objective		Research Question
<b>Research Objective 5:</b> Do the perceptions of high-ranking key informants provide a representative account of the configuration of the organization, as perceived by lower-ranking members of the firm who are concerned with BS implementation and execution on a daily basis?		<b>Research Question 5:</b> Given an effective BS implementation, the perceived BS and perceived characteristics of MO (CCO); MO (FMO), LO and IIC do not deviate significantly across organizational ranks and/or organizational functions.

Table 24: Research Objective 5 and Research Question 5

## 2.4 Chapter Summary

The following overview recaptures the research aim and research principles presented in Chapter 1 and provides a brief account of how these were addressed in the context of this chapter.



Research Aim		Identify the interrelations that exist between Business Strategy making and a firm's Capability to Innovate to understand how this contributes to the economic sustainability of incumbent organizations.
Research Principles		Achieved how?
No 1	Focus on innovation	Synergistic perspective centered on the objective to achieve innovations. Integration of the perspective of IO, sketch innovation process and DCV.
No 2	Dynamic perspective	
No 3	Holistic approach	
No 4	Place in context of prior research	Research variables are all relevant in the context of prior research and thus present in their combination a useful extension and allow to derive additional insights into the interdependencies between these variables
No 5	Influenced by management	BS presented as a key determinant of the CTI of an organization and illustrated as a key determinant of organizational configuration.
No 6	Auditable + representative	<ul style="list-style-type: none"> <li>- Key organizational constructs and components of successfully implemented innovations were identified. Furthermore, the research is based on concepts which were well researched in prior research and each represent a key variable conducive of bringing forward innovations in organizations</li> <li>- 5 research questions are derived from literature to assess the interrelationships derived from prior reasoning in the context of this research</li> </ul>
No 7	Context: Incumbent multi-national organization	The research model takes into consideration the context it is designated for

Table 25: Chapter 2 summary

Therefore, all requirements on the conceptualization and operationalization are addressed throughout this chapter. Provided that the research aim explicitly warrants the validation of the framework to derive auditable and representative insights into the specificities of the target organization, in the following chapter the research design is presented which adheres to the principles of this research.

Chapter 3: Research Paradigm

3.1 Introduction

Research Principles	(1) Innovation focus (2) Dynamic perspective (3) Holistic approach (4) Integration with prior research (5) Influenced by managers (6) Auditable and Representable (7) Incumbent organization context	
Chapter Aims	Activities	Outcomes
To outline the most prominent research approaches and justify the selection of a research design for this study	Systematically review and consider epistemological, ontological and methodological choices available	Selection of an adequate research design to satisfy the research aim

Table 26: Key deliverables of chapter 3 and research principles

In chapter 1, 7 research principles were introduced. Chapter 2 presented a holistic, dynamic and innovation focussed research framing, which adhered to research principles No 1-3. Furthermore, focal constructs were identified in prior research to place this thesis in the context of prior academic work (research principle No 4). The framework, which is provided below, posits that firm Capability to Innovate (CTI) is contingent of the BS of the particular firm and highlights the role of management to determine its composition (research principle No 5). Based on the omissions from prior research presented in chapter 2, 5 research objectives and a corresponding number of research questions were introduced. The alleged interrelationships between the variables are presented in the graphical model above (Roberts, 2010: 163-165; Creswell, 2009: 116-118):

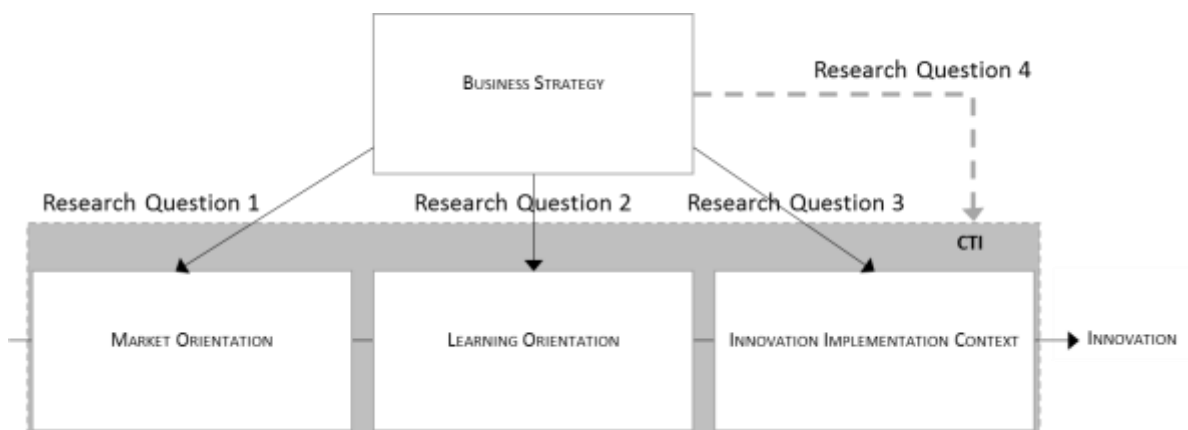


Figure 11: Research framework and Research Questions 1-4

This chapter illustrates, how these theorized interrelationships may be assessed empirically. Therefore, it is mainly concerned with research principle No 6, which calls to obtain an auditable and representative account of the peculiarities of the organization’s CTI. Furthermore it intends to set the stage to assess the alleged synergistic interplay between Market Orientation (MO), Learning Orientation (LO) and the Innovation Implementation

Context (IIC) of the firm, and to determine the degree of influence Business Strategy (BS) has on their configuration. Moreover, this chapter takes into account the research principle No 7 (“incumbent organization context”) as the research takes place in an incumbent multinational organization in the FMCG industry.

This chapter comprises of 2 main parts. The 1<sup>st</sup> section illustrates the selection of an adequate research design (i.e. the paradigm utilized and the inherent ontological-, epistemological-, methodological positioning of this research and the justification of the choice of pertinent methods selected for the collection of data) which adheres to the research aim and the specified research principles. The 2<sup>nd</sup> section treats the instrumentation (i.e. provides details on the content and fit of research instruments selected as component constructs for the final research instrument utilized in the research project central to this study) and touches upon the survey instrument and the selection of the inherent component constructs obtained from prior research, the process of pilot study conduct and data collection.

## 3.2 Research Design

### 3.2.1 Research Paradigm

A research paradigm represents a distinct perspective or -“worldview,” which guides the actions taken by a researcher (Creswell, 2009: 6). The selection of such a research paradigm is ideally directed by the specific research question aimed to be addressed as part of a given research project (Clough & Nutbrown, 2012: 21). A research paradigm comprises of a coherent set of assumptions and choices including the research philosophy (i.e. ontology and epistemology) as well as the research strategy (i.e. methodology, methods and approaches to data analysis applied in a research project; Blaikie, 1993: 106; Hiles, 1999: 5). Thus the thorough construction of a coherent research design allows the researcher to address the research question most effectively and ultimately to contribute to the development of knowledge and practice.

The interrelation of the component constructs of an overall research design are illustrated in the following figure:<sup>19</sup>

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<sup>19</sup> With regards to the order of ontology and epistemology provided herein, note that the order remains contested (Marsh & Stoker, 2010: 186).

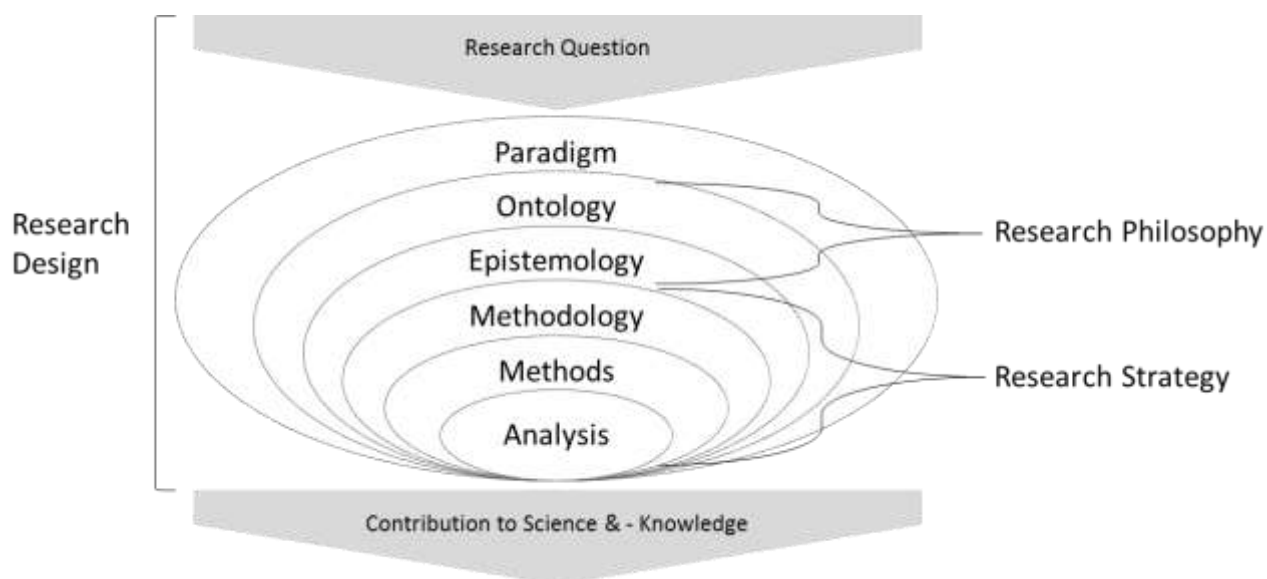


Figure 12: Research paradigm: A coherent approach to address a research question

Several authors emphasize that, with regards to the selection of an appropriate research paradigm, there is no “right” choice per se (Clough & Nutbrown, 2012: 21). For example, Blaikie (1993: 108) states that “a paradigm is not true or false, only useful in solving puzzles which it defines, using criteria which it specifies. Truth becomes a matter of community consensus (p. 108)”. Clough & Nutbrown (2012: 21) emphasize that researchers should not initially limit themselves to the sole application of only one single research paradigm to any potential research question, but be prepared to flexibly alter their choice of research paradigm and inherent ontological-, epistemological- and methodological choices *when advantageous to more effectively answer a specific research objective*.

However, according to Creswell (2009: 3) and Blaikie (1993: 202), the choice of a research design is naturally influenced to some extent by the researcher’s prior experiences and general preferences (e.g. opting for research procedures with predetermined, linear- or flexible and ambiguous processes; Blaikie, 1993: 201), as well as the intended audience and requirements of (potential) financiers of a study.

There are various different research paradigms discussed throughout literature (e.g. Post-positivism, Constructivism, Advocacy/Participatory or Pragmatism; Creswell, 2009: 6) and approaches are frequently marked as contested or contestable (Marsh & Stoker, 2010: 186). With regards to this thesis, it is neither intended nor possible to resolve the long-standing controversies (Blaikie, 1993: 11/201) involved in the academic discussion and – application of research philosophies. However, despite a widely inconsistent description of research paradigms (see for example: Creswell, 2009; Blaikie, 1993; Crotty, 1999; Marsh & Stoker, 2010) agreement between the publications can be found on the provision of a quantitative paradigm and a qualitative paradigm to outline *fundamental* differences in the

worldviews a researcher can take. Those most widely known and most relevant for the selection of an appropriate research paradigm for this research, and to put the choice into perspective, are Positivism/Post-positivism (i.e. mainly quantitative), Constructivism/Interpretivism (i.e. mainly qualitative; Creswell, 2009: 6). Quantitative- and qualitative paradigms are frequently presented as two opposing ends of a continuum of perspectives available to a researcher. At the same time, pragmatism reflects a widely unprejudiced approach, which aims to most effectively combine aspects from both the quantitative- and qualitative domain into an overall research design (Creswell, 2009) in an effort to most adequately answer a research aim irrespective of any pre-determination.

The elements of a given research paradigm, namely the implication for the choices of ontology, epistemology, methodology, methods and data analysis are briefly reviewed in the following paragraphs. The overview is by no means intended to exhaust the subject. It aims to provide a brief synopsis of the key differences in the most fundamental positions to ultimately allow the reader to re-enact the choices taken with regards to the research paradigm employed to address the research questions inherent to this thesis. The synopsis is followed by the presentation of the research paradigm considered most suitable to address the research question, complemented with a rationale which provides a justification for this selection.

### 3.2.2 Ontology

According to Furlong & Marsh, published in Marsh & Stoker (2010) the key ontological question is on the nature of 'being' and aims to answer the question on "what is the form and nature of reality and, consequently, what is there that can be known about it (p 185)?" Thus, ontology it is essentially about 'what exists'. Following Blaikie (1993: 202), "approaches to social enquiry can be divided into two groups in terms of their ontological assumptions: they are either realist or constructivist."

The approaches of realists and constructivists to the existence of social reality can be, again, understood as two opposing ends of a continuum. While realists approach reality as "something out there" which exists independently of the knowledge – and person of the researcher, constructivists perceive reality as a result of social construction. Thus, constructivists posit, contrary to realists, that no single reality exists but a near infinite number of context dependent socially constructed "realities."

As a result, realists posit that "uniformities can be observed (Blaikie, 1993: 202)" by the researcher without influencing or altering their manifestation (e.g. singular- or fragmented variables that represent the truth or reality). In their view, "data are in numerical form and can be classified and objectively described and measured through stable rules of formulae

independent of the observer. Constructivists take an opposing standpoint and resent observation as an inappropriate attempt to the exploration of social reality. According to Blaikie (1993: 202) positivism, critical rationalism and realism share the ontological position of realists, while that of constructivists is shared by e.g. interpretivism, critical theory, structural theory and feminism as the most widely recognized approaches.

The following figure provides a basic overview on the most utilized ontological positions and their understanding on the nature of reality (based on Marsh & Stoker, 2010: 185; Blaikie, 1993: 202):

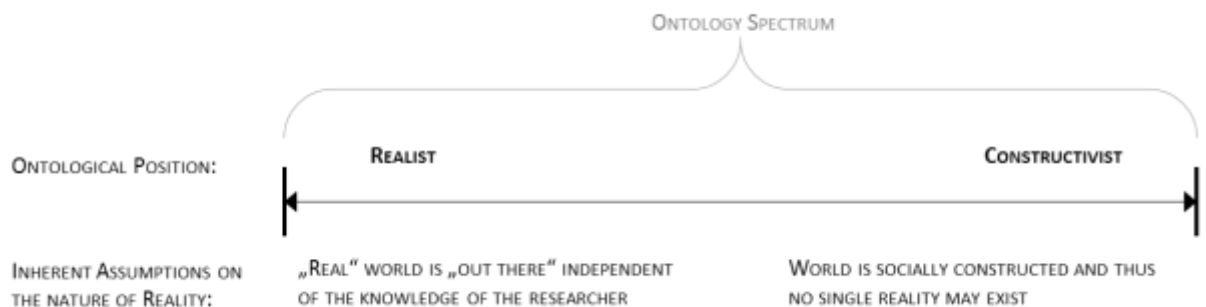


Figure 13: Ontological Positions and their view of reality

### 3.2.3 Epistemology

Ontology and epistemology are closely related, while this relationship remains a contested issue (Marsh & Stoker, 2010: 186). With regards to the ongoing discourse it is neither intended nor possible to provide a solution to the contradictions and inconsistencies involving the ontology – epistemology debate as part of this thesis. However, as suggested by Marsh & Stoker (2010: 186), in the ongoing debate on the nature of the relationship between the two, researchers “should adopt a position which makes sense [...] and use it consistently, while acknowledging that it is contested.”

Epistemology is broadly defined as “a theory of knowledge; it presents a view and a justification for what can be regarded as knowledge- what can be known, and what criteria such knowledge must satisfy in order to be called knowledge rather than beliefs (Blaikie 1993: 7)”.

There are a multitude of epistemological positions known to researchers with the most recognized provided in the following figure, which outlines a continuum of potential vintage points (based on Marsh & Stoker, 2010: 186):

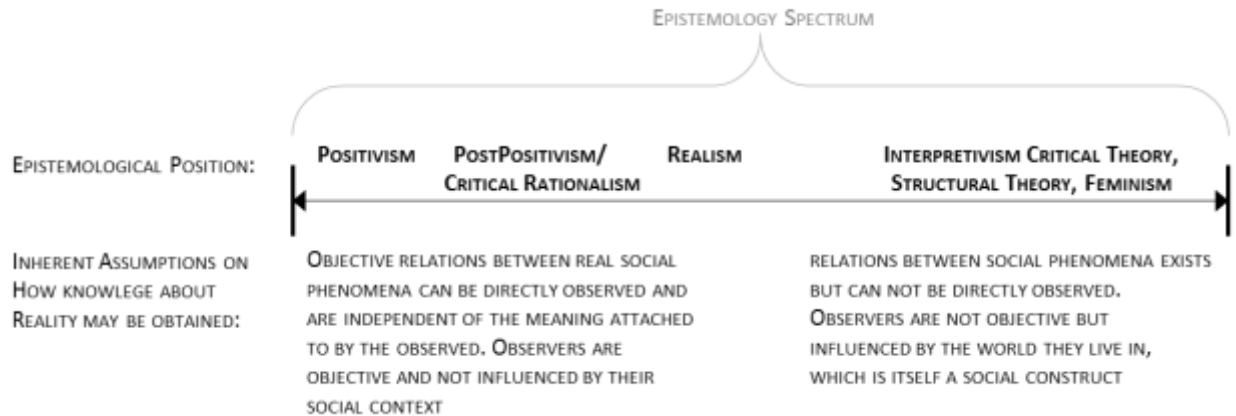


Figure 14: Epistemological Positions and the knowledge about reality

Positivism, Post-positivism/ Critical Rationalism and Realism share the ontology of an “ordered universe made up of atomistic, discrete and observable events (Blaikie, 1993: 94).” However, these philosophies differ in their approach on how to gain knowledge. In its epistemology, positivism implies that knowledge may only be derived from scientific methods such as experiments, observations and comparative analysis and allows for context independent generalizations and ultimately the *prediction* of phenomena (Blaikie, 1993: 94-95; 98). Post-positivism/ critical rationalism primarily rejects the epistemology of positivism. “Nature and social life are regarded as consisting of essential uniformities [... with] the aim of science to discover these uniformities, to find universal statements which are true because they correspond to the facts of nature (Blaikie, 1993: 95).” The key difference between positivism and post-positivism/ critical rationalism is that deductive theories (derived from both, empirical observations/experiments or theoretical reasoning) represent one of the early stages of research and *allege potential regularities* in the (social) world. The result of deductive reasoning is the formulation of research questions or -hypotheses which guide the subsequent research and, most importantly, make the researcher aware of his own selective and potentially biased position in the selection and formulation of hypotheses (Blaikie, 1993). As mentioned by Clough & Nutbrown (2012:10) “all social science is saturated (however disguised) with positionality.” In the last step of post-positivist/ critical rationalist research, the alleged regularities are ‘rationally’ tested through statistical methods and the theory provided becomes refuted or preliminarily accepted (Blaikie, 1993: 94-96). Realists share the ontological understanding of positivism and post-positivism/ critical rationalism and postulate a reality independent of the researcher (Blaikie, 1993: 98-99). Realists aim to *explain* observable phenomena by deriving *hypothetical models* which are intended to represent underlying structures and mechanisms observed. In the eyes of a realist the element of explanation of (social) phenomena (versus that of prediction as desired by positivists) presents the ultimate objective of science.

Interpretism is shaped by a constructivist ontology which emphasizes the role of social construction of meaning and reality (Blaikie, 1993: 96). The epistemology of interpretism posits that knowledge may be derived by the researcher immersing into social reality and the reconstruction and transformation of “everyday concepts and meanings (Blaikie, 1993: 96)” into scientific knowledge. This knowledge provides the basis for the formulation of new theories. Interpretism shares its ontological assumptions with such epistemological perspective as critical theory, structural theory and feminism (Blaikie, 1993; Marsh & Stoker, 2010: 186). These positions are named as a matter of completeness, however are not relevant for the theoretical positioning of this research (for more details see for example Blaikie, 1993: 97f).

### 3.2.4 Methodology

In the following paragraphs, methodologies (also referred to as ‘strategies of inquiry’; Creswell, 2009:11) are briefly reviewed and the linkage between ontology, epistemology and subsequently methodology are reviewed. While the former involves the philosophical underpinning of research, methodology involves the practice of research and defines its research strategy.

According to Blaikie (1993: 7), methodology “is the analysis of how research should or does proceed. It includes discussions of how theories are generated and tested – what kind of logic is used, what criteria they have to satisfy, what theories look like and how particular theoretical perspectives can be related to particular research problems.” Clough & Nutbrown (2012: 25) suggest that “methodology starts quite simple by asking such questions as: ‘Why interview?’, ‘Why carry out a questionnaire survey?’, ‘Why interview 25 rather than 500 participants?’” and acknowledge that while “decisions such as these are apparently often practical [they frequently] carry very deep, often unarticulated implications (p 25)” on the research.

Research methodologies can be widely categorized as quantitative strategies and qualitative strategies (Creswell, 2009:12). Mixed method approaches utilize elements of both quantitative- and qualitative strategies to allow for greater depth of understanding than with only one single approach and to mitigate the impact of bias inherent to each method (Roberts, 2010: 142) through triangulation of preliminary findings.

According to Roberts (2010: 141) the selection of an appropriate methodology for a given research depends on (1) the problem to be investigated, (2) the purpose of the study, (3) the theory base and (4) the nature of the data. It is thus essentially about the question where the research process begins and whether “it start[s] with observations or gathering [of] data



which are then used to develop explanations or [...] with a theory, a hypothesis or a model which is then tested by making observations or gathering data (Blaikie, 1993: 131).”

Quantitative approaches generally strongly focus on the *result* of a phenomenon. Qualitative approaches, on the other hand, allow to make sense from the analysis of the *process* that leads to a given phenomenon (Akwei, 2007: 48).

Based on this differentiation, four different approaches can be identified: Deductive-, inductive-, retroductive- and abductive research strategies (Blaikie, 1993: 131). In the following, and in anticipation of the outcome of paradigm selection for the research aim at hand, the underlying reasoning for deductive and inductive strategies are outlined to provide insights into the most contrasting approaches to social science (for an extensive review of adductive- and retroductive strategies, see Blaikie, 1993: 131).

Deductive strategies intend to derive facts from existing theories (Blaikie, 1993: 132-133). This research strategy, which is frequently referred to as *hypothetico-deductive* or *falsificationist* approach aim to refute hypotheses (Blaikie, 1993: 143). In order to be refutable, hypotheses need to be falsifiable. While hypotheses can never be proven to be “correct”, they stand as preliminarily accepted, or supported, until eventually a superior thesis falsifies them. This reasoning was brought forward by the philosopher Karl Popper. Deductive strategies are appropriate when” researchers seek facts and causes of human behavior and want to know a lot about a few variables so differences can be identified (Creswell, 2009: 142)” through the collection and analysis of primarily numerical data.

Inductive strategies on the other hand essentially aim to derive a general/ universal- and at best generalizable theory from the observation of a singular event, state of affair or particular statement (Blaikie, 1993: 132). The aim of the researcher is to gain knowledge in an initially broad area under study by investigating into people’s opinions, perceptions and feelings involved with the phenomenon under study (Creswell, 2009: 143). According to Blaikie (1993: 137) inductive strategies consist of four key elements: (1) Observation and recording of all facts without selection or interpretation, (2) Analysis, comparison and classification of data, (3) Based on this analysis, generalizations are drawn from the relationships between the components and (4) these generalizations are then subject to further testing. Thus, the research process commences with observation and results in the generation of theory.

Overall, while inductive strategies are mainly concerned with understanding of processes, deductive strategies are -aimed at specifying causalities. The aim of deductive strategies to derive facts and - of inductive strategies to build theory is illustrated below (based on Roberts, 2010: 142-143; Blaikie, 1993: 131-132):

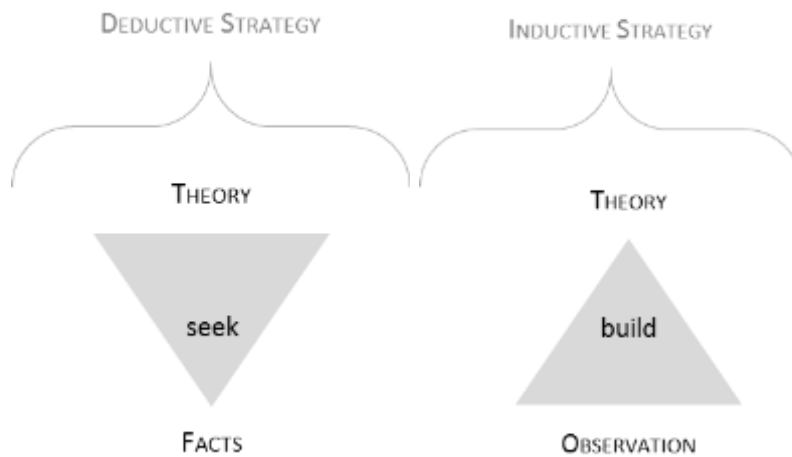


Figure 15: Inductive and Deductive Strategies of enquiry

The following figure provides an overview on quantitative, qualitative and mixed method research strategies and their underlying reasoning (based on Marsh & Stoker, 2010: 186; Creswell, 2009: 12; Blaikie, 1993: 131-132):

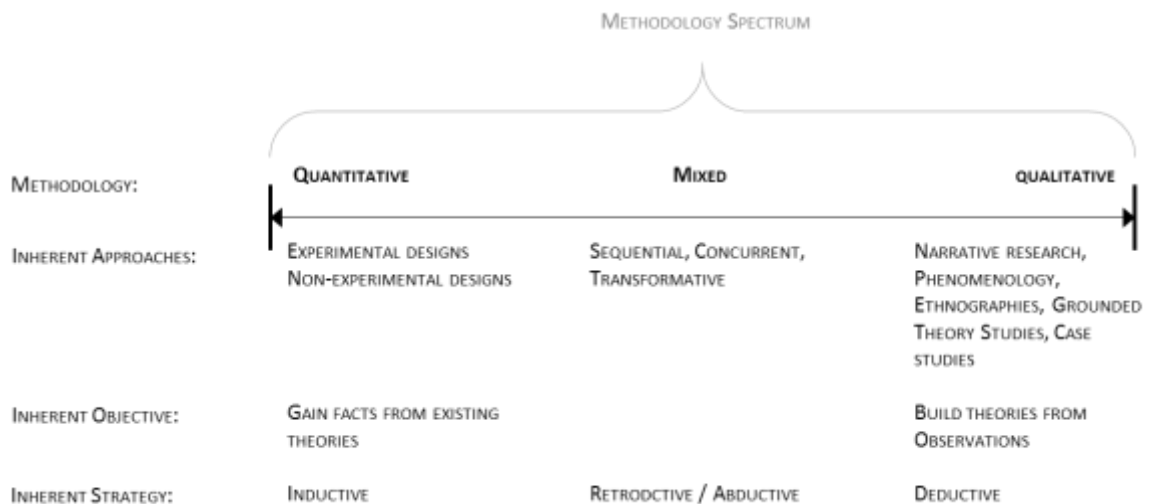


Figure 16: Methodological Positions

### 3.2.5 Method

While methodology involves the selection of a research strategy which best allows to either obtain facts from theory or theory from research methods resemble the “actual techniques or procedures used to gather and analyze data related to some research question or hypothesis (Blaikie, 1993: 7).” Prior publications in the subject frequently link survey/questionnaire instruments with quantitative methodology and associate methods such as interviews, focus groups and observations with qualitative methodology. Mixed methods then utilize methods from qualitative and quantitative methodologies, as illustrated below (based on Blaikie, 1993: 7 and Creswell, 2010: 15):

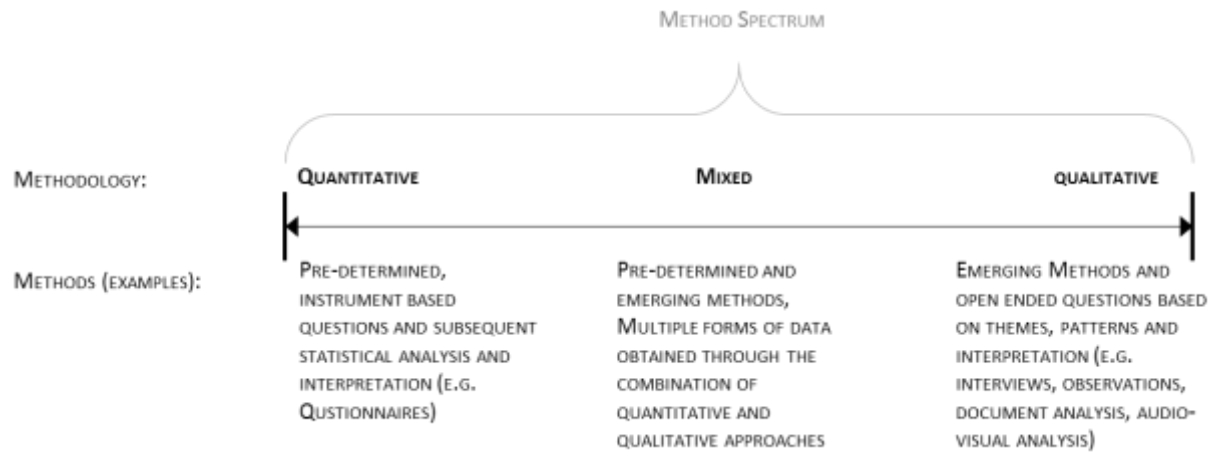


Figure 17: Methods for data collection

To summarize the theoretical review of research methods, the following table outlines the major differences between quantitative- and qualitative methods and their inherent reasoning (based on Akwei, 2007: 48):

Quantitative Methods	Qualitative Methods
Emphasis on testing and verification	Emphasis on understanding
Focus on facts and/or reasons for social events	Focus on understanding from the point of view of the (subjective) informant
Logical and critical approach	Interpretation and rational approach
Controlled measurements	Observations and measures in natural settings
Objective 'outsider view' distant from data	Subjective 'insider view' and closeness to data
Hypothetical-deductive, focus on hypothesis testing	Explorative orientation
Result-oriented	Process-oriented
Particularistic and analytical	Holistic perspective
Generalization by population membership	Generalization by comparison of properties and contexts of individual organism

Table 27: Quantitative- and qualitative methods

### 3.2.6 Research Design Summary

The stated research questions indicate towards a research project which seeks to derive facts from existing theory. The research objectives and – questions are derived from a thorough analysis and synthesis of existing literature and involve prior conceptualizations and theory (i.e. there is sufficient prior research/ an existing body of knowledge available and theory existing). The research objective, as defined by the research question, aims to approach *existing theory* from a slightly different- and holistic angle with the intention to further extend and broaden the existing knowledge in the field. The research question serves as the starting point for the subsequent research by inferring interdependencies between component constructs derived from deployment of existing theories (Creswell, 2009:

18). Thus, unlike in a qualitative paradigm, this research *does not* commence with a methodology which aims to make sense out of an un-proceeded and previously non-recognized startling phenomena which serves as a starting point for the generation of new theory (Blaikie, 1993: 144). By default, this order rules out constructivist- as well as critical realist approaches such as retroduction (Blaikie, 1993).

According to Creswell (2009: 18) quantitative approaches to social science are especially useful when aiming to 1) test theories or explanations, 2) identify factors that influence outcomes, 3) determine the utility of an intervention and 4) understand the best predictors of outcomes. As indicated in below table, the indicated advantages of quantitative approaches achieve absolute congruence with the research question posed in this research:

Objective of quantitative research	Congruence with research objectives?
1) Test theories or explanations	<u>Yes</u> : 5 research questions are stated based on prior reasoning and the interrelationships are to be assessed by statistical means
2) Identify factors that influence outcomes	<u>Yes</u> : Assess influence of BS on dependent variable constructs (MO, LO, IIC)
3) Determine the utility of an intervention	<u>Yes</u> : As part of the contribution to practice a periodic re-testing of the generalizable assessment tool is intended to understand the effect of strategic interventions on firm CTI over time (research principle No 6)
4) Understand the best predictors of outcomes	<u>Yes</u> : Determine the influence of BS on CTI, its component constructs and their alignment

*Table 28: Quantitative research and congruence with research question*

Another indication for an appropriate research paradigm is prior academic work in related fields of study (Blaikie, 1993). Such prior research almost exclusively utilized objective epistemological positions and post-positivist-/ critical rationalist approaches to address their research establishing a hypothetico-deductive research tradition.

The following table presents an overview of relevant research involving one or more components similar to the research at hand which take a purely quantitative, hypothetico-deductive research approach. This aggregation is provided to demonstrate the dominance of such approaches in related research (provided in alphabetical order):

Hypothetico-deductive Research	Objective of Research	Market Orientation	Organizational Learning	Innovation Implementation	Business Strategy
Baker & Sinkula, 1999	Effect of MO and LO on organizational performance	X	X		
Calantone, Cavushil & Zhao, 2002	Influence of LO and firm innovation capability on firm performance		X		
Dobni, 2008; Dobni, 2010b	Assessment of Innovation Culture/ Relationship between IO and BS	X	X	X	X
Govindarajan, Kopalle & Danneels, 2011	Relationship between specificity of MO and types of innovation brought forward	X			
Jimenez-Jimenez & Sanz Valle, 2011	Relationship between OL, innovation and firm performance		X		
Jimenez-Jimenez, Sanz Valle & Hernandez-Espallardo, 2008	Influence of MO and OL on innovations in firms	X	X		
Johnson, Martin & Saini, 2012	Influence of BS on MO of firms	X			X
Keskin, 2006	Effect of MO and LO on innovation capabilities of small and medium enterprises	X	X		X
Lee & Tsai, 2005	Effect of business operation mode on MO, LO and innovativeness- and performance of organizations	X	X		
Li, Zhou & Si, 2010	Influence of BS and environmental turbulence on innovation and performance				X
Lukas, 1999	Relationship between BS, MO, environmental turbulence and business performance	X			X
Matsuno & Metzner, 2000	Influence of BS on MO and firm performance	X			X
Mavondo, Chimhanzi & Stewart, 2005	Influence of LO, MO, and human resource practices on innovation and firm performance	X	X		
Morgan & Strong, 1998	Relationship between MO and BS	X			X
Paladino, 2007	Relationship between OL, MO, resource orientation and firm performance	X	X		
Sabherwal & Chan, 2001	Influence of alignment between BS and information system strategy on firm performance				X
Johnson & Lederer, 2010	CEO/CIO mutual understanding, strategic alignment and information services (IS)				X
Sinkula, Baker & Noordewier, 1997	Relationship between LO, market information and marketing program dynamism		X		

Hypothetico-deductive Research	Objective of Research	Market Orientation	Organizational Learning	Innovation Implementation	Business Strategy
Song & Parry, 2009	Influence of desired level of MO on business performance	X			X
Theodosiou, Kehagias & Katsie-kea, 2012	Influence of strategic orientations and marketing capabilities on firm performance				X
Zhou et al, 2005	Influence of strategic orientations on MO and IO	X			X

Table 29: Related prior critical rationalist research

The work of Kuhn (1962, “normal science”) advocates that science should utilize existing approaches until “puzzles” are faced which cannot be answered with existing paradigms. The research question inherent to this thesis is widely in line with prior research and does “only” aim to approach identified phenomena from a different angle, and within an un-proceeded construct- constellation, to provide additional in-depth knowledge of the phenomena under research (Blaikie, 1993: 107). Thus, a realist ontology with a post-positivist/ critical rationalist epistemology seems appropriate to address the research question on hand in a hypothetico-deductive manner. Therefore, this research can be seen as a logical extension of prior research in the field and its “aim is not for unexpected novelty of fact or theory but for articulation of problems within the expectations and prescriptions of the paradigm (Blaikie, 1993: 106).”

However, Clough & Nutbrown (2012: 20) remind researchers to *not blindly* follow along existing traditions and established approaches to investigate into phenomena. According to them, the decision which research paradigm and methods to apply to a given research problem needs to be thoroughly considered to select the most promising RD (even if deviant from most dominant approach in the field; i.e. ‘normal science’). Therefore, alternative options to conducting this research differently were considered in depth by taking potential benefits of other research designs into consideration, which are not further specified here beyond the generic information about research paradigms provided in previous sections (see for example Blaikie, 1993 for an extensive discussion of advantages- and disadvantages of other approaches).

Despite numerous alternative research designs, a hypothetico-deductive approach to this research is considered best to answer the inherent research objective and satisfy the practical needs of the target organization.

The method of choice for data collection, in line with prior research in the field and the research philosophy selected for this research, is a questionnaire. The majority of the literature supported the view that attitudes, behaviours and perceptions could be measured through such a means.

In summary, the following aspects were considered and suggest that statistical testing on data obtained through a closed-question questionnaire instrument is the most promising approach to most efficiently answering the research objectives at hand. Thus, at the set-out of the research project, a purely quantitative approach to the research is perceived as adequate:

	Criteria	Why is a quantitative approach (questionnaire based) fitting for this research?
1)	Context/ Organizational requirements/ aim of research	<p><u>Testing of theory</u>: Quantitative approach to test theory or explanation and to identify factors which influence an outcome (Creswell, 2009: 18)</p> <p><u>Generalization</u>: Practical use of research instrument is higher if generalizable to overall firm to derive meaning and draw strategic conclusions (research principle No 6).</p> <p><u>Operationalization</u>: Self-administered, online based questionnaire design allows for periodic re-testing to assess the outcome of potential interventions to further enhance CTI of the organization. Furthermore, it allows for rapid turnaround and the re-use of existing survey elements from prior research in the field (Creswell, 2009: 146-147)</p> <p><u>Efficiency and Effectiveness of use</u>: Quantitative approach allows to have a strong focus to answer the research question at hand and avoiding distraction from the core topic; furthermore it allows to periodically re-test the characteristics of the organization in an economic and unbiased manner</p>
2)	Prior research in the field	<p><u>Research tradition</u>: Prior research in the field almost exclusively hypothetico-deductive setting the stage for additional research in the same research tradition to enhance depth of knowledge as long as no “puzzles” emerge which can’t be explained with the prevailing research tradition (Blaikie, 1993)</p> <p><u>Development of knowledge</u>: Quantitative approach allows for comparison of research findings with prior research and to contribute to science and practice by adding to the frontier of knowledge</p>

Table 30: Selection of research paradigm (summary of reasoning)

It is the understanding that even though “there is no one ideal way to gain knowledge of the social world (Blaikie, 1993: 215)” the above selection of a research design poses a well outlined and justified selection of choices to address the research questions and objectives of this study (Creswell, 2009: 144). This initial positioning allows to leave the door open to potential further inquiry into observed phenomena yielded by the first wave of research in

case of upcoming “puzzles” which can’t be solved with the approaches taken in prior research in the field (Blaikie, 1993). As such, under the assumption that puzzling results emerge, it would allow to go back and employ a mixed method approach by clarifying through an additional combination with qualitative methodology.

Below the initial figure illustrating the key components of a research design is presented with the choices made in the context of this research:

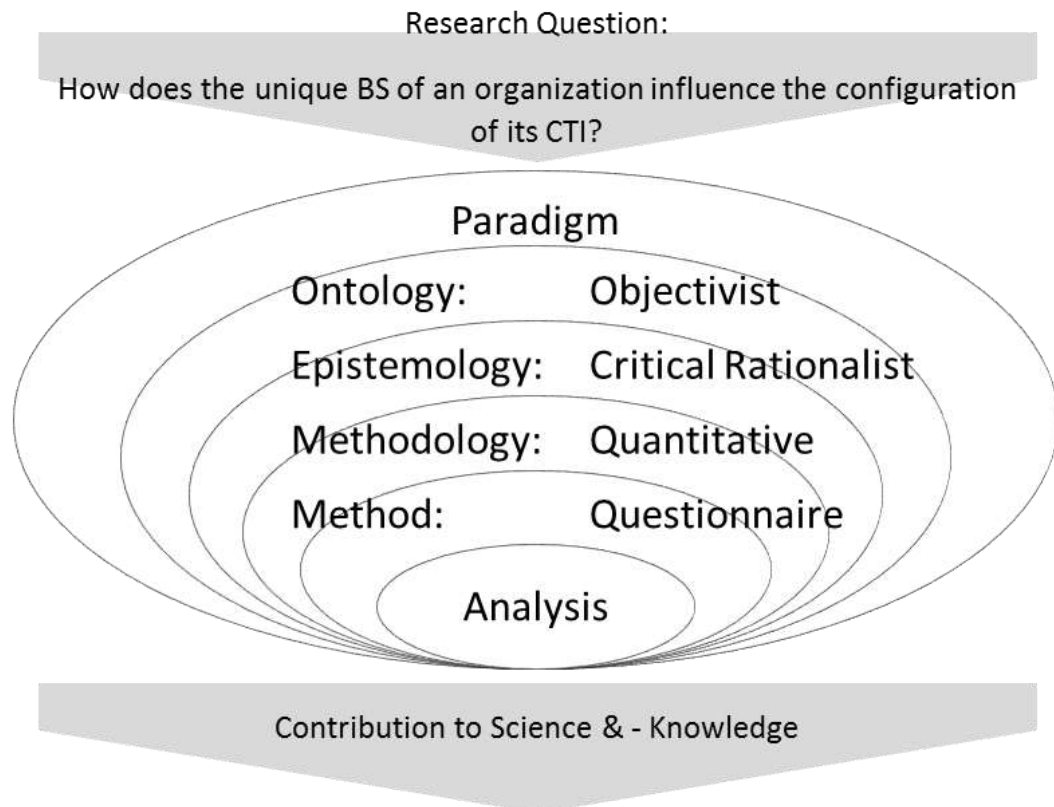


Figure 18: Selected research paradigm

### 3.3 Instrumentation

In the 2<sup>nd</sup> part of this chapter, the composition of the research instrument is described. As previously stated, a self-administered, online-based survey is the preferred type of data collection procedure for the study (Creswell, 2009: 146-147). In the context of this study this method promises several advantages (e.g. wide acceptance of electronically administrated questionnaires within the target organization, quick turnaround in data collection and data processing) and is considered most suitable to address the research question and –aims of the research project at hand.

In the following the survey instruments resembling the component constructs for BS, MO, LO and IIC are reviewed and the rationale for their fit with the given context of this research, -the population and -subsequent selection are outlined and summarized (Roberts, 2010: 154). In line with the research principles No 4, 6 and 7, the surveys for each component are



existing, well-validated and reliable scales (Creswell, 2009) which are described in the literature and are detailed in the Appendix as part of the final questionnaire deployed for data collection (Song, 2009: 150).

In the following table, general selection criteria for the admission of measuring constructs into the final survey instrument are provided:

	Criteria	Description
1)	Fit with research model and research questions	Measuring constructs should <ol style="list-style-type: none"> <li>(1) Adequately represent a firms Business Strategy (BS), its Market Orientation (MO), its Learning Orientation (LO) and the Innovation Implementation Context (IIC) prevailing within the organization</li> <li>(2) Allow to separately assess CCO and FMO in the context of the influence of Disruptive Innovation Theory (DIT; Christensen, 1997) on the research project at hand (where applicable in the context of the research questions provided)</li> </ol>
2)	Statistical analyses	Measures should <ol style="list-style-type: none"> <li>(3) Allow to validate the quality of the presented research questions statistically</li> <li>(4) Provide insights into the interrelations between research variables and significant between group differences</li> <li>(5) Provide adequate scales to allow to reflect in a fine-grained fashion the perceptions of individuals and to assess variations statistically</li> <li>(6) Provide a representative account of the configuration of organizational characteristics</li> <li>(7) Allow periodic re-testing at a later point in time, to assess the impact of potential interventions from an organizational development perspective</li> </ol>
3)	Existing, previously validated scale	Preference for an existing construct <ol style="list-style-type: none"> <li>(8) Allow for extending the findings of prior research in the field by allowing to compare and contrast research results with findings of prior research in the field</li> <li>(9) Enhance construct- and content validity due to prior utilization in academic research (Pallant, 2005)</li> </ol>
4)	Applicable to single organization context and multiple-informant research design	<ol style="list-style-type: none"> <li>(10) Allow multi-informant design in single organizational/ multi hierarchical research context</li> <li>(11) Allow to assess actual behaviour observed in day to day business and not intended behaviour</li> </ol>
5)	Length/ Number of items	Due to the holistic approach taken in this research project the operationalization of the overall questionnaire (i.e. length, number of survey items) needs to be considered when selecting a research instrument
6)	User friendliness	Comprehensive, straight forward operationalization for use of members on various organizational levels (prior research mainly addressed heads of department/company)

Table 31: General criteria for the admission of constructs into the survey

Under adherence to these criteria, the selection of the individual measuring constructs is illustrated in the next paragraphs.

### 3.3.1 Construct for assessment of Business Strategy

A Google search of the term “Strategy” reveals some 180,000,000 entries (Status: 1.1.2014). More than obvious, BS has multiple facets and it is impossible to excessively cover the whole subject. In the past, strategy typologies have allowed to abstract and mold “theories that account for multiple causal relationships” into widely coherent- and appealing constructs. They allow to organize “complex webs of cause-effect relationships into coherent accounts (Fiss, 2011: 393).” Such typologies are “conceptually derived interrelated sets of ideal types’ [that] ‘identify multiple ideal types, each of which represents a unique combination of the organizational attributes that are believed to determine the relevant outcome(s)’ (Fiss, 2011: 395).” According to Fiss (2011: 393) there are several such typologies available to investigate into firm strategy, out of which those of Porter (1981; ‘Five Forces’), Mintzberg (1983) and Miles et al (1978) seem to be the most widely known and utilized (e.g. Desarbo et al, 2005: 25; Gimenez, 2000; for an advanced review of strategy typologies see Sollosy, 2013: 12). In recent years, by the work of Jaruzelski & Dehoff (2007) and Jaruzelski, Loehr & Holman (2010) on global innovators, yet another typology repeatedly surfaced in innovation/strategy/management research.

Despite their usefulness in cross organizational research, in the context of a single organizational research, typologies tend to lose out on fine grained insights underlying a BS pursued by an organization (Desarbo et al, 2005: 26). Therefore, while typologies tend to be easy to grasp, they over-simplify relationships when the nuances underlying an organizations BS are forced into a limited number of strategy types (e.g. in the case of Miles et al, 1978: “Defender”, “Analyzer” and “Prospector” strategies) and are thus not adequate when investigating into intra-group, firm specific fine-grained cause-and-effect relationships (Morgan & Strong, 1998: 1054).

The Strategic Orientation of Business Enterprises (STROBE) measure, introduced by Venkatraman (1989) provides a useful alternative to the predominant strategy typologies and is especially useful in the single organizational context of this research. Furthermore, it is well validated and was used in much prior research (e.g. Sabherwal & Chan, 2001; Morgan & Strong, 1998; Johnson & Lederer, 2010; Viande et al, 2005; Bergeron, Raymond & Rivard, 2004). In an attempt to operationalize and standardize measurement of BS, Venkatraman (1989) identified six BS attributes based on extensive literature analysis and empirical evidence obtained from a questionnaire sent to 450 managers. The subsequent data analysis suggested (1) aggressiveness, (2) analysis, (3) defensiveness, (4) futurity, (5) proactive-

ness and (6) riskiness as key components and descriptors of organizational strategic orientation (Sabherwal & Chan, 2001: 13; Venkatraman, 1989: 948–949). In their combination, these BS attributes allow to closely describe the nuances present in the BS of an organization, which are not made explicit in typological approaches. Thus the STROBE measure allows to derive and describe realized BS from management actions (Sabherwal & Chan, 2001: 13; Bergeron, Raymond & Rivard, 2004: 1008) and is thus an adequate measure to assess the perceived actual BS of an organization from the employees on multiple hierarchical levels in a single organizational context. Given that these BS attributes are reflected in management action (Sabherwal & Chan, 2001: 13), it is possible for members of the organization on all hierarchical levels to closely describe how they perceive the diffused BS as it reaches them through management action and -emphasis (Bergeron, Raymond & Rivard, 2004: 1008; Sabherwal & Chan, 2001: 13). Therefore it allows members to report on the perceived BS of an organization with values being transported explicitly and implicitly on a cultural level (Schein, 2010). The BS attributes are briefly described below:

BS attribute	Underlying reasoning/ Conceptualization
Aggressiveness (BS_AGG)	BS_AGG is associated with behavior which emphasizes the need to allocate resources for “improving market positions at a relatively faster rate than the competitors in the chosen market (Venkatraman, 1989: 948).” It is thus associated with a firm that seeks to achieve “first-mover advantage and exhibits a combative posture in exploiting market opportunities (Morgan & Strong, 1998: 1055)”
Analysis (BS_ANA)	BS_ANA is associated with behavior which emphasizes the importance of a thorough search for underlying mechanisms and for deriving most adequate answers to emergent challenges in the internal and external environment (Venkatraman, 1989: 948; Morgan & Strong, 1998:1056)
Defensiveness (BS_DEF)	BS_DEF is associated with defensive behavior of firms who aim to secure their current positioning by emphasizing the importance of enhancing the efficiency and effectiveness of their operations (i.e. through cost reduction and economies of scale; Venkatraman, 1989: 948). “Defensiveness encourages an internal focus for organizational strategists which, consequently, deflects attention away from the external environment of the firm. Therefore, when changes occur in the marketplace, the defensiveness trait means that firms have limited adaptive capabilities (Morgan & Strong, 1998: 1056-1057).”
Futurity (BS_FUT)	BS_FUT may be present in defensive and prospective types of organizations. It encompasses elements of anticipating the future by outlining a strategic process to achieve a desired organizational state. Based on this process however, firms who emphasize futurity also highlight the importance of planning, forecasting and monitoring to achieve their strategic objective (Venkatraman, 1989: 948-949; Morgan & Strong, 1998: 1057)

BS attribute	Underlying reasoning/ Conceptualization
Proactiveness (BS_PRO)	BS_PRO lies at the heart of proactive organizations. This business attribute expresses the “continuous search for market opportunities and experimentation with potential responses to changing environmental trends (Venkatraman, 1989: 949).”
Riskiness (BS_RIS)	BS_RIS represents the “extent of riskiness reflected in various resource allocation decisions as well as choice of products and markets (Venkatraman, 1989: 949).” Therefore riskiness expresses the extent in which an organization takes economically constructive risks and emphasizes the entrepreneurial traits of organizational members (Morgan & Strong, 1998: 1058).”

*Table 32: BS attributes an alleged link with MO (CCO) and MO (FMO)*

### 3.3.2 Construct for assessment of Market Orientation

As outlined in the literature review presented in chapter 2 of this thesis, the research on MO has a long-standing tradition. The theoretical foundation was brought forward by Drucker in 1954 (van Raaij & Stoelhorst, 2008: 1266–1267) and was followed in the late 1980s and early 1990s (e.g. Kohli & Jaworski, 1990; Jaworski & Kohli, 1993; Kohli, 1993; ‘MARKOR’ scale; Deshpandé et al, 1993; Narver & Slater, 1990; ‘MKATOR’ scale) with the academic re-discovery of the concept and first operationalization (van Raaij & Stoelhorst, 2008: 1266–1267).

Since then numerous research on the subject has emerged. Despite the relative importance of a decided approach to assessing and understanding the concept of MO especially given the insights provided by DIT (Govindarajan & Kopalle, 2006: 190), in the last ten years only two independent studies have accepted the call for an extension of existing MO constructs to include a measure for both, CCO and FMO (Govindarajan & Kopalle, 2011; Narver, Slater & MacLachlan, 2004: 334).

Scarce research in this domain was primarily attributed to a lack of appropriate measures of disruptiveness and the validity of the underlying characteristics (Govindarajan & Kopalle, 2006: 190). The emergent frameworks have concentrated less on the value destroying effect associated with disruptive innovations (Danneels, 2004: 254), but investigated into the level of CCO and FMO displayed within an organization. The conceptualization of separate measures for CCO and FMO was operationalized in two alternative scales (e.g. ‘Responsive- and proactive MO’ scale (Narver, Slater & MacLachlan, 2004) and ‘Current customer & future customer’ scale (Govindarajan, Kopalle & Danneels, 2011)) incorporating latest scholarly developments.

Following the research question, - aims and the subsequent criteria for selection of an adequate operationalization for the assessment of a firm’s MO, due to the almost exclusive focus of most MO constructs, all initial operationalizations (i.e. MKATOR, MARKOR etc.) are not considered as adequate to serve in answering the research question inherent to this

research. Despite their wide application in research, they lack future customer focus and thus do not allow for a differentiation between CCO and FMO contingent on the specific BS of an organization. Both remaining scales (i.e. Narver, Slater & MacLachlan, 2004 and Govindarajan, Kopalle & Danneels, 2011) were empirically tested on a 6-item Likert scale (Narver et al, 2004: 339) and 7-item Likert scale (Govindarajan, Kopalle & Danneels, 2011: 132), respectively. Thus they principally qualify for the criteria (3) provided for selection. Furthermore, both scales involve an inside-out perspective on the configuration of a firms MO and are thus both applicable for application in a single organization/ multi-level/ multi-informant approach and consider MO (including separate component constructs representing CCO and FMO).

With regards to their operationalization and validity, Narver, Slater & MacLachlan (2004: 340-342) differentiate two component constructs with a total of 15 scale items: 'Proactive MO' with 8 items (Cronbach's alpha<sup>20</sup> 0.884) and 'Responsive MO' with 7 items (Cronbach's alpha 0.855). The scale developed by Govindarajan, Kopalle & Danneels (2011: 132) consists of an overall of 8 items out of which 4 represent the component construct of 'Mainstream Customer Orientation' (Cronbach's alpha 0.70) and 4 represent 'Emerging Customer Orientation' with a Cronbach's alpha of 0.88. Thus both scales exhibit a satisfactory level of validity. However, given the difference in the number of scale items and taking into consideration the length and operationalization (i.e. time to complete and avoiding user fatigue during administration) of the final multi-construct questionnaire, the scale developed by Govindarajan, Kopalle & Danneels (2011) seems more adequate.

This preference is further sustained as Govindarajan, Kopalle & Danneels (2011: 124) specifically take into consideration implications brought forward by DIT. Under the light of DIT, MO is posited as a two-component construct comprising of representatives for FMO and CCO. Furthermore, Govindarajan, Kopalle & Danneels (2011) recognize- and build on the prior work of Narver, Slater & MacLachlan (2004) for their research.

Taking the fit of the Govindarajan, Kopalle & Danneels (2011) scale with the selection criteria into account, the measure is deemed adequate to be included into the final research instrument utilized in this construct.

While some of the initial MO constructs (i.e. Narver & Slater, 1990) emphasize the role of inter-functional coordination for the effectiveness of the overall MO of an organization, in

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<sup>20</sup> Cronbach's alpha provides information on the internal consistency of a scale (Nunnally, 1978; Peter, 1979). While in general a value of Cronbach's alpha above 0.70 is desired, in practice lower Cronbach's alpha values are accepted with the use of constructs in the social sciences (Pallant, 2005).

line with the holistic conceptualization of this research it is argued that the LO of an organization provides an adequate indication for the quality of its information dissemination capabilities which include cross organizational knowledge sharing. The reasoning for the selection of an adequate component construct for the final research instrument is provided in the next paragraphs.

### 3.3.3 Construct for Learning Orientation

As outlined in the literature review in chapter 2, academic research into firm learning (OL/LO) has a long-standing tradition. Following the literature review, the below listed research was deemed most significant for the holistic research proposed as part of this thesis. The respective approaches are briefly reviewed with regards to their appropriateness in a single organizational context (as inherent to the research project in this thesis) and the number of scale items and their validity:

Publication	Research Focus	Number of scale items and component constructs with [number of items]
Perez Lopez et al, 2004 Jimenez-Jimenez et al, 2008; Jimenez-Jimenez & Sanz-Valle, 2011	Innovation, OL and firm performance	<u>13 items</u> ; including component constructs representing: 1) knowledge acquisition [3], 2) knowledge distribution [3], 3) knowledge Interpretation [3], and 4) Organizational Memory [4]
Sinkula, Baker & Noordewier, 1997; Baker & Sinkula, 1999; Mavondo, Chimhanzi & Stewart, 2005	Relationship between LO, MO, innovation, human resource practices and firm performance	<u>11- 18 items</u> (depending on publication); including component constructs representing: 1) Commitment to learning [4-6], 2) Shared Vision/Purpose [4-6], Open-Mindedness [3-6]
Baker & Sinkula, 2005	MO, learning types and new product success	<u>3 types of learning</u> (paragraph approach <sup>21</sup> ): 1) Modeling, 2) Adaptive Learning, 3) Generative Learning
Paladino, 2007; Paladino, 2008	Drivers of innovation and new product success: Linking OL with MO, resources and firm performance	<u>9 items</u> (no separate component constructs)

<sup>21</sup> Requires the respondent to read 3 different brief explanations of learning types and then distribute 100 Points between the types to indicate the scoring of their organization (p 501-502)

Publication	Research Focus	Number of scale items and component constructs with [number of items]
Tohidi et al, 2011	Establishing a new measure of organizational learning and assessing its effect on firm innovation	<u>23 items</u> ; including component constructs representing: 1) Managerial commitment and empower [6], 2) Experimentation [4], 3) Risk taking [3], 4) Openness and interaction with environment [5], 5) Knowledge transfer and integration [5]
Lee & Tsai, 2005	Effect of business operation mode LO and MO	<u>9 items</u> ; including component constructs representing: 1) Team learning [6], 2) System thinking [3]
Auh & Menguc, 2005: 1656	Measurement of explorative and exploitative learning in context of competitive intensity	<u>7 items</u> ; including component constructs representing: 1) Explorative learning [4], 2) Exploitative learning [3]
Calantone, Cavusgil & Zhao, 2002; Keskin, 2006	Assessment of LO of firms in connection with its innovation capability and firm performance	<u>17 items</u> ; including component constructs representing: 1) Commitment to learning [4], 2) Shared Vision [4], 3) Open Mindedness [4], and 4) Intra-organizational knowledge sharing [5]

Table 33: OL/LO - prior relevant research in the field

While the actual depth of learning (i.e. generative-, adaptive- and meta-learning) is established conceptually, there are still no adequate measures available to derive the actual quality of learning displayed within an organization. One attempt, brought forward by Baker & Sinkula (2005), reflects a single- item measure which does not allow for the assessment with a Likert-type scale and is thus not an adequate operationalization for the research at hand. Another attempt to bring forward an adequate measure by Auh & Menguc (2005) investigate into explorative- and exploitative learning styles but fails to truly assess the overall propensity of an organization to learn. Consequently, it is argued (see literature review) that the quality of learning should be reasonably represented for the purpose of this study by the level of importance a firm places on overall learning to achieve its strategic objectives, which is reflected in its LO.

The measuring construct representing a firm's LO, as brought forward by Calantone, Cavusgil & Zhao (2002), is considered a suitable component construct in the holistic research instrument developed for this research. For the construction of the measure Calantone, Cavusgil & Zhao (2002: 519) drew extensively from the work of several other scholars in

the field and consequently contribute to accumulation of knowledge in the OL/LO area of research, adding to the acceptance of the overall construct (Cronbach's alpha are as follows for the four 1<sup>st</sup> order component constructs of the 2<sup>nd</sup> order LO measure: 'Commitment to learning [0.80]', 'shared vision [0.79]', 'open-mindedness [0.72]', and 'intra-organizational knowledge sharing [0.75]'; Calantone, Cavusgil & Zhao, 2002: 519). To establish the combined LO as a single second order factor, the convergence of the component constructs was tested and achieved satisfactory results and goodness of fit (see p 520 for details).

Furthermore, by investigating into a firm's commitment to learning, its shared vision, open mindedness and the specificity of its intra-organizational knowledge sharing potential conceptual overlaps between the previously selected construct of MO and the 'information acquisition' component constructs of most OL constructs (e.g. Jimenez-Jimenez et al (2008); Jimenez-Jimenez & Sanz-Valle (2011)) are avoided.

In the next paragraphs, the measuring construct representing a firms IIC is briefly introduced and reviewed.

#### 3.3.4 Construct for Innovation Implementation Context

The importance of the economically successful execution/implementation of innovative concepts is repeatedly emphasized by researchers and practitioners for more than a century (e.g. Schumpeter, 1911) as is illustrated in the literature review in chapter 2. Thus it appears surprising that the implementation context and the related climate for the implementation of innovations in organizations (i.e. the phase of their execution) today received very little attention in academic research.

One exception was is the work of Dobni (2008, 2010b) who developed a holistic 78 item scale to investigate into innovation culture of organizations. One of the component constructs of his work is titled the 'Implementation Context (Dobni, 2008: 546).' It holds 17 measuring items (Cronbach's alpha of 0,77) assessing the readiness of the organization to support innovative concepts during the 'last phase' of their transition from an innovative concept to actual implementation/commercialization with a seven point Likert scale. Its measuring items touch upon such aspects as flexibility of processes, availability of resources and managerial support, track record in successfully executing innovations, efficiency and effectiveness of transporting innovative concepts towards ultimately implementing them as well as the focus of the organization on measuring and enhancing their innovation pipeline (Dobni, 2008: 546).

The conceptualization therefore provides a multi-component account of the IIC prevailing within an organization. With regards to the holistic research at hand, the conceptualization is deemed an adequate measure of this process stage. Given the previous utilization in



prior research (i.e. Dobni, 2008, 2010b) and its validity, the measure complies with the selection criteria presented at the beginning of this chapter. Furthermore, Dobni's (2008) study shares, while focussing strongly on a firms' cultural disposition and its effects on its overall innovation capability, some conceptual overlap with the research presented in this thesis. Thus it is expected to relate back some of the findings of this study to the initial study and to further contribute to the knowledge in the field by investigating into the applicability of the construct in the context of this research.

### 3.3.5 Test variables

Test or moderation variables are included into a research model to determine the potential impact of these factors on the relationship between independent variable and dependent variables (Creswell, 2009).

An overall number of 8 test variables is included into the final research instrument. These include 3 categorical variables and 5 additional variables which are informed by prior research.

- The 3 categorical variables allow to categorize respondents to the survey by 1) the time with the company, 2) the membership in a specific department/function and 3) by the hierarchical level the respondent belongs to (which is an essential aspect given the inherent research question and aim of this thesis).
- The 5 additional variables touch upon themes which frequently surfaced in prior research or are fitting with the theoretical grounding of this research. Subsequently, these items touch upon 1) the distinctiveness and clearness how the BS of the organization is communicated, 2) the perceived level of adequacy of the BS versus the perceived environmental turbulence, 3) the level of employee encouragement to part with outdated organizational routines or mental models and to enhance organizational routines, 4) the perceived level of environmental turbulence (Fiss 2011; Desarbo et al, 2005; Paladino, 2008) and 5) the perceived level of security of future firm profitability.

For reasons of operationalization (i.e. length of the final questionnaire utilized in this research) it was decided to operationalize all test variables with one single item each. While this poses a potential limitation (Pallant, 2005) given the overall length of the final questionnaire and the threat of user fatigue, it was decided to accept the inherent limitations and work with a single lead-item.

The following table summarizes the test variables included into the final research instrument:

Prior Research	Test Variable(s)	Included?
Dewar & Dutton (1986: 1424)	<u>Perceived level of clearness of BS communicated</u>	Yes. Item Test_1_STR of the final survey instrument
Lukas (1999: 149)	<u>Perception of strategy as adequate vs. perceived environmental turbulence</u>	Yes. Item Test_2_CHA of the final survey instrument
Dobni (2008); Baer (2012: 1114); Capon et al (1992: 167); Hurley (2002: 271); Jaworski & Kohli (1993: 55)	<u>Employee Encouragement / Empowerment</u> "I am prepared to do things differently if given the chance to do so (Dobni, 2008: 549)"	Yes. Item Test_3_ENC of the final survey instrument
Mintzberg, (1979); Desarbo et al (2005: 73); Jiménez-Jimenez & Sanz Valle (2011: 413); Jansen, Van den Bosch & Volberda (2006: 1664)	<u>Environmental Peculiarities</u> understanding of a) market environment, b) technological environment and c) competitive environment	Yes. Technological dynamics reflected with one item (Test_4_TEC)
n.a.	<u>Perceived certainty of future profitability</u> Assess the role perceived future profitability has in the context of the perceptions of respondents	Yes. Item Test_5_PRO of the final survey instrument
Govindarajan, Kopalle & Danneels (2011: 125)	<u>Time with the company</u> time with the company might influence the knowledge/perception of the firms' strategy characteristics	Yes. Item "Time with the Company" of the final survey instrument
n.a. (in the context of a single organization)	<u>Department</u> to allow for fine-grained analysis, given the specific context, research question and –aims determining this research in a single organization	Yes. Survey allows to differentiate between: Marketing/Sales, Finance, Human Resources, Information Services and others
Theodosiou, Kehagias & Katsieka (2012: 1068)	<u>Hierarchical Level</u> Assuming that the hierarchical level of the respondent is contingent on the responsibility for leading an increasing number of employees.	Yes. Survey differentiates between 4 levels of organizational hierarchy: 1) Manage Function/-Business 2) Manage Managers 3) Manage others 4) Manage self
Govindarajan, Kopalle & Danneels (2011: 125/132)	<u>Willingness to cannibalize</u> Willingness to cannibalize is associated with the pursuing of disruptive innovations	No. Similar measuring item already reflected in STROBE measure; thus not included separately
Christensen (1997)	<u>Perception of organization approaching sustaining and disruptive innovations differently</u>	No. Propensity to deal with sustaining and disruptive innovation opportunities is reflected already in the overall BS the organization exhibits

Table 34: Selection of control variables for research instrument

Due to the single organizational context of this study, test variables employed by other cross-organizational research with the unit of analysis being the overall firm (e.g. firm type, firm location, firm age and firm size; Zhou et al, 2005: 1054) were not included into the questionnaire.

#### 3.4 Questionnaire, pilot study and ethical considerations

The previously introduced items of the existing measurement constructs as well as the test variables were combined into a final measurement construct comprises of 5 sections and including a total of 66 questions.

In order to mitigate potential cross pollution of measuring constructs and to ensure comparability of the findings of this research project with findings of prior research the measuring constructs and their inherent items were kept in the same order as utilized in prior research (Brace, 2004: 138). The measuring constructs were assembled into the final research construct in the order in which they were introduced in this thesis (which also follows widely their assumed order in the innovation sketch innovation process). Additionally, the test variables are included as a fifth section into the research instrument.

Subsequently the following order of measuring construct emerges in the final research instrument:

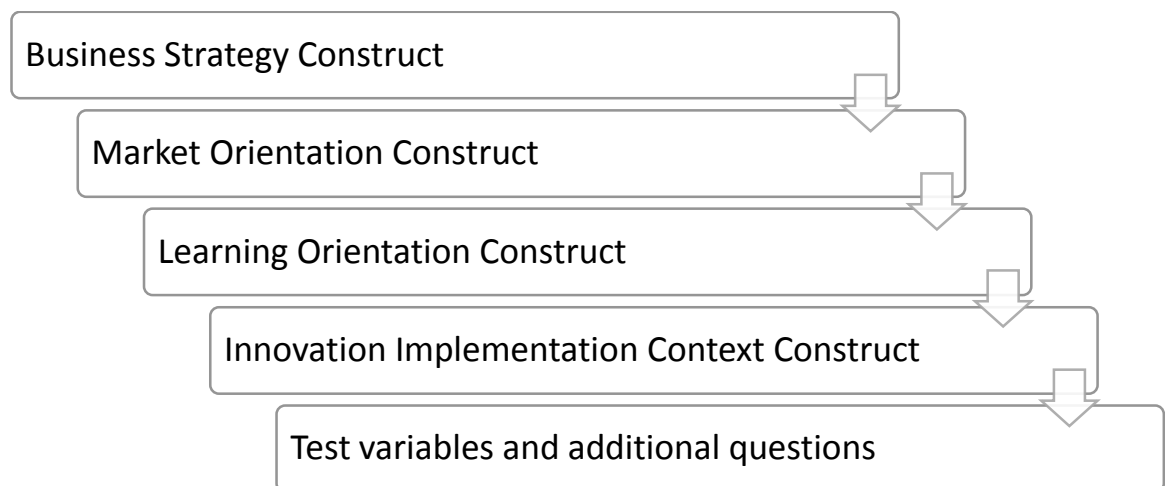


Figure 19: 5 Component constructs and their order in the final research construct

As the majority of research constructs selected for the final research construct were administered with a 7 point Likert scale in prior research, the same scaling (ranging from 'strongly disagree' to 'strongly agree' to mitigate potential bias from 'order effects' or 'acquiescence'; Brace, 2004: 88) was consistently selected for the research project at hand. Furthermore, attention was paid to the potential of 'pattern answering' (i.e. continuously ticking a certain response category without paying attention to the content of the questions posed; Brace, 2004: 88), keeping the occasionally reverse coded items of the initial measuring constructs.

The application of a consistent 7 point Likert scale resulted to a change in scaling only for the construct of BS attributes, which was previously operationalized in a 5-point Likert scale. This alteration is not seen as a weakening of the initial construct but allows to potentially obtain more granular information (i.e. increase of scale sensitivity; Jyothibabu, Farooq & Pradhan, 2010: 308) on the perception of BS and its diffusion across hierarchic levels and is considered an appropriate change given the context of this research. The approach taken ensures broad consistency with prior research and allows to contrast research findings with available prior research in the field. Furthermore, a 7-point Likert scale allows to derive sufficiently detailed responses to provide in depth understanding of the influence of the components of BS on the individual component constructs and the overall firm CTI.

Assuming that every participating respondent, who is a member of the target organization, has a perception of the organizational whereabouts and its enacted BS, it was decided to not include a scale option to select 'no opinion/ not applicable (Brace, 2004)' in the operationalization of the survey instrument. However, the 7-point scale allows for a neutral mid-point to allow the respondents to return a 'balanced' response if perceived as appropriate (and not forcing them to select an either/or response which might pollute the responses received; Brace, 2004: 85).

Construct	Initial Scaling	Final Scaling
BS (Venkatraman, 1989)	Likert scale [1-5]	Likert scale [1-7]
MO (Govindarajan, Kopalle & Danneels, 2011)	Likert scale [1-7]	Likert scale [1-7]
LO (Calantone, Cavusgil & Zhao, 2002)	Likert scale [1-7]	Likert scale [1-7]
IIC (Dobni, 2008)	Likert scale [1-7]	Likert scale [1-7]
Test variables	n.a.	Likert scale [1-7]

*Table 35: Scaling of research construct components*

The final research instrument was assembled into a browser-based questionnaire tool from websurveyor.com (now: vovici.com), which was previously used in the target organization in similar context. The instrument was then first utilized for pilot testing, later the final questionnaire (adjusted after the feedback from the pilot study) was administered by the same means to the defined sample to ensure consistency of approaches.

Following the emphasis of several authors on the importance of pilot testing of questionnaires (e.g. Brace, 2004: 163; Roberts, 2010: 154), a 3-phase approach was taken to enhance the quality of the initial research instrument (van Teijlingen & Hundley, 2001). The decision to take a 3-step pilot study was influenced by the advice of van Teijlingen & Hundley (2001: 3) to preferably re-test when amendments to an initial research instrument were made following initial feedback.

Pilot study participants of all phases were members of the organization under research and thus generally elective to the overall population of the final questionnaire. In line with the

multi-level approach intended for the research project, the participants represented various hierarchical level within the organization (i.e. manage business/-function, manage managers, manage others and manage self).

In order to avoid a participation of members of the organization in both, pilot study and final rollout of the questionnaire (which could lead to pollution of results according to van Teijlingen & Hundley, 2001: 2)), pilot study participants were selected based on their membership in the same organization as the unit under research, however located in different geographic locations at that time to make sure that they were not be part of the final population of the research (i.e. not part of the organizational unit selected for the final rollout of the instrument). Subsequently the initial responses received from participants of phase 1, 2 and 3 of the pilot study were not included into the main results (van Teijlingen & Hundley, 2001: 2).

As suggested by Roberts (2010: 154), van Teijlingen & Hundley (2001: 2) and Brace (2004: 118-119), pilot study participants were asked to report back on clarity of instructions, potentially ambiguous questions and clarity of wording. Furthermore they were asked to indicate the time taken to complete the survey and to voice their opinion on the length and convenience of the study taken as well as any other observation deemed important to enhance the construct (Roberts, 2010: 155).

After completion of the pilot survey, participants (who agreed to waive the anonymity offered when asked to participate in the pilot study) were contacted individually to provide their feedback which was then collected (phase 1). Changes were made to the measuring items after phase 1 to further enhance the expected results. When re-wording of the initial items was advisable based on the feedback received from pilot study participants, revised items were considered which were utilized in similar studies building on the same base constructs. For example, the work of Sabherwal & Chan (2001: 29) and Johnson & Lederer (2010:147) were taken into consideration when making necessary revisions to components of the initial STROBE construct (Venkatraman, 1989).

The effect of the changes on the quality were then assessed in phases 2 and 3. After all 3 stages the received feedback from extensive one to one sessions with the participants was utilized to further enhance the component constructs (i.e. clarity of wording, understanding). All 4 versions of the questionnaire utilized (pilot study phase 1+2+3 and final construct) were compiled considering the ethical responsibilities of the researcher Clough & Nutbrown (2012: 29).

The following table provides an overview on the stages of the pilot study and provides additional information about the number of participants and their functional background:

Stages of pilot study	Participants
Phase 1:	4 participants, thereof 3 participants from Finance, 1 participant from Sales/Logistics
Phase 2:	4 participants, thereof 2 participant from Finance, 2 participants from Sales, 1 participant from IS department
Phase 3:	2 participants, thereof 1 from Finance, 1 from Marketing

*Table 36: Pilot study stages and – participants*

## Chapter 4: Data Collection and Data Analysis

### 4.1 Introduction

Chapter Aims	Activities	Outcomes
To outline the process of data collection and data analysis	<ul style="list-style-type: none"> <li>- Descriptive statistics to gain in depth knowledge of available data</li> <li>- systematically review and consider techniques available for data analysis</li> <li>- perform statistical analyses to test the alleged interrelationship between variables</li> </ul>	Understanding of the nature of the data, choices of statistical techniques and results of statistical analysis of research questions

*Table 37: Key deliverables of chapter 4*

This thesis aims to investigate into the effect of Business Strategy (BS) on a firms' capability to innovate (CTI). Following a thorough analysis of prior research in the field of innovation, there is evidence that an organizations Market Orientation (MO), its Learning Orientation (LO) and ultimately its ability to execute and to implement innovative concepts within a supportive Innovation Implementation Context (IIC), are essential contributors to overall innovative success of an organization.

In chapter 3 the context for the utilization of a purely quantitative research design was set and the selection was justified as the most appropriate measure to discover truth and provide added value from the research findings, both for the advancement of science and with regards to the practical application. The research project thus aims to investigate into how an organizations' unique BS influences its overall CTI. While prior research almost exclusively concentrated on cross-organizational studies with single- or key- informant strategies from top hierarchical positions, the research project at hand concentrates on a single organization in the FMCG industry with the unit of analysis being the individual employee perception of the behaviors observed within the organization.

In order to obtain representative results for the target organization, a research approach which takes the perception of a representative number of employees on four different hierarchical levels and multiple functional areas into account is employed. This approach was selected to serve two main purposes: (1) to contribute to the progression of knowledge by allowing new insights into the interdependencies between the chosen BS of an organization and its MO, LO and IIC and (2) to contribute to the configuration of the organization by allowing an inspection of its configuration across multiple hierarchical levels and functions as well as providing insights for potential organizational interventions towards optimizing the status quo. As such, a time based study was utilized to obtain a "snapshot" of the perceptions from within the organization (Saunders, Lewis & Thornhill, 2007: 148).

The research design, which was formally introduced in chapter 2, is provided below for illustration purposes:

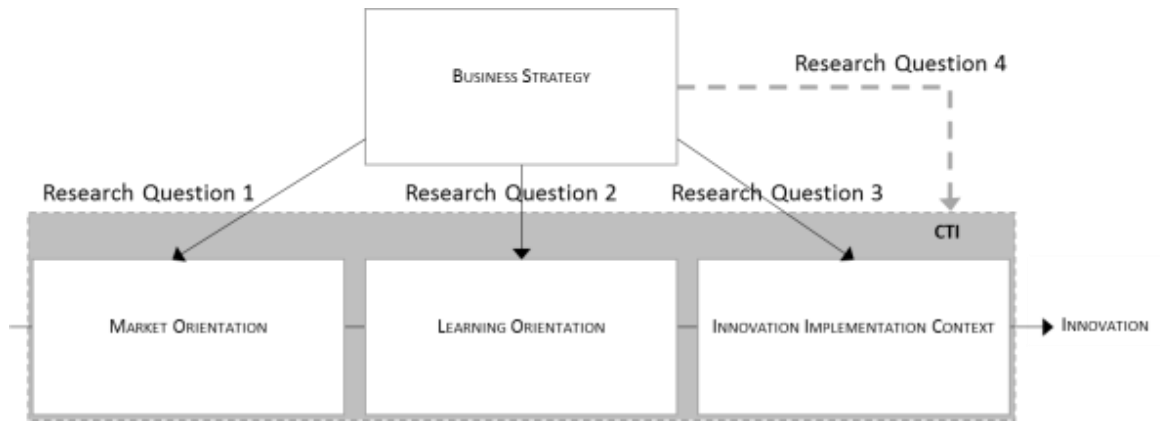


Figure 20: Research framework and Research Questions 1-4

Research questions 1 – 3 (as indicated above) investigate into the influence of BS (independent variable) on the dependent variables MO (and its component constructs MO (CCO; current customer orientation) and MO (FMO; future market orientation)), LO and IIC. Research question 4 addresses the interrelationship between MO (CCO), MO (FMO), LO and the organizations IIC. Moreover, research question 5 assesses potential differences in perception across hierarchical ranks and functional boundaries within the single organization under research.

The remainder of this chapter aims to provide a thorough answer to the research objectives and the inherent research questions of this thesis and to ultimately allow to answer to the overall research aim. To make sense from the data collected from within the target organization and to ultimately contribute to the advancement of science and practice, 4 key steps are presented hereafter:

Step 1 provides a recollection of the data collection process

Step 2 deals with descriptive statistics and the nature of the obtained responses

Step 3 assesses the utilized measures with regards to their validity and reliability and their internal structure in order to confirm observations from their previous utilization in prior research.

Step 4 recaptures the research questions central to this research and outlines the process undertaken to assess their validity and a brief summary of the relevant findings.



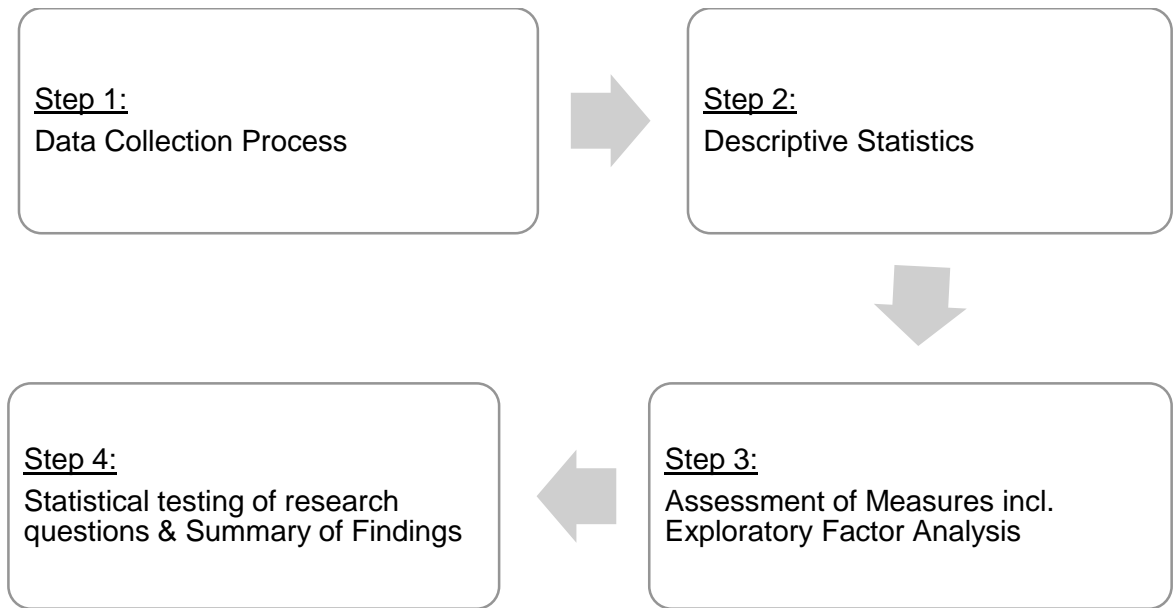


Figure 21: Structure and key elements of chapter 4

This chapter relies on Pallant (2005) and statistical analyses were performed with SPSS Version 21.

#### 4.2 Data Collection Process

The key objective of the research project at hand is the assessment of organizational level observations across multiple hierarchical levels and functional boundaries in a single organization in the FMCG industry. In order to obtain access to a significant number of employees of the single target organization, several limiting conditions were imposed upon the researcher by the target organization. These limitations were voiced from within the organization and then defined in close cooperation with the target organizations legal department, its data protection officer and senior executives in the human resource department. The two main limiting aspects include:

- (1) Limitations in the collection process: Data protection required that the researcher should not be permitted to obtain personal information of members of the target organization and all data should be collected anonymously. To achieve these requirements, the human resource department of the target organization acted as an intermediate to facilitate the identification of the sample, and to send all required communication to the selected target sample population.
- (2) Limitations in the use of data: The collected data could only be used for academic purposes. Furthermore, full anonymity for the organization was requested. Thus, no indication of the name of the target organization or its line of business were granted. Additionally, the use of data limits any further description of the organizations' business unit which was selected for data collection.

Limitation number (1) was mitigated by relying on an intermediate partner from the human resource department to get in contact with the members of the identified sample and to ultimately conduct the mechanical process of collecting responses with an existing web-based survey instrument. Therefore, the limitation ended with the completion of the data collection process itself and did not pose a curtailment of the overall research project. In case of limitation number (2) however, the effects emanate to the overall research project as it excludes available data from being published. For example, it would have been beneficial for future research to specify the target organization more closely with regards to its geographical location, its size and potentially even its line of products to allow for consecutive research to be contrasted more closely with the findings of this research. To comply with the request for anonymity from senior officials in the target organization, such aspects however, are not included in this thesis. While this poses a limitation to this thesis which must be acknowledged, it does not threaten the validity of obtained results or the overall conclusions which can be drawn from the findings presented in the remainder of this chapter.

To obtain a “snapshot” of the perceptions of organizational members, a cross-sectional study and thus time based data collection approach was utilized (Saunders, Lewis & Thornhill, 2007: 148). Contrary to longitudinal studies, which aim to study developments over time, cross-sectional studies focus on a description of the status quo at a single period of time.

Data collection was initiated on May 7<sup>th</sup> 2014 and was closed on Jun 1<sup>st</sup> 2014 (i.e. 25 calendar days, thereof 18 workdays). It consisted of an initial mailing to the defined sample of 430 members of the organization. The mailing was sent by the human resource intermediates on behalf of the researcher and consisted of a cover letter which included a brief overview on the researcher, the research topic and asked the respondents to contribute their individual observations by filling out the 66-item questionnaire introduced in chapter 3 via an electronic survey instrument (Creswell, 2009). The criteria provided by Brace (2004: 174-180) are met as a minimum standard to ensure compliance with requirements of ethically sound research and allowed (potential) participants to “make an informed decision about whether or not they are prepared to cooperate in the study (Brace, 2004: 174)”:

Based on the average duration to complete the survey, which was assessed during the pilot studies, the average completion time for the survey was indicated with 15 – 20 minutes to the organizational members contacted. Furthermore, full confidentiality was assured to all participants and the compliance with the requirements of data protection and human resource department were indicated.

In order to increase the participation in the survey, several actions were taken, as suggested for example by Brace (2004):

- The name and contact details (email address) of the researcher and his director of studies at the University of South Wales (who was asked for his agreement prior to the rollout of the survey) were included in all mailings to the sample population to provide an official framing to the research and allow to exchange in case of arising issues or questions<sup>22</sup>.
- The dominant survey platform for internal questionnaires in the target organization was utilized to not expose members of the organization to an unfamiliar experience when accessing the link to the survey instrument<sup>23</sup>. Given that internal surveys are relatively common within the organization, it was expected to face an environment which would be generally supportive to fill out an additional survey.
- A senior official in the Finance discipline was won as a project sponsor and the initial cover letter and the link to the survey on May 7<sup>th</sup> 2014 were sent out in his name. This sponsorship was seen as an essential component to reach a high response rate by outlining the importance of the research project to the members of the sample and to encourage employee participation.
- To further increase participation, it was decided to allot one ipad mini amongst those participants who successfully completed the survey<sup>24</sup>. In order to participate, respondents had to voluntarily provide their email addresses upon completion of the survey (while the collection was principally conducted fully anonymously).

Two follow up notes were issued on May 12<sup>th</sup> 2014 and May 20<sup>th</sup> 2014 in the name of the researcher asking the employees in the sample for their participation.

After completion of the data collection phase, a thank you note was issued to all participants indicating the total number of respondents, the response rate and the winner of the ipad mini who was drawn from all respondents by the human resource intermediate.

### 4.3 Descriptive Statistics

Data collection yielded an overall of 182 responses which represents a response rate of 42.33%. As all questions were made mandatory within the electronic survey instrument, all 182 responses are completely populated and responses to all 66 items were received for each participant.

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<sup>22</sup> 3 organizational members made use of the contact details of the researcher to further enquire into the content of the study. No issues of any kind were raised.

<sup>23</sup> The platform utilized for data collection was [www.websurveyor.com](http://www.websurveyor.com) (now: vovici.com)

<sup>24</sup> The device was acquired and paid for by the researcher.

#### 4.3.1 Participation over time

Data collection was conducted during the period between May 7<sup>th</sup> and May 31<sup>st</sup> 2014. The initial mailing was sent during noontime on Wednesday, May 7<sup>th</sup>, while on May 12<sup>th</sup> (Monday) and May 20<sup>th</sup> (Tuesday) two follow up mailings were sent to the sample. Overall, a total of 42% (77 responses) of all responses were obtained on the first day. And a total of 80% of all responses were collected by the 4<sup>th</sup> workday (May 12<sup>th</sup>). Thus the 2<sup>nd</sup> follow up mailing on May 20<sup>th</sup> 2014, yielded a comparably low amount of only 14 additional responses (while the first mailing resulted in 77 responses on the same day and the 1<sup>st</sup> follow up in 42 responses on the same day respectively) which illustrates a diminishing marginal utility over time. Based on the low participation in the last 8 working days (i.e. 3 additional participants) it was decided to close data collection on May 31<sup>st</sup> 2014. In the following figure, the cumulative frequency of the number of responses over time is provided to illustrate overall participation and the diminishing participation over time (for further details on the participation over time, please refer to the Appendix (6.6); layout adapted from Saunders, Lewis & Thornhill (2007: 392)):

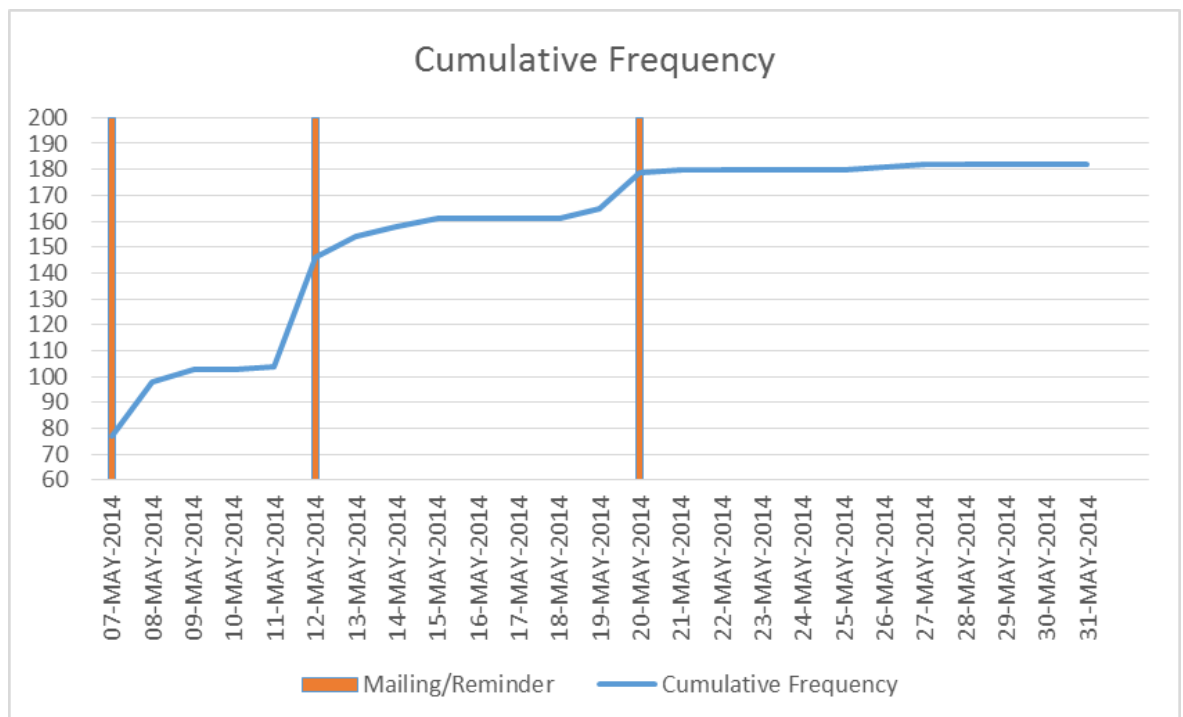


Figure 22: Cumulative Frequency of responses over time (end of day)

Overall the response rate of 42,33% was below the expected response rate<sup>25</sup>. However, in comparison with prior research (mainly cross-organizational), this percentage still marks a

<sup>25</sup> Based on a high participation rate experienced in prior employee opinion surveys, a 70% participation rate was assumed when calculating an optimal sample size of 430 for the population of 1107 employees admitted to the target population (following the approach to N- definition outlined by Saunders, Lewis & Thornhill (2007)).

satisfactory high level (e.g. Calantone, Cavusgil & Zhao, 2002: 518 achieved 46.75%; Jimenez-Jimenez & Sanz Valle, 2011: 411 achieved 25.2%; Matsuno & Metzner, 2000: 4 achieved 38,76%; Lukas (1999: 14) achieved 34.6%; Ward & Lewandowski (2008: 229) achieved ~ 15%) and results in a margin of error of 3.7% (confidence level of 95%).

#### 4.3.2 Nature of Population, Sample and Responses

The composition of the responses was contrasted with the composition of the target population and the selected sample to assess potentially significant deviations and to allow an enhanced understanding of the nature of the received responses. As quantitative research (like the research at hand) aims at generalization of findings from a sample to the underlying overall population, a high level of similarity between the composition of the respondents and the overall population is essential. For the selection of the initial sample, a stratified random-sampling approach (Saunders, Lewis & Thornhill, 2007: 221) was utilized which appeared the most appropriate in the context of the research as it maintains the structure of the overall population in selected strata which are in the focus of a research project. In the context of this research, the sample was identified in the same proportion as the overall population with regards to the hierarchical level of the employees as well as their functional area membership.

In the following, the received 182 responses are assessed based on the hierarchical level of respondents and to their membership in a functional area.

#### 4.3.3 Responses by Hierarchical Level

In the survey, the respondents were asked to indicate their current hierarchical level to allow for an analysis of the collected data across hierarchical boundaries. In line with existing terminology utilized within the organization, the descriptors for the top hierarchical level was "Manage Function/Business", of the second highest hierarchical level: "Manage Managers", for the third highest level: "Manage others" and for the frontline employee level: "Manage self". Members of the "Manage others" level and above are usually superiors.

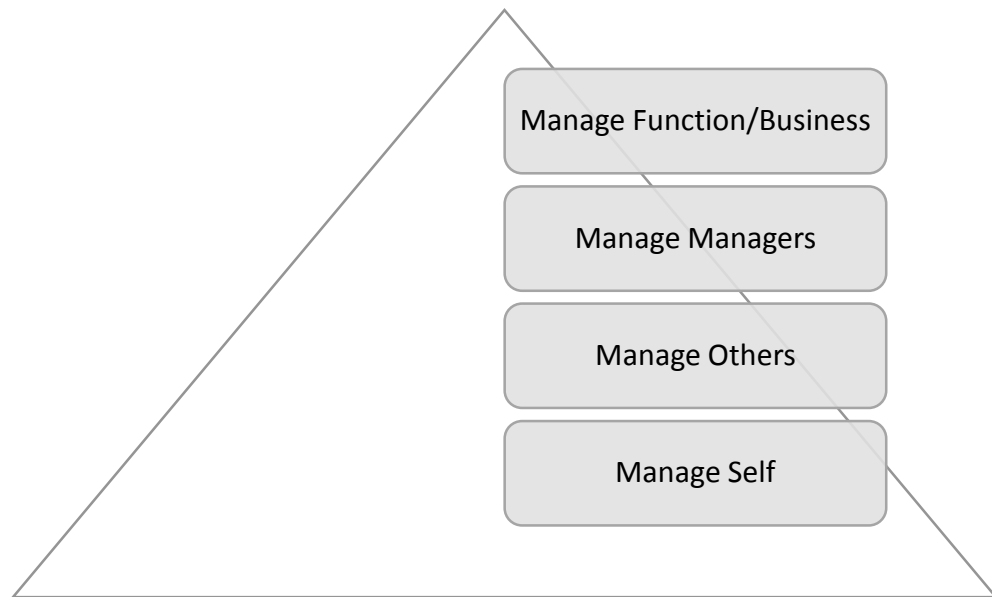


Figure 23: Overview of 4 key hierarchical levels

The final responses were composed of 19,8% managers on the “Manage Function/Business” level, 22,5% of “Manage Managers”, 23,1% of “Manage Others” and 34,6% of “Manage self”, respectively. This distribution is widely similar with the distribution in the population and in the selected sample, as observable in the following table:

Position	Population		Sample		Respondents	
	Frequency	%	Frequency	%	Frequency	%
Manage Function/ - Business	196	17,7	76	17,7	36	19,8
Manage Managers	188	17,0	75	17,4	41	22,5
Manage Others	322	29,1	123	28,6	42	23,1
Manage Self	401	36,2	156	36,3	63	34,6
<b>Total</b>	<b>1107</b>	<b>100,0</b>	<b>430</b>	<b>100,0</b>	<b>182</b>	<b>100,0</b>

Table 38: Composition of Population, Sample and Respondents (by hierarchical level)

#### 4.3.4 Responses by Functional Area

Similar to the provision of their hierarchical level, the respondents were also requested to indicate the functional area in which they are currently employed. Based on the responses received, 18,1% of all respondents belong to the Marketing/Sales fraction of the organization, 11,0% work in the Human Resource discipline, 33,5% in Finance and 37,4% in the Information Services (IS) department and “other” departments. “Others” includes employees who are employed in operations-related departments, such as procurement. During the process of the definition of the target population, no administrative support functions etc. were allowed into the population and are subsequently neither included into the sample, nor into the final responses. This exclusion follows the assumption that these support functions do not significantly involve into the factual execution of BS and their observations are thus of limited value to fulfil the aim of this research. Furthermore, given that there is a separate business entity which is concerned with product development and engineering, this entity

is beyond the scope of this research as there was no access available to members of these business units. However, as a holistic approach is taken towards innovation (i.e. innovation reaches well beyond just product innovations and concerns all members of an organization and their daily way of operating), the focus on none R&D functions does not pose a limitation to this research.

The definition of the population as well as the selection of the final sample were conducted based on detailed (anonymous) information provided by the Human Resource intermediates and allowed for a fine-grained selection<sup>26</sup>. The distribution of functional membership in the population, sample and the final responses are indicated in the following table. While Marketing/Sales appears to be slightly under-represented among the final responses, the overall structure of the responses appears to be widely in line with the initial population and selected sample.

Function	Population		Sample		Responses	
	Frequency	%	Frequency	%	Frequency	%
Marketing/Sales	270	24,4	104	24,2	33	18,1
Human Resources	86	7,8	40	9,3	20	11,0
Finance	322	29,1	122	28,4	61	33,5
IS/Others	429	38,8	164	38,1	68	37,4
<b>Total</b>	<b>1107</b>	<b>100,0</b>	<b>430</b>	<b>100,0</b>	<b>182</b>	<b>100,0</b>

*Table 39: Composition of Population, Sample and Respondents (by functional area)*

Due to the small number of members of the Human Resource discipline in the overall population, the original number in the stratified sample was increased to obtain a sufficiently great number of respondents, which lead to an initial overweighting of the Human resource function. Furthermore, due to the sponsorship of the research through a senior Finance executive, the participation rate of members of the Finance discipline might have lead to an above average participation and a slight over-proportion of this function among the final responses, which is not seen as a threat to the overall validity of the findings.

Overall, the patterns of responses are very similar with the underlying population for their membership in the hierarchical level and the functional area. Thus it is assumed, that the responses obtained are representative for the overall total population of the single organization under research and allow the research findings to be generalized across the business unit under research.

<sup>26</sup> An anonymized data set which indicated the hierarchical level and functional area of each individual member of the organization was provided to the researcher by the human resource intermediates. A unique identifier allowed the human resource intermediates to later identify the organizational members selected into the stratified sample.

#### 4.3.5 Time with the Company

Overall, 97.8% of all respondents indicated that their time with the company was greater than 1 year and a total of 85.7% of all respondents are employed by the target organization since more than 3 years. The relatively low proportion of newly employed respondents among all respondents is assumed to be a good indication that prior to participating in the research project, the majority of respondents had ample time to experience the organizations characteristics with regards to the dimensions under research (Morgan & Berthon, 2008: 1338) and thus account their individual perceptions of behavioral patterns within their organizational surroundings in an adequate fashion.

	Frequency	%	Valid %	Cumulative %
0 - 1 years	4	2,2	2,2	2,2
1 - 3 years	22	12,1	12,1	14,3
3 - 5 years	19	10,4	10,4	24,7
Valid 5 - 15 years	76	41,8	41,8	66,5
15 - 20 years	28	15,4	15,4	81,9
more than 20 years	33	18,1	18,1	100,0
Total	182	100,0	100,0	

Table 40: Distribution of "time with the company"

#### 4.4 Assessment of Bias

Assessment of two types of bias were performed: (1) Common method bias and (2) Non-response/late-response bias (Govindarajan, Kopalle & Danneels, 2011: 125). Common method bias in research may result from a variance attributable to the measurement method utilized in a research rather than the underlying observations the construct is intended to measure (Podsakoff et al, 2003: 879).

Method biases are most frequently a source of measurement error in social sciences and can have numerous causes rooted in the nature of the respondent, the nature of survey items or in the context a survey is applied (see summary of potential causes of common method bias in Podsakoff et al, 2003: 882). While the existence of some level of influence from the application of a single common method for data collection cannot be fully mitigated (Podsakoff et al, 2003: 900), Harman's single factor test was performed in SPSS to obtain an indication of a potential common method bias. For this, a factor analysis was performed with all individual dependent variable measuring items restricted to a single factor. The variance explained was 29.8%, which is well below the critical threshold of 50%. Thus the influence of common method bias on this research appears to be negligible.

Non-response bias was assessed by comparing the nature of respondents answering the survey in the period of May 7<sup>th</sup> through May 11<sup>th</sup> 2014 (i.e. early respondents) versus those who took the survey in the period of May 12<sup>th</sup> through May 31<sup>st</sup> 2014 (i.e. late respondents)



to assess into a potential late- or non-response bias. Given the scope of the research project to obtain a representative account of the overall organization the analysis of the structure of respondents was performed with regards to their membership in hierarchical level and functional area. The comparison of the structure of both groups did not indicate a significant deviation among early and late respondents, thus providing no indication for a late- or non-response bias.

#### 4.5 Assessment of Measures

In the following section, the quality of the well-established measures utilized in the research instrument is assessed based on the 182 responses obtained during the data collection process. This investigation aims to establish a sound basis to allow for a thorough statistical response to the research objectives derived in chapter 2. To establish this precondition, an investigation into the (1) reliability, (2) the validity (3) and the distribution of scores on the utilized measures is undertaken. Furthermore (4), Exploratory Factor Analysis (EFA) is applied to gain further insights on the validity of the scales in the context of this research.

##### 4.5.1 Reliability

According to Saunders, Lewis & Thornhill (2007: 149) reliability “refers to the extent to which [...] data collection techniques or analysis procedures will yield consistent findings.” Three aspects are crucial to the concept of reliability (Saunders, Lewis & Thornhill, 2007: 149): (1) Will the utilized measures yield the same results when applied in other research? (2) Will researchers who utilize the same measures obtain similar results? And (3) is it transparent how raw data is translated into interpretable results?

Saunders, Lewis & Thornhill (2007: 149-150) identify four potential threats to the reliability of a measure: (1) Participant error, which describes a distortion of the obtained data due to the collection of data during specific periods (e.g. Monday morning vs. Friday afternoon) which might prompt the respondents to answer differently than they would have under different condition. As described in the descriptive statistics section of this chapter, data collection occurred during a period of 18 workdays and responses were recorded well distributed over time. Thus participant error appears to be negligible.

(2) Participant bias refers to a change in the expression of “true” observations towards answers which are deemed favored by management to comply with internal expectations. Participant bias is probable mainly in “environments characterized by an authoritarian management style” (Saunders, Lewis & Thornhill, 2007; 149) when respondents do not feel safe to express their true observations. Given that data collection in the research at hand was conducted fully anonymously and participation was possible by accessing the survey instrument with an online link directly and privately from the individual employees’ workstation, participant bias, too, seems to be negligible.

Threats number (3) and (4) to the reliability of scales are observer error and observer bias respectively. Both distortions could lead to an inconsistency of observations due to an inconsistent data collection technique (i.e. variation in how the questions are asked) or in the way the obtained data is assessed (i.e. by variation of how to interpret certain aspects). However, given that the survey instrument was delivered consistently and standardized through an electronically based instrument, observer error and observer bias are not expected to have occurred during the data collection or- interpretation process.

In the academic practice an overall assessment of the reliability of constructs is usually performed statistically, assessing the Cronbach's alpha of an instrument (Dobni, 2008: 551). Cronbach's alpha provides information on the internal consistency of a scale (e.g. Churchill, 1979; Dobni, 2008). It provides evidence, how well a set of items measure a single, one-dimensional concept (i.e. the degree of correlation and thus internal consistency among the items). While in general a value of Cronbach's alpha above 0.70 is desired, in practice lower Cronbach's alpha values are accepted with the use of constructs in the social sciences (Pallant, 2005). Especially given that Cronbach's alpha values are sensitive to low numbers of scale items (e.g. below 10 items per construct), low values in the area of 0.5 are not uncommon (Pallant, 2005: 90). A high Cronbach's alpha, however, may be an indicator that the measure consists of too many individual items which are, to some extent redundant (i.e. asking the same question in slightly different ways; Streiner, Geoffrey & Cairney, 2014).

For the assessment of the reliability of the measures utilized in this research, an initial assessment of the Cronbach's alpha was performed as the primary indicator of reliability. It is contrasted with the reliability findings of other researchers with the same initial constructs, while some variability in the reliability scores is expected depending on the difference in the sample the measure is assessed with (Pallant, 2005: 90).

#### 4.5.2 Validity

Besides the reliability of a measuring instrument, its validity is a critical aspect. Validity in a measuring item is given if "findings are really about what they appear to be about (Saunders, Lewis & Thornhill, 2007: 150)." The concept of validity can thus be separated into two components, (1) content validity and (2) construct validity (Churchill, 1979: 6-70).

- Content validity is concerned with a "general agreement among the subjects and researchers that constituent items cover all aspects of the variable being measured; therefore, [... it] depends on how well the researchers create items that cover the content domain of the variable being measured (Dobni, 2008: 552)".

- *Construct validity* describes “the extent to which the theoretical essence of the measure is captured (Dobni, 2008: 552).” Consequently, if the individual items of a construct are highly correlated it is taken as a confirmation that the items are convergent on the same underlying construct (Dobni, 2008: 552).

To ensure both, content- and construct validity in the research at hand, several aspects were considered. First, the measuring instruments for the BS attributes, MO (CCO) and MO (FMO) as well as LO and IIC are extracted from prior research and represent well established, reliable and valid measures which have undergone numerous steps of refinement (as suggested by Churchill, 1979; see Venkatraman, 1989; Govindarajan, Kopalle & Dandneels, 2011; Calantone, Cavusgil & Zhao, 2002; Dobni, 2008; Sabherwal & Chan, 2001). Secondly during the pilot study and the follow up interviews associated with it, respondents indicated their remarks to the content validity of the individual scale items, which were adapted if indicated to further enhance their content validity. Thus, both content and construct validity are assumed for the research instrument.

To further investigate into the validity of the utilized constructs, exploratory factor analysis (EFA) is utilized as an additional pillar of the analyses performed to derive meaning from the collected data. The purpose of exploratory factor analysis is to assess the unidimensionality of the multi-item constructs extracted from prior research and to shed further light on the discriminant validity (Calantone, Cavusgil & Zhao, 2002: 519). Thus EFA allows to test the theoretically specified dimensionality of a construct with empirical data (Venkatraman, 1989: 951) and contribute to the understanding of measures. The EFA conducted in this thesis were conducted with SPSS (Promax rotation, Kappa 4).

The analysis of the constructs concludes with an assessment of the distribution of the responses on the utilized measures.

#### 4.5.3 Distribution of responses

According to Saunders, Lewis & Thornhill (2007: 434), the central tendency and the dispersion of responses on the variables utilized in a research project, have a significant impact on the availability and choice of appropriate statistics to answer the inherent research question or hypotheses in a research. Thus it is crucial to gain a thorough understanding of the distribution of scores before conducting statistical analyses and drawing conclusions or assessing the value of hypotheses/research questions. According to Pallant (2005), there are two main aspects which need to be considered before appropriate statistical methods to answer research questions can be selected:

- Kurtosis “provides information about the ‘peakedness’ of the distribution (Pallant, 2005: 51)” of responses collected from research instruments. A value of 0 indicates a normal distribution, and values of 1 and -1 indicate that the distribution of responses is “peaked” or relatively flat (Pallant, 2005: 52).
- Skewness “provides an indication of the symmetry of the distribution (Pallant, 2005: 51).” While a value of 0 indicates a normal distribution, values of 1 indicate scores which are clustered to the left or for -1 to the right respectively. In social sciences a normal distribution, which is described with a perfect, bell-shaped-curve, is rather an exception than the rule (Pallant, 2005: 52).

To assess for normality of the distribution of measures, the Kolmogorov-Smornov-Test is utilized which indicates normality if results are above a significance level of 0,05 (Pallant, 2005: 53-55).

#### 4.5.4 Overview on Reliability, Validity and Distribution of measures

In line with the respective prior research from which the survey components were extracted, the raw data collected from the 182 respondents of the survey were computed into the first and second order constructs. To do so, first the coding of questionnaire items was reversed, where indicated in the original research. Secondly, 1<sup>st</sup> and 2<sup>nd</sup> level constructs were calculated by aggregating the total scores of the individual items of the sub-constructs. To allow for comparison across the constructs which consisted of a varying number of items, the total score was divided by the number of items each consisted of to obtain a mean score for each item.

The occurrence of outliers was screened for and none of the responses were excluded from the analysis.

In the following, the results of the individual assessment of the utilized measures with regards to their reliability, validity and the distribution of their scores, are summarized by construct and discussed in brief (see Appendix for details):

#### 4.5.5 Market Orientation Constructs

The MO of an organization has been frequently cited as an important antecedent of firm innovation (i.e. their quantity and success) and ultimately firm performance (e.g. Jiménez-Jimenez, Sanz-Valle & Hernandez-Espallardo, 2008: 390; Keskin, 2006; Baker & Sinkula, 2005; Hurley & Hult, 1998; Lee & Tsai, 2005)). Authors in the past have recognized, that top management shapes values and orientation of firms and their emphasis on specific aspects of MO will determine the degree and direction of MO exhibited by the firm (Kirca, Jayachandran & Bearden, 2005: 25).

The emergence of Disruptive Innovation Theory (DIT; Christensen, 1997) warrants a distinct assessment of a firm's orientation towards serving its current customer base and/or its orientation towards exploring future market opportunities. However, the most popular measuring constructs for MO do not allow to assess the degree of an organizations MO towards its current customer base and/or potential future markets in a separate fashion (e.g. Narver & Slater, 1990; Kohli et al, 1993), as criticised for example by Berthon, Hulbert & Pitt (2004: 1067), Narver & Slater (2004: 335), Grinstein (2008: 126) and Rueckert (1992).

In order to answer the research question most adequately, a relatively novel measuring construct brought forward by Govindaranaj, Kopalle & Danneels (2011) was selected for the research project at hand. Contrary to prior research instrument it contains two individual component constructs, MO (CCO) and MO (FMO), which are made up of 3 individual items, each and allow to assess an organizations focus on the current customer and/or the future market domain. The individual items were reverse-coded if indicated in the original research in line with its initial utilization and mean scores were computed for both component constructs.

An analysis of the constructs with regards to their Cronbach's alpha as well as their kurtosis and skewness was conducted and yielded the following results:

Measures	No. of items	Cronbach's Alpha	Test of Normality (Kolmogorov-Smirnov)	Kurtosis	Skewness
MO (CCO)	3	0,498	Sig: 0,000	-0,001	-0,062
MO (FMO)	3	0,811	Sig: 0,021	-0,189	0,017

*Table 41: Reliability and Normality of MO scales*

In both of the above cases the test of normality yields significant results, which indicates a violation of the assumption of normality (Pallant, 2005: 53).

The Cronbach's alpha value for MO (CCO) is below 0,7 which is frequently considered the minimum desired level. In prior research of Govindarajan, Kopalle & Danneels (2011: 128) the reliability was indicated with a Cronbach's alpha of 0,70 which is a relatively low result in itself. Thus, the low level of Cronbach's alpha is accepted for this measure.

The Cronbach's alpha value for MO (FMO) reached a level of 0,811. Prior research indicated a reliability with a Cronbach's alpha of 0,88 (Govindarajan, Kopalle & Danneels, 2011: 128). As for the MO (CCO) construct the Cronbach's alpha is lower than in the initial construct. However, as it remains well above the level of 0,70 its reliability is accepted in the context of this research.

A EFA was performed with Promax rotation across all 6 items of the combined measures of MO (CCO) and MO (FMO). It yielded two factors with an Eigenvalue greater 1.0<sup>27</sup>. When applying a restriction to two factors in a second step of analysis, the 3 items of the MO (FMO) and the 3 items of the MO (CCO) construct loaded on the intended sub-construct which suggests discriminant validity (Govindarajan, Kopalle & Danneels, 2011: 126). The two constructs are thus confirmed in line with prior research (Govindaraja, Kopalle & Danneels, 2011).

#### 4.5.6 Learning Orientation Construct

A firms learning ability is deemed an important asset which allows the organization to disseminate the information and observations it obtains through the means of its MO. The conceptualization underlying LO is assumed to be a representative of a firms' focus on learning which ultimately translates into its ability to learn (Baker & Sinkula, 1999: 413). LO is conceptualized as multiple components which represent organizational values that determine an organizations' willingness and ability to engage in knowledge creation and – use (Sinkula & Baker, 1997: 309; Mavondo, Chimhanzi & Steward, 2005: 1237–1238). Therefore, the components of LO determine (Sinkula & Baker, 1997) “the degree to which an organization is satisfied with its theory in use and, hence, the degree to which proactive learning occurs. In this respect, LO affects the information that it attends to, interprets, evaluates, and ultimately accepts or rejects (p 309).”

To assess the LO of an organization, the measure introduced by Calantone, Cavusgil & Zhao (2002) was utilized (see chapter III). It consists of the four 1<sup>st</sup> order constructs (1) Commitment to learning [LO\_COM], (2) shared vision [LO\_VIS], (3) Open-Mindedness [LO\_OPE] and (4) Intra-organizational knowledge sharing [LO\_SHA], which combine into a 2<sup>nd</sup> order construct representing an organizations' LO (see chapter 2 for additional information on the first order component constructs of LO).

The assessment of the 1<sup>st</sup> and 2<sup>nd</sup> order constructs revealed the following results:

Measures	No. of items	Cronbach's Alpha	Test of Normality (Kolmogorov-Smirnov)	Kurtosis	Skewness
LO_COM	4	0,897	0,000	0,295	-0,723
LO_VIS	4	0,785	0,000	-0,374	-0,297
LO_OPE	4	0,735	0,000	0,481	-0,429
LO_SHA	5	0,765	0,056	-0,238	0,018
LO		0,826	0,200	0,549	-0,360

Table 42: Reliability and Normality of LO scale and 1st order components

<sup>27</sup> The Eigenvalue of a factor represents the amount of the total variance explained by that factor (Pallant, 2005: 175).

The results confirm the high Cronbach's alphas observed in the initial Calantone, Cavusgil & Zhao (2002) research. These were reported with: 0,80 (LO\_COM), 0,79 (LO\_VIS), 0,72 (LO\_OPE) and 0,75 (LO\_SHA) respectively (Calantone, Cavusgil & Zhao, 2002: 520).

Based on the Kolmogorov-Smirnov test of normality, three out of four sub-scales were shown to deviate from normal distribution, while the overall 2<sup>nd</sup> order LO scale was reasonably normal distributed at the 0,05 significance level.

A EFA for the 17 items of the 2<sup>nd</sup> order LO scale was conducted. When unrestricted, it revealed four factors with an Eigenvalue greater or equal to 1,0. Except for the LO\_SHA\_4 item, which showed a low loading with the four items of the LO\_COM scale, all items loaded with their intended constructs and are thus in line with the initial observations made by Calantone, Cavusgil and Zhao (2002).

#### 4.5.7 Innovation Implementation Context Construct

The concept underlying the construct of IIC is based on the awareness amongst most scholars in the field, that successful innovation requires at least two stages, namely the development or invention of useful new ideas or -concepts resulting from a re-combination of knowledge ("creativity") and their subsequent utilization in practice through implementation or commercialization (e.g. in the form of novel products, - processes, -services, - business models or markets; Schumpeter, 1911; Drucker, 1985; Gaynor, 2002; Baer, 2012: 1102; Magadley & Birdi, 2012: 2; Damanpour, 1992; Axtell et al, 200: 281). Therefore, contrary to the colloquial use of the word "innovation" as a synonym for anything that is new, innovation in its initial conceptualization refers to a creative idea which was successfully implemented or commercialized (Magadley & Birdi, 2012: 2; Gaynor, 2002: 16). Consequently, the concept of innovation is inseparable from the implementation and commercialization (Schumpeter, 1911).

Subsequently, the implementation context for innovative concepts may facilitate or inhibit their introduction into the marketplace.

The measure of favorability of the IIC was brought forward by Dobni (2008) as part of this thesis, and is now deployed in single organization research for the first time. The initial assessment of the 182 collected responses revealed the following results for the IIC measure:

Measures	No. of items	Cronbach's Alpha	Test of Normality (Kolmogorov-Smirnov)	Kurtosis	Skewness
IIC	13	0,836	0,200	0,817	0,137

Table 43: Reliability and Normality of IIC scale



The Cronbach's alpha scored 0,836 which is above the value of 0,77 reported by Dobni (2008: 546) in the context of the original research and suggests a high level of reliability.

EFA was run without limiting constraints on the number of factors to be extracted. It revealed three factors with Eigenvalues greater than 1,0. These findings are in line with Dobni (2008: 550) who reported that the initial 86 scale items developed to create his measures of innovation culture loaded on an overall 17 factors (among them one-item solutions) and were limited in the end to a number of 7 main factors, out of which one represents the construct of IIC. It may well be possible that in order to limit the number of overall constructs, items were included into the final IIC measure which might yield two or three different sub-constructs, if the IIC of an organization was dissected into its more fine-grained component constructs.

#### 4.5.8 Business Strategy Attributes Constructs

The conceptualization of the BS attributes was brought forward by Venkatraman (1989) and the 6 BS attributes were utilized in various consecutive research (e.g. Sabherwal & Chan, 2001). The underlying rationale for the utilization of a multiple-dimensional construct to assess the overall BS of an organization allows to gain superior insights into the fine-grained mechanisms which then translate into an organizations overall strategy (Fiss, 2011: 394). The 6 attributes of the STROBE measure aim to investigate the following aspects underlying an organizations' behavior: 1) *Aggressiveness* [BS\_AGG], 2) *Analysis* [BS\_ANA]; 3) *Defensiveness* [BS\_DEF], 4) *Futurity* [BS\_FUT]; 5) *Proactiveness* [BS\_PRO] and 6) *Riskiness* [BS\_RIS].

An assessment of reliability of the 6 BS attributes as well as their distribution was performed with the following results:

Measures	No. of items	Cronbach's Alpha	Test of Normality (Kolmogorov-Smirnov)	Kurtosis	Skewness
BS_AGG	3	0,567	0,000	0,344	0,560
BS_ANA	4	0,742	0,000	-0,088	-0,549
BS_DEF	3	0,467	0,000	0,567	-0,546
BS_FUT	4	0,596	0,001	-0,111	-0,365
BS_PRO	4	0,703	0,003	-0,343	0,209
BS_RIS	4	0,471	0,000	1,585	0,076

Table 44: Reliability and Normality of BS attribute scales

While in the initial Venkatraman (1989) paper, no Cronbach's alpha values for the BS attribute measures were indicated the Cronbach's alpha values in consecutive research are presented in the table below:



Author BS Attribute	Sabherwal & Chan (2001: 21)	Akman & Yilmaz (2008: 93)	Johnson & Leder- er (2010: 145)	Vijande et al (2005: 32)	Bergeron, Raymond & Rivard (2004: 1010)	Li, Zhou & Si (2010: 308)	Morgan & Strong (2003: 170)
BS_AGG	0,60	0,75	0,88	0,698 and 0,724*	0,70	0,75	0,90
BS_ANA	0,72	0,89	0,80	0,813	0,90	0,83	0,88
BS_DEF	0,74	0,72	n.a.	0,702	0,65	0,70	0,83
BS_FUT	0,73	0,73	0,81	0,834	0,85	0,83	0,87
BS_PRO	0,71	0,83	0,71	0,834 and 0,811*	0,69	0,86	0,71
BS_RIS	0,67	0,69	0,80	0,842	0,40	0,64	0,74
*) reflects Cronbach's alpha scores for two separate component constructs which deviate conceptually from the initial operation of the STROBE measure							

Table 45: Cronbach's Alpha scores for STROBE utilized in prior research

Bergeron, Raymond & Rivard (2004: 1011) reported on unreliability of both the “riskiness” and “aggressiveness” dimension. Following insignificant correlations between these- and the remaining attributes of the measure, the decision was made to exclude both dimensions from further analysis in their study to obtain convergence of the remaining strategy measure.

Several studies, which utilized the STROBE measure of BS attributes (e.g. Sabherwal & Chan, 2001; Akman & Yilmaz, 2008; Li, Zhou & Si, 2010; see table above), found the scales to be reasonably reliable and to display “comparatively good convergent validity (Li, Zhou & Si (2010: 306-308)” despite low Cronbach's alpha values for some of the BS attribute component constructs (e.g. BS\_AGG, BS\_RIS). In line with the prior acceptance of low Cronbach's alpha values in other studies, it was decided to also include all 6 BS attributes in the final research construct.

The acceptance of constructs with comparably low Cronbach alpha values is furthermore supported by the observations of Pallant (2005: 90), who states that scales with less than 10 items are likely to yield quite low Cronbach's alpha values, even in the range of 0.5. Given that the BS attribute component constructs are made up of only 3 – 4 items each, its increased sensitivity to individual items is in line with this argumentation and the measures with low Cronbach's alpha are included in the research with no further amendments.

While theoretically an alternative approach would have been to reduce each BS attribute measure to an even more limited number of items (in the extreme to only one single lead item) to enhance the assumed reliability. However, following an in-depth analysis of the individual questionnaire items and their underlying conceptualizations, the decision was

taken to adhere to the established constructs derived from prior research and to keep all 22 items to remain close to the previously utilized original constructs.

#### 4.6 Summary Descriptive Statistics & Discussion of Measures

A thorough analysis of the reliability, validity and distribution of scores allows the researcher to select the most appropriate data analysis methods to answer the research questions and hypotheses of a research project (Pallant, 2005). The most important fundamental decision is the selection of either parametric or non-parametric statistics which is contingent, among others, on the displayed nature of measure distribution. Given that, as illustrated in the previous chapters, most of the assessed constructs and sub-constructs utilized in the research at hand yielded data which did not show a normal distribution, the use of non-parametric statistics is advisable (Pallant, 2005).

While parametric techniques are generally considered as “more powerful” (Pallant, 2005: 102), their assumption of normality of score distribution frequently pose a limitation in social science research as data are not normally distributed (Pallant, 2005: 103). If results indicate, as in the research at hand, an abnormal distribution, the researcher has 3 main options to address this limitation: (1) To proceed with parametric techniques and “hope” for the approach to be robust enough provided an adequate sample size, (2) to manipulate the skewed data and thus force the variables into a normal distribution followed by an analysis with parametric techniques and (3) to utilize non-parametric approaches which provide an alternative technique to most of the parametric methods (Pallant, 2005: 103).

An investigation into the available non-parametric methods of data assessment revealed that it is possible to exhaustively answer research objectives and research questions inherent to this research with non-parametric techniques. Consequently, to keep any potential distraction from utilizing parametric techniques on skewed data or from manipulating skewed data to achieve a normal distribution, the decision was taken to adhere to the use of non-parametric techniques for the investigation into the alleged interrelationships among variables inherent to this thesis.

#### 4.7 Statistical Validation of Research Questions

Based on the thorough assessment of the central constructs of this research, an investigation into the research questions inherent to this thesis can be conducted. The 5 research questions and the sub-questions follow the premise that the *achieved* levels of MO, LO and of the favourability of the IIC prevailing in the organization are contingent on the level actually desired by the firm (i.e. through formulation, communication and execution of BS; Song & Parry, 2009: 145). To investigate into the impact of BS on the perceived peculiarities of the component constructs, 5 main research questions were derived from the literature and presented in chapter 2. Based on the data and analyses described above, these

research questions were assessed empirically which is described in the following paragraphs.

To assess the alleged interrelation between the various variables under study in the underlying research project, three core non-parametric techniques are deployed:

- Correlation (Spearman) is utilized to “describe the strength and direction of the linear relationship between two variables (Pallant, 2005: 121)”. The correlation coefficient describes the strength of an existing relationships which can be described as small, medium or large (Pallant, 2005: 126):

Correlation coefficient	Level of correlation
$r=0,10$ to $0,29$ or $r=-0,10$ to $-0,29$	Small
$r=0,30$ to $0,49$ or $r=-0,30$ to $-0,49$	Medium
$r=0,50$ to $1,0$ or $r=-0,50$ to $-1,0$	Large

Table 46: Correlation coefficients and level of correlation

Contrary to Multiple regression analysis, which is a widely used parametric technique of data analysis in prior research, correlation (Spearman) allows a less sophisticated exploration of the relationship among variables in a research (Pallant, 2005: 140). However, given that multiple regression analysis is limited to normal distributed data, which is not present in the data obtained from the research at hand, as presented in the section on the assessment of measures (see 4.5.4), the non-parametric technique of correlation analysis (Spearman) is utilized.

Neither correlation (Spearman) nor regression analysis allow to establish causality in time based studies (Pallant, 2005). Therefore, in the statistical validation of the research questions, it is not intended to establish causality, but outline positive (positive correlation coefficient) or negative (negative correlation coefficient) relationships among variables to provide evidence which supports or refutes the central research questions inherent to this research.

- Kruskal-Wallis-Test is the “non-parametric alternative to a one-way between-groups analysis of variance. It allows [...] to compare the scores on some continuous variable for three or more groups (Pallant, 2005: 294)”. The Kruskal-Wallis test is an extension of the Mann-Whitney-U Test, which is described in the next paragraph. While it indicates that there may or may not be a significance difference between the groups used for differentiation, a separate, post-hoc test to compare the individual groups on a 1:1 basis is required to confirm the significance between two groups.

These post-hoc tests to the Kruskal-Wallis-Test are conducted with

- Mann-Whitney-U-Test which allows to compare the mean scores on a continuous variable between two single groups.

To allow for a coherent and structured understanding, the individual research questions are briefly recaptured and sub research questions are introduced where necessary. These sub research questions allow to assess the potential impact of the test variables on the interrelation between the BS attributes and the dependent variable constructs. Furthermore, the undertaken analyses and their results are summarized in brief. This is done in order to keep the extent of the following section to a reasonable length and present significant findings in an appropriate manner. Additional relevant statistical output is available in the corresponding sections of the Appendix.

#### 4.7.1 Research Question 1

The 1<sup>st</sup> research question postulates a relationship between the BS of an organization and the strength and direction of the MO (in their strength and orientation towards the current customer base and/or potential future markets) it pursues. Thus, the underlying assumption is that (RQ1.0) the perceived BS of an organization is significantly and positively linked with the perceived MO of the organization. To assess the alleged relationship based on the empirical data at hand, the following sub research questions are introduced:

RQ1.1: The six BS attributes are significantly and positively linked with the perceived MO (CCO) and MO (FMO) of the organization

The nature of relationship between the BS attributes and the two MO constructs MO (CCO) and MO (FMO) are assessed through correlation analysis (Spearman). The following table summarizes the correlation between the BS attributes and the two MO component constructs:

	MO (CCO)		MO (FMO)	
	Correlation Coefficient (Spearman)	Sig. (2-tailed)	Correlation Coefficient (Spearman)	Sig. (2-tailed)
BS_AGG_Scale	0,064	0,388	0,147*	0,048
BS_ANA_Scale	0,156*	0,036	0,132	0,075
BS_DEF_Scale	0,262**	0,000	0,179*	0,016
BS_FUT_Scale	0,229**	0,002	0,319**	0,000
BS_PRO_Scale	0,115	0,123	0,500**	0,000
BS_RIS_Scale	-0,030	0,684	0,244**	0,001
*) Correlation is significant at the 0,05 level (2-tailed).				
**) Correlation is significant at the 0,01 level (2-tailed).				

Table 47: Correlations between BS attributes, MO (CCO) and MO (FMO)

The above presented results indicate that all BS attributes are related to at least one of the MO component constructs at a 0,01 and/or 0,05 significance level respectively. All significant correlations are at a small or medium level of correlation. Based on these findings, RQ1.1. is supported.

RQ1.2: The link between the 6 BS attributes and the perceived MO (CCO) and MO (FMO) of the organization is related to 5 test variables included in this research as well as “time with the company”

To assess the potential influence of test variables on the perception of the link between the BS attributes and the dependent variables MO (CCO) and MO (FMO), the scores on both constructs were separated into two different groups, including all respondents who described their perceptions of the MO (CCO) and MO (FMO) as “high” and those who perceived it as “low”. For this purpose the mean score for each of the two constructs was identified and respondents who scored below the mean were included in one group, while those who scored mean or above were included in the opposing group.

Both groups were then assessed in a separate step with regards to their scores on the test variables which were included in the research instrument as single item constructs.

	MO (CCO)		
	Low Scores	High Scores	Sig. (2-tailed)*
Test_1_STR	4,682	4,628	0,976 (not sig.)
Test_2_CHA	4,295	4,394	0,610 (not sig.)
Test_3_ENC	4,011	4,362	0,158 (not sig.)
Test_4_TEC	3,841	3,638	0,344 (not sig.)
Test_5_PRO	4,773	5,000	0,285 (not sig.)
Time with Company			0,842 (not sig.)

\*) Performed with Mann-Whitney U Test at 0,05 level

Table 48: MO (CCO) scores and test variables

For the MO (CCO) construct, none of the test variables exhibit a significant difference for those respondents who reported their perception of the MO (CCO) of the organization as either high or low.

The same analysis was performed for the MO (FMO) construct with the following results:

	MO (FMO)		
	Low Scores	High Scores	Sig. (2-tailed)*
Test_1_STR	4,145	5,019	0,000 (sig.)
Test_2_CHA	3,895	4,670	0,000 (sig.)
Test_3_ENC	3,908	4,396	0,061 (not sig.)
Test_4_TEC	3,868	3,642	0,371 (not sig.)

	MO (FMO)		
Test_5_PRO	4,711	5,019	0,233 (not sig.)
Time with Company			0,292 (not sig.)
*) Performed with Mann-Whitney U Test at 0,05 level			

Table 49: MO (FMO) scores and test variables

Thus the responses of the 182 participants suggest that there are significant differences in the perceived MO (FMO) for those respondents who perceive the BS to be well articulated and clear to understand, as well as for those who perceive the BS to be fully adequate given the level of change the organization faces. For both, Test\_1\_STR and Test\_2\_CHA higher levels of agreement are associated with higher levels of perceived MO (FMO) of the organization. The perceived level of encouragement is not significant at the 0,05 level however at the 0,10 level.

Overall, RQ1.2 is partially supported given that 2 out of 6 test variables are significantly related to the MO (FMO) construct.

The findings related to research question 1 are subsequently summarized in the following table:

Research Objective 1	Key Literature	Research Question	Results obtained in the context of the research project
What is the relationship between a firm's BS, which is contingent on its unique situation and – intention, and the level of MO (CCO) and MO (FMO) it exhibits?	Govindarajan, Kopalle & Danneels (2011); Morgan & Strong (1998: 1055-1058); Berthon, Hulbert & Leyland (2004: 1067); Venkatraman (1989); Vijande et al (2005); Johnson & Lederer (2010)	<u>RQ1.1:</u> The 6 BS attributes are significantly linked with the perceived MO (CCO) and MO (FMO) of the organization.	<u>Research question partially supported.</u> <ul style="list-style-type: none"> <li>- <u>MO (CCO) significantly correlated</u> with BS_ANA (+0,156), BS_DEF (+0,262) and BS_FUT (+0,229)</li> <li>- <u>MO (CCO) not significantly correlated</u> with BS_AGG, BS_PRO and BS_RIS</li> <li>- <u>MO (FMO) significantly correlated</u> with BS_AGG (+0,147), BS_DEF (+0,179), BS_FUT (+0,319), BS_PRO (+0,500) and BS_RIS (+0,244)</li> <li>- <u>MO (FMO) not significantly correlated</u> with BS_ANA</li> </ul>
	Paladino (2008: 587)	<u>RQ1.2:</u> The link between the 6 BS attributes and the perceived MO (CCO) and MO (FMO) of the organization are significantly related	<u>Research question partially supported.</u> <ul style="list-style-type: none"> <li>- For <u>MO (CCO)</u> there is <u>no significant difference</u> at the score of the test variables Test_1_STR, Test_2_CHA, Test_3_ENC, Test_4_TEC, Test_5_PRO and “time with the company” for respondents who rate the perceived MO (CCO) “high” versus those who report it as “low”.</li> <li>- For <u>MO (FMO)</u> there is a <u>significant difference</u> at the score of the test variables Test_1_STR and Test_2_CHA</li> </ul>

Research Objective 1	Key Literature	Research Question	Results obtained in the context of the research project
		to 5 test variables and “time with the company.”	<p>for respondents who rate the perceived MO (FMO) “high” versus those who report it as “low”. In both cases, higher scores on the test variables are associated with higher scores on the MO (FMO) construct.</p> <p>- For <u>MO (FMO)</u> there is <u>no significant difference</u> at the score of the test variables <u>Test_3_ENC</u>, <u>Test_4_TEC</u>, <u>Test_5_PRO</u>, as well as “time with the company”.</p>

Table 50: Summary of Findings – Research Question 1

#### 4.7.2 Research Question 2

Earlier studies in the domain of OL/LO (e.g. Sinkula, Baker & Noordewier, 1997; Baker & Sinkula, 1999; Mavondo, Chimhanzi & Stewart, 2005) suggest, that a firms’ emphasis on the importance of a FMO results in a higher level of attention to firm learning as it represents an essential determinant of actually achieving its BS objectives and ensuring/attaining future economic success through innovation stemming from the explorative activities of the company. Thus, members of the organization are alleged to sense different levels of emphasis on firm learning contingent on the BS communicated across the organization. Therefore H2.0 posits that the perceived BS of the organization is significantly linked with the perceived LO of the organization. This research question is operationalized with the following sub research questions:

RQ2.1: The 6 perceived BS attributes are significantly linked with the perceived LO of the organization

A non-parametric correlation analysis was performed between the 6 BS attributes and the LO measure. The results are indicated in the table below:

	LO	
	Correlation Coefficient (Spearman)	Sig. (2-tailed)
BS_AGG_Scale	-0,160*	0,031
BS_ANA_Scale	0,370**	0,000
BS_DEF_Scale	0,392**	0,000
BS_FUT_Scale	0,510**	0,000
BS_PRO_Scale	0,486**	0,000
BS_RIS_Scale	0,244**	0,001
*) Correlation is significant at the 0,05 level (2-tailed).		
**) Correlation is significant at the 0,01 level (2-tailed).		

Table 51: Non-parametric correlations between BS attributes and LO

The correlation analysis suggests, that there are statistically significant correlations between all perceived BS attributes and the perceived LO of the organization. Except

BS\_AGG, which displays a low negative correlation with the perceived LO of the organization, all other perceived BS attributes are correlated on a medium to high (BS\_FUT\_Scale) level with the perceived LO of the organization. Based on these significant findings, RQ2.1 is supported.

RQ2.2: The link between the 6 BS attributes and the perceived LO of the organization is significantly related to 5 test variables and “time with the company”

In similar fashion to the previous analysis of RQ1.2, a between group analysis was performed for respondents who reported the level of LO as “high” and those who reported it as “low”. The classification was based on the mean scores on the LO measure and yielded the following results:

	LO			
	Low Scores (mean)	High Scores (mean)	Sig. (2-tailed)***	Correlation (Spearman) with LO measure
Test_1_STR	4,132	5,176	0,000 (sig.)	0,436**
Test_2_CHA	3,813	4,879	0,000 (sig.)	0,445**
Test_3_ENC	3,703	4,681	0,000 (sig.)	0,444**
Test_4_TEC	4,022	3,451	0,011 (sig.)	-0,168*
Test_5_PRO	4,538	5,242	0,004 (sig.)	0,261**
Time with Company			0,074 (not sig.)	n.a.
*) Correlation significant at the 0,05 level (2-tailed)				
**) Correlation significant at the 0,01 level (2-tailed)				
***) Performed with Mann-Whitney U Test at 0,05 level				

Table 52: LO scores and test variables

The results indicate that with the exception of “time with the company” all test variables are significantly different for “high” and “low” scores on the perceived LO of the organization. For Test\_1\_STR, Test\_2\_CHA, Test\_3\_ENC and Test\_5\_PRO there is a positive correlation (i.e. high perceived scores on LO are associated with higher scores on the test variables). For Test\_4\_TEC, the relationship exhibits a negative correlation with the scores on the LO construct. For the variable “time with the company” the differences between the two groups are not significant.

Based on these findings, RQ2.2 is supported.

The findings related to research question 2 are subsequently summarized below:



Research Objective 2	Key Literature	Research Question	Results obtained in the context of the research project
What is the relationship between a firm's BS, which is contingent on its unique situation and – intention, and the level of LO it exhibits?	Baker & Sinkula (2002: 11); Auh & Menguc, (2004: 1652); Baker & Sinkula, (1999: 415); Slater & Narver (1995: 64–65).	RQ2.1: The 6 BS attributes are significantly linked with the perceived LO of the organization.	<u>Research question supported.</u> All BS attributes are significantly linked with the LO construct (Spearman correlation coefficient provided in bracket). - BS_ANA (+0,370), BS_DEF (+0,392), BS_FUT (+0,510), BS_PRO (+0,486) and BS_RIS (0,244) are significantly and positively correlated with LO. - BS_AGG (-0,160) is negatively correlated with perceived LO of the organization
		H2.2: The link between the 6 BS attributes and the perceived LO of the organization is significantly related to 5 test variables and “time with the company.”	<u>Research question supported.</u> - With the exception of “time with the company” all test variables are significantly different for respondents who indicated “high” vs. “low” scores on the perceived LO of the organization. - For Test_1_STR, Test_2_CHA, Test_3_ENC and Test_5_PRO there is a positive correlation (i.e. high perceived scores on LO are associated with higher scores on the test variables). - For Test_4_TEC, the relationship exhibits a negative correlation with the scores on the LO construct. - For the variable “time with the company” the differences between the two groups are not significant.

Table 53: Summary of Findings – Research Question 2

#### 4.7.3 Research Question 3

A firm's IIC, as operationalized by Dobni (2008, 2010), involves the “organization's ability to execute value-added ideas. [And it] considers the ability to proactively co-align systems and processes with changes in the competitive environment (p. 551).” For the purpose of this thesis it is posited as the perceived firm climate for the *execution of innovation concepts* and degree of adaptability of the organization to changes in its BS. It is assumed that (RQ3.0) the perceived BS of an organization is significantly linked with the perceived IIC of the organization. The theorized interlinkage is operationalized with the following sub research question:

RQ3.1: The 6 BS attributes are significantly linked with the perceived favorability of the IIC prevailing within the organization

	IIC	
	Correlation (Spearman)	Coefficient Sig. (2-tailed)
BS_AGG_Scale	-0,047	0,533
BS_ANA_Scale	0,223**	0,002
BS_DEF_Scale	0,430**	0,000

	IIC	
BS_FUT_Scale	0,466**	0,000
BS_PRO_Scale	0,546**	0,000
BS_RIS_Scale	0,331**	0,000
**) Correlation is significant at the 0,01 level (2-tailed).		

Table 54: Non-parametric correlations between BS attributes and LO

A correlation analysis (Spearman) was performed between the 6 BS attributes and the IIC measure to reveal the nature of the alleged linkage between the constructs. The results indicate, that the perceived favorability of the IIC within the organization is positively inter-related with a medium to high strength in 5 out of 6 BS attributes on the 0,01 significance level (2-tailed). Based on the available data, only the BS\_AGG measure does not indicate a significant relationship with the perceived favorability of the IIC. However, given that the majority of the BS attributes displays significant linkage with the IIC measure, RQ3.1 is supported.

RQ3.2: The link between the 6 BS attributes and the perceived favorability of the IIC of the organization is significantly related to 5 moderating variables and “time with the company”

In similar fashion to the previous analysis of RQ1.2 and RQ2.2, a between group analysis was made for respondents who reported the level of IIC as “high” and those who reported it as “low”. The classification was based on the mean scores on the IIC measure and yielded the following results:

	IIC			
	Low Scores	High Scores	Sig. (2-tailed)***	Correlation (Spearman) with IIC measure
Test_1_STR	4,084	5,131	0,000 (sig.)	0,445**
Test_2_CHA	3,867	4,747	0,000 (sig.)	0,437**
Test_3_ENC	3,795	4,525	0,002 (sig.)	0,373**
Test_4_TEC	3,795	3,687	0,506 (not sig.)	-0,068
Test_5_PRO	4,675	5,071	0,098 (not sig.)	0,155*
Time with Company			1,000 (not sig.)	n.a.
*) Correlation significant at the 0,05 level (2-tailed)				
**) Correlation significant at the 0,01 level (2-tailed)				
***) Performed with Mann-Whitney U Test at 0,05 level				

Table 55: IIC scores and test variables

The results indicate that Test\_1\_STR, Test\_2\_CHA and Test\_3\_ENC are significantly different for “high” and “low” scores on the perceived IIC of the organization and exhibit a positive correlation (Spearman) with the IIC construct (i.e. high perceived scores on favorability of the IIC are associated with higher scores on the test variables). For Test\_4\_TEC, and Test\_5\_PRO as well as “time with the company” the differences between the two groups are not significant.

Based on these findings, *RQ3.2 is partially supported.*

The findings related to research question 3 are subsequently summarized in the following table:

Research Objective 3	Key Literature	Research Question	Results obtained in the context of the research project
What is the relationship between a firm's BS, which is contingent on its unique situation and – intention, and the level of favorability its IIC exhibits?	Dobni (2008); Gaynor (2002)	RQ3.1: The 6 perceived BS attributes are significantly linked with the perceived favorability of the IIC of the organization.	<u>Research question supported.</u> With the exception of BS_AGG, all BS attributes are significantly linked with the scores of the IIC construct (positive correlation). These are: BS_ANA (0,223), BS_DEF (0,430), BS_FUT (0,466), BS_PRO (0,546) and BS_RIS (0,331).
		RQ3.2. The link between the 6 BS attributes and the perceived favorability of the IIC of the organization is significantly related to 5 test variables and “time with the company.”	<u>Research question partially supported.</u> - Test_1_STR, Test_2_CHA and Test_3_ENC are significantly different for “high” and “low” scores on the perceived IIC of the organization and exhibit a positive correlation (Spearman) with the IIC construct (i.e. high perceived scores on favorability of the IIC are associated with higher scores on the test variables). - For Test_4_TEC, and Test_5_PRO as well as “time with the company” the differences between the two groups are not significant.

Table 56: Summary of Findings – Research Question 3 (extract from chapter IV)

#### 4.7.4 Research Question 4

This thesis adopts a holistic perspective of firm innovation. Based on the introduced conceptualization the effect of BS on the overall CTI of a firm is represented by the combined three 1<sup>st</sup> order constructs of MO, LO and IIC of an organization. In its alleged synergistic interplay, they resemble an important contribution to the understanding of how BS provides a lever to enhancing the effectiveness and efficiency of a firms *overall* innovation efforts is presented. This line of reasoning is congruent with the reasoning of the concept of “strategic alignment”, which emphasizes the importance of fit between two or more organizational factors to maximize performance (Bergeron, Raymond & Rivard, 2004: 1004). In line with this reasoning, *RQ4.0 posits that the perceived MO (CCO), MO (FMO), LO and IIC in an organization are significantly related (with near zero correlation between MO (CCO) and MO (FMO)).*

One of the core aspects of this thesis is the alleged importance of the interplay between a firms MO, LO and IIC. To validate this assumption, a correlation analysis (Spearman) was

performed which included the 4 main constructs under investigation MO (CCO), MO (FMO), LO and IIC.

The analysis confirms significant correlations between most constructs. While the correlation between the scores of the MO (CCO) and MO (FMO) constructs are not significant, which is in line with the findings in prior research (Govindarajan, Kopalle & Danneels, 2011) and is discussed later in this thesis. In the following table the between measure correlations are observable.

<b>Correlations</b>			MO (CCO)	MO (FMO)	LO	IIC
Spearman's rho	Total_MO_CCO Scale	Correlation Coefficient	1,000	,122	,161*	,210**
		Sig. (2-tailed)	.	,100	,030	,004
		N	182	182	182	182
	Total_MO_FMO Scale	Correlation Coefficient	,122	1,000	,533**	,496**
		Sig. (2-tailed)	,100	.	,000	,000
		N	182	182	182	182
	Total_LO_Scale	Correlation Coefficient	,161*	,533**	1,000	,588**
		Sig. (2-tailed)	,030	,000	.	,000
		N	182	182	182	182
	Total_IIC Scale	Correlation Coefficient	,210**	,496**	,588**	1,000
		Sig. (2-tailed)	,004	,000	,000	.
		N	182	182	182	182

\*. Correlation is significant at the 0,05 level (2-tailed).

\*\* . Correlation is significant at the 0,01 level (2-tailed).

*Table 57: Between construct correlations (dependent variables)*

They indicate that there is a small positive correlation between MO (CCO), LO and IIC. Furthermore, there are medium and large levels of correlation between MO (FMO) and LO as well as between MO (FMO) and perceived favorability of IIC. Finally, a firms perceived LO is positively related with the perceived favorability of its IIC (large level of correlation).

Based on the above indicated levels of interrelation between the constructs alleged to represent an organizations overall CTI, RQ4.0 is supported.

The findings related to research question 4 are subsequently summarized below:

Research Objective 4	Key Literature	Research Question	Results obtained in the context of the research project
Is there a synergistic relationship between an firm's MO (CCO), MO (FMO), it's LO and it's IIC, which support the holistic perspective of this re-search?	Siguaw, Simpson & Enz (2006); Govindarajan, Kopalle & Danneels (2011: 131), Tushman & O'Reilly, 2002)	RQ4.0: The perceived MO (CCO), MO (FMO), LO and IIC are significantly related.	<u>Research question supported.</u> <ul style="list-style-type: none"> <li>- With the exception of the relationship between MO (CCO) and MO (FMO), all constructs exhibit significant levels of positive correlation (see Table 57).</li> <li>- Near zero correlation between MO (CCO) and MO (FMO) is in line with prior research and literature on Ambidextrous Organization Theory (AOT), which posits that both are not mutually exclusive but possible at the same time (Tushman &amp; O'Reilly, 2002)</li> </ul>

Table 58: Summary of Findings – Research Question 4

#### 4.7.5 Research Question 5

Contrary to the majority of prior research in the field, the research project at hand is based in a single organization context. Part of the contribution to practice lies in the ability to analyze potential miss-alignments of the organizational strategy communication throughout the organization. Thus it is alleged that (RQ5.0) given an effective BS implementation, the perceived BS and perceived peculiarities of MO (CCO); MO (FMO), LO and IIC do not deviate significantly across organizational ranks and/or organizational functions.

The main research question is operationalized in two sub research questions. The first posits that (RQ5.1) the perception of BS attributes and MO (CCO), MO (FMO), LO and IIC across ranks should not deviate significantly if BS is communicated effectively.

A between hierarchical level analysis of all 182 responses was performed with the Kruskal-Wallis test for the 4 hierarchical levels of the organization (see Figure 23). Based on the initial results, which indicated high levels of differences between the mean ranks for the highest managerial levels in the organization and all other respondents, a second analysis was performed. It investigates into significant deviations between top hierarchical levels ("Manage Function/Business") and "all other levels" (which were re-combined into one single level). The results indicate that there are significant deviations between the perceptions of top management and all other organizational ranks for BS\_AGG (Sig: 0,000; 2-tailed), BS\_ANA (Sig: 0,018; 2-tailed) and LO (Sig: 0,029; 2-tailed), as presented in the following table:

Hierarchical Level		Total_BS_AGG Scale	Total_BS_ANA Scale	Total_LO_Scale
Top Management	Mean	2,2870	5,2917	18,3472
	N	36	36	36
	Std. Deviation	,69990	1,08644	3,31516
all others	Mean	3,0000	4,8733	16,9281
	N	146	146	146
	Std. Deviation	,98494	1,03568	3,69762
Total	Mean	2,8590	4,9560	17,2088
	N	182	182	182
	Std. Deviation	,97621	1,05615	3,66054

*Table 59: Perceptions of Top management vs. all others*

For all other 4 BS attributes, as well as MO (CCO) and IIC, no significant differences between the perceptions across organizational ranks were obtained. Given the 3 significant deviations, however there is evidence that the BS is not communicated effectively from the top hierarchical level to the lower ranks. Thus H5.1 is only partially supported.

H5.2: posits that the perception of BS attributes and MO (CCO), MO (FMO), LO and IIC across functions should not deviate significantly if BS is communicated effectively.

A between functional area analysis of all 182 responses was performed with the Kruskal-Wallis test for the functions Marketing/Sales, Finance, Human Resources and Information Services/others. At the initial level of analysis, the test indicated a significant deviation only for the scores on the BS\_ANA measure (Sig: 0,000). Based on the indicated rank order, the following contrasting groups were formed and assessed for their perceptions of specific BS attributes:

BS\_AGG: Does Human Resources differ significantly from all other functions? Sig: 0,088 (not significant)

BS\_ANA: Does Finance significantly differ from all other functions? Sig: 0,000 (significant)

BS\_DEF: Does IS/Others significantly differ from all other functions? Sig: 0,213 (not significant)

BS\_FUT: Do Finance and IS/Others significantly differ from Marketing/Sales and HR? Sig: 0,135 (not significant)

BS\_PRO: Does Marketing/Sales differ significantly from all other functions? Sig: 0,021 (significant)

BS\_RIS: Does IS/Others significantly differ from all other functions? Sig: 0,029 (significant)

Furthermore, significance between the perception of MO (FMO), LO and IIC between Marketing/Sales and "all other functions" was computed. It yielded insignificant results (i.e. for MO (FMO) = 0,309; LO = 0,538; IIC = 0,293) and suggested that there are no significant differences between these groups across functional boundaries.

Based on the findings indicated above and the significant deviations in the perceptions of the variables BS\_ANA, BS\_PRO and BS\_RIS between functional areas, RQ5.2 is only partially supported.

The findings related to research question 5 are subsequently summarized below:

Research Objective 5	Key Literature	Research Question	Results obtained in the context of the research project
Do the perceptions of high-ranking key informants provide a representative account of the configuration of the organization, as perceived by lower-ranking members of the firm who are concerned with BS implementation and execution on a daily basis?	Sabherwal & Chan (2001), Johnson & Lederer (2010) Theodosiou, Kehagias & Kasikea (2012)	RQ5.1: Perception of BS attributes and MO (CCO), MO (FMO), LO and IIC <u>across ranks</u> do not deviate significantly.	<u>Research question partially supported.</u> <ul style="list-style-type: none"> <li>- In the single organizational context there are significant deviations on some of the selected variables under research.</li> <li>- Perceptions between top hierarchical level (i.e. “Manage Function/Business”) and all other hierarchical levels differ significantly for BS_AGG (Top management perception: less aggressiveness), BS_ANA (top management perception: higher level of analysis), and LO (top management perception: higher levels of LO).</li> </ul>
		RQ5.2: Perception of BS attributes and MO (CCO), MO (FMO), LO and IIC <u>across functional boundaries</u> do not deviate significantly.	<u>Research question partially supported.</u> <ul style="list-style-type: none"> <li>- Significant deviations for Finance vs. “all other functions” (BS_ANA)</li> <li>- Significant deviations for Marketing/Sales vs. “all other functions” (BS_PRO)</li> <li>- Significant deviations for IS/Others vs. “all other functions” (BS_RIS)</li> </ul>

Table 60: Summary of Findings – Research Question 5

#### 4.8 Summary of Chapter 4

In this chapter, the data collection process which lead to 182 responses to a 66-item survey instrument in a single organization of the FMCG industry, was outlined. The nature of the overall population, of the stratified sample as well as of the final respondents were described. Next, the validity and reliability of the utilized measures were assessed and the distribution of the responses were indicated in preparation for the selection of appropriate data analysis methods to address the research question central to this research. Based on this

pre-work, 5 research questions were assessed and the results indicated in preparation for the discussion of these findings in the next chapter.



## Chapter 5: Discussion

### 5.1 Introduction and Structure of this chapter

Chapter Aims	Activities	Outcomes
To generate new knowledge by placing the results of data analysis in the context of prior research	- Contrast findings from statistical testing of research questions in chapter 4 with the literature in chapter 2 and derive contributions to science, methodology and practice	Contributions to science (i.e. conceptual advancements and insights from the data), – to methodology and – to practice from research questions 1-5

Table 61: Key deliverables of chapter 5

This chapter aims to contrast and integrate the key research findings presented in chapter 4 with the theoretical underpinning of the research model presented in chapter 2. Furthermore, to derive the contributions to science and practice from the research employed.

At this stage it is relevant to reiterate that this thesis approaches firm innovation by integrating and synthesizing three different vintage points. The subsequent holistic, and dynamic perspective posits that the capability of an organization to innovate is a multi-component concept which comprises of three key components<sup>28</sup>: (1) An organizations market orientation (MO), (2) its learning orientation (LO) and (3) its innovation implementation context (IIC). The multi-component perspective emphasizes the importance of the combined and synergistic effect of the 3 dependent variable constructs which are presented as contributors to the overall capability to innovate (CTI) of the organization. Furthermore, it highlights the important role of BS directing the unique composition of an organizations CTI. As a result of the synergistic interplay of these key components, the organization is able to transform its observations into innovative concepts and ultimately into commercially successful products or services, which are key contributors to organizational profitability and longevity.

Inherent to the emergent perspective is the central assumption that a firm's unique BS is ultimately the determinant of the unique configuration of its CTI (i.e. shapes the configuration of its MO, its LO and its IIC which is conducive to implementing and executing innovative concepts into commercially successful products or services). To account for the multiple facets and streams of influence on the overall strategic behavior of the single organization under review, Venkatraman's (1989) STROBE measure for BS attributes is utilized in the research at hand. These 6 BS attributes are recaptured in the following table:

<sup>28</sup> See chapter 2 for an extensive review of definitions of "innovation", which lead to the selection of the 4 component constructs under research as representing critical components of an organizations intention to be innovative as well as its CTI and yield sustaining, radical and/or disruptive innovative outputs.

BS attribute	Underlying reasoning/ Conceptualization
Aggressiveness (BS_AGG)	BS_AGG is associated with behavior which emphasizes the need to allocate resources for “improving market positions at a relatively faster rate than the competitors in the chosen market (Venkatraman, 1989: 948).” It is thus associated with a firm that seeks to achieve “first-mover advantage and exhibits a combative posture in exploiting market opportunities (Morgan & Strong, 1998: 1055)”
Analysis (BS_ANA)	BS_ANA is associated with behavior which emphasizes the importance of a thorough search for underlying mechanisms and for deriving most adequate answers to emergent challenges in the internal and external environment (Venkatraman, 1989: 948; Morgan & Strong, 1998:1056)
Defensiveness (BS_DEF)	BS_DEF is associated with defensive behavior of firms who aim to secure their current positioning by emphasizing the importance of enhancing the efficiency and effectiveness of their operations (i.e. through cost reduction and economies of scale; Venkatraman, 1989: 948). “Defensiveness encourages an internal focus for organizational strategists which, consequently, deflects attention away from the external environment of the firm. Therefore, when changes occur in the marketplace, the defensiveness trait means that firms have limited adaptive capabilities (Morgan & Strong, 1998: 1056-1057).”
Futurity (BS_FUT)	BS_FUT may be present in defensive and prospective types of organizations. It encompasses elements of anticipating the future by outlining a strategic process to achieve a desired organizational state. Based on this process however, firms who emphasize futurity, also highlight the importance of planning, forecasting and monitoring to achieve their strategic objective (Venkatraman, 1989: 948-949; Morgan & Strong, 1998: 1057)
Proactiveness (BS_PRO)	BS_PRO lies at the heart of proactive organizations. This business attribute expresses the “continuous search for market opportunities and experimentation with potential responses to changing environmental trends (Venkatraman, 1989: 949).”
Riskiness (BS_RIS)	BS_RIS represents the “extent of riskiness reflected in various resource allocation decisions as well as choice of products and markets (Venkatraman, 1989: 949).” Therefore riskiness expresses the extent in which an organization takes economically constructive risks and emphasizes the entrepreneurial traits of organizational members and accepts failure as part of the overall objective to identify potentially new markets (Morgan & Strong, 1998: 1058).

Table 62: Business Strategy attributes

Contrary to other measures of BS, the measurement of BS attributes (Venkatraman, 1989) allows to account for fine-grained differences in the perception of BS components and is thus especially useful in the context of the single organization research underlying this thesis (see discussion of measures in chapter 3 for further details on the adequacy of the STROBE measure in the context of this research).

The alleged interactions between the key components comprising an organizations' CTI (as presented in chapter 2) are visualized in the model below, which was introduced earlier:

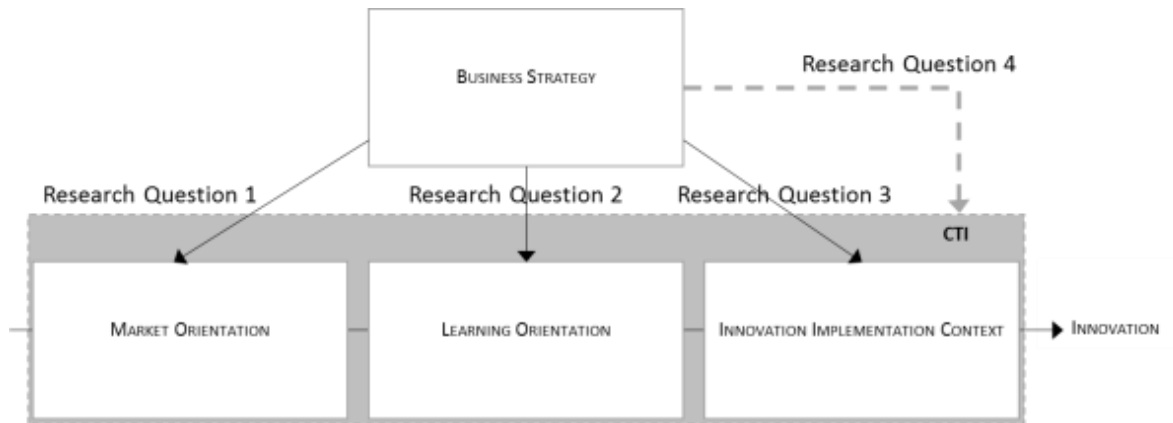


Figure 24: Research framework and Research Questions 1-4

The single organizational research approach adopted in this thesis aims to mitigate the methodological limitations of prior single informant research and to yield a framework which ultimately qualifies as a diagnostic instrument which can be utilized in the context of organizational development activities. Prior research in areas related to the research at hand almost exclusively concentrates on the use of single informant or key informant enquiry strategies utilized in cross organizational research designs. Thus they rely on a very limited number of respondents to describe the peculiarities of a participating organization (with the unit of analysis being the organization).

The research project at hand investigates into the perceived characteristics of the organizations' BS attributes as well as its CTI across multiple hierarchical levels and functional areas with the unit of analysis being the perception of the individual employee. Thus it allows to shed light on the question if observations obtained from key informants (as in most prior research) are representative for the factual configuration of the organization or if they may comprise wishful thinking at times (expressed in the scores provided based on the observations of the single-/key informant). Contrary to such prior research, the selected inquiry strategy allows to statistically reveal significant differences in the observations made by members of four distinct hierarchical levels and across the boundaries of various functional areas (in the context of this research: Marketing/Sales, Finance, Human Resources and others). Ultimately this research design allows to assess if top management perceptions of BS and CTI are representative for the overall organization, or if there are significant deviations.

With regards to a potential enhancement of an organization's CTI, the herein proposed research instrument qualifies as a diagnosing instrument which represents a scientifically founded starting point for potential organizational interventions aimed to reduce potential miss-alignments between "intended strategy recognition" and "factual strategy recognition"

to foster strategic alignment and higher performance (Sabherwal & Chan, 2001) or to transform the CTI of the organization all together.

In line with the structure of the previous chapter, in the following the key findings of research questions 1 thru 5 are discussed separately and in consecutive order. This discussion is based largely on contrasting emergent findings with evidence found in prior academic publications, as presented in the literature review in chapter 2. Along with each of the five main research questions, the contributions to science are addressed (that is in terms of overall conceptual advancements, as well as specific conclusions drawn from subjecting the research questions of this research to statistical testing). At the end of the chapter, a brief summary of the key contributions of this thesis to science, methodology and practice is provided to illustrate the overall spectrum of observations.

## 5.2 Discussion: Business Strategy and Market Orientation (RQ1)

The MO of an organization has been frequently cited as an important antecedent of firm innovation (i.e. their quantity and success) and ultimately firm performance (e.g. Jiménez-Jimenez, Sanz-Valle & Hernandez-Espallardo, 2008: 390; Keskin, 2006; Baker & Sinkula, 2005; Hurley & Hult, 1998; Lee & Tsai, 2005)). Overall, MO in past reasoning was associated with successfully innovating firms and increased levels of firm performance were empirical attributed to MO across numerous studies (Jiménez-Jimenez, Sanz-Valle & Hernandez-Espallardo, 2008: 390; Govindarajan, Kopalle & Danneels, 2011) conducted in small and large firms (Lee & Tsai, 2005: 331).

However, as criticised by some authors, the current customer perspective has received literally exclusive attention with regards to empirical analyses conducted on MO (Narver & Slater, 2004: 335; Berthon, Hulbert & Pitt, 2004; Grinstein, 2008: 126; Rueckert, 1992). Berthon, Hulbert & Leyland (2004) note, with regards to the dominance of the current customer perspective in MO research, that scholarly research and management practice might have interpreted Drucker's conceptualization of firm purpose unidirectional towards nearly exclusively focusing organizational activities on serving current customers, excluding the aspect of exploration required for new "customer creation (p 1067)." Thus, they posited, further research is needed to explicitly link the BS of the organization with their performance in the CCO and/or FMO domain of MO.

In order to extend the insights into this relationship, as warranted by Grinstein (2008: 127), the differentiation between CCO and FMO as two distinct components of MO is essential to gain enhanced insights on the implications from the alignment of strategic orientation in firms in future research and to acknowledge and reflect the implications of DIT (Christensen, 1997) on MO research.

This thesis and the inherent research answered to the call from prior research and utilized two separate constructs to measure both, MO (CCO) and MO (FMO), as conceptualized in Govindarajan, Kopalle & Danneels (2011) to mitigate the limitations of prior research. This conceptual separation now allows to investigate into the interdependencies between a firm's BS attributes and its level of perceived emphasis on MO (CCO) and MO (FMO).

In line with Dobni & Luffman (2000: 90), this thesis argues that the optimal level of MO (CCO) and MO (FMO) is contingent on the competitive environment the individual company operates in and the unique BS it deems adequate to achieve its objectives. Therefore, there is no optimal level of CCO and/or FMO per se, but the level and configuration of MO prevailing in a firm must be approached from the unique situation and context an organization operates in (Gilbert, 1994). As suggested by Morgan & Strong (1998: 1053), it is "likely that the strategy pursued will reflect the extent of market orientation exhibited by the firm". Therefore, the expected results of the research inherent to this thesis can only provide an account of the current level of CCO and FMO of the organization, but do not provide an absolute measure which allows to make statements on which levels of CCO and FMO are advisable for an organization to seek irrespective of its current unique situation.

#### 5.2.1 Recap of Results and Interpretation (Research Questions 1.1-1.4)

The base research question, RQ1.0, emerged from the literature review. Its primary assumption is that the BS chosen by an organization has a significant influence on the strength of the CCO and the FMO, which the organization exhibits.

The following observations were made in chapter 4 and are based on the analysis of the 182 responses obtained in the single organization research inherent to this thesis:

Research Objective 1	Key Literature	Research Question	Results obtained in the context of the research project
What is the relationship between a firm's BS, which is contingent on its unique situation and – intention, and the level of MO (CCO) and MO (FMO) it exhibits?	Govindarajan, Kopalle & Danneels (2011); Morgan & Strong (1998: 1055-1058); Berthon, Hulbert & Leyland (2004: 1067); Venkatraman (1989); Vijande et al (2005); Johnson & Lederer (2010)	RQ1.1: The 6 BS attributes are significantly linked with the perceived MO (CCO) and MO (FMO) of the organization.	<u>Research question partially supported.</u> <ul style="list-style-type: none"> <li>- <u>MO (CCO) significantly correlated</u> with BS_ANA (+0,156), BS_DEF (+0,262) and BS_FUT (+0,229)</li> <li>- <u>MO (CCO) not significantly correlated</u> with BS_AGG, BS_PRO and BS_RIS</li> <li>- <u>MO (FMO) significantly correlated</u> with BS_AGG (+0,147), BS_DEF (+0,179), BS_FUT (+0,319), BS_PRO (+0,500) and BS_RIS (+0,244)</li> <li>- <u>MO (FMO) not significantly correlated</u> with BS_ANA</li> </ul>

Research Objective 1	Key Literature	Research Question	Results obtained in the context of the research project
	Paladino (2008: 587)	RQ1.2: The link between the 6 BS attributes and the perceived MO (CCO) and MO (FMO) of the organization are significantly related to 5 test variables and "time with the company."	<p><u>Research question partially supported.</u></p> <ul style="list-style-type: none"> <li>- For <u>MO (CCO)</u> there is <u>no significant difference</u> at the score of the test variables Test_1_STR, Test_2_CHA, Test_3_ENC, Test_4_TEC, Test_5_PRO and "time with the company" for respondents who rate the perceived MO (CCO) "high" versus those who report it as "low".</li> <li>- For <u>MO (FMO)</u> there is a <u>significant difference</u> at the score of the test variables Test_1_STR and Test_2_CHA for respondents who rate the perceived MO (FMO) "high" versus those who report it as "low". In both cases, higher scores on the test variables are associated with higher scores on the MO (FMO) construct.</li> <li>- For <u>MO (FMO)</u> there is <u>no significant difference</u> at the score of the test variables Test_3_ENC, Test_4_TEC, Test_5_PRO, as well as "time with the company".</li> </ul>

Table 63: Summary of Findings – Research Question 1 (extract from Chapter 4)

Research question 1.1. Investigates into the link between BS and the two component constructs of MO, MO (CCO) and MO (FMO), which build on the work of Christensen (1997) and are operationalized by Govindarajan, Kopalle & Danneels (2011). According to Venkatraman, an organizations' overall BS can be described with a combination of the 6 BS attributes which represent the nuances of the overall BS (Venkatraman, 1989; Morgan & Strong, 1998: 1054) pursued by a firm.

Based on the research findings presented in chapter 4 (and summarized in the table above) the following significant linkages between BS attributes and MO (CCO) and MO (FMO) constructs are observed as part of the statistical analysis conducted in the previous chapter. In line with the theoretic reasoning underlying the STROBE attributes, the results exhibit a significant levels of correlation between MO (CCO) and BS\_ANA, BS\_DEF, as well as with BS\_FUT. Furthermore, there are significant positive levels of correlation between MO (FMO) and BS\_AGG, BS\_DEF, BS\_PRO and BS\_RIS. These interrelations are discussed in the following and contrasted with the findings of prior research:

BS attribute	MO (CCO)	MO (FMO)
BS_AGG		X
BS_ANA	X	
BS_DEF	X	X
BS_FUT	X	X
BS_PRO		X
BS_RIS		X

Table 64: Significant linkages between BS attributes, MO (CCO) and MO (FMO)

Aggressiveness (BS\_AGG) is significantly and positively related with MO (FMO), while no significant interrelation is observable with MO (CCO). Thus the identified linkage is in line with the argumentation of Venkatraman (1989: 948) that this dimension describes firm behavior related to “allocation of resources for improving market positions at a relatively faster rate than the competitors in a chosen market (p 948).” The underlying rationale is in line with expected firm behavior related to “exploration” of new opportunities and the creation and the securing of a favorable position in new, uncontested markets (Kim & Mauborgne, 2005) which requires bold moves and decided investments of resources and management attention to achieve the strategic objectives. Consequently, the conceptual separation allowed to shed further light on the relationship between aggressive behaviors of the organization and the specificities of its MO and allows to integrate prior, inconsistent findings (Harris, 2000: 602).

Analysis (BS\_ANA) is primarily involved to represent an organizations’ “tendency to search deeper for the roots of problems, and to generate the best possible solution alternatives [... as well as to achieve consistency in the] overall resource allocation for the achievement of chosen objectives (Govindarajan, 1989: 948).” Based on the empirical data at hand BS\_ANA is positively correlated with MO (CCO) and plays an insignificant role in the MO (FMO) domain. Subsequently, the observed behavior integrates with the notion of exploitation of a given current business situation by achieving continuous improvement of the ongoing operations and by an ongoing enhancement of customer value and competitive position in an existing sector the organization operates in.

Both MO (CCO) and MO (FMO) measures are associated positively with defensiveness (BS\_DEF). While MO (FMO) exhibits a relatively low correlation with BS\_DEF, this result still poses a deviation versus the relationship theorized by Venkatraman (1989). Based on the initial conceptualization by Venkatraman (1989), defensiveness is associated with “cost reduction and efficiency seeking methods [... and] preservation of one’s own products, markets and technologies (p. 948).” Therefore, the expectancy would have been to reveal a strong link between current customer focus and BS\_DEF. Despite the initial conceptual contradictions, these observations are similar to the observations made by Lukas (1999: 154) and Morgan & Strong (1998: 1065). Lukas (1999: 154) reports that “unexpectedly”,

prospective organizations exhibit relatively high levels of current customer focus. Lukas' (1999) findings integrate well with the higher observed levels of BS\_DEF for respondents who indicated a perception of high levels of MO (FMO). Morgan & Strong (1998: 1065) report in a similar fashion that there is a positive, yet insignificant relationship between BS\_DEF and their MO construct (based on MKTOR<sup>29</sup>; Narver & Slater, 1990). Given that the underlying reasoning for the MO (CCO) and MO (FMO) measures is different from the construct utilized by Morgan & Strong (1998), these similarities (see 2.3.2.2 for a discussion of the different MO measures) should be treated with a high level of caution. However, both findings lead to support the reasoning of Lukas (1999) that "stronger customer emphasis is the signature of innovative businesses [...] rather than of 'defensive' businesses (p. 154)." Similarly, Vijande et al (2005: 35) argue that firms which exhibit higher levels of MO can be expected to aim for the provision of lower prices as part of their overall market serving strategy, thus exhibiting a certain degree of defensiveness.

As theorized by Venkatraman (1989) and Morgan & Strong (1998) *futurity* (BS\_FUT) is associated with both, MO (CCO) and MO (FMO) which supports the importance of BS\_FUT to echo with both, the "desired future state" which the organization aims to achieve, as well as the importance of rather short-term focus on planning, forecasting and monitoring. The link with futurity is significant for both, MO (CCO) and MO (FMO). Based on the underlying conceptualization, futurity is a representative of "longer-term" strategic thinking (Venkatraman, 1989: 948). Therefore, the positive correlation between BS\_FUT and both MO component constructs confirms that firms which exhibit a strong focus on MO (CCO) and/or MO (FMO) are likely to exhibit higher levels of futurity in an effort to either secure a long-term position in an existing and ongoing business set up (i.e. MO (CCO)) or to obtain and secure such a long-term leadership position in emergent market situations (i.e. MO (FMO)). Consequently, it indicates that futurity is not a matter of FMO but of the level of emphasis longer-term strategic positioning plays in an organization, indifferent of its focus on the CCO or FMO domain.

*Proactiveness* (BS\_PRO) is significantly related with MO (FMO) and plays an insignificant role for MO (CCO). According to Venkatraman (1989: 949) proactiveness relates to the "continuous search for market opportunities and experimentation [...] which may or may not be related to the present line of operations (p 949)." Thus based on the conceptualization a significant link with both, MO (CCO) and MO (FMO) would have been expected. However, based on the empirical data underlying the research project at hand, it appears that the role of proactiveness is by far stronger in the domain of MO (FMO), thus partially contradicting the argumentation of Venkatraman (1989). Furthermore, while Vijande et al (2005: 35) state

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<sup>29</sup> For discussion see 2.3.2.2 Review of popular Market Orientation constructs



that firms with a high level of MO are in general eager to proactively capitalize on its market position, the findings of this research suggest that the role of proactiveness is by far greater in the domain of MO (FMO) and cannot be generalized to MO (CCO) related activities.

Riskiness (BS\_RIS) is significantly linked with MO (FMO), which is in line with prior reasoning (Venkatraman, 1989; Morgan & Strong, 1998). Therefore, the results obtained from subjecting H1.1 to statistical analysis support the theoretical reasoning underlying the STROBE measure in combination with the Govindarajan, Kopalle & Danneels (2011) measures of MO (CCO) and MO (FMO). Accordingly, while Morgan & Strong (1998: 1066) and Vijande et al (2005: 33-34) reported an insignificant relationship between BS\_RIS and their MKTOR construct (note that Vijande et al, 2005 utilized a similar construct which was influenced by their prior research), in the thesis at hand there is a clear positive correlation between the forward looking MO (FMO) construct, while there is a slightly negative, but insignificant, correlation between the BS\_RIS attribute and MO (CCO). Vijande et al (2005: 33-34) concluded that “market orientation is asserted with risk aversion”, based on the observations of this research the relationship between BS\_RIS and MO (CCO) and MO (FMO) is different in its nature and strength. It appears that the disintegration of the initial MO conceptualization of Narver & Slater (1990), and Jaworski & Kohli (1993) towards two separate measures focusing on MO (CCO) and MO (FMO) lead to an increase in the explanatory power of the constructs in the context of this research and allows more fine-grained insights into the interrelationship between BS attributes and the MO component constructs.

Overall the research at hand found that out of a maximum of 12 linkages possible, a total of 8 sets of BS attribute – MO (CCO) and/or BS attribute – MO (FMO) relationships are shown to be significant. In contrast to the work of Vijande et al (2005: 34), the findings contribute significantly to the understanding of how BS attributes and the MO component constructs interact. Especially noteworthy are the reported correlations between MO (FMO) and BS\_RIS (small), BS\_FUT (medium) and BS\_PRO (high), respectively. In line with the initial reasoning underlying the BS attributes, the results indicate that indeed prospective strategies are associated with higher levels of proactivity, futurity and taking calculated risks (Lukas, 1999: 154). From an organizational development perspective, a higher emphasis on these three BS attributes during the process of BS making and communicating is expected to move the organization towards achieving higher levels of MO (FMO).

H1.2 suggests a significant influence of the test variables (1) Clarity of BS communicated (Test\_1\_STR), (2) Adequacy of change given unique situation of the firm (Test\_2\_CHA), (3) Perceived level of employee encouragement (Test\_3\_ENC), (4) Perceived level of environmental turbulence (Test\_4\_TEC), (5) Perceived security of future profitability of the

organization (Test\_5\_PRO), as well as 'time with the company' as the link between the perceived BS attributes, MO (CCO) and MO (FMO).

For MO (CCO), the results indicate that there are no significant deviations in the perception of the test variables for respondents who perceived the MO (CCO) of the organization as "high" versus those who perceive it as being "low". However, for the MO (FMO) construct, there are significant deviations for the respondents who reported the MO (FMO) of the organization as "high" versus those who reported it as "low". The deviations are significant for the Med\_1\_STR variable as well as for the Med\_2\_CHA variable. This suggests that respondents who perceive the BS to be communicated clearly and set adequately given the unique situation of the organization scored on average higher scores on the MO (FMO) scale. Furthermore, the between group difference of the Med\_3\_ENC was reported with a relatively high 0,061 score (significant at the 0,10 level) which implies that the perceived encouragement to participate in the renewal of organizational knowledge and routines may influence the achieved level of MO (FMO).

Similar to the observations reported by Lukas (1999: 152), Jaworski & Kohli (1993) and Matsuno & Metzner (2000: 1), the level of technological turbulence in the business environment of the organization (MED\_4\_TEC) is not related significantly to "high" or "low" levels of MO (CCO) and MO (FMO). This observation seems to contribute to the understanding that the strategic configuration of the organization is less contingent on environmental factors but robust across different environmental or market conditions (Matsuno & Metzner, 2000: 1) and subsequently most probably contingent on relatively deliberate choices made by the organization during its strategy making process (Gilbert, 1994).

Based on the findings presented above, it appears, that as the organization is dealing with the status quo (i.e. its current customer base), the relationship the organization has with its current customers, is not contingent significantly and immediately on the current BS of the organization. The insignificant levels of interdependence suggest that the interaction with current customers, which has a long-standing history in the organization under research, operates on the grounds set by BS making in the past and has limited dependencies on the current BS (see for example: Gilbert, 1994: 21; Senge, 1990; Christensen, 1997). Therefore, it appears that these observations provide support to other authors, who observe that the status quo of an organization is relatively self-maintaining and determined by past investments (e.g. Pfeffer & Salancik, 2003; Farjoun, 2002; Christensen, 1997; Schumpeter, 1911), organizational routines and theory in use (e.g. Agyris & Schön, 1978) and ultimately manifested in organizational culture (e.g. 'Basic underlying assumptions'; Schein, 2010)

which stem from past routines that transpired into the conduct of the organization and influences or even directs its actions without being an obvious driver to the unskilled observer (Schein, 2010).

However, in comparison it appears relatively simpler to strengthen the MO (FMO) of the firm. For example, when attempting to move the organization more towards a MO (FMO) focus, it seems vital to enhance the level of clarity of communication of where the organization is heading (i.e. higher levels of communication overall). Moreover to link the chosen BS of the organization to the level of change the organization faces from the internal and external environment (as buy-in seems essential to achieve high levels of MO (FMO)). As with the level of perceived encouragement, while it is not significant at a 0,05 level it appears reasonably related to higher scores of MO (FMO).

Overall, the investigation into the influence of the BS attributes on the configuration of the organizations' MO (CCO) and MO (FMO) provide insights into how to upraise the level of both, MO (CCO) and MO (FMO) through the emphasis on specific traits of BS and through effective communication and inclusion. Given that in their research paper, Govindarajan, Kopalle & Danneels (2011: 129) posit that higher levels of MO (CCO) and MO (FMO) are associated with overall higher levels of radical (CCO) and disruptive (FMO) innovations, these insight provide a lever to reach higher levels of innovative output through strategic management.

### 5.2.2 Contribution to Science

Research Aim	Identify the interrelations that exist between Business Strategy making and a firm's Capability to Innovate to understand how this contributes to the economic sustainability of incumbent organizations.
Research Principles	(1) Innovation focus (2) Dynamic perspective (3) Holistic approach (4) Integration with prior research (5) Influenced by managers (6) Auditable and Representable (7) Incumbent organization context
Research Objective 1:	What is the relationship between a firm's BS, which is contingent on its unique situation and – intention, and the level of MO (CCO) and MO (FMO) it exhibits?

Table 65: Research Aim, Research Principles and Research Objective 1

The literature review presented in chapter 2 identified several omissions or methodological weaknesses in prior research which are addressed with the research project at hand. This research contributes to the scientific advancement by addressing these limitations and provide evidence to answer the 1<sup>st</sup> research objective. Additionally, the empirical findings

which emerged from RQ1.0 were presented in the previous paragraphs and are summarized in the following table:

No	Omission / methodological weakness	Key Literature	Contribution to <u>science</u> made with this thesis
1.)	Most prior research utilizes MO research constructs with an overly focus on the current customer base	Christensen (1997); Kohli & Jaworski (1990); Jaworski & Kohli (1993); Govindarajan, Kopal- le & Danneels (2011); Narver & Slater (2004), Berthon, Hulbert & Pitt (2004), Grinstein (2008: 126); Rueckert (1992)	<u>Conceptual advancement:</u> Under the light of DIT (Christensen, 1997), a differentiation between the CCO and FMO was warranted in MO research, in order to enhance the understanding of science with regards to how the components interrelate.
2.)	MO construct which differentiates between MO (CCO) and MO (FMO): - was not utilized in multi-component research - was not previously validated in an FMCG industry background	Govindarajan, Kopal- le & Danneels (2011), Morgan & Berthon (2008), Christensen (1997)	<u>Conceptual advancement:</u> Assessment of MO (CCO) and MO (FMO) constructs confirmed their validity and applicability in an FMCG background and single organization research
3.)	Inclusion in holistic model relating BS attributes to separate measures of MO (CCO) and MO (FMO) which was never assessed in previous research	Govindarajan, Kopal- le & Danneels (2011: 131); Govindarajan (1989)	<u>Conceptual advancement:</u> As warranted by Govindarajan, Kopal- le & Danneels (2011: 131), a better understanding of the antecedents of higher levels of both MO (CCO) and MO (FMO), which in their study was ultimately linked with higher levels of disruptive and radical innovations, is desired.

No	Omission / methodological weakness	Key Literature	Contribution to <u>science</u> made with this thesis
4.)	Prior research did not empirically assess the interplay between the BS attributes and separate constructs for MO (CCO) and MO (FMO)	Govindarajan, Kopalle & Danneels (2011); Venkatraman (1989), Morgan & Strong (1998); Cambra-Fierro et al (2012), Dobni (2008); Vijande et al (2005); Harris (2000)	<u>Empirical evidence (from RQ1.1):</u> <ul style="list-style-type: none"> <li>- Supports the conceptualization of the MO component constructs introduced by Govindarajan, Kopalle &amp; Danneels (2011) to interrelate with the BS attributes as theorized in literature (Venkatraman, 1989; Morgan &amp; Strong, 1998)</li> <li>- Lends support to the argumentation of Lukas (1999: 154) that prospective firms exhibit significant levels of defensive current customer orientation.</li> <li>- provides an indication for the methodological strength and provides potential insights for future research</li> <li>- MO (CCO) significantly related with BS_ANA, BS_DEF and BS_FUT</li> <li>- MO (FMO) significantly related with BS_AGG, BS_DEF, BS_FUT, BS_PRO and BS_RIS</li> <li>- BS_RIS was previously reported to relate insignificantly with MO. Based on the conceptual separation into MO (CCO) and MO (FMO) a clear link between BS_RIS and MO (FMO) was identified which poses a contribution to science</li> <li>- BS_PRO not related with MO (CCO), parting with the conceptualization of Venkatraman (1989)</li> </ul>
5.)	Prior research reported insignificant relationships between MKTOR and BS attributes	Morgan & Strong (1998: 1065- 1066); Vijande et al (2005: 33-34)	<u>Empirical evidence (from RQ1.1):</u> <ul style="list-style-type: none"> <li>- Observation was made that there is a small level correlation between BS_DEF and MO (FMO) as well as MO (CCO). Prior research reported on an insignificant positive relationship with the MKTOR measure. Based on the relationship observed in the research at hand, the relationship seems to be stronger for the MO (CCO) measure.</li> <li>- Prior research reported insignificant relationships between BS_RIS and MKTOR. Based on the relationship observed for the research at hand, there is a significant relationship between BS_RIS and MO (FMO). The relationship between BS_RIS and MO (CCO) is insignificant.</li> <li>- 8 out of 12 potential linkages between the BS attributes and MO (CCO) / MO (FMO) are significant which indicates that the explanatory power of the separate component constructs of MO was</li> </ul>

No	Omission / methodological weakness	Key Literature	Contribution to <u>science</u> made with this thesis
			increased following their conceptual separation
6.)	Prior research did not assess a potential influence of test variables on the scores on the MO (CCO) and MO (FMO) scales	Govindarajan, Kopalle & Danneels (2011), Paladino (2008: 587)	<u>Empirical evidence (from RQ1.2):</u> <ul style="list-style-type: none"> <li>- Perceived scores on the MO (CCO) scores are not significantly related with MED_STR, MED_CHA, MED_ENC, MED_TEC, MED_PRO or “time with the company”</li> <li>- Perceived scores on the MO (FMO) scores are significantly and positively related with MED_STR and MED_CHA, suggesting an important synergistic effect between MO (FMO) and clarity of strategy communicated and perceived adequacy of organizational change; all other variables are not significantly related with MO (FMO)</li> <li>- With regards to the relationship between environmental turbulence and MO (CCO) and MO (FMO): In line with the observations of Lukas (1999: 155) it appears that the “degree of emphasis in market orientation are defined by the fundamental strategic orientation of the business rather than by environmental characteristics.”</li> </ul>

Table 66: Research Question 1 - Contribution to Science (Summary)

The observations related to the 2<sup>nd</sup> research question are discussed in the next paragraphs.

### 5.3 Discussion: Interrelation between Business Strategy and Learning (RQ2)

The 2<sup>nd</sup> research question reasoned that the level of LO the organization exhibits is contingent on the BS the organization employs.

OL is increasingly seen as holding great merit being a critical component in the execution of BS, which deserves more attention from business leaders (Marsick & Watkins, 1999: 208) aiming for organizational survival and prosperity in times of turbulence. OL theory differentiates between three different types of learning: Adaptive learning, generative learning and Meta learning (e.g. Baker & Sinkula, 2002: 11). Higher order learning, such as generative learning and meta learning (which encompasses both, adaptive learning and generative learning) are frequently associated with explorative behaviours and are assumed to be positively related with future market oriented BS.

#### 5.3.1 Recap of Results and Interpretation (Research Questions 2.1-2.2)

The following observations were made in the previous chapter and are based on the analysis of the 182 responses in the single organization research inherent to this thesis. They are discussed and contrasted in the following paragraphs.

Research Objective 2	Key Literature	Research Question	Results obtained in the context of the research project
What is the relationship between a firm's BS, which is contingent on its unique situation and – intention, and the level of LO it exhibits?	Baker & Sinkula (2002: 11); Auh & Menguc, (2004: 1652); Baker & Sinkula, (1999: 415); Slater & Narver, (1995: 64–65).	RQ2.1: The 6 BS attributes are significantly linked with the perceived LO of the organization.	<p><u>Research question supported.</u></p> <p>All BS attributes are significantly linked with the LO construct (Spearman correlation coefficient provided in bracket).</p> <ul style="list-style-type: none"> <li>- BS_ANA (+0,370), BS_DEF (+0,392), BS_FUT (+0,510), BS_PRO (+0,486) and BS_RIS (+0,244) are significantly and positively correlated with LO.</li> <li>- BS_AGG (-0,160) is negatively correlated with perceived LO of the organization</li> </ul>
		RQ2.2: The link between the 6 BS attributes and the perceived LO of the organization is significantly related to 5 test variables and “time with the company.”	<p><u>Research question supported.</u></p> <ul style="list-style-type: none"> <li>- With the exception of “time with the company” all test variables are significantly different for respondents who indicated “high” vs. “low” scores on the perceived LO of the organization.</li> <li>- For Test_1_STR, Test_2_CHA, Test_3_ENC and Test_5_PRO there is a positive correlation (i.e. high perceived scores on LO are associated with higher scores on the test variables).</li> <li>- For Test_4_TEC, the relationship exhibits a negative correlation with the scores on the LO construct.</li> <li>- For the variable “time with the company” the differences between the two groups are not significant.</li> </ul>

Table 67: Summary of Findings – Research Question 2 (extract from chapter 4)

RQ2.1 posits that all BS attributes are significantly correlated with the perceived LO of the organization. The statistical analysis of the empirical data, obtained during the research project, supported this alleged relationship.

Based on the results of correlation analysis presented in chapter 4 (see table above), it appears that an emphasis on higher levels of the BS attributes BS\_ANA, BS\_DEF, BS\_FUT, BS\_PRO and BS\_RIS encourages organizational behaviors which lead to higher levels of perceived LO in the organization. These positive correlations are in line with the observations of Morgan & Berthon (2008: 1344) who report that proactivity and risk taking are associated with higher levels of learning. Moreover, these observations are consistent with those of Vijande et al (2005: 35) who emphasize the importance of BS\_ANA to achieve higher order learning. Furthermore, they integrate well with the assertions of Jaworski & Kohli (1993) that riskiness enhances the likelihood that managers “propose and introduce new offerings (p. 55).”

Additionally, the research extends the observations of prior research towards revealing an additional link with BS\_DEF and BS\_FUT. The link of LO and BS\_FUT reaches a large level of correlation (+0,510) and exceeds the level of correlation between LO and BS\_PRO (+0,486). Therefore, based on the empirical evidence obtained, BS\_PRO and BS\_FUT appear to be the key BS attributes associated with a high level of LO of the company under research.

An exception to the positive interrelation between most BS attributes and LO is posed by the BS attribute BS\_AGG, which is negatively correlated with the perceived LO prevailing within the firm. It appears that BS\_AGG is associated rather with bold moves which build on the momentum of surprise or strong authoritarian leadership and consequently have a contrary effect on the perceived LO of the organization.

In RQ2.2 the potential influence of the 5 test variables on the perceived LO of the organization was assessed. The results indicate that higher levels of perceived clarity of strategy communicated (Test\_1\_STR), perceived adequacy of change (Test\_2\_CHA), perceived encouragement (Test\_3\_ENC) to enhance as well as the perceived level of future profitability (Test\_5\_PRO) of the organization are associated with higher levels of perceived LO. These observations suggest that closely communicated directions of BS, as well as comprehensibility of strategic moves in light of the current situation the organization faces and an active encouragement of organizational members to enhance the status quo are important contributors to enhance the perceived LO of the organization. Moreover, the observation that higher levels of perceived encouragement to change outdated firm routines and knowledge lend support to learning theory. For example, Hurley (2002) argues that “people learn primarily by being encouraged to tackle challenges, experiment, fail and correct failures, and reflect on their experiences (p. 271).” Consequently, employee encouragement seems to be a powerful lever to enhance the LO of the company.

In line with the reasoning involving the negative correlation between BS\_AGG and LO, the research provides evidence that the perceived future profitability of the organization is positively associated with higher levels of LO. Consequently, higher levels of (economic and most likely job) certainty are alleged contributors to a favorable perception of LO in the organization and contribute to a favorable learning environment. Furthermore, while Test\_5\_PRO is not significantly related to the perceived scores of MO (CCO) and MO (FMO), the positive correlation between LO and Med\_5\_PRO appears to be especially noteworthy. As learning in organizations is important as a means to question outdated theory in use (Agyris & Schön, 1978), the findings indicate that higher levels of LO can be triggered especially *in times of economic stability*. Therefore the emergent results of the research project suggest that higher levels of LO should be proactively encouraged by management



in times when profitability appears certain, in order to prepare the organization for times of higher uncertainty in the future and to thus thrive on the current sentiment and profitability available in the organization. Such a favorable learning environment is one which is characterized as low pressure with enough leeway to build on organizational slack (García-Morales, Lloréns-Montes & Verdú-Jover, 2008: 300).

Prior research in the field of OL/LO associates organizations aiming at exploration (i.e. FMO) with higher levels of learning, while firms aimed at exploitation (i.e. CCO) were associated with lower levels of learning (e.g. He & Wong, 2004). The available data suggests that the interrelation is more complex than previously assumed. For example, when considering that higher levels of LO are achievable when profitability appears certain (as expressed in the context of this thesis through the variable `Test_5_PRO`), it suggests that a stronghold in CCO which generates sufficient funds in the short and mid-term creates a favorable environment which then allows to achieve higher levels of learning when emerging into explorative, FMO activities<sup>30</sup>. To capitalize on this pattern, a proactive and future-anticipating BS appears of use.

These patterns are furthermore interesting from the point of AOT, as they suggest that firms may capitalize on synergistic effects between a LO fostered in their organization on the basis of current profitability which is channeled towards the exploration of new business opportunities beyond the core of current activities (Zook, 2007 ; Kim & Mauborgne, 2005; Brown & Eisenhardt, 1998). Thus the observations provide support to the reasoning of Farjoun (2002), who posits that current organizational success and profitability should be seen as a result of organizational conduct in the short-term, but in themselves qualify as an input variable which allows the organization to achieve long-term success if re-invested wisely.

'Time with the organization' is not significantly linked with perceived level of LO prevailing within the organization (at a 0,05 significance level). This insight supports the notion that the perceived LO is not overly influenced by either long- or short membership in the firm, but is rather influenced by organizational behaviors. These observations run counter to popular beliefs that long-term members of an organization may be generally more reluctant to change and learning than members who joined the organization more recently.

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<sup>30</sup> Further investigation into the matter, however, was beyond the scope of this thesis and is left for future research.

### 5.3.2 Contribution to Science

Research Aim	Identify the interrelations that exist between Business Strategy making and a firm's Capability to Innovate to understand how this contributes to the economic sustainability of incumbent organizations.
Research Principles	(1) Innovation focus (2) Dynamic perspective (3) Holistic approach (4) Integration with prior research (5) Influenced by managers (6) Auditable and Representable (7) Incumbent organization context
Research Objective 2:	What is the relationship between a firm's BS, which is contingent on its unique situation and – intention, and the level of LO it exhibits?

Table 68: Research Aim, Research Principles and Research Objective 2

The literature review presented in chapter 2 identified several omissions or methodological weaknesses in prior research which are addressed with the research project at hand. This research contributes to the scientific advancement by addressing these limitations and provide evidence to answer the 2<sup>nd</sup> research objective. Additionally, the empirical findings which emerged from RQ2 were presented in the previous paragraphs and are summarized in the following table:

	Omission / methodological weakness	Key Literature	Contribution to science made with this thesis
1.)	LO construct by Calantone, Cavusgil & Zhao (2002) was not utilized in subsequent re-search: <ul style="list-style-type: none"> <li>- was not previously validated in an FMCG industry background</li> <li>- was not utilized in multi-component research</li> <li>- initial utilization in cross industrial, cross organizational context with a sample of 400 R&amp;D vice presidents (Calantone, Cavusgil &amp; Zhao, 2002: 518)</li> </ul>	Calantone, Cavusgil & Zhao (2002)	<u>Conceptual advancement:</u> <ul style="list-style-type: none"> <li>- Utilized/validated in multi-component research with BS attributes as independent variable</li> <li>- Utilized/validated in FMCG industry in the context of an incumbent market player</li> <li>- Utilized/validated in a single organization context with respondents from different organizational functions and hierarchical levels (initially only R&amp;D vice presidents), thus shown to be useful with other population as well.</li> <li>- Including Exploratory Factor Analysis (EFA) which confirms internal structure presented in initial research paper (i.e. 2<sup>nd</sup> order construct of LO is made up of 4 1<sup>st</sup> order component constructs: Commitment to learning, shared vision, open-mindedness and intra-organizational knowledge sharing)</li> <li>- Reliability of measure indicated by high Cronbach's alpha values</li> </ul>

	Omission / methodological weakness	Key Literature	Contribution to science made with this thesis
2.)	Limited empirical research on the factual levels of LO and OL in explorative (FMO) and exploitative (CCO) contexts.		<u>Conceptual advancement:</u> <ul style="list-style-type: none"> <li>- Appears as if the simplistic relationship between FMO =&gt; comparably higher levels of learning and CCO =&gt; comparably lower levels of learning is more complex and is influenced by the perceived security of future profitability of the firm.</li> <li>- High levels of learning appear to be associated with a perception of secured future profitability combined with explorative organizational behavior.</li> </ul>
3.)	No prior research in interrelating BS attributes and the interplay with LO and limited focus on importance of "intention" on the LO of the firm. <ul style="list-style-type: none"> <li>- was not previously related to BS attributes</li> </ul>	Venkatraman (1989); Calantone, Cavusgil & Zhao (2002)	<u>Empirical evidence (from RQ2.1):</u> Interrelation of STROBE (Venkatraman, 1989) measure with perceived LO of the organization: <ul style="list-style-type: none"> <li>- Aggressive behaviors are negatively related with LO of the organization</li> <li>- Constructive behaviors are associated with higher levels of LO</li> </ul>
4.)	Limited prior research on influencing factors in the link between BS attributes and OL/LO of an organization.	Calantone, Cavusgil & Zhao (2002); Venkatraman (1989); Hurley (2002: 271)	<u>Empirical evidence (from RQ2.2):</u> Interrelation of LO measure with 5 test variables: <ul style="list-style-type: none"> <li>- Clarity of strategy communicated, adequacy of change given the specific situation of the firm, encouragement to change outdated routines and mental models, and perceived future profitability are positively associated with higher levels of LO in the firm.</li> <li>- Link between perceived encouragement and higher levels of LO provides support to prior reasoning, that employee encouragement is a critical factor to enhance employee learning.</li> <li>- Level of perceived technological change is negatively associated with LO of the organization</li> <li>- No prior research of the link between BS and OL/LO in a single organizational context of an incumbent market player in the FMCG industry</li> </ul>

Table 69: Research Question 2 - Contribution to Science (Summary)

#### 5.4 Discussion: Interrelation between Business Strategy and favorability of the innovation implementation context (RQ3.1-3.3)

Following the reasoning in chapter 2 besides BS, MO and LO, the perceived favourability of the IIC of the organization was selected to represent the ability of the organization to execute innovative concepts in line with its selected BS and to ultimately put them to economic use.

The notion of “execution” is not new in innovation research, however empirical investigations into the subject are relatively scarce (e.g. Dobni, 2008; Gaynor, 2002) as the act of innovation execution is usually taken for granted. For the research at hand, the favorability of the IIC was selected to represent the perceived availability of supporting infrastructure and resources to implement innovative concepts and bring them to economic use (Schumpeter, 1911). It is important to acknowledge the limitations of the construct, which does not allow to assess separately the perceived IIC for sustaining or radical/disruptive innovations. Thus, the perceived level of favorability is a relative measure and does not allow to specify the favorability for a given innovation strategy.

##### 5.4.1 Recap of Results and Interpretation (Research Questions 3.1-3.2)

The following observations were made in the previous chapter and are based on the analysis of the 182 responses in the single organization research inherent to this thesis. They are discussed and contrasted in the following paragraphs.

Research Objective 3	Key Literature	Research Questions	Results obtained in the context of the research project
What is the relationship between a firm's BS, which is contingent on its unique situation and – intention, and the level of favorability its IIC exhibits?	Dobni (2008); Damanpour (1991)	RQ3.1: The 6 perceived BS attributes are significantly linked with the perceived favorability of the IIC of the organization.	<u>Research question supported.</u> With the exception of BS_AGG, all BS attributes are significantly linked with the scores of the IIC construct (positive correlation). These are: BS_ANA (0,223), BS_DEF (0,430), BS_FUT (0,466), BS_PRO (0,546) and BS_RIS (0,331).
		RQ3.2. The link between the 6 BS attributes and the perceived favorability of the IIC of the firm is significantly related to 5 test variables and “time with the company.”	<u>Research question partially supported.</u> - Test_1_STR, Test_2_CHA and Test_3_ENC are significantly different for “high” and “low” scores on the perceived IIC of the firm and exhibit a positive correlation (Spearman) with the IIC construct (i.e. high perceived scores on favorability of the IIC are associated with higher scores on the test variables). - For Test_4_TEC, and Test_5_PRO as well as “time with the company” the differences between the two groups are not significant.

Table 70: Summary of Findings – Research Question 3 (extract from chapter 4)

RQ3.1 posited that there is a significant link between perceived BS and perceived favorability of the IIC prevailing within the organization. The results, which emerged from the empirical data, indicate that with the exception of BS\_AGG, all BS attributes are significantly and positively related with the perceived favorability of the IIC prevailing within the organization.

A content analysis of the underlying conceptualization of BS attributes (Venkatraman, 1989) and their potential role in relation to the execution and/or commercialization of innovations was performed. It provides evidence that, with the exception of BS\_AGG, for the remaining 5 attributes there is a strong conceptual link with the notion of innovation implementation available:

BS attribute	Key aspects with regards to IIC (Venkatraman, 1989: 948-949)	Conductive to execute/ commercialize innovations?
BS_AGG	Allocation of resources to achieve <u>competitive advantage</u>	No
BS_ANA	Internal consistency achieved in <u>resource allocation</u>	Yes
BS_DEF	<u>Cost reduction</u> and <u>efficiency seeking</u>	Yes
BS_FUT	<u>Long-term focus</u> which emphasizes importance of structure and support systems to achieve business success	Yes
BS_PRO	Continuous <u>search for opportunities</u> and <u>experimentation</u>	Yes
BS_RIS	Riskiness in <u>resource allocation</u> as well as <u>choice of products and markets</u>	Yes

Table 71: BS attributes and IIC (based on Venkatraman, 1989)

For example, in the case of BS\_AGG, the dominant theme is the allocation of resources to achieve competitive advantage (Venkatraman, 1989). This BS attribute consequently has limited conceptual overlap with the underlying conceptualization of the IIC construct as the resources of the organization are directed towards objectives which are not linked with the immediate need to support the progress of innovative concepts on their route to commercialization/implementation. On the contrary, BS\_ANA, BS\_DEF, BS\_FUT, BS\_PRO and BS\_RIS (as presented in the table above) each emphasize a different aspect supportive for the development and execution of innovative concepts (e.g. resource allocation, process efficiency, experimentation and choice of product/market). Therefore, there is a strong conceptual overlap with the concept underlying innovation implementation/ commercialization and thus IIC. These observations provide new insights into the importance of the link between BS and the successful implementation/commercialization of innovations and its underlying mechanisms and requirements (e.g. resources, infrastructure, management support etc.).

RQ3.2 investigates into the potential effect of the 5 test variables and 'time with the company' on the link between perceived BS attributes and perceived favorability of the IIC. Based on the available data, it appears that perceived clarity of strategy communicated (Test\_1\_STR), perceived adequacy of change given the specific circumstances of the company (Test\_2\_CHA) and perceived encouragement to break with the status quo (Test\_3\_ENC) are positively associated with the perception of a favorable IIC available in the organization. These observations are similar to the results obtained in H1.2 and H2.2 where high scores on the Test\_1\_STR and Test\_2\_CHA variables were positively related with the level of favorability of the dependent variable construct. In the context of H3.2. These findings suggest that an effective and transparent communication as well as strategic decisions, which are grounded in the necessities derived from insights of the status quo, are key concepts to achieve higher levels of perceived favorability of the IIC within the organization.

As in RQ2.2, where higher levels of Test\_3\_ENC were related to higher levels of perceived LO within the organization, higher levels of perceived encouragement to change outdated routines and consequently to participate in the renewal of the organization (Test\_3\_ENC) are significantly associated with higher scores on the IIC construct. It appears that these increased levels of perceived encouragements point towards higher employee participation and ownership during the final phase of the execution/ commercialization of innovative concepts. These findings support the findings and assertions made in prior research, which suggested that organizational innovators obtain necessary resources and support to execute their innovations through formal and informal channels. Therefore higher levels of (perceived) encouragement might provide sufficient top management and 'political' support to overcome potential obstacles (Assink, 2006) to the execution of an innovative concept (Axtell et al, 2000: 283; Baer, 2012: 1116; Dahlggaard-Park & Dahlggaard, 2010: 170).

Another important observation results from the statistical domain and is noteworthy at this point in time as it represents a conceptual advancement and contribution to the advancement of science. EFA performed in the research at hand suggests two factors with Eigenvalue greater than 1,0 inherent to the current construct of IIC (Dobni, 2008). This is in line with the observations of Dobni (2008) who observed that there are several different factors observable within the construct, indicating that different organizational aspects comprise the overall IIC of an organization. For example, Gaynor (2002: 103) argues that "infrastructure," "resources" and "information" are contributors to foster innovative output in organization. While Siguaw, Simpson & Enz (2006: 564-566) propose "resource allocation", "technology competencies", "operations competencies" and "employee competencies" as

potential supporting factors beneficial to the IO of an organization. Other authors have highlighted the importance of top management buy-in for the successful execution of innovative concepts and Damanpour's (1991) meta analysis of factors supportive to firm innovation yielded 10 significant interlinkages with contextual variables. Therefore, the findings provide support for future analyses into the conceptualization of the IIC construct. For example the construct could be enhanced in its quality by operationalizing it as a 2<sup>nd</sup> order framework combining, and separately assessing, various 1<sup>st</sup> order constructs of innovation enabling – or supporting factors.

#### 5.4.2 Contribution to Science

Research Aim	Identify the interrelations that exist between Business Strategy making and a firm's Capability to Innovate to understand how this contributes to the economic sustainability of incumbent organizations.
Research Principles	(1) Innovation focus (2) Dynamic perspective (3) Holistic approach (4) Integration with prior research (5) Influenced by managers (6) Auditable and Representable (7) Incumbent organization context
Research Objective 3:	What is the relationship between a firm's BS, which is contingent on its unique situation and – intention, and the level of favorability its IIC exhibits?

Table 72: Research Aim, Research Principles and Research Objective 3

The contributions to science which emerged from the third research question and from the conceptual advancements brought forward from the research project, are summarized in the following table. In their combination they contribute to answer the 3<sup>rd</sup> research objective.

	Omission / methodological weakness	Key Literature	Contribution to science made with this thesis
1.)	No prior research in interrelating BS and the interplay with perceived favorability of the IIC and limited focus on importance of "intention" on the IIC of the organization. - was not previously related to BS attributes (STROBE, Venkatraman, 1989)	Venkatraman (1989), Dobni (2008)	<u>Conceptual advancement:</u> Interrelation of BS attributes with perceived favorability of the IIC of the firm
2.)	IIC construct - was not utilized in multi-component research - was not previously validated in an FMCG industry background	Dobni (2008)	<u>Conceptual advancement:</u> - Utilized/validated in multi-component research - Utilized/validated in FMCG industry context within incumbent market player - Cronbach's alpha (0,836) confirmed good level of reliability in the context of this research

	Omission / methodological weakness	Key Literature	Contribution to science made with this thesis
3.)	Domain surrounding the implementation context for innovations is scarcely researched.	Dobni (2008); Gaynor (2002); Siguaw, Simpson & Enz (2006)	<u>Conceptual advancement:</u> <ul style="list-style-type: none"> <li>- EFA performed reveals two component constructs with Eigenvalues greater 1,0 and suggests potential for more detailed approach to IIC to reveal contributing factors that allow to successfully implement innovative concepts (e.g. "infrastructure", "resources", "technology" etc.)</li> <li>- Provides an indication for further research to identify and separately assess component constructs prevailing in the IIC construct</li> </ul>
4.)	IIC was not previously assessed in light of BS attributes of the firm	Dobni (2008); Venkatraman (1989)	<u>Empirical evidence (from RQ3.1):</u> STROBE (Venkatraman, 1989) BS attributes related to perceived favorability of IIC within the organization: <ul style="list-style-type: none"> <li>- With the exception of BS_AGG (no significant relationship), all BS attributes are positively correlated to the perceived favorability of the IIC of the firm</li> <li>- Correlation coefficients for BS_ANA (0,223), BS_DEF (0,430), BS_FUT (0,466), BS_PRO (0,546) and BS_RIS (0,331).</li> </ul>
5.)	Effect of BS attributes on IIC was not previously assessed in light of potential interdependencies with test variables	Dobni (2008)	<u>Empirical evidence (from RQ3.2):</u> <ul style="list-style-type: none"> <li>- Statistically different perceived favorability of the IIC for respondents who scored 'low' versus those who scored 'high' on: Test_1_STR, Test_2_CHA and Test_3_ENC (positively associated with perceived IIC prevailing within the organization)</li> <li>- Suggests that a widely communicated strategic need enhances the probability to secure scarce resources conducive to implement innovative concepts</li> </ul>

Table 73: Research Question 3 - Contribution to Science (Summary)

### 5.5 Discussion: Interrelation between Capability to Innovate constructs

This thesis is operationalized from a holistic and dynamic perspective as a multi-component construct comprised of an organizations' MO, its LO and the context it provides for the implementation and execution of innovative concepts (IIC). In chapter 2, the CTI of an organization was presented as ultimately contingent on the unique BS the organization pursues.



Thus the BS of the organization (represented by the STROBE BS attributes measure) is the independent variable inherent to the research project performed as part of this thesis.

With regards to the interplay between the component constructs employed in the research at hand, RQ4.0 aims to uncover synergistic effects between the constructs of MO (CCO), MO (FMO), LO and IIC. It posits that, with the exception of MO (CCO) with MO (FMO), all constructs are significantly and positively related and contribute to the overall CTI of an organization.

#### 5.5.1 Recap of Results and Interpretation (Research Question 4.0)

The following observations were made in the previous chapter based on the data analysis which builds on the empirical data obtained from 182 responses in the single organization research which is part of the research project inherent to this thesis:

Research Objective 4	Key Literature	Research Question	Results obtained in the context of the research project
Is there a synergistic relationship between an firm's MO (CCO), MO (FMO), it's LO and it's IIC, which support the holistic perspective of this re-search?	Siguaw, Simpson & Enz (2006); Govindarajan, Kopalle & Danneels (2011: 131), Tushman & O'Reilly, 2002)	RQ4.0: The perceived MO (CCO), MO (FMO), LO and IIC are significantly related.	<u>Research question supported.</u> <ul style="list-style-type: none"> <li>- With the exception of the relationship between MO (CCO) and MO (FMO), all constructs exhibit significant levels of positive correlation</li> <li>- Near zero correlation between MO (CCO) and MO (FMO) is in line with prior research and literature on AOT which posits that both are not mutually exclusive but possible at the same time (Tushman &amp; O'Reilly, 2002)</li> </ul>

Table 74: Summary of Findings – Research Question 4 (extract from chapter 4)

RQ4.0 offers insights with regards to the holistic and dynamic perspective on the overall CTI of the organization. With exception of the relationship between MO (CCO) and MO (FMO), there is a positive correlation among all constructs indicating a conceptual overlap and interrelation between MO, LO and IIC. The insignificant correlation between the MO (CCO) and MO (FMO) component construct is in line with findings that relate to the ambidextrous organizational school of thought (Tushman & O'Reilly, 2002) and support the initial observations of Govindarajan, Kopalle & Danneels (2011: 131) who first operationalized the separate constructs for MO (CCO) and MO (FMO). They report that both constructs should not be seen as two opposing ends of a continuum but as two separate dimensions which can be simultaneously pursued within one single organization. This

line of argumentation is supported with the evidence which emerged in the research project at hand and points into the direction that MO (CCO) and MO (FMO) are not related and thus neither synergistic nor negatively influencing each other. Subsequently, much prior research indicates that management needs to find a delicate balance between CCO and FMO within the organization to balance short-term and long-term firm objectives (Gaynor, 2002: 18) and to align its CTI in light of the firms' unique situation (Damanpour, 1992: 583). Several authors in the field argue that a balancing of exploration and exploitation and subsequent innovative offspring is necessary to sustain the competitive advantage of the firm in the short- and long-run. Such balancing is not only possible (Stock & Zacharias, 2011: 881), but even associated with higher firm performance (He & Wong, 2004) and superior capabilities to increasingly handle the development and implementation of both types of innovations (Siguaw, Simpson & Enz, 2006: 567).

Even though the specific composition of component constructs utilized in this thesis may not be the "standard measure" for IO which is warranted by Siguaw, Simpson & Enz (2006: 570), it can be seen as a conceptual advancement highlighting the importance of a distinct approach to the separate MO domains dealing with innovations associated with current customers and innovations associated with FMO. Furthermore the perspective taken in this research integrates the distinct perspectives of IO, sketch innovation process and Dynamic Capabilities View (DCV) based on the inherent innovation focus of all 3 perspectives. Consequently, the CTI framework assess the impact of BS on MO (CCO) and MO (FMO) in connection with LO and IIC to adhere to this holistic reasoning. It is the contribution of this thesis to relate these 4 dependent variable component constructs which were never utilized in this combination before. Especially the aspect of innovation implementation (i.e. the element of commercially successful execution/application) was neglected or under-represented in most prior research (Baer, 2012: 1102) and completes the view at an organizations capabilities related to innovation.

Overall, except the relationship between the MO (CCO) and MO (FMO) constructs, all component constructs of the CTI measure are positively related. Therefore, the results provide a very positive affirmation of the holistic perspective taken in this research and provide support to the alleged synergistic effects between a firm's ability to sense, to learn and to execute innovative concept for the use of the organization.

### 5.5.2 Contribution to Science

Research Aim	Identify the interrelations that exist between Business Strategy making and a firm's Capability to Innovate to understand how this contributes to the economic sustainability of incumbent organizations.
Research Principles	(1) Innovation focus (2) Dynamic perspective (3) Holistic approach (4) Integration with prior research (5) Influenced by managers (6) Auditable and Representable (7) Incumbent organization context
Research Objective 4	Is there a synergistic relationship between an firm's MO (CCO), MO (FMO), it's LO and it's IIC, which support the holistic perspective of this research?

Table 75: Research Aim, Research Principles and Research Objective 4

Following this discussion, the key contributions to the advancement of science from RQ4.0 is summarized in the following table. The evidence contributes to overall answer the 4<sup>th</sup> research objective.

	Omission / methodological weakness	Key Literature	Contribution to science made with this thesis
1.)	No re-search to integrate DIT, AOT, IO and DCV with an organic strategy perspective	Christensen, (1997), Tushman & O'Reilly (2002); Siguaw, Simpson & Enz (2006), Schumpeter (1911); Bessant & Tidd (2011); Teece, Pisano & Shuen (1997); Farjoun (2002)	<u>Conceptual advancement:</u> <ul style="list-style-type: none"> <li>- Synthesis and integration of works on DIT, AOT, IO, innovation process, DCV and organic strategy based on the inherent perspective on innovation</li> <li>- Conceptualization of CTI contingent on BS of an organization to highlight the role of "intention" which was widely ignored</li> <li>- Theoretical grounding based on synthesis and integration of DIT; AOT, IO, DCV and organic strategy perspective</li> </ul>

	Omission / methodological weakness	Key Literature	Contribution to science made with this thesis
2.)	Limited research with holistic, dynamic orientation to describe CTI of an organization	Siguaw, Simpson & Enz, 2006; Dobni, 2008; (Stock & Zacharias, 2011: 881)	<u>Conceptual advancement:</u> <ul style="list-style-type: none"> <li>- Presentation of CTI measure to illustrate link between BS and CTI from a holistic and organic perspective</li> <li>- Conceptualization of IO as MO (CCO), MO (FMO), LO and IIC – contingent on intention of the organization to be innovative (represented by its BS)</li> <li>- Analysis of definitions of “innovation” leads to 4 key elements which exhibit a conceptual overlap with model of innovation orientation (IO; Siguaw, Simpson &amp; Enz, 2006) and DCV, which were synthesized into the concept of CTI present in this thesis</li> <li>- Existing constructs utilized in a multi-component research context comprising of measures for BS attributes, MO (CCO), MO (FMO), LO and IIC</li> </ul>
3.)	No prior research on the interplay between MO (CCO), MO (FMO), LO and IIC of the firm	Calantone, Cavusgil & Zhao, (2002); Govindarajan, Kopalle & Danneels (2011); Dobni (2008)	<u>Empirical evidence (from RQ4.1):</u> <ul style="list-style-type: none"> <li>- With the exception of MO (CCO) and MO (FMO), all constructs are significantly and positively correlated.</li> <li>- Shows interrelations between constructs and lends support to the conceptualization brought forward in this thesis.</li> <li>- MO (CCO) and MO (FMO) are not correlated significantly. Thus the findings support observations of AOT that both can be pursued simultaneously within an organization.</li> </ul>

Table 76: Research Question 4 - Contribution to Science (Summary)

### 5.6 Discussion: Perceptions across ranks & functional boundaries (RQ5.1- 5.2)

The 5<sup>th</sup> research question addressed potential variations in the perception of firm characteristics (i.e. its BS attributes and CTI component constructs) across organizational hierarchical levels and/or functional boundaries.

Single informant strategies are widely used in quantitative academic research. As outlined in chapter 2, most prior research in the field related to BS, MO and LO was performed with cross-organizational research designs and relied on data obtained from single- or key informants. The single source of information poses a significant limitation to the research findings of prior research as bias are likely (Garcá-Morales, Lloréns-Montes & Verdú-Jover, 2008: 315). However, due to restrictions (e.g. time, resources) and practicability, potentially obscuring effects are usually acknowledged and ultimately accepted by researchers in the field. Consequently, the implications of potential deviations for the execution and alignment

of BS (Sabherwal & Chan, 2001; Johnson & Lederer, 2010) were widely ignored by prior research.

The thesis at hand is based in a single organizational research and employs a multi-hierarchy, multi-function, multi-respondent research design to obtain data about the perceived constituency of the organization's CTI, as well as its perceived BS, across various organizational boundaries. It thus poses an opportunity to assess the level of variation of responses across different organizational groups (i.e. hierarchical levels or functional membership). Subsequently, it allows to investigate if observations gained from single informants (regularly top manager level) allow to draw validity conclusion for the whole organization. Given that there is an almost exclusive reliance of prior research on single informants, significant deviations in the perception between top management and lower level employees, while not automatically generalizable to other organizations, would indicate that the conclusions drawn from prior research are not beyond doubt and that the conclusions drawn should be interpreted with caution.

In line with the intended practical use of the research (as outlined in chapter 1), the CTI framework and the emergent findings of the empirical data allow to identify potential deviating observations from within the company and to subsequently address relevant aspects as part of organizational development interventions. To provide a representative account of the perceived peculiarities across organizational ranks and functional boundaries, a stratified random sampling approach (Saunders, Lewis & Thornhill, 2007: 221) was adopted, which allows to generalize the findings of this research to the overall population of the business entity under research.

#### 5.6.1 Recap of Results and Interpretation (Research Questions 5.1- 5.2)

In order to assess the degree of variation in the perceptions across organizational ranks and functional boundaries, which is frequently beyond the scope of cross organizational research, as well as to yield a diagnostic instrument for the application in an organizational development context, research question 5 was established. It posits that an effectively communicated and aligned BS (Sabherwal & Chan, 2001; Johnson & Lederer, 2010; Thodosiou, Kehagias & Kasikea, 2012) should result in similar perceptions of the organizations BS and its underlying BS attributes as well as of the perceived CTI component constructs across hierarchical levels and functional boundaries of the organization. The following results were obtained from the analyses of empirical data performed in the previous chapter:

Research Objective 5	Key Literature	Research Question	Results obtained in the context of the research project
Do the perceptions of high-ranking key informants provide a representative account of the configuration of the organization, as perceived by lower-ranking members of the firm who are concerned with BS implementation and execution on a daily basis?	Sabherwal & Chan (2001), Johnson & Lederer (2010) Theodosiou, Kehagias & Kasikea (2012); Dobni & Luffman (2000: 910)	RQ5.1: Perception of BS attributes and MO (CCO), MO (FMO), LO and IIC <u>across ranks</u> do not deviate significantly.	<u>Research question partially supported.</u> <ul style="list-style-type: none"> <li>- In the single organizational context there are significant deviations on some of the selected variables under research.</li> <li>- Perceptions between top hierarchical level (i.e. “Manage Function/-Business”) and all other hierarchical levels differ significantly for BS_AGG (Top management perception: Less aggressiveness), BS_ANA (top management perception: Higher level of analysis), and LO (top management perception: higher levels of LO).</li> </ul>
		RQ5.2: Perception of BS attributes and MO (CCO), MO (FMO), LO and IIC <u>across functional boundaries</u> do not deviate significantly.	<u>Research question partially supported.</u> <ul style="list-style-type: none"> <li>- Significant deviations for Finance vs. “all other functions” (BS_ANA)</li> <li>- Significant deviations for Marketing/Sales vs. “all other functions” (BS_PRO)</li> <li>- Significant deviations for IS/Others vs. “all other functions” (BS_RIS)</li> </ul>

Table 77: Summary of Findings – Research Question 5 (extract from chapter 4)

Authors in the past (e.g. Zhou et al., 2005: 1052; Sabherwal & Chan, 2001) have stressed the importance of strategy diffusion from top management to all hierarchical ranks of the firm and the subsequent consistent execution of desired behavior for the success of the organization by all its members. In extreme cases of disconnection between the top management and the remaining organization, BS could be fully detached from the factual whereabouts of the company. Consequently, the perceptions of top management and those of other members of the organization would report fundamentally different observations of perceived behaviors. In the past, alignment between strategic dimensions across the organization was shown to result in more effective strategy execution and performance (e.g. Johnson & Lederer, 2010: 138; Sabherwal & Chan, 2001; Dobni & Luffman, 2000: 910). The results of the performed analyses indicates that there are factual differences in the perception across hierarchical levels of the firm (RQ5.1). In the context of the empirical research project of this thesis, the differences relate to the perceptions of BS\_AGG, BS\_ANA and LO. These findings in their specific manifestation have a limited immediate effect on the advancement of scientific knowledge as the results can not necessarily be generalized to other firms or related prior research. However, they do indicate that there are

fundamental differences in the perception between top management and other hierarchical levels in the specific constellation and context of this research. Thus, with the limitations posed by the research design (i.e. single organizational context), the assumptions can be stated that in prior research the perceptions obtained from addressing key informants in cross organizational research, were not fully representative for the respective organizations and incomplete conclusions might have been drawn.

Furthermore, there are differences across functional boundaries (RQ5.2). In the context of this research, members of the Finance discipline report significantly higher levels of perceived BS\_ANA than all other functions. Members of the Marketing/Sales discipline report significantly higher levels of expected future profitability than all other functions and members of the IS/others discipline report significantly higher levels of perceived BS\_RIS than all members of all other functions. Consequently, the findings suggest that there are indeed differences in perceptions across functional boundaries which indicates towards a BS which is not understood equally across the organizational ranks and results in ineffective behaviors (Sabherwal & Chan, 2001; Johnson & Lederer, 2010). Moreover, in the context of scientific advancement, the adequacy of single informant strategies to assess the overall configuration of an organization is questionable based on this case example.

### 5.6.2 Contribution to Science

Research Aim	Identify the interrelations that exist between Business Strategy making and a firm's Capability to Innovate to understand how this contributes to the economic sustainability of incumbent organizations.
Research Principles	<ul style="list-style-type: none"> <li>(1) Innovation focus</li> <li>(2) Dynamic perspective</li> <li>(3) Holistic approach</li> <li>(4) Integration with prior research</li> <li>(5) Influenced by managers</li> <li>(6) Auditable and Representable</li> <li>(7) Incumbent organization context</li> </ul>
Research Objective 5	Do the perceptions of high-ranking key informants provide a representative account of the peculiarities of the organization, as perceived by lower- ranking members of the firm who are concerned with BS implementation and execution on a daily basis?

*Table 78: Research Aim, Research Principles and Research Objective 5*

Following this discussion, the key contributions to the advancement of science from RQ5.0 are summarized below. In their combination they serve to answer the 5<sup>th</sup> research objective.

	Omission / methodological weakness	Key Literature	Contribution to science made with this thesis
1.)	<p>Most prior research relied on key informant strategies and cross organizational research</p> <ul style="list-style-type: none"> <li>- Neglecting potential deviating perceptions across different ranks</li> <li>- Neglecting potential deviating perceptions across different functional boundaries</li> <li>- There is very limited research that takes differences in the perception of multiple hierarchical levels into account</li> <li>- Very limited explanatory power for organizational diagnostics</li> </ul>	<p>Stock &amp; Zacharias, (2011: 881); Calantone, Cavusgil &amp; Zhao, (2002: 518); Roberts, 2010; Morgan, McGuinness &amp; Thorpe, (2000: 347)</p>	<p><u>Conceptual advancement:</u></p> <ul style="list-style-type: none"> <li>- Research design parts from prior research in the field and adds “strength and clarity” to the findings of the research (see Roberts, 2010: 51 on “Replication Studies”)</li> <li>- Advancement of research in the single organizational/ multiple-informant field of research.</li> <li>- Supports the notion that there are factual differences in the perceptions of BS attributes and organizational peculiarities (here: LO) across the organization. Thus it implicates limitations to the findings and conclusions of prior key-informant research as the generalizability of top management observations to the factual configuration of the organization remains doubtful.</li> </ul>
2.)	<p>Single informant / key informant strategies are the method of choice in most research. However, they generalize from the perceptions of a key informant to the whole organization (unit of analysis). Miss-alignments or miss-perceptions could lead to an unintended but incorrect reporting of organizational characteristics (e.g. “basic disease of the hierarchy”; Senge, 1990)</p>	<p>Senge, (1990); Theodosiou, Kehagias &amp; Kasikea (2012); Dobni &amp; Luffman (2000: 910)</p>	<p><u>Empirical evidence (from RQ5.1 and RQ5.2):</u></p> <ul style="list-style-type: none"> <li>- Findings suggest that single informant strategies are not universally adequate as different levels of perceptions may exist across hierarchical levels and functional boundaries.</li> <li>- Significant differences between perceptions across hierarchical levels for BS_AGG, BS_ANA and LO</li> <li>- Statistically significant: Severe differences between the subjective recognition of “encouraged to change things” across top management level vs. “all others.”</li> <li>- Significant differences between perceptions across functional boundaries</li> </ul>

Table 79: Research Question 5 - Contribution to Science (Summary)

In combination, the statistical analyses involved with the 5 research questions presented in this research yielded numerous contributions to science as presented in the sections above.

### 5.7 Contribution to Practice

Besides the contributions to science, which were outlined above, there are several contributions to managerial practice emerging from this thesis and the inherent research project.



While the research project itself is based on a single organizational context, the broad spectrum of managerial implications seem to be applicable to a wider range of organizations (even though the specific perceptions of measures may be different).

First, it places the importance of a holistic and dynamic perspective on innovation as key determinant of organizational survival and sustainable competitive advantage at the top of the agenda. It posits that innovation should ultimately be the most important managerial scope to maintain a flexible, and financially sound organization and to aim for organizational longevity. Thus it contributes to the integration of the DCV into empirical research, which was warranted by Vogel & Güttel (2010: 16) and emphasizes the inherent scope of dynamic capabilities research on a Schumpeterian perspective of innovation. Furthermore, this research sheds light on the importance of strategic alignment (Sabherwal & Chan, 2001; Johnson & Lederer, 2010) across hierarchical levels and across functional boundaries to achieve superior levels of organizational performance.

Second, in the context of the single organization under research, it identifies actionable key levers for leaders, such as

- (1) Communication and inclusion: BS attributes which should be emphasized to get the organization to move to a specific direction. While this is not fully new, it is a reminder for strategic management to not forget to take employees along. In the specific case of the organization, for example there appears to be a mismatch between the perception of the BS attributes encouragement (Test\_3\_ENC) and the intended level of LO which suggests that communication and perceived level of inclusion could be improved. Given the importance of perceived encouragement for employees to effectively participate in OL activities, a miss-alignment of the perceptions of this variable across organizational ranks may have adverse effects on the ability to learn of the firm and ultimately its ability to successfully compete (Hurley, 2002: 217).

Moreover, BS\_FUT, BS\_PRO and BS\_RIS are business attributes which are positively associated with MO (FMO). Thus, if the organization aimed to move more towards a FMO, it should emphasize the traits underlying these three BS attributes in the creation and communication of its BS. This awareness posits a starting point for potential firm interventions. Especially noteworthy are the reported correlations between MO (FMO) and BS\_RIS (small), BS\_FUT (medium) and BS\_PRO (high), respectively. In line with the initial reasoning underlying the BS attributes, the results indicate that indeed prospective strategies are associated with higher levels of proactivity, futurity and taking calculated risks (Lukas, 1999: 154). From an organizational development perspective, a higher emphasis on these three BS attributes

during the process of BS making and communicating is expected to move the organization towards higher levels of MO (FMO). Furthermore, the influence of the test variables allows decision makers to benefit in practice. For example, a good communication of BS is highly related with the workforce perceiving this BS to be adequate and correct under the given situation of the firm. Therefore, it appears that a well communicated BS upraises the level of acceptance and potentially of perceived employee encouragement to participate in the organization renewal. These interdependencies are especially relevant when attempting to enhance the level of MO (FMO), as the research provides evidence that employees are more willing to participate in explorative endeavours if the specific need is comprehensible.

- (2) Strategy making: Spend less time on CCO- related strategies as current customer focused domain of business appears to be relatively self maintaining and difficult to change. The evidence suggests that is more promising to engage in strategic activities related to direct and enhance the FMO of the company. FMO –related BS making appears coupled with an adequate communication strategy translate more effectively into organizational change. Moreover, it is important to acknowledge that higher levels of CCO and FMO are associated with a higher level of innovative outputs (Govindarajan, Kopalle & Danneels, 2011) which outlines the importance of actively encouraging BS attributes that are positively associated with higher levels of MO (CCO) and MO (FMO). For example, Govindarajan, Kopalle & Danneels (2011: 129) report that the strategic business units (SBUs) which were low on both, MO (CCO) and MO (FMO) had a low degree of output qualifying as radical and disruptive innovations. Therefore, low levels result in lower levels of innovative output. This thesis thus highlights the important linkages between BS attributes and the level of MO (CCO and MO (FMO) and provides a lever to increase the absolute levels an organization may score in these dimensions. As it appears that both, MO (CCO) and MO (FMO) can both coexist to deliver more innovative output, and thus contribute to an organizations overall prosperity. Furthermore, the findings of this research imply that a greater effectiveness in BS making can be achieved when paying attention to the potential influence of communication, clarity of BS and the encouragement of organizational members to participate in organizational learning and the renewal of the knowledge base (Agyris & Schön, 1978; Senge, 1990).
- (3) A holistic perspective on an organizations' CTI. The view on firm CTI reaches from the moment of idea generation to the ultimate commercially successful implemen-

tation and comprises an organizations ability to sense, to learn and to act on innovative ideas, explicit and latent market demands and shifts to the business environment. Furthermore, the obtained data are supportive of the alleged synergistic relationship between the individual component constructs of CTI, which emphasizes the awareness that all components must be fostered simultaneously and in a combined fashion and cannot stand alone if the firm truly wants to achieve a higher level of overall innovative output (Gaynor, 2002; Gilbert, 1994; Siguaw, Simpson & Enz, 2006).

- (4) Create a learning environment and use current profitability to invest during times of perceived economic safety to allow proactive, FMO-related learning.
  
- (5) Alignment: Management should aim to achieve strategic alignment across hierarchical levels and across functional boundaries within the organization. The role of strategic and internal alignment for effectively achieving organizational objectives is highlighted throughout this thesis (e.g. Sabherwal & Chan, 2001; Johnson & Lederer, 2010).

Third, a diagnostic framework is presented which links BS with MO (CCO), MO (FMO), LO and IIC. This diagnostic instrument allows for periodic re-testing in a single organizational context and provides a representative account of the perceptions of BS and CTI prevailing within the organization. Based on this assessment the firm may perform interventions and monitor the changes in the perceptions of organizational members across its hierarchical levels and functional boundaries (i.e. measure the effectiveness of changes through periodic re-testing). These interventions should be derived from a thorough analysis of the results of this research, especially if the reported results deviate strongly from specific aspects which are deemed desirable with a lower or higher emphasis by strategy makers within the organization. For example, if the perceived importance of the FMO aspect of the current MO of the organization was not in line with the strategic direction desired by senior management, an attempt could be made to align the current state of the organization with the intended state. This could be done by emphasizing the importance of BS attributes such as BS\_AGG, BS\_DEF, BS\_FUT and BS\_PRO and/or by addressing the importance to concentrate less on attributes involving BS\_ANA and BS\_DEF. Furthermore, in the same example, given the synergistic effect of Med\_1\_STR, Med\_2\_CHA and Med\_3\_ENC with MO (CCO) and overall CTI, it appears crucial that top management clearly and understandably outlines the strategic need to alter the current 'modus operandi' and the need to use current levels of profitability (Med\_5\_PRO) and security to foster an environment which facilitates and expects learning.

Furthermore, as criticized by van Raaij & Stoelhorst (2008: 1269–1270), prior conceptualizations of MKTOR and MARKOR were not “actionable”. Due to the clear conceptual differentiation of the component constructs, organizational development can derive clear results for each of the component constructs and derive specific actions to alter the current set-up of the organization (if desired to do so).

Thus it allows to identify and then mitigate miss-alignments of perceptions across organizational ranks/ functional boundaries. This awareness could be a starting point for further analysis (also qualitative approaches such as interviews or focus groups; Creswell, 2009) and ultimately interventions from top management and organizational development if the variation in perception poses a threat to the congruent understanding of strategic objectives and desired organizational constituencies across the organization. Potential deviations need to be assessed on a case by case basis, as some of them may be attributable to the specific context in a certain functional area (e.g. Finance observing a higher level of BS\_ANA than Marketing/Sales or Human Resources might be an acceptable deviation). In the specific context of this research, for example, there is a statistically significant difference between the subjective recognition of “encouraged to change things” across top management level and “all others” as well as a significantly higher perceived level of LO amongst top management respondents’ vs. “all other” ranks. These deviations should be a starting point for further investigation in the firm and lead to attempts to align the understanding and enactment of BS, as the perceptions of top management and those of all other employees vary significantly, which was shown to be a source of ineffectiveness and of an inadequate level of alignment across all hierarchical levels (e.g. Sabherwal & Chan, Johnson & Lederer, 2010).

## 5.8 Summary

In this chapter the implications of the research findings of chapter 3 were discussed and placed in context with prior research or existing gaps in literature. Furthermore, the conceptual contributions emergent from this thesis were presented and summarized. There are a multitude of observations and contributions from the research project inherent to this thesis. These aspects were discussed throughout chapter 5 and provide insights on a relatively granular level of detail.

The next chapter presents an overall summary of the thesis. It includes a reflection on the aim of the research and how its intentions were met. Furthermore, the key findings are outlined, together with a brief illustration of strengths, limitations and opportunities for future research.



## Chapter 6: Conclusion

### 6.1 Reflection on the Research Aim and Summary

Chapter Aims	Activities	Outcomes
To ensure that the research aim and guiding criteria are met and to re-iterate the most prominent contributions to science and practice	<ul style="list-style-type: none"> <li>- Reflect upon research activities and outcomes to ensure satisfaction of research aim</li> <li>- Reflect upon key contributions of the research</li> <li>- Illustrate potential avenues for future research</li> </ul>	Recapitulation of research outcome and research aim; identify areas for future research

Table 80: Key deliverables of chapter 6

Chapter 1 provided an indication that the average life span of multi-national firms is only 40-50 years (de Geuss, 2002: 1) and that firm failure to capitalize on innovative opportunities is associated with loss of shareholder value, employment etc. Moreover, innovation was presented to be the only source of renewed profitability (Bessant, 2005; Schumpeter, 1911: 212) and to provide competitive advantage (Keupp, Palmié & Gassmann, 2012: 367; Stock & Zacharias, 2011: 881) and growth (Wong, 2013: 709-710) for firms. Furthermore, evidence was introduced that incumbent firms fail in the face of disruptive innovations which turn the rules of firm success upside down (Christensen, 1997; Schumpeter, 1911). And organizational routines, which are conducive to firms when dealing with their core customers, unexpectedly turn into core rigidities and stumbling blocks when the same company is faced with disruptive innovations (Leonard-Barton, 1992). Based on the emergence of Disruptive Innovation Theory (DIT) therefore, a differentiated approach to sustaining and disruptive firm innovations was postulated.

Based on these observations, the aspiration of this research was introduced. It was based on the assumption that precognition and better knowledge of the role of organizations allow firms to develop patterns which may yield sustained organizational success and longevity through integrating the implications of DIT and link BS with an organizations propensity to bring forward sustaining and – disruptive innovations. Subsequently the aim of this research was to

*Identify the interrelations that exist between Business Strategy making and a firm's Capability to Innovate to understand how this contributes to the economic sustainability of incumbent organizations.*

The initial grounding of the research in the domain of innovation research was intentionally framed relatively wide. To further refine the scope of the research, research principles were presented in accordance with the research aim, which acted as guiding framework for the selection of theoretical underpinning and of research constructs as well as the creation of the research framework.

Subsequently, in chapter 2, 3 distinct views on innovation were introduced. These comprised of the perspective of (1) Innovation Orientation (IO), a (2) processual approach to innovation based on prior definitions of the term “innovation” and (3) the dynamic capabilities view (DCV). Each of these perspectives was shown to provide a specific view on innovation:

- (1) IO as a holistic, all-encompassing and concerted approach which emphasizes the role of each organizational member in the company’s quest to bring forward innovations;
- (2) the processual view as perspective which emphasized the role of strategic “intent” for bringing forward innovations and the role of a firms’ combined abilities to sense, to disseminate and to learn and ultimately act by developing innovative concepts into true innovations (e.g. Schumpeter, 1911; West & Farr, 1990), which allow an organization to obtain rents from its implementation. It therefore highlights the role of interaction between these organizational capabilities to emphasize their synergistic effect to upraise the level of innovative output an organization brings forward.
- (3) Lastly, the DCV was introduced which posits that firms may obtain superior performance and sustained competitive advantage from continuously utilizing its capabilities to sense, to seize and to transform. The DCV stresses the role of a firms capabilities to sense, seize and to transform (Teece, 2007) to recurrently derive rents from bringing forward new, favourable factor combinations. Ultimately these capabilities emphasize the role of strategic management to combine organizational assets and firms specific, rare and difficult to imitate capabilities into new factor combinations or innovations, which allow the firm to obtain superior rents.

Research Principles		Achieved how?
No 1	Focus on innovation	Synergistic perspective centered on the objective to achieve innovations. Integration of the perspective of IO, sketch innovation process and DCV.
No 2	Dynamic perspective	
No 3	Holistic approach	

*Table 81: Framing of this thesis: Research Principles No 1-3*

Based on the work of Kuhn (1962; “normal science”) and the inherent reasoning to build the knowledge based in research by extending and refining the research approaches of prior academic research in the field, the literature review provide an overview of research constructs utilize in prior, multiple component research. Given the inherent interest of prior research into the conceptualizations underlying Business Strategy (BS), Market Orientation

(MO) and firm learning, and their conceptual overlap with the holistic and dynamic framing of the research aim, these component were selected for inclusion into the conceptualization of the research model central to this thesis. Furthermore, based on the processual perspective of innovation a construct to assess the favorability of the Innovation Implementation Context (IIC) prevailing within an organization was included into the research model. While the notion of innovation implementation or innovation execution was widely ignored in prior research, the importance of innovation conducive organizational infrastructure, resources and support systems to develop an innovative idea into an economically successful innovation was especially relevant when viewed from the perspective of Disruptive Innovation theory (DIT). In their combined form, BS is posited to represent an organizations intention to be innovative. MO represents an organizations ability to sense, the Learning Orientation (LO) of the firm represents its ability to make sense, to learn and to part with outdated organizational routines and theory in use (Schön & Agyris, 1978). Lastly, the IIC of the firm represents its ability to move innovative concepts from an idea stage towards their ultimate implementation or commercialization which sets free their economic potential and contributes to rents from innovation accruing to the firm (Schumpeter, 1911). In their combined fashion, MO, LO and IIC were presented as being representative of an organization's overall Capability to Innovate (CTI) which is in its composition contingent on the BS displayed by the firm.

Research Principle		Achieved how?
No 4	Place in context of prior research	Research variables are all subject to prior research and thus present in their combination a useful extension of prior research and allow to derive additional insights into the interdependencies between these variables

*Table 82: Framing of this thesis: Research Principle No 4*

Strategic management research is long concerned with identifying levers how management can ultimately determine organizational success. Based on the implications of DIT, which posits that good management practice may be successful under conditions of stability, but lead to organizational failure in the face of disruptive innovations, BS was presented as a key determinant in building organizational capabilities to deal with sustaining innovation *and* disruptive innovations. As sustaining innovations frequently offspring the relationships of firms with their current customers, and disruptive innovations are associated with future markets, chapter 2 presented a continuum for BS which ranged from an exclusive current customer orientation (CCO) to an exclusive future market orientation (FMO). The "right" choices of an adequate BS for a given organization was presented as being contingent on the current environmental status of the organization (e.g. high vs. low competition; high vs. low rate of technical progress etc.) and of its unique strategic intention (e.g. strategy of growth vs. consolidation in a niche market). Overall, chapter 2 presented the unique BS of



an organization therefore as the key determinant of the configuration of an organizations CTI which is conducive to achieving the innovation objectives of the firm. Based on the alleged interactions between BS and the component constructs of CTI, 5 testable research questions were presented.

For research questions 1-3, BS served as the independent variable and investigated into its influence on the level of MO (CCO), MO (FMO), LO and IIC exhibited by the firm. Research question 4 assessed the synergistic interplay among MO (CCO), MO (FMO), LO and IIC to validate the suppositional synergistic interplay of these components as part of the organizations overall CTI. Research question 5 was then based on the notion that BS, in order to be effective, needs to be first verbalized by top management and then implemented across all hierarchical and functional levels of an organization (Sabherwal & Chan, 2001). The level of alignment achieved throughout the organization (i.e. from top level hierarchic levels which are involved into BS formulation) to all other hierarchical levels including frontline employees (i.e. those who ultimately execute the BS of the organization) was assumed to be illustrated by the level of congruence of the perceptions of organizational variables throughout the company (e.g. Johnson & Lederer, 2010).

Research Principle		Achieved how?
No 5	Influenced by Management	BS presented as a key determinant of the CTI of an organization and significant influence is supported by empirical evidence.

*Table 83: Framing of this thesis: Research Principle No 5*

The research project was based in an incumbent, multi-national organization in the Fast Moving Consumer Goods (FMCG) industry. To serve the requirements of the firm under research, it was the intention to develop a research instrument which would provide an auditable and representative account of the peculiarities of the organizations CTI and allow for periodic re-testing, for example after interventions from the organizational development department were implemented throughout the organization.

In chapter 3, the selection of a purely quantitative research paradigm was illustrated. The choice allows to utilize a questionnaire survey instrument which allows to derive a representative account of the constitution of the single organization as well as provides the opportunity for periodic re-testing in an economic and standardized fashion via online based survey instruments. Moreover the survey instrument allows to investigate into the level of alignment between the perceptions across different hierarchical levels. Additionally, the selected research paradigm allows to build on the work of prior research which almost exclusively utilized hypothetico-deductive approaches (Blaikie, 1993) and to put the findings of this research into perspective with prior observations. Furthermore, it allowed to utilize established and well validated research instruments from prior research.

Research Principles		Achieved how?
No 6	Auditable + representative	<ul style="list-style-type: none"> <li>- Key organizational constructs and components of successfully implemented innovations were identified. Furthermore, the research is based on concepts which were well researched in prior research and each represent a key variable conducive of bringing forward innovations in organizations (overall number of 66 questionnaire items)</li> <li>- 5 research questions are derived from literature to assess the interrelationships derived from prior reasoning in the context of this research</li> <li>- Multiple hierarchical levels to investigate into level of alignment of perceptions across organizational ranks</li> <li>- Stratified random sample (Saunders, Lewis &amp; Thornhill, 2007) to obtain representative account of the organization</li> <li>- Empirical research yielded 182 respondents (thereof participants by level of hierarchy: Manage Business-/Function: 36; Manage Managers: 41; Manage Others: 42; Manage Self: 63)</li> </ul>
No 7	Context: Incumbent multi-national organization	The research framework takes into consideration the context it is designated for. Empirical validation of framework yielded good results.

Table 84: Framing of this thesis: Research Principles No 6-7

Overall, the choices made to answer the aim of the research and to contribute to the advancement of the knowledge base were successfully executed and yielded considerable amounts of new insights. In their combination, they identify controllable parameters of firm innovation capability and indicate mechanisms, which may contribute to organizational longevity. Therefore, the overall research aim is sufficiently answered.

## 6.2 Key Findings – Answers to the Research Aim

This thesis contributes to further clarify the role of BS in shaping the peculiarities of firm CTI and consequently provides answers to the research aim of this thesis. The research framing emphasized the importance:

- 1) To be knowledgeable about the role of innovation as the single source for renewed organizational profitability in general. Furthermore to acknowledge the implications of DIT, that organizational settings may be very conducive in the interaction with current customers and bringing forward sustaining innovations, but may have a totally adverse effect when disruptive innovations are involved (Christensen, 1997; Leonard-Barton, 1992; Christensen & Overdorf, 2000: 1; Dobni, 2010a). Therefore the presented framework and implications of this research may serve as disconfirming information (Schein, 2010) and serve to enrich the “cognitive frames of senior

managers (Henderson, 2006: 7)” which underlie their decision making. Moreover, the research helps to appreciate innovation as a holistic, all-encompassing activity of the whole organization (e.g. Siguaw, Simpson & Enz, 2006), which includes an ongoing quest to derive rents from favorable factor combinations (Schumpeter, 1911) resulting from superior firm capabilities to sense, to seize and to transform (Teece, 2007).

- 2) To recognize that strategic management is an ongoing process which involves to recurrently identify and adapt an optimal BS for an organization, by considering the specificities of its environment (including evolutionary and revolutionary changes to it) and the strategic direction the firm *wants* to take to achieve its strategic objectives (Farjoun, 2002). The selected BS will then place the organization on a continuum defining the level of innovation output the organization desires and the focus it takes to either serve exclusively current customers, exclusively aim to uncover future markets or to balance CCO and FMO to some extent. And furthermore, to effectively communicate the chosen BS and the underlying reasoning comprehensibly throughout the organization to foster strategic alignment (Sabherwal & Chan, 2001) across all levels of hierarchy and all functional boundaries. Consequently, in line with the selected BS of an organization the role of management may change from “controller to enabler (Denning, 2012: 9).”

In the following, the main contributions of this thesis are recapitulated. These are based on the numerous, fine-grained findings which were derived from 5 research questions and a total of 9 sub research questions. These investigated into the interlinkages between 6 1<sup>st</sup> order component constructs of BS with 4 dependent variable constructs: MO (CCO), MO (FMO), LO and IIC. Moreover they assessed potential differences among the perceptions of their characteristics across 4 levels of hierarchy in order to illustrate the level of strategic alignment throughout the firm. The findings were then presented in chapter 4 and discussed and contrasted with the literature in chapter 5.

Overall this thesis makes 3 main contributions to the advancement of science: (1) From a conceptual perspective, (2) by contributing and extending prior research and (3) from a methodological perspective. Additionally, the findings have several managerial implications.

(1) Contribution to science – conceptual:

- a. The conceptualization of the research provides a synthesis of multiple streams of prior research. The underlying conceptualization draws from numerous prior streams of research. Its grounding is holistic, dynamic and innovation focused and builds on the conceptualizations of Innovation

orientation (Siguaw, Simpson & Enz, 2006), dynamic capabilities view (DCV; Teece, Pisano & Shuen, 1997; Teece, 2007) and a processual perspective of innovation derived from prior research (e.g. Schumpeter, 1911; Tidd, 2011). Furthermore, the research model accommodates implications of DIT (Christensen, 1997) by conceptually separating a firm's sustaining innovation- related CCO and a disruptive innovation- related FMO, which also builds on the reasoning of Ambidextrous Organization Theory, which argues that firms need to find a balance between their CCO and a FMO to maintain a position of competitiveness (Tushman & O'Reilly, 2002). The organic strategy (Farjoun, 2002) perspective highlights the role of BS as a recurring and adaptive procedure which comprises of the element for strategy formulation and – implementation and emphasizes the role of strategic management to continuously influence the configuration of the organization to maintain a position of competitive advantage and prosperity. Organic strategy conceptually integrates well with DCV and holistic conception of BS and acknowledges that BS, in reality, is less of a linear process than an adaptive cycle of change with elements of iteration and interpretation (Farjoun, 2002: 561-563). Overall, the underlying argumentation resulted in the central research model which relates a firm's unique BS to the overall CTI of the firm, comprised of its MO (CCO), its MO (FMO), its LO and its IIC which, in their combination, represent an organizations ability to sense, to learn and to translate innovative concepts into rent generating innovations. Therefore, even if it cannot be resolved immediately, the thesis contributed to the quest outlined by Siguaw, Simpson & Enz (2006: 570) by conceptually advancing the ideas inherent to IO and by developing a potential framework to measure the capabilities associated with innovative firms in an evolutionary manner.

- b. From the overall conceptual advancement presented above, an explicit contribution stems from the integration and synthesis of the 3 different perspectives of IO, the processual perspective on innovation and the DVC. IO in its conceptualization emphasizes that innovation is an all-encompassing task which touches upon all members of an organization. The perspective underlying the sketch innovation process also outlines the importance of a holistic perspective but specifically emphasizes the importance of a coordinated and synergistic interplay between various organizational abilities which are of limited use individually but in their combination provide the ability of an orga-

nization to bring forward innovative concepts and to launch them into economic use (Cambra-Fierro et al (2012: 858; Vera & Crossan, 2004: 222). Thus the process perspective highlights the interplay between an organizations ability to sense, to disseminate, learn and part with outdated routines and to implement or execute innovations. Furthermore it points out that the specificities of these capabilities are all contingent on the intended direction of the organization which is determined by the unique BS of the company. The DCV perspective then emphasizes the importance of maintaining and renewing strategic resources over time to stay competitive. Thus this perspective highlights that continuous adaptation of the capabilities of an organization is required to bring forward resources with a higher innovative potential. Hence, dynamic capabilities, described as the ability of the organization to sense, seize and to transform (Teece, 2007) essentially transport the Schumpeterian notion of deriving new factor combinations by successfully combining entrepreneurial thinking and acting with the assets and capabilities of the organization to shape new, rent generating VRIN resources. Thus inherently the DCV posits that it is at the heart of management to ensure that organizational capabilities are fostered which enable the organization to continuously innovate in order to achieve economic prosperity and longevity (Teece, 2007). From that perspective the CTI framework comprises an organizations ability to sense and seize and BS is the determinant to shape the direction of organizational capabilities development through the strategic intention of the organization. Subsequently, BS represents an organizations dynamic capability to transform (Teece, 2007) by providing strategic direction to the firm. Thus, the research model lies at the heart of the DCV.

(2) Contribution to science – from empirical evidence in the field of MO, LO and IIC.

This research project yielded provided multiple fine grained insights into the dynamics between BS, MO, LO and IIC. These findings extend and strengthen the research findings of prior research in the field. Based on rich details they suggest new insights and allow to make assertions based on specific details. Furthermore, the research touches upon several of the areas highlighted for further research by prior publications (e.g. see Table 2). Specifically, the research contributes to the growth of knowledge by:

- a. Validating of the instruments of BS attributes (Venkatraman, 1989), MO (CCO) and MO (FMO; Govindarajan, Kopalle & Danneels, 2011), LO (Cantalone, Cavusgil & Zhao, 2002) and IIC (Dobni, 2008) in the context of an incumbent, multi-national organization in the Fast Moving Consumer Goods (FMCG) industry and applying them in a new context.
- b. Investigating into how BS attributes interrelate with MO (CCO), MO (FMO), LO and IIC. The research provided good evidence that BS of an organization is significantly related with these constructs and allows to draw conclusions on fine grained dependencies.
- c. Providing evidence for the synergistic interplay between the component constructs of CTI, which lends support to the conceptualization and the research model utilized
- d. Introducing and determining the role of test variables, such as clarity of BS communicated (Test\_1\_STR), perceived adequacy of change (Test\_2\_CHA), employee engagement (Test\_3\_ENC) and perceived security of future profitability of the organization (Test\_5\_PRO), into the research instrument. The findings suggest that these variables are of high importance, especially in the context of FMO, when the organizational routines need to be broken open so the firm can engage into new ventures (Schein, 2010).
- e. Adding to research in the area of “strategic learning and change (Vogel & Güttel 2012: 1-2)” and contribute insights in the domain of “balance of flexibility and efficiency, stability and change, incremental and radical innovation or exploration and exploitation (p 12)”

(3) Contribution to method – research design:

- a. This research utilized a research design which extended prior research approaches by taking multiple informants from multiple levels of hierarchy and different functional areas into account. Besides the inherent interest of the single organization under study (i.e. officials from the Organizational Development department), the research design answers the 22 year old call of Jaworski & Kohli (1993) who posit that “it would be very interesting to compare perceptions of employees at different levels of an SBU [Strategic Business Unit] and account for differences in perceptions (p. 65).” The approach taken indeed strengthened the conclusions drawn from the data as the number of responses obtained allow to generalize to the condition of the *overall* organization. Consequently, the multiple voices taken into

account for the research project at hand provide a “qualitative touch” to the research as the perceptions of multiple participants allow to obtain a coherent picture of the configuration which integrates the observations of many.

- b. The research findings provide evidence that the assessment of key informant or single informant strategies, which are the methodology of choice in most prior research (see Table 29) may not provide a complete account of the factual constitution of the organization. Based on the responses obtained in the single organization research inherent to this thesis, several significant deviations in the perception between Top management and “all other” levels of organizational hierarchy emerged. Subsequently, it appears that key informants (usually on the highest levels of organizational hierarchies) are not universally knowledgeable about the true configuration of their organization but may be subject to recognition bias (e.g. “basic disease of the hierarchy”; Senge, 1990). Despite the influence of senior executives on the creation of the BS agenda of an organization and their subsequent knowledge of the *intended* strategic direction of the firm, it is argued that throughout a necessary diffusion process (i.e. the breakdown/operationalization of strategic objectives to lower hierarchic ranks) strategic objectives may be subject to alterations, interpretations (Christensen, 1997) or fail to be executed altogether – aspects which may not be known by key informants on the top hierarchical level of the organization. Therefore, even though the findings of this research are not necessarily transferable to other research, the findings imply that conclusions drawn from prior key informant research may be questionable in their interpretation and in providing a true account of the organization they stand for.
- c. The research setting in the context of an incumbent FMCG organization offers insights into the innovation dynamics of such a company. Based on the multiple informant research approach, the findings are well grounded and may provide relevant insights for researchers and practitioners operating in similar organizational surroundings (note: The findings are not necessarily transferable, as discussed in 6.3). Therefore, the research contributes to the understanding of innovation capabilities in large firms.

(4) Contribution to practice: The managerial implications of this research are discussed in more detail in chapter 5.7. Overall this research contributes to managerial practice with the following insights:

- a. An appreciation of innovation as a holistic concept and an understanding the “right” behavior in one context may be just “wrong” in another. Furthermore, to illustrate the linkage between the chosen BS and the type of innovations the organization will most likely yield (i.e. mainstream customer orientation leads to incremental innovation, FMO leads to more disruptive innovations; Govindarajan, Kopalle & Danneels, 2011: 123)
  - b. The insight that there is no optimal BS per se, but that BS is a conscious choice of management in an attempt to place the organization in a favorable position in the context of its unique business environment and to direct the organization scope towards the desired future state. Therefore, BS appears to direct what organization capabilities will be developed to perfection and what innovative objectives the organization aims to achieve. This includes the inherent choices to place either CCO or FMO or a mixture of both in the center of BS, and thus organizational, attention. What remains important to acknowledge is that “[i]f a company chooses the [BS ...] that fits its history, present resources and future goals better and then follows it consistently, mistakes are more apt to be avoided and profits from innovations are more likely to follow Gilbert (1994: 21):”
  - c. BS making is an ongoing exercise which requires continuous adaptation (Farjoun, 2002) and revision in the face of environmental changes (e.g. competitor moves, new legislation, new technologies etc.). Therefore it appears that the hallmark of good management is to be willing to publicly revise and alter past decisions in the face of new information. In that context it appears of essence to foster an organizations LO and the inherent spirit of flexibility to prepare the organization to act in time if required so by internal or external determinants.
- (5) Finally, as shown as part of the results of the research (but not necessarily applicable to other organizations as the research is not generalizable beyond the population of the organization under research), it appears that the current business model of an organization is relatively self maintaining and that it is difficult for management to make themselves heard through communicating necessary changes of current routines. Therefore, if changes of the status quo and the operation mode of the current set-up are required management must be prepared to confront a very resilient organizational culture (Schein, 2010) and changes, despite their potential necessity,



will be difficult and tedious to achieve (Gilbert, 1994: 21). What remains is that communication appears an essential component to change organizational culture and underlying routines and to take along employees. It is not a simple matter and changes need time and trust throughout the organization. Therefore it must not be another “flavor of the month” that is discounted when the initial budget for organizational change endeavours is spent. Employee commitment is essential to alter the strategic direction of the firm, which is a gradual process that does not come with immediate results. This thesis contributes to outlining the importance of a holistic perspective on how BS making influences an organizations’ CTI (Cambra-Fierro et al, 2012: 866-867).

### 6.3 Strengths and Limitations

This research conceptualized, operationalized and validated a holistic and dynamic model of firm innovation in a single organizational context. Due to the processual perspective inherent to the selection of the research variables, the research model illustrates how BS may effect an organizations ability to sense, to learn and to make sense and part with outdated organizational routines as well as its ability to develop innovative concepts into commercially successful innovations. Given the single organizational context of the research, the data provided a representative account of organizational peculiarities and the level of alignment between the perceptions across 4 different hierarchical levels and across multiple functional boundaries. The model allows to assess the attributes underlying its BS and to obtain a report on the configuration of its MO, its LO and its IIC. In the context of the organization under research, despite a relative stability of business environment and BS, the survey instrument identified significant differences in the perceptions of top management and “all other employees.” It is now in the responsibility of the organization to derive conclusions from the overall achieved levels of its CTI, the specific configuration and to potentially derive initiatives for organizational development to mitigate the differences in perceptions through interventions.

Despite the usefulness of the research framework, there are several potential limitations which should be kept in mind when interpreting the results of this research. They mainly relate to: The (1) research setting in a single organizational context, the (2) utilized research paradigm, sample and data as well as the (3) measures which were data utilized in the research at hand and are discussed in the following paragraphs.

Even though a research paradigm was selected for the research at hand which was deemed most adequate to answer the presented research aim of this thesis, the choices, which provide overall strength to the research at hand, result in some limitations which should be taken into account before considering the implications of this research. These potential

limitations relate primarily to the (1) research setting, the (2) research paradigm, sample and data as well as the (3) measures which were data utilized in the research at hand.

#### (1) Research setting

While most prior research was conducted in a cross-organizational research design with single- or key informants as the sole source of information, the research at hand is based in a single organizational context and relies on multiple informants on different hierarchical levels and based in several different organizational functions. Sample homogeneity in the context of this research is important to allow to study the perceptions of various subgroups among the sample in greater depth (e.g. Saunders, Lewis & Thornhill, 2007: 232). This research setting is considered especially adequate to answer the research objective at hand in that it allows to draw conclusions to the configuration of the single organization under research with regards to the perceptions of BS and CTI across different hierarchical levels and functional boundaries. As the research project is based in the practical context of an organization, this approach allows to get a thorough understanding of the whereabouts of the firm and to obtain an adequate and generalizable level of detail to allow subsequent interventions aimed to enhance organizational effectiveness and strategic alignment (Sabherwal & Chan, 2001; Johnson & Lederer, 2010). Moreover, it allows to utilize the research instrument for periodic re-testing in an economic, standardized fashion (Brace, 2004).

The choices made to base the research project in a single organization, multiple-informant setting however, has inherent limitations. For example, as the research is undertaken in a single firm, it does not allow to generalize the findings to other organizations other than the one under research. Therefore, the applicability and transferability of the findings poses a limitation.

Secondly, the research is purely based in an FMCG industry environment and is performed in an incumbent market player with a highly focused line of operations. Furthermore, given that a time based data collection was performed, the research settings do not allow to conclude on causality but can only reveal interrelations between variables. In the context of this research the time based data collection allowed to *prove* that there are interrelations between the BS of the organization and its CTI, however the causal relationship between BS as the independent variable and CTI as the dependent variable assumed in the research at hand, results from the theoretical reasoning revealed in chapter 2 and cannot be proven with the current research setting. However, based on the implications of prior research it can be reasonably assumed that there is a certain level of causality between the variables of this research. Following the argumentation of

Farjoun (2002: 577) that “[t]he effects of strategy on performance can be direct or indirect through change in the organization [...]” there are direct and indirect links assumed between BS and organizational capabilities. However, to allow for conclusions on the interactions and magnitude of causality, a longitudinal study with data collected over time and after organizational interventions would be necessary. This, however, was beyond the scope of this research.

## (2) Research Paradigm, Sample and Data

Based on the research principle to provide a diagnostic framework which allows to draw conclusions on the configuration of a company’s BS perceptions and its linkage with the perceived CTI of the organization, as well as with the intention in mind that emergent findings should be contrastable with prior research in the field, a quantitative research paradigm was selected to achieve the objectives of the research at hand. Based on the stratified random sample drawn for the research at hand, the obtained results allow to generalize the findings to the overall organization under research. Furthermore, the survey-based data collection allows for periodic re-testing to monitor the effect of potential interventions deemed desirable by top management with regards to the BS of the organization and the expected changes in the configuration of the organizations’ CTI. Thus, from the perspective of this research, the selected research paradigm, sample and the collected data serve the overall research aim in the fashion considered most adequate to answer the research objective and ensure an overall contribution to the advancement of science and managerial practice.

However, this research relies on a purely quantitative research paradigm (Creswell, 2009), which was selected as the best possible approach to answer the research objectives inherent to it and to contribute to the practical applicability of the knowledge generated during the research process. Quantitative research is shown to be the paradigm of choice in prior research in the field (see for example Table 29) and was deemed the most appropriate for further inquiries into the subject in line with the argumentations of Blaikie (1993) and Kuhn (1962). However, inherent to quantitative approaches is a loss of potentially rich data which could be generated from in-depth interviews or case studies which are the hallmarks of qualitative research (Creswell, 2009) and could be the source of additional revelations. Given the scope of this research and the objective to create a quantitative research instrument useful as a diagnostic instrument to allow for periodic re-testing of the effect of firm interventions, the disadvantages of purely quantitative approaches are acceptable in the context of this research.

Moreover, while the number of 182 respondents (response rate of 42,33%) is sufficient to properly answer the stated research objectives, the number of respondents in some clusters (e.g. Human resource employees on Manage Manager level) is relatively low and would pose limitations to the explanatory power of the research on a more granular level. Thus there would be limited possibilities to further investigate into a higher level of granularity with the given data and number of respondents.

Furthermore, the scanning for potential bias revealed statistically significant different patterns on the first half of responses versus the second half of responses (“early” vs. “late”) on some of the variables. Despite further investigations into potential causes for this deviation, there were no significant differences in the structure of the first and last respondents observable. Therefore, the responses appear genuine and the cause for the variation remains unexplainable. While the variation is not seen as a major limitation to the findings of this research, it should be kept in mind when interpreting the results.

### (3) Measures

The measures utilized in this research were extracted, from prior, well validated research in the field of BS, MO, LO/OL and innovation. In their combination, however, they present an unprecedented arrangement with novel insights from the interaction amongst the constructs. The selection of previously validated constructs is considered to add methodological strength and overall credibility to the research undertaken. Moreover, it allowed to contrast the research findings, obtained in the single organizational context of the research project at hand, with observations made in prior research, as presented in this chapter.

Based on the 182 responses obtained, the validity of all measures was re-assessed and contrasted with prior research. The Cronbach’s alpha values for the component constructs of the STROBE measure (Venkatraman, 1989) were shown to be relatively low in comparison with the results obtained in prior research. While the strength of the measures was observable during the validation of the research instrument items (i.e. pilot testing phase) and from the emerging results from interrelating the BS attributes to MO (CCO), MO (FMO), LO and IIC, a Cronbach’s alpha value below 0,7 is considered by most scientists as a weakness. While Pallant (2005) acknowledges that in social science a Cronbach’s alpha below 0,7 is relatively frequent and acceptable, it is important to be aware of the controversy involving this topic. Overall, the relatively low level of Cronbach’s alpha for the BS attributes is deemed a lower level priority which stands back from the overall conceptual advancements brought forward by this research.

Moreover, the measure of LO in this research was admitted as a representative of assumed factual OL of the organization. However, as outlined by MacCurtain (2005: 188) LO as a construct is representing the “conditions for learning rather than actual learning”. Therefore, the conceptual distinctions should be acknowledged when interpreting the results of this research.

Moreover, the measure of IIC does not differentiate between its effects on the successful development of different types of innovation (e.g. sustaining- vs. disruptive innovation concepts). This poses a limitation to the interpretation of the findings as it provides a relative measure of the perceived favorability of the IIC, which is contingent on the perceived BS of the organization. For example, a respondent who perceives the BS of the company as purely FMO would report on the perceived favorability of the IIC from a very prospective point of view, while a respondent who would perceive the BS of the firm as purely CCO would indicate his observations of the favorability of the IIC from this perspective. While the construct was shown to be reliable and valid and its utilization in the context of this research served to answer the inherent research objectives, it should be acknowledged that the measure provides a relative rather than an absolute measure of the favorability of the IIC, which in terms of this study is considered equally valid.

Finally, the test variables included in this research should be treated with some caution. Due to the length of the survey instrument, single item measures were admitted to serve as test variables. While the unambiguity of the items and their usefulness were assessed during the pilot phase (i.e. development and validation of the research instrument) most researchers clearly prefer multi-item measures to single-item measures. With regards to the use in this research, the 5 test variables proved to be useful and effective aspects of this research, however, their single-item operationalization should be acknowledged when results are interpreted (Pallant, 2005).

#### 6.4 Future Research

Notwithstanding, or just because of, the broad conceptualization of the research at hand, 8 potential avenues for further research emerged and are outlined below. They represent a selection of the avenues deemed most fruitful for future research, such as:

- (1) The utilized holistic research model and approach in this thesis: The research project was based in single organizational context in an organization of the FMCG industry. Future research could utilize the same approach to confirm/ re-assess the findings in a different organizational context (either in another incumbent FMCG organization or in a different industrial context). Based on the observed level of participation over time, an appropriate sample size should be calculated on an assumed

response rate of max. 40% to ensure that the number of respondents is adequate to allow for fine-grained further analyses, if necessary to do so. Alternatively (and depending on the overall number of employees in the organization under research) it could be considered to address the total population instead of drawing a stratified sample, which could limit the number of participation reminders sent to the overall firm during the phase of data collection.

- (2) The integration of OL vs LO: This thesis utilized a measure of LO, which accounts for the conditions that enable learning rather than the actual level, type or quality of factual learning (McCurtain, 2005: 188), to approximate the level of OL prevailing within the organization. Future research might attempt to interrelate the constructs and underlying concepts of OL and LO in a single research. This could shed light on the question of how both concepts interact and how valid the conclusions drawn from a measure of LO are for the factual OL of a firm and vice versa. In this context it would be of interest to develop a standard measure which enables researchers to diagnose the level of OL prevailing within an organization. Based on the literature review presented in chapter 2, the development of such a measure which allows to assess the level of generative-, adaptive-, and meta-learning would allow to integrate theoretical reasoning in the field of OL (e.g. Agyris & Schön, 1978; Baker & Sinkula, 2005) with empirical data obtainable in research. In this regard it would also be interesting to empirically assess the interrelation between types and levels of OL and a measure of innovative output which distinguishes the type (i.e. sustaining vs. radical/ disruptive) and rate of innovations (Siguaw, Simpson & Enz, 2006) brought forward by an organization, as warranted by Cambra-Fierro et al (2012: 865-866).
- (3) The distinction of the favorability of the IIC in an organization with regards to the type of innovation facilitated. As stated by Darroch & McNaughton (2002), “[c]ommon sense suggests that different types of innovation will require different resources and, therefore, will need to be managed differently (p. 211).” Future research could therefore aim to develop a measure to allow a differentiation between the perceived favorability of the IIC in the organization with regards to sustaining innovations and with regards to radical/disruptive innovations and aim to resolve inconsistent findings of prior research (e.g. see meta-analysis in Damanpour, 1991: 582-583). Moreover, such research could aim to identify and investigate further into the 1<sup>st</sup> order elements which contribute to the 2<sup>nd</sup> order construct of IIC of an organization (e.g. “infrastructure”, “resources”, “support systems” and “top-management buy in”; Gilbert, 1994: 21; Gaynor, 2002). As a combination of the aim

to differentiate between the context for radical vs. disruptive innovations and a better understanding of 1<sup>st</sup> order constructs which comprise the IIC of an organization (A starting point for this analysis might be the publication of Damanpour (1991) who identified 10 organizational aspects conducive to innovation in his meta-analysis of prior research), it could then provide an assessment the availability of these components to facilitate the implementation of sustaining and/or radical/disruptive innovations. Especially in a research context which highlights the differentiation between MO (FMO) and MO (CCO) (Govindarajan, Kopalle & Danneels, 2011), a differentiated look at the organizational capabilities to execute different types of innovations contingent on the MO of the firm, appears to be a fruitful avenue for future research with contributions to both science and managerial practice.

- (4) The confirmation of BS attributes. Based on the comparably low Cronbach's alpha scores observable in this research it would be advisable to re-assess the initial operationalization of the strategic business strategy attributes (STROBE; Venkatraman, 1989) in the light of over 25 years of time gone by since the initial instrumentation. Such research could aim to supplement and enhance the identification of strategic business attributes relevant to organizations in today's business environment and yield measures with a greater number of measuring items and a higher degree of internal consistency. Thus such research would contribute either to a confirmation of the initial STROBE measure as being "up to date" to represent key elements of today's strategy making or lead to an evolution of the STROBE measure towards a version 2.0 which could be the starting point for strategy research of the future.
- (5) The test variables utilized in this research: The thesis at hand included single-item measures to assess the (1) influence of perceived clarity of BS (Test\_1\_STR), the influence of (2) perceived adequacy of change (Test\_2\_CHA), (3) the influence of perceived encouragement to part with obsolete organizational routines (Test\_3\_ENC), (4) the level of perceived technological turbulence in the environment (Test\_4\_TEC; Paladino, 2008), as well as the (5) influence of perceived security of profitability in the future (Test\_5\_PRO). The perceived clarity of BS communicated as well as the perceived adequacy of change communicated were shown to be strongly related with the perceptions of the dependent variable constructs. Furthermore, the influence of perceived encouragement to part with organizational routines and take place in the renewal of the organization as well as the perceived security of future profitability were especially relevant for the interplay between BS

and the perceived LO of the organization. Future research could build on the implications which emerge from this research and a) utilize the same items to introduce these dimensions as test variables into other studies or b) bring forward multi-item measures which could be utilized in future research. Both approaches would contribute to further validate the observations made in the current research context and potentially reveal influencing factors on organizational behaviors which were widely neglected in prior research.

- (6) An extension of the holistic research model employed in this research. Based on the suggestions for future research provided above, it is desirable to build on the research model utilized in the research at hand and supplement it to enhance the diagnostic power of the instrument. For example, BS should be related to MO (CCO), MO (FMO), LO and an extended measure of IIC which allows to assess the favorability for the execution of sustaining and radical/disruptive innovations (see Nr. 3, above). These elements could be combined with an output measure assessing the form, type and rate of innovations (Siguaw, Simpson & Enz, 2006: 561) brought forward by an organization. Such an approach could build and extend the work of Govindarajan, Kopalle & Danneels (2011: 130) or Jansen, Van den Bosch & Volberda (2006: 1672). For example, Govindarajan, Kopalle & Danneels (2011: 130) utilized measures to assess the number and type of radical and disruptive innovations introduced by SBUs, and provide more fine grained categorizations of the types and quantities of innovative output (in this combination, the research instrument could serve as a diagnostic instrument for single organization research or in a cross-organizational context for innovation research), which interrelates BS making with the organizational propensity to search for and execute incremental and/or radical/disruptive innovations. Such research could then also attempt to quantify the synergistic effect between the CTI constructs on the innovative output of the firm. Furthermore, it would allow to answer the call by Lukas & Ferrell (2000: 244) to separately assess the effect of MO components on innovation. Lukas & Ferrell (2000: 244) warrant that future research could assess the types of innovations launched and assess whether an overly focus on MO (CCO) results in significantly different types of innovations than organizations exhibiting an overly focus on MO (FMO). Lastly, this extended research model could allow to answer the call of Matsuno & Metzner (2000: 1-3) and Jiménez-Jimenez, Sanz-Valle & Hernandez-Espallardo (2008: 391) to further investigate into the relationship between different strategies, the level of MO and LO of an organization and an output variables, such as the types and quantities of innovations brought forward by



the organization. This would ultimately allow to increase the prognostic power of research in this field and further illustrate the mechanisms yielding innovative output (Jiménez-Jimenez, Sanz-Valle & Hernandez-Espallardo, 2008: 391).

(7) Causality. In social sciences the establishment of causality cannot be achieved with time-based studies (as outlined in section 6.3 of this research). Therefore, to allow more exploration of the interrelation between BS (posited in this research as independent variable) and constructs comprising an organization's CTI, it would be advisable to perform longitudinal studies over time. This could bring further clarity to the existent research which appears trapped in a "hen and egg" situation when posing the question if, for example, BS influences the MO of the organization or if the MO of the organization influences its BS as it appears that "[t]he effects of strategy on performance can be direct or indirect through change in the organization (Farjoun, 2002: 577)." Authors who would like to pursue research in this avenue should take the relatively new "organic strategy approach" (Farjoun, 2002: 562) into consideration. It integrates several schools of strategy research and through its emphasis on continuous change and organic evolution of strategy making "portrays BS as less rigid, linear, static, individualistic, and prospective (Farjoun, 2002: 572)". Therefore, researchers should be prepared to acknowledge that the interactions between BS and other organizational capabilities will most likely not allow to draw conclusions on stable cause and effect relationships (e.g. Deshpandé, Farley & Webster, 1993: 32; Hult & Ketchen, 2001: 905). Following the argumentation of the DCV a firm's dynamic capabilities will interact amongst each other to continuously enhance the organizations capabilities to sense, seize and to transform (Teece, 2007). This conceptualization principally builds on the idea that the constructs are strongly interlinked, but the order of impulses which shape the alteration of their configuration may result from just this tight interaction (Ali et al, 2010). However, based on the findings of this research, the exhibited BS of the firm appears to have a robust impact on the configuration and development of organizational capabilities.

(8) Employee inclusion. Based on the findings of this research, higher levels of employee inclusion are associated with higher levels of encouragement, as well as clarity and adequacy of BS perceived. While it reaches beyond the scope of this research it appears a fruitful avenue to investigate into other organizational measures (e.g. job satisfaction, organizational effectiveness etc.) to identify potential positive influencing factors emerging from the synergistic composition and alignment of a firms BS and its CTI. Thus these aspects elaborate on how ultimately contextual

aspects which might contribute to higher levels of strategic alignment and higher levels of employee commitment to foster the alignment and effectiveness of a company's CTI may emerge.

### 6.5 Outlook

Despite evidence, that perpetually excellent companies or industries do not exist (Kim & Mauborne, 2005:11), the field of innovation holds various opportunities for firms seeking to proactively and systematically enhance their competitive position and aim to ensure long-term survival and prosperity.

This thesis may not have resolved the phenomenon that incumbent organizations fail over time. Yet, it has made an emphasis on the importance of understanding innovation from a holistic perspective and considering the implications of DIT that "good" management may be wrong at times. Furthermore, that a change of management perspective may be helpful to achieve higher levels of organizational longevity. The mechanisms outlined encourage conscious and proactive actions in BS making, increase managerial awareness for potential inhibitors to innovation (Assink, 2006) and prepare the organization to achieve future objectives and a necessary level of flexibility and strategic renewal (Morgan & Strong, 1998: 1064; Tushman & O'Reilly, 2002: 2; Denning, 2005: 7). Based on the implications of this research, the role of leadership remains an essential determinant of firm success and in creating an organizational context that fosters innovation (Van de Ven, 1986: 601). Therefore, it is expected that incumbent organizations may find the implications of this thesis helpful in their quest to channel their strength of today into innovation and consequently achieve a state of prosperity and ultimately longevity.

*"if new entrants can capture billions of dollars of new wealth in an industry without the resources and accumulated experience of an established player, imagine the possibilities if the energy and resources of an already successful company could be focused on the challenge of inventing new opportunities for new wealth creation (Hamel, 2000: 288)."*

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Appendix

6.6 Review of MARKOR and MKTOR scale items

6.6.1 Review of MARKOR scale items

(Source: Kohli et al, 1993: 476)

		<u>Current</u> Customer Focus	<u>Potential</u> <u>Future</u> Customer Focus	<u>Definite</u> <u>Future</u> Customer Focus
<u>Intelligence Generation</u>				
1.	In this business unit, we meet with customers at least once a year to find out what products or services they will need in the future.	x		
2.	Individuals from our manufacturing department interact directly with customers to learn how to serve them better.	x		
3.	In this business unit, we do a lot of in-house market research.	x	X	
4.	We are slow to detect changes in our customers' product preferences.*	x	X	
5.	We poll end users at least once a year to assess the quality of our products and services.	x		
6.	We often talk with or survey those who can influence our end users' purchases (e.g., retailers, distributors).*	x		
7.	We collect industry information by informal means (e.g., lunch with industry friends, talks with trade partners).	x		
8.	In our business unit, intelligence on our competitors is generated independently by several departments.	x		
9.	We are slow to detect fundamental shifts in our industry (e.g., competition, technology, regulation). (R)*	x	X	
10.	We periodically review the likely effect of changes in our business environment (e.g., regulation) on customers.*	x		

		<u>Current</u> Customer Focus	<u>Potential</u> <u>Future</u> Customer Focus	<u>Definite</u> <u>Future</u> Customer Focus
<u>Intelligence Dissemination</u>				
11.	A lot of informal "hall talk" in this business unit concerns our competitors' tactics or strategies.*	x		
12.	We have interdepartmental meetings at least once a quarter to discuss market trends and developments.*	x	X	
13.	Marketing personnel in our business unit spend time discussing customers' future needs with other functional departments.		X	
14.	Our business unit periodically circulates documents (e.g., reports, newsletters) that provide information on our customers.*	x		
15.	When something important happens to a major customer of market, the whole business unit knows about it within a short period.*	x		
16.	Data on customer satisfaction are disseminated at all levels in this business unit on a regular basis.	x		
17.	There is minimal communication between marketing and manufacturing departments concerning market developments. (R)	x	X	
18.	When one department finds out something important about competitors, it is slow to alert other departments. (R)*	x		

<u>Responsiveness</u>	<u>Current</u> Customer Focus	<u>Potential</u> <u>Future</u> Customer Focus	<u>Definite</u> <u>Future</u> Customer Focus
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19.	It takes us forever to decide how to respond to our competitor's price changes. (R)	x		
20.	Principles of market segmentation drive new product development efforts in this business unit.	x		
21.	For one reason or another we tend to ignore changes in our customer's product or service needs. ®	x	x	
22.	We periodically review our product development efforts to ensure that they are in line with what customers want.	x		
23.	Our business plans are driven more by technological advances than by market research. (R)	x	x	
24.	Several departments get together periodically to plan a response to changes taking place in our business environment.	x	x	
25.	The product lines we sell depends more on internal politics than real market needs. (R)*	x		
26.	If a major competitor were to launch an intensive campaign targeted at our customers, we would implement a response immediately.	x		
27.	The activities of the different departments in this business unit are well coordinated.*	x		
28.	Customer complaints fall on deaf ears in this business unit. (R)*	x		
29.	Even if we came up with a great marketing plan, we probably would not be able to implement it in a timely fashion. (R)*	x		
30.	We are quick to respond to significant changes in our competitors' pricing structures.*	x		
31.	When we find out that customers are unhappy with the quality of our service, we take corrective action immediately.*	x		
32.	When we find that customers would like us to modify a product of service, the departments involved make concerted efforts to do so.*	x		

(R) denotes reverse coded item.

\*Refers to addition of item during or after completion of the second pretest.

### 6.6.2 Review of MKATOR

(Source: Kayhan et al, 2011: 540; based on Narver & Slater (1990)

		<u>Current</u> Customer Focus	<u>Potential</u> <u>Future</u> Customer Focus	<u>Definite</u> <u>Future</u> Customer Focus
Customer orientation				
1.	We give close attention to after-sales service.	x		
2.	Our business objectives are driven primarily by customer satisfaction	x		
3.	We measure customer satisfaction systematically.	x		
4.	We constantly monitor our level of commitment to serving customer's needs.	x		
5.	Our competitive advantage is based on our understanding of customer needs.	x		
6.	Our strategies are driven by our beliefs about how we can create greater value for customers.	x		
7.	We frequently measure customer satisfaction.	x		
Competition orientation				
8.	Top management regularly discusses competitors' weakness.	x		
9.	We rapidly respond to competitive actions that threaten us.	x		
10.	We target customers where we have an opportunity for competitive advantage.	x		
11.	Top management regularly discusses competitors' strengths.	x		

12.	Our sales people regularly share information concerning competitor's strategies.	x		
Interfunctional Coordination				
13.	Our top managers from every function regularly visit our current customers.	x		
14.	Our top managers from every function regularly visit our prospective customers.		x	
15.	Our managers understand how employees can contribute to value of customers.	x		
16.	All of our business functions are responsive to each other's needs.	x		
17.	Information about our customers is freely communicated throughout our organisation.	x		
18.	All of our business functions are integrated in serving the needs of our target markets	x		
19.	All of our business developments are responsive to each other's requests.	x		

### 6.7 Research Construct and Questionnaire items

Construct/ Subconstruct	Item
<b>Business Strategy</b>	
<b>Aggressiveness</b>	
AGG1	Our organization tends to cut prices to increase market share.
AGG2	Our organization tends to set prices below those of our competitors.
AGG3	To our organization, market share tends to be more important than cash flow and profitability.
<b>Analysis</b>	
ANA1	In our organization, information systems provide support for decision making.
ANA2	When confronted with important decisions, we typically develop comprehensive analyses of the business situations faced.
ANA3	In our organization, we are highly analytical when preparing our decision-making.
ANA4	We require high amounts of factual information to support our day-to-day decision-making.
<b>Defensiveness</b>	
DEF1	In our organization, firm performance is constantly monitored through various control systems.
DEF2	In our organization, we devote much attention to improving the efficiency of our business operations.
DEF3	In our organization, product quality and product optimization play an important role.
<b>Futurity</b>	
FUT1	In our organization, the criteria for resource allocation generally reflect short-term considerations [R].
FUT2	In our organization, we highlight research as an important determinant of future commercial success.
FUT3	In our organization, we keep track of significant general trends.
<b>Proactiveness</b>	
PRO1	Our organization is constantly seeking new opportunities in areas closely related to our present business activities.
PRO 2	Our organization is usually the first one to introduce new brands or products in the market (even when it is not clear how successful they may be).
PRO 3	Our organization is constantly on the look out to take on business opportunities well beyond the scope of our present business activities.
<b>Riskiness</b>	
RIS1	Our business activities can be generally characterized as rather high-risk (Note: Within the boundaries provided by our compliance framework)
RIS2	In our organization, our business decisions are influenced by our aim to keep risks at a minimum.
RIS3	In our organization, we have a tendency to support projects where the expected returns are certain [R].

<b>Market Orientation</b>	
<b>Mainstream Customer Orientation (CCO)</b>	
MAIN1	In our organization, we strongly focus our attention on our current customer/consumer base.

MAIN2	Our organization invests a significant portion of its resources in innovations, which are directed at our current customer/consumer base.
MAIN3	In our organization, market research is strongly focused on our current customer/consumer base (which does not necessarily mean that information is then effectively utilized).
Emerging Customer Orientation (FMO)	
EME1	In our organization, we are early to identify- and serve demands of small, newly emerging customer segments in business areas which reach well beyond the scope of our present business activities.
EME2	Our organization sufficiently allocates the critical financial and human resources to carve out a strong position in small, newly emerging customer segments which reach well beyond the scope of our present business activities.
EME3	In our organization, we actively seek customers of the future in areas which reach well beyond the scope of our present business activities.

Learning Orientation	
Commitment to Learning	
COM1	In our organization, Managers actively encourage learning as a means to achieve competitive advantage.
COM2	In our organization, learning is actively encouraged as key to improvement in our day-to-day business.
COM3	In our organization, employee learning is understood as an investment, not an expense.
COM4	In our organization, learning is seen as a key capability necessary to guarantee organizational survival.
Shared Vision	
SHA1	There is a commonality of purpose in our organization.
SHA2	In our organization, there is total agreement on our organizational vision across all levels, functions, and divisions.
SHA3	In our organization, all employees are committed to the overall goals of this organization.
SHA4	Employees view themselves as partners in determining the direction of our organization.
Open Mindedness	
OPE1	In our organization, we are not afraid to reflect critically on the shared assumptions we have made about our customers/consumers.
OPE2	Members of this organization continually question the very way we perceive the marketplace.
OPE3	In our organization, we rarely collectively question our own bias about the way we interpret customer information.
OPE4	In our organization, we continually judge the quality of our decisions and activities taken over time.
Intraorganizational Knowledge Sharing	
KNO1	There is a good deal of organizational conversation that keeps alive the lessons learned from history.
KNO2	In our organization, we always analyze unsuccessful organizational endeavors and communicate the lessons learned widely.
KNO3	We actively use mechanisms for sharing lessons learned in organizational activities from department to department (unit to unit, team to team).
KNO4	Top management repeatedly highlighted the importance of knowledge sharing in our organization.
KNO5	In our organization, we rarely share lessons learned or -prior experiences [R].

Implementation Context	
IIC1	Given our current level of flexibility, over the next year we could change up to 50 percent of the processes that support our current business model.
IIC2	In our organization, we are prepared to commit resources to support ventures that result from our innovation pathway.
IIC3	We have a wide resource base in our organization which facilitates the introduction of innovations to the market.
IIC4	We are prepared to discontinue products/services that only marginally serve our purposes in efforts to build capacity for something new.
IIC5	Compared to our competitors, we are frequently more successful with new product/service offerings introduced to the market.
IIC6	In our organization, ideas flow efficiently through to implementation/commercialization.

IIC7	Our management is a great help in breaking down barriers that stand in the way of implementing new processes/products/services.
IIC8	In our organization, we truly accept that mistakes will occur or that not everything we do will be ultimately successful.
IIC9	We can quickly facilitate changes to our products/services based on customer demand or competitive reaction.
IIC10	We are quick to turnaround ideas into marketable products/services.
IIC11	In our organization, we can modify systems and processes fairly quickly and as necessary to enhance our competitive position.
IIC12	In our organization, project managers have the autonomy to speed up, slow down, change course or cancel projects altogether.

Test Variables	
TEST1	From my personal perspective, I perceive our organization's strategy as being well articulated and clear to understand.
TEST2	In my opinion, given the level of change in the internal and/or external environment our organization faces, the current strategic direction of the organization and its emphasis on change is fully adequate.
TEST3	I feel encouraged to challenge decisions and actions in this organization if I think there is a better way.
TEST4	Technological developments in our industry are relatively minor.
TEST5	I expect our current core products to continue to deliver high levels of profitability to our organization for the next 5 years.

## 6.8 Participation over time

Date	Frequency	Cumulative Frequency	Weekday	Workday	% of total participation	Cumulative % of participation
07-MAY-2014	77	77	We	1	42,3	42,31
08-MAY-2014	21	98	Th	1	11,5	53,85
09-MAY-2014	5	103	Fr	1	2,7	56,59
10-MAY-2014	0	103	Sa		0,0	56,59
11-MAY-2014	1	104	Su		0,5	57,14
12-MAY-2014	42	146	Mo	1	23,1	80,22
13-MAY-2014	8	154	Tu	1	4,4	84,62
14-MAY-2014	4	158	We	1	2,2	86,81
15-MAY-2014	3	161	Th	1	1,6	88,46
16-MAY-2014	0	161	Fr	1	0,0	88,46
17-MAY-2014	0	161	Sa		0,0	88,46
18-MAY-2014	0	161	Su		0,0	88,46
19-MAY-2014	4	165	Mo	1	2,2	90,66
20-MAY-2014	14	179	Tu	1	7,7	98,35
21-MAY-2014	1	180	We	1	0,5	98,90
22-MAY-2014	0	180	Th	1	0,0	98,90
23-MAY-2014	0	180	Fr	1	0,0	98,90
24-MAY-2014	0	180	Sa		0,0	98,90
25-MAY-2014	0	180	Su		0,0	98,90
26-MAY-2014	1	181	Mo	1	0,5	99,45
27-MAY-2014	1	182	Tu	1	0,5	100,00
28-MAY-2014	0	182	We	1	0,0	100,00
29-MAY-2014	0	182	Th	1	0,0	100,00
30-MAY-2014	0	182	Fr	1	0,0	100,00
31-MAY-2014	0	182	Sa		0,0	100,00
<b>Gesamtergebnis</b>	<b>182</b>	<b>182</b>		<b>18</b>	<b>100,0</b>	<b>100,00</b>

## 6.9 Assessment of Bias

Harman's single factor test:

### Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10,729	29,802	29,802	10,729	29,802	29,802
2	2,141	5,948	35,749			
3	1,987	5,519	41,269			
4	1,622	4,505	45,774			
5	1,520	4,223	49,996			
6	1,384	3,843	53,839			
7	1,319	3,665	57,504			
8	1,084	3,011	60,515			
9	1,023	2,841	63,356			
10	,968	2,689	66,044			
11	,946	2,629	68,674			
12	,901	2,503	71,177			
13	,799	2,218	73,395			
14	,762	2,116	75,511			
15	,715	1,986	77,497			
16	,696	1,934	79,431			
17	,670	1,862	81,293			
18	,605	1,681	82,974			
19	,590	1,638	84,612			
20	,578	1,607	86,218			
21	,548	1,521	87,739			
22	,483	1,342	89,082			
23	,441	1,226	90,308			
24	,416	1,156	91,464			
25	,378	1,049	92,513			
26	,358	,995	93,509			
27	,334	,928	94,436			
28	,295	,818	95,255			
29	,288	,800	96,055			
30	,266	,738	96,793			
31	,248	,688	97,481			
32	,217	,602	98,083			
33	,208	,577	98,660			
34	,202	,561	99,221			
35	,149	,414	99,635			
36	,131	,365	100,000			

Extraction Method: Principal Component Analysis.

% of Variance explained <50%, thus no indication for common method bias.

Late response bias (Man Whitney U Test):

<b>Ranks</b>				
	Date_2_Groups	N	Mean Rank	Sum of Ranks
	7th-11th of May	104	91,90	9557,50
Total_BS_AGG Scale	12th - 31st of May	78	90,97	7095,50
	Total	182		
	7th-11th of May	104	95,62	9944,50
Total_BS_ANA Scale	12th - 31st of May	78	86,01	6708,50
	Total	182		
	7th-11th of May	104	92,22	9590,50
Total_BS_DEF Scale	12th - 31st of May	78	90,54	7062,50
	Total	182		
	7th-11th of May	104	88,96	9252,00
Total_BS_FUT Scale	12th - 31st of May	78	94,88	7401,00
	Total	182		
	7th-11th of May	104	82,63	8594,00
Total_BS_PRO Scale	12th - 31st of May	78	103,32	8059,00
	Total	182		
	7th-11th of May	104	83,09	8641,50
Total_BS_RIS Scale	12th - 31st of May	78	102,71	8011,50
	Total	182		
	7th-11th of May	104	86,33	8978,00
Total_MO_CCO Scale	12th - 31st of May	78	98,40	7675,00
	Total	182		
	7th-11th of May	104	82,14	8542,50
Total_MO_FMO Scale	12th - 31st of May	78	103,98	8110,50
	Total	182		
	7th-11th of May	104	86,40	8986,00
Total_LO_Scale 2nd order!	12th - 31st of May	78	98,29	7667,00
	Total	182		
	7th-11th of May	104	84,75	8814,00
Total_IIC Scale	12th - 31st of May	78	100,50	7839,00
	Total	182		

Test Statistics<sup>a</sup>

	Total_BS_AGG Scale	Total_BS_ANA Scale	Total_BS_DEF Scale	Total_BS_FUT Scale	Total_BS_PRO Scale	Total_BS_RIS Scale	Total_MO_CCO Scale	Total_MO_FMO Scale	Total_LO_Scale 2nd order!	Total_IIC Scale
Mann-Whitney U	4014,500	3627,500	3981,500	3792,000	3134,000	3181,500	3518,000	3082,500	3526,000	3354,000
Wilcoxon W	7095,500	6708,500	7062,500	9252,000	8594,000	8641,500	8978,000	8542,500	8986,000	8814,000
Z	-,119	-1,223	-,214	-,753	-2,629	-2,499	-1,542	-2,781	-1,507	-1,997
Asymp. Sig. (2-tailed)	,905	,221	,831	,451	,009	,012	,123	,005	,132	,046

a. Grouping Variable: Date\_2\_Groups

## Ranks

	Date_2_Groups	N	Mean Rank	Sum of Ranks
Total_BS_AGG Scale	7th-11th of May	35	18,74	656,00
	12th - 31st of May	1	10,00	10,00
	Total	36		
Total_BS_ANA Scale	7th-11th of May	35	18,81	658,50
	12th - 31st of May	1	7,50	7,50
	Total	36		
Total_BS_DEF Scale	7th-11th of May	35	18,91	662,00
	12th - 31st of May	1	4,00	4,00
	Total	36		
Total_BS_FUT Scale	7th-11th of May	35	18,54	649,00
	12th - 31st of May	1	17,00	17,00
	Total	36		
Total_BS_PRO Scale	7th-11th of May	35	18,57	650,00
	12th - 31st of May	1	16,00	16,00
	Total	36		
Total_BS_RIS Scale	7th-11th of May	35	18,33	641,50
	12th - 31st of May	1	24,50	24,50
	Total	36		
Total_MO_CCO Scale	7th-11th of May	35	18,20	637,00
	12th - 31st of May	1	29,00	29,00
	Total	36		
Total_MO_FMO Scale	7th-11th of May	35	18,44	645,50
	12th - 31st of May	1	20,50	20,50
	Total	36		
Total_LO_Scale 2nd order!	7th-11th of May	35	18,50	647,50
	12th - 31st of May	1	18,50	18,50
	Total	36		
Total_IIC Scale	7th-11th of May	35	18,61	651,50
	12th - 31st of May	1	14,50	14,50
	Total	36		



Test Statistics<sup>a</sup>

	Total_BS_AGG Scale	Total_BS_ANA Scale	Total_BS_DEF Scale	Total_BS_FUT Scale	Total_BS_PRO Scale	Total_BS_RIS Scale	Total_MO_CCO Scale	Total_MO_FMO Scale	Total_LO_Scale 2nd order!	Total_IIC Scale
Mann-Whitney U	9,000	6,500	3,000	16,000	15,000	11,500	7,000	15,500	17,500	13,500
Wilcoxon W	10,000	7,500	4,000	17,000	16,000	641,500	637,000	645,500	18,500	14,500
Z	-,827	-1,063	-1,410	-,145	-,242	-,581	-1,027	-,195	,000	-,386
Asymp. Sig. (2-tailed)	,408	,288	,159	,885	,809	,562	,304	,846	1,000	,699
Exact Sig. [2*(1-tailed Sig.)]	,556 <sup>b</sup>	,389 <sup>b</sup>	,222 <sup>b</sup>	,944 <sup>b</sup>	,889 <sup>b</sup>	,667 <sup>b</sup>	,444 <sup>b</sup>	,889 <sup>b</sup>	1,000 <sup>b</sup>	,778 <sup>b</sup>

a. Grouping Variable: Date\_2\_Groups

b. Not corrected for ties.

6.10 Assessment of Measures  
 6.10.1 Assessment of MO measures  
 6.10.1.1 Assessment of MO CCO  
**Assessment of Normality**

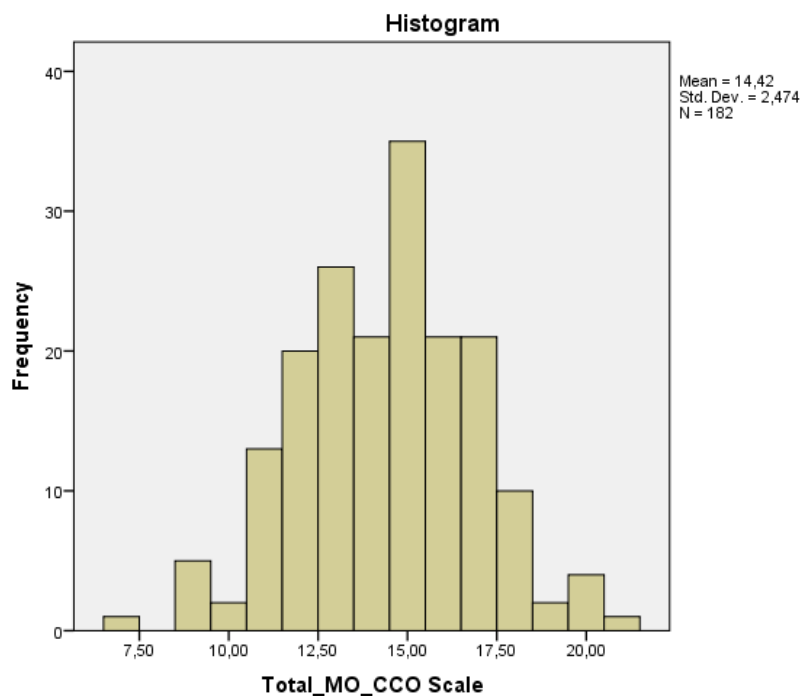
**Descriptives**

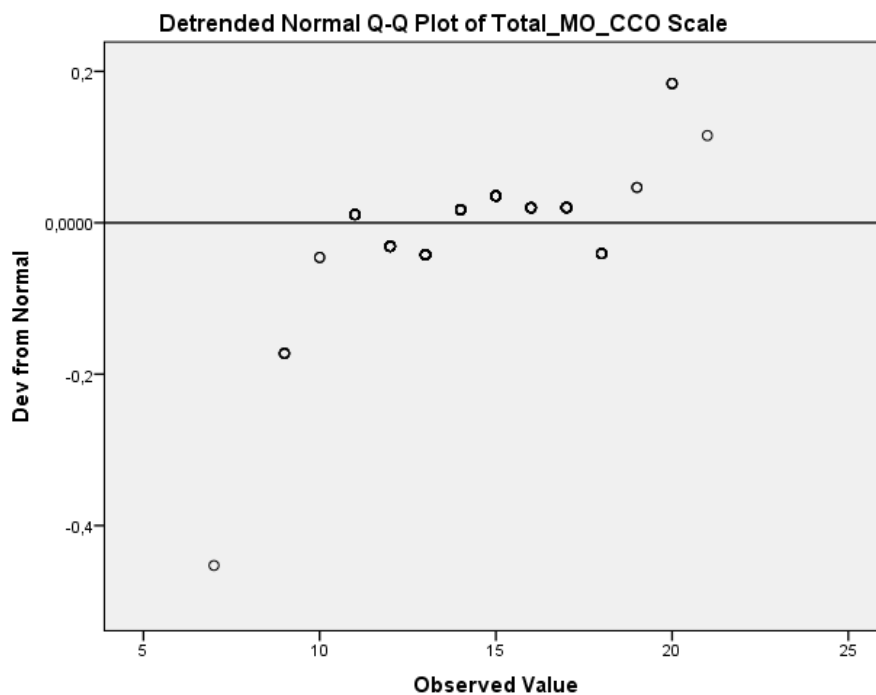
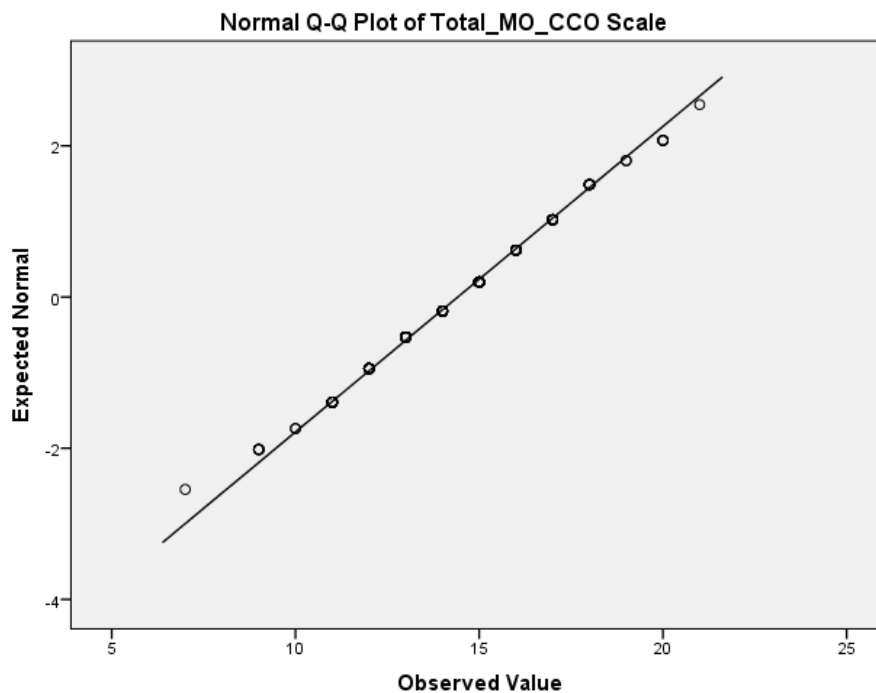
			Statistic	Std. Error
Total_MO_CCO Scale	Mean		14,4176	,18342
	95% Confidence Interval for Mean	Lower Bound	14,0557	
		Upper Bound	14,7795	
	5% Trimmed Mean		14,4267	
	Median		15,0000	
	Variance		6,123	
	Std. Deviation		2,47447	
	Minimum		7,00	
	Maximum		21,00	
	Range		14,00	
	Interquartile Range		3,00	
	Skewness		-,062	,180
	Kurtosis		-,001	,358

**Tests of Normality**

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Total_MO_CCO Scale	,110	182	,000	,982	182	,020

a. Lilliefors Significance Correction





**Assessment of Reliability**

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,498	,494	3

**Item Statistics**

	Mean	Std. Deviation	N
MO_CCO_1	4,813	1,1507	182
MO_CCO_2	4,747	1,2839	182

MO_CCO_3	4,857	1,0572	182
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#### Inter-Item Correlation Matrix

	MO_CCO_1	MO_CCO_2	MO_CCO_3
MO_CCO_1	1,000	,278	,123
MO_CCO_2	,278	1,000	,336
MO_CCO_3	,123	,336	1,000

#### Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
MO_CCO_1	9,604	3,677	,254	,078	,495
MO_CCO_2	9,670	2,742	,408	,170	,219
MO_CCO_3	9,560	3,795	,294	,114	,433

#### Scale Statistics

Mean	Variance	Std. Deviation	N of Items
14,418	6,123	2,4745	3

### 6.10.1.2 Assessment of MO FMO

#### Assessment of Normality

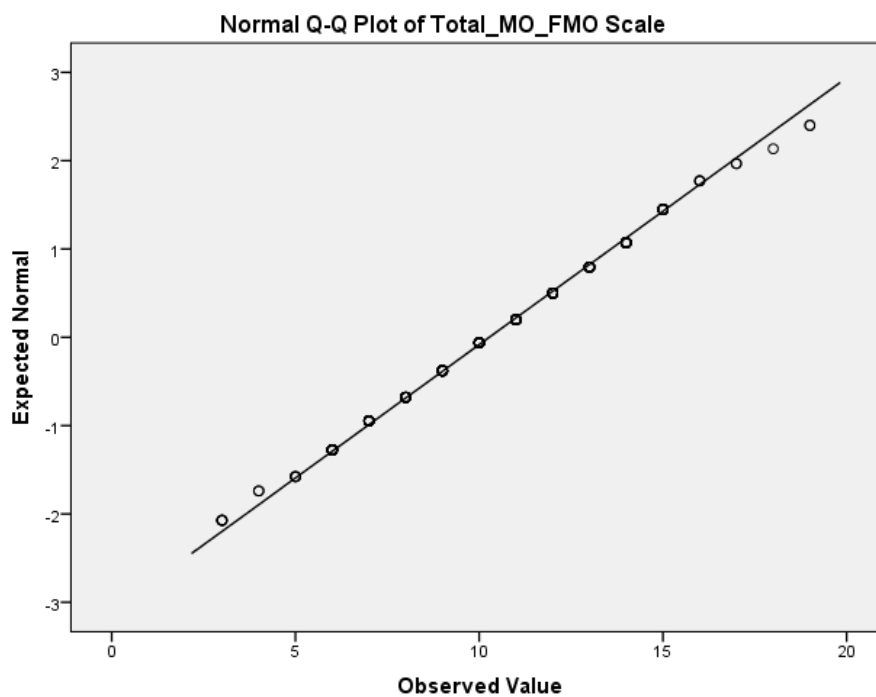
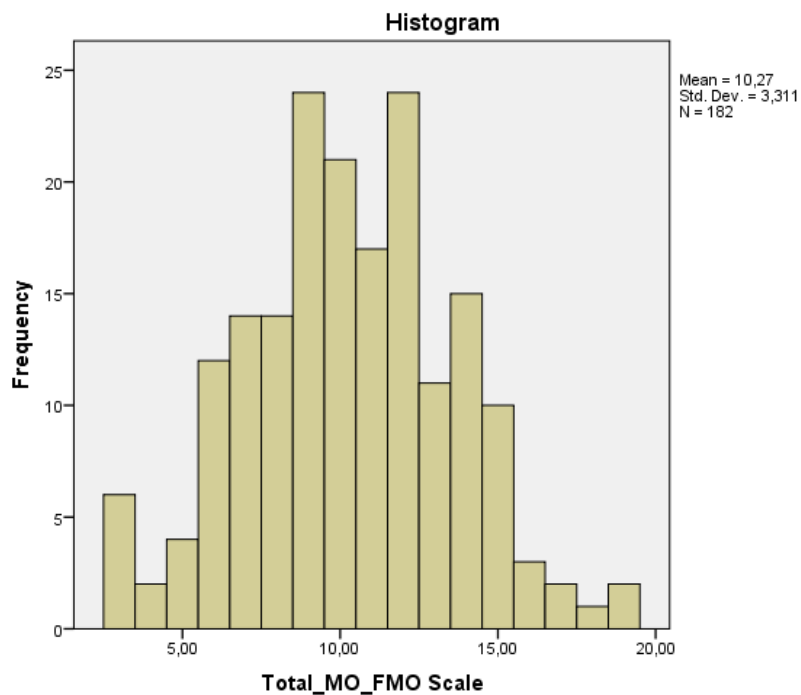
##### Descriptives

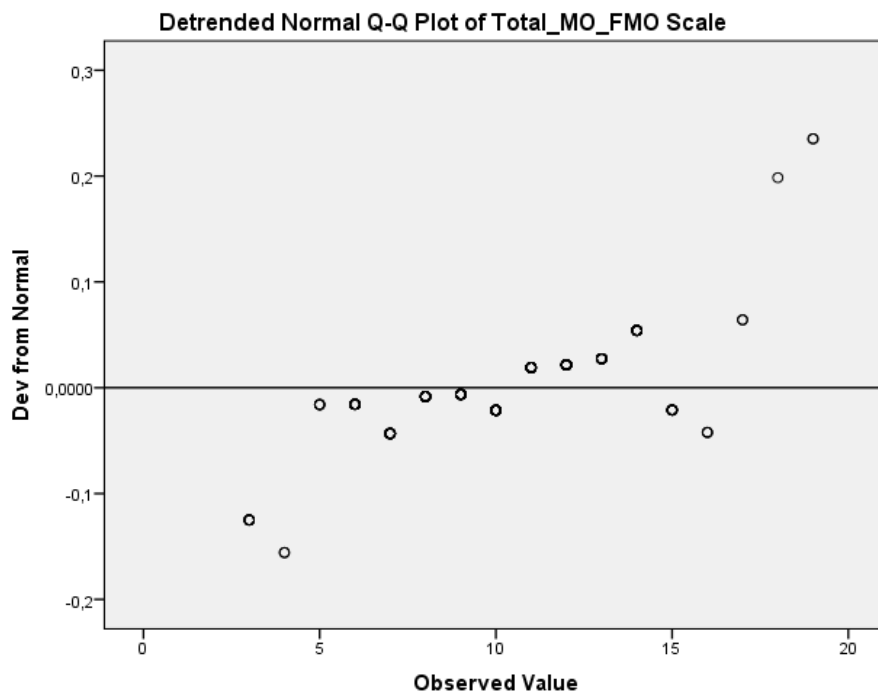
			Statistic	Std. Error
Total_MO_FMO Scale	Mean		10,2747	,24543
	95% Confidence Interval for Mean	Lower Bound	9,7905	
		Upper Bound	10,7590	
	5% Trimmed Mean		10,2808	
	Median		10,0000	
	Variance		10,963	
	Std. Deviation		3,31101	
	Minimum		3,00	
	Maximum		19,00	
	Range		16,00	
	Interquartile Range		4,00	
	Skewness		,017	,180
	Kurtosis		-,189	,358

##### Tests of Normality

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Total_MO_FMO Scale	,072	182	,021	,986	182	,069

a. Lilliefors Significance Correction





**Assessment of reliability**

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,811	,811	3

**Item Statistics**

	Mean	Std. Deviation	N
MO_FMO_1	3,313	1,2856	182
MO_FMO_2	3,401	1,2476	182
MO_FMO_3	3,560	1,3520	182

**Inter-Item Correlation Matrix**

	MO_FMO_1	MO_FMO_2	MO_FMO_3
MO_FMO_1	1,000	,565	,582
MO_FMO_2	,565	1,000	,619
MO_FMO_3	,582	,619	1,000

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
MO_FMO_1	6,962	5,474	,638	,407	,763
MO_FMO_2	6,874	5,503	,667	,447	,735
MO_FMO_3	6,714	5,023	,679	,463	,722

**Scale Statistics**

Mean	Variance	Std. Deviation	N of Items
10,275	10,963	3,3110	3

6.10.1.3 Assessment of MO – EFA

**KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,678
Approx. Chi-Square		242,405
Bartlett's Test of Sphericity	Df	15
	Sig.	,000

**Communalities<sup>a</sup>**

	Initial	Extraction
MO_CCO_1	,102	,081
MO_CCO_2	,272	,999
MO_CCO_3	,125	,125
MO_FMO_1	,417	,526
MO_FMO_2	,486	,623
MO_FMO_3	,468	,638

Extraction Method: Maximum Likelihood.

a. One or more communitiy estimates greater than 1 were encountered during iterations. The resulting solution should be interpreted with caution.

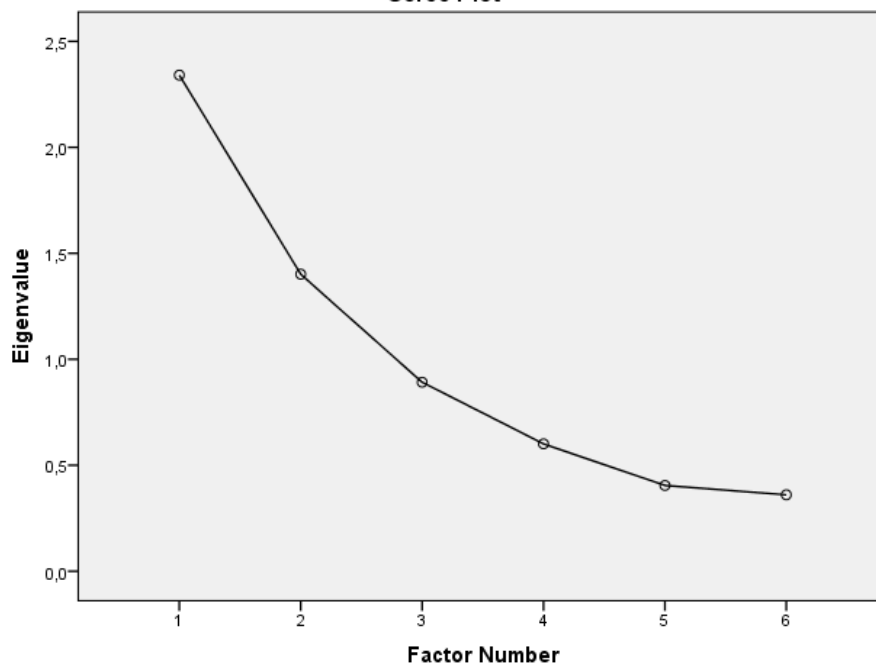
**Total Variance Explained**

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings <sup>a</sup>
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	2,341	39,012	39,012	1,378	22,974	22,974	1,900
2	1,401	23,356	62,369	1,614	26,893	49,867	1,332
3	,892	14,860	77,229				
4	,601	10,015	87,244				
5	,405	6,746	93,990				
6	,361	6,010	100,000				

Extraction Method: Maximum Likelihood.

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

**Scree Plot**



**Factor Matrix<sup>a</sup>**

	Factor	
	1	2

MO_CCO_2	,999	-,001
MO_CCO_3	,336	-,112
MO_CCO_1	,278	-,057
MO_FMO_3	,207	,771
MO_FMO_2	,330	,717
MO_FMO_1	,193	,699

Extraction Method: Maximum Likelihood.

a. 2 factors extracted. 9 iterations required.

#### Goodness-of-fit Test

Chi-Square	df	Sig.
4,565	4	,335

#### Pattern Matrix<sup>a</sup>

	Factor	
	1	2
MO_FMO_3	,821	-,084
MO_FMO_2	,770	,057
MO_FMO_1	,744	-,071
MO_CCO_2	,051	,983
MO_CCO_3	-,100	,371
MO_CCO_1	-,045	,295

Extraction Method: Maximum Likelihood.

Rotation Method: Promax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

## 6.10.2 Assessment of LO measure

### 6.10.2.1 LO\_COM\_Scale

#### Descriptives

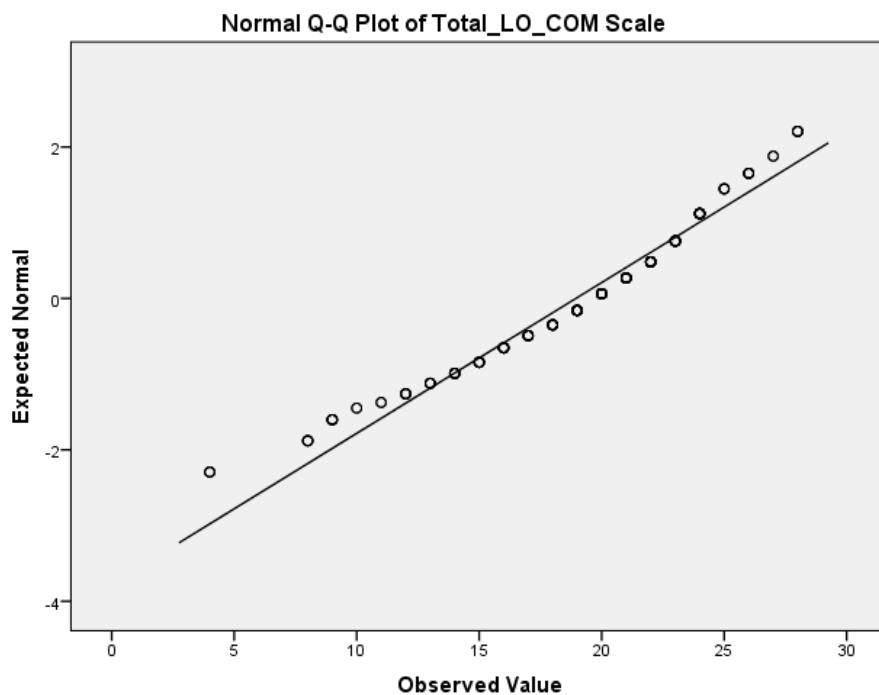
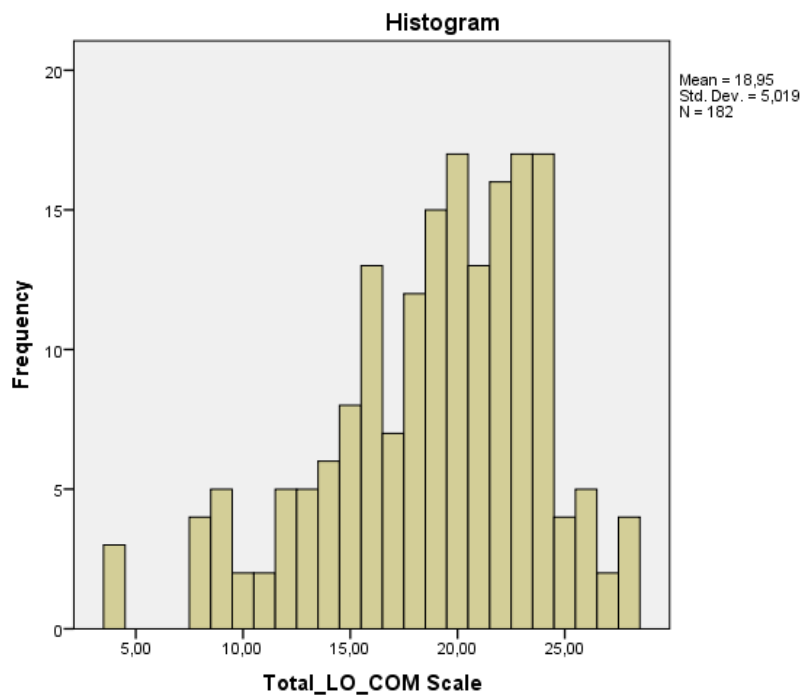
		Statistic	Std. Error
Total_LO_COM Scale	Mean	18,9451	,37203
	95% Confidence Interval for Mean		
	Lower Bound	18,2110	
	Upper Bound	19,6791	
	5% Trimmed Mean	19,1606	
	Median	20,0000	
	Variance	25,190	
	Std. Deviation	5,01900	
	Minimum	4,00	
	Maximum	28,00	
	Range	24,00	
	Interquartile Range	7,00	
	Skewness	-,723	,180
	Kurtosis	,295	,358

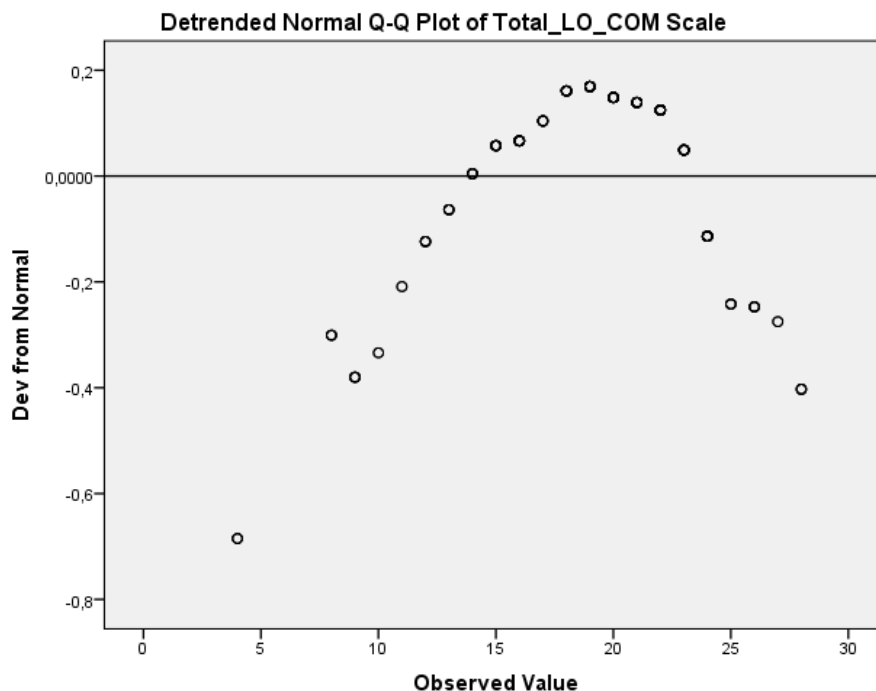
#### Tests of Normality

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Total_LO_COM Scale	,109	182	,000	,957	182	,000

a. Lilliefors Significance Correction







**Assessment of Reliability**

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,897	,898	4

**Item Statistics**

	Mean	Std. Deviation	N
LO_COM_1	4,324	1,4411	182
LO_COM_2	4,681	1,4632	182
LO_COM_3	5,016	1,4584	182
LO_COM_4	4,923	1,3764	182

**Inter-Item Correlation Matrix**

	LO_COM_1	LO_COM_2	LO_COM_3	LO_COM_4
LO_COM_1	1,000	,791	,592	,653
LO_COM_2	,791	1,000	,652	,679
LO_COM_3	,592	,652	1,000	,752
LO_COM_4	,653	,679	,752	1,000

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
LO_COM_1	14,621	14,701	,761	,651	,871
LO_COM_2	14,264	14,195	,803	,687	,856
LO_COM_3	13,929	14,774	,739	,603	,879
LO_COM_4	14,022	14,950	,784	,643	,863

**Scale Statistics**

Mean	Variance	Std. Deviation	N of Items
18,945	25,190	5,0190	4

**6.10.2.2 LO\_VIS\_Scale**

**Assessment of Normality**

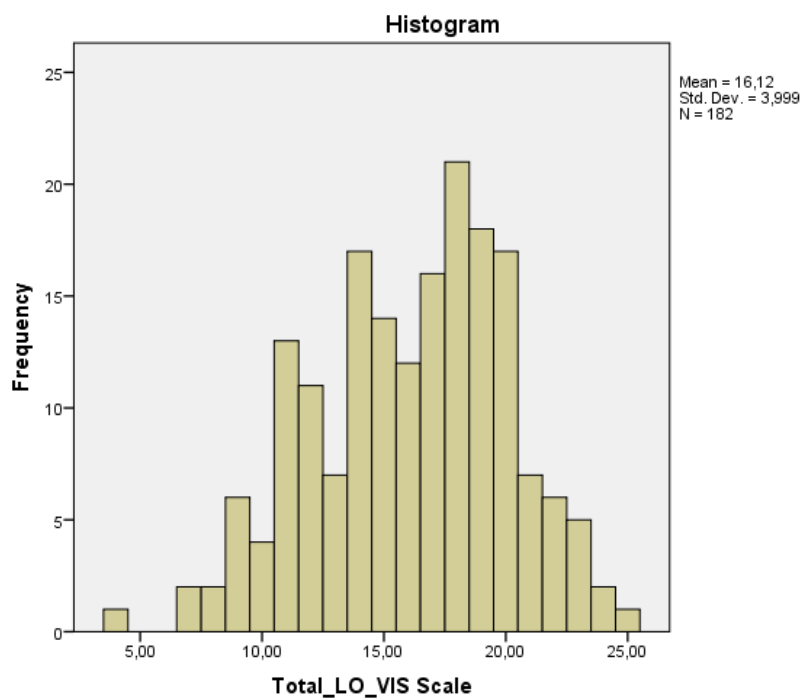
**Descriptives**

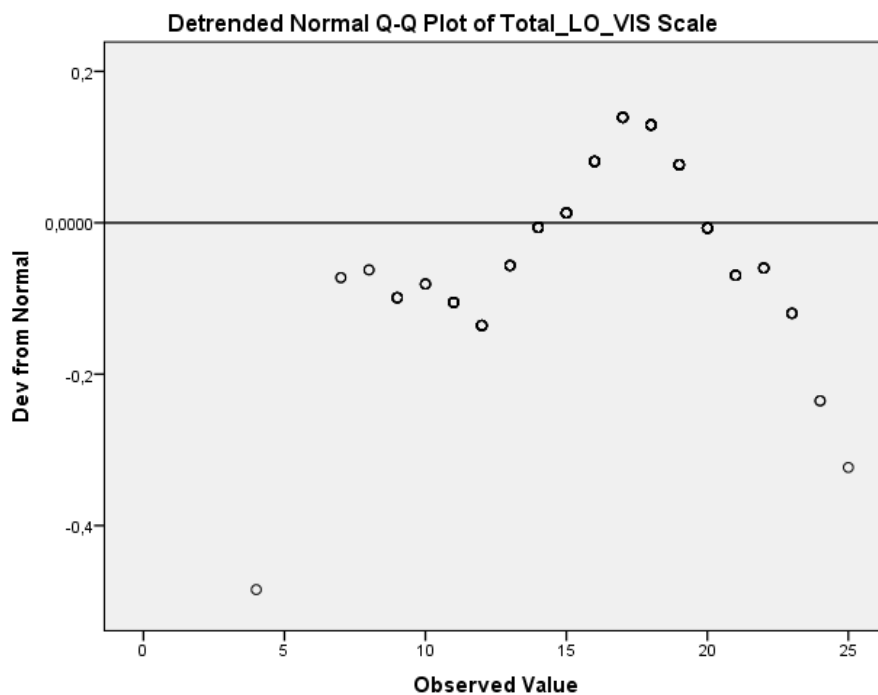
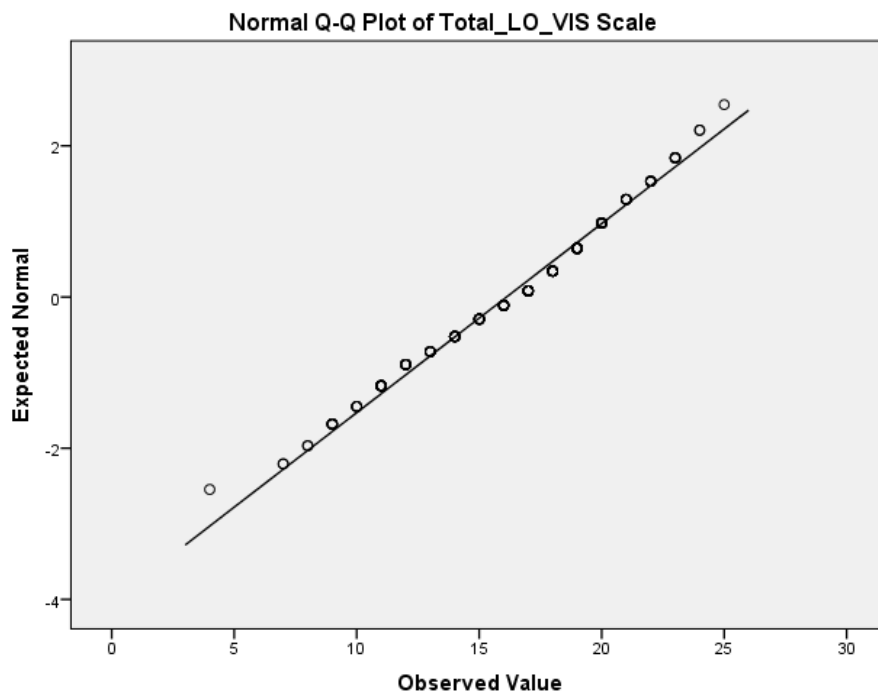
		Statistic	Std. Error	
Total_LO_VIS Scale	Mean	16,1154	,29643	
	95% Confidence Interval for Mean	Lower Bound	15,5305	
		Upper Bound	16,7003	
	5% Trimmed Mean	16,1777		
	Median	17,0000		
	Variance	15,992		
	Std. Deviation	3,99902		
	Minimum	4,00		
	Maximum	25,00		
	Range	21,00		
	Interquartile Range	6,00		
	Skewness	-,297	,180	
	Kurtosis	-,374	,358	

**Tests of Normality**

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Total_LO_VIS Scale	,104	182	,000	,982	182	,018

a. Lilliefors Significance Correction





**Assessment of Validity**

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,785	,784	4

**Item Statistics**

	Mean	Std. Deviation	N
LO_VIS_1	4,451	1,1347	182
LO_VIS_2	3,599	1,3619	182

LO_VIS_3	4,467	1,3157	182
LO_VIS_4	3,599	1,3039	182

#### Inter-Item Correlation Matrix

	LO_VIS_1	LO_VIS_2	LO_VIS_3	LO_VIS_4
LO_VIS_1	1,000	,425	,447	,407
LO_VIS_2	,425	1,000	,549	,516
LO_VIS_3	,447	,549	1,000	,516
LO_VIS_4	,407	,516	,516	1,000

#### Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
LO_VIS_1	11,665	10,854	,515	,266	,769
LO_VIS_2	12,516	9,025	,625	,395	,716
LO_VIS_3	11,648	9,191	,636	,406	,710
LO_VIS_4	12,516	9,489	,598	,361	,730

#### Scale Statistics

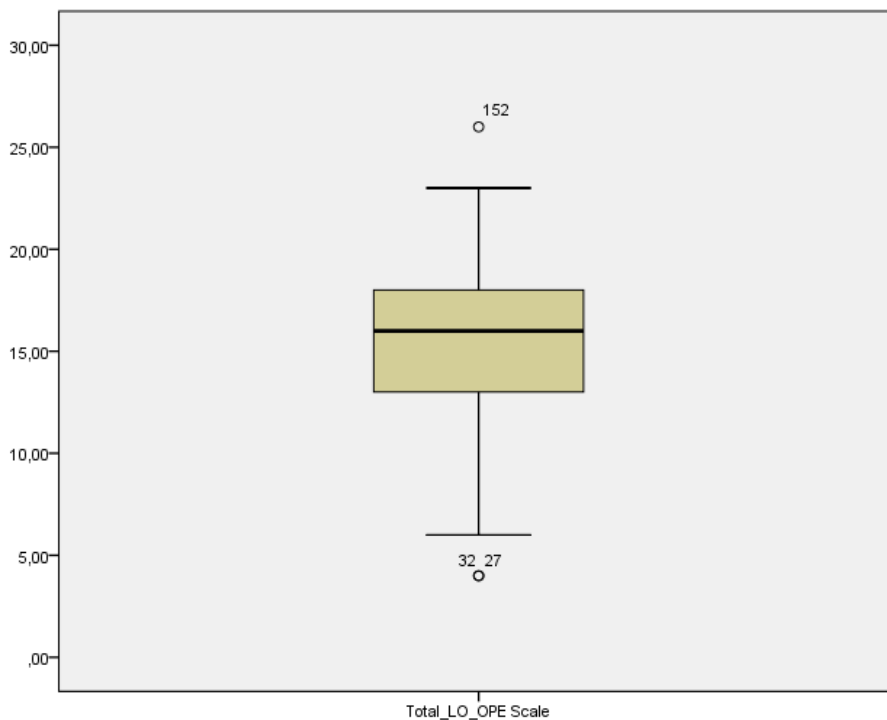
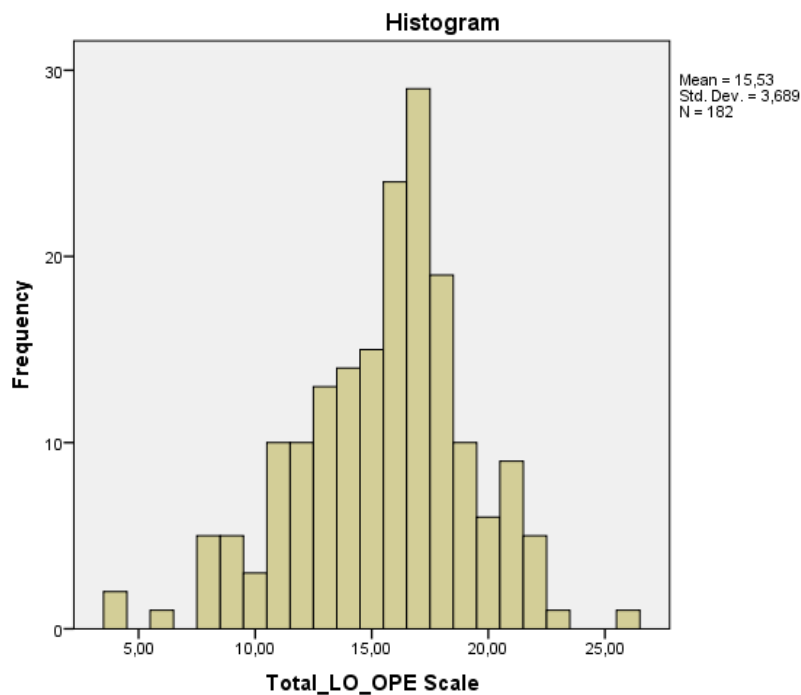
Mean	Variance	Std. Deviation	N of Items
16,115	15,992	3,9990	4

#### 6.10.2.3 LO\_OPE\_Scale

Assessment of Normality (Step 2 – with item LO\_OPE 3 reverse coded following negative correlation)

#### Descriptives

		Statistic	Std. Error	
Total_LO_OPE Scale	Mean	15,5275	,27346	
	95% Confidence Interval for Mean	Lower Bound	14,9879	
		Upper Bound	16,0670	
	5% Trimmed Mean	15,6227		
	Median	16,0000		
	Variance	13,610		
	Std. Deviation	3,68914		
	Minimum	4,00		
	Maximum	26,00		
	Range	22,00		
	Interquartile Range	5,00		
	Skewness	-,429	,180	
	Kurtosis	,481	,358	



**Step 2 Reliability (after reverse coding of item LO\_OPE\_3\_R)**

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,735	,738	4

**Item Statistics**

	Mean	Std. Deviation	N
LO_OPE_1	3,929	1,2033	182
LO_OPE_2	3,973	1,1679	182

LO_OPE_3	3,643	1,1267	182
LO_OPE_4	3,984	1,4239	182

#### Inter-Item Correlation Matrix

	LO_OPE_1	LO_OPE_2	LO_OPE_3	LO_OPE_4
LO_OPE_1	1,000	,573	,254	,467
LO_OPE_2	,573	1,000	,408	,385
LO_OPE_3	,254	,408	1,000	,389
LO_OPE_4	,467	,385	,389	1,000

#### Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
LO_OPE_1	11,599	8,264	,563	,402	,654
LO_OPE_2	11,555	8,281	,590	,404	,641
LO_OPE_3	11,885	9,329	,437	,233	,722
LO_OPE_4	11,544	7,454	,531	,299	,679

#### Scale Statistics

Mean	Variance	Std. Deviation	N of Items
15,527	13,610	3,6891	4

#### 6.10.2.4 LO\_SHA\_Scale

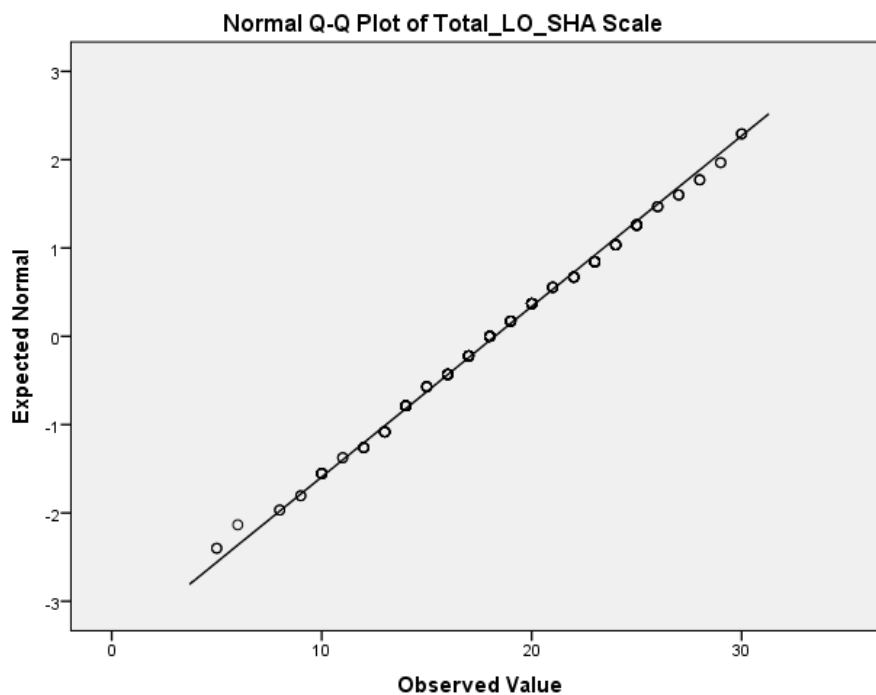
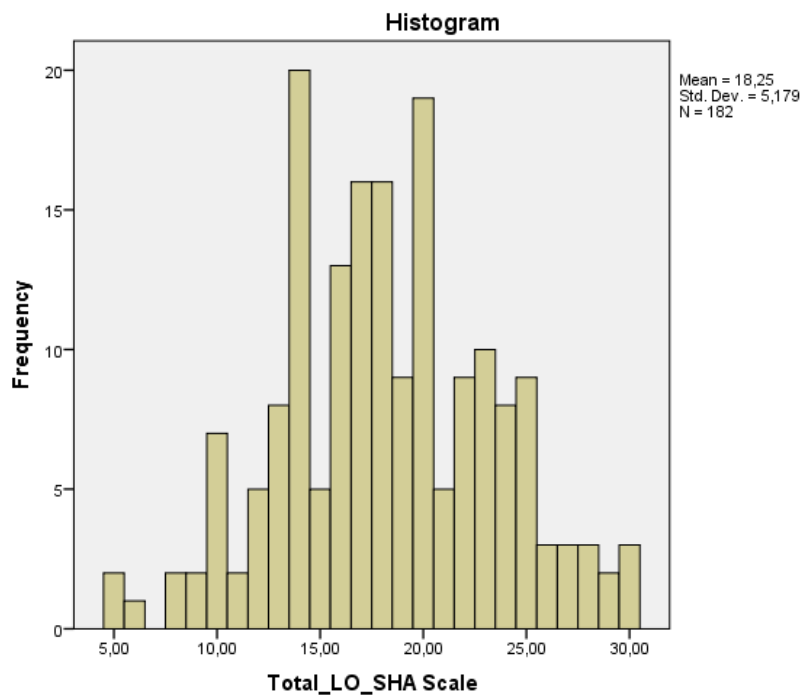
#### Descriptives

		Statistic	Std. Error	
Total_LO_SHA Scale	Mean	18,2473	,38386	
	95% Confidence Interval for Mean	Lower Bound	17,4898	
		Upper Bound	19,0047	
	5% Trimmed Mean	18,2436		
	Median	18,0000		
	Variance	26,817		
	Std. Deviation	5,17851		
	Minimum	5,00		
	Maximum	30,00		
	Range	25,00		
	Interquartile Range	8,00		
	Skewness	,018	,180	
	Kurtosis	-,238	,358	

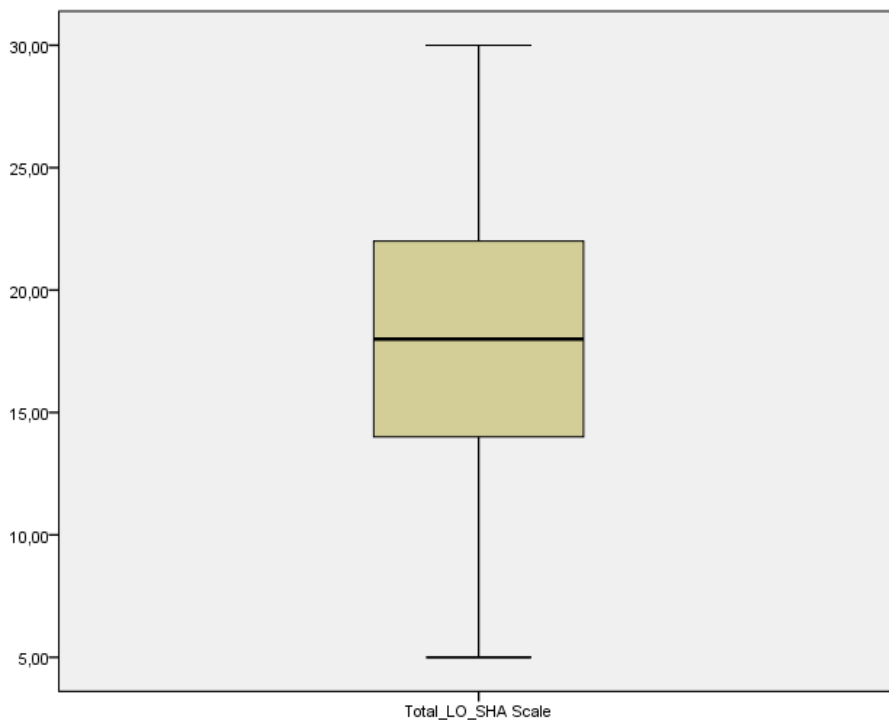
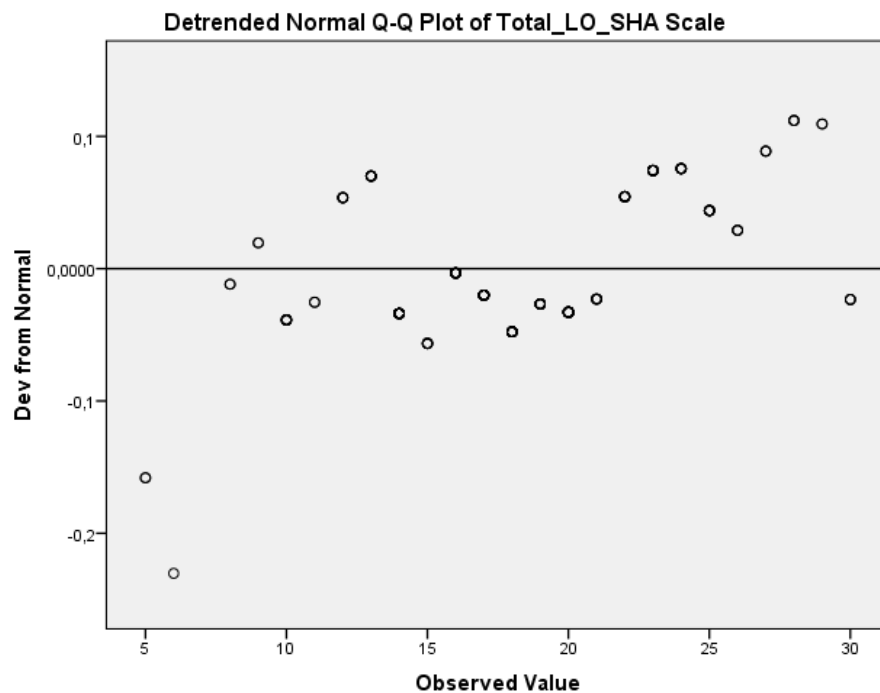
#### Tests of Normality

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Total_LO_SHA Scale	,065	182	,056	,990	182	,237

a. Lilliefors Significance Correction







**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,765	,768	5

**Item Statistics**

	Mean	Std. Deviation	N
LO_SHA_1	3,692	1,4312	182
LO_SHA_2	3,049	1,3996	182
LO_SHA_3	3,203	1,4093	182

LO_SHA_4	4,566	1,5137	182
LO_SHA_5_R	3,736	1,4553	182

#### Inter-Item Correlation Matrix

	LO_SHA_1	LO_SHA_2	LO_SHA_3	LO_SHA_4	LO_SHA_5_R
LO_SHA_1	1,000	,554	,428	,267	,457
LO_SHA_2	,554	1,000	,639	,268	,443
LO_SHA_3	,428	,639	1,000	,332	,374
LO_SHA_4	,267	,268	,332	1,000	,226
LO_SHA_5_R	,457	,443	,374	,226	1,000

#### Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
LO_SHA_1	14,555	17,762	,581	,373	,706
LO_SHA_2	15,198	17,176	,662	,518	,678
LO_SHA_3	15,044	17,633	,608	,445	,697
LO_SHA_4	13,681	19,821	,349	,133	,788
LO_SHA_5_R	14,511	18,461	,499	,272	,735

#### Scale Statistics

Mean	Variance	Std. Deviation	N of Items
18,247	26,817	5,1785	5

#### 6.10.2.5 Total LO Scale

#### Descriptives

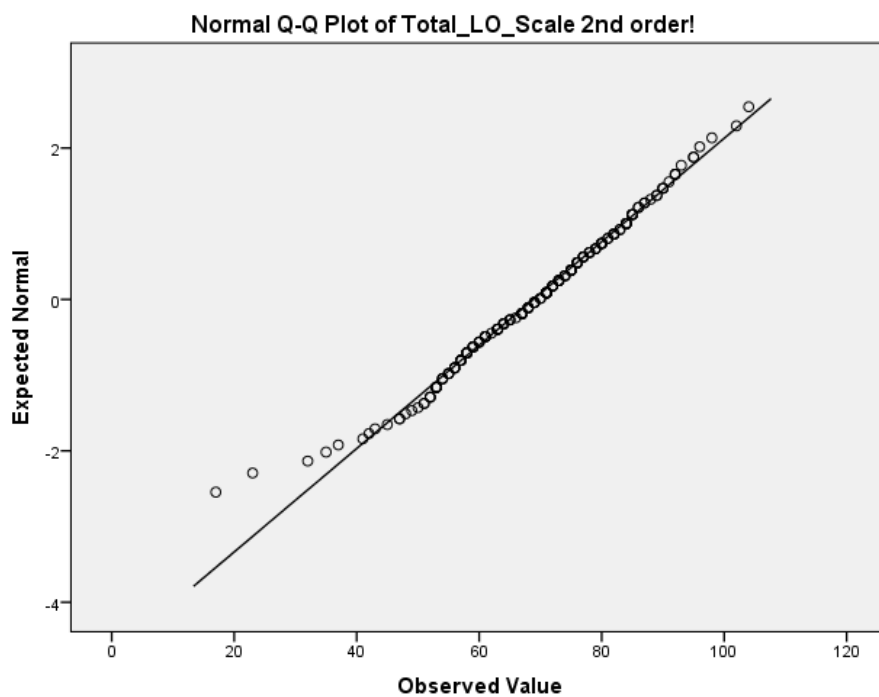
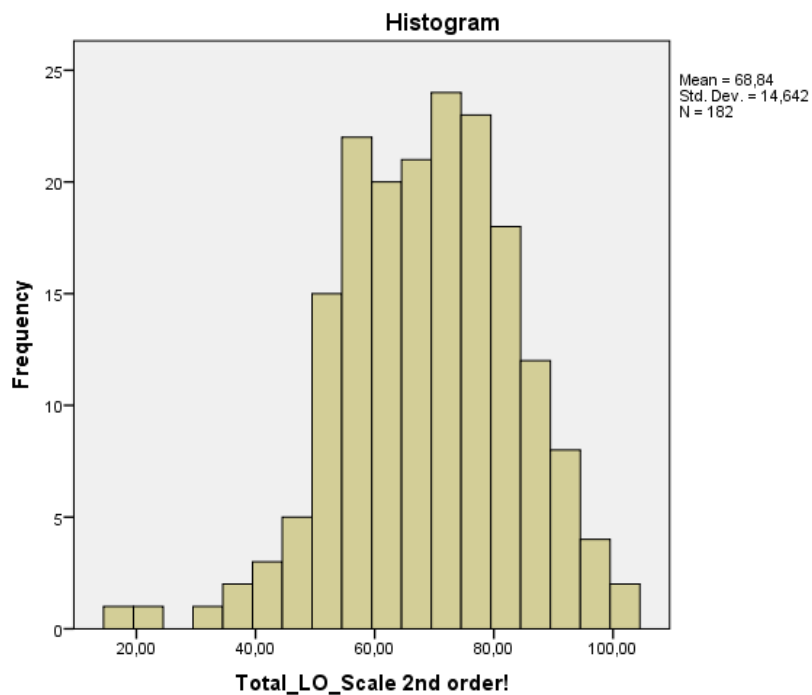
			Statistic	Std. Error
Total_LO_Scale 2nd order!	Mean		68,8352	1,08535
	95% Confidence Interval for Mean	Lower Bound	66,6936	
		Upper Bound	70,9767	
	5% Trimmed Mean		69,1825	
	Median		69,5000	
	Variance		214,393	
	Std. Deviation		14,64215	
	Minimum		17,00	
	Maximum		104,00	
	Range		87,00	
	Interquartile Range		21,00	
	Skewness		-,360	,180
	Kurtosis		,549	,358

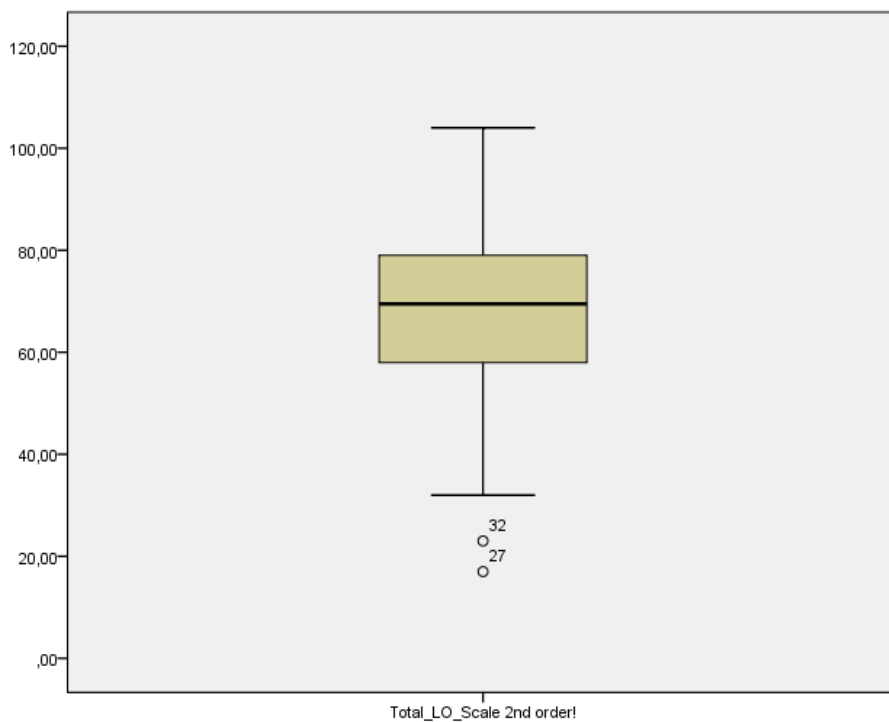
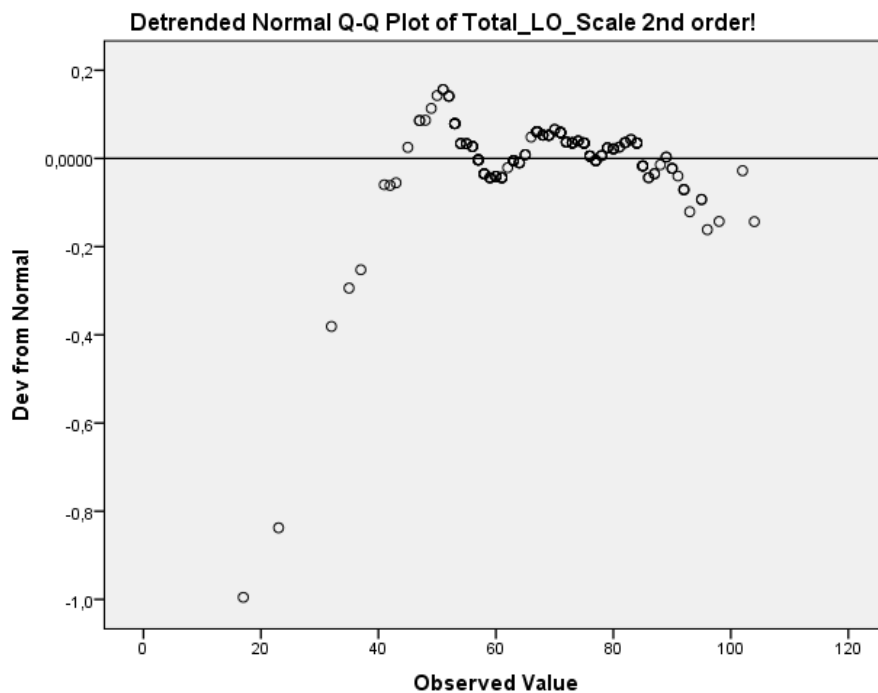
#### Tests of Normality

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Total_LO_Scale 2nd order!	,048	182	,200*	,988	182	,136

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction





**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,826	,833	4

**Item Statistics**

	Mean	Std. Deviation	N
Total_LO_COM Scale	18,9451	5,01900	182
Total_LO_VIS Scale	16,1154	3,99902	182
Total_LO_OPE Scale	15,5275	3,68914	182
Total_LO_SHA Scale	18,2473	5,17851	182

**Inter-Item Correlation Matrix**

	Total_LO_COM Scale	Total_LO_VIS Scale	Total_LO_OPE Scale	Total_LO_SHA Scale
Total_LO_COM Scale	1,000	,613	,489	,582
Total_LO_VIS Scale	,613	1,000	,559	,510
Total_LO_OPE Scale	,489	,559	1,000	,580
Total_LO_SHA Scale	,582	,510	,580	1,000

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Total_LO_COM Scale	49,8901	116,209	,675	,477	,772
Total_LO_VIS Scale	52,7198	136,181	,667	,469	,777
Total_LO_OPE Scale	53,3077	143,982	,642	,433	,792
Total_LO_SHA Scale	50,5879	114,023	,665	,459	,779

**Scale Statistics**

Mean	Variance	Std. Deviation	N of Items
68,8352	214,393	14,64215	4

**6.10.2.6 EFA LO Scale items**

**KMO and Bartlett's Test**

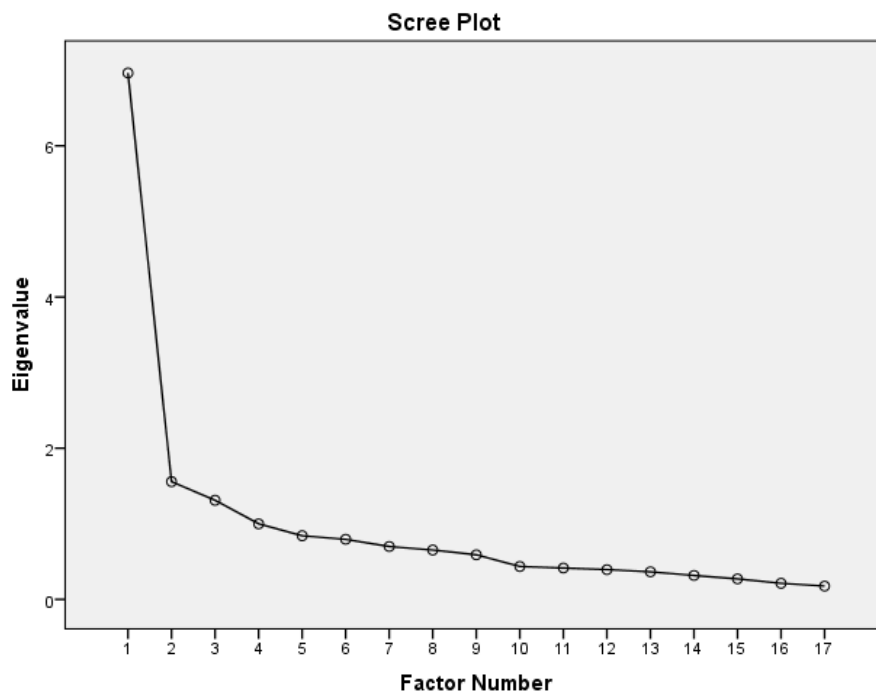
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	,891
Approx. Chi-Square	1472,605
Bartlett's Test of Sphericity Df	136
Sig.	,000

**Total Variance Explained**

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings <sup>a</sup>
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	6,963	40,961	40,961	6,455	37,972	37,972	5,251
2	1,557	9,161	50,122	1,155	6,793	44,765	3,833
3	1,311	7,715	57,837	,942	5,542	50,307	4,516
4	1,000	5,881	63,717	,511	3,008	53,315	4,503
5	,842	4,952	68,669				
6	,795	4,676	73,345				
7	,700	4,116	77,461				
8	,653	3,844	81,304				
9	,590	3,472	84,776				
10	,435	2,559	87,335				
11	,415	2,443	89,778				
12	,394	2,320	92,098				
13	,365	2,147	94,245				
14	,317	1,865	96,110				
15	,272	1,600	97,710				
16	,213	1,251	98,961				
17	,177	1,039	100,000				

Extraction Method: Maximum Likelihood.

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.



**Factor Matrix<sup>a</sup>**

	Factor			
	1	2	3	4
LO_COM_1	,809	-,161	-,286	-,081
LO_COM_2	,790	-,280	-,263	,004
LO_COM_4	,789	-,285	,017	,143
LO_COM_3	,732	-,300	-,016	,147
LO_SHA_2	,641	,544	-,237	-,054
LO_VIS_2	,626	,065	,230	-,449
LO_VIS_3	,608	-,234	,394	-,205
LO_SHA_1	,593	,336	-,019	,047
LO_OPE_1	,592	,167	,339	,302
LO_VIS_4	,581	,079	,433	-,094
LO_SHA_3	,579	,363	-,204	-,043
LO_VIS_1	,567	-,037	,208	-,040
LO_OPE_2	,542	,235	,286	,206
LO_OPE_4	,530	,249	,196	,173
LO_SHA_4	,528	-,075	,070	,133
LO_SHA_5_R	,406	,329	-,047	,063
LO_OPE_3_R	,360	,115	,110	,126

Extraction Method: Maximum Likelihood.  
a. 4 factors extracted. 5 iterations required.

**Goodness-of-fit Test**

Chi-Square	Df	Sig.
123,272	74	,000

**Pattern Matrix<sup>a</sup>**

	Factor			
	1	2	3	4
LO_COM_2	,905	,102	-,142	-,015
LO_COM_1	,781	,254	-,205	,075
LO_COM_3	,775	-,113	,174	-,037
LO_COM_4	,767	-,102	,211	,001
LO_SHA_4	,375	-,001	,264	-,013
LO_SHA_2	-,021	,849	,071	,007
LO_SHA_3	,101	,637	,034	,011
LO_SHA_1	,040	,483	,260	,028
LO_SHA_5_R	-,032	,439	,219	-,048

LO_OPE_1	,052	,049	,738	-,041
LO_OPE_2	-,043	,154	,611	,030
LO_OPE_4	-,013	,225	,511	,008
LO_OPE_3_R	,064	,113	,321	-,019
LO_VIS_2	-,062	,195	-,162	,842
LO_VIS_3	,202	-,249	,112	,658
LO_VIS_4	-,099	-,005	,359	,524
LO_VIS_1	,189	,002	,206	,305

Extraction Method: Maximum Likelihood.  
 Rotation Method: Promax with Kaiser Normalization.  
 a. Rotation converged in 8 iterations.

### 6.10.3 Assessment of IIC measure

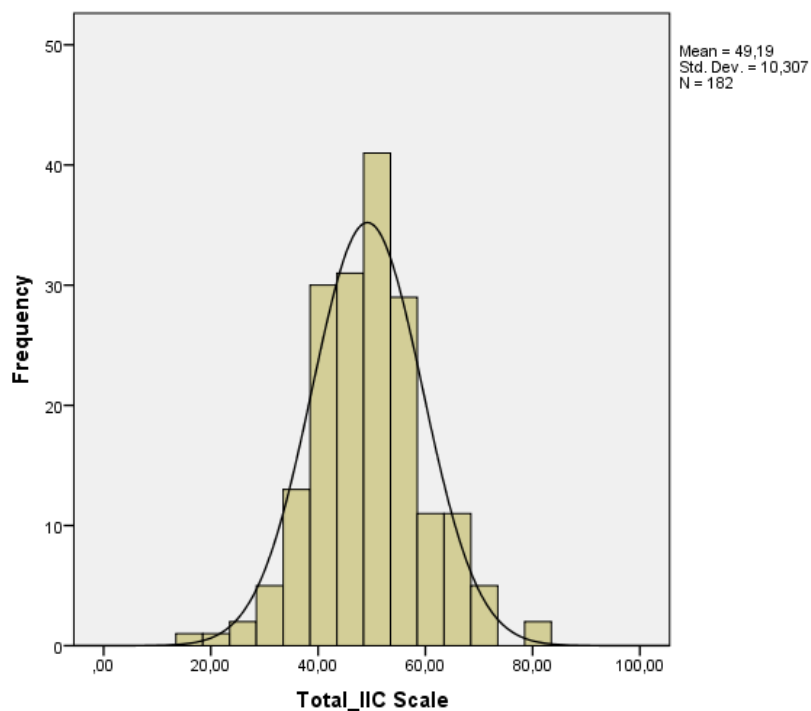
#### Descriptives

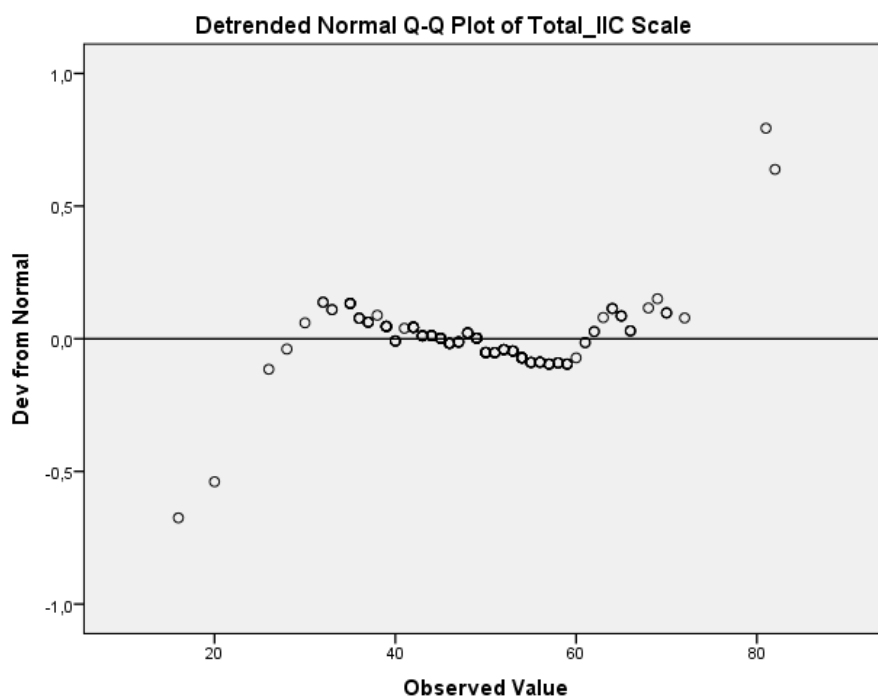
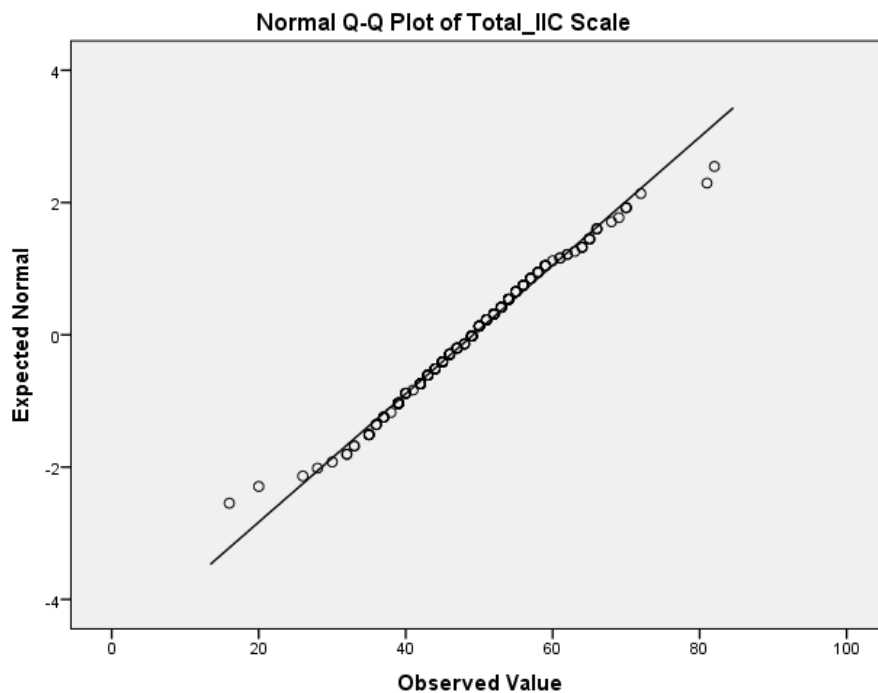
		Statistic	Std. Error
Total_IIC Scale	Mean	49,1868	,76403
	95% Confidence Interval for Mean	Lower Bound	47,6793
		Upper Bound	50,6944
	5% Trimmed Mean	49,1081	
	Median	49,0000	
	Variance	106,241	
	Std. Deviation	10,30733	
	Minimum	16,00	
	Maximum	82,00	
	Range	66,00	
	Interquartile Range	13,00	
	Skewness	,137	,180
	Kurtosis	,817	,358

#### Tests of Normality

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Total_IIC Scale	,051	182	,200*	,990	182	,221

\*. This is a lower bound of the true significance.  
 a. Lilliefors Significance Correction





**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,836	,840	13

**Item Statistics**

	Mean	Std. Deviation	N
IIC_1	3,066	1,6066	182
IIC_2	4,500	1,3076	182
IIC_3	4,390	1,3198	182
IIC_4	4,253	1,3794	182
IIC_5	4,126	1,2125	182
IIC_6	3,830	1,1933	182



IIC_7	3,802	1,4468	182
IIC_8	3,571	1,5495	182
IIC_9	3,747	1,2666	182
IIC_10	3,291	1,2908	182
IIC_11	3,143	1,4187	182
IIC_12	3,286	1,2639	182
IIC_13	4,181	1,4394	182

#### Inter-Item Correlation Matrix

	IIC_1	IIC_2	IIC_3	IIC_4	IIC_5	IIC_6	IIC_7	IIC_8	IIC_9	IIC_10	IIC_11	IIC_12	IIC_13
IIC_1	1,000	,239	,115	,057	,058	,084	,203	,211	,109	,137	,161	,100	,052
IIC_2	,239	1,000	,434	,395	,343	,444	,438	,368	,200	,139	,250	,231	,348
IIC_3	,115	,434	1,000	,249	,276	,365	,315	,347	,218	,218	,286	,241	,309
IIC_4	,057	,395	,249	1,000	,361	,271	,183	,147	,147	,204	,221	,183	,258
IIC_5	,058	,343	,276	,361	1,000	,355	,332	,247	,248	,283	,269	,135	,205
IIC_6	,084	,444	,365	,271	,355	1,000	,572	,346	,319	,362	,377	,340	,311
IIC_7	,203	,438	,315	,183	,332	,572	1,000	,544	,295	,377	,490	,376	,336
IIC_8	,211	,368	,347	,147	,247	,346	,544	1,000	,375	,350	,538	,280	,246
IIC_9	,109	,200	,218	,147	,248	,319	,295	,375	1,000	,542	,491	,256	,192
IIC_10	,137	,139	,218	,204	,283	,362	,377	,350	,542	1,000	,550	,318	,212
IIC_11	,161	,250	,286	,221	,269	,377	,490	,538	,491	,550	1,000	,464	,242
IIC_12	,100	,231	,241	,183	,135	,340	,376	,280	,256	,318	,464	1,000	,296
IIC_13	,052	,348	,309	,258	,205	,311	,336	,246	,192	,212	,242	,296	1,000

#### Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
IIC_1	46,121	96,980	,211	,098	,847
IIC_2	44,687	90,846	,549	,437	,820
IIC_3	44,797	92,428	,476	,278	,825
IIC_4	44,934	94,526	,366	,252	,833
IIC_5	45,060	94,543	,434	,260	,828
IIC_6	45,357	91,336	,591	,440	,818
IIC_7	45,385	86,757	,645	,525	,812
IIC_8	45,615	87,177	,576	,438	,817
IIC_9	45,440	92,955	,478	,371	,825
IIC_10	45,896	91,641	,523	,441	,822
IIC_11	46,044	87,622	,625	,527	,814
IIC_12	45,901	93,526	,455	,285	,826
IIC_13	45,005	92,591	,418	,223	,829

#### Scale Statistics

Mean	Variance	Std. Deviation	N of Items
49,187	106,241	10,3073	13

#### KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	,861
Approx. Chi-Square	678,424
Bartlett's Test of Sphericity	df
	78
	Sig.
	,000

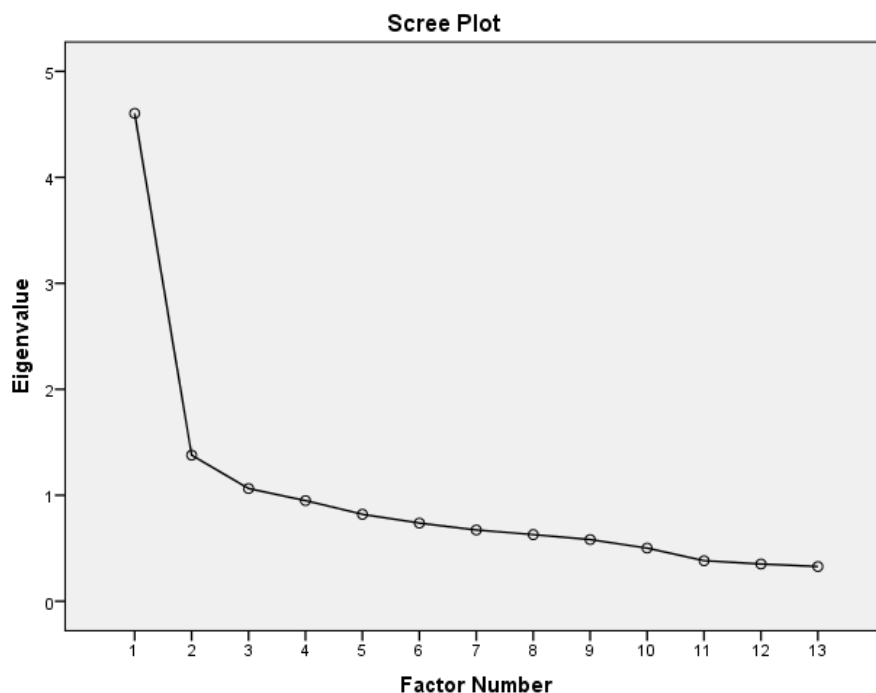
#### Communalities

	Initial	Extraction
IIC_1	,098	,063
IIC_2	,437	,632
IIC_3	,278	,313
IIC_4	,252	,211
IIC_5	,260	,239
IIC_6	,440	,443
IIC_7	,525	,509
IIC_8	,438	,423
IIC_9	,371	,402
IIC_10	,441	,513
IIC_11	,527	,641

IIC_12	,285	,271
IIC_13	,223	,231

Extraction Method: Maximum Likelihood.

A visual check (Scree Plot) indicated that there were potentially 2 main items



**Total Variance Explained**

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings <sup>a</sup>
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	4,603	35,410	35,410	4,039	31,066	31,066	3,402
2	1,379	10,605	46,015	,851	6,544	37,609	3,398
3	1,064	8,183	54,198				
4	,950	7,305	61,504				
5	,820	6,308	67,812				
6	,738	5,674	73,486				
7	,672	5,172	78,658				
8	,629	4,840	83,498				
9	,582	4,477	87,975				
10	,502	3,858	91,833				
11	,383	2,942	94,775				
12	,351	2,703	97,479				
13	,328	2,521	100,000				

Extraction Method: Maximum Likelihood.

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

**Factor Matrix<sup>a</sup>**

	Factor	
	1	2
IIC_11	,722	-,347
IIC_7	,711	,061
IIC_6	,650	,145
IIC_8	,647	-,063
IIC_10	,602	-,388
IIC_2	,596	,526
IIC_9	,554	-,308
IIC_12	,509	-,109
IIC_3	,508	,233
IIC_5	,467	,143
IIC_13	,447	,177

IIC_4	,391	,240
IIC_1	,243	,062

Extraction Method: Maximum Likelihood.

a. 2 factors extracted. 4 iterations required.

#### Goodness-of-fit Test

Chi-Square	df	Sig.
76,613	53	,019

#### Pattern Matrix<sup>a</sup>

	Factor	
	1	2
IIC_2	,912	-,233
IIC_3	,535	,039
IIC_6	,510	,220
IIC_4	,479	-,036
IIC_7	,449	,347
IIC_13	,438	,066
IIC_5	,411	,115
IIC_1	,200	,073
IIC_11	-,005	,804
IIC_10	-,117	,780
IIC_9	-,052	,663
IIC_8	,275	,447
IIC_12	,149	,417

Extraction Method: Maximum Likelihood.

Rotation Method: Promax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

<tbid: remove item 1? Was fairly low in initial Dobni (2008) paper and seems to call some distraction!>

#### Factor Correlation Matrix

Factor	1	2
1	1,000	,599
2	,599	1,000

Extraction Method: Maximum Likelihood.

Rotation Method: Promax with Kaiser Normalization.

### 6.10.4 Assessment of BS attribute measures

#### 6.10.4.1 Assessment of BS\_AGG\_Scale

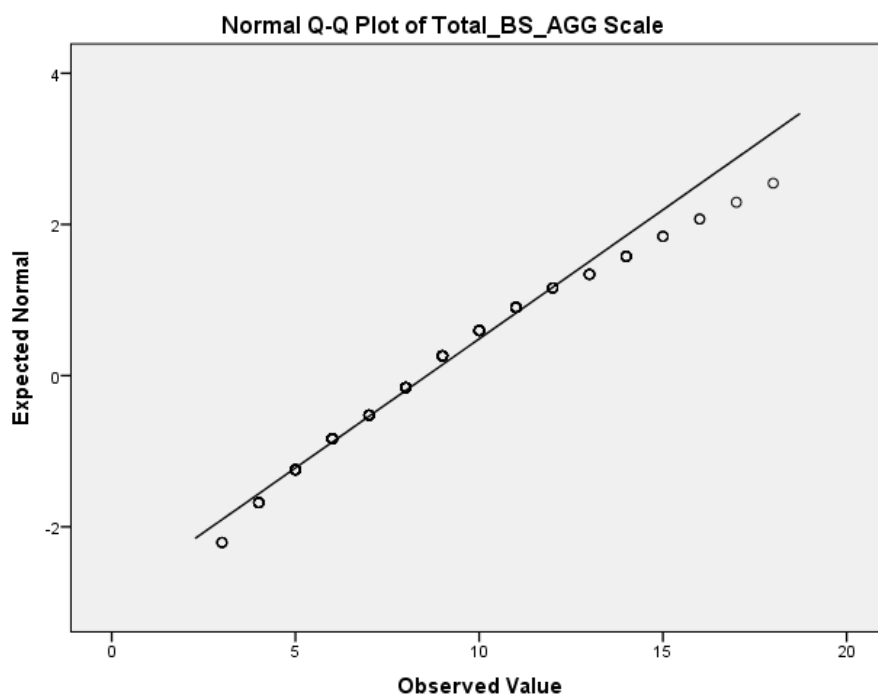
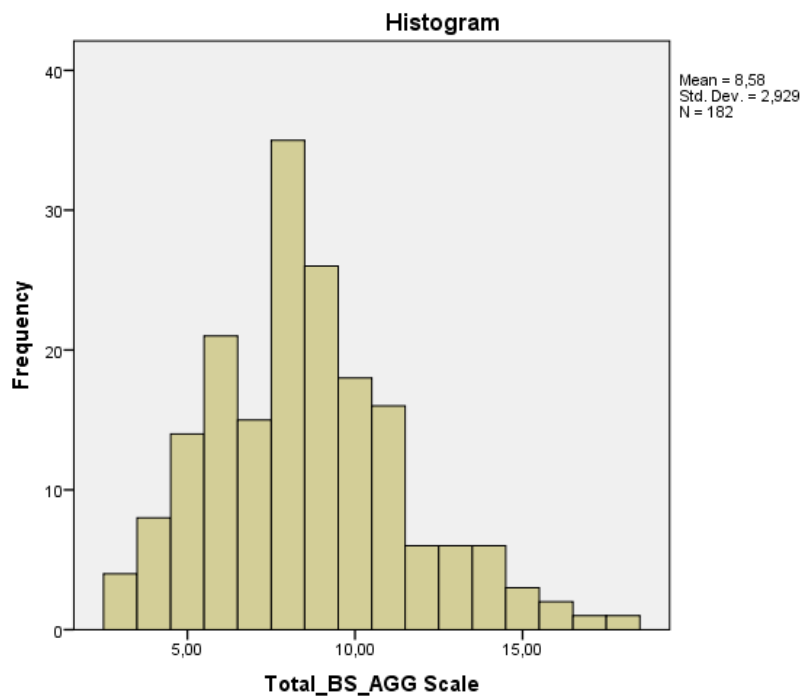
#### Descriptives

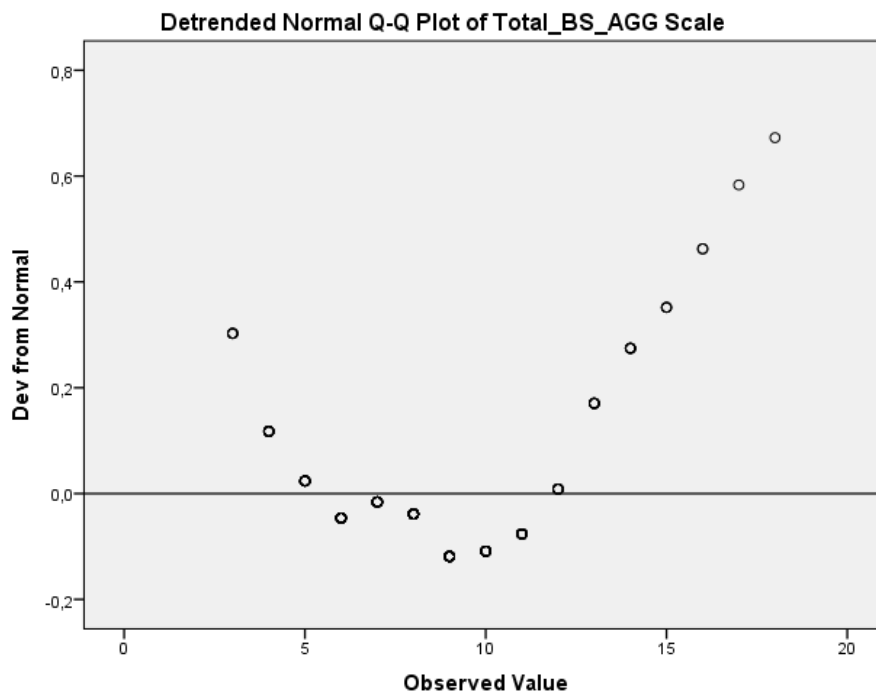
		Statistic	Std. Error	
Total_BS_AGG Scale	Mean	8,5769	,21709	
	95% Confidence Interval for Mean	Lower Bound	8,1486	
		Upper Bound	9,0053	
	5% Trimmed Mean	8,4689		
	Median	8,0000		
	Variance	8,577		
	Std. Deviation	2,92864		
	Minimum	3,00		
	Maximum	18,00		
	Range	15,00		
	Interquartile Range	4,00		
	Skewness	,560	,180	
	Kurtosis	,344	,358	

### Tests of Normality

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Total_BS_AGG Scale	,118	182	,000	,967	182	,000

a. Lilliefors Significance Correction





**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,567	,578	3

**Item Statistics**

	Mean	Std. Deviation	N
BS_AGG_1	2,758	1,4091	182
BS_AGG_2	2,313	1,1732	182
BS_AGG_3	3,505	1,4054	182

**Inter-Item Correlation Matrix**

	BS_AGG_1	BS_AGG_2	BS_AGG_3
BS_AGG_1	1,000	,577	,202
BS_AGG_2	,577	1,000	,161
BS_AGG_3	,202	,161	1,000

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
BS_AGG_1	5,819	3,884	,487	,345	,274
BS_AGG_2	6,264	4,759	,477	,336	,335
BS_AGG_3	5,071	5,271	,206	,044	,724

**Scale Statistics**

Mean	Variance	Std. Deviation	N of Items
8,577	8,577	2,9286	3

**6.10.4.2 Assessment of BS\_ANA**

**Descriptives**

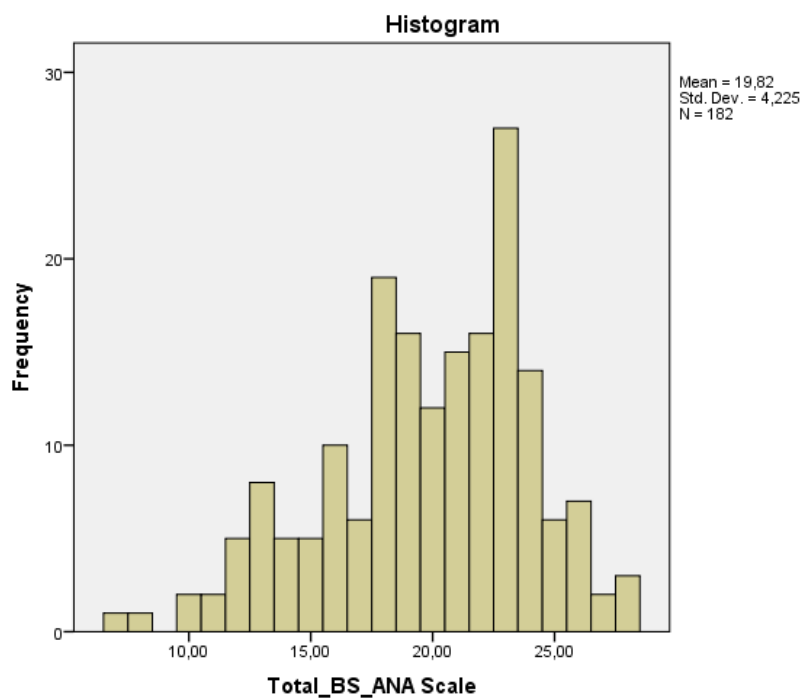
		Statistic	Std. Error
Total_BS_ANA Scale	Mean	19,8242	,31315
	95% Confidence Interval for Lower Bound	19,2063	
	Mean Upper Bound	20,4421	

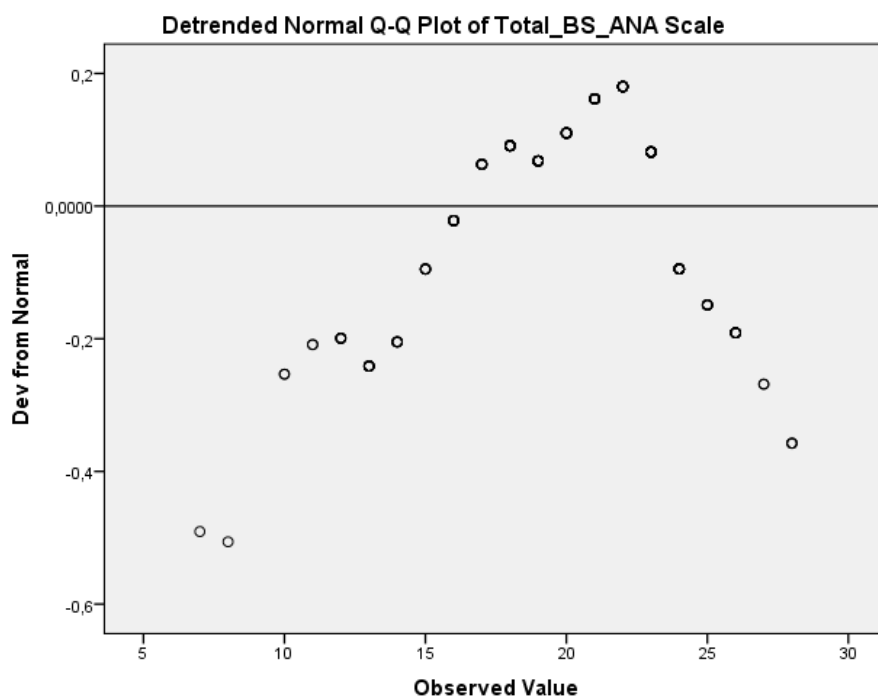
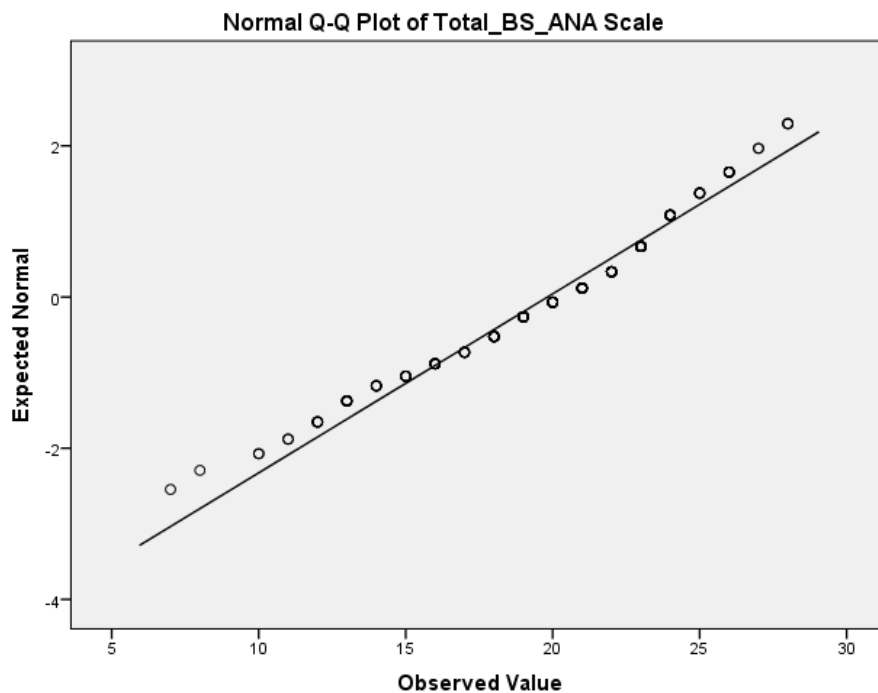
5% Trimmed Mean	19,9585	
Median	20,0000	
Variance	17,847	
Std. Deviation	4,22461	
Minimum	7,00	
Maximum	28,00	
Range	21,00	
Interquartile Range	5,25	
Skewness	-,549	,180
Kurtosis	-,088	,358

**Tests of Normality**

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Total_BS_ANA Scale	,109	182	,000	,967	182	,000

a. Lilliefors Significance Correction





**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,742	,748	4

**Item Statistics**

	Mean	Std. Deviation	N
BS_ANA_1	4,456	1,5541	182
BS_ANA_2	5,038	1,3436	182
BS_ANA_3	5,110	1,3942	182
BS_ANA_4	5,220	1,3238	182

**Inter-Item Correlation Matrix**

	BS_ANA_1	BS_ANA_2	BS_ANA_3	BS_ANA_4
BS_ANA_1	1,000	,386	,395	,147
BS_ANA_2	,386	1,000	,726	,390
BS_ANA_3	,395	,726	1,000	,514
BS_ANA_4	,147	,390	,514	1,000

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
BS_ANA_1	15,368	11,505	,373	,181	,783
BS_ANA_2	14,786	10,324	,662	,540	,612
BS_ANA_3	14,714	9,575	,733	,606	,564
BS_ANA_4	14,604	12,207	,420	,269	,743

**Scale Statistics**

Mean	Variance	Std. Deviation	N of Items
19,824	17,847	4,2246	4

**6.10.4.3 Assessment of BS\_DEF****Descriptives**

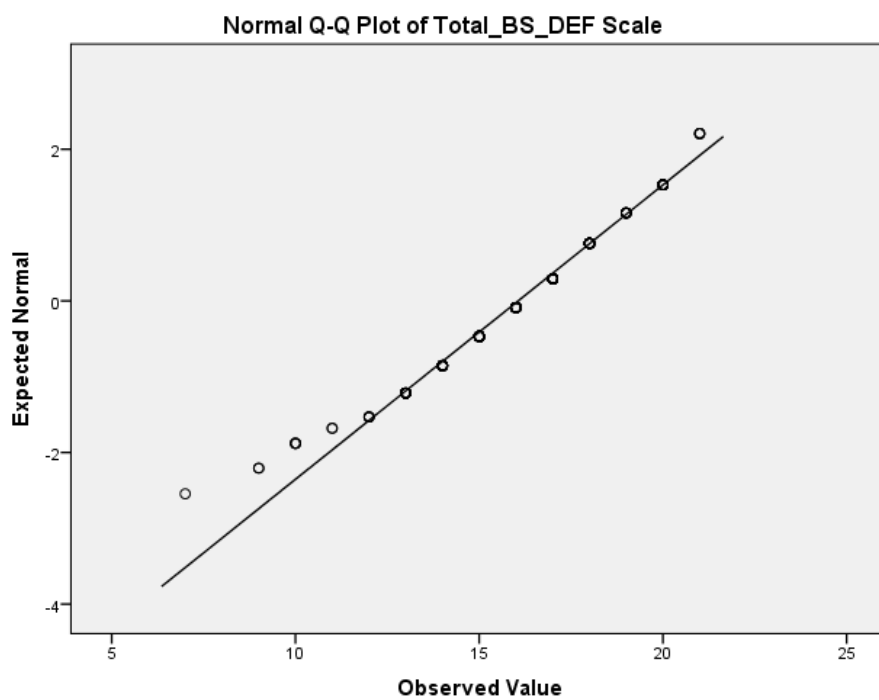
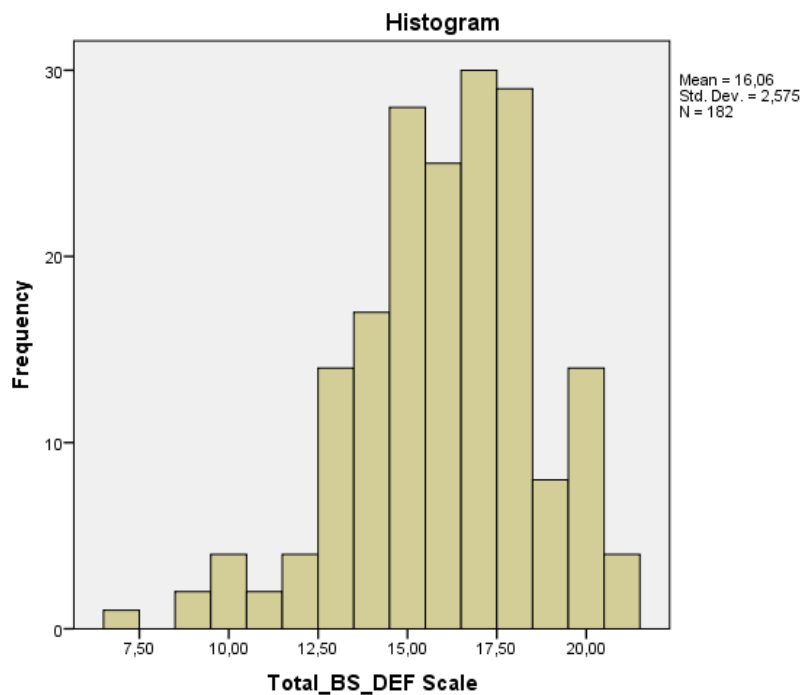
		Statistic	Std. Error
Total_BS_DEF Scale	Mean	16,0604	,19089
	95% Confidence Interval for Mean	Lower Bound Upper Bound	15,6838 16,4371
	5% Trimmed Mean	16,1709	
	Median	16,0000	
	Variance	6,632	
	Std. Deviation	2,57521	
	Minimum	7,00	
	Maximum	21,00	
	Range	14,00	
	Interquartile Range	3,00	
	Skewness	-,546	,180
	Kurtosis	,567	,358

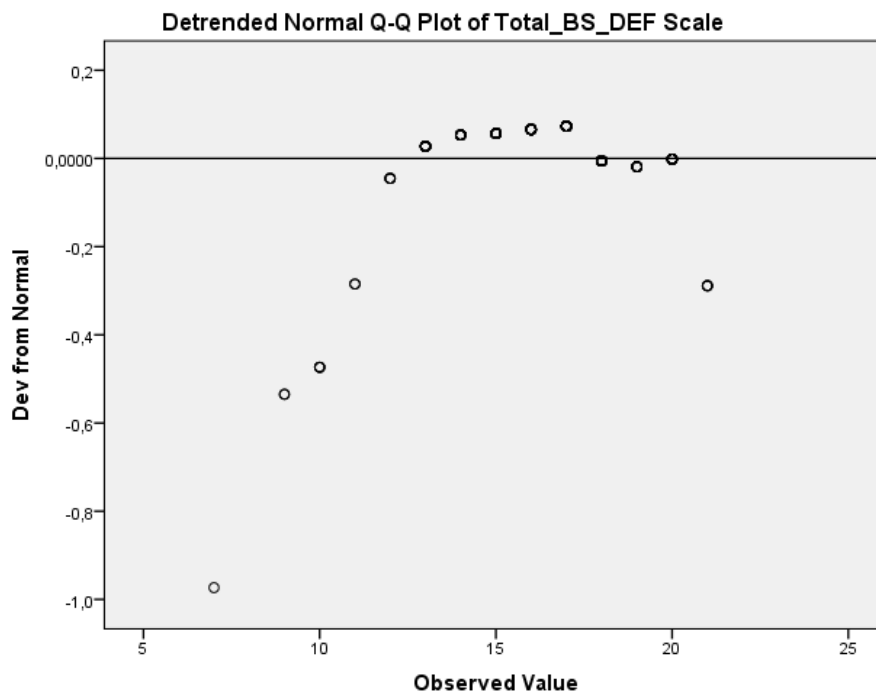
**Tests of Normality**

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Total_BS_DEF Scale	,109	182	,000	,965	182	,000

a. Lilliefors Significance Correction







**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,467	,489	3

**Item Statistics**

	Mean	Std. Deviation	N
BS_DEF_1	5,330	1,1472	182
BS_DEF_2	4,841	1,5312	182
BS_DEF_3	5,890	,9513	182

**Inter-Item Correlation Matrix**

	BS_DEF_1	BS_DEF_2	BS_DEF_3
BS_DEF_1	1,000	,209	,241
BS_DEF_2	,209	1,000	,276
BS_DEF_3	,241	,276	1,000

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
BS_DEF_1	10,731	4,054	,273	,080	,397
BS_DEF_2	11,220	2,747	,303	,098	,383
BS_DEF_3	10,170	4,396	,334	,111	,335

**Scale Statistics**

Mean	Variance	Std. Deviation	N of Items
16,060	6,632	2,5752	3

6.10.4.4 Assessment of BS\_FUT

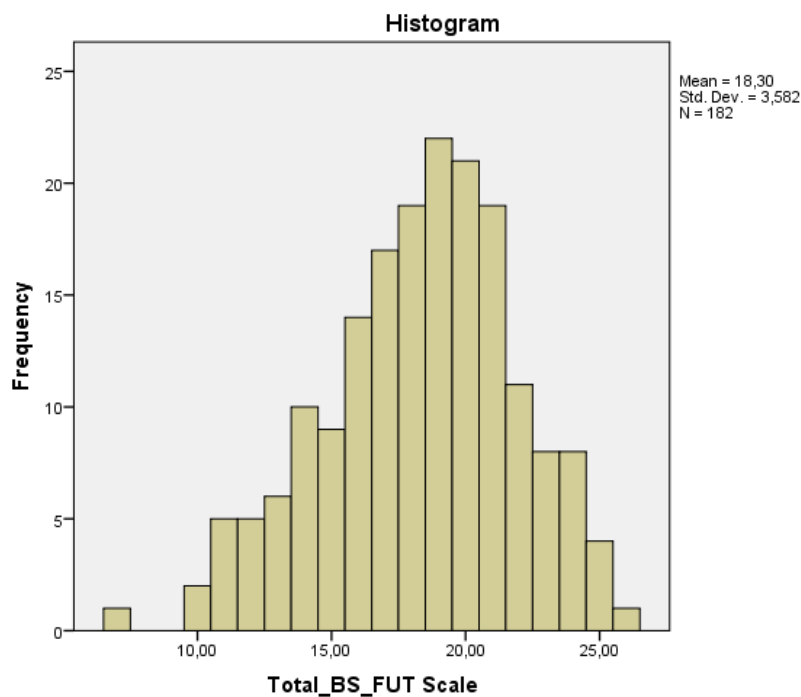
**Descriptives**

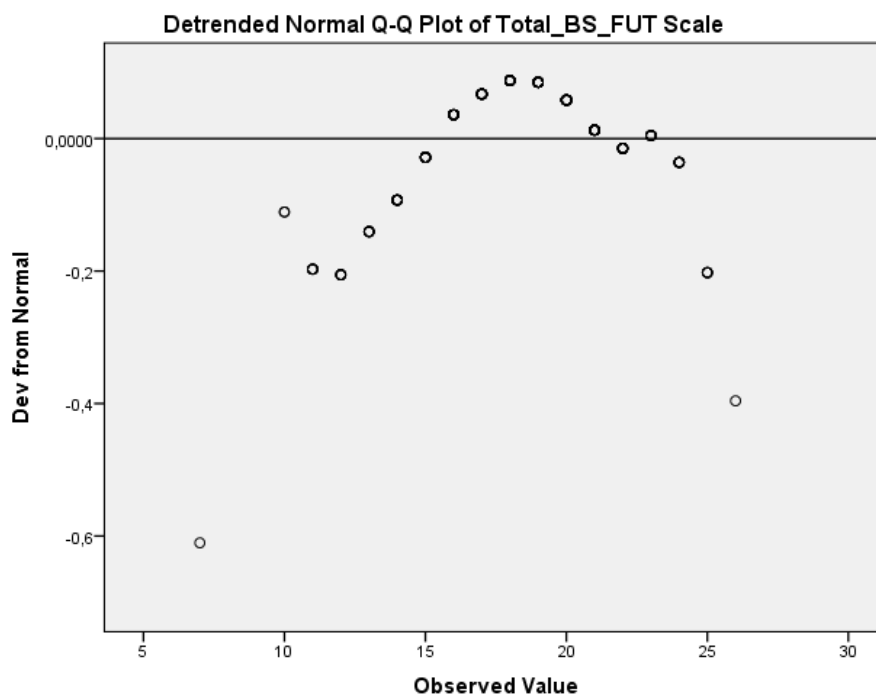
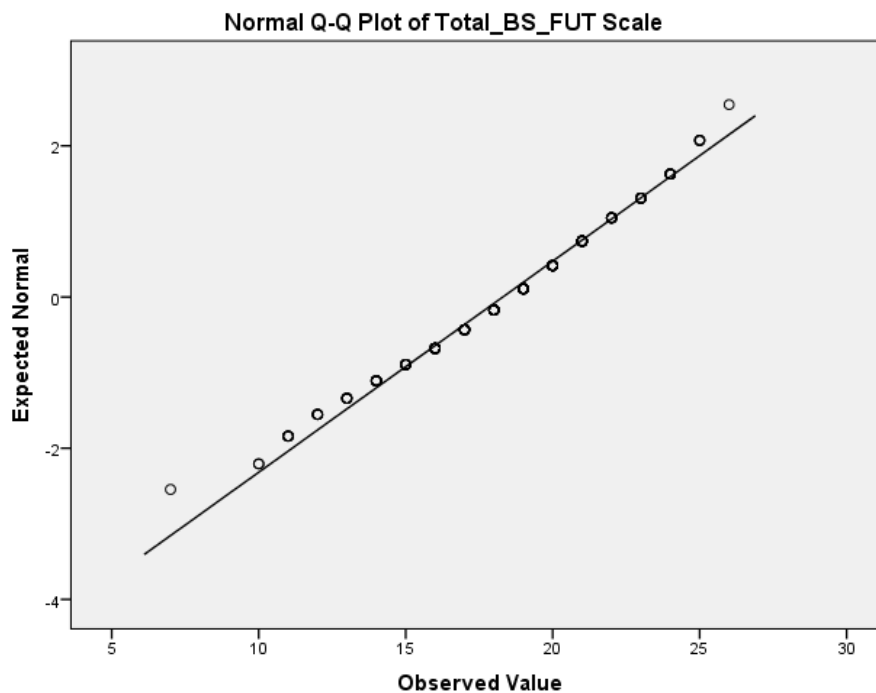
		Statistic	Std. Error	
Total_BS_FUT Scale	Mean	18,3022	,26552	
	95% Confidence Interval for Mean	Lower Bound	17,7783	
		Upper Bound	18,8261	
	5% Trimmed Mean	18,3846		
	Median	19,0000		
	Variance	12,831		
	Std. Deviation	3,58201		
	Minimum	7,00		
	Maximum	26,00		
	Range	19,00		
	Interquartile Range	5,00		
	Skewness	-,365	,180	
	Kurtosis	-,111	,358	

**Tests of Normality**

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Total_BS_FUT Scale	,094	182	,001	,982	182	,017

a. Lilliefors Significance Correction





**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,596	,599	4

**Item Statistics**

	Mean	Std. Deviation	N
BS_FUT_1_R	3,286	1,3849	182
BS_FUT_2	5,319	1,3328	182
BS_FUT_3	4,945	1,2991	182
BS_FUT_4	4,753	1,3084	182

## Inter-Item Correlation Matrix

	BS_FUT_1_R	BS_FUT_2	BS_FUT_3	BS_FUT_4
BS_FUT_1_R	1,000	,142	,132	,253
BS_FUT_2	,142	1,000	,345	,416
BS_FUT_3	,132	,345	1,000	,346
BS_FUT_4	,253	,416	,346	1,000

## Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
BS_FUT_1_R	15,016	9,000	,230	,067	,637
BS_FUT_2	12,984	7,884	,424	,220	,488
BS_FUT_3	13,357	8,297	,380	,170	,523
BS_FUT_4	13,549	7,575	,492	,251	,434

## Scale Statistics

Mean	Variance	Std. Deviation	N of Items
18,302	12,831	3,5820	4

## 6.10.4.5 Assessment of BS\_PRO

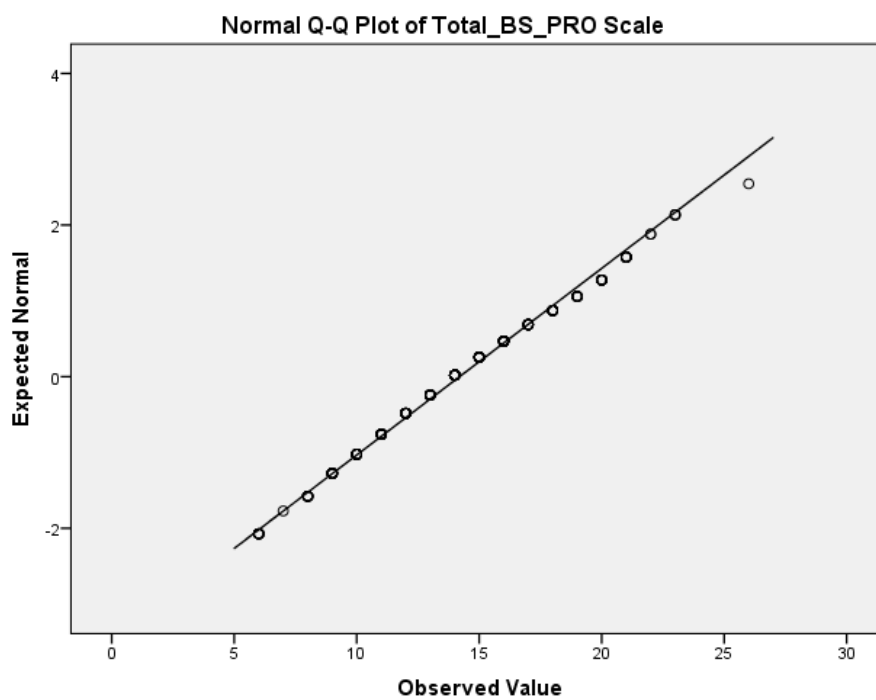
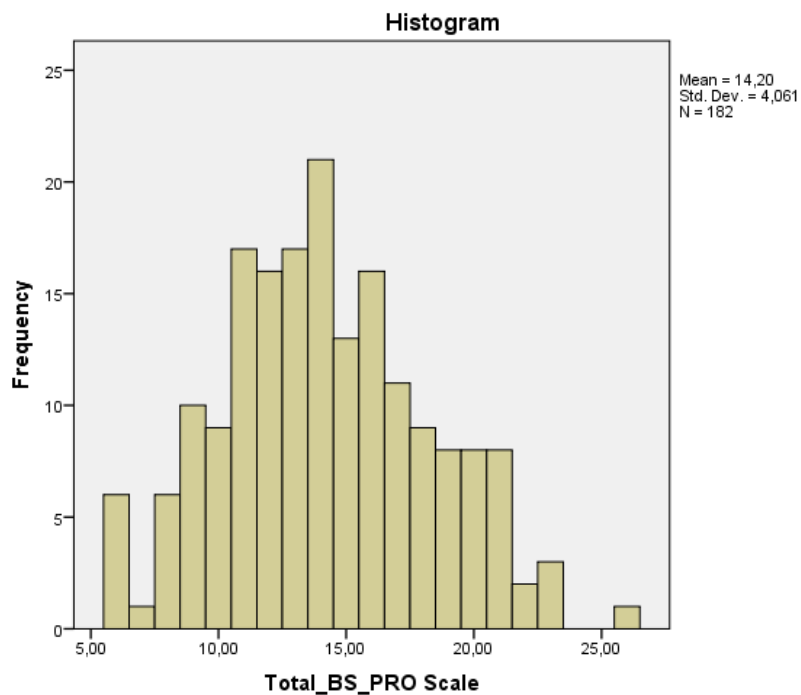
## Descriptives

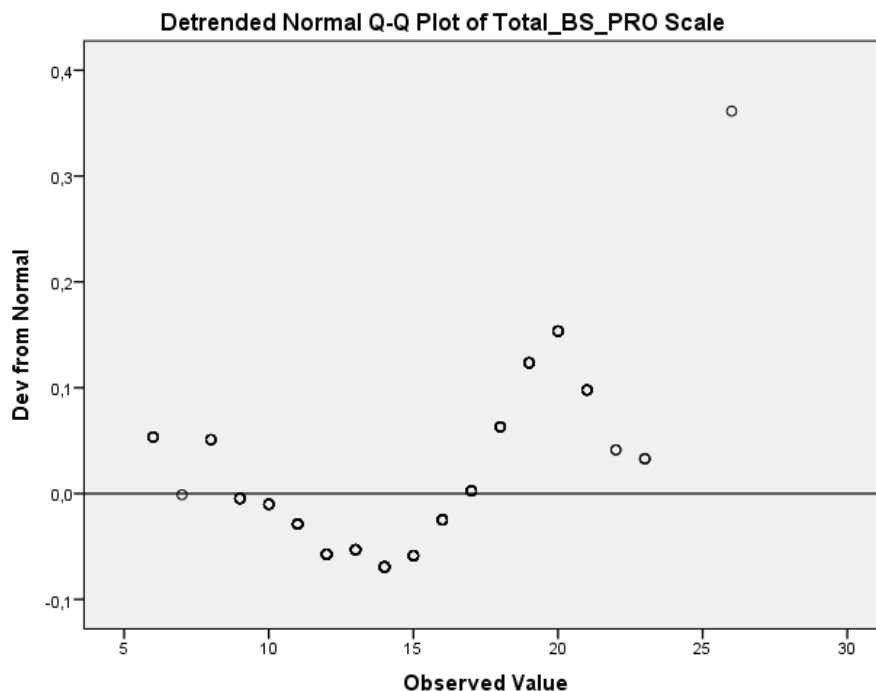
		Statistic	Std. Error	
Total_BS_PRO Scale	Mean	14,1978	,30102	
	95% Confidence Interval for Mean	Lower Bound	13,6039	
		Upper Bound	14,7918	
	5% Trimmed Mean	14,1642		
	Median	14,0000		
	Variance	16,491		
	Std. Deviation	4,06092		
	Minimum	6,00		
	Maximum	26,00		
	Range	20,00		
	Interquartile Range	6,00		
	Skewness	,209	,180	
	Kurtosis	-,343	,358	

## Tests of Normality

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Total_BS_PRO Scale	,085	182	,003	,985	182	,053

a. Lilliefors Significance Correction





**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,703	,705	4

**Item Statistics**

	Mean	Std. Deviation	N
BS_PRO_1	4,654	1,3890	182
BS_PRO_2	2,995	1,3317	182
BS_PRO_3	3,407	1,3983	182
BS_PRO_4_R	3,143	1,4609	182

**Inter-Item Correlation Matrix**

	BS_PRO_1	BS_PRO_2	BS_PRO_3	BS_PRO_4_R
BS_PRO_1	1,000	,220	,340	,180
BS_PRO_2	,220	1,000	,473	,682
BS_PRO_3	,340	,473	1,000	,347
BS_PRO_4_R	,180	,682	,347	1,000

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
BS_PRO_1	9,544	11,697	,302	,121	,748
BS_PRO_2	11,203	9,489	,637	,529	,549
BS_PRO_3	10,791	10,034	,508	,283	,627
BS_PRO_4_R	11,055	9,555	,532	,466	,612

**Scale Statistics**

Mean	Variance	Std. Deviation	N of Items
14,198	16,491	4,0609	4

6.10.4.6 Assessment of BS\_RIS

**Descriptives**

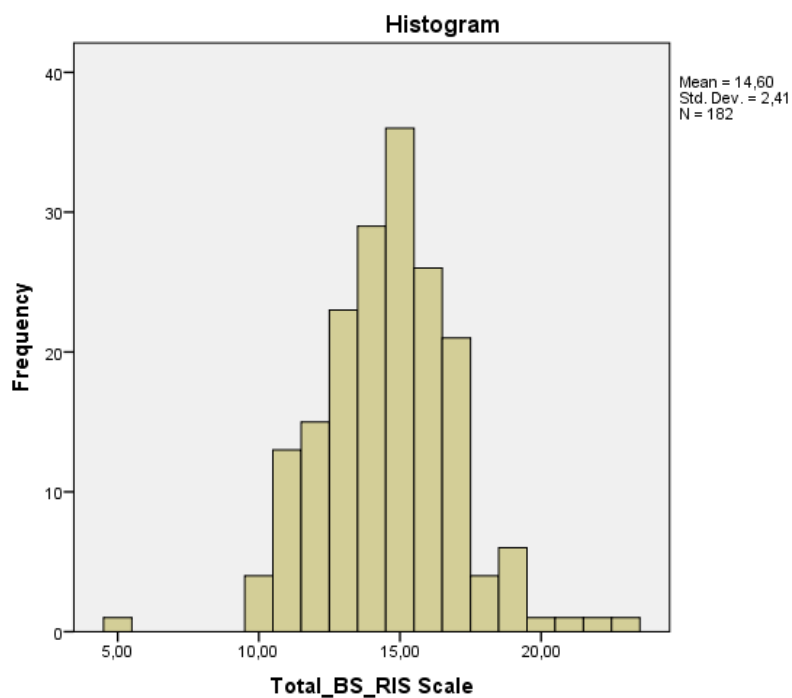
	Statistic	Std. Error
Total_BS_RIS Scale Mean	14,6044	,17866

95% Confidence Interval for Mean	Lower Bound	14,2519	
	Upper Bound	14,9569	
5% Trimmed Mean		14,5604	
Median		15,0000	
Variance		5,809	
Std. Deviation		2,41029	
Minimum		5,00	
Maximum		23,00	
Range		18,00	
Interquartile Range		3,00	
Skewness		,076	,180
Kurtosis		1,585	,358

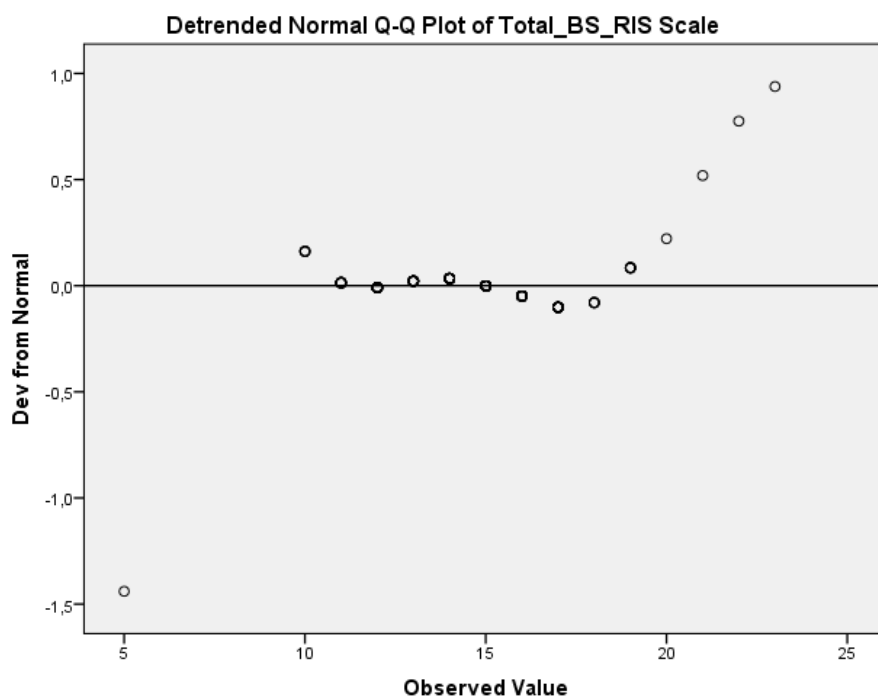
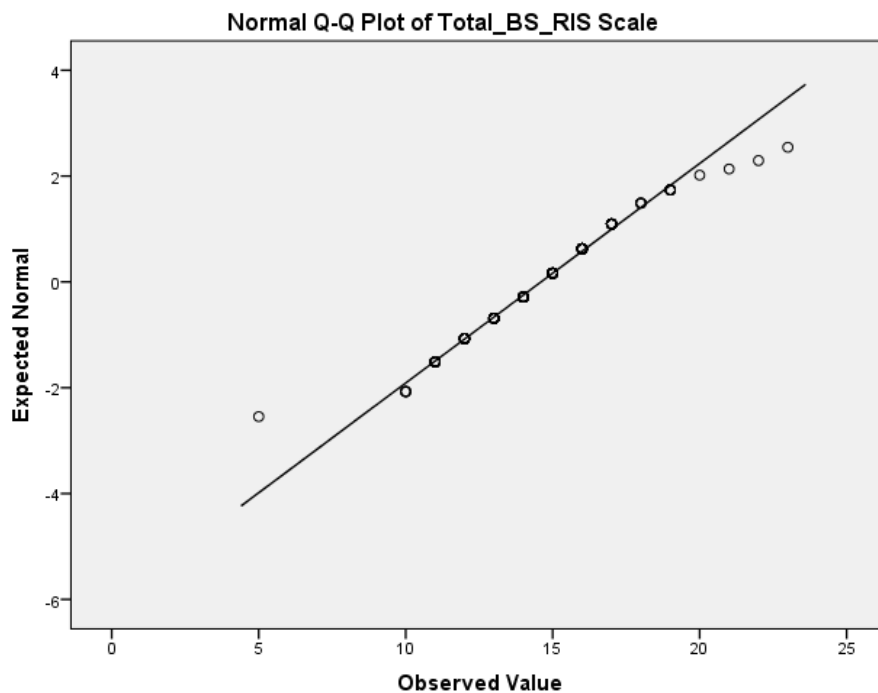
**Tests of Normality**

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Total_BS_RIS Scale	,100	182	,000	,967	182	,000

a. Lilliefors Significance Correction







Item BS\_RIS\_2 reversed!

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,471	,480	4

**Item Statistics**

	Mean	Std. Deviation	N
BS_RIS_1	3,451	1,4848	182
BS_RIS_2_R	2,830	1,4058	182
BS_RIS_3_R	3,005	1,3276	182
BS_RIS_4_R	2,978	1,2786	182

**Inter-Item Correlation Matrix**

	BS_RIS_1	BS_RIS_2_R	BS_RIS_3_R	BS_RIS_4_R
BS_RIS_1	1,000	,159	,049	,011
BS_RIS_2_R	,159	1,000	,308	,318
BS_RIS_3_R	,049	,308	1,000	,280
BS_RIS_4_R	,011	,318	,280	1,000

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
BS_RIS_1	8,813	8,617	,103	,027	,565
BS_RIS_2_R	9,434	6,788	,403	,174	,262
BS_RIS_3_R	9,258	7,662	,312	,132	,361
BS_RIS_4_R	9,286	7,951	,296	,139	,379

**Scale Statistics**

Mean	Variance	Std. Deviation	N of Items
12,264	11,720	3,4235	4

6.11 Appendix for Research Question 1  
 6.11.1 Appendix for Research Question 1.1

Correlations

			Total_BS_A GG Scale	Total_BS_ ANA Scale	Total_BS_DE F Scale	Total_BS_FU T Scale	Total_BS_PR O Scale	Total_BS_RI S Scale	Total_MO_CC O Scale	Total_MO_FM O Scale
Spearman' s rho	Total_BS_A GG Scale	Correlation Coef.	1,000	-,144	-,004	-,099	,060	,020	,064	,147*
		Sig. (2-tailed)	.	,053	,959	,185	,420	,792	,388	,048
		N	182	182	182	182	182	182	182	182
	Total_BS_A NA Scale	Correlation Coef.	-,144	1,000	,339**	,476**	,215**	-,070	,156*	,132
		Sig. (2-tailed)	,053	.	,000	,000	,004	,347	,036	,075
		N	182	182	182	182	182	182	182	182
	Total_BS_D EF Scale	Correlation Coef.	-,004	,339**	1,000	,504**	,361**	,038	,262**	,179*
		Sig. (2-tailed)	,959	,000	.	,000	,000	,612	,000	,016
		N	182	182	182	182	182	182	182	182
	Total_BS_F UT Scale	Correlation Coef.	-,099	,476**	,504**	1,000	,497**	,191**	,229**	,319**
		Sig. (2-tailed)	,185	,000	,000	.	,000	,010	,002	,000
		N	182	182	182	182	182	182	182	182
	Total_BS_P RO Scale	Correlation Coef.	,060	,215**	,361**	,497**	1,000	,424**	,115	,500**
		Sig. (2-tailed)	,420	,004	,000	,000	.	,000	,123	,000
		N	182	182	182	182	182	182	182	182
	Total_BS_RI S Scale	Correlation Coef.	,020	-,070	,038	,191**	,424**	1,000	-,030	,244**
		Sig. (2-tailed)	,792	,347	,612	,010	,000	.	,684	,001
		N	182	182	182	182	182	182	182	182
	Total_MO_C CO Scale	Correlation Coef.	,064	,156*	,262**	,229**	,115	-,030	1,000	,122
		Sig. (2-tailed)	,388	,036	,000	,002	,123	,684	.	,100
N		182	182	182	182	182	182	182	182	182
Total_MO_F MO Scale	Correlation Coef.	,147*	,132	,179*	,319**	,500**	,244**	,122	1,000	
	Sig. (2-tailed)	,048	,075	,016	,000	,000	,001	,100	.	
	N	182	182	182	182	182	182	182	182	182

\*. Correlation is significant at the 0.05 level (2-tailed).  
 \*\*. Correlation is significant at the 0.01 level (2-tailed).

6.11.2 Appendix for Research Question 1.2  
MO (CCO)

**Report**

Total_MO_CCO_by_Median		MED_1_STR	MED_2_CHA	MED_3_ENC	MED_4_TEC	MED_5_PRO
below 5.0	Mean	4,682	4,295	4,011	3,841	4,773
	N	88	88	88	88	88
	Std. Deviation	1,1991	1,3145	1,5499	1,5966	1,4362
5.0 and above	Mean	4,628	4,394	4,362	3,638	5,000
	N	94	94	94	94	94
	Std. Deviation	1,4590	1,4234	1,5159	1,5300	1,4142
Total	Mean	4,654	4,346	4,192	3,736	4,890
	N	182	182	182	182	182
	Std. Deviation	1,3363	1,3689	1,5382	1,5615	1,4255

**Ranks**

	Total_MO_CCO_by_Median	N	Mean Rank	Sum of Ranks
MED_1_STR	below 5.0	88	91,62	8062,50
	5.0 and above	94	91,39	8590,50
	Total	182		
MED_2_CHA	below 5.0	88	89,49	7875,50
	5.0 and above	94	93,38	8777,50
	Total	182		
MED_3_ENC	below 5.0	88	85,91	7560,00
	5.0 and above	94	96,73	9093,00
	Total	182		
MED_4_TEC	below 5.0	88	95,23	8380,00
	5.0 and above	94	88,01	8273,00
	Total	182		
MED_5_PRO	below 5.0	88	87,31	7683,00
	5.0 and above	94	95,43	8970,00
	Total	182		

**Test Statistics<sup>a</sup>**

	MED_1_STR	MED_2_CHA	MED_3_ENC	MED_4_TEC	MED_5_PRO
Mann-Whitney U	4125,500	3959,500	3644,000	3808,000	3767,000
Wilcoxon W	8590,500	7875,500	7560,000	8273,000	7683,000
Z	-,031	-,510	-1,413	-,947	-1,070
Asymp. Sig. (2-tailed)	,976	,610	,158	,344	,285

a. Grouping Variable: Total\_MO\_CCO\_by\_Median

MO (FMO)

**Ranks**

	Total_MO_FMO_by_Median	N	Mean Rank	Sum of Ranks
WithComp	below 3.33	76	86,85	6600,50
	3.33 and above	106	94,83	10052,50
	Total	182		
MED_1_STR	below 3.33	76	73,93	5618,50
	3.33 and above	106	104,10	11034,50
	Total	182		
MED_2_CHA	below 3.33	76	75,64	5749,00
	3.33 and above	106	102,87	10904,00
	Total	182		
MED_3_ENC	below 3.33	76	83,02	6309,50
	3.33 and above	106	97,58	10343,50
	Total	182		
MED_4_TEC	below 3.33	76	95,52	7259,50
	3.33 and above	106	88,62	9393,50
	Total	182		
MED_5_PRO	below 3.33	76	86,16	6548,50
	3.33 and above	106	95,33	10104,50

Total	182
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**Test Statistics<sup>a</sup>**

	WithComp	MED_1_STR	MED_2_CHA	MED_3_ENC	MED_4_TEC	MED_5_PRO
Mann-Whitney U	3674,500	2692,500	2823,000	3383,500	3722,500	3622,500
Wilcoxon W	6600,500	5618,500	5749,000	6309,500	9393,500	6548,500
Z	-1,055	-3,936	-3,525	-1,875	-,894	-1,192
Asymp. Sig. (2-tailed)	,292	,000	,000	,061	,371	,233

a. Grouping Variable: Total\_MO\_FMO\_by\_Median

**Report**

Total_MO_FMO_by_Median		MED_1_STR	MED_2_CHA	MED_3_ENC	MED_4_TEC	MED_5_PRO
below 3.33	Mean	4,145	3,895	3,908	3,868	4,711
	N	76	76	76	76	76
	Std. Deviation	1,5029	1,4839	1,6906	1,7308	1,5303
3.33 and above	Mean	5,019	4,670	4,396	3,642	5,019
	N	106	106	106	106	106
	Std. Deviation	1,0689	1,1850	1,3917	1,4289	1,3380
Total	Mean	4,654	4,346	4,192	3,736	4,890
	N	182	182	182	182	182
	Std. Deviation	1,3363	1,3689	1,5382	1,5615	1,4255

## 6.12 Appendix for Research Question 2

## 6.12.1 Appendix for Research Question 2.1

## Correlations

		Total_BS_AG G Scale	Total_BS_ANA Scale	Total_BS_DEF Scale	Total_BS_FUT Scale	Total_BS_PRO Scale	Total_BS_RIS Scale	Total_LO_Scale 2nd order!	
Spearman's rho	Total_BS_AGG Scale	Correlation Coef. Sig. (2-tailed) N	1,000 . 182	-,144 ,053 182	-,004 ,959 182	-,099 ,185 182	,060 ,420 182	,020 ,792 182	-,160* ,031 182
	Total_BS_ANA Scale	Correlation Coef. Sig. (2-tailed) N	-,144 ,053 182	1,000 . 182	,339** ,000 182	,476** ,000 182	,215** ,004 182	-,070 ,347 182	,370** ,000 182
	Total_BS_DEF Scale	Correlation Coef. Sig. (2-tailed) N	-,004 ,959 182	,339** ,000 182	1,000 . 182	,504** ,000 182	,361** ,000 182	,038 ,612 182	,392** ,000 182
	Total_BS_FUT Scale	Correlation Coef. Sig. (2-tailed) N	-,099 ,185 182	,476** ,000 182	,504** ,000 182	1,000 . 182	,497** ,000 182	,191** ,010 182	,510** ,000 182
	Total_BS_PRO Scale	Correlation Coef. Sig. (2-tailed) N	,060 ,420 182	,215** ,004 182	,361** ,000 182	,497** ,000 182	1,000 . 182	,424** ,000 182	,486** ,000 182
	Total_BS_RIS Scale	Correlation Coef. Sig. (2-tailed) N	,020 ,792 182	-,070 ,347 182	,038 ,612 182	,191** ,010 182	,424** ,000 182	1,000 . 182	,244** ,001 182
	Total_LO_Scale	Correlation Coef. Sig. (2-tailed) N	-,160* ,031 182	,370** ,000 182	,392** ,000 182	,510** ,000 182	,486** ,000 182	,244** ,001 182	1,000 . 182

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

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

## 6.12.2 Appendix for Research Question 2.2

## Report

Total_LO_Scale_by_Median		MED_1_STR	MED_2_CHA	MED_3_ENC	MED_4_TEC	MED_5_PRO
below 4.3438	Mean	4,132	3,813	3,703	4,022	4,538
	N	91	91	91	91	91
	Std. Deviation	1,4848	1,4135	1,6090	1,6192	1,5868
4.3438 and above	Mean	5,176	4,879	4,681	3,451	5,242
	N	91	91	91	91	91
	Std. Deviation	,9140	1,0938	1,2985	1,4550	1,1483
Total	Mean	4,654	4,346	4,192	3,736	4,890
	N	182	182	182	182	182
	Std. Deviation	1,3363	1,3689	1,5382	1,5615	1,4255

## Ranks

	Total_LO_Scale_by_Median	N	Mean Rank	Sum of Ranks
WithComp	below 4.3438	91	84,83	7719,50
	4.3438 and above	91	98,17	8933,50
	Total	182		
MED_1_STR	below 4.3438	91	73,16	6658,00
	4.3438 and above	91	109,84	9995,00
	Total	182		
MED_2_CHA	below 4.3438	91	71,90	6542,50
	4.3438 and above	91	111,10	10110,50
	Total	182		
MED_3_ENC	below 4.3438	91	75,72	6890,50
	4.3438 and above	91	107,28	9762,50
	Total	182		
MED_4_TEC	below 4.3438	91	101,20	9209,50
	4.3438 and above	91	81,80	7443,50
	Total	182		
MED_5_PRO	below 4.3438	91	80,70	7344,00
	4.3438 and above	91	102,30	9309,00
	Total	182		

Test Statistics<sup>a</sup>

	WithComp	MED_1_STR	MED_2_CHA	MED_3_ENC	MED_4_TEC	MED_5_PRO
Mann-Whitney U	3533,500	2472,000	2356,500	2704,500	3257,500	3158,000
Wilcoxon W	7719,500	6658,000	6542,500	6890,500	7443,500	7344,000
Z	-1,786	-4,850	-5,148	-4,122	-2,548	-2,848
Asymp. Sig. (2-tailed)	,074	,000	,000	,000	,011	,004

a. Grouping Variable: Total\_LO\_Scale\_by\_Median

## 6.13 Appendix for Research Question 3

## 6.13.1 Appendix for Research Question 3.1

## Correlations

			Total_IIC Scale	Total_BS_AGG Scale	Total_BS_ANA Scale	Total_BS_DEF Scale	Total_BS_FUT Scale	Total_BS_PRO Scale	Total_BS_RIS Scale
Spearman's rho	Total_IIC Scale	Correlation	1,000	-,047	,223**	,430**	,466**	,546**	,331**
		Coefficient							
		Sig. (2-tailed)	.	,533	,002	,000	,000	,000	,000
		N	182	182	182	182	182	182	182
	Total_BS_AGG Scale	Correlation	-,047	1,000	-,144	-,004	-,099	,060	,020
		Coefficient							
		Sig. (2-tailed)	,533	.	,053	,959	,185	,420	,792
		N	182	182	182	182	182	182	182
	Total_BS_ANA Scale	Correlation	,223**	-,144	1,000	,339**	,476**	,215**	-,070
		Coefficient							
		Sig. (2-tailed)	,002	,053	.	,000	,000	,004	,347
		N	182	182	182	182	182	182	182
	Total_BS_DEF Scale	Correlation	,430**	-,004	,339**	1,000	,504**	,361**	,038
		Coefficient							
		Sig. (2-tailed)	,000	,959	,000	.	,000	,000	,612
		N	182	182	182	182	182	182	182
	Total_BS_FUT Scale	Correlation	,466**	-,099	,476**	,504**	1,000	,497**	,191**
		Coefficient							
		Sig. (2-tailed)	,000	,185	,000	,000	.	,000	,010
		N	182	182	182	182	182	182	182
Total_BS_PRO Scale	Correlation	,546**	,060	,215**	,361**	,497**	1,000	,424**	
	Coefficient								
	Sig. (2-tailed)	,000	,420	,004	,000	,000	.	,000	
	N	182	182	182	182	182	182	182	
Total_BS_RIS Scale	Correlation	,331**	,020	-,070	,038	,191**	,424**	1,000	
	Coefficient								
	Sig. (2-tailed)	,000	,792	,347	,612	,010	,000	.	
	N	182	182	182	182	182	182	182	

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



## 6.13.2 Appendix for Research Question 3.2

## Report

Total_IIC_by_Median		MED_1_STR	MED_2_CHA	MED_3_ENC	MED_4_TEC	MED_5_PRO
below 3.7692	Mean	4,084	3,867	3,795	3,795	4,675
	N	83	83	83	83	83
	Std. Deviation	1,4584	1,3594	1,5441	1,5908	1,5150
3.7692 and above	Mean	5,131	4,747	4,525	3,687	5,071
	N	99	99	99	99	99
	Std. Deviation	1,0066	1,2482	1,4593	1,5429	1,3267
Total	Mean	4,654	4,346	4,192	3,736	4,890
	N	182	182	182	182	182
	Std. Deviation	1,3363	1,3689	1,5382	1,5615	1,4255

## Ranks

	Total_IIC_by_Median	N	Mean Rank	Sum of Ranks
WithComp	below 3.7692	83	91,50	7594,50
	3.7692 and above	99	91,50	9058,50
	Total	182		
MED_1_STR	below 3.7692	83	71,39	5925,50
	3.7692 and above	99	108,36	10727,50
	Total	182		
MED_2_CHA	below 3.7692	83	73,66	6114,00
	3.7692 and above	99	106,45	10539,00
	Total	182		
MED_3_ENC	below 3.7692	83	78,48	6513,50
	3.7692 and above	99	102,42	10139,50
	Total	182		
MED_4_TEC	below 3.7692	83	94,27	7824,00
	3.7692 and above	99	89,18	8829,00
	Total	182		
MED_5_PRO	below 3.7692	83	84,66	7026,50
	3.7692 and above	99	97,24	9626,50
	Total	182		

Test Statistics<sup>a</sup>

	WithComp	MED_1_STR	MED_2_CHA	MED_3_ENC	MED_4_TEC	MED_5_PRO
Mann-Whitney U	4108,500	2439,500	2628,000	3027,500	3879,000	3540,500
Wilcoxon W	9058,500	5925,500	6114,000	6513,500	8829,000	7026,500
Z	,000	-4,870	-4,289	-3,115	-,665	-1,653
Asymp. Sig. (2-tailed)	1,000	,000	,000	,002	,506	,098

a. Grouping Variable: Total\_IIC\_by\_Median

## 6.14 Appendix for Research Question 5

## 6.14.1 Appendix for Research Question 5.1

## Ranks

	Position_4	N	Mean Rank
Total_BS_AGG Scale	Manage Function/ - Business	36	60,19
	Manage Managers	41	95,96
	Manage Others	42	88,49
	Manage Self	63	108,49
	Total	182	
Total_BS_ANA Scale	Manage Function/ - Business	36	110,11
	Manage Managers	41	88,89
	Manage Others	42	81,96
	Manage Self	63	88,92

	Total	182	
	Manage Function/ - Business	36	96,60
Total_BS_DEF Scale	Manage Managers	41	89,72
	Manage Others	42	86,71
	Manage Self	63	92,94
	Total	182	
	Manage Function/ - Business	36	98,74
Total_BS_FUT Scale	Manage Managers	41	82,10
	Manage Others	42	85,56
	Manage Self	63	97,44
	Total	182	
	Manage Function/ - Business	36	87,69
Total_BS_PRO Scale	Manage Managers	41	83,67
	Manage Others	42	81,33
	Manage Self	63	105,55
	Total	182	
	Manage Function/ - Business	36	88,58
Total_BS_RIS Scale	Manage Managers	41	83,50
	Manage Others	42	92,61
	Manage Self	63	97,63
	Total	182	
	Manage Function/ - Business	36	102,22
Total_MO_CCO Scale	Manage Managers	41	96,17
	Manage Others	42	87,33
	Manage Self	63	85,11
	Total	182	
	Manage Function/ - Business	36	84,25
Total_MO_FMO Scale	Manage Managers	41	75,22
	Manage Others	42	93,27
	Manage Self	63	105,06
	Total	182	
	Manage Function/ - Business	36	108,67
Total_LO_Scale 2nd order!	Manage Managers	41	73,40
	Manage Others	42	84,45
	Manage Self	63	98,17
	Total	182	
	Manage Function/ - Business	36	91,38
Total_IIC Scale	Manage Managers	41	86,56
	Manage Others	42	81,31
	Manage Self	63	101,58
	Total	182	

**Test Statistics<sup>a,b</sup>**

	Total_B S_AGG Scale	Total_B S_ANA Scale	Total_B S_DEF Scale	Total_B S_FUT Scale	Total_B S_PRO Scale	Total_B S_RIS Scale	Total_M O_CCO Scale	Total_M O_FMO Scale	Total_LO _Scale	Total _IIC Scale
Chi - Square	19,985	6,166	,790	3,347	7,178	1,948	3,053	8,897	10,428	4,244
Df	3	3	3	3	3	3	3	3	3	3
Asymp. Sig.	,000	,104	,852	,341	,066	,583	,384	,031	,015	,236

a. Kruskal Wallis Test

b. Grouping Variable: Position\_4

Post hoc:

Ranks				
	Position_2	N	Mean Rank	Sum of Ranks
Total_BS_AGG Scale	Top Management	36	60,19	2167,00
	all others	146	99,22	14486,00
	Total	182		
Total_BS_ANA Scale	Top Management	36	110,11	3964,00
	all others	146	86,91	12689,00
	Total	182		
Total_BS_DEF Scale	Top Management	36	96,60	3477,50
	all others	146	90,24	13175,50
	Total	182		
Total_BS_FUT Scale	Top Management	36	98,74	3554,50
	all others	146	89,72	13098,50
	Total	182		
Total_BS_PRO Scale	Top Management	36	87,69	3157,00
	all others	146	92,44	13496,00
	Total	182		
Total_BS_RIS Scale	Top Management	36	88,58	3189,00
	all others	146	92,22	13464,00
	Total	182		
Total_MO_CCO Scale	Top Management	36	102,22	3680,00
	all others	146	88,86	12973,00
	Total	182		
Total_MO_FMO Scale	Top Management	36	84,25	3033,00
	all others	146	93,29	13620,00
	Total	182		
Total_IIC Scale	Top Management	36	91,38	3289,50
	all others	146	91,53	13363,50
	Total	182		
Total_LO_Scale 2nd order!	Top Management	36	108,67	3912,00
	all others	146	87,27	12741,00
	Total	182		

Test Statistics<sup>a</sup>

	Total_B S_AGG Scale	Total_B S_ANA Scale	Total_B S_DEF Scale	Total_B S_FUT Scale	Total_B S_PRO Scale	Total_B S_RIS Scale	Total_M O_CCO Scale	Total_M O_FMO Scale	Total _IIC Scale	Total_LO _Scale 2nd order!
Man n- Whit ney U	1501,00 0	1958,00 0	2444,50 0	2367,50 0	2491,00 0	2523,00 0	2242,00 0	2367,00 0	2623 ,500	2010,00 0
Wilc oxon W	2167,00 0	12689,0 00	13175,5 00	13098,5 00	3157,00 0	3189,00 0	12973,0 00	3033,00 0	3289 ,500	12741,0 00
Z Asy mp. Sig. (2- taile d)	-4,010 ,000	-2,375 ,018	-,654 ,513	-,924 ,356	-,485 ,627	-,373 ,709	-1,375 ,169	-,926 ,354	-,016 ,987	-2,184 ,029

a. Grouping Variable: Position\_2

6.14.2 Appendix for Research Question 5.2

Ranks			
	FUNCTION	N	Mean Rank
Total_BS_AGG Scale	Marketing/Sales	33	87,42
	Human Resources	20	110,33
	Finance	61	86,34
	IS/Others	68	92,57
	Total	182	

	Marketing/Sales	33	75,14
	Human Resources	20	94,48
Total_BS_ANA Scale	Finance	61	113,66
	IS/Others	68	78,69
	Total	182	
	Marketing/Sales	33	93,08
	Human Resources	20	96,63
Total_BS_DEF Scale	Finance	61	95,93
	IS/Others	68	85,26
	Total	182	
	Marketing/Sales	33	81,27
	Human Resources	20	84,35
Total_BS_FUT Scale	Finance	61	98,82
	IS/Others	68	92,00
	Total	182	
	Marketing/Sales	33	72,38
	Human Resources	20	100,35
Total_BS_PRO Scale	Finance	61	97,20
	IS/Others	68	93,07
	Total	182	
	Marketing/Sales	33	80,39
	Human Resources	20	88,75
Total_BS_RIS Scale	Finance	61	86,19
	IS/Others	68	102,46
	Total	182	
	Marketing/Sales	33	98,44
	Human Resources	20	109,78
Total_MO_CCO Scale	Finance	61	86,88
	IS/Others	68	86,90
	Total	182	
	Marketing/Sales	33	83,09
	Human Resources	20	74,60
Total_MO_FMO Scale	Finance	61	89,03
	IS/Others	68	102,76
	Total	182	
	Marketing/Sales	33	86,39
	Human Resources	20	81,75
Total_LO_Scale 2nd order!	Finance	61	90,12
	IS/Others	68	98,08
	Total	182	
	Marketing/Sales	33	100,23
	Human Resources	20	85,05
Total_IIC Scale	Finance	61	92,54
	IS/Others	68	88,23
	Total	182	

Test Statistics<sup>a,b</sup>

	Total_B S_AGG Scale	Total_B S_ANA Scale	Total_B S_DEF Scale	Total_B S_FUT Scale	Total_B S_PRO Scale	Total_B S_RIS Scale	Total_M O_CCO Scale	Total_M O_FMO Scale	Total_LO _Scale 2nd order!	Total _IIC Scale
Chi-Square	3,412	18,192	1,631	2,817	5,718	5,137	4,033	6,198	2,099	1,494
Df	3	3	3	3	3	3	3	3	3	3
Asymp. Sig.	,332	,000	,652	,421	,126	,162	,258	,102	,552	,684

a. Kruskal Wallis Test

b. Grouping Variable: FUNCTION