

Master Degree Project in Management

# THE ART OF MAKING RATIONAL INVESTMENT DECISIONS

*'The fall of theories and the rise of heroes?'*

- A case study on how organizations structure and produce rational investment decisions



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# **The Art of Making Rational Investment Decisions**

*'The fall of theories and the rise of heroes?'*

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## **Abstract**

The purpose of this paper aims to explain the production of rationality for organizations and present how managers engage in investment decisions, recognize the underlying factors affecting the decision-making process, and eventually describe how organizations engineer rationality in their investment processes. This paper presents two different industries; manufacturing and investment, and draw upon similarities and differences between them with the ambition to compare the definition and the standardization of rationality in the firms' investment activities. In order to gain a deeper understanding of the complexities and ambiguities of investment activities, as well as providing an additional dimension to the study, two advisory firms have been interviewed. The study is qualitative in its nature and builds on the concept of performativity, where the practical usage of an aspect of economic theory, not only are used by investment actors, but also shapes investment practices (MacKenzie, 2007). Previous studies on performativity related to decision-making have presented a gap between how actors make sense of these economic assumptions, and to what extent these assumptions are implemented into practice. Furthermore, this study aims to provide new insights and understandings in how normative economic theory becomes infused into investment activities and therefore asserts a practical relevance for decision-making. Finally, this paper, inspire a further discussion on how rationality can be efficiently and accurately produced in the investment process for organizations operating on a globalized market characterized by digitalization, shorter business-cycles and increased competition.

## **Key Words**

*Investments, Decision-Making, Performativity, Rationality, Technology, Consultants*

## **Introduction**

In organizational and management research, there is a growing interest regarding how managers behave and make sense of investment decisions (Sandahl & Sjogren, 2005). Several research fields such as; psychology, strategy and finance have conducted studies to increase our understanding of decision making related to investment activities (Sandahl and Sjogren, 2005; Eisenhardt & Zbaracki, 1992; De Bondt & Thaler, 1995; Simon 1979; Cabantous, Gond & Johnson-Cramer, 2010). Although extensive research has been done in the field over the last 40 years, studies have shown a gap between theory and business praxis related to investment decisions. The ambiguities in understanding investment praxis mainly derives from the complexities in trying to understand how theory and practice influence each other with respect to decision making in the investment process. Previous studies concerning rational decision-making might have a normative content and describe the underlying assumptions on how an investment actor makes a decision to maximize utility (Savage, 1954; Simon, 1957; von Neumann & Morgenstern, 1947). For example, one of the main contributions from these scholars, were the concept of the ‘economic man’, which reinforces the normative perspective in decision making (Elster, 1986). In comparison, organizational theories revise decision-making by denouncing rational choice theory and reject the economic models of rationality (Chia 1994; Laroche 1995; Langley et al. 1995).

Moreover, organizational scholars argue that normative economic theories related to decision making become exceedingly theoretical and are therefore not applicable to investment praxis, thus insufficient in describing the actual decision practice (Eisenhardt & Zbaracki, 1992). Additionally, these scholars fail to explain the circumstances of tools designed to produce rationality in the decision-making process, as well as the attributes of the investment actor who makes sense of the final decision. March (2006), states that rationality is not just a construct of social intelligence, it is also a crafted product from organizational intelligence, thus producing rationality demands a cautious and patient effort from well-trained professionals in relation to actors, theory and material artefacts. In particular what is missing from the research is an analysis of the social-technical conditions in decision making that enables the construction of rational decisions within the organizational context (Cabantous, Gond & Johnson-Cramer, 2010). This perspective allows researchers to analyze rational decision-making as a social construction, where rational choice theory and a set of tools and artefacts, embed the underlying core assumptions of decision making (Cabantous & Gond 2011; Cabantous et al. 2008). This culminates in rationality as a performative praxis, produced within the organization and more generally how economic theory is translated in decision making, altogether making rationality, and decision making, highly context dependent (Cabantous & Gond, 2011). In that sense, rational decision-making can be described as a performative praxis - a set of activities, where organizational actors together produce rational decisions and therefore gives social reality to rational choice theory (Ibid).

In the theoretical model used in this paper, theory derives from normative decision theory as described by (Keeney 1982; von Neumann & Morgenstern 1947; Myerson, 1991), and actors include the decision maker and others, both internal and external actors (in this paper referred to as consultants), who in some way influence the final investment decision (Langley, 1989). Moreover, non-human actors can be investment tools, business intelligence software and other support systems. In theory, tools are

designed to construct rationality and support actors to produce rationality in their investment processes (Clemen & Reilly, 2001; Hodgkinson et al. 1999). In a practical perspective, both researchers and practitioners, emphasize on the importance of techniques and tools in strategic decision-making (Reckwitz, 2002), and can therefore be seen as rationality carriers (Cabantous & Gond, 2011).

The difference between theory and practice has been outlined in previous studies, and the variations are explained in organizational theory as firms not having the necessary ability in using sophisticated investment-tools, and are not putting enough resources to improve this (Sandahl & Sjogren, 2005). Moreover, the methods and techniques that are considered to be used as basis for decision making are ignored by managers when they are assumed not to be able to handle complexity and counteract current fixed strategies (Bazerman, 1990). Previous research done on the effect of technology, such as software in decision-making, is however still not fully established (Orlikowski & Scott, 2008; Molloy & Schwenk, 1995). In general, tools acting as rationality carriers connected to decision making, requires more research on how to permanent produce rationality in the investment process and how rationality is distributed between human and non-human actors (Latour, 2005). In addition, researchers ignore the fact that rational investment decisions include complex arrangements, where the organizational actors collectively fabricate rationality, but also overlooks the idea that decision-making tools have a role as rationality transporters (Cabantous & Gond, 2011). Thus, it is relevant to study rational decision making as *performative* - how *actors, tools* and *theory*, together produce the reality in which they operate in. Performativity in this sense, will highlight how all stakeholders make sense of rationality and examine if it is in fact rational, or just reflect the idea of rationality related to the investment case (Callon, 2007; MacKenzie, 2007).

In this paper, investment activities will reflect all investment decisions such as; equity, technology and fixed assets, or generally described as: '*the act of putting money, effort and time, into something to make a profit or get an advantage*' (Cambridge Dictionary, 2017) Thus, investing into an asset or item that hopefully will generate income or appreciate in the future. Consequently, a manager's decision to invest into long-term assets will have a decisive influence on the rate and direction of the firm's future growth and success. In that sense, a bad investment decision can prove to be fatal for the continued existence of the company, e.g. an undesired or unsuccessful business expansion will result in substantial operating costs for the firm. At the same time, insufficient investments and inactivity in today's rapidly changing business environment will make it more difficult for firms to stay competitive in the long-run. This highlights the relevance for studying investment practices in relation to economic theory and examine the practical implications. Furthermore, globalization heightens the competition between companies, and investment decisions are made to gain a competitive advantage, to attain organic growth, and to diversify risk (Cunat & Guadalupe, 2009; Strategy&, 2017). In that sense, rationality, today, is more context dependent and ambiguous in its definition, which is mainly due to rapid market changes (e.g. technology development) in both the manufacturing and investment sector (EY, 2016; Strategy&, 2017; Cunat & Guadalupe, 2009). These complexities can partly be explained by contextual aspects, such as; size of investment, industry specifics, the investments' time horizon, risk-aversion and the professional actors involved in the investment process. The different contextual factors can have different

underlying rationales, and therefore a rational investment has different outcomes depending on the context (Strategy&, 2017). Hence, to understand the underlying aspects of investment decision-making, researchers can not solely explain the assumptions of rationality by only studying normative economic theory.

Consequently, to minimize the gap between theory and practice, the ‘performative framework’ of Cabantous & Gond (2011), which illustrates the performative praxis of decision making, will be outlined and reviewed in order to gain a deeper insight in how actors are influenced by theory and how they define and produce rationality in the investment process. Thus, with performativity as a framework, the purpose of this paper aims is to explain the production of rationality for organizations in their investment processes, and present how managers engage in investment activities, recognize the underlying factors affecting decision making and eventually how organizations engineer rationality in their investment processes. The ambiguous relationship between human actors and economic theory that is underlying an investment decision, needs to be investigated further in order to make sense of rationality. Finally, the role played by advisory firms will support how the responding companies in both sectors perceive and cope with the creation of rationality. More specifically, examine how theory and practice are interrelated in the investment process and study how the investment practices are shaped by actors, theory and tools, who assist in shaping the formality of investment decisions. This in turn, provides the framework for outlining this paper’s research question:

***‘How is decision making performed, and how is theory of decision making and practice interrelated in the pursuit of making rational investment decisions?’***

## **Theoretical Framework**

### **Performativity - Rational Decision Making as Praxis**

Previous research done in the field of decision making extradite a gap between theory and practice. This gap can be seen as a lack of understanding on why theories are known, but differ in their practical usage - normative decision theory vs. investment praxis. However, researchers studying decision making within organizations have presented a new relationship between theory and practice. This relationship can be explored by the theories of performativity, and the approach of understanding how organizational practices create a framework of various actors with the purpose of producing rationality in the investment process (Cabantous & Gond, 2011). With that in mind, it is important to further investigate how reiterated actions affect investment decision-making, rather than just present how investment actors relate to the concept of rationality.

In the past, a high quantity, and different versions of performativity have been described due to its performative utterance, an utterance that does not only say something, but also does something, i.e. praxis is made by doing something, rather than just talking about it (Austin, 1962). According to Austin (1962), performativity does not just describe reality, but also have the ability to shape it. For it to become a reality, there is a need for an agreement between the setting, actors, and the audience regarding their roles and how to develop new practices (Goffman, 1974). Moreover, Lyotard (1979), states that being ‘performative’ is related to the result of process input-output. In other words, performativity emerges because of something being produced through performances (Lyotard, 1979). Furthermore, Butler (2010)

advocates that a practice needs to be repeatedly performed if to make a practical change. That is also supported by Latour (1986), who state that performativity relates to the society and the continuous construction of it through the repeated performances of the social. The performing of certain practices helps to legitimize actions and meanings, thus the notion of what, for example rational decision making might be, or on what grounds to decide, changes only slowly over time (Ibid). Today, performativity is employed in several fields, among them organizational studies and it has been translated in various ways, and more specifically into decision making, which will be the focus of this paper. To do that, it is essential to apply performative definitions of objects, since objects are enacted into being and when objects change, the practices and relations related to that object changes as well (Lindberg & Walter, 2012). For example, in organizational studies, the influence of technology is increasing in a social setting and daily interactions between users and technology (Orlikowski, 2007; Orlikowski & Scott, 2008). These two perspectives give reason to explore technology both as an actor and a tool, which exerts a performative effect on decisions making, rather than pre-negotiated term that technology only serves as a mechanical support (Orlikowski, 1996; Orlikowski & Iacono, 2001; Kallinikos, 2004), but also to investigate how actors, tools, and theory together influence performativity. Furthermore, Callon (1998, p.2), make use of the phrase *'economics in the broad sense of the term, performs, shapes and formats the economy, rather than observing how it function'*. By this, the author refers not only to economic theory, but also to human and non-human actors such as; people, technologies and decision-making tools that together influence and shape investment practices. Altogether, offering a view where economic theory is not by itself to be used when analyzing a market, rather as a part of the practice that performs the market.

Earlier empirical studies on performativity have mainly been conducted on financial markets (MacKenzie, 2007), and mundane markets (Kjellberg & Helgesson, 2006). Both areas of research show compelling arguments for that additional empirical studies are needed to capture the performative role of economic theory in business practices. Further on, MacKenzie (2007), develops the concept of performativity as either 'generic' or 'effective', where generic performativity refers to when an economic concept (theory, model or tool) is used by participants in economic processes (MacKenzie, 2007). Effective performativity refers to when the 'practical' use of an aspect of economics has a practical effect on economic processes. Effective performativity is further labeled into two branches: 'Barnesian' and 'Counter-Performativity'. Barnesian is characterized as when the; *'practical use of an aspect of economics makes economic processes more like their depiction by economics'*, while counter-performativity is described as the *'practical use of an aspect of economics that make economic processes less like their depiction by economics'* (MacKenzie, 2007 p.55). In studies conducted on financial markets, cases have often been related to theories and models, where one of MacKenzie's most famous studies of the Black-Scholes-Merton formula, displays how the formula for option pricing was used in transforming the economy in order to make the formula more 'real'. In this case, the fit of the formula was gradually improved as the model exerted a performative effect when used (MacKenzie, 2007). In other words, the actors implemented and acted upon the model, and in that sense, the model created the reality for the entire field of option pricing during this time. Similar studies include; Huault & Rainelli-Weiss' (2011), study on weather derivatives and Pollock and Williams' (2009), study on how analytical models are used by industry analysts. Despite that, research conducted by

Cabantous, Gond & Johnson-Cramer (2010), and Cabantous & Gond (2011), are interesting to capture, since their view of performativity studies decision theory as practice in an organizational setting. Moreover, studies by Kjellberg & Helgesson (2006), have examined mundane markets, where the authors state that many different tools, theories and models may be involved in shaping the markets. This notion draw the attention to study how markets are performed in everyday business practices and present how economic theory can be included as a part of the tools used in the development of these practices.

Finally, in the scope of this paper, performativity can broadly be defined as the entire set of processes whereby a theory influences the reality it describes, hence increases its anticipation and eventually its social success (MacKenzie, 2007). Research done on performativity demonstrates that the core principles of economic theory affect management practices, tools, norms, language, and then assists in shaping the market conditions according to the behavioural assumption of the theory (Ferraro et al. 2005; MacKenzie, 2007). In that sense, performativity attracts our attention to different processes where economic theories can affect investment practices. However, performativity processes do not repeatedly lead to theory self-realization; they shape actors' social reality, language and praxis. Thus, performativity explains how theory, actors and tools together create rationality in everyday organizational life. Finally, performativity articulates three different mechanisms that produce rationality within organizations: *rationality conventionalization*, *rationality engineering* and *rationality commodification*, which will be explained further in the next section. Together these three highlight the links between rational choice theory and the daily practices of rational decision-making in organizations. It presents how discrepancies between theory and organizational life can lead to deeper studies on how managers, academics and consultants coproduce rationality in the investment process (Cabantous & Gond, 2011).

### **Rational Decision Making - as a Performative Praxis**

Organizational studies primarily approaches decision making as a process and consider the level of rationality within decision making as an outside variable (Langely et al. 1995; Fredrickson 1984). However, performativity approaches rational decision-making as a determined action of actors in search of rationality. Therefore, it is vital to unfold the production of rationality by examining organizational scholars who study decision making as something emerging from the actions of organizational actors (Jarzabkowski et al, 2007; Whittington, 2006). The following section will present the different elements and mechanisms that together compose the model of performativity as described in figure 1 (see next page).

Figure 1 Rational Decision Making as Performative Praxis

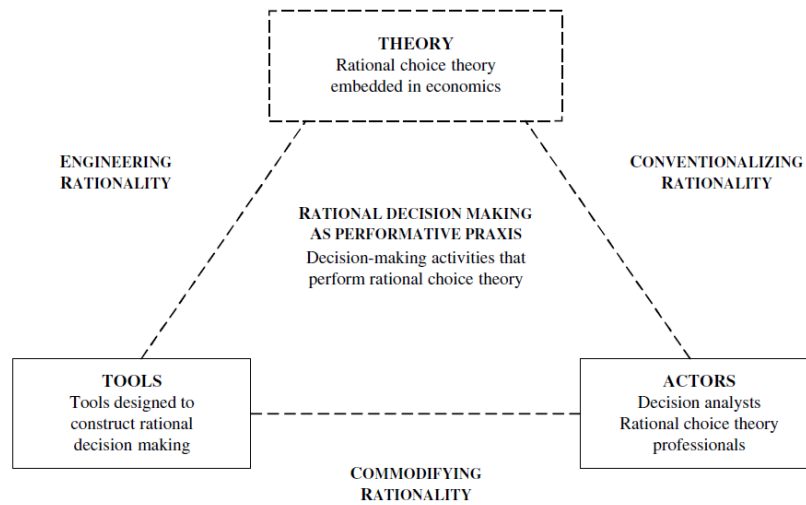


Figure 1. “The Performative Framework”. Source: Cabantous & Gond (2011)

## The Trinity

### *Theory - Actors - Tools*

The economic model of rationality is used by economists to conceptualize practices related to investment decisions (Mas-Colell et al. 1995). The first step in the model requires decision makers to structure the problem and then define a set of alternative decisions, e.g. scenario planning or utility functions. In the second step, decision makers should specify each alternative in a way that reflects their preferences and assess the probability of each alternative taking place. Thirdly, decision makers should select the alternative with the highest possible expected value and then work to implement it (Keeney 1982, von Neumann & Morgenstern 1947). The underlying theoretical framework for the decision-making process derives from two different branches within decision theory; normative decision theory and descriptive decision theory (E.Bell & Raiffa, 1988). Normative decision theory, as in this paper rational choice theory, advises on how to make the best optimal decision in relation to a set of uncertain possibilities and values. Whereas descriptive decision theory describes and analysis the existing decision behaviour of possible irrational agents. The normative approach assumes that the individual actor can assess and make the optimal decision to maximize the utility outcome (Myerson, 1991). By following this process, the investment decision will in theory be considered to minimize risk and therefore also increase the level of rationality (Cabantous & Gond, 2011). However, in business praxis, actors may not have all the available information, thus incapable of making fully rational investment decisions. In that sense, creating a pre-negotiated decision process will not fully have an effect the final decision since it lacks the ability to make use the missing data. Rather every single action performed by actors related to the decision will eventually shape how actual decisions are performed Henry (2000).

In the model of performativity, actors include the decision makers and a whole range of other individuals, who are contributing to the final decision. An actor inside the organization can be a business-analyst who conduct the necessary analytics on behalf of the final decision maker (Langley, 1989). An external actor could be a consultant assisting in various tasks with the purpose of providing additional support for their clients’ investment activities (Hodgkinson et al, 2006). Non-human actors can be exemplified as investment tools and other supportive decision-making systems



(Clemen & Reilly, 2001; Hodgkinson et al. 1999). In that sense, actors can be both human and non-human that together affect rationality in the investment process. In a practical perspective, both researchers and practitioners emphasize on the importance of techniques and tools in decision-making (Reckwitz, 2002; Orlikowski, 2007). In theory, tools are designed to produce rationality for investment decisions and support actors in their quest to perform rational investment choices. Actors striving for making rational decisions can overcome their limited cognitive capacities with the help of decision-making techniques and tools (Clemen & Reilly 2001; Hodgkinson et al. 1999). Therefore, the perception of rationality in the investment praxis will continuously reappear in research due to technologies of model-based rationality (March, 2006).

### **Rationality Mechanisms**

The three links; *rationality conventionalization*, *rationality engineering*, and *rationality commodification* (see Figure 1), together shape rational choice theory in organizational decision-making praxis. Firstly, conventionalization rationality explains how rational choice theory influence organizational practices. Secondly, engineering rationality is a process where tools and artifacts implement rational choice theory in organizations' investment practices. Finally, commodifying rationality supports the influence and diffusion of rational choice theory, and enforces conventionalization and engineering by incorporating practitioners in the development of the tools and methods used in investment process. The following section will individually explain these three mechanisms.

#### *Conventionalization Rationality*

Rationality has not disappeared from organizational practices, rather it has been turned into a 'convention', i.e. a social norm or praxis, guiding decisions and actions, giving them justification (Czarniawska, 2003). Boltanski & Thevenot (2006), argue that tools and practices embed actors with rationality, hence they inhabit a daily routine where the definition of rationality is institutionalized - made into a convention. Additionally, researchers argue that the cognitive embeddedness of future managers within economic assumptions, will force rationality into a convention, i.e. rationality as praxis (Callon 1998; Cabantous & Gond, 2011). In this conventionalization process, the key actors are business schools and other institutions that provide education and training for future managers, which supports the cognitive embeddedness of economic theory (Cabantous & Gond, 2011). The understanding of tools and practices learnt by managers in the educational process heavily impacts their future managerial practices (Ferraro et al. 2005; Goshal, 2005). Furthermore, Liang & Wang (2004), display a rational approach to decision-making commonly used in business schools and this approach to management practices will eventually affect business praxis, thus having a practical impact on investment decisions. By promoting a normative framework, and through teaching tools and techniques, researchers have 'equipped' managers with normative rational choice theory and these actors are therefore assumed to make rational investment decisions (Cabantous & Gond, 2011). Finally, the conventionalization process forces rational decision making by integrating managers' embeddedness of rational choice theory into methods, tools and practices (Scott, 1995). Nevertheless, appropriate cognitive tools support actors to internalize rationality and practice a rational method of decision-making, thus forcing rational decision-making into a 'convention' (Cabantous & Gond, 2011).

### *Engineering Rationality*

Studies on decision making has revealed managers to have a limited cognitive capacity and rely on heuristics techniques to make investment decisions (Bazerman 2005; Kahneman et al. 1982; Schwenk 1984; Simon 1955). Therefore, to frame managers as rational decision makers, it is essential to include more than the educational background and the principles of the economic theory of choice. Managers striving for making rational decisions need to overcome their limited cognitive capacities with the help of decision-making techniques and tools (Clemen & Reilly 2001; Hodgkinson et al. 1999). Bain & Company's annual '*Management Tools and Techniques*' (2015), states that many companies sustain their decision-making praxis by using techniques and tools found in management textbooks, thus offering organizational actors a setting where they can sustain rational investment decisions (Rigby 2001; Stenfors et al. 2007; March 2006; Callon 1998; Cabantous & Gond, 2011). This engineering process provides rationality to a whole spectrum of organizational actors by materializing the underlying principles of rational choice theory (Orlikowski & Scott, 2008). These devices shape rational choice theory into a social reality that is accessible, available and possibly useful, thus potentially play a vital role in rational decision-making because it can guarantee the reproduction of a context favorable to making rational decisions within organizations (Cabantous & Gond, 2011). In that sense, making economics performative requires both theory and its practical environment - a socio-technical grouping of human and non-human factors (Callon 1998, Ferraro et al. 2005).

### *Commodifying Rationality*

By the conventionalization of rational decision-making, practitioners can provide it to managers and organizations as a commodity in their pursuit of rationality (March, 2006). It supports the influence and diffusion of rational choice theory, which in turn is implanted in practices and tools shaped by the engineering process of rationality (Cabantous & Gond, 2011). The commodifying of rationality also enforces convention and engineering with the aid of practitioners who develop markets and tools for rational decision-making (Cabantous & Gond, 2011). Scholars such as Kipping (1999), and McKenna (1995), have studied the commodification process and observed a new spread of analytical tools and techniques aiming at improving the operational performances and corporate strategies for organizations. Furthermore, external consultants play an important role in supporting a decision-making practice by convincing the users of the quality and contribution of their own business services and advises (Clark & Salaman, 1998). Thereto, consultants also produce legitimacy to the investment decision and aids in the implementation phase of the services provided (Langley, 1989). As a result, consultants bring rationality into investment decision-making and thereby undertakes a role as 'rationality carriers' (Cabantous & Gond, 2011). By reinforce the prerequisite to implement a rational approach to decision-making through strategy- and decision making tools, the commodification strengthens the conventionalization and bolster, or even ensures a diffusion of rationality (Czarniawska, 2001). Altogether, rational decision-making involves scholars and organizational actors who foster and spread rational decision-making through their relationships, thus making rational decision-making both a product and a research field (Cabantous & Gond, 2011).

## **Methodology**

The purpose of this paper is to present and provide insight into how organizational actors from the manufacturing and investment sector, engage and relate to rationality in their investment processes. This is done by using a performative approach to decision making, where the responding companies describe their investment activities and how they work to reinforce a structure enhancing successful investment decision. By including the perspective of, and role asserted by external consultants in their effort to engineer rationality for their clients, will ultimately provide this paper with a level of unbiasedness and add another dimension in understanding of how companies in both sectors work and relate to rationality. In this report, managers in three different industries were interviewed; *Manufacturing*, *Investments* and *Advisory*. Consequently, investments will reflect all decisions such as; equity, technology and fixed assets or as outlined in the introduction part where an investment is generally described as: an item or an asset that is purchased which hopefully will generate income or increase in value in the future, where the investment can encourage economic growth for the business.

### **The Setting**

#### *Manufacturing*

The corresponding companies in this sector are all engaged in mass-production and are facing a high demand for investments due to increasing international competition, as well as technology development. The current business environment forces the companies to invest heavily in order to improve operational efficiency, to expand their business model and to remain competitive. Investments in this sector include machinery, infrastructure and other investments targeting product innovation, etc. (Strategy&, 2017).

#### *Investments*

The target respondents in this sector either invest into small or large equity stakes in companies. In the former, the actors invest into immature businesses with an short-term exit plan and in the latter actors invest into mature businesses. In that sense, smaller firms invest equity in companies for short-term profit, but the larger investment firms invest in equity, or acquire entire companies to increase growth and expand their business (SVCA, 2017). Thus, they are similar in terms of holding strategy, i.e. active ownership, but dissimilar in exit strategy.

#### *Advisory*

The current macro-environment is characterized by shorter business-cycles, a reducing time-frame for the investment process and an increasing need for time-efficient due-diligence activities (Giertz et al. 2016). To deal with this, companies tend to seek external consultation to oversee their investment processes. Advisory firms support the responding companies in their investment activities by integrating software, develop investment models and act as speaking partners in the investment process (Ibid). With that in mind, this paper study two advisory firms with the purpose of providing a deeper understanding of the relationship between consultants and their clients' investment activities.

### **Research Design**

To see the social interactions between decision makers in the investment process, where the actual decision is an outcome of these interaction, this paper is approached

using a qualitative method with a social constructivist mindset. By incorporating the constructionist approach in qualitative research, we analyze the human conditions and therefore gain a deeper understanding of the contextual settings for the companies (Holstein & Gubrium, 2008). This approach enabled us to actively discuss our perception and understanding of the researched field in relation to the respondents as well as created a forum for discussion. The design structure enabled us to capture factors and uncertainties that are discovered in the decision-making process. Furthermore, the design is structured and relies on an abductive reasoning in order to address the lack of clarity in terms of how to select theory often associated with the deductive approach. Abductive reasoning handles this dilemma by adopting a pragmatist view and therefore seeks to determine the best possible explanation to clarify the empirical findings in this study (Dubois & Gadde, 2002). Thus, grounded theory involving the construction of theory through the analysis of data, is a well-suited method for this paper. In collecting additional data and reviewing the old, codes could be grouped and put into categories which helped us to structure the empirical findings and draw relevant conclusions (Martin & Turner, 1986).

Furthermore, few models and theories are found to explore or explain how organizations produce rational decisions and how theory and practice are interrelated. To address this, the paper is based on the principles of a case study, since the main purpose for conducting a case study is that it is a suitable method for exploratory ambitions (Dul & Hak, 2008). In that sense we claim that the case study is an appropriate method in order to explore the topic further. For instance, Flyvbjerg (2006) explains that is valuable to shift the focus towards a more practical and context related approach. Consequently, this is favoring the purpose of this study, since it allows to examine situations where contextual factors are important to the studied phenomenon, e.g. size of investments, industry specifics and the attributes of an individual actor (Flyvbjerg, 2006). Finally, although case studies are generally a subject for criticism, in the case that it fails to generalize insights, we believe that context specific knowledge can contribute to our research field (Flyvbjerg, 2006).

### **Data Collection**

For the purpose of collecting the relevant data for the investment process, we chose to conduct multiple interviews with decision makers from 4 manufacturing companies and 4 investment firms, as well as the support and reasoning from 2 advisory firms (see Table 1 on next page). In total, 19 interviews were conducted which broadened the scope and provided an insight on how investment decisions are performed in practice. Initially, the contact was made to a group of individuals with different business backgrounds and responsibilities within each firm, however connected to the investment process. This interaction gave us a good understanding of the entire investment process, as well as generated additional contacts considered useful for our research. These events are referred to as 'the snowballing method' by Kvale & Brinkmann (2008), which strengthened the relevance of collected data and increased the scope of the interviews. We believe that the scope and mix of investment actors, will give us a holistic perspective on the field of decision-making.

Industry	Interviewees	Label
Investments	Investment Manager	I1
	Business Developer	I1
	CFO	I1
	Investment Manager	I1
	Investment Manager	I2
	Owner/Investor	I3
	CEO	I3
	Investment Director	I4
Manufacturing	Senior Finance Project Leader	M1
	Head of Business Control	M1
	Manager Strategy	M1
	Head of Global Logistics	M2
	CFO	M3
	Head of Product Development	M4
	CEO	M4
Advisory	Partner - Accounting	C1
	Director - Corporate Finance	C1
	Director - Accounting	C1
	Partner - Human Resources	C2

Table 1. "Table of respondents" The table include the sectors, companies and position of the respondents. In total: 19 respondents.

The primary data was collected through interviews with a semi-structured approach, where the questions were open-ended which enabled us to steer the conversation and focus on the most essential parts of our research (Silverman, 2013). The interviews were approached similarly, starting with a questionnaire, which was designed individually, with few, but open questions. While performing the interviews, we explained the purpose and background of the study. Hence, creating a mutual ground and providing an ability for the respondents to give adequate answers relevant for our research question (Martin & Turner, 1986). This in turn, favored the quality of the interviews since the amount of time for each interview was limited. To create trust, all respondents were carefully handled in a client-centered manner, thus creating a personal encounter, favouring the trust-relationship where their opinions and private reflections could be revealed (Kvale, 2006; Czarniawska, 2014). All respondents were promised anonymity and provided with the ability to review the material after the transcription process of the interviews. This approach favored the ethical dimension of this study and avoided ethical conflicts between the respondent and the employer (Silverman, 2013). Nonetheless, it is essential to overcome the power asymmetry potentially occurring during an interview as mentioned by (Czarniawska, 2014), therefore we favored a discussion forum rather than an examination. Furthermore, the secondary data was primarily provided by the responding companies, with documents regarding their investment processes and current business environment, as well as other factors that could potentially affect their business. The purpose of collecting secondary data was primarily to comprehend what empirical evidence until this point, had been conveyed in our research area and how that material could be related to the purpose and the results of this study (Silverman, 2013).

## **Data Analysis**

The choice was made to record all interviews, if granted by the respondent, giving us the advantage to analyze the material afterwards and by that not omit essential facts stated by the respondent during the interview (Silverman, 2013). Moreover, to gather as much information as possible, one person led the interview, while the other observed the conversation and took notes. Through observing the conversations, we enhanced our understanding of the specific contextual setting, thus useful as a supplementary method for collecting data (Silverman, 2013). After the interviews we initiated a session of reflection on the result of the interview, which enabled us to discuss and deepen our understanding. Since the collected material was continuously analyzed during the interview phase, we developed new ideas and research angles enabling us to understand the field and ask more adequate questions enriching the study (Martin & Turner, 1986).

The collected data were analyzed in two steps, in accordance with the grounded theory approach mentioned by Martin & Turner (1986). First, we evaluated our transcripts thoroughly and outlined the material into key points related to each interview. This facilitated us to notice and divide emerging patterns from the interviews and evolve a comprehensive understanding of the decision-making process. Additionally, notes and observations during the interviews was taken into consideration and analyzed in relation to the data in the interview transcripts. In the final step of the analyzing process, the collected data was coded and categorized into relevant themes to answer our research question. The identified and selected themes were structured accordingly; ‘perception of rationality’, ‘investment process’, ‘methods and tools’, ‘decision theory’, ‘composition of teams’ and ‘external consultation’. Moreover, the themes facilitated the process of comparing the results with our theoretical framework. The themes became the initial target for what material to highlight and what material to exclude, and as a result all gathered material was not used, since parts of the data was not relevant for to the purpose of this study and failed to support our research question (Silverman, 2013). After analyzing and coding all material the themes were categorized into three different universal rubrics: ‘Uncovering Rationality’ and ‘Unfolding the Investment Process’. This highly structured process granted us the ability to conduct a thorough analysis of the gathered data and supported us to make well informed conclusions.

## **Limitations**

Firstly, we have not been able to follow the organizations for a longer time-period, as well as the fact that the examined industries are highly context specific, something that potentially limit the scope of this study. However, to address these limitations, we decided to include the role played by advisory firms and analyze their understandings of what drives the development of investment practices. Nonetheless, it is difficult to draw general conclusions, since we can not claim that the respondents are fully representative for these industries. In both the investment and manufacturing sector, the investment process might differ a lot, which makes it difficult to apply the same general assumptions across the sectors. Secondly, we are conscious that our study only provides a certain picture, at a certain point of time. Thus, a continued study over a longer time period with additional interviews could result in new findings, especially in regards to how the idea and perception of rationality can change over time. Finally, the market challenges faced by firms are present at this point of time

and we cannot proclaim that this will be the case in the future, which is limiting the time-frame relevance of this study.

## **Empirical Findings**

In this section, there will be a presentation of the collected data from the respondent companies, concerning how they perceive and describe rationality in their daily investment activities. This is followed by a section outlining the investment processes for both sectors in relation to the role played by the interviewed advisory firms. Throughout the investment process, the responding actors make use of different models and tools, as well as consultant, to create a framework for making rational investment decisions. In that sense, this section needs to be presented if we are to understand the underlying praxis of creating a support structure that is favouring successful investment decisions.

### **Uncovering Rationality**

The respondents in the manufacturing industry, state that the creation of rationality derives from internally developed procedures and industry specific knowledge gained from years of experience in the sector. Respondents explain that the internal investment process supports the investment team to maximize utility from the investment and achieve a positive return on investment (ROI), which is described as a rational outcome:

*I perceive rationality in my line of work, as making investment activities that will provide additional revenue to our company in a specific time-frame, as well as making necessary investments in order to cope with increasing competition...especially competition deriving from digitalization - Head of Global Logistics (M2)*

However, there is clearly a difference depending on what type of investment the companies are dealing with, e.g. investment decisions concerning new machinery, staff and product development are handled differently compared to international investment such as building a new production center. In the former, there is generally no need for external advisory services before making the final decision, which stands in contrast to the latter, i.e. foreign investments, when it comes to the usage of external consultation. This is further explained as:

*Investing into new products, we do not seek advice from external consultation, since we have sufficient experience in the area and have done it successfully in the past. However, if we are investing into a new factory abroad, we seek external consultation from Business Sweden, etc...and their consultation provides us with expertise knowledge in the region we want to invest in - Senior Finance Project Leader (M1)*

By seeking consultation from Business Sweden, the responding company (M1), explains that they get access to expertise knowledge on different geographical regions in how to conduct business successfully. Furthermore, they consider this action to be helpful in minimizing risk and further support the level of rationality throughout the investment process. This notion is further supported by (M2), who explains how they work with external advisory consultants when dealing with complex investment decision. In this case, consultants do not influence the decision process, but are hired to validate and legitimize the final decision for internal and external stakeholders, i.e. acting as a speaking partner:

*In the late phase of the investment process, we hire consultants to validate rather than influence the final decision, which often is required from top management...if they are to approve the final investment decision. Thereby, the consultants do not take the decision for us, instead they provide us with a second opinion - Head of Global Logistics (M2)*

In that sense, the respondent argue for that the investment decision will be examined and evaluated from different perspectives deriving from the expertise knowledge of the advisory firms. The respondent states that this will provide confidence to the investment decision and favor utility maximization in the long-run perspective. Following this, the respondents consider the need for external consultation as praxis within the industry, thus portraying the company as a rational entity against stakeholders. Additionally, the Chief Financial Officer in (M3), brings forward a more detailed description on the reason for why they hire external consultancy firms:

*The consultancy firms have models and tools, rooted in economic theory, that helps us to speak the same business language and make more well-informed and analyzed investment decisions that is understandable for all parties. Without a common-ground, it becomes harder for our employees to be consistent in their line of work and minimize risk. Thus, providing both internal and external stakeholders with legitimacy during the entire investment process - Chief Financial Officer (M3)*

In this case, the external consultants influence the investment process with a theoretical framework, i.e. through their pre-constructed models and tools during the entire decision-making process, which they state will have a more profound impact on the final investment decision. Furthermore, the respondents state that the consultants support in incorporating and understanding rational investment models that will both structure the process, make it more efficient and support the company to take more well-grounded decisions, as well as educate the personnel. In relation, the Partner in Corporate Finance (C1), explain that they provide a universal framework to improve the understandings of the complexity in decision making, ultimately ensuring that every decision is risk-averse and strives towards maximizing utility. Additionally, all respondents claim their thought of rationality derives from working with extremely competent colleagues, having several years of experience within the industry, thus stating that industry experience is a vital part for creating rationality. Finally, their definition of rationality differs a lot depending on the contextual setting regarding the specific investment, but in general all respondents agreed upon that rationality derives from a structured series of processes leading up to the final decision.

The respondents in the investment sector perceive rationality as something produced in the investment process and that the process needs to be reiterated continuously in order to improve the structure. In this process, the respondents claim that they incorporate different economic models and measure their activities to benefit the yield of the investment. In that sense, the firms can throughout the process, exclude unnecessary events and minimize errors, making the chain more efficient:

*We have developed a comprehensive framework for our investment process, where the basics for all types of investments will be reviewed and analyzed, as well as more specific aspects. A commonly used program, that everyone recognizes and use is Microsoft Excel, which we construct and develop to match our specific setting. In this*



*case, we believe that the framework will prevent us from making basic mistakes and therefore minimize the risk of human error - Chief Financial Officer (I1)*

However, all respondents in company (I3) explains that a standardized investment process is problematic for them, since every investment is highly context dependent. Thus, the investment manager emphasizes on the importance of building a strong and dynamic investment team, that is adaptable to different investment cases, rather than only working according to a standardized investment structure. Furthermore, the respondents from company I2 states that if they are to produce rationality in the investment process, they need to have quantifiable goals and measurements in the process. So, by using investment tools such as; developed spreadsheets, financial analysis and business intelligence software, as well as continuously educating people involved in the process, the respondent states that this structure favor their perception of rationality and can be an efficient way to analyze the potential success of an investment. The Investment Manager in (I4) supports this notion and structure by explaining how they work with strategic investment activities:

*Rationality for me is to have quantifiable goals in the acquisition process and relate those goals to the overall strategy of the organization...by supporting that practice, we can continuously improve our investment activities and thereby more frequently make rational decisions - Investment Manager (I4)*

The respondent hereby explains a critical factor for making rational investments, where organizations need to have agile investment processes with quantifiable goals, rather than a standardized fixed procedure. In that sense, the respondent argues for an investment process where the investment managers and other actors involved in the investment, are the key influencers of the final decision, while the structure of the process should be seen as a rationality supporter.

However, there is a difference between how the respondents perceive rationality. In general, actors dealing with investment decisions in smaller investment firms such as (I1), describe a softer definition of rationality, in comparison to respondents in the bigger investment firms as (I2), (I3), and (I4). The investment processes in larger firms are more frequently based on sophisticated investment models and tools, since there is more information and data available to analyze. This stands in comparison to the process in smaller firms, where information concerning the investment object is limited, hence intuition and another approach to the due-diligence process, such as examining human capital and pre-stage business plans are seen as rationality carriers. However, it is generally explained that for a decision to be perceived as rational, stakeholders affected by the investment need to gain from the final decision, hence creating long-term relationships which generates overall value. If everyone benefit from the decisions made by the investment firm, the company will be considered as competent and reliable, which means that other competitive stakeholders will be more likely to continue their collaboration. Thus, this will favor rationality and utility maximization even in the future, as stated by the respondents.

Consequently, defining rationality in the investment sector, gives no coherent response, since every investment process may vary, but at the same time, there is an agreement on the necessity for creating a 'dynamic investment teams', in charge of making the final investment decision. Furthermore, the respondents explain that there might not be a universal team for every investment case within the firm and the team

can vary depending on contextual investment preferences and settings. This reasoning is further elaborated on by the Investment Manager in (I4):

*When we select the individuals responsible for the investment process, we consider people with various background, both in academics and in their professional life, as well as a proven track record...especially since we act in the private equity sector and all investments are somehow unique and enacted in different contexts -*  
Investment Manager (I4)

Rationality in that sense, is explained as allocating different competencies, i.e. combining individuals with a proven successful track-record in dealing with different investment cases. Hiring consultants, and other external experts with expertise knowledge in the specific investment object or sector, is also described as a way of addressing complexities and uncertainties in dealing with different investments.

The interviewed advisory firms have similar definitions of rationality and their view upon the subject can be described from an external perspective, meaning that they add another dimension for understanding the perception of rationality related to investment activities. Their business model builds on the concept of providing various consultancy services with the purpose of simplifying and supporting investment decisions for companies. The respondents in this sector, claim their role to be supportive in nature and to provide expertise knowledge for companies dealing with complex investment decisions. Hence, consultants work according to and provide their clients with, a well-structured process, where their contribution to rationality is measurable and strives to implement economic theory into practice. The consultants use known theoretical models taught in business schools and developed by researchers to engineer their product portfolio, and by doing that, they diffuse theory through their relationship with clients. Ultimately, the advisory firms believe that this will favor rationality in the investment processes, since their products are based on economic theories and business praxis:

*We provide entrepreneurs with methods, tools and other material supporting them to make a well-grounded investment decision. We also explain what effects an investment might yield and the corresponding risks...our aim is to put all the cards on the table and let them finalize the decision -* Partner, Accounting (C1)

This statement confirms the traditional role of consultancy firms, providing their clients with additional information promoting and strengthening the concept of rationality for companies working with complex investment activities. However, the final influence and impact of consultancy services varies depending on contextual business settings. Meaning that some firms rely more extensively on consultants, whereas others see their advices as second opinions and as something legitimizing their final decision towards external stakeholders, which is further outlined by the Director Corporate Finance in (C1):

*There is clearly a big difference in how clients make use of our products and advises. Some of them strongly use our recommendations, whilst others use us as a speaking partner and as a service that will legitimize their business actions...thereby making them trustworthy to stakeholders -* Director Corporate Finance (C1)

In that sense, the respondents from both sectors argue for that consultancy services are indeed useful and aids them in the investment process, providing sophisticated investment procedures, a common investment language and as a legitimizing speaking partner ensuring external stakeholders that the investment is sound and profitable. Furthermore, respondents perceive rationality as a process of continuously improving their services and tools, making them more adjustable to future decisions and to different potential scenarios. This will eventually prepare the models to cope with future investment complexities, as stated by Head of Accounting in (C1):

*It is hard to predict the future...therefore, rationality is more difficult to produce. Previous theories and models do not explain the reality anymore, thus a continuous improvement of processes and prepare for future scenarios are more necessary now than ever before - Head of Accounting (C1)*

The interviewees perceive the current business environment as highly volatile and hard to predict. Therefore the responding advisory firms feel the need to assume the role as a speaking partner and further develop their product portfolio, which make their services more suitable and adaptable to deal with market disturbances. Additionally, the consultants express a need to educate their clients in their usage of more advanced investment methods and tools provided by the advisory firms. Finally, they state that rapid technology development across industries makes it harder for them to produce rationality for their client's investment processes:

*We need to adapt to new strategies, products, services and new ways of thinking. The risk of making the wrong decision today is big, although the risk and the consequences of doing nothing is even bigger. Hence, it crucial to make investments to stay competitive and those decision makes it hard to define what rationality is - Partner Accounting (C1)*

The two advisory firms are clearly portraying an ambiguous picture where rationality is harder to define and therefore also to produce in the investment process. Rationality today is even more context dependent than before which is increasing the complexity of consultants' work and the usage of their services. Thereby, consultants structure the models according to normative economic theory, but also recognize the need to figure out how to make their models more applicable and reflexive to change. Due to the increased complexities and technology advancements, the time aspect today becomes highly important when engaging in investment activities. The importance of time is further supported by statements from the consultants, where they argue for that rationality today and in the future, will be highly correlated with the time-frame of an investment. In that sense, the advisory firms state that their clients need to take quicker decisions to stay competitive, thus highly structured and fixed investment processes, as mentioned by several respondents in both sectors, will be less effective and therefore possible excluded in the future.

### **Unfolding the Investment Process**

This section will outline the investment process in both industries as well as the external role played by advisory firms. Additionally, different categories of investments and factors underlying the investment decision will be illustrated, as well as how rationality is structured and eventually produced throughout the investment process.

### *Manufacturing firms*

According to the respondents in the manufacturing sector, the investment process is described in different sections, where the companies make use of proprietary in-house models and framework throughout the entire process. Furthermore, they work closely with an internal investment-board responsible for making the final decision, although the process of getting there is separated. Several teams within the companies are working independently in the value chain, striving towards maximizing value in each step. This means that experts within the firms are continuously evaluating the investment prospect and thereby structure the model to be more efficient and dynamic in dealing with changes in terms of market and technology development. Thus, the company in theory, benefits from a more qualitative chain where each step of the process is refined by experts which ultimately generate the best possible outcome. Additionally, teams are continuously having a dialogue with the investment-board on how to maximize commercial, financial and industrial value. This is described as a highly structured process, which is built upon previous industry experience and models created in-house throughout the years (e.g. Microsoft Excel is described as the most internally used program).

Moreover, the respondents explain that they make use of an economy monitoring system during the investment process, with the purpose of minimizing risk and human error. This system supports the firms to make use of different financial targets to facilitate the production of rationality and thereby profit maximization. Thus, they believe that their perception of rationality is supported by the systems constructed through industry experience and previous practices. Furthermore, by hiring graduates from business schools, the companies claim that they are exposed to economic theory, which will in turn affect their investment process. Additionally, external consultation provides various business theories through their pre-constructed methods, models and tools originating from academic research and previous best business praxis. In that sense, the respondents from the manufacturing sectors explain that advisory firms support their firms with measurability, trackability and in understanding future potential consequences of the investment, and thereby minimize risk and prepare for eventualities, hence supporting utility maximization in the final decision.

The general consent is that the manufacturing firms are becoming more process-oriented and therefore less adaptable to change. In that sense, the investment process becomes generic and more complex to apply to specific investments. However, the respondents in company (M1) describe their work with structuring new models and processes from previous experiences, which in turn are implemented on different levels within the company. The respondents consider this procedure to strengthen the adaptability in each unit. Additionally, these firms are heavily targeting economic profits as a basis for rationality and consider profit maximization as the ultimate form of rational behavior. The respondents explain when dealing with structured and process-oriented models, the flexibility is harmed and as a result the company fails to manage quick and necessary investment decisions. However, the respondents reflect on another important factor affecting rationality in decision-making, i.e. the need for staying competitive. On this subject, all firms agree that some investments, e.g. invest into innovative solutions is essential, but may not yet be profitable. This can be illustrated by an example from the Chief Financial Officer in (M3), stating the need for investments into complex innovative solutions, even though it is not profitable for them at the time. Despite that, it is deemed crucial for the brand image and the

respondents describe this as something forcing them to make irrational investments. This is described as a ‘follower-strategy’, where firms examine competitors before deciding on how to act, thus affecting the rational behavior.

### *Investment firms*

The investment process for the responding firms are similar in the investment structure, however they tend to focus on different key factors before making the final decision. This is a result of the investment strategy and the characteristics of the investment object, as described in the methodology chapter.

The following section will outline the general investment process (see Figure 2), for the responding investment firms:



Figure 2. “The investment process”. A process emerged from the empirical findings.

During the entire investment process, the firms have quantifiable goals in every step with the purpose of continuously evaluating the process and favor rationality in terms of minimizing risk. This enables the companies to frequently evaluate the investment object, thus minimizing the risk for making a disfavorable investment. This is exemplified when respondents mention the importance of scenario planning and that scenario planning allows the firm to evaluate different strategies and continuously re-evaluate their investments, which is further explained by the Investment Manager in (I1):

*By creating scenarios and continuously evaluate our investments we always learn how we can develop our investment strategy and improve our investment selection process, thereby we create a ground for rational decisions to be made and therefore have a bigger accuracy in making profitable investments - Investment Manager (I1)*

Thus, the respondents state that in using scenario planning as a tool in the investment process, will help them to establish a forum for discussing different potential investment outcomes, such as risk detection and future management of the investment object. However, a downside in using this activity according to all respondents in (I3), is that this is usually quite time-consuming and therefore, in some cases, have a negative effect on the time-frame of the investment.

Furthermore, all the respondent companies make use of management reviews, expressed as ‘Human Capital Due-diligence’. The Partner in Human Resources (C2) explains that this procedure evaluates and identifies key personnel deemed vital for the future success of the firms. Moreover, it is necessary for the investments firm in an early stage to be able to evaluate the management in the investment object in order to ensure less operational involvement for the investment firm in the long run, so they instead can focus on the strategic development. The Investment Director in (I4) states that they want to create a long-lasting relationship with the management to favor the trust-relationship and the ability to co-operate in the business development phase. In contrast to the human capital due-diligence, all the respondents present the financial due-diligence process as not as important, and only as a tool to validate the investment. Rather it is about finding a quality investment object with a great business plan in a sector displaying a positive trend, as well as having a good management

team capable developing the company further. In other terms, seeking long-term investments that are benefiting all stakeholders are seen as acting in a rational manner. Moreover, both the CEO and the Investment Manager in (I3) state that by following this investment structure in each case, the investment managers can early on evaluate the future business potential of the investment object. This in turn is explained to increase the success ratio of the investments, by continuously evaluate and improve the model for the investment, making it more efficient and cost-effective. Furthermore, external consultancy services are used in the due-diligence process and in this process, consultants contribute with both expertise knowledge, crunching numbers activities and acts as a verifying second opinion to stakeholders. These consultancy services are further described by the Investment Manager in (I2):

*When we initiate an investment process, we always consider to hire external advisory services from the big consultancy firms. This can help us to verify our results and handle some of the work in our due-diligence process...which is usually very time consuming. Even if we have the capability of doing it in-house, we use consultants to minimize the time-aspect - Investment Manager (I2)*

Again, this statement shows the importance of time in the investment process. The respondent clearly explains the need of hiring consultants to reduce the time-span of the investment process. Moreover, the investment process can somehow be influenced by the educational and professional backgrounds of the employees, since the investment professionals in the responding companies are mostly recruited from the big American advisory firms, as stated by the Chief Financial Officer in (I1). Consequently, the respondent illustrate that the investment process is therefore more likely to influence and alter their perception of rationality.

The idea of Human Due-diligence is further demonstrated as important by Company (I1), which is characterized by investing into smaller and more immature business ventures. Their valuation models is different since there is less financial data to examine and the investment process will therefore incorporate other important factors compared to investments in more mature businesses. The lack of financial data, and the uncertainty of future market success, shifts focus towards a softer and more humane approach, where the main basis for an investment decision derives from evaluating the human capital:

*For me, the team is the most important factor. A great team with a bad product can succeed, but a bad team with a great product will most likely fail. Additionally, there is less financial data available for us, which is increasing the need for looking the team behind the investment object – Business Developer (I1)*

Following that statement, the firm describe that they use a set of corresponding factors related to the investment process. Firstly, all the individuals in the investment team have different complementary business backgrounds, which enables the firm to make professional and well-grounded decisions. It also enables the organization to successfully invest into a variety of markets, since the investment team have a diversified skill-set and knowledge base, which is also contributes to spread the risk in the investment portfolio. Secondly, they rarely invest alone in immature and early-stage businesses, rather they tend to share ownership with other investment firms. In that sense, they use other investment firms to validate their decision, and by this increase the flow of information and minimize the possible down-side of the

investment. Thirdly, as a proactive measure, the firm travel abroad to find inspiration for making their own investment process more reliable and efficient, e.g. trips to Silicon Valley, or more specifically, the 'Nordic Innovation House'. As a result, they demonstrate that best market praxis related to investment decisions will be diffused and thereby influence the models and tools used in the Swedish investment sector. Finally, after the investment decision, the investment firms provide their investment object with their own expertise personnel, both legal and financial support to further develop the investment object and maximize the utility of the investment.

In summary, rationality as described in normative economic theory is often deviant from the practical experiences and definitions of the respondents. This gap, derives from different aspects such as; contextual setting, technological development, individual actors (educational background and professional experience) and their interaction with non-human actors (decision-making tools), which together affect how they perceive rationality. The tools and models presented earlier in the empirical findings have a role in producing rational decisions, and in guiding the actors to make rational investments. However, the current business environment is getting more complex and the models can no longer, in their intuitive ability, solely explain and predict the business reality. Consequently, it is interesting to present and review how different models and tools engineers an alternative view of rational decision-making. In that sense, rationality can vary in each investment and therefore increase the relevance for examining how rationality is engineered and adapted in its explicit context. It is intriguing to deepen the discussion regarding how these factors together perform rational decisions and to question the norms of rationality for investment decisions.

## **Discussion & Analysis**

### *The Genesis of Making Rational Investment Decisions*

In the manufacturing sector, the investment process is described as a value-chain where various specialized teams operate in different steps of the chain. Thus, experts in each team, and step, evaluate and develop the internal investment model to be more intuitive and dynamic towards other internal business units. In that sense, using economy monitoring systems, and a close discussion with the investment-board, as described by the respondents, supports the institutionalization of rationality throughout the company and facilitates a common language for understanding their perception of rationality. Boltanski & Thevenot (2006), state that tools and practices embed actors with rationality, hence actors inhabit a daily routine where rationality is made into a convention (Cabantous & Gond, 2001). This is an important step to create a common language, and ground, for making rational decisions, which further supports the conventionalization process of rationality within the manufacturing firms (Cabantous & Gond, 2011). Altogether, rational decision-making involves scholars, organizational actors and consultants, who foster and spread rational decision-making through their relationships, and as a result, fabricating rational decision-making as a commodity. The commodification of rational choice theory is strengthened when academics create and develop tools, where theory is translated and integrated, which in turn will support organizations to process and facilitate rational decision-making (Keefer et al. 2004). This is a process continuously practiced by the manufacturing companies, where they make use of external advisory services in their investment processes, which in turn can be seen as purchasing rationality as a commodity. This process of institutionalization is further supported by the interviewed advisory firms,

who provide business theories and practices through their pre-constructed models and tools to their clients. By frequently making use of these methods in the investment process, the engineering process of rationality is evident for the responding companies. Moreover, the manufacturing companies tend to implement the models in 'good-faith', since they acknowledge these procedures to have a significant positive and beneficial impact on their investment activities. However, these procedures cannot guarantee a successful investment outcome and can therefore potentially have a counter-performative effect on the expected value of an investment. In that sense, these processes of conventionalization rationality can negatively impact the level of success for an investment, since the performative process will embed actors with a sense of rationality as fixed, and not adaptable or susceptible to change (MacKenzie, 2007). In contrast, for the investment firms, the investment process is recognized as a guiding praxis, which in combination with diversified investment teams, results in a more adaptable decision praxis. Additionally, the investment firms tend to more frequently re-evaluate their investment strategies. As a result, they create a forum for re-evaluating and discussing rationality, which can be seen as the institutionalization of their perception of rationality in a structured manner.

Furthermore, all investment teams heavily rely on different tools and heuristics techniques for simplifying their decision-basis, but also to help them to understand and solve complex investment problems (Bazerman 2005; Kahneman et al. 1982). Generally, the investment teams have been developing and remodeling their own support systems which is then passed on to new co-workers. As an example, Microsoft Excel are the most commonly used program by the responding firms, and assist the investment actors through a wide range of different business intelligence activities. As a result, decision makers' experience in and usage of these programs, further diffuse their perception and understanding of rationality. Moreover, the manufacturing companies make use of an economy monitoring system during the investment process, and this system supports the firms to make use of different financial targets to facilitate the production of rationality. Hence, the diffusion of theory can be ensured throughout the investment process by the systems constructed through industry experience and previous praxis. In contrast, the investment firms have a different approach to internally developed systems. Instead, they focus on dynamic and interactive models and tools, which enable the investment teams to easily adapt the systems to each specific investment case. Another important procedure for the investment sector is the usage of scenario-planning modeling, where traditionally four different scenarios are reviewed and by this, the investment team can test the stress-level of a potential investment. In that sense, the investment firms are generally more 'project-oriented', while the manufacturing firms are more 'process-oriented', where they tend to not adapt investment practices to each specific investment case. This project-oriented support structure enables the investment process for the investment firms to be more agile and proactive, which is favouring rationality in its explicit investment context where organizations can more frequently make rational investment decisions. Following that, it is quite clear that companies and the people working with investment decisions, need the interaction between professionals and non-human actors, such as decision-making tools, if they are to make rational decision theory performative. An interaction and praxis, further supported by Clemen & Reilly (2001), Hodgkinson et al. (1999) and Kjellberg & Helgesson (2006). By relying on these tools, managers can overcome their limited cognitive capacities according to Clemen & Reilly (2001) and Hodgkinson et al.



(1999). In that sense, the devices, originated from rational choice theory, will engineer rational choice theory into a social reality that is accessible and useful, which potentially will play a crucial role for making rational investment decisions. As a result, the human actor together with her tools, can guarantee the reproduction of a context where decision makers more frequently make rational decisions (Cabantous and Gond, 2011). Subsequently, making economics performative requires both theory and its practical environment (Callon 1998, Ferraro et al. 2005). The engineering process is supported by interaction between human and non-human factors and provides rationality to a whole spectrum of organizational actors by materializing the underlying principles of rational choice theory (Orlikowski & Scott, 2008).

#### *External Consultation*

The need for financial- and decision-making models to be more adaptable and applicable, shifts focus towards the role played by advisory firms. Advisory firms operate in wide range of different business context and are exposed to various investment dilemmas on a regular basis, and therefore inhibits a profound and expertise knowledge in how companies should act in different investment procedures and contexts. Furthermore, consultants have an important role in supplying a range of different methods and tools to support companies' investment activities and make them more applicable to reality. This assumption is supported by Clark & Salaman (1998), where the authors argue for the important role played by external consultants in supporting investment practices by convincing the clients of the quality and contribution of their consultancy services. By conventionalization rational decision-making, practitioners, in this case consultants, can forward it to managers and organizations as a commodity (March, 2006). In that sense, consultants reinforce the prerequisite to implement a normative rational approach to decision-making, thus having a real impact on their clients' investment processes (MacKenzie, 2007). Thus, consultants provide different strategy- and decision-making tools, supporting the practices they implement, which in turn strengthen, or even ensures, a diffusion of rational choice theory in the performativity approach. In turn, this can be explained as an engineering process of rationality, where the fit of the investment process will gradually be improved as the model exert a performative effect when practiced (MacKenzie, 2007).

Furthermore, the decision makers can overcome their limited cognitive capacity with the help of decision-making techniques and tools (Clemen & Reilly 2001; Hodgkinson et al. 1999), provided and implemented by the interviewed consultants, strengthening the 'barnesian' performativity effect. In that sense, making theory performative requires both theory and its practical environment, i.e. actors and the decision-making tools connected to the investment (Callon 1998, Ferraro et al. 2005). However, the empirical findings points to another conclusion where it is becoming more difficult for external consultants to efficiently apply their traditional models and techniques into practice. The responding advisory firms confirm an increased complexity in supporting firms in their investment process and therefore require a more customized approach if value is to be created for their clients. This phenomenon potentially derives from using outdated models and tools as basis for investment activities, as these fail to explain and predict the complexity of both the current and future market shifts. Consequently, in the current volatile market where the future is hard to predict (Strategy&, 2017; EY, 2016), methods and tools provided by consultants, might have a 'counter-performative' effect on the investment decision,

meaning that they can in fact decrease the level of rationality in the investment process (MacKenzie, 2007). Additionally, MacKenzie (2007), states that when organizations strictly implement models and frameworks that are detached from reality, they run the risk of getting a counterproductive effect on the implemented subject, which in this case is rationality.

### *The fall of theories and the rise of heroes?*

The difference between theory and practice has been outlined in previous studies and the variation is explained as firms not having the ability to use sophisticated investment-tools, and are not putting enough resources to improve this (Sandahl & Sjogren, 2005). In that sense, it is essential for both investment actors and advisory firms to fill the gap between theory and practice through constructing their 'Toolbox' to be even more performative, i.e. adaptable to each specific investment case by the relationship between theory, actors and tools, but also in tutoring the investment teams in their ability to make sense, and use the tools in an efficient and professional manner. According to Austin (1962), performativity does not just describe reality, but also has the ability to construct it. For it to become a reality, there is a need for an agreement between the setting, actors and the audience regarding their roles and how to develop new practices. Thus, the relationship between actors and tools creates a common ground for theory, which will increase the probability for 'barnesian' performativity (MacKenzie, 2007), resulting in that the actors' perception of rationality will be implemented and ensured in the investment process.

The perhaps most critical perspective on the concept of making decision-making performative, refers to when the influence of economic theories becomes too strong and therefore part of constructing the business reality for an industry. In that case, theory creates the contextual settings, but also the market conditions for the industry actors, which can potentially lead to big market failures. Thus, economic theory becomes real and part of shaping the practical commitments of the professional actor. This is related to one of MacKenzie's (2007), most famous studies of the Black-Scholes-Merton formula, who showed how the formula for option pricing was used in transforming the economy in order to make the formula more 'real'. In this case, the fit of the formula was gradually improved as the model exerted a performative effect when used, which eventually led to massive market failures. In other words, the actors implemented, and acted upon the model, and in that sense, the model created the reality for the entire field of option pricing during this time. This notion makes it evident that theory drives practice and can have a performative effect, either positive or negative, which is supported by Kjellberg & Helgesson (2006), who state that different tools, theories and models may be involved in shaping a market. Again, it points to the importance of education in the investment process, the creation of a shared investment language, and flexible tools, connected to business reality that is favoring each investment case.

As emerged from the empirical findings, normative economic theory studied in business schools, are diffused through models and tools as a commodity by consultants, as well as internally developed by investment actors within organizations. However, these theories and models partially fail to deliver a reliable and adaptable investment structure for decision-making. As a consequence, organizational actors tend to abandon these models and techniques. In that sense, it becomes harder to rely on previous investment practices and models, and as a result, rational investment decisions as a performative praxis could be discarded. In this case, external factors

such as digitalization, increased competition and shorter business-cycles, increases the need for making quicker and more efficient investment decisions in order to stay competitive. Orlikowski & Scott (2008), exemplifies this by arguing for that the influence of technology is increasing in a social setting, as well as in its daily interactions between users and technology. Furthermore, Callon (1998 p.2), make use of the phrase: *'economics in the broad sense of the term, performs, shapes and formats the economy, rather than observing how it functions'*. By this, he refers not only to economic theory, but also to human and non-human actors such as; people, technologies, procedures, and tools, that together influence investment practices. Accordingly, investment professionals continuously need to develop these tools to be more more adaptable to context and different investment scenarios in order to have a real performative effect. Otherwise it could potentially have a 'generic' performative effect, or even be 'counter-performative', if not applicable to the specific investment case of the company, as it will fail to support the production of rationality (MacKenzie, 2007). Therefore, it is vital to resolve and focus on the individual actor connected to the investment decision, since they have an extremely vital role in the creation of rationality for the investment process. This reasoning supports the praxis of building strong and dynamic investment teams, a common practice mentioned by several of the responding companies, particularly in the investment sector. Furthermore, the respondents claim that they can make use of consultants to support their business activities and therefore increase the level of diversity in the investment teams. Hence, the role of consultants, and the need for their services, will vary depending on industry context and by the professional backgrounds of the actors in the investment teams. By using consultants, the duration of due-diligence activities, and structuring information connected to the investment case, will rapidly decrease. Therefore, organizations could be enabled to make quicker decisions and be better equipped to handle complexities and uncertainties that are characterizing markets today. The 'best practice', and the theoretical knowledge, is embedded within the actors, which is improving the foundation of making a rational investment decision capable of dealing with different scenarios on a more frequent basis. In that sense, it is evident that the power of teams, and their composition, could be a key success factor for making rational investment decisions in the future.

In shifting focus from a theoretical framework towards the action of the individual actor, heightens the need for companies to further increase the evaluation of human capital. It is a softer, and perhaps a more complex evaluation, which increases the demand for specialized advisory firms' who are experts at conducting human resource due-diligence. Through this process, the respondents believe that they can ensure the required expertise in every investment case. In addition, Lyotard (1979), states that being 'performative' is related to the result of process input-output. In other words, performativity emerges because of something being produced through performances (Lyotard, 1979), again it is important to comprehend and evaluate the actions of the specific individuals. Furthermore, Butler (2010), advocates that a practice needs to be repeatedly performed to make a practical change. The performing of certain practices helps to legitimize actions and meanings, thus the notion of what, rational decision making might be, or what grounds to decide, changes only slowly over time. In order to legitimize and actively work sustain the relationship between human and non-human actors, it is essential to build a bridge between theory and practice, where actors continuously repeat the actions that is most likely to generate a favourable investment decision. As a support, organizations can build a performative

framework that does not force actions, but rather provides a structure, and guidelines in how to produce, and sustain a framework for rational investment decisions.

## **Conclusion**

The purpose of this paper was to present and provide insight into how organizational actors from the manufacturing and investment sector, engage and relate to rationality in their investment processes. This was done by using a performative approach to decision making, where the responding companies describe their investment activities and how they work to reinforce a structure enhancing successful investment decision. By including the perspective of and role asserted by external consultants in their effort to engineer rationality for their clients, provided this paper with a unique level of unbiasedness and added another dimension in our understandings of how companies in both sectors work and relate to rationality in their investment activities.

Globalization is one of the major forces driving rapid market changes for companies where technology and digitalization revolutionize industries and force companies to adopt new business praxis. The results present some evidence in that it is becoming more difficult for companies to discount the future benefits and success-rate of investments. As a result, a paradox appears when investment activities both requires more extensive information gathering and analysis, as well as a shorter time-frame in the investment process in order to stay competitive. This in turn, increases the complexity, and challenges the usage of and compatibility of previous successful models and techniques. Furthermore, methods traditionally used as basis for investment decision-making are ignored by managers, when they are assumed to not be able to handle the complexities of reality and therefore counteract current fixed strategies. In that sense, traditionally used models can be too complicated, misleading and are therefore sometimes ignored, or less able to predict market shifts. Thus, potentially provide an incorrect forecast of the future, which in turn can lead to cases where investment actors make misguided decisions based on outdated, yet successful theories of the past. This points to the conclusion that theories have the power to evaluate the current and the past, but fails as a supportive and explaining tool for future investment cases

Therefore, it is vital to focus on the development of 'up-to-date' investment models, capable of dealing with contextual differences, and shorter time-frames for the investment process, as well as the ability to handle big data flows, e.g. by developing advanced business-intelligence systems. Additionally, these systems have to be intuitive and user-friendly, in order to have a practical impact. As a result, companies gain the ability to collect, analyze and efficiently use big data-sets, and therefore able to make more accurate investment decisions. Furthermore, assuming that organizations follow a strict unagile investment structure, economic theories and traditional models will continue to struggle to exert a performative effect on investment praxis. In that sense, the investment process should be regarded as a guiding praxis, rather than a fixed procedure, thus it needs to be adaptive to specific cases and engineered by investment professionals and not solely structured according to the theoretical assumptions that fails to explain the business reality. In that sense, a project-oriented structure is more appropriate to enable the investment process to be more agile and proactive. In turn, decision makers can decrease the time-frame of the investment process by excluding unnecessary events and adjusting the investment praxis to each specific investment case.

Furthermore, the results show that the professional background and individual competencies are highlighted as major contributing factors for the investment process. In that sense, the investment team should be composed deliberately out of individuals with various industry backgrounds and skill-sets. A diversified team will enable firms to handle complexities and perchance make more well-grounded investment decisions in the long-run. Thus, in order to ensure rational decisions, the human due-diligence processes should be regarded as a praxis contributing to the long-term yield of the investment. Consequently, highlighted as a potential future successful praxis in the quest to substitute traditional models in the pursuit of rationality in the investment process. In fact, investment activities, according to the findings, tend to emphasize more on the 'investment team', and the importance of the 'individual actor' connected to the investment case, rather than build upon rationality in the traditional theoretical sense. Finally, to support the performative effect of rational decision-making, external consultants have an important role to fill, since they generally have extensive information and practical knowledge from their previous working-relationships with clients in all types of industries that are facing complex investment decisions. 'The Consultancy Toolbox' needs to include additional attributes that can be adaptable for the explicit context if it is to be successful in its usage and have a performative effect. In that sense, the consultant could be seen as the ideal actor in spearheading the development, education and integration of these systems and models, as well as supporting in the implementation process.

To conclude, the gap between economic theory and practice, when it comes to investment decision-making, remains ambiguous, and the results of this paper could indicate a decline in the importance and usability of economic theories and models for investment activities. Instead the results points to the importance of the individual actor working with investments, which is reflecting the origin of this study - *The fall of theories and the rise of heroes*.

#### *Future Research*

As discussed, the relationship between actors, theory and tools, and more specifically the investment process at the studied companies, highlights how rationality is made sense of and how organizations work to produce rational decision-making as a praxis, thus aids in answering our research question. However, these findings cannot fully explain the gap between theory and investment praxis. In order to substantiate the level of relevance of the results, additional research in other industries, contextual settings and factors related to investments are needed in order to fully grasp how theory and practice interrelate in the search of rationality in decision making. By doing this, researchers can further study investment practices and investigate if theoretical assumptions are in fact declining in importance on a broader scale and across different industries. Consequently, the study may contribute to a broader discussion on how and why economic theories, especially normative decision theory, becomes less important and might lose in practical relevance for the entire field of decision making. Moreover, due to the increasing relevance of the individual actor and the team composition, further research is needed on the human due-diligence process, as well as how to structure investment teams efficiently. Finally, this paper, inspire a further discussion on how rationality can be efficiently and accurately produced in the investment process for organizations operating on a globalized market.

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