Bachelor Thesis

To what extent is the utilization of Effectuation or Causation reflected in the turnover by starting/novice entrepreneurs?

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ABSTRACT

This research paper was conducted in order to identify possible implications the utilization of the causation and effectuation approach have in respect to a newly established company's success. Therefore, this paper heavily relies on Sarasvathy's work of the identification and clarification of the effectuation and causation approach. On the basis of a survey, which was send to approximately 2000 novice entrepreneurs in Germany, the results indicate that the effectuation approach is not a superior method in establishing a successful new business compared to the causational approach. The causational approach, however, also shows no signs for establishing a more successful venture than the effectual approach. Furthermore, this research displays the fact that both approaches potentially have a big influence in the performance of a company, but are not the only determinants for a successful business.

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Keywords

Causation, Effectuation, Startups, Decision-making, New venture creation, Business establishment

1. Introduction

In today's world economy, each year many businesses are being established and the amount of new businesses increases (Fairlie, Morelix, Reedy, & Russel, 2015). According to Fairlie et al. (2015), the amount of newly created ventures by entrepreneurs increased from 0.28 percent of the adult population (equivalent to 280 out of 100,000 adults) in 2014 to 0.31 percent of adults, who established a new venture, in 2015. However, not all of those new businesses will survive and become success stories. In fact, nine out of ten startups will fail in becoming successful ventures (Patel, Forbes, 2015). This raises the question of what the differences are between the ten percent of well-operating startups and the ninety percent of those who cannot stay competitive and thus, finally fail.

One plausible explanation for the variation in successful and failed organizations is the difference in the entrepreneur's willingness to pursue his / her idea and opportunities, once they emerged (Shane & Venkataraman, 2000). With regard to Patel (2015), there are two main elements, which will affect the startup's success or failure. The first element is the suitability of the startup's product for the intended market. This means, if the startup's product does not fit the requirements or demands in the market, it is likely for the company to fail. The second, and more relevant element for this article is the entrepreneur's knowledge and handling of business operations, meaning all internal business processes and aspects, which are necessary to maintain a well-functioning company. In other words, the second element argues that the startup's success depends on the entrepreneur's ability to manage and make decisions. With regard to decision-making, it is further argued that *"when members of a firm become overly passive or decline to take risks or exercise creativity in order to capitalize on a market opportunity, they run the risk of losing the entrepreneurial edge"* (Lumpkin & Dess, 1996, p. 163). Hence, making decisions, on which the company and its employees are heavily dependent on, is assumably one of the most important tasks for entrepreneurs and company founders. Therefore, La Pira (2010) argued that there are two main approaches to entrepreneurial decision-making, namely an intuitive and rational approach towards decision-making. This concept of decision-making will be further discussed in the next section of this paper.

A widely accepted definition of an entrepreneur is that *"an entrepreneur is a person who recognizes opportunities and creates organizations to pursue it"* (Bygrave & Hofer, 1991, p. 14). However, the definition of entrepreneurs does not entail a precise description of the meaning of 'recognizing opportunities'. Does this mean that an entrepreneur is waiting until a promising opportunity comes along? Or rather that an entrepreneur plans and evaluates his / her resources beforehand in order to take on an opportunity? Those two approaches of strategically managing a business are reflected in the concept of effectuation and causation. An entrepreneur, who pursues the causational approach, starts by determining the goals and objectives first, before he / she evaluates different means to achieve those goals (Sarasvathy, 2001). This approach is highly regarded due to the fact that it is *"a systematic, prediction-*oriented, and formal approach, [which] leads to superior venture performance"* (Brinckmann, Grichnik, & Kapsa, 2010, p.24). In contrast, when following the effectuation approach, an entrepreneur will start by identifying his / her available resources, such as the entrepreneur's financial capabilities, in order to agree on the final outcome (Sarasvathy, 2001). This concept of effectuation and causation and the entrepreneur's decision to pursue one of both, according to the literature, can be linked to the success of the company (Nelson, 2012).

Even though there is little existing research about the effectuation approach before the year 2001 (Sarasvathy, 2001), the existing literature is mostly focused on the entrepreneur's *"person-specific determinants"* (Van Praag, 2003), his / her satisfaction and perception of the company's performance (Nelson, 2012). However, the company's actual operational success, in terms of generated financial earnings, was rather neglected. Furthermore, on the one hand, scholars criticized this approach and labeled effectuation as *"a proposed new theory of entrepreneurship, with insufficient empirical testing and critical analysis"* (Arend, Sarooghi, & Burkemper, 2015, p. 630). Additionally, Arend et al. (2015) argued that in order for the effectuation approach to be considered a more successful practice than the causation approach, it needs to create any kind of advantages, which cannot be created through the utilization of the causation approach. On the other hand, scholars support the effectuation approach due to its questioning of widely accepted believes, thoughts and assumptions in order to start a new venture (Perry, Chandler, & Markova, 2011). Moreover, due to today's fast changing environment, which highly influences the entrepreneur and thus, his / her decision-making, it may be a more advised decision for an entrepreneur to follow the effectuation approach, rather than the causation approach (Harms & Schiele, 2012). However, even though in today's world economy it might be more applicable to use effectuation, Nelson (2012) identified in his work that the connection between a successful company, and thus a satisfied entrepreneur, and the utilization of the effectuation approach is not existent.

Due to this gap in literature, the article will intensively examine the following research question: ***To what extend does the startup's success depend on the entrepreneur's decision-making to establish his or her company on the basis of the effectual or causational approach?***

The following research investigates whether the entrepreneur's strategic approach towards the utilization of effectuation and causation in order to establish a business will influence the overall success of the company. Moreover, it analyzes whether one approach is more likely to generate a business's success. Additionally, the article will provide a basis for future comparisons between different cultures, in order to examine whether the utilization of the concept of effectuation and causation has different outcomes or successes in different environments.

1.1 Research Goal

The intention of this research is to provide entrepreneurs and future entrepreneurs with the answer to which approach – effectuation or causation – has a higher likelihood of generating a successful business. Therefore, the article will mainly focus on the companies' generated financial outputs with regards to the entrepreneurs' chosen approaches. Obviously, literature exists about the usage and effectiveness of the effectuation and causation approach, but those were mainly focused on the entrepreneur's "*person-specific determinants*" (Van Praag, 2003) and the company's longevity (Van Praag, 2003; Headd, 2003).

Concluding, this research intends to provide a clear answer of which approach is better to be used in order to start a business with high potential to generate success. Thus, this research will be a contribution to the already existing literature with regards to the concept of effectuation and causation.

2. Theoretical Framework

The following part of the research paper will examine multiple conducted researches with regards to the causation and effectuation approach. Within this paper's segment, definitions and explanations are provided in order to highlight the most important aspects of this concept. Furthermore, this part also contains theoretical definitions and explanations of how a newly established venture's success or failure is determined, as well as a potential linkage to the concept of effectuation and causation.

2.1 Effectuation and Causation

In order to start a new venture, one or multiple persons have to have an idea or see an opportunity to start a business. These people are commonly referred to as entrepreneurs. "*An Entrepreneur is someone who perceives an opportunity and creates an organization to pursue it*" (Bygrave & Hofer, 1991, p. 14). Moreover, Bygrave and Hofer (1991) state that the process of becoming an entrepreneur entails much more than simply adding a new company to the industry. In contrary, according to them, by becoming an entrepreneur and establishing a company, the external environment is majorly affected from being without this company to a new state, which entails the firm. In addition, it may be possible that, with the establishment of a new venture, the start of a completely new industry is created.

However, in order to achieve the creation of a new industry, reshaping the external environment, or simply starting the new venture, the entrepreneur has the obligation to render multiple decisions. Nevertheless, this research is less focused on the final decisions made by the entrepreneur, but rather on how the entrepreneur arrived at those final decisions. Therefore, according to La Pira (2010), two approaches are highly discussed, namely the rational decision-making approach and the intuitive approach. The rational decision-making approach is the most common and known approach, due to the fact that most MBA university lecturers teach rational decision-making over an intuitional one in their lectures (Sarasvathy, 2001). Thus, with regards to the entrepreneur, the rational approach is closely linked to practices like creating business plans and financial analysis systems (La Pira, 2010). On the contrary, intuition is regarded as "*the ability of an individual to access stored knowledge and or experiences in their subconscious mind*" (La Pira, 2010, p. 4). In other words, intuition is an individual's sense or feeling towards a specific situation or object, which lets the entrepreneur decide upon his / her instinct, which can be commonly referred to as gut feeling.

When contemplating the aforementioned definitions of intuition and rationality, one can identify similar traits from a relatively new concept in the literature of entrepreneurialism, namely the concept of effectuation and causation towards business creation. Therefore, the similarities are between the causational approach and the rational approach, and the effectuation approach and the intuitional approach to business creation.

The causational approach to business creation takes "*a particular effect as given and focus on selecting between means to create that effect*" (Sarasvathy, 2001, p. 245). This means that the entrepreneur determines the startup's goals and objectives in advance, before the processes and means are defined in order to achieve those goals (Sarasvathy, 2001). Furthermore, the causational approach, according to research, is closely linked to the planning school due to its definition of being a formal and systematic approach, which utilizes predictions to generate the best possible outcome for the venture (Brinckmann, Grichnik, & Kapsa, 2010). However, according to Sarasvathy (2001), the effectuation approach is better suited to deal with uncertainties than the causational approach, due to its reversed approach, which starts by taking "*a set of means as given and focus on selecting between possible effects that can be created with that set of means*" (Sarasvathy, 2001, p. 245). Furthermore, Sarasvathy (2008) implies that the effectual approach is mostly used by expert entrepreneurs, with much working experience and knowhow. This approach of effectuation was linked to the school of learning, which has its "*focus on learning, strategic flexibility, and controlling resources, especially when facing high degrees of uncertainty*" (Brinckmann, Grichnik, & Kapsa, 2010, p. 24).

In order to differentiate between the two approaches of causation and effectuation, five principles were created (Sarasvathy, 2001). The first principle is the differentiation between 'Affordable loss' and 'Expected returns'. This means that entrepreneurs, who favor the causational approach, are eager to select the best strategies for the purpose of maximizing the financial returns. On the contrary, utilizing the effectuation approach, entrepreneurs evaluate the potential loss, which is still acceptable for the firm, and make use of experimentations

and various strategies to gain multiple options in the future.

The second principle, by Sarasvathy (2001), is the differentiation between 'Strategic alliances' and 'Competitive analysis'. Within this principle, on the one hand, the causational approach focuses on the competition and entails detailed benchmarking analyses. On the other hand, the effectuation approach seeks to reduce uncertainty as well as the industry's conditions of admission by establishing strategic alliances and cooperate with stakeholders.

Sarasvathy's (2001) third principle differentiates between 'Exploitation of contingencies' and 'Exploitation of preexisting knowledge'. This differentiation states that if a company's main source of competitive advantage lies in the preexisting knowledge of the entrepreneur, probably the best decision is to make use of the causational approach. Whereas, the utilization of the effectuation approach is advised when facing contingencies, which are not visible at first, but emerge over time.

Fourthly, the next principal, by Sarasvathy (2001), differentiates between 'Controlling an unpredictable future' and 'Predicting an uncertain future'. This principle describes the most basic differentiation between the two approaches, namely the logic, which initiates the corresponding actions from the entrepreneur. The causational approach follows the logic of: "*To the extent that we can predict the future, we can control it*" (Sarasvathy, 2001, p. 252), and thus, focuses on predictable facets of an uncertain future. On the opposite of the causational logic, the effectuation approach follows the logic of: "*To the extent that we can control the future, we do not need to predict it*" (Sarasvathy, 2001, p. 252). Hence, the effectuation approach focuses on the controllable facets of an unpredictable future.

In addition to those four principles, Sarasvathy (2001) indicated the existence of an underlying basis for the differentiation of effectuation and causation. This basis was the differentiation between 'Means' and 'Ends', which she clearly referred to as the fifth principle in her work of 2008. Within this differentiation, Sarasvathy provides the drivers, which are associated with the respective approaches. With regard to the effectuation approach, an entrepreneur choses strategic decisions on the basis of supporting his / her mean-driven actions. On the contrary, an entrepreneur, who chooses the causational approach to business creation, focuses on achieving his / her preset goals by the utilization of multiple pathways. Therefore, this approach is also labeled as a goal-driven approach.

2.2 Success and Failure in Business Ventures

The term 'success' is a widely used term, which has many definitions and has different meanings to different people in different situations. However, the amount of meanings and definitions will decrease when one tries to define success with regard to businesses and startups. One definition of business success is "*the longer one can survive and prevent involuntary exit, the more successful one is*" (Van Praag, 2003, p. 1). In other words, a business's success is defined by its duration of survival in its respective market. Nevertheless, research indicates that not all businesses, which closed their gates, were unsuccessful during that time of closure (Headd, 2003). More precisely, Headd (2003) argues that only thirty-three percent of the closed businesses are considered unsuccessful. He further states that the factors, which lead to a business survival, are the size of the company and its resource indicators, such as the number of employees, the starting capital and the entrepreneur's educational background. As stated by Headd (2003), the entrepreneur's abilities are an important factor, and it is suggested, "*that entrepreneurial performance is almost always confounded with firm performance*" (Sarasvathy, 2008, p. 123). This explanation sounds plausible, since a company would not be able to perform well and survive in its industry when the head of the firm acts irresponsibly or poorly. However, other scholars also conducted researches about the success or failure of new and established ventures. As, for example, David Beccarini (1999), who regarded the creation of a new company as a single, but huge, project. He stated that the success of a project (or new venture) is determined by two factors. One, the 'product success', which represents the effects the company's final product has on the company. Second, the 'project management success', which refers to "*the project process and, in particular, the successful accomplishment of cost, time and quality objectives. It also considers the manner in which the project management process was conducted*" (Beccarini, 1999). Moreover, scholars (Beccarini, 1999; Neely , Adams, & Kennerley , 2002) emphasized the importance of always aligning the company's goals and objectives with those from the company's stakeholders. Therefore, Neely et al. formed a five-dimensional performance prism, which "*is a thinking aid which seeks to integrate five related perspectives and provide a structure that allows executives to think through the answers to five fundamental questions*" (Neely , Adams, & Kennerley , 2002, p. 4). Those questions are asked with regard to the company's stakeholders' satisfaction, stakeholders' contributions, strategies, processes and its capabilities.

In addition to those explanations of a company's success, other scholars erased the entrepreneur from their equation and labeled his / her talents and expertise as rather negligible and not as one of the fundamentals, which determine success (Bosma , van Praag , Thurik , & de Wit, 2004). Bosma et al. (2004) argue that not the entrepreneur, as an individual, but rather his / her actions determine the firm's success. More precisely, they state "*investment in industry-specific and entrepreneurship-specific human and social capital contributes significantly to the explanation of the cross-sectional variance of the performance of small firm founders*" (Bosma , van Praag , Thurik , & de Wit, 2004, p. 228). Nevertheless, Bosma et al. (2004) also came to the conclusion that, even it may not be the strongest determinant for a business's success, the prior gained experiences as well as being a part of associations is positively related to the performance of a company.

Hence, one can argue that the success of a newly established company is determined by many different factors, which differ in their importunateness as well as their impact. However, the question of whether the way of thinking, behaving and thus, decision making – this could be represented by the causational or effectuation approach - by the company's founder already determines a successful company, or at least provide a higher likelihood of success, can still not be answered. Therefore, a survey was created and send to multiple businesses, in order to find an answer to this question. This will be elaborated in the upcoming part of this research paper.

3. Methodology

In the following part of this research paper, the methods and procedures of conducting this quantitative research are examined. Therefore, the following segment contains explanations and information regarding the sample, its sampling method, as well as the definition of the independent and dependent variable. In addition, this segment of the paper clarifies the subsequent processes of analyzing the data, once the entrepreneurs' responses are gathered. Furthermore, the part highlights preset requirements regarding conditions, which have to be met by the entrepreneur as well as his / her company in order to be deemed acceptable for this study.

3.1 Sample

This research was conducted on the basis of a survey, which was send via e-mails, to approximately 2000 company founders in Germany. However, the number of responses was rather low and accumulated to an amount of 130 completed surveys, which represents a response rate of 6.5 percent. In order to analyze the gathered data from the survey in the most reliable way, three conditions were defined, which have to be met. Firstly, this research is only intended to analyze companies and startups, which are no longer in business than five years. Thus, this represents the starting phase of a startup and provides a precise time frame of existing operations, which allows for better comparisons between the chosen startups. Secondly, the entrepreneurs have to have at least a degree of an institution of higher education, for instance a bachelor's or master's degree. The reason for selecting this condition of choosing entrepreneurs, who at least have an undergraduate degree, assures a similar educational background. Hence, the entrepreneurs' responses can be compared more easily, without including the influences of higher or lower educational experiences. Thirdly, those entrepreneurs as well as their startups' headquarters have to be located in Germany. Thus, on the one hand, selecting one geographical area will provide a better basis for comparisons, and eventually reduces cultural biases. On the other hand, this will present the opportunity of comparing the collected data with data, which was previously obtained in the Netherlands.

With regard to the selection of startups, their field of operations and expertise will be negligible. This can be neglected due to the quantitative nature of this research, which aims to identify the general implications of using the effectuation or causation approach for establishing a new venture. Therefore, concentrating on only one industrial area within Germany would potentially negatively affect the intention of this research.

3.2 Sampling Method

Since the survey was intended to reach as many startups across Germany as possible, and reduce the risk of contacting the same startup multiple times, the bachelor circle team installed a list, on which every startup was enumerated. Following the listing, by the help of the Internet program 'Newsletter2go', e-mails, which entailed the survey, were automatically verified and send to the respective entrepreneur. Additionally, due to the slowly increasing response rate over the research's first three to four weeks of operation, it was decided to sign up on digital platforms for entrepreneurs, such as LinkedIn and XING, as well as to enroll in Facebook groups, which are intended for startups and entrepreneurs. Within those groups, the bachelor circle team directly contacted multiple business owners, who occasionally provided assistance for a further distribution of the survey.

Due to the fact that the original survey was developed in English, five German natives (the bachelor circle team) translated the survey into German. Furthermore, the translated survey was reexamined for mistakes and misunderstandings by a second institutional, German native, instance in order to guarantee a good understanding for the German entrepreneurs. Once the survey was translated into German, the complete survey was implemented into Google Forms, in order to have a professional outlay. Moreover, the utilization of Google Forms has the advantage of being able to translate the responses into other statistical tools, such as IBM SPSS Statistics. Furthermore, after the surveys' analysis, the gathered data was translated back into, as well as presented, in English.

The risk of receiving too few responses by the entrepreneurs was always present. However, measures were adopted, such as keeping the asked questions short and precise, to potentially encounter a higher likelihood of receiving a greater amount of responses.

3.3 Causation and Effectuation Scales

In this research the independent variable will be represented by the concept of causation and effectuation. In order to analyze the respondents' propensities towards the utilization of the causation or effectuation approach, the survey contains ten questions relating equally to causation (Appendix 10.1) and effectuation (Appendix 10.2). More precisely, those questions entail the core principals - by Sarasvathy - of both approaches.

The used scale, developed by Alsos, Clausen and Solvoll (2014), is considered a reliable, validated and tested measuring approach. Moreover, according to Alsos, Clausen and Solvoll (2014), the utilization of this scale is easily understandable and thus, can be used by other researchers without encountering

major obstacles.

The evaluation of the responses will be conducted on the basis of a 7-point-Likert scale. A 7-point-Lickert scale is used in order to provide the respondents with enough possibilities to choose from and thus, receiving a better indication of the exact statement from the entrepreneurs. Within this scale the respondent has to choose his / her answers from seven possibilities, wherein 1 represents 'strong disagreement', 4 represents a 'neutral positioning', and 7 represents 'strong agreement' with regards to the question stated in the questionnaire. Furthermore, due to the utilization of a 7-point-Likert scale, the entrepreneurs have the possibility to choose a neutral response to a question asked and thus, the respondents are not urged to choose one site over the other.

3.4 Success Scale

As mentioned before, the independent variable is the concept of effectuation and causation, and will influence the dependent variable, which is represented by the success of the company. In terms of the analysis of a company's success, the survey entails six questions. Those questions, however, cannot be answered on the basis of a 7-point-Likert scale, due to their qualitative nature. Four of those six questions are concerned about the financial success of the company, in terms of its last year's revenue and profit. The remaining two questions are not concerned about the financial output, but about the business's time span of survival in its respective industry, and about the number of employees employed in the startup (Appendix 10.3).

3.5 Methods of Analysis

Once the entrepreneurs completed the surveys, the outcomes of the surveys will be implemented and statistically analyzed by using IBM SPSS Statistics. The utilization of this statistical program helps to structure and order responses, to identify correlations between variables and thus, to facilitate analyses. With regard to the analysis itself, several main steps were taken for the purpose of finding a relationship between the utilization of one of the two approaches and the company's prosperity.

Firstly, the gathered data was reviewed on the basis of the previously mentioned conditions, which have to be met by the respondents for being accepted for this research. By separating the acceptable data from the useless ones, the response rate decreased from 6.5 percent to 3.45 percent, which accumulated to an amount of 69 usable responses out of 2000 contacted entrepreneurs.

Following the data set adjustments, an exploratory factor analysis (EFA) was conducted. This was reasoned due to the fact that the original survey was created in English, translated into German to guarantee a good understanding for the participants, and finally translated back into English. Therefore, the EFA will be used to verify the content's validity. In order to verify the EFA's outcomes, Cronbach's alpha, "*which is the most common measure of scale reliability*" (Field, 2009, p. 674)

was used. Furthermore, according to Field (2009), an acceptable value for Cronbach's alpha, and thus the value used within this research, is ≥ 0.7. Furthermore, next to conducting an EFA, the respondents were assessed on the basis of the previously mentioned ten questions, which relate to Sarasvathy's effectuation and causation principals. This was accomplished by taking a mean of an entrepreneur's five responses, which relates to his / her utilization of the causational approach. Thus, every mean, which indicates a value between 4.0 and 7.0, represents the entrepreneur's utilization of the causational approach. However, scoring between 1.0 and 4.0 does not necessarily indicate the entrepreneur's engagement in effectuation practices. With regard to effectuation, the same approach as for the causational responses was used, by generating the mean of the respondent's scores. Hence, the mean values will also range from 1.0 to 7.0, in which a value above 4.0 represents a stronger tie towards effectuation, whereas below 4.0 represents the entrepreneur's disuse of effectuation. The cutoff point at the value 4.0 was determined due to the 7-point-Likert scale, which was used within the survey. Within the survey the value 4 stands for a neutral positioning, which then was further used as the cutoff point for the mean scores as well.

Due to the fact that within the sample of n = 69 only 24 respondents answered the relevant questions for determining success, the sample was further reduced to n = 24. Accordingly, all following statistical analyses were conducted on the basis of a sample size of 24 respondents. Furthermore, within the sample of 24 respondents, multiple entrepreneurs decided not to share their financial information about their company. Thus, the primary determinant for business success in this research is the company's turnover generated in 2015.

Once the entrepreneurs' tendencies towards effectuation and causation were identified through the creation of mean scores, a correlation analyses as well as a test (Shapiro-Wilk test) for validating a normal distribution were conducted. However, before testing for a normal distribution, two participants of this study were excluded. The first scored a causational mean score of 4, which he or she also scored in respect to the effectual mean. Thus, this entrepreneur is the only representative, who would have been labeled as a neutral positioning. This would negatively affect the analysis due to the sample size of one within his or her respective group. Furthermore, when implementing this one respondent into the study, there would be no valid comparison possible with the other two groups. The reason for labeling the one entrepreneur as neutral will be further explained in the last paragraph of this paper's section. The second entrepreneur, who was excluded from the study, did not include any generated turnover while filling out the survey, which makes his or her answer impractical. Therefore, the following analyses were conducted on the basis of a sample of 22 entrepreneurs with the main focus on a company's generated turnover in 2015.

After the last data adjustment, the data set was examined for a normal distribution through a Shapiro-Wilk test. Furthermore, following the Shapiro-Wilk test, the data underwent a correlation analysis in order to identify possible relationships

between the variables. Moreover, a correlation analysis provides a first generalized overview about the dataset, and potentially indicates unexpected coherences.

Following that, both mean scores for effectuation and causation as well as the number employees were used in order to perform a regression analysis on the basis of a company's turnover. A regression analysis was done due to the fact that the intention of this paper is to identify the linkage between the approaches and the company's success. Furthermore, due to a regression analysis, one is provided with the opportunity to predict future happenings more precisely (Field, 2009). In terms of this study, this means - assuming one knows the entrepreneur's tendency - with the help of a regression analysis one can predict whether a company is likely to become successful or not.

Lastly, a Mann-Whitney test was conducted. This was reasoned in order to find the actual, if there is any, difference between the two approaches. Therefore, a new variable was created, namely "Cau1_Eff2", which derived through the subtraction of the entrepreneur's causational mean from the entrepreneur's effectuation mean. Thus, a negative score would represent an entrepreneur, who tends towards the causational approach, and a positive score those, who are inclined towards the effectuation approach. Importantly, this newly created variable does only represent the entrepreneurs' tendencies towards one or the other approach. This is reasoned, since an entrepreneur, who seems to tend in favor of the effectuation approach, can also include the causation approach for aspects of his / her operations. Hence, the new variable only indicates an entrepreneur's tendency. However, when the score equals zero, the respective entrepreneur scored the same means in effectuation and causation and is thus, labeled as neutral. The variable "Cau1_Eff2" summarized those three categories by labeling all causational entrepreneurs as "1", the effectuation entrepreneurs as "2" and the neutral ones as "3". As mentioned above, due to the small amount of one respondent, who would fall into the third category, this respondent was neglected.

4. Results

As indicated in the previous section of this paper, there was a need for conducting an EFA (Appendix 10.4.1). This analysis displayed a statistical relevance for the Kaiser-Meyer-Olkin test, which accumulates to 0.76, and thus, is larger than Cronbach's alpha of 0.7. Additionally, the Bartlett's test also confirmed the statistical significance by representing a value beneath .05 with an actual value of $p < 0.001$. Furthermore, by selecting an 'Eigenvalue' of one and a suppression of 0.3, the 'Rotated component matrix' as well as the 'Scree plot' clearly displayed two factors (or components), which accounted for 54.42 percent of variation within all cases. Hence, the content's validity was verified.

In terms of the sample's normal distribution, the Shapiro-Wilk test has to represent a significance level of above .05 in order to be considered as normally distributed. The test (Appendix 10.4.2) indicated a normal distribution for the causational entrepreneurs ($p = .695$) as well as for the entrepreneurs, who are regarded as tending towards the effectuation approach ($p = .169$). However, regarding the company's turnover ($p < .000$) and the number of employees within a company ($p = .001$) the Shapiro-Wilk test displayed distributions, which are not normal.

Based on the correlation analysis (Appendix 10.4.3) of this study, the utilization of the causation approach towards the creation of a successful business was statistically insignificant, but strongly and negatively related to a company's turnover $r = .006$, $p > .05$. Furthermore, in terms of the utilization of an effectuation approach, this correlation was also statistically insignificant, but strongly and positively related to the company's turnover $r = -.186$, $p > .05$. Next, the number of employees was also strongly and positively related to the company's turnover, but displayed no statistical significance $r = .256$, $p > .05$. Noticeably, with regard to the number of employees, there was a statistical significant outcome displayed, with a strong and positive relation with the causational approach towards decision-making $r = .45$, $p < .05$.

Besides the correlation analysis, three regression analyses (Appendix 10.4.4 – 10.4.6) were performed to predict a company's turnover based on the entrepreneur's tendency towards effectuation and causation as well as the number of employees. Regarding the causational approach, an insignificant regression equation was found ($F(1,20) = .001$ $p > 0.05$), with an R^2 of .000. The entrepreneur's predicted turnover is equal to $140494.118 + 1085.054$ (causation) euros when causation is measured on a 7-Point-Lickert scale. Therefore, the entrepreneur's income increases by 1085.054 euros for each point on the Lickert scale of causation. In terms of effectuation, an insignificant regression equation was found ($F(1,20) = .715$ $p > 0.05$), with an R^2 of .035. The entrepreneur's predicted turnover is equal to $251188.897 - 31184.259$ (effectuation) euros when effectuation is measured on a 7-Point-Lickert scale. Therefore, the entrepreneur's income decreased by 31184.259 euros for each point on the Lickert scale of effectuation. With regard to the amount of employees within the company, an insignificant regression equation was found ($F(1,20) = 1.398$ $p > 0.05$), with an R^2 of .065. The entrepreneur's predicted turnover is equal to $62228.713 + 28605.911$ (Number of employees) euros when the number of employees is measured. Therefore, an entrepreneur's income increased by 28605.911 euros for each additional employee employed within a company.

Lastly, the Mann-Whitney test was performed (Appendix 10.4.7). The displayed results indicated a statistical insignificant result. However, even though the results are not statistically significant, the test result indicated that a company's turnover was greater for entrepreneurs, who have the tendency towards the effectuation approach (Mdn = 130000) than for entrepreneurs, who based their operations more towards the causation approach (Mdn = 50000), U = 27, p = .121, r = .26.

5. Discussion and Interpretation of Results

Within this research a comparison was made between the effectuation and the causation approach towards an entrepreneur's decision-making. Additionally, it was tested how each of these approaches is related to a company's success. Therefore, Sarasvathy's insights about the fundamental differences between the causation and effectuation approach were used in order to provide a solid understanding of this concept throughout this research paper. Besides providing a good understanding of the literature, a survey was conducted on the basis of Alsos et al.'s (2014) scales for the type of decision-making approach an entrepreneur uses for his / her venture. Alsos et al.'s scales were then used to eventually find relationships with regard to a company's turnover in 2015. Therefore, data was gathered and analyzed using statistical procedures. Moreover, the scales had to be verified through an Exploratory Factor Analysis (EFA) at first, to guarantee the contents validity, which it did.

With regard to other independent variables, namely a person's sex, age, education and prior obtained working experience, those variables were statistically analyzed. Nevertheless, none of these variables showed any influence in a company's turnover (Appendix 10.4.3). Hence, these variables were neglected in the research. However, the variable "Number of employees" was not neglected. On the contrary, the number of employees is positively related with the utilization of the causational approach. Moreover, the number of employees displays a smaller significance values (p = .251) than causation (p = .980) and effectuation (p = .408) towards the generated turnover within the correlation analysis. Hence, one can argue that the impact of the number of employees is similar to, or potentially greater than, the impact of effectuation and causation. This verifies the statements made by Headd (2003) and Bosma et al. (2004), who argued that one of the biggest contributors of success are the employees within the company. One possible explanation of the relationship between causation and the number of employees is the causational teaching methods in university lectures as indicated by Sarasvathy (2001). This can be assumed, since causational thinking is involved with the establishment of goals prior the actual work begins. Thus, causational entrepreneurs have an estimated number of required employees from the start of operations, whereas effectuation oriented entrepreneurs do not have estimates of the required employees, but rather hire employees when the necessity emerges. Furthermore, the positive relationship between a company's turnover and the number of employees can be explained on the basis that a company, which employs more employees, potentially has more or bigger operations running than other companies, who do not have that many employees employed. Therefore, the size and amount of operations determine the amount of employees and thus, potentially determine the company's amount of turnover.

Next to the number of employees, the causational approach towards decision-making also shows a noteworthy outcome in relation to a company's turnover. This relationship is a very weak but positive relationship. This implies that with each increase in the utilization of the causation approach a company's turnover will increase by a minor extent. Therefore, it is assumed that the utilization of the causational approach has an impact towards a company's turnover. In contrary to the correlation of the causation approach, the effectuation approach shows a moderately strong and negative relationship in relation to a company's turnover. Thus, with each increase in the utilization of the effectual approach, the generated turnover will slightly decrease. This negative correlation could be explained on the basis of Sarasvathy's (2008) work. She states that expert entrepreneurs, who are in business longer and have more expertise than those, who are measured in this study, mostly use the effectual approach. Thus, with a sample consisting of only entrepreneurs, who are in business since five years or less, a reversed correlation is reasonable. However, both correlations indicate no statistical significance, especially the causational approach. Therefore, one can say that neither the causation approach nor the effectuation approach has a positive effect on a company's turnover. Moreover, it can be argued that this potentially provides a direction, which Sarasvathy (2001) and Harms and Schiele (2012) already indicated. According to those scholars, there is often no one best way for choosing a particular decision-making approach, but rather the combination of the effectuation and causation approach could potentially be the best practice to follow. This statement was supported even further by the conduction of the three regression analyses. As indicated previously, all analyses are statistically insignificant in their nature, but display important results with regards to the R^2. The R^2 represents the explained variance of the sample, which means that, in terms of causation, zero percent of the variance in the turnover is explained through the causational approach. In terms of effectuation, only 3.5 percent of the variance in turnover is explained by this concept, whereas 96.5 percent of the variation is explained through other factors than effectuation. Lastly, the number of employees' R^2 represents an explained variation in turnover of 6.5 percent and thus, leaves 93.5 percent in variation, which is explained through other influencers. Hence, a generated turnover might be influenced by these three factors, but consists of many other factors, which together determine a company's turnover.

In order to verify the assumption that the best practice to follow is a combination of the effectuation and causation approach, the Mann-Whitney test was performed. As described in the paper's results section, the test shows no statistical significant difference between the mean ranks, and respectively in the medians of both approaches. Nevertheless, the effectuation median as well as the mean rank lie significantly above the median and mean rank of the causation approach. This finding, on the one hand, contradicts with the aforementioned assumption of a combined approach, due to its indication of a better performance by entrepreneurs, who tend towards effectuation. On the other hand, it also contradicts with the results gained through the correlation analysis, since within the correlation analysis a superior performance by the causational approach regarding a company's turnover is implied. Therefore, this could be seen as an additional support for the utilization of a combined practice. Furthermore, the Mann-Whitney test's result indicates that an entrepreneur, who tends towards the utilization of the effectuation approach, has an increase in the

likeliness of generating a higher turnover than an entrepreneur, who tends towards the causation approach.

A possible explanation for this difference in outcomes for those two approaches might be, on the one hand, that the entrepreneurs filled out self-estimated values for their companies' turnovers. Thus, the provided turnover values are not exact and can distort the outcomes of the analyses. On the other hand, there is an unequal distribution of entrepreneurs within the respective tendency groups. Therefore, even though effectuation might seem to be superior, with an equal distribution, the generated means would potentially change and thus, show different results eventually.

6. Limitations and Further Research

In order to guarantee a good interpretation of the results displayed in the results section of this paper, one always has to include the research's limitations. This research paper was conducted for the purpose of comparing, and eventually identifying a linkage between the causation or effectuation approach with regard to a company's success. However, the sample size can be regarded as small since only 22 responses from entrepreneurs were considered as useful for this research. Furthermore, even within the sample of 22 entrepreneurs not all relevant questions for this study were answered, and thus left blank, which resulted in a not normally distributed data set. This lack of responses is also the underlying cause for the statistically insignificant results created through the statistical analyses. As indicated by multiple entrepreneurs in the survey's comment section, the required data for this research entailed sensitive information about the companies. Therefore, company founders often times were not allowed or were not willing to share these data with people outside the company.

Next to the sample size limitation, another concern of this research was the time aspect. Once the survey was established, translated and hundreds of German companies were contacted through e-mails, the response rate increased only very slowly. This caused multiple interruptions with regard to the finalization deadline of this paper, but also in terms of being able to even start analyzing the gathered data. This implies that a formal contacting approach towards novice entrepreneurs is rather insufficient. Understandably, company founders and managers are under constant pressure to maintain and improve their companies' operations, which hinders them to spent time with concerns outside their company boundaries.

Another initial intention of this research was to create a data set consisting of German entrepreneurs in order to be able to draw comparisons with a data set, which was gathered in the Netherlands. Contrary to expectations, the previously conducted survey entailed reversed scales, which changed the outcomes of this survey to a certain extent, and thus, was not comparable with the gained information from German entrepreneurs.

Under these circumstances it is hard to gain any insights of the effect an effectuation or causational decision-making approach has towards a superior business performance. However, for future researches it is highly advised to increase the sample size

of respondents. Hence, an increase in sample size would eventually create a normal distribution on the basis of which one can conduct more informative analyses. Furthermore, it would be interesting to investigate whether other aspects exist, such as education, age or the company's chosen field of operation, which have an influential power in respect to the company's success. Additionally, it is further advised to avoid formal contacting practices, such as e-mails, in order to reach out to novice entrepreneurs due to the aforementioned lack of spare time. Using ordinary contacting approaches, such as Facebook, Twitter, LinkedIn or Xing, seems to generate more responses from novice entrepreneurs.

Lastly, it is highly advised to differentiate between the different types of companies, for instance a joint-stock company. This differentiation, which was also indicated by a respondent's comment, should be made due to a different taxation practice for different company types, as well as the difference in their reported revenues and earnings. Furthermore, in order to generate more responses, which indicate a company's financial performance, a qualitative research approach through the utilization of telephone or video calls as well as head to head interviews might be more applicable. Additionally, this would help the researcher to receive more accurate data to work with.

7. Conclusion

This research was performed in order to contribute to the already existing literature of the effectuation and causation approach. Therefore, Sarasvathy's insights regarding these two approaches towards the establishment of new ventures were used and displayed a clear differentiation between effectuation and causation. As the research, but also the literature, suggests, both approaches have their pros and cons, and both have a non-negligibly influence in a company's success.

Reviewing the research question provided in the introduction section of this paper, *to what extend does the startup's success depend on the entrepreneur's decision-making to establish his or her company on the basis of the effectual or causational approach?* It can be summarized that the effectual as well as the causational approach towards decision-making of novice entrepreneurs generates no significant difference in providing a higher likelihood of a successful business. However, even though the results indicate no significant difference between the causation and effectuation approach, the lack in usable responses calls for further investigation, in which the current research can function as a solid foundation.

8. Acknowledgements

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10. Appendix

10.1 Survey questions for Causation

   1.

   2.

   3.

   4.

   5.

10.2 Survey questions for Effectuation

   1.

   2.

   3.

   4.

   5.

10.3 Survey questions for Success

   1.
   2.
   3.
   4.
   5.
   6.

10.4 IBM SPSS Outputs

10.4.1 Exploratory Factor Analysis (EFA)

Rotated Component Matrix[a]

	Component	
	1	2
Caus_1		,653
Caus_2		,640
Caus_3		,653
Caus_4		,805
Caus_5		,696
Eff_1	,653	
Eff_2_affloss	,772	
Eff_3	,794	
Eff_4	,697	
Eff_5	,773	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3,662	36,617	36,617	3,662	36,617	36,617	2,928	29,276	29,276
2	1,780	17,803	54,420	1,780	17,803	54,420	2,514	25,144	54,420
3	,978	9,783	64,203						
4	,873	8,730	72,933						
5	,702	7,023	79,956						
6	,563	5,628	85,584						
7	,444	4,439	90,023						
8	,397	3,970	93,993						
9	,307	3,065	97,058						
10	,294	2,942	100,000						

Extraction Method: Principal Component Analysis.

Scree Plot

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,760
Bartlett's Test of Sphericity	Approx. Chi-Square	214,052
	df	45
	Sig.	,000
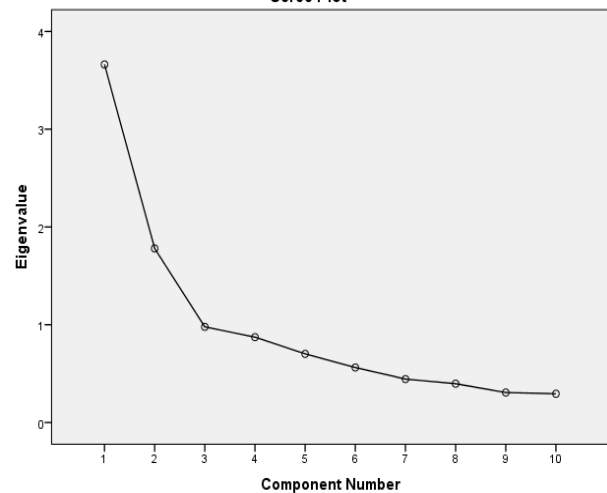
10.4.2 Tests for Normality

Explore

[DataSet1] /Users/sebastian/Desktop/German responses_v2.1.short.sav

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Turnover_Euro	22	100,0%	0	0,0%	22	100,0%
CAUS	22	100,0%	0	0,0%	22	100,0%
EFF	22	100,0%	0	0,0%	22	100,0%
Num_Empl	22	100,0%	0	0,0%	22	100,0%

Descriptives

			Statistic	Std. Error
Turnover_Euro	Mean		145445,909	46524,7122
	95% Confidence Interval for Mean	Lower Bound	48692,474	
		Upper Bound	242199,345	
	5% Trimmed Mean		117404,040	
	Median		75000,000	
	Variance		4,762E+10	
	Std. Deviation		218220,243	
	Minimum		10,0	
	Maximum		800000,0	
	Range		799990,0	
	Interquartile Range		145400,0	
	Skewness		2,437	,491
	Kurtosis		5,481	,953
CAUS	Mean		4,5636	,24464
	95% Confidence Interval for Mean	Lower Bound	4,0549	
		Upper Bound	5,0724	
	5% Trimmed Mean		4,6111	
	Median		4,5000	
	Variance		1,317	
	Std. Deviation		1,14748	
	Minimum		1,80	
	Maximum		6,40	
	Range		4,60	
	Interquartile Range		1,85	
	Skewness		-,462	,491
	Kurtosis		-,024	,953
EFF	Mean		3,3909	,27711
	95% Confidence Interval for Mean	Lower Bound	2,8146	
		Upper Bound	3,9672	
	5% Trimmed Mean		3,3778	
	Median		3,2000	
	Variance		1,689	
	Std. Deviation		1,29978	
	Minimum		1,20	
	Maximum		5,80	
	Range		4,60	
	Interquartile Range		1,55	
	Skewness		,511	,491
	Kurtosis		-,366	,953
Num_Empl	Mean		2,909	,4157
	95% Confidence Interval for Mean	Lower Bound	2,045	
		Upper Bound	3,773	
	5% Trimmed Mean		2,843	
	Median		2,500	
	Variance		3,801	
	Std. Deviation		1,9496	
	Minimum		1,0	
	Maximum		6,0	
	Range		5,0	
	Interquartile Range		4,0	
	Skewness		,394	,491
	Kurtosis		-1,479	,953

Tests of Normality

	Kolmogorov–Smirnov[a]			Shapiro–Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Turnover_Euro	,265	22	,000	,636	22	,000
CAUS	,119	22	,200[*]	,969	22	,695
EFF	,163	22	,131	,937	22	,169
Num_Empl	,245	22	,001	,828	22	,001

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Histograms

Histogram
Cau1_Eff2= Causation
Mean = 146459,41
Std. Dev. = 243729,452
N = 17

Histogram
Cau1_Eff2= Causation
Mean = 4,94
Std. Dev. = ,913
N = 17

Histogram
Cau1_Eff2= Causation
Mean = 2,93
Std. Dev. = 1,002
N = 17

Histogram — Normal
Cau1_Eff2= Causation

Mean = 3,0
Std. Dev. = 1,969
N = 17

Frequency (y-axis), Num_Empl (x-axis)

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	32554576,8	1	32554576,8	,001	,980^b
	Residual	1,000E+12	20	5,000E+10		
	Total	1,000E+12	21			

a. Dependent Variable: Turnover_Euro
b. Predictors: (Constant), CAUS

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	140494,118	199831,157		,703	,490	-276346,37	557334,606
	CAUS	1085,054	42523,393	,006	,026	,980	-87617,189	89787,297

a. Dependent Variable: Turnover_Euro

10.4.5 Regression Analysis for Effectuation

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	EFF^b	.	Enter

a. Dependent Variable: Turnover_Euro
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,186^a	,035	-,014	219718,061

a. Predictors: (Constant), EFF

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3,450E+10	1	3,450E+10	,715	,408^b
	Residual	9,655E+11	20	4,828E+10		
	Total	1,000E+12	21			

a. Dependent Variable: Turnover_Euro
b. Predictors: (Constant), EFF

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	251188,897	133567,711		1,881	,075	-27428,465	529806,259
	EFF	-31184,259	36887,997	-,186	-,845	,408	-108131,27	45762,755

a. Dependent Variable: Turnover_Euro

10.4.3 Correlation Analysis

Correlations

Correlations

		Turnover_Euro	CAUS	EFF	Num_Empl	Age	Years_Ent	Edu
Turnover_Euro	Pearson Correlation	1	,006	-,186	,256	-,064	-,003	,333
	Sig. (2-tailed)		,980	,408	,251	,778	,989	,130
	N	22	22	22	22	22	22	22
CAUS	Pearson Correlation	,006	1	-,410	,450[*]	-,133	-,080	-,178
	Sig. (2-tailed)	,980		,058	,036	,554	,722	,427
	N	22	22	22	22	22	22	22
EFF	Pearson Correlation	-,186	-,410	1	,015	-,022	-,031	-,016
	Sig. (2-tailed)	,408	,058		,948	,923	,892	,944
	N	22	22	22	22	22	22	22
Num_Empl	Pearson Correlation	,256	,450[*]	,015	1	,056	,304	,061
	Sig. (2-tailed)	,251	,036	,948		,803	,169	,788
	N	22	22	22	22	22	22	22
Age	Pearson Correlation	-,064	-,133	-,022	,056	1	,559^{**}	,563^{**}
	Sig. (2-tailed)	,778	,554	,923	,803		,007	,006
	N	22	22	22	22	22	22	22
Years_Ent	Pearson Correlation	-,003	-,080	-,031	,304	,559^{**}	1	,485[*]
	Sig. (2-tailed)	,989	,722	,892	,169	,007		,022
	N	22	22	22	22	22	22	22
Edu	Pearson Correlation	,333	-,178	-,016	,061	,563^{**}	,485[*]	1
	Sig. (2-tailed)	,130	,427	,944	,788	,006	,022	
	N	22	22	22	22	22	22	22

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

10.4.6 Regression Analysis for Number of Employees

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Num_Empl^b	.	Enter

a. Dependent Variable: Turnover_Euro
b. All requested variables entered.

10.4.4 Regression Analysis for Causation

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	CAUS^b	.	Enter

a. Dependent Variable: Turnover_Euro
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,006^a	,000	-,050	223605,569

a. Predictors: (Constant), CAUS

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,256^a	,065	,019	216183,544

a. Predictors: (Constant), Num_Empl

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6,532E+10	1	6,532E+10	1,398	,251[b]
	Residual	9,347E+11	20	4,674E+10		
	Total	1,000E+12	21			

a. Dependent Variable: Turnover_Euro

b. Predictors: (Constant), Num_Empl

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	62228,713	84139,746		,740	,468	−113283,72	237741,147
	Num_Empl	28605,911	24197,568	,256	1,182	,251	−21869,331	79081,153

a. Dependent Variable: Turnover_Euro

10.4.7 Mann – Whitney Test

Ranks

	Cau1_Eff2	N	Mean Rank	Sum of Ranks
Turnover_Euro	Causation	17	10,59	180,00
	Effectuation	5	14,60	73,00
	Total	22		

Test Statistics[a]

	Turnover_Euro
Mann–Whitney U	27,000
Wilcoxon W	180,000
Z	−1,217
Asymp. Sig. (2–tailed)	,224
Exact Sig. [2*(1–tailed Sig.)]	,249[b]
Exact Sig. (2–tailed)	,240
Exact Sig. (1–tailed)	,121
Point Probability	,009

a. Grouping Variable: Cau1_Eff2

b. Not corrected for ties.

10.4.8 Medians

Statistics

Turnover_Euro

Causation	N	Valid	17
		Missing	0
	Median		50000,000
Effectuation	N	Valid	5
		Missing	0
	Median		130000,000