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The effect of external obstacles on the pricing strategies of new products at Dutch and German Business-to-Business SME's

MSc. Business Administration

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Abstract

To study how environmental dynamics, affect pricing strategies, mainly Value-based pricing in Dutch and German Business-to-Business small and middle enterprises, a research has been conducted applying a survey assessment. Basically, four environmental dynamics constructs have been distinguished and applied in the assessment. These four constructs are identified as: Instability, Growth, Velocity and Turbulence. Likewise, four hypotheses have been involving these constructs separately against the, current favourable pricing strategy: Value-based pricing. However, these environmental dynamics might not be the ideal circumstances in applying a Value-based pricing approach. As the study interprets the data output, it becomes clear that, out of the four assessed environmental dynamics, Growth has an unexpected large positive effect on Value-based pricing. Growth has been perceived as increasing resource inflows in the market and has been characterized as an environment that is continually expanding in opportunities with the need for bulky but risky investments. Based on the level of investment, Growth might have a positive influence on the Value-based pricing strategy. The article's key contribution is to understand how these environmental obstacles affect the pricing strategies, with its focus on value-based pricing approach.

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1. Introduction

This article is in contribution to a collaborative research regarding the business-to-business (from now on B2B) value-based pricing, implemented by small and middle-sized enterprises (appointed as SME's). This initiation started after realizing that the majority of new product introductions fail to meet objectives among SME's, although success rates can increase when applying value-based principles. Additionally, the collaborative research aims at a generalizability towards Germany and the Netherlands. Moreover, the focus lies on the degree of what upstream and downstream processes are applied by the companies and the success rate of their new products within the residing country. Depending on the segmentation, competitiveness and pace of the development, a different strategy might be more befitting. This article looks at, to what extent, external obstacles can have an influence on the pricing strategies of new products. Depending on the conducted method and the country, it might be that the data results give a different meaning and perspective. It could also be that firms make more use of cost-based or competition-based pricing while value-based pricing is proven to increase the success rate. This research will predominantly highlight answers to the external obstacles faced when applying these pricing strategies, therefore the focus will be met on the research question: "*What is the influence of external obstacles on the pricing strategy of new products at Dutch and German B2B SMEs?*". It might be that while in theory, value-based principles are ideal, it could in practice become a difficult realisation when managers are not only faced with setting the right prices in understanding customer value, but also decisions that are influenced by competition and the dynamic environment within the industry.

Marketing researchers highlight value-based pricing as mostly a positive way of achieving increased product performance (Ingenbleek, Frambach, & Verhallen, 2013) and firm performance (Liozu & Hinterhuber, 2013). Although organisational and psychological challenges can play a role in disregarding value-based pricing, it is commonly stated that many companies set prices based on the cost of their product (Hinterhuber, 2008). Alternatively, prices are also set based on the prices of competing products, without accounting for the worth of performance differences between the company's product and that of the competing product (T. Gale and J. Swire, 2011). A well-known obstacle that prevents companies from implementing value-based pricing strategies is the disability to conduct an accurate value assessment (Hinterhuber, 2008). In accordance to this, Hinterhuber notes, 'If the company itself does not know the value of its products or services to customers, how does it know what to charge the customer for value?' (Hinterhuber, 2008, p. 44). However, studies have shown that there are external obstacles influencing organizational decisions. A study from Floricel and Ibanescu (2008), has indicated that the dynamics of competitive environments have been an influence on innovation. The study mainly puts its focus on a firms' innovation portfolio management practices where the innovation portfolio management approach is adapted to the dynamics of competitive environment (Floricel and Ibanescu, 2008). Eisenhardt and Martin, (2000), also argue that dynamic capabilities can lead to competitive advantage if there is an alignment with the pattern of environmental change whereas a disadvantage is likely if there is a misalignment.

Füreder, Maier and Yaramova (2014), have come up with obstacles to the implementation of the value-based pricing method in Austrian SME's. Their research came with internal and external obstacles. The internal obstacles were identified as adaptation of corporate structure to value-based pricing, the high expenses for implementing the method and a lack of sales force or the lack of senior management's support or consumer knowledge for the pricing strategy. The external obstacles were identified with the problematic assessment of value due to differentiation of the product/service in comparison to the competitors and the high competitive ratings of the market (Füreder, Maier & Yaramova, 2014). It is likely that these dynamics affect Dutch and German SME's in a similar way as the main rationale for this research is the validation of external obstacles influencing the pricing strategies in Dutch and German SME's.

2. Theoretical framework

2.1 Pricing objectives

Several studies have made clear that the clarification of the objectives of a pricing process is a beginning stage to the pricing strategy (Hinterhuber, 2003; Shipley & Jobber, 2001). Shipley and Jobber (2001), state that it is critical for pricing objectives to be consistent with the company's broader objectives and with the objectives and marketing strategy for the product. These objectives are prone to change over time as markets and environmental conditions also change (Shipley & Jobber, 2001). More likely, these objectives are depending on the segmentation and whether the involved industry is a dynamic or a fast-changing environment. In case of a fast-changing environment, a flexible approach might be required in the setting of pricing objectives. Additionally, there are cases where objectives might be aimed towards profits, survival, sales volume, sales revenue, market share, image creation, competitive parity or advantage, barriers to entry, and perceived fairness. There is no one way street and these can be all subject to change depending on the internal and external status of a company. Furthermore, global companies rarely adopt a global pricing strategy, as a domestically profitable pricing strategy might not be as effective in another country due to different local market conditions (Hinterhuber, 2003). According to Shipley and Jobber (2001), profit targets are the most widely specified objectives reflecting short-term concerns as measured by margins, target returns, and various financial rations.

2.2 Pricing strategies

The following study will focus on pricing strategies in B2B small and medium-sized enterprises. By the standards of the European commission, a company is regarded as an SME when it has at most 250 employees with a turnover of minimal €2.000.000 and a maximum of €50.000.000. Furthermore, these pricing strategies will be presented in further detail as there are broad pricing strategies to be considered.

Among the pricing strategies, value-based pricing is the most advised pricing strategy. Ingenbleek (2014), defines value-based pricing as the 'degree to which decision makers base the price of a market offering on the customers' perceptions of the benefits that the product offers, and how these benefits are traded-off by customers against the price that has yet to be determined' (Ingenbleek, 2014, p.34) . Next to value-based pricing, other pricing strategies may be implemented by companies like competition-based pricing, cost-based pricing or going-rate pricing. Hinterhuber (2008), describes competition-based pricing as pricing that uses anticipated or observed price levels of competitors as primary source for setting prices, whereas Cost-based pricing is described as a pricing approach that determines prices primarily with data from cost accounting. Cost-based pricing does come with limitations, as for example, the non-economic elements related to the excess of the use value over the cash value of a product are not taken into consideration which is perceived as an indicator of importance to the client (Macdivitt & Wilkonson, 2012).

Going-rate pricing has been regarded as an easy to apply pricing approach that saves time and costs where the focus lies on the customer's perception of the price of a company which is assessed by the customer regarding different factors such as performance, features, brand reputation, etc., where after a certain evaluation the client chooses a product on the market (Füreder, Maier & Yaramova, 2014). Moreover, Liozu and Hinterhuber (2013), validate that value-based pricing is positively linked to firm performance, whereas competition-based pricing is negatively linked to firm performance. These findings are despite the idea of value-based pricing, leading to increased revenues or gross margins with lower company profits due to increases in fixed expenses (e.g. training). These results have been providing empirical support that value-based pricing is positively correlated with profitability, regardless of company size, industry or nationality (Liozu & Hinterhuber, 2013; Ingenbleek et al., 2003; Monroe, 2002, p.36; Cannon & Morgan, 1990). It is important to take consideration of reflecting on the customer, company, and competitor's perspective to relate on the decisions of pricing

strategies. Shipley and Jobber (2001), clarify in viewing pricing as a continuous process where changes in environmental conditions, marketing strategy, and customer needs can influence the pricing process, which in the end can modify the adopted price. Although, based on research, value-based pricing is the most profitable, studies have shown that competition-based pricing and a cost-based pricing have been the most common approach in Germany, Austria and Switzerland (Hinterhuber, 2008, p.43).

Next to these examples there are still more variations of pricing strategies such as Cost-plus, target costing, break-even pricing strategy and competitive bidding (reversed auction). Cost-plus is mostly applied in less competitive fields of business. This method is regarded as the least risky strategy because the focus lies in the coverage of average total costs added with the calculated profit (Shy, 2008). The target costing method is unlike the cost-plus method, often applied in highly competitive markets where the price is decided based on the features of the offering (Clifton, Bird, Albano & Townsend, 2004). Füreder, Maier and Yaramova (2014), describe the break-even pricing as another conventional pricing method that displays the interrelationship between total costs and total revenue with dependence on sales volumes. This method focuses on a desired return on the invest capital. The advantages of this method are that it is regarded as a simple price calculator because of the rational and mathematical approach. Moreover, this strategy method can possibly ensure price stability with a minimization of the destructive price influence of the competition (Capon & Hulbert, 2012). The competitive bidding method is regarded as an auctioning method where the roles of buyer and seller are reversed. Where a buyer presents a contract for bidding, sellers can make bids on the contract. Depending on the auctioning progress, the price can decrease as sellers compete to underbid their competitors while still meeting the specifications of the contract (Pandey, 2007). These biddings are often applied on a software or an online platform.

The importance on the knowledge of these pricing strategies is high, as it is crucial to identify the pricing strategies based on the characteristics screened from the collected data. Generally, researchers concur that pricing strategies can be categorised into three groups: cost-based pricing, competition-based pricing and value-based pricing. As appointed in this section, there are many more pricing strategy approaches available. To reduce the complexity of the analyses, these three pricing strategies will be regarded in the analyses with the remainder of the pricing strategies factorized as “other pricing strategies”. Depending on the data collection, these might be subject to change.

2.3 External obstacles

It is important to note that external obstacles are still a broad aspect. External obstacles can come in many forms or factors. Floricel and Ibanescu (2008), elaborated on the dynamics of competitive environments. Within the aspects of the dynamics of competitive environments, this study focused on four dimensions to characterize the patterns of environmental dynamics. The study by Floricel and Ibanescu (2008), address these four dimensions of environmental change as: *velocity*, *turbulence*, *growth* and *instability*.

Velocity

Velocity is referred to the perceived intensity of directional change in meso-level systems, such as advances in functionality, performance and cost, contributed by technological innovation (Moore, 1965; Eisenhardt, 1989). The directional change in the environments can be rapid but still predictable. Depending on the level of velocity (high or low velocity) from the environment(s), a fitting strategy may be adopted to uphold a competitive advantage. In an environment of high velocity, it can be required to have more resources contributed by technological innovation.

Turbulence

Floricel and Ibanescu (2008), define *turbulence* as the extent of perceived discontinuity in environmental or market change regarding past trends and anticipated directions. This includes perspectives from a macro-level such as globalization, where unexpected competitors can arise,

accompanied by digital electronics and internet. Turbulent events usually take firms by surprise and are in relation with a gross increase in relevant uncertainty (Emery and Trist, 1965, p. 26). Furthermore, firms in this condition might start to realize that past sources of competitive advantage and their organizational structure have become irrelevant in a highly turbulent environment.

Growth

Growth can be defined as a perception of increasing resource inflows in the market. In this case, strategic actors can be in a dilemma between two future threats: insufficient capabilities or capabilities that are ahead of the market needs (Floricel and Ibanescu, 2008). Capabilities, can in this case be, the amount of telecom infrastructure that is necessary to assist a service or product. In case of a bigger market for example, there could be an insufficient telecom infrastructure to even consider a certain pricing strategy. In this case the focus might shift towards a different pricing strategy than the ideal as the insufficient capability (or maybe over-capability) might not allow it. This might be an occurring case with SME's. Furthermore, High-growth environments are also characterized by continually expanding opportunities where there is a need for bulky but risky investments (Floricel and Ibanescu, 2008, Banting and Ross, 1975). There is a continuous nature of change in these environments.

Instability

Instability is defined as a steady and diverse array of competitive moves by other strategic actors (Floricel and Ibanescu, 2008). Instability can come from different kinds of attacks by firms, such as product imitation and promotional wars or from competitors entering with cheap or substitute (similar or comparable) products. In case of SME's this could be perceived as a threat and therefore might invest more labour in the existing product or Research and Development (R&D) than on the pricing strategy. Moreover, a high level of instability in an environment is also characterized by diffuse and irregular changes (Floricel and Ibanescu, 2008).

As the dimensions were used to clarify fitting portfolio management, it is likely that these dimensions can be addressed to clarify pricing strategy approaches. Eisenhardt and Martin (2000), argue that dynamic capabilities can lead to competitive advantage when there is a match with the pattern of environmental change. In this case, it can be that some circumstances might not allow a firm to lead an advantageous pricing strategy due to certain influential factors like an organizational structure or expertise. An example would be value-based pricing. Although, this pricing strategy is now known as the most profitable pricing strategy, it is regarded as a pricing strategy that needs a lot of patience, perseverance, collective confidence, and tremendous sweat equity (Liozu, 2014). Liozu (2016), researched the difficulties of applying a value-based pricing method, asking firms to rate the perceived difficulties of deploying value-based pricing on a scale from 1 to 10, these presented difficulties in the three decisional areas of competitive analysis, market segmentation, and the selection of value drivers. This might be the case, because, time simply does not permit this in a highly dynamic environment. Furthermore, a weakness of value-based pricing is also that data is difficult to obtain and to interpret, possibly leading to an increased importance in marketing intelligence (Hinterhuber, 2008). Based on this information, it is possible that situations with high turbulence, high instability and high growth, makes it unlikely to implement a value-based pricing approach. Therefore, the following hypotheses are made:

Hypothesis 1: Dutch and German SME's in Highly turbulent environments are unlikely to use a value-based pricing approach on their new products.

Hypothesis 2: Dutch and German SME's in high-growth environments are unlikely to use a value-based pricing approach on their new products.

Hypothesis 3: Dutch and German SME's in high-instability environments are unlikely to use a value-based pricing approach on their new products.

Velocity on the other hand, is known to be a directional change in the environment that can be rapid but still predictable. Based on the predictability, it might be that value-based pricing strategy is still a possible approach to apply. Therefore, the following hypothesis is made:

Hypothesis 4: Dutch and German SME's in high-velocity environments are likely to use a value-based pricing approach on their new products.

Because of the negative influence on the value-based pricing strategy, it might be possible for Dutch firms to reconsider their approach and opt for cost-based pricing or competition-based pricing as data is readily available and doesn't take customers or also the competition into account. Cost-based pricing approaches determine prices with data from cost accounting while competition-based pricing approaches use anticipated or observed price levels of competitors as primary source for setting prices (Hinterhuber, 2008). The latter might require some data of the competition. Based on this, the assumption will be that under extreme high turbulence, instability and growth, Dutch and German firms might be more willing to choose for cost-based pricing as less data needs to be acquired. Although this is a generalized assumption, it could also be that Dutch and German SME's with, the right skills, technology, capacity and organizational structure, a value-based pricing approach is still possible under these circumstances.

3. Methodology

3.1 Sample selection

The sample is dependent on the quota set for each attendee contributing the research. Spanning from five researchers, each person aims at conducting 6 to 10 interviews with at least 6 different SME's. This leads to a minimum of 30 interviews, with the possibility of maximum 50 interviews. Furthermore, the collaborative and the individual research aims at interviewees operating from a strategic position. Along with the interviews, it is highly important for the individual study to conduct as many surveys as possible for the sample size. Moreover, the interviews and surveys are divided among German and Dutch SME's. In consideration of this, the study will focus on both the Dutch and German SME's which, in primary, will utilize on the maximum collected surveys.

3.2 Measures

The external obstacles variables and the pricing strategies are each measured using a five-point Likert scale. The external obstacles velocity, turbulence, growth and instability will function as independent variables while the pricing strategies classified as cost-based pricing, competition-based pricing, value-based pricing will function as dependent variables. The relations among these variables will be further conducted in the results.

3.3 Data collection

In contribution to the collaborative research, data collection is acquired through semi-structured interviews and surveys. Researchers recommend using a basic checklist that helps in covering all relevant areas (i.e. research questions) (Berg, 2007). Berg (2007), points out that the advantage of such a checklist, is that it "allows for in-depth probing while permitting the interviewer to keep the interview within the parameters traced out by the aim of the study" (Berg, 2007, p.39). For the collaborative purpose, this research opted for this type of interview as it would allow covering various subjects. Arguably, it is important to consider that interview participants become biased or give opinionated answers during the semi-structured interviews. Therefore, it is important to keep a structure in the questions, focussing more on facts and specific answers. According to Blaxter *et al* (2006), it is worthwhile doing interviews as it offers researchers an opportunity to find out information that might not be accessible using techniques such as questionnaires and observations. According to Dörnyei (2007), mutual understanding can be ensured with the presence of the interviewer. Meaning that the interviewer might be able to rephrase or simplify questions that were not understood by the interviewees. This might result in more appropriate answers and lead to more accurate data. Recordings, if allowed by the interviewees, might also add to the data accuracy, as the interviewer might be able to replay the interview and expand on his findings. Appendix A will point out the interview attendants and the firms they are linked to.

Separate from the semi-structured interviews, it is of importance to the individual study to hold out surveys according to a five-point Likert scale. Arguably, seven-point scale might also be fitting to the research, but a five-point scale has been chosen to maintain a clear and noticeable distance between the point scales. Although seven-point scale might achieve more accuracy (Joshi et al, 2015), it might possibly overcomplicate, leading to the difficulty of perceiving a distinction between the point scales. Appendix B present the items used for each variable.

3.4 Data sampling

As the data is gathered from the interview participants and separately from own initiation, the sample size of 25(N=25) will be further conducted in the analyses. Contacts information is acquired from the Chamber of Commerce, University of Twente acquaintances, LinkedIn and web searching. Selection criteria is met by the SME's across the regions of Germany and the Netherlands. While the sample size is relatively small, it can be sufficient for further indications, analyses and future adaptations.

3.5 Data analysis

Since this study is mainly dependent on the surveys in data gathering, a secondary data analysis will be implemented to analyse the relations and effects between the external obstacles and the pricing strategies. To achieve this analysis, the software analytic tool SPSS will be used for predictive analytics to compute the data. To test the hypotheses within this study, a regression analyses will be used. This analysis allows to predict the value of the dependent variables on one or more independent variables (Field, 2009). Furthermore, the online survey service SurveyMonkey will be used to create the surveys based on a five-point Likert scale.

3.6 Survey scale

The hypotheses are tested with a questionnaire implementation, build on the items of previous research by Ingenbleek et al. (2003) and Floricel and Ibanescu, (2008). While the Items of Ingenbleek et al. (2003), are based on successful new product pricing practices, the items of Floricel and Ibanescu, (2008) have a foundation on environmental dynamics. This combination of items defines the constructs necessary for the data analyses.

3.7 Data structure

In preparation of the data analyses, the survey data is structured and categorised as ordinal constructs in SPSS. The following constructs (Table 1), in line with the survey, represent the pricing strategies and the external obstacles. The relevant items are listed as VBPrice_#(items relevant to Value-based pricing strategy), Vel_#(items relevant to Velocity), Turb_#(items relevant to Turbulence), Gro_#(items relevant to Growth) and Inst_# (items relevant to Instability). After conducting a reliability test, the total scores are calculated and converted to the mean. As a result, the constructs are prepared for further analysis.

3.7.1 Value-based pricing

The relevancy of Value-based pricing is primary as it needs to be tested for all hypotheses. Moreover, the intent of founding out the effects on Value-based pricing makes this construct applicable as a dependent variable, whilst increased in compatible item importance as a necessary addition in the survey. Furthermore, the five items for Value-based pricing, based on the widely used paper by Ingenbleek, Debruyne, Frambach & Verhallen (2003), are operationalized in the survey and further research.

3.7.2 Velocity

Velocity is adapted in the survey as a crucial environmental dynamic variable and is measured by the five-point Likert-type scale. The three items used, representing this construct, is contributed by the research of Floricel and Ibanescu (2008), as their theory of environmental dynamics aim to accentuate the orthogonality between these variables. Although this clarifies complete absent correlation between the environmental variables, a high inter-correlation between the items of each construct is mandatory for sufficient internal consistency and reliability. Additionally, the construct Velocity will be implemented as an independent variable, clarifying the effects on the dependant variable Value-based pricing.

3.7.3 Turbulence

Turbulence as a construct is admitted in the survey and regarded as an independent environmental dynamic variable, measured by the five-point Likert-type scale. Like Velocity, Turbulence as a construct formulates the effects on the construct Value-based pricing. The three items representing this construct is based on the research and questionnaire of Floricel and Ibanescu (2008). Likely, a high inter-correlation between the items of this construct is paramount and requires sufficient internal consistency and reliability.

3.7.4 Growth

Growth is included in the survey as an independent environmental dynamic variable and measured by the five-point Likert-type scale. Likewise, Growth clarifies the effects on the construct value-based pricing and is built on the research and questionnaire of Floricel and Ibanescu (2008). Hinging on two items, a high internal consistency, reliability and inter-correlation between the items of this construct is necessary for a valid analysation.

3.7.5 Instability

Instability is required in the survey as a construct and will be regarded as an independent variable clarifying the effect on the construct Value-based pricing. Recurrently, this construct is found on the research and questionnaire of Floricel and Ibanescu (2008), holding an importance in a high internal consistency, reliability and inter-correlation between the items of this construct. The construct is built on three items as seen in Table 1.

Table 1: Relevancy of constructs and survey Items

Construct	**Source**	**Item attribute**	**Implemented item**
Value-based pricing	Ingenbleek et al. (2003)	VBPrice_1	Our new products have better/more advantages than the products of the competition
	Ingenbleek et al. (2003)	VBPrice_2	Customers see our products as good value
	Ingenbleek et al. (2003)	VBPrice_3	Our products offer advantages to the customer
	Ingenbleek et al. (2003)	VBPrice_4	The price and the advantages of the product are balanced
	Ingenbleek et al. (2003)	VBPrice_5	Our new products have better/more advantages than other products that fulfill a similar need
Construct	**Source**		**Implemented item**
Velocity	Floricel and Ibanescu, (2008)	Vel_1	The pace of change in our sector is very fast compared to other sectors
	Floricel and Ibanescu, (2008)	Vel_2	Very often, new competitors enter the sector with innovative products
	Floricel and Ibanescu, (2008)	Vel_3	The technological frontier advances very rapidly in our sector
Construct	**Source**		**Implemented item**
Turbulence	Floricel and Ibanescu, (2008)	Turb_1	External factors are forcing unpredictable transformations in our sector
	Floricel and Ibanescu, (2008)	Turb_2	The boundaries of our sector are undergoing a major redefinition
	Floricel and Ibanescu, (2008)	Turb_3	Our sector is going through significant developments that nobody anticipated
Construct	**Source**		**Implemented item**
Growth	Floricel and Ibanescu, (2008)	Gro_1	Total sales of our sector grow very fast compared to other sectors
	Floricel and Ibanescu, (2008)	Gro_2	Sales in recently opened niches within our sector grow extremely fast
Construct	**Source**		**Implemented item**
Instability	Floricel and Ibanescu, (2008)	Inst_1	Established competitors constantly challenge our positions
	Floricel and Ibanescu, (2008)	Inst_2	Myriads of actions by our rivals continually erode our advantage
	Floricel and Ibanescu, (2008)	Inst_3	Our products are constantly under attack from low-cost substitutes

3.8 Statistical implementation

The statistical implementation consists of descriptive and inferential statistics. Field (2009), states that descriptive statistics and histograms are a good way of getting an instant picture of the data distribution. Additionally, inferential statistics are suitable for generalizing the findings on a population based on an adequate sample size.

3.9 Method of analyses

A quantitative analysis will be carried out to convert valid data output imperative for the hypotheses. Moreover, the analyses requires a data check for missing data, entry errors and normality. While the constructs are developed according to constructs mentioned in the Data structure, the internal consistency will be checked with the Cronbach's Alpha on the reliability to assure that the items are measuring the same construct. This can be confirmed by checking the inter-correlation between the items for the construct. Although, a strong inter-correlation between the items indicate that the items are measuring the same construct, a weak inter-correlation between the items can imply the contrary, thus, the reliability is low. Field (2009) and Kline (1999), note that a generally acceptable range for the Cronbach's Alpha value is within the close dimensions of $\alpha = .7$ and $\alpha = .8$. However, it is also mentioned that these general guidelines have to be used with caution, as the value of α is also

dependent on the number of items on the scale. Meaning that, if there is an adequate value of α, it could imply that the Cronbach's Alpha value is high due to a large number of items, regardless of an high item inter-correlation or not. Based on the aforementioned, the intent is to aim for an high Cronbach's Alpha value (α = 7 or more), with small number of items to reach a high qualitative reliability of constructs. For this reason, it is necessary to delete items to increase the Cronbach's Alpha value(α). Consequently, Field (2009) and Cortina (1993) denote that an item inter-correlation above .5(r > .5) can be considered fairly strong. Furthermore, items that are reverse-phrased should be counter-reversed along with the scores before a reliability analysis is conducted. Consequently, a factor analyses is customary for a survey research. However, the minimum respondents' quota for an acceptable factor analyses is 50 (Comrey & Lee, 2013). Not meeting this standard will output poor results.

Assuring normality, the dataset will be analysed on the values of skewness and kurtosis. While skewness involves the symmetry of the distribution, kurtosis is subjected to the peakedness. In assumption of normality, George & Mallery (2010) indicate that the *z*-scores for skewness and kurtoses is ideally between -1.96 and 1.96 (both significant at $p < .05$).

Conclusively, with the aforementioned preparations, a regression analyses will be performed to test the hypotheses on the level of significance in correlation(s) and causation(s). The question however lies in which regression analyses, as this is dependent on the sample size leading to an acceptable statistical power. Generally, researchers have a different opinion about this matter, as most would agree that a bare minimum of 50 subjects would suffice for an adequate analyses, some would agree to a minimum of 100 subjects (Harris, 1975; Cohen, 1988; Green, 1991; Kelley & Maxwell, 2003; Voohis & Morgan, 2007). Although, these indications are a matter, the assumption will be that with subjects under a minimum of 50 will attest to a single linear regression analysis, while equally or above 50 will pinpoint to a multiple regression analysis. Based on the survey substance and prior references, the rule of thumb will be the bare minimum of 50 subjects for a multiple regression analyses whilst, below that count, assures to a single linear regression analysis. To give a sense of the effect sizes, the following guidelines of Cohen will be used to demonstrate this: *r* less than .10 can be seen as trivial, while the range between .10 and .30 can be interpreted as a small to medium effect, the range between .30 and .50 can be observed as a medium to large effect, and above .50 can be interpreted from a large to a very large effect (Cohen, 1988). While mostly these interpretations are used for Pearson's correlation *r*, another related effect size is the coefficient of determination R^2(or r-squared) the square calculation of the Pearson correlation *r*.

4. Analysis

Statistical analysis is applied using SPSS, meaning that the constructs are created from the survey data and tested on the internal consistency and normality. Moreover, a descriptive statistics analyses has been performed on the exploration of missing data, entry errors and normality. Additionally, the dataset has been tested on reliability with the Cronbach's Alpha to attest that the items have an sufficient inter-correlation for consistency. Generally, in case of a survey research it is standard to conduct a factor analysis. However, due to poor sample size of 25, factor analyses is excluded. Furthermore, the constructs are used to measure the direct effect according to the hypotheses and a single linear regression is executed due to a sample size of 25 respondents. While the planned minimum of 30 participants or a maximum of 50 has not been met, the sample size of 25 subjects is sufficient for further indications, analyses and future adaptations.

4.1 Participants

The grand scale of questionnaires has been filled out by participants that were acquired though semi-structured interviews (for collective research purposes) and from own initiation. Additionally, the SME's were represented by one or two employees. Along with five German companies, twenty companies are established in the Netherlands. Noted, most of these companies operate internationally, the participants are originated in Germany and Netherlands. All the companies are under operation in the production industry. Grossly, 700 companies have been approached through email and telephone over a 45 day period. Mostly, companies were not able to meet the time needed for an hour interview and an additional survey, so the response rate is low, nearing to 2%. While finding respondents with the inclusion of interviews might have been bearing low data collection, focussing solely on the acquisition of questionnaires have resulted in 10 surveys over a 30-day period with a company reach of 250. In total, this results in 25 surveys for the data collection.

4.1.1 Companies

From the observation of the sample collection, the location of the company, location of the customers and the size have a similarity, not deviating from each other and fall under the quota of an SME. The industry of the corporate operation on the other hand, are not similar for each company. While some companies in the data collection fall under the same industry, most of the companies do not have this similarity and operate under a different industry (see Appendix 1). Unexpectedly, the organisations that do fall under the same industry, did not have complementary survey answers but rather differences. Although, an adequate conclusion is non-existent in the context of similarities between companies (mostly because of a poor sample size) operating under the same industry, different interpretations, circumstances and perspectives of survey participants can also account for the differences in the answers. There are still a lot of factors to account for the similarities.

4.2 Statistical analysis

Survey data has been collected from each organisation participating the study. The exploration of data has been realised with descriptive and inferential statistics methods described by Field (2009). While the identification of missing data, skewness, kurtosis and abnormalities in the data has been performed with descriptive statistics, correlations have been realized with inferential statistics methods. Looking at the descriptive statistics, there were no missing data entries (table 2) and abnormalities. Furthermore, the skewness and kurtosis of "Location" is in the high range and does not represent a normal distribution. The skewness and kurtosis of Customer location, Employees, VBPricing, Turbulence, velocity, Growth and Instability do fall within the acceptable ranges between -1.96 and 1.96 which indicates that normality can be assumed. Yet, looking at the graphs and considering the small sample size (N=25), asymmetrical skewness is still noticeable (Appendix 2). Additionally, the standard error of skewness and kurtosis are in all entries similar. The standard errors for skewness and kurtosis are solely functions of the sample size, regardless of the values of the statistics themselves. Therefore, the values for the standard error of skewness and kurtosis are the same. Equally important,

the reliability of the constructs have met the minimum standard of $\alpha = 7$. Correlations and causations, on the other hand, will be further clarified.

Table 2: Descriptive statistics of the 25 data entries

Statistics

		Location	Customer_location	Employees	VBPricing	Turbulence	Velocity	Growth	Instability
N	Valid	25	25	25	25	25	25	25	25
	Missing	0	0	0	0	0	0	0	0
Skewness		2,609	-,895	-,427	-,082	,149	,051	,020	-,306
Std. Error of Skewness		,464	,464	,464	,464	,464	,464	,464	,464
Kurtosis		6,656	-,152	-1,081	-,095	-1,025	-1,093	-,256	-,703
Std. Error of Kurtosis		,902	,902	,902	,902	,902	,902	,902	,902

4.3 Internal consistency

To acknowledge if the items measure the same necessary constructs (Value-based pricing, Turbulence, Velocity, Growth and Instability) as proposed in the Method section, an analysis of the internal consistency has been made. Although, the sample size is low, Cronbach's Alpha is still performed to validate the internal consistency of the constructs. As a small sample size is considered in the data analyses, a Cronbach's Alpha of a minimal 0.6 will not be disregarded but rather accepted as moderately reliable. Yet, a Cronbach's Alpha of minimal 0.7 is still preferred. Regardless, a minimum Cronbach's Alpha of 0.6 is still expected, as the items and constructs are based on prior research.

4.3.1 Value-based pricing

Value-based pricing has a Cronbach's Alpha of 0.828 (Table 3) and could not be improved further, and is not perceived as a concern because the value is above the norm. To reach the current value of 0.828, two items were deleted (VBPrice_2 and VBPrice_4). The inter-correlation between these items were less powerful, thus the items were deleted.

4.3.2 Turbulence

Turbulence has a Cronbach's Alpha of 0.767 (Table 3) and is above the norm. Consequently, it could not have been improved further. One item has been deleted to increase the Cronbach's Alpha to 0.767 as the inter-correlation with this item has been low, leaving two items (Turb_1 and Turb_3) for the measurement of this value. Although, the construct is above the settled norm, in contrary to the other four constructs, it has the lowest reliability.

4.3.3 Instability

Instability has a Cronbach's Alpha of 0.840 (Table 3) and the value is well beyond the norm. Moreover, the reliability could not have been improved further as the items already had a high inter-correlation between them. In this case, no items had any need for removal, thus three items (Inst_1, Inst_2, Inst_3) have stayed intact.

4.3.4 Growth

The environmental obstacle construct Growth has a Cronbach's Alpha of 0.830(Table 3), thus the reliability is well above the norm. Although, no items have been deleted, the construct already consisted of two items (Gro_1 and Gro_2) that have an high inter-correlation. More likely, as mentioned in the Method section, the constructs have had no need of many item deletions, because prior research have constantly built on them.

4.3.5 Velocity

Velocity as a construct has a Cronbach's Alpha of 0.786(Table 3) and therefore, is beyond the settled norm. Furthermore, no items have been deleted, leading to three items (Vel_1, Vel_2, Vel_3) having a good inter-correlation for an internal consistency.

Table 3: Cronbach's Alpha item reliability analyses for the constructs

Construct	Crohnbach's Alpha	Number of Items after deletion	Number of Items deleted
Value-based Pricing	0,828	3	2
Turbulence	0,767	2	1
Instability	0,840	3	0
Growth	0,830	2	0
Velocity	0,786	3	0

4.4 Uniformity of the data

As illustrated in Table 2, after conducting descriptive statistics, the constructs represent the conditions in Kurtosis and Skewness. The results point out that the constructs that are relevant, have a skewness and kurtosis between -1.96 and 1.96, which indicates that normality can be assumed.

4.5 Correlation

To test the significance in the correlations between the environmental obstacle constructs and Value-based pricing, a correlation table has been created (table 4). From quick observation from the correlation table, only one of the environmental obstacles variable has been significantly correlated with Value-based pricing. Moreover, all the environmental obstacles variables have been significantly correlated with each other, yet there is no adequate indication of (multi)collinearity. Although, the correlations are highly significant, the correlations in its self are not excessively high enough to indicate (multi)collinearity. Looking at the Variance Inflation Factor (VIF) later on, the values validate the aforementioned, as the VIF does not reach high levels. Consequently, the Tolerance levels, are well above 0.10.

Table 4: Correlation Table

Correlations

		VBPricing	Turbulence	Velocity	Growth	Instability
VBPricing	Pearson Correlation	1	-,018	,286	,431*	-,045
	Sig. (1-tailed)		,465	,083	,016	,415
	N	25	25	25	25	25
Turbulence	Pearson Correlation	-,018	1	,501**	,554**	,409*
	Sig. (1-tailed)	,465		,005	,002	,021
	N	25	25	25	25	25
Velocity	Pearson Correlation	,286	,501**	1	,547**	,318
	Sig. (1-tailed)	,083	,005		,002	,061
	N	25	25	25	25	25
Growth	Pearson Correlation	,431*	,554**	,547**	1	,503**
	Sig. (1-tailed)	,016	,002	,002		,005
	N	25	25	25	25	25
Instability	Pearson Correlation	-,045	,409*	,318	,503**	1
	Sig. (1-tailed)	,415	,021	,061	,005	
	N	25	25	25	25	25

*. Correlation is significant at the 0.05 level (1-tailed).

**. Correlation is significant at the 0.01 level (1-tailed).

4.6 Direct effects

Testing on the direct effects will be met by performing a linear regression. Due to a small sample size (N=25), a multiple linear regression analyses will not give a sufficient validation, but rather a small indication. Contrarily, the indication might also not be strong enough. Nonetheless, the direct effects will be mainly approved by the output of a linear regression analyses, while an attempt for a (stepwise)multiple regression analyses will give a possible indication for further research and adaptation(s). Following the table interpretations, "I.V." will be an abbreviation for "Independent Variable" and "D.V." will be an abbreviation for "Dependent Variable".

H1: Dutch and German SME's in Highly turbulent environments are unlikely to use a value-based pricing approach on their new products.

Table 5: Linear regression results for H1

I.V.	**D.V.**	**R^2**	**B**	**t**	**F**	**Significance (2-tailed)**	**Significance (1-tailed)**	**Tolerance**	**VIF**
Turbulence	VBPricing	0,000	-0,016	-0,089	0,008	0,93	0,465	1,000	1,000

A linear regression has been conducted to test the first hypothesis (Table 5). The first noticeable

output is that there is no significant (both in 1-tailed and 2-tailed) relationship between Turbulence and Value-based pricing. Furthermore, the effect that Turbulence has on the Value-based pricing would be very trivial (R^2= 0,000, *r*= -,018). Moreover, the direct effect of Turbulence on the Value-Based pricing is not significant (F=0,008, p=0,465, R^2= 0,000). Because of there is no significant effect of Turbulence on the VBPricing, H1 is rejected.

H2: Dutch and German SME's in high-growth environments are unlikely to use a value-based pricing approach on their new products.

Table 6: Linear regression results for H2

I.V.	D.V.	R^2	B	t	F	Significance (2-tailed)	Significance (1-tailed)	Tolerance	VIF
Growth	VBPricing	0,186	0,482	2,290	5,244	0,032	0,016	1,000	1,000

The second hypothesis is, likewise, tested with a linear regression analyses (Table 6). Surprisingly, the positive correlation(r=0,431) between Growth and Value-based pricing is significant(p=0,032 in 2-tailed and p=0,016 in 1-tailed). Yet H2 is rejected, as the data hints the contrary of H2, that is: "Dutch and German SME's in high-growth environments are **likely** to use a value-based pricing approach on their new products.". Moreover, there is a moderately large positive effect(R^2=0,186, *r*=0,431) of Growth on the Value-based pricing. Although, this research indicates that there is a significant positive effect of a high-growth environment on the value-based pricing strategy, we cannot yet fully assume causality, implying that an "high-growth environment *causes* Dutch and German SME's to choose a value-based pricing approach on their new products". In this case, one would think it is unlikely that a pricing strategy affects the environment, yet multiple factors or reasons might be included in the significantly positive correlation, leaving room for further discussion in this paper.

H3: Dutch and German SME's in high-instability environments are unlikely to use a value-based pricing approach on their new products.

Table 7: Linear regression results for H3

I.V.	D.V.	R^2	B	t	F	Significance (2-tailed)	Significance (1-tailed)	Tolerance	VIF
Instability	VBPricing	0,002	-0,43	-0,216	0,047	0,831	0,415	1,000	1,000

similarly, the third hypothesis is tested with a linear regression analysis (Table 7) and the results point out that there is no significant relationship(p=0,831 in 2-tailed and p=0,415 in 1-tailed) between Instability and Value-based pricing(p=0,831). Consequently, there is almost no effect of Instability on the Value-based pricing (R^2=0,002 and *r*=-,*045)*. Therefore, H3 is rejected.

H4: Dutch and German SME's in high-velocity environments are likely to use a value-based pricing approach on their new products.

Table 8: Linear regression results for H4

I.V.	D.V.	R^2	B	t	F	Significance (2-tailed)	Significance (1-tailed)	Tolerance	VIF
Velocity	VBPricing	0,082	0,215	1,434	2,055	0,165	0,083	1,000	1,000

Likewise, a linear regression analyses is replicated on the fourth hypothesis between the variables "Velocity" and "VBPricing" (Table 8). The results reveal that, with the current sample size, there is no significant correlation between Velocity and Value-based pricing (p=0,165 in 2-tailed and p=0,083 in 1-tailed). Moreover, there is a moderately positive effect of Velocity on the Value-based pricing

(R^2=0,082 and *r*= 0,286). Although there is no significance, the p-value can be considered very low. Possibly, a larger sample size might bring more significant meaning between these variables.

While the sample size is not fit for purpose regarding a multiple regression analysis. An attempt is still considered (Table 9), leading to a possible indication for further research and adaptation. In this attempt, Value-based pricing has been set as the dependent variable. Additionally, the environmental obstacle constructs have been set as the independent variables. Whilst performing the test stepwise, the weakest correlated variables have been disregarded from the equation, leaving only the variables that are most fit to explain the distribution.

Observations from the stepwise multiple regression analyses (out of all relevant variables), reveal that Growth, is the only relevant variable significantly explaining the distribution. This result, to a certain degree, further validates the former linear regression analyses.

Table 9: Multiple regression results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95,0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	2,157	,662		3,257	,003	,787	3,527		
	Growth	,482	,210	,431	2,290	,032	,047	,917	1,000	1,000

a. Dependent Variable: VBPricing

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	Turbulence	-,371[b]	-1,709	,101	-,342	,693	1,443	,693
	Velocity	,073[b]	,317	,755	,067	,701	1,426	,701
	Instability	-,350[b]	-1,670	,109	-,335	,747	1,338	,747

a. Dependent Variable: VBPricing

b. Predictors in the Model: (Constant), Growth

5. Discussion

The results partially support the theoretical framework and the hypotheses. Environmental dynamics variables do exert some influence on the pricing strategies. Potentially, on the attempt of implementing value-based pricing, as the environmental dynamics certainly might have either a positive or a negative influence. As the data collected, outputs some indication of correlations, jumping conclusions on causations is yet to be recognized, as different other unnoticed or discovered factors can play a substantial role in implementing a value-based pricing strategy. Like the theoretical framework covered that different circumstances might make it unlikely for a SME to use value-based pricing strategy, if certain requirements can be met, then the possibility still exists to implement value-based pricing. In the case of this study, Hinterhuber (2008), mentions that a decision for value-based pricing requires a lot of information and certainty. This partially is backed up with the attention on why this pricing strategy is known as the most profitable pricing strategy where patience, perseverance, confidence is to be known as main ingredients (Liozu, 2014). Yet, observing at what drives that decision when environmental obstacles are at play, possibly provides a new perspective in the matter.

5.1 Theoretical contribution

This study expands the current set of knowledge regarding the driving factors of SME's in their choice for value-based pricing strategy. Presently, the knowledge on the effectiveness of a value-based pricing strategy is adequate. Yet, there is room for more study as regards to the driving factors influencing the value-based pricing strategy, either positively or negatively. From this perspective, the incentive to adapt on the current studies mainly comes down on the outside influences on value-based pricing. As the tasks on this subject is divided among five researchers, different scopes were established. Furthermore, this study has set its focus on the external obstacles influencing the pricing strategy, along with another study observing the effect of internal obstacles on value-based pricing. The focal points of external, or rather the environmental obstacles, were further divided in four constructs. The constructs: Instability, Velocity, Growth and Turbulence have been further observed among two regions in Germany and The Netherlands. Based on these four variables, the findings were principally implying the presence of correlations between the environmental obstacle constructs and the Value-based pricing strategy. Out of the four constructs, only the relationship of Growth with Value-based pricing provided significant correlation and effect. On the other hand, the dynamic between these two variables resulted in a positive effect rather than the expectation of a negative effect. Moreover, Growth was mainly defined as a perception of increasing resource inflows in the market, where the strategic actors could be in a dilemma between the future threats of insufficient capabilities or capabilities that are ahead of the market needs (Floricel and Ibanescu, 2008). Despite the expectations of a negative influence on Value-based pricing strategy, there might be the indication that Growth can be a positive motivator for Value-based pricing. Admittingly, Growth is characterized as an environment that is continually expanding in opportunities with the need for bulky but risky investments. Based on the level of investment, Growth might have a positive influence on the Value-based pricing strategy. Furthermore, there is also the possibility that the level of risk has a mediating effect on Value-based pricing. As the SME's within this sample size might have asserted a high level of risk, resulting in a positive effect, a low risk approach might have proven otherwise.

Although, only one out of four environmental obstacle constructs (Growth) has significant positive effect on Value-based pricing, further replication of this study on a larger scale (in sample size and demographic), still remains to validate the significance on the correlations along with causations and therefore the contribution. It is also worth mentioning that there are studies indicating that this environmental condition depends on how much disposable income is available. Banting and Ross (1975), revealed that purchasing power, along with a high variety of products leads to extremely high costs for marketers because of: short production runs, high safety stocks, uneconomical and frequent small shipments, high per unit allocations of head office, marketing research, R & D, and promotion expenses. Presently, it has also become increasingly difficult to get customers' attention. Hinterhuber

(2008), has mentioned that customers are flooded with television, print and internet advertisements with various other scale tactics where customers adopt a negative view of marketing. Currently, customers are difficult to reach and impress through traditional market channels, with a tendency of not responding well to traditional marketing tactics, unless these tactics are creative, unusual, and perceived as impressive (Hinterhuber, 2008). Therefore, investment in marketing research and promotion expenses becomes necessary and intensive. Moreover, depending on the market, similar necessary costs still remain in the current developments. Therefore, not only would available income play a role in this environmental dynamic, it's the alignment of the purchasing power spend over the amount of product variety that is offered. The higher the product variety, the more purchasing power is needed. Perhaps, SME's that align their purchasing power adequately with their product variety, have the requirements, or rather the space, budget and attention span to implement a Value-based pricing strategy.

The moderately positive effect of Velocity on the Value-based pricing has been bordering close on significance and might've proven significant with a larger sample size. Yet depending on the sample size, a different strength of effect on the pricing strategy might've also been present. The indication does bring the attention on the effect Velocity might have on the Value-based pricing approach. Floricel and Ibanescu (2008), mention that directional changes in the environment might be rapid, but still predictable. Depending on the predictability, it might not be surprising that Velocity can have a moderately positive effect on the Value-based pricing.

Although, the relationship between Turbulence and Value-based pricing has not been significant, there has been little to no indication of a relationship and effect of Turbulence on the Value-based pricing approach. Momentarily, three environmental dynamic constructs have no adequate significance. While there is no adequate significance, looking at the effect(very small) that Instability would have on the Value-based pricing, it wouldn't be a surprising matter as prior research has determined that strong presence of competitive pressure would most likely lead to an adoption of competitive-based pricing approaches rather than Value-based (Liozu, 2014; Ingenbleek et al, 2013). Liozu (2013), on this matter, mentions that competitive environments often led to the development of a commoditization mindset.

In this case, the contribution does provide an indication that the environmental obstacles faced by SME's, possibly affect the choices for a pricing strategy. Therefore, this study encourages replication and future findings on the same matter for further validation, generalization and adaptation.

5.2 Practical implications

The practical implications mainly come down to the poor sample size that is put into effect during the actualization of this study. The collection of data within the available timespan, only resulted in acquiring 25 respondents, which, according to the observed theory, would only allow for an adequate linear regression analysis. Whilst, the ability to perform a linear regression analyse was present, a larger sample size might've delivered more accurate outputs.

5.3 Limitations of the study

Although, there is a contribution from this study, limitations are present. First and foremost, generalization is heavily limited by the sheer factor of having a small sample size. Generalizations, possibly, could still be a difficult cornerstone as "Industry" is another factor that could bring meaning to the pricing strategy choices of SME's. From the conduction of semi-structured interviews found on the collective research, different noticeable challenges are faced by the SME's based on the industry. For example, an SME that has a focus group or a market segment in the digital or Nano industry, might face a more dynamic environment where market changes occur in a fast pace. In this case, a fast and flexible response might become of highest priority. Organisations that lack this ability, might face less favourable opportunities to safely implement a value-based pricing strategy with the required information, certainty or confidence. Moreover, one might ask themselves if an SME with a

decentralized organisational structure might be more fitting for this industry, or perhaps a centralized structure. Furthermore, the next limitation arises from the insufficient replication of this study over the same regions and requirements. Consequently, from a small sample size, as 25 different SME's over the same regions might provide different data, thus results. Although, this still subjects within the aspects of generalizations, the relevancy is with the generalizations over the same regions. Contrarily, generalizations for these regions might not be representable for the whole country, and most likely on the larger scales tantamount to the sample sizes and representational factors. Another limitation is the grey area of the possibility for further unknown factors that can affect the pricing strategies of SME's. While this study may present significant correlation and causation with some indications for potentially significant correlations and causations, conclusions on causations should be thread carefully. The current correlations might not imply causation. While, it would seem unlikely that a pricing strategy has an effect on the environment, there can still be different unaccounted indicators and factors having an influence on the pricing strategies and otherwise.

5.4 Directions for further research

As mentioned before, the study remains to deliver a conclusion on causations. Although correlations are present, further research might deliver more clarification and validation on causations by replicating the study on a larger scale, demographically and in sample size. Additionally, control variables can be exploited to further expand the understanding on whether the correlations can be implied as causations. Possible control variables could be for example: Industry, Firm size, Organizational structure, capital and (IT)infrastructure.

6. Conclusion

The study assessed "*the influence of external obstacles on the pricing strategy of new products at Dutch and German B2B SME's"*. To support the assessment of this matter, a literature review has been formed leading to four hypotheses. While, multitude of studies validate the positive effectiveness of a Value-based pricing strategy, the drive and effect of external obstacles has yet to be remained. The four hypotheses follow the assumption on the most favourable pricing strategy Value-based pricing, where four external obstacles can bring influences in the willingness to choose this pricing strategy. Currently, the assessment has involved the four environmental obstacle constructs: Turbulence, Velocity, Growth and Instability. Although, the results point out that Instability and Turbulence have a weak negative correlation with Value-based pricing, the correlations between these constructs and Value-based pricing has not been significant.

The third assessment of the relationship between Velocity and Value-based pricing resulted positive, supporting the hypotheses regarding these two constructs. Yet, validation of the correlations between these two constructs stays on hold, as there was no significant relationship. Moreover, the correlation between these two constructs has been bordering close on significance. Which, brings the attention on a larger sample size, possibly allowing for a significant relationship between Velocity and Value-based pricing in future assessments.

The fourth analysis comes down to the relationship between Growth and Value-based pricing, surprisingly leading to the contrary of the hypothesis: "*Dutch and German SME's in high-growth environments are unlikely to use a value-based pricing approach on their new products.".* As the hypothesis assumed a negative influence, the output of the data validates otherwise with a significant correlation between Growth and Value-based pricing, indicating a moderately large effect of Growth on Value-based pricing . Even though there is a significant correlation between these two variables, there might not yet be adequate assumption of causation. To meet enough validation for causation, replication and further adaptation of the study is essential with the proper requirements.

In conclusion to the following research question: *What is the influence of external obstacles on the pricing strategy of new products at Dutch and German B2B SMEs?*". The analyses of the hypotheses bring a strong indication that some external obstacles can have a mixed influence on the ideal pricing strategy. While theory sufficiently validates that a Value-based pricing approach is the most ideal, this study indicates that, out of the four assessed environmental constructs, Growth can have a positive influence on Value-based pricing. Growth defines the level of resource inflows in a market and is characterized as an environment that is continually expanding in opportunities with the need for bulky but risky investments. Based on the level of investment, Growth might have a positive influence on the Value-based pricing strategy. Therefore, according to the assessment, it can be concluded that Growth is involved with the selection of a pricing strategy for Dutch and German B2B SME's. Consequently, future research is required with control variables and a larger sample size to further validate the causation. In sum, the findings of this study bring attention on the importance of external obstacles on the pricing strategies, and the necessity for further empirical testing.

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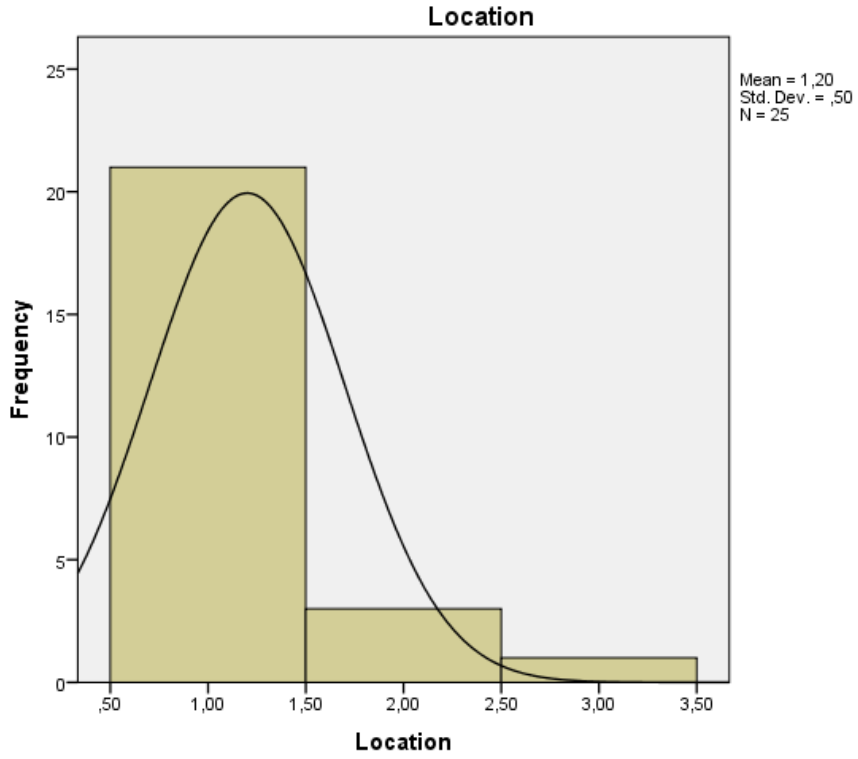
9. Appendix

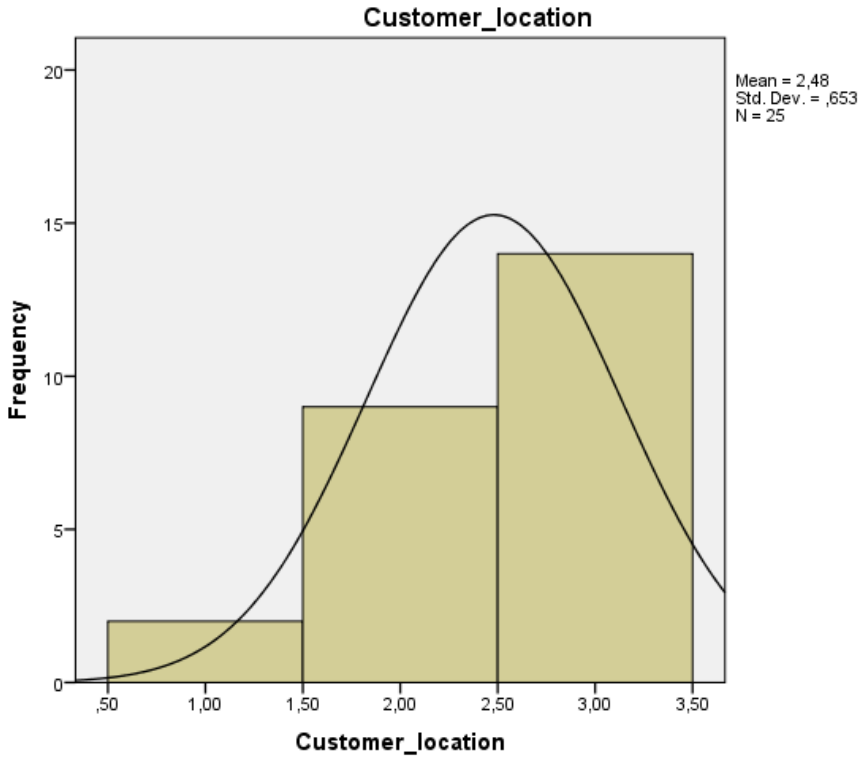
A: Survey overview

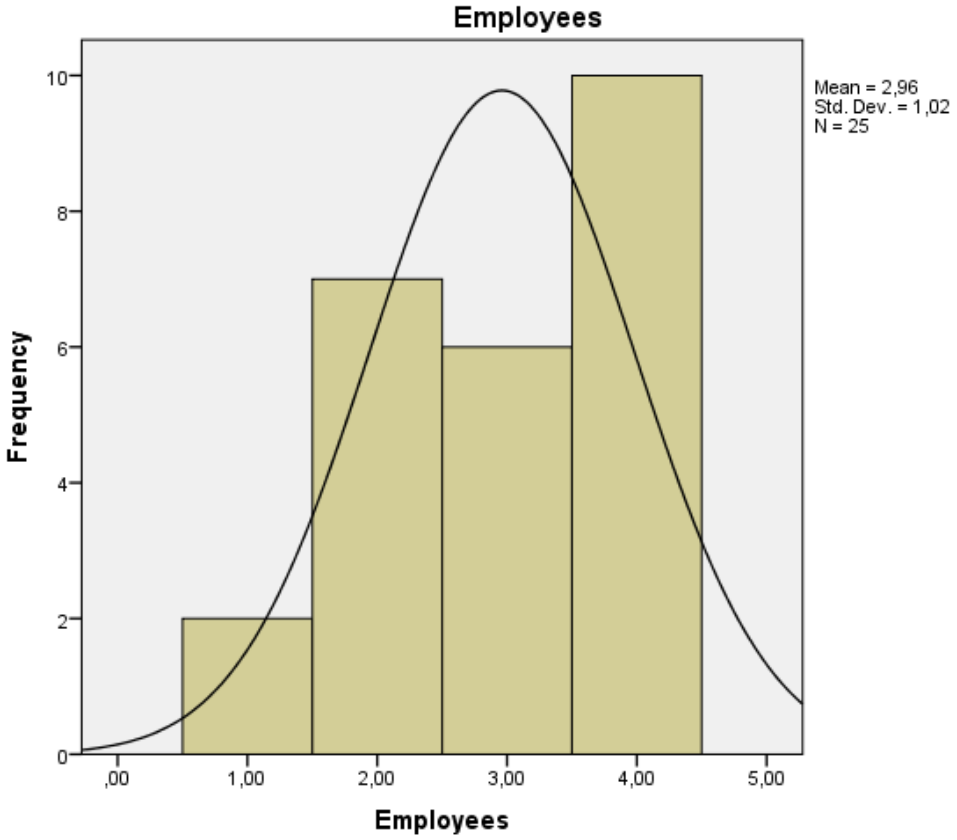
Industry	location	customer	employee	new prod	VBP1	VBP2	VBP3	VBP4	VBP5	VBP6	VBP7	VBPr1	VBPr2	VBPr3	VBPr4	VBPr5	CostBP1	CostBP2	CostBP3	CostBP4	CostBP5
Agri1	1	3	4	5	5	4	2	3	1	1	4	5	5	5	5	5	2	1	4	2	2
Agri2	1	3	2	2	4	4	5	4	2	2	5	4	4	4	4	4	2	3	3	3	3
Sport1	1	3	3	4	4	4	3	4	2	2	3	4	4	4	3	4	3	4	3	2	2
Steel 1	1	1	2	5	4	4	4	1	2	2	2	3	5	5	4	3	4	4	4	2	4
Semicon 1	1	2	2	1	3	5	3	4	3	4	4	3	5	5	4	3	4	4	4	4	3
General 1	1	2	2	2	4	4	3	4	1	1	3	3	4	4	4	2	2	3	2	2	2
Textiles1	1	3	4	4	4	3	4	5	3	2	5	4	5	5	3	4	5	4	3	3	3
Iron 1	1	2	4	1	3	4	4	4	4	4	5	3	4	4	4	3	4	4	4	4	3
Semicon 2	1	3	4	4	5	4	4	4	3	1	5	4	5	5	4	4	4	3	4	3	2
Steel 2	1	2	2	2	4	5	4	4	2	2	5	5	5	4	5	3	5	3	5	5	5
Print1	2	2	2	2	5	5	3	4	1	1	5	3	5	3	4	3	5	5	5	3	3
Plastics1	3	3	3	4	5	5	5	5	3	2	4	5	5	5	5	5	4	5	4	3	3
Plastics2	2	2	1	3	5	5	3	4	2	2	5	4	3	4	5	3	4	5	5	2	2
Plastics3	2	3	3	5	2	4	1	4	1	1	5	3	4	4	3	2	4	4	3	3	3
Thermoplast1	1	3	3	3	4	4	3	5	4	2	5	3	4	4	4	3	4	5	2	4	5
Nano1	1	3	3	3	4	5	4	4	4	2	3	3	4	4	3	3	4	4	3	3	3
Plastics4	1	2	3	1	3	4	2	3	2	2	3	3	4	2	3	2	5	4	4	4	4
Plastics5	1	2	4	1	3	3	3	2	2	1	2	3	4	2	3	1	4	4	4	2	3
Nano2	1	3	2	4	5	5	4	4	4	3	4	3	5	4	4	4	4	4	4	4	3
Oil1	1	3	4	3	4	4	4	4	4	3	5	3	4	4	4	3	4	4	3	3	3
Sunpanel1	1	2	4	2	3	4	4	4	3	3	4	3	3	3	4	3	3	3	4	3	3
Sanitary1	1	3	4	3	4	4	4	4	3	2	4	3	4	3	4	3	3	4	2	3	3
Radar1	1	3	4	4	5	5	4	4	4	4	4	4	4	4	4	4	3	3	4	4	3
Aerotech1	1	3	4	4	5	5	4	4	4	3	5	4	4	5	4	4	3	3	2	4	3
Systems1	1	1	1	1	4	5	5	5	4	2	5	4	5	5	1	5	2	4	5	2	2

Industry	CompBP1	CompBP2	CompBP3	CompBp4	CompBP5	CompBP6	SoNP1	SoNP2	SoNP3	SoNP4	SoNP5	V1	V2	v3	t1	t2	t3	g1	g2	i1	i2	i3
Agri1	4	5	1	3	1	2	3	3	4	5	5	3	3	1	1	2	1	3	2	2	2	1
Agri2	4	4	4	4	3	3	3	3	3	4	4	3	3	4	2	2	2	3	3	2	3	3
Sport1	4	4	3	2	2	2	0	0	0	0	5	2	2	2	2	2	2	3	4	4	3	4
Steel 1	4	2	4	4	3	4	0	0	0	0	3	2	2	3	3	3	2	2	2	4	3	2
Semicon 1	2	3	4	3	4	3	4	3	3	3	4	4	3	4	2	3	2	2	3	2	2	2
General 1	4	4	2	2	2	2	3	3	3	3	3	2	2	4	2	2	3	2	2	3	2	3
Textiles1	4	4	4	4	4	3	4	4	2	4	3	5	4	3	3	5	3	4	4	4	4	3
Iron 1	4	3	4	2	2	2	0	0	0	0	0	5	4	4	2	2	3	3	3	3	4	4
Semicon 2	4	5	4	4	4	4	4	4	3	4	3	2	2	3	2	3	1	3	3	5	3	5
Steel 2	4	5	3	5	5	5	4	4	4	4	4	1	2	4	3	2	3	3	3	2	2	2
Print1	4	4	4	5	5	3	3	3	3	3	3	5	3	5	2	5	1	3	3	4	4	4
Plastics1	4	5	3	4	4	4	4	4	4	4	4	2	3	2	1	2	2	3	3	2	2	2
Plastics2	4	5	4	4	3	4	3	3	4	4	3	1	2	3	2	3	2	3	3	4	3	4
Plastics3	2	2	4	2	2	3	3	3	3	3	4	3	2	4	3	3	3	3	4	4	3	4
Thermoplast1	4	4	2	2	1	2	2	2	3	3	4	2	2	3	2	2	2	3	4	3	2	2
Nano1	3	4	2	2	1	2	4	4	3	3	3	5	4	4	4	3	4	4	4	2	3	4
Plastics4	2	2	3	2	1	2	2	3	2	2	3	1	2	1	2	2	2	2	2	3	3	3
Plastics5	4	4	3	4	4	3	3	3	3	3	3	1	1	1	1	1	2	2	2	2	3	3
Nano2	3	3	2	3	3	3	4	4	3	3	4	4	5	4	4	4	4	3	3	4	3	4
Oil1	3	4	4	4	4	4	4	4	3	4	3	2	3	2	4	2	3	4	3	4	4	4
Sunpanel1	2	3	3	2	3	2	3	3	3	2	3	2	3	3	3	3	3	3	3	3	3	3
Sanitary1	3	2	2	2	2	3	4	4	4	3	4	2	2	2	3	3	3	3	3	4	3	4
Radar1	4	3	2	2	2	3	4	4	4	4	4	4	3	4	4	3	4	3	4	4	3	4
Aerotech1	3	3	3	3	3	4	4	3	3	3	4	4	4	4	4	3	3	4	4	4	3	4
Systems1	2	2	4	4	4	4	4	4	5	4	5	5	2	5	5	5	2	4	5	5	4	5

B: Distributions of the relevant constructs



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Std. Dev. = 1,02
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Employees
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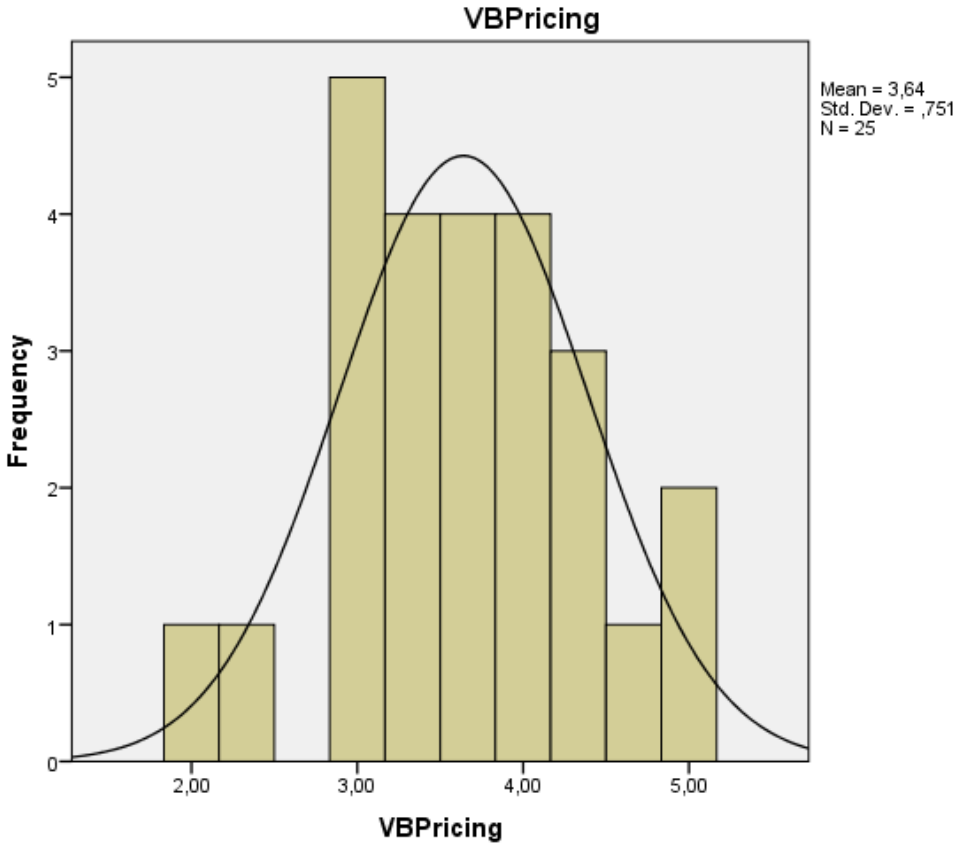
6
8
10
,00
1,00
2,00
3,00
4,00
5,00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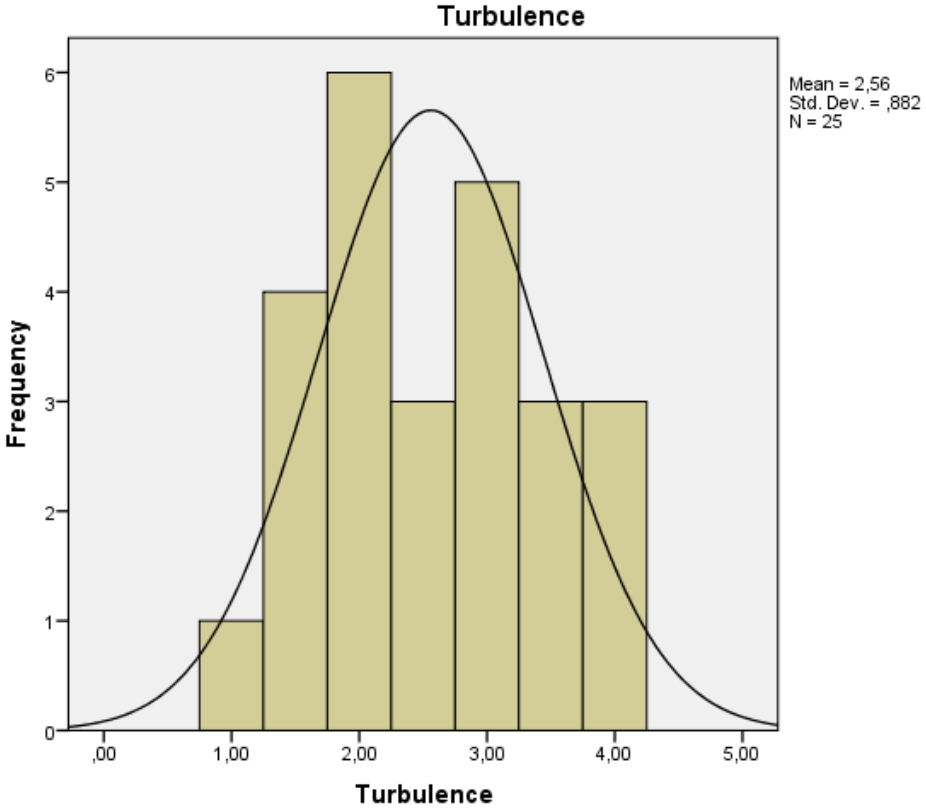
3
4
5
2,00
3,00
4,00
5,00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Std. Dev. = ,882
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Frequency
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5
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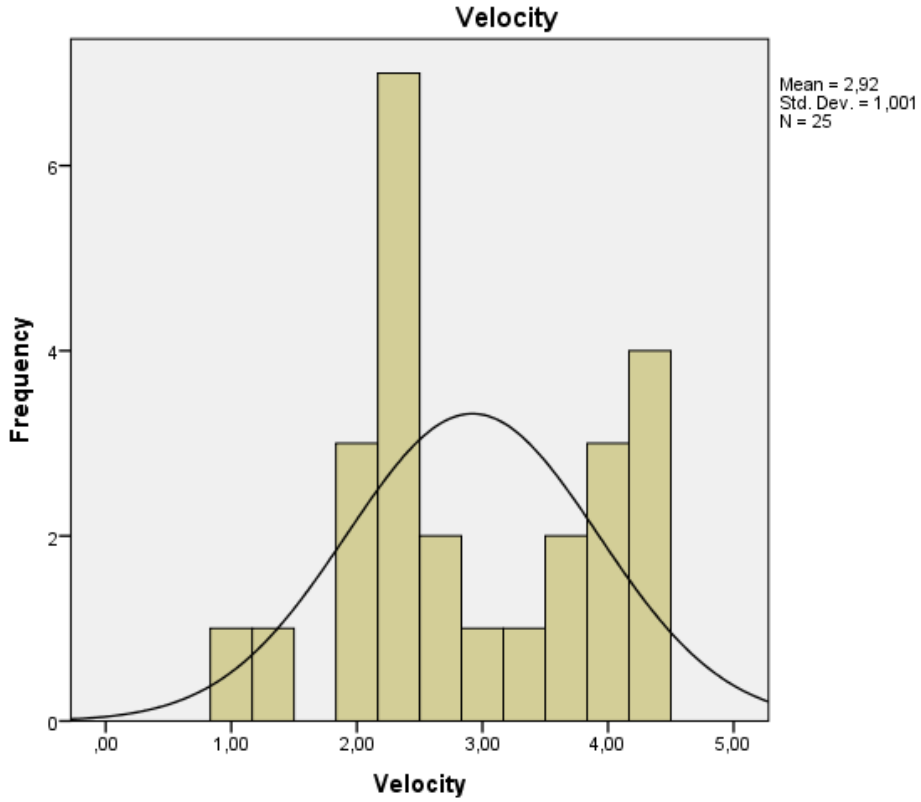
,00
1,00
2,00
3,00
4,00
5,00
Turbulence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Std. Dev. = 1,001
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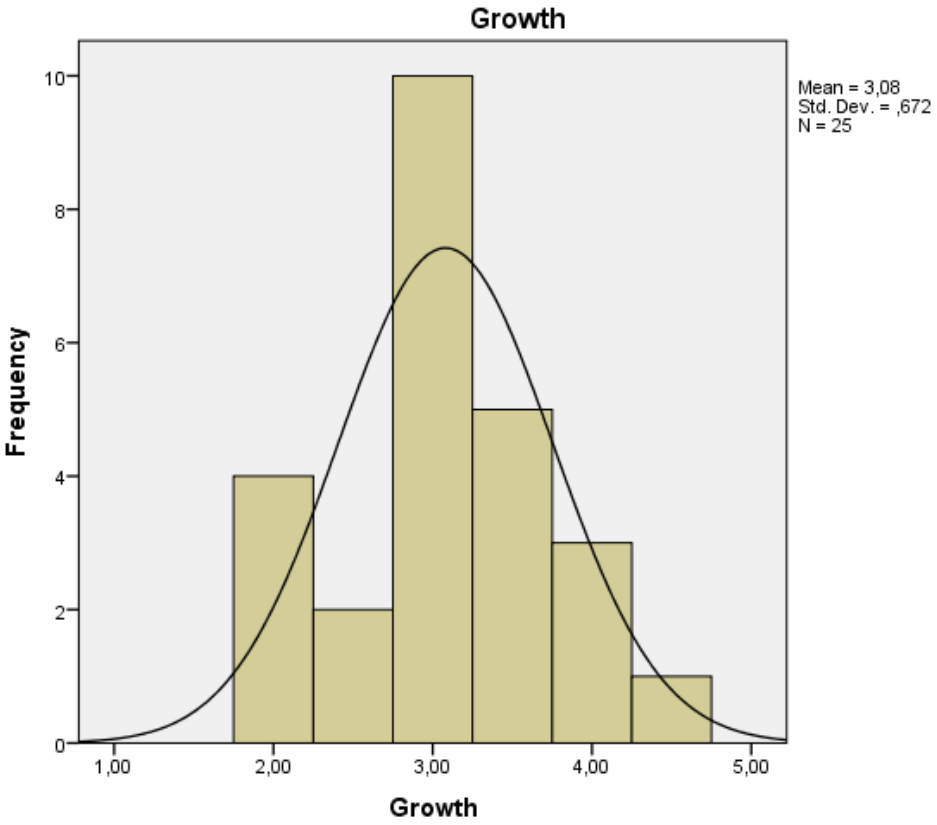
6
,00
1,00
2,00
3,00
4,00
5,00
Velocity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Mean = 3,08
Std. Dev. = ,672
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8
10
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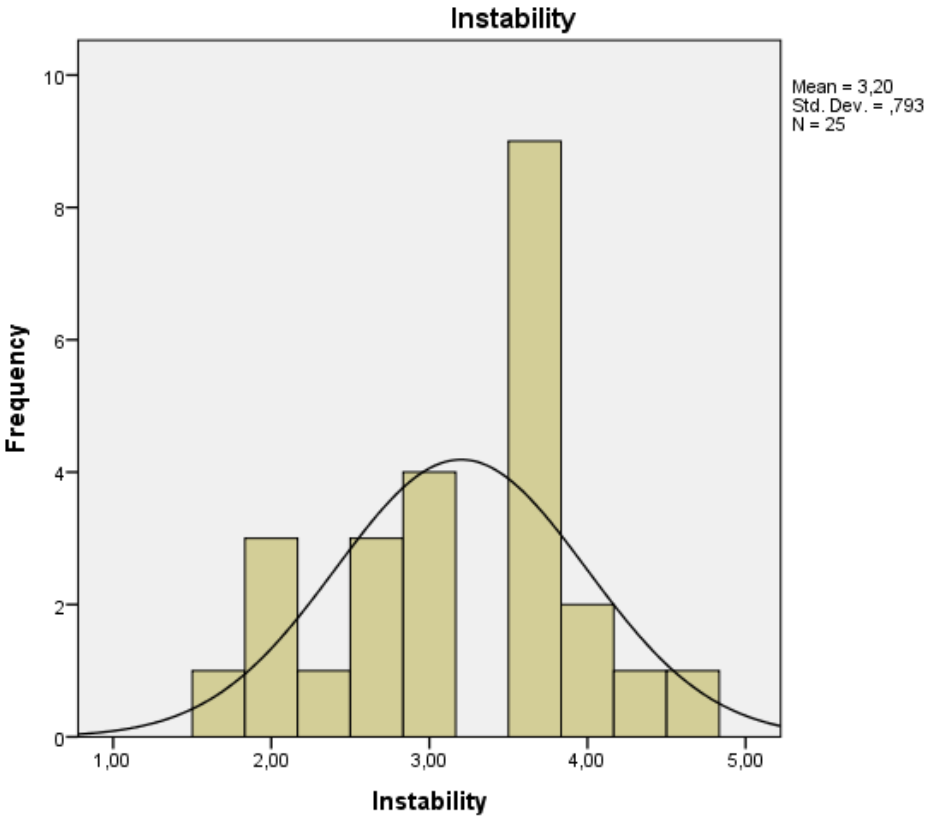
2,00
3,00
4,00
5,00
Growth


Instability
Mean = 3,20
Std. Dev. = ,793
N = 25
Frequency
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2
4
6
8
10
1,00
2,00
3,00
4,00
5,00
Instability

C: SPSS output of Reliability

Value-based pricing

Reliability Statistics

Cronbach's Alpha	N of Items
,828	3

Item Statistics

	Mean	Std. Deviation	N
VBPrice_1	3,5600	,71181	25
VBPrice_3	4,0400	,88882	25
VBPrice_5	3,3200	,98826	25

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
VBPrice_1	7,3600	2,990	,642	,818
VBPrice_3	6,8800	2,443	,663	,786
VBPrice_5	7,6000	1,917	,798	,647

Inter-Item Correlation Matrix

	VBPrice_1	VBPrice_2	VBPrice_3	VBPrice_4	VBPrice_5
VBPrice_1	1,000	,329	,490	,324	,682
VBPrice_2	,329	1,000	,499	-,031	,433
VBPrice_3	,490	,499	1,000	,119	,696
VBPrice_4	,324	-,031	,119	1,000	,078
VBPrice_5	,682	,433	,696	,078	1,000

Turbulence

Reliability Statistics

Cronbach's Alpha	N of Items
,767	2

Item Statistics

	Mean	Std. Deviation	N
Turb_1	2,6400	1,07548	25
Turb_3	2,4800	,87178	25

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Turb_1	2,4800	,760	,636	.
Turb_3	2,6400	1,157	,636	.

Inter-Item Correlation Matrix

	Turb_1	Turb_2	Turb_3
Turb_1	1,000	,529	,636
Turb_2	,529	1,000	,064
Turb_3	,636	,064	1,000

Instability

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,840	,852	3

Item Statistics

	Mean	Std. Deviation	N
Inst_1	3,3200	,98826	25
Inst_2	2,9600	,67577	25
Inst_3	3,3200	1,02956	25

Inter-Item Correlation Matrix

	Inst_1	Inst_2	Inst_3
Inst_1	1,000	,581	,714
Inst_2	,581	1,000	,678
Inst_3	,714	,678	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Inst_1	6,2800	2,460	,719	,528	,767
Inst_2	6,6400	3,490	,681	,479	,833
Inst_3	6,2800	2,210	,783	,614	,703

Growth

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,830	,841	2

Item Statistics

	Mean	Std. Deviation	N
Gro_1	3,0000	,64550	25
Gro_2	3,1600	,80000	25

Inter-Item Correlation Matrix

	Gro_1	Gro_2
Gro_1	1,000	,726
Gro_2	,726	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Gro_1	3,1600	,640	,726	,527	.
Gro_2	3,0000	,417	,726	,527	.

Velocity

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,786	,790	3

Item Statistics

	Mean	Std. Deviation	N
Vel_1	2,8800	1,42361	25
Vel_2	2,7200	,93630	25
Vel_3	3,1600	1,17898	25

Inter-Item Correlation Matrix

	Vel_1	Vel_2	Vel_3
Vel_1	1,000	,693	,633
Vel_2	,693	1,000	,344
Vel_3	,633	,344	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Vel_1	5,8800	3,027	,801	,656	,502
Vel_2	6,0400	5,540	,591	,495	,767
Vel_3	5,6000	4,750	,561	,417	,778

D: Multiple regression attempt with sample size N=25

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	,431[a]	,186	,150	,69232	,186	5,244	1	23	,032	1,245

a. Predictors: (Constant), Growth

b. Dependent Variable: VBPricing

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2,514	1	2,514	5,244	,032[b]
	Residual	11,024	23	,479		
	Total	13,538	24			

a. Dependent Variable: VBPricing

b. Predictors: (Constant), Growth

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	2,157	,662		3,257	,003	,787	3,527					
	Growth	,482	,210	,431	2,290	,032	,047	,917	,431	,431	,431	1,000	1,000

a. Dependent Variable: VBPricing

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	Instability	-,350[b]	-1,670	,109	-,335	,747	1,338	,747
	Turbulence	-,371[b]	-1,709	,101	-,342	,693	1,443	,693
	Velocity	,073[b]	,317	,755	,067	,701	1,426	,701

a. Dependent Variable: VBPricing

b. Predictors in the Model: (Constant), Growth