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Author post-print (accepted) deposited by Coventry University's Repository

Original citation & hyperlink:

Achterberg, LH, Omar, M, Ambituuni, A & Roll, O 2018, 'Facts or gut feelings: Analysis of external pricing antecedents for SMEs in Germany' *Journal of Small Business and Enterprise Development*, vol (in press), pp. (in press)

<https://dx.doi.org/10.1108/JSBED-12-2017-0398>

DOI [10.1108/JSBED-12-2017-0398](https://dx.doi.org/10.1108/JSBED-12-2017-0398)

ISSN 1462-6004

Publisher: Emerald

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Journal of Small Business and Enterprise Development

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Article information:

To cite this document:

Lars Hendrik Achterberg, Maktoba Omar, Ambisisis Ambituuni, Oliver Roll, (2018) "Facts or gut feelings: analysis of external pricing antecedents for SMEs in Germany", Journal of Small Business and Enterprise Development, <https://doi.org/10.1108/JSBED-12-2017-0398>

Permanent link to this document:

<https://doi.org/10.1108/JSBED-12-2017-0398>

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Abstract

Purpose – This study analyses the external antecedents of pricing information acquisition in an integrative manner. The study develops understanding of determinants of information acquisition as a crucial prerequisite of successful pricing strategies within German SMEs.

Methodology – A large scale survey of sampled 2,542 SMEs was conducted. A total of 220 questionnaires were completed, reflecting a response rate of 9 per cent. This was acceptable considering the sensitivity of pricing issues. A final sample of 173 usable questionnaires obtained.

Findings – The result indicates that external antecedents of pricing information acquisition practices have a positive impact on SME pricing performance and pricing performance is positively related to firm performance.

Practical implications – The study indicates that external antecedents of pricing information acquisition are strategic pricing capability, which should receive attention by SME managers.

Originality – This study bridges significant obstacle to knowledge generation and theory development of the important issues of pricing information acquisition in SMEs.

Keywords – Pricing information; SMEs; external pricing antecedents; pricing performance

1 Introduction

Pricing is considered key driver of a firm's performance and as a crucial factor in earning economic rents (Totzek and Alavi, 2010; Watson, Wood and Ferni, 2015; Dutta, Zbaracki and Bergen, 2003; Morgan 2012; Roy *et al.* 2016; Meehan *et al.* 2011; Roll, Pastuch, and Buchwald 2012). The first step in the process of making pricing decisions is the acquisition and use of pricing information (Homburg and Totzek 2011), which is regarded as the foundation of professional pricing in its organisational context (Indounas 2009; Totzek and Alavi 2010; Hult *et al.* 2005; Slater and Narver 2000). Without appropriate information, pricing decisions are likely to be gut-based and haphazard (Meehan *et al.* 2011). The consequence of such informal pricing practices is that firms will likely extract suboptimal profits from their markets (Ingenbleek *et al.* 2003; Monroe 2003; van der Rest., and Roper (2013). In the long-term, ignoring the informational prerequisites of pricing decisions might jeopardise the firm's existence, because profitability cannot be sustainably ensured.

The question of how firms should collect pricing information to determine pricing strategies and to arrive at profitable and competitive prices for their products is especially relevant and critical (Leonidou, 2004; van der Rest *et al.*, 2018). However, this tends to be overlooked by many managers (Roll, Pastuch, and Buchwald 2012) especially in small and medium enterprise (SME) context. This has been associated with the complexities of pricing (Banterle, Carraresi, and Cavaliere 2011; Cant 2012; Carson *et al.* 1998). Prior studies indicate that SME managers admit that pricing decisions are frequently guided by gut feelings, as they lack an effective information basis and sufficient managerial pricing skills when making such decisions (Cant 2012; Carson *et al.* 1998; van der Rest *et al.*, 2018)._This deficiency is a significant obstacle in professional pricing practices and profitable pricing decisions in SMEs and a very critical observation against the backdrop of the high importance of the SME sector to the EU (European Union) economy (Palmieri 2007; Spence and Essoussi 2010; Stokes and Wilson 2010; Wymenga *et al.* 2012; Stouraitis *et al.* 2017). In addition, shortcomings in SME pricing are particularly perilous, because, compared to larger enterprises and multinationals, SMEs are far more vulnerable due to limited resources, a lower labour productivity and a limited impact on the marketplace (Banterle, Carraresi, and Cavaliere 2011; Carson 1993; Stokes and Wilson 2010).

The bulk of pricing research tends to overlook the first step of making pricing decisions, which focuses on how firms should collect pricing information to determine pricing strategies

and arrive at profitable prices, as well as the antecedents of acquisition of such information (Özer and Phillips 2012). This is considered most important step in the information processing model (Yeoh, 2002). Ingenbleek (2007, p. 450) states, “at the foundation of value-informed pricing in its organizational context are [...] the information sources that may inform managers about the customer’s value perception”. However, studies on this issue only focus on large businesses (Totzek and Alavi 2010; Wiltinger 1998), particularly on export (Tzokas et al. 2000) and service pricing (Avlonitis and Indounas 2005; Indounas 2009), and only rely on small qualitative samples (Wiltinger 1998, Indounas 2009; Tzokas et al. 2000; Hart et al. 1999). Additionally, there is little conceptual and empirical research on the antecedents of pricing information acquisition. Specifically, to the best of our knowledge, no quantitative study, which analyses the external antecedents of pricing information acquisition in an integrative manner, has been previously conducted. The situation is even more critical for SMEs (Ingenbleek 2007; Rao and Kartono 2009; Schuppar 2006). Hence, this paper sets out to answer the following research question. *What are the external antecedents of pricing information acquisition in SMEs, and why should SMEs pay attention to pricing information acquisition?*

To answer this question, four hypotheses were developed and tested using quantitative survey data obtained from sampled manufacturing SME firms in Germany. The next section presents these hypotheses, followed by the research method in section 3. The result and discussion is presented in section 4 whilst section 5 discusses the implication and limitation of the study.

2 Hypotheses development

2.1 External market factors and pricing information acquisition

In this section, hypotheses are developed regarding the external market factors of pricing information acquisition. Three variables have been selected in this antecedent group: market-related complexity, market growth and customer power.

According to Information Economics theory, information acquisition activities are critically related to uncertainty problems arising from the external market environment (Adler, 1996; Franco et al. 2011; McGee and Sawyerr, 2003). Hence, market-related complexity is viewed

as a core barrier to informed marketing decision making. Wade and Hulland (2004) support this notion by suggesting that firms must develop their information processing capabilities to cope with increasing complexity.

Daft, Sormunen, and Parks (1988) confirm this argument based on a sample of 50 large U.S. manufacturers, their investigation suggests that greater complexity-related environmental uncertainty leads to greater information scanning in terms of frequency and overall amount of information sources. Yeoh (2000) also suggests a positive relationship between uncertainty and information acquisition. Environmental uncertainty is conceptualised in terms of the complexity of the immediate market-environment, related to competitors, customers and products and environmental complexity in terms of the macro or remote marketplace (e.g. tariffs, exchange rate fluctuations, legal environments).. Yeoh suggested that the managers' bounded rationality compels them to focus on the immediate and closer market-environment that has a more direct impact on a firm's potential. Therefore, the complexity of the immediate market environment seems to be more influential regarding information acquisition practices than macro-environmental-related complexity (Belich and Dubinsky, 1995). To summarise, the existing empirical evidence supports the inference that market-related complexity will most likely be associated with higher levels of pricing information acquisition activities.

Despite the relevance of the suggested relationship, empirical evidence in the context of pricing is scarce. Studies dealing explicitly with this relationship in an SME pricing context are lacking. This is surprising since Ingenbleek (2007) has established a conceptual link between demand uncertainty and pricing information sources. Consequently, the following hypothesis has been developed.

H1: SMEs operating in markets with high levels of complexity will conduct more pricing information acquisition.

The influence of market growth and dynamism on marketing practices has been acknowledged by several researchers (Daft, Sormunen, and Parks 1988; Homburg, Workman, and Krohmer 1999; Narver and Slater 1990). The dynamic component of uncertainty refers to "the degree to which the factors of the decision unit's internal and external environment remain basically the same over time or are in a continual process of change" (Duncan 1972, p. 316). The high rate of change connected to high growth dynamic

market environments has important implications for pricing decision making and information gathering (O'Regan, Ghobadian, and Liu 2000). Daft, Sormunen, and Parks (1988, p. 125) state that when the "rate of change is high, external activities and events shift rapidly so decision-makers do not have accurate information about them." This notion is corroborated by Yeoh (2000), who suggests that managers might deem their existing information and knowledge base inadequate to deal with unstable and quickly changing market conditions. Managers are likely to feel insecure and uncertain about pricing decisions that have already been implemented as well as about their future pricing decisions in these dynamic market conditions (Duncan, 1972). Drawing upon Information Economics theory, this increased perceived uncertainty will most likely lead to greater information screening activity (Adler, 1996). It is assumed that SMEs will conduct more pricing information acquisition to cope with high volatility and dynamic growth processes in their markets. Although it has not yet been investigated in the research field of SME pricing, some empirical support for this inference is provided by the studies of Garg, Walters, and Priem (2003), Ghobadian et al. (2008), Wright and Ashill (1998) and Yeoh (2000). Therefore, the following hypothesis has been postulated.

H2: SMEs operating in markets with high levels of market growth will conduct more pricing information acquisition.

If customer power is high, buyers can impose considerable pressure on prices (Slater and Narver 1994; Wyld, Pugh, and Tyrrall 2012; Yao and Oppewal, 2016). This might lead to lower levels of pricing success (Schuppar 2006; Totzek and Alavi 2010). The most relevant characteristic of this buyer/seller relationship is the element of enforcement. This element is important for the pricing practices of large enterprises (LEs) and multinationals, but even more for the pricing of SMEs, whose lack of control and power within given markets is considerably higher (Stokes and Wilson 2010). If customers can enforce their will regarding the price/quality configuration of a product in the buyer/seller relationship, the scope of action for self-determined marketing decision making will most likely be reduced substantially (Wyld, Pugh, and Tyrrall 2012). The theoretical underpinning for this inference can be found in Information Economics theory. Important contributions to this theory suggest that higher levels of uncertainty induce a higher amount of information acquisition activities. Paradoxically, if customer power is high, it is likely that uncertainty in a given pricing decision will be reduced substantially. The reason for this is that the SMEs' scope of action for pricing decisions is extremely limited in such a situation. The customer can impose his will by

exerting pressure on prices, leading to reactive pricing behaviour (Slater and Narver 1994; Wyld, Pugh, and Tyrrall 2012). Therefore, if customers have the power to dictate prices, the cost-benefit trade-off of information screening activities is likely to be unfavourable, leading to a lower number of SMEs' pricing information acquisition. Consequently, the following hypothesis has been postulated:

H3: SMEs operating in markets with high levels of customer power will conduct less pricing information acquisition.

2.2 Pricing information acquisition and pricing performance

Pricing performance has been selected as a key consequence of pricing information acquisition. The assumption is that higher levels of pricing information acquisition will lead to increased pricing performance. This is theoretically underpinned by the Information Economics theory and Resource-based View (RBV) (Hieke 2009; Hult 2011; Lockett 2005; Lockett, Thompson, and Morgenstern 2009; Newbert 2007). According to Information Economics theory, information acquisition is a key means to reduce uncertainty and improve decision quality. Moreover, the RBV literature asserts the potential positive relationship between appropriate information-processing capabilities and competitive advantage and performance (Barney 1991; Dutta, Zbaracki, and Bergen 2003; Narver and Slater 1990; van der Rest et al., 2018). Pricing decision makers (managers) who are bounded by external complexities may result in intuitive (gut feeling) approach (Hallberg, 2017) with implications for their competitive performance. Even when using heuristics that develop over time to fit the specifics of decision making (Mousavi and Kheirandish, 2014) research has shown that such approach require support in the form of access to institutions and decision-supporting systems (Smith, 2008). This further highlights the link between information processing capabilities and pricing performance.

The literature emphasises the impact of information acquisition on performance. In the export marketing literature, Köksal (2008) and Yeoh (2000) reported a positive influence of export information acquisition activities on export performance. In addition, findings in the environment scanning literature have also provided some evidence that information acquisition is positively related to firm performance (Daft, Sormunen, and Parks 1988; Garg, Walters, and Priem 2003; Beal 2000). Other researchers find non-significant or weak

relationships between information acquisition and performance (Brush 1992; Keh, Nguyen, and Ng 2007).

Quantitative findings regarding this relationship are scarce in pricing research. One of the few quantitative studies dealing with the construct pricing information investigates its relation not to pricing performance but to export pricing strategy, leaving the question of performance implications of pricing information unanswered (Tzokas et al. 2000). In contrast, Indounas (2009) has shed light on the link between pricing information and pricing performance. He performed a group comparison of high and low pricing performing service firms and found that high performing firms scored higher regarding customer-based, competition-based, profit margin-based and cost-based pricing information elements. Although Indounas offers initial insights, his findings are limited to the service sector; the author ignores the external factor of information acquisition sources, and focuses only on pricing information elements. Totzek and Alavi (2010) reports evidence for the positive relationship between market-information oriented pricing management and pricing success. In an SME context.

Existing empirical studies offer only piecemeal and incomplete understanding of the effect of pricing information acquisition as influenced by external factors on pricing performance. In addition, the question of whether pricing information acquisition influences pricing performance has not been sufficiently answered in the SME context. Based on the preceding argument, it is assumed that firms conducting more pricing information acquisition can extract higher margins from customers. Thus, the following hypothesis has been postulated:

H4: SME pricing information acquisition positively relates to pricing performance.

2.3 Pricing performance and firm performance

Firm performance has been shown to be a consequence of pricing performance. The previous section justified why the pricing information acquisition capability might be positively related to pricing performance. In turn, SME pricing performance is suggested to be positively related to firm performance. Both constructs have been conceptualised separately. The RBV suggests that pricing is an important distinct firm capability that is most likely related to competitive advantage (Dutta, Zbaracki, and Bergen 2003; Morgan 2012; Wernerfelt 1984). More specifically, the development of appropriate pricing capabilities is

crucial to generate adequate rents (Dutta, Zbaracki, and Bergen 2003). Consequently, drawing on the RBV, pricing performance might be related to firm performance.

In addition, many pricing research asserted that pricing is a major profit lever and the basis for superior firm success (Cram 2006; Mohammed 2010; Roll, Pastuch, and Buchwald 2012). For example, Mohammed (2010) presents the effects of a one per cent price increase on selected Fortune 500 companies, assuming constant demand. Mohammed's calculations reveal that a one per cent price increase has a major impact on a firm's profitability. In the case of Wal-Mart, for instance, a one per cent price increase would lead to a profit growth of 18 per cent, and in the case of Amazon, it would lead to a 23 per cent profit increase.¹ These kinds of financial calculations typically focus on LEs and multinationals (Mohammed 2010; Roll, Pastuch, and Buchwald 2012). In many cases, such data is unavailable in privately held firms and SMEs (Pelham 2000).

Empirical evidence regarding this important RBV proposition is scant, and even less so in the case of SMEs. Some findings point toward the support of the proposition but still need empirical verification in the context of SME pricing and the emerging research field of pricing information-processing practices. Although some studies suggest that pricing practices (Ingenbleek, Frambach, and Verhallen 2010; Ingenbleek et al. 2003), pricing objectives or pricing capabilities (Liozu and Hinterhuber 2013) are related to firm performance, it is unclear whether pricing performance also leads to greater firm performance. In the context of SMEs, Merrilees, Rundle-Thiele, and Lye (2011) have posited a positive link between marketing performance and financial firm performance. However, this study lacks a pricing focus since this is a distinctive capability. Schuppar (2006) found a positive relationship between pricing performance and firm performance in terms of profitability. However, the findings call for further investigation and confirmation in the distinctive field of SME pricing. In this research, a similar relationship is expected. Information-driven pricing that considers external market factors should lead to the extraction of higher profits from customers (H4). In turn, SME pricing performance should be associated with increased firm performance. This justifies the last hypothesis:

H5: SME pricing performance positively relates to firm performance.

¹ Calculations based on 2008 annual data of Wal-Mart and Amazon.

3 Research method and context

Mindful of the fact that we theoretically underpinned the research hypothesis by the Information Economics theory and RBV, we draw on these two theories to structure our empirical work and for guidance on methodology. We adopted a deductive research approach using a quantitative strategy and a survey design as data collection strategy. This is justified by fact that the hypothesis of this study can be best addressed by using a quantitative methodology, which allowed us to investigate external factors and outcomes of the latent construct pricing information acquisition. Quantitative designs are recommended if research focuses on the understanding of best predictors of a specific outcome (Creswell 2009). Moreover, the introductory section of the paper revealed that many SME pricing studies have a qualitative focus using small samples. SME pricing studies providing more generalisable results are lacking, hence the need for a quantitative research strategy that utilises a larger sample.

3.1 Data collection

Online questionnaire was used to collect the research data. Given the large size of the SME target population in Germany and cost and time restrictions, an appropriate sampling technique was used to identify SME manufacturing companies. In the context of this research two important regional chambers for industry and commerce were identified, namely, the Industrieund Handelskammer Osnabrück - Emsland - Grafschaft Bentheim, and the Industrieund Handelskammer Nord Westfalen. Both chambers for industry and commerce cover a larger economic region in the northwestern part of Germany. This region was, therefore, specified as the area of coverage for the research. Moreover, since the research focuses on the pricing information acquisition practices in SMEs, the upper threshold of the EU SME definition was used to exclude large firms with more than 249 employees and revenue of 50 million Euros annually from the target population. Additionally, this research focuses on product pricing and excludes service, wholesale and retail pricing. The table of classification of economic activities, Edition 2008 (WZ 2008) as provided by the Federal Statistical Office Germany, was used to identify manufacturing firms (Statistisches Bundesamt 2008). Based on the classification table, firms fulfilling the inclusion criteria 'manufacturing', WZ 2008 Code 'C' were included in the target population.

As the research investigates the acquisition of information for pricing decisions, the sample responders mainly targeted general management at the executive level because they are responsible for pricing decisions and the firms' success measures. Furthermore, we include B2B and B2C firms in the sample because of the paper's specific focus on the external antecedents of pricing information acquisition. Indeed, actual price setting practices as well as pricing strategies may be very different in B2B and B2C markets. However, according to the pricing literature, B2B and B2C firms have to acquire pricing information to support organizational price decision-making within similar dynamics of external environment and market complexities (Smith 1995; Ingenbleek 2007, 2014; Dixit et al. 2008). Even when the scope of pricing action for a firm is limited due to, for instance, high customer power in B2B markets, research shows that firms acquire and consider cost information when setting prices (Ingenbleek et al. 2003; Totzek and Alavi 2010). Moreover, mixed B2B and B2C samples are quite common in the pertinent pricing information literature (Ingenbleek, Frambach, and Verhallen 2010, 2013).

It was also necessary to determine an adequate firm sampling frame. This was achieved by building cooperation with the two regional chambers for industry and commerce identified above. These institutions provided their complete firm databases. The application of the defined inclusion criteria to the firm databases yielded a population of 2,542 SMEs in the specified area of coverage. The sampling frame comprised high quality data of the necessary information for data collection and was very comprehensive since almost every SME in the specified region obtains a membership in the chambers for industry and commerce.

To integrate ethical considerations, respondents indicated their consent of participation by clicking the button to start the questionnaire. A total of 220 questionnaires were completed, reflecting a response rate of 9 per cent. The response rate is acceptable considering the sensitivity of pricing issues as the research subject. A few questionnaires had to be excluded from analysis, because the firms did not fulfil the defined target population criteria. Specifically, 36 firms violated the SME criterion and 9 firms were from the excluded industry sectors. In addition, 2 questionnaires were excluded due to significant inconsistencies in responding behaviour. The data cleaning procedure led to a final sample of 173 usable questionnaires, reflecting a response rate of 7 per cent.

3.2 Data analysis strategy

First univariate statistical analysis tools such as frequency, mean and percentage measures (Fielding and Gilbert 2008), were used to establish the data sample profile. Additionally, we used bivariate analysis techniques to investigate the relationships among variables and to test the developed hypothesis statistically.

Spearman's rho (r_s) was used to calculate statistical correlation coefficient since all the obtained research variables except pricing information acquisition were found to be significantly non-normal (Field 2009). Spearman's rho was calculated by:

$$r_s = 1 - \frac{6 \sum_{i=1}^n d_i^2}{n(n^2 - 1)}$$

where d is the difference in rankings between two variables (Holling and Gediga 2011; Iacobucci and Churchill 2010). Correlation coefficient values of $\pm .1$ indicate a small effect, values $\pm .3$ indicate a medium effect and values $\pm .5$ indicate a large effect (Field 2009).

To calculate *mean comparison procedure*, consideration needs to be given to the assumptions of the underlying test statistics. In this study, independent-mean tests were considered applicable because the categorical predictor variables yield multiple sub-samples, between which means are to be compared (Aaker, Kumar, and Day 2007). Since the predictor variables were found to be dichotomous, a non-parametric Mann-Whitney U test was used due to the group sizes (Bowerman et al. 2012; Field 2009; Iacobucci and Churchill 2010) and the homogeneity of variances in the populations (Field 2009). To ensure that this requirement is met, a Levene test was first performed to check whether the variances are homogenous or heterogeneous (Bortz and Schuster 2010). Where the assumption of homogeneity of variances is violated, a modified t-test equation was used to ensure a valid test statistic (Eckstein 2008). Where homogeneity of variances is assumed due to a non-significant Levene test, the t-statistic is calculated by:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{s_p^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

Where equal variances cannot be assumed the t-statistic is calculated by:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\left(\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}\right)}}$$

where $s_p^2 = \frac{(n_1-1)s_1^2 + (n_2-1)s_2^2}{n_1+n_2-2}$, s_1 is the standard deviation of sample 1, s_2 is the standard deviation of sample 2, n_1 is the size of sample 1 and n_2 is the size of sample 2 (Aaker, Kumar, and Day 2007; Bowerman et al. 2012; Field 2009).

The effect sizes for t-tests are calculated by:

$$r = \frac{t^2}{t^2 + df}$$

Values of $\pm .1$ indicate a small effect, values $\pm .3$ indicate a medium effect and values $\pm .5$ indicate a large effect (Field 2009).

4 Result and discussion

4.1 Sample profile

The analysed data showed that 93 per cent of the investigated firms are managed by the owner of the firm. This figure further demonstrates that the sample firms can be deemed legally and economically independent. The median age of the investigated firms is 27 years. Table 1 summarises the profile of the investigated firms.

Table 1: Sample characteristics summary

	Frequency	Per cent
Employees		
1-9	60	35
10-49	81	47
50-249	32	18
Annual turnover (million Euros)		
≤ 2	74	43
≤ 10	45	26
≤ 50	32	18
No indication	22	13
Position of respondents		
Top management	136	79
Sales department	14	8
Finance/controlling department	10	6
Product management	2	1
Marketing department	1	1
Other	10	6

	Frequency	Per cent
Manufacturing sectors		
Machinery	32	19
Metal processing	31	18
Printing	15	9
Wood and furniture	15	9
Electronics	11	6
Textiles	11	6
Food	10	6
Chemicals and plastics	9	5
Construction	7	4
Automotive	5	3
Other	27	16
Type of customers		
Business-to-business	156	90
Business-to-consumer	17	10
Type of goods		
Durable goods	120	69
Non-durable goods	53	31
Age of respondents		
<30	13	8
30-39	43	25
40-49	53	31
50-59	44	25
60-69	15	9
70-79	5	3

4.2 Environmental market factors on pricing information acquisition

This paper sets out to investigate the influence of external market factors on pricing information acquisition as defined by hypothesis H1, H2 and H3. This is because variations in market conditions may require SMEs to align pricing information practices accordingly. The results for the variables are presented in Table 2.

Table 2: Analysis of market-related complexity, market growth and customer power

Amount of pricing information acquisition ^a	Antecedents		
	Market-related complexity H1	Market growth H2	Customer power H3
Spearman's rho	0.172	0.099	-0.071
Significance	$p < 0.05$	$p > 0.05$	$p > 0.05$

Amount of pricing information acquisition ^a	Antecedents					
	Market-related complexity H1		Market growth H2		Customer power H3	
	High	Low	High	Low	High	Low
Mean ^b	3.80	4.10	3.85	4.09	3.96	3.88
SE	0.08	0.09	0.07	0.11	0.07	0.10
t-value	2.543		1.987		-0.670	
Significance	$p < 0.01$		$p < 0.05$		$p > 0.05$	
Effect size	0.191		0.150		0.051	

^a The construct was measured using a six-point scale, where 1 = frequently and 6 = never.

^b Note: Smaller mean values indicate a greater amount of pricing information acquisition.

H1 argues that SMEs operating in markets with high levels of complexity will conduct more pricing information acquisition. The result of the Spearman correlation test presented in Table 2 shows that a significant relationship can be found between market-related complexity and pricing information acquisition, $r_s = 0.172$, $p < 0.05$. The results suggest a positive association of the two constructs, $t(171) = 2.543$, $p < 0.01$, $r = 0.191$. SMEs operating in market environments characterised by a higher complexity acquire more pricing information ($M = 3.80$, $SE = 0.08$) than the other group, which is confronted with lower market complexity ($M = 4.10$, $SE = 0.09$). Thus, both tests provide a consistent picture and hypothesis H1 is accepted, suggesting that as complexity increases, firms increase their information acquisition practices.

This result is consistent with previous research showing that environmental complexity is an important determinant of information search (Daft, Sormunen, and Parks, 1988; Belich and Dubinsky, 1995; and Yeoh, 2000). The study also finds support for Wade and Hulland's (2004) assertion that as complexity increases, firms should develop efficient information capabilities and rely on them for effective decision-making. Overall, the findings agree with the literature (Belich and Dubinsky 1995; Daft, Sormunen, and Parks 1988; Wade and Hulland 2004; Yeoh 2000), which, however, does not focus on the pricing function. Therefore, the underlying result is a departure from prior research indicating that firms should level the amount of pricing information acquisition depending on the complexity of different markets or market segments. This is even more important for SMEs characterised by a lack of pricing resources as the analysis has shown. SMEs should analyse and evaluate the complexity of the different markets in which they operate. It might be wise for

SME managers to allocate a greater amount of the limited pricing resources to markets characterised by a greater complexity.

H2 states that SMEs operating in markets with high levels of market growth will conduct more pricing information acquisition. The result of the correlational analysis indicates a non-significant relationship between market growth and pricing information acquisition, $r_s = 0.099$, $p > 0.05$. By contrast, the independent t-test results suggest a significant relationship. As lower mean values indicate a greater amount of pricing information acquisition, SMEs confronted with high market growth ($M = 3.85$, $SE = 0.07$) conducted more pricing information acquisition than the other group, which experiences lower growth dynamics in their markets ($M = 4.09$, $SE = 0.11$), $t(171) = 1.987$, $p < 0.05$, $r = 0.150$. Because of the mixed results of the statistical tests, hypothesis H2 can only be partially accepted.

High growth markets are often very dynamic due to their high rate change in known decision factors and the frequent emergence of different and new factors influencing pricing decisions (Duncan 1972). The results of the t-tests provide support for a positive relationship between *market growth* and pricing information acquisition (Hypothesis H2 partially accepted). However, despite the insignificant result of the correlational analysis, the findings should be interpreted with some caution. As expected, SMEs operating in markets with high levels of market growth conducted more pricing information acquisition. The results suggest a small effect of market growth on pricing information acquisition. Future verification of the found relationship may be warranted, given the partial support of the hypothesis and the lack of additional evidence of this relationship in the context of SME pricing.

Customer power was conceptualised as a potential predictor of SMEs' pricing information practices. Specifically, H3 states that SMEs operating in markets with high levels of customer power will conduct less pricing information acquisition. As Table 2 indicates, the postulated negative relationship is reflected in the results of both statistical tests, because the Spearman correlation coefficient and the t-value are negative. Firms confronted with high customer power, on average, conduct less pricing information acquisition ($M = 3.96$, $SE = 0.07$) than SMEs experiencing lower customer power ($M = 3.88$, $SE = 0.10$). However, neither test statistics were significant, $r_s = -0.071$, $p > 0.05$, $t(171) = -0.670$, $p > 0.05$. Therefore, hypothesis H3 is rejected.

The results show that *customer power* is not significantly related to pricing information acquisition. Although, firms confronted with high customer power conduct, on average, less pricing information acquisition than SMEs experiencing lower customer power, the difference was not substantial enough to reject the null hypothesis. Thus, customer power's influence appears to be marginal. The results imply that SMEs confronted with high customer power do not react with passivity in their information acquisition practices, since they search with the same effort as SMEs where this condition is not satisfied. Although contrary to expectations, this result is encouraging because the active search behaviour creates an opportunity to overcome the potentially critical situation, in which customers exert substantial pressure on SME prices. Not reducing search efforts in such circumstances might conceivably enable SMEs to find other market segments or product niches, in which customer power is lower, thus, finding an exit from this dependency. As compared to large multinational enterprises, considerable information searches in situations of high customer power might be especially important for SMEs since they are more vulnerable, given their limited impact on the marketplace and their constraint resource base. Although the results might seem credible, further research may be warranted to shed a more differentiated light on the influence of customer power on SME pricing practices.

4.3 Success implications of pricing information acquisition

In addition to analysing the influence of the different external antecedent variables, we set out to investigate the success implications of SMEs' pricing practices. Drawing on the RBV and Information Economics theory, pricing performance was selected as a key consequence of pricing information acquisition (*H4: SME pricing information acquisition positively relates to pricing performance*). The results regarding the relationship between pricing information acquisition and pricing performance are presented in Table 3.

Table 3: Relationship between pricing information acquisition and pricing performance

Pricing performance ^a	Antecedent
	Pricing information acquisition H4
Spearman's rho	0.180
Significance	$p < 0.01$

Pricing performance ^a	Antecedent	
	Pricing information acquisition H4	
	High	Low
Mean ^b	2.70	3.04
SE	0.10	0.10
t-value	2.453	
Significance	$p < 0.01$	
Effect size	0.184	

^a The construct was measured using a six-point Likert scale, where 1 = strongly agree and 6 = strongly disagree.

^b Note: Smaller mean values indicate a greater pricing performance.

The pricing information acquisition capability is a key means to reduce uncertainty, to improve the quality of pricing decisions and to avoid gut-based and simplified pricing decision-making behaviour. SMEs with higher levels of pricing information acquisition will likely be able to enforce intended prices and appropriate adequate value for their products from customers, and, therefore, H4 postulates that SMEs' pricing information acquisition positively relates to pricing performance. Table 3 depicts the results of the Spearman correlational analysis and independent t-tests regarding this hypothesised relationship. As expected, the Spearman correlation indicates a significant relationship between pricing information acquisition and pricing performance, $r_s = 0.180$, $p < 0.01$. This finding is supported by the follow-up test. SMEs with higher pricing information acquisition also have higher pricing performance ($M = 2.70$, $SE = 0.10$). Compared to the other group, which conducts a lower amount pricing information acquisition ($M = 3.04$, $SE = 0.10$), this is a significant difference $t(171) = 2.453$, $p < 0.01$. Both statistical tests indicate a significant and moderate relationship between pricing information acquisition and pricing performance. Consequently, hypothesis H4 is accepted.

The results showed that *pricing performance* is impacted positively by pricing information acquisition. This suggests that pricing information practices are a crucial prerequisite of successful pricing practices in SMEs. The results reveal the importance of viewing informational pricing practices as a distinctive step in the pricing process, requiring considerable attention. This result can be explained by the Information Economics theory argument that information acquisition is a key mechanism in reducing uncertainty and to

improve decision quality (Adler 1996). Similarly, the RBV suggests informational resources as valuable strategic assets to improve performance (Ketchen, Hult, and Slater 2007). Thus, this study result seems plausible. This result supports the Information Economics theory which argues that information acquisition is a key mechanism in reducing uncertainty and to improve decision quality and the RBV which suggests informational resources as valuable strategic assets to improve performance. The study contributes to the literature by extending these findings to the context of pricing in manufacturing SMEs. Pricing information acquisition is a strategic to pricing capability, which should receive attention by SME managers.

Firm performance was modelled as a separate sequence from pricing performance. Specifically, we theorised that pricing information acquisition is related to pricing performance, which in turn should be related to SMEs' firm performance (H5). The results of the analysis are depicted in Table 4.

Table 4: Relationship between pricing performance and firm performance

Firm performance ^a	Antecedent	
	Pricing performance H5	
Spearman's rho Significance	0.533 $p < 0.001$	
Mean ^b	High 2.27	Low 2.85
SE	0.07	0.07
t-value	5.987	
Significance	$p < 0.001$	
Effect size	0.416	

^a The construct was measured using a six-point Likert scale, where 1 = strongly agree and 6 = strongly disagree.

^b Note: Smaller mean values indicate a greater pricing performance.

Hypothesis H5 argues that SMEs' pricing performance positively relates to firm performance. The results of the analysis are noticeable. The Spearman correlation coefficient indicates a large and highly significant relationship between pricing performance and firm performance,

$r_s = 0.533$, $p < 0.001$. Similarly, the follow-up also indicates that SMEs with high pricing performance can realise a higher firm performance ($M = 2.27$, $SE = 0.07$) than the other group characterised by a lower level of pricing performance ($M = 2.85$, $SE = 0.07$). The difference is also very significant, $t(171) = 5.987$, $p < 0.001$, representing a large effect, $r = 0.416$. Thus, there is factual evidence to accept hypothesis H5.

This result strongly supports the contention that pricing performance is positively related to firm performance. The result is notable in that it clearly shows that the development of appropriate pricing capabilities is crucial to SME success. This is consistent with suggestions in pricing literature (Cram 2006; Mohammed 2010; Roll, Pastuch, and Buchwald 2012). However, prior to this study, there is limited evidence in the literature regarding this relationship in SME context. This study explicitly focused on the relationship between pricing performance and firm performance, adding more insight into this relationship. The confirmed positive relationship appears credible against the background of the existing literature and implies that SMEs should invest in their pricing capabilities to benefit from increased firm performance. Pricing is an important task in SMEs, which should receive significant managerial attention.

4.4 Discussion and implication

This paper analysed the external antecedents of pricing information acquisition in an integrative manner and developed an understanding of pricing information as a crucial prerequisite of successful pricing strategies within the context of German SME's. The contextual development identified and acknowledges pricing acquisition as a strategic pricing capability and distinct sub-challenge within pricing management. This study, therefore, bridges the gap in literature by investigating the external conditions that influence the intensity of pricing information practices. The study provides justification for SME managers to allocate a greater amount of the limited pricing resources to markets characterised by a greater complexity and high level of market growth. The study also revealed the importance of information acquisition as strategic to pricing capability, which should receive attention by SME managers. Moreover, this study strongly supports the contention that pricing performance is positively related to firm performance which implies

that SMEs managers should invest in their pricing capabilities to benefit from increased firm performance.

We drew on the RBV and Information Economics theory, to conceptualised pricing performance as a key consequence of pricing information acquisition. We introduced pricing information acquisition a strategic capability within the pricing meta-capability, thus providing an initial conceptual and empirical evidence of external antecedents of pricing acquisition in response to the demands in the recent pricing literature. This conception is in line with the RBV suggestion that informational resources is valuable strategic assets to improve performance (Ketchen, Hult, and Slater 2007) and Information Economics theory argument that information acquisition is a key mechanism in decision quality and uncertainty reduction (Adler 1996). This will allow for optimisation of pricing information that leads to the extraction of higher margins from understanding external antecedents such as market complexity and growth for enhance pricing and firm performance.

However, caution should be observed in the generalizability of this recommendation as the study only focusses on manufacturing SMEs. The research also focuses on one specific region (north-western part of Germany) and only 7% workable response rate was obtained. Within the obtained workable response, 90% are active on the B2B markets, and only 17 companies are involved in the B2C markets. Future research should be conducted using this study's approach in the context of other countries with target of greater response rate for B2B and/or B2C SMEs, and in other industry sectors, such as the service or retailing sector. The research is also limited by its use of subjective performance measures as a tool for data collection due to the fact that privately held small companies are frequently reluctant to disclose key pricing information. Future studies may wish to corroborate the findings of this research by means of objective measures of performance. For instance, future research could attempt to measure the performance variables based on archival data of small publicly held companies.

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