

MARKET ORIENTATION AND SMES' ACTIVITY IN PUBLIC SECTOR PROCUREMENT PARTICIPATION

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ABSTRACT. Small and medium enterprises (SMEs) have been found to be under-represented in the awarding of public sector procurement contracts. Currently, very little is known about the strategic and behavioral aspects associated with SMEs' participation in public sector procurement. To take a step in filling the gap, we used a conceptual construct known as market orientation (MO). The construct comprises *a firm's orientation in gathering information on competitors and customers*, and using the information to gain competitive advantage. This research found that MO has a positive effect on how active SMEs are in searching information on available requests for tenders and how actively they participate in bidding contests. This work strongly suggests that MO should be taken into account when designing procurement contracts, and MO should be fostered among SMEs.

INTRODUCTION

Despite the fact that small and medium-sized enterprises (SMEs) play a vital role in national and regional economies, they are generally underrepresented in public procurement markets. As a consequence, the welfare potential of producing and delivering goods and services through public procurement is insufficiently exploited. The underrepresentation is undesirable since the very idea of public

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procurement has been in exploiting the benefits of unrestricted competition between private firms when a public sector organization purchases goods, services or construction projects.

The underrepresentation of SMEs in the public procurement market has raised much discussion among the designers of public procurement architecture – viz., authorities, specialists and lawyers especially within the Organization for Economic Cooperation and Development (OECD), the World Trade Organization (WTO) and the European Union (EU) and their relevant institutions. As a matter of fact, EU has reformulated the directives of public procurement to better take into account SMEs' opportunities to engage in public procurement and tenders. The next step will be the implementation of directives via national legislative action in each member country. The general drift behind the reform is based on past experiences on the performance of public procurements and on surveys on the access of SMEs to public procurement done by the Austrian Institute for SME Research (see KMU, 2004) and by GHK Consulting (see GHK, 2010). In spite of documented experience and surveyed perceptions of SMEs we still lack an adequate understanding of the underrepresentation of SMEs and the factors that foster the SMEs' participation on public procurement.

Two different paths can be taken to better understand the underrepresentation of SMEs in public procurements. One path is related to market structure and the inability of public procurement designs and laws to promote both the participation of SMEs and that of larger enterprises equally. The other path leads to the abilities and aspirations of SMEs themselves: for example, does an explicit strategy and organized utilization of the information on one's business environment increase SMEs activity towards public procurements? There is quite scant but growing literature on procurement law and competition law in the context of public procurement (Graells, 2011; Weishaar, 2013) whereas research on the strategic and behavioral aspects of the participation of SMEs in public procurements is largely absent.

The second path was taken to explore a set of factors influencing SMEs activity to participate in public procurements. The authors focused on the influence of a definite strategic construct known as market orientation, which has been studied extensively in marketing and business economics literature since the 1990s (Kohli & Jaworski,

1990; Narver & Slater, 1990). Market orientation comprises a firm's strategic orientation towards generating market information, analyzing it and responding in a relevant way (see Maydeu-Olivares & Lado, 2003). Strong market orientation is found to have a positive influence on various aspects in SME performance such as competing with larger firms, selecting the most productive resource combinations, and responding to customers' (often) varying needs (Raju, Lonial, & Crum, 2011, Morgan, Vorhies, & Mason, 2009, Baker & Sinkula, 2009). Strong market orientation also implies a high level of interest in finding new opportunities and markets (Reijonen, Laukkanen, Komppula, & Tuominen, 2012). It is expected that market orientation also positively affects firms' activity, both in acquiring information concerning public sector tender opportunities and in submitting bids in these tender opportunities.

The approach of this study has two unique factors. First, it is the first empirical analysis of the relationship between a firm's strategic orientation and its activity in public procurements. Therefore it provides important new knowledge of the factors influencing SMEs' behavior and activity in participating in public procurement markets. Secondly, it contributes to the literature on the role and significance of market orientation for SMEs' overall behavior by providing evidence that the strategic orientation of a firm has an important relationship to its performance not only in "traditional" private markets but also in public procurement markets.

The rest of the paper is arranged as follows. Section Two provides a literature review which covers both the role of SMEs in public procurement and research on market orientation. The section also sets the hypotheses for the empirical analysis. In the third section the data and the methods of analysis are introduced. Section Four consists of the results of the analysis and Section Five concludes the paper by providing a discussion of the results, their managerial implications and the limitations and future possibilities of this line of research.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

SMEs and Public Procurement

In most economies the public sector is an important buyer of goods and services from the private sector. In the EU, for example,

the public sector's purchases from private enterprises account for one sixth of the total GDP (Arrowsmith, 2009). On that account, public sector procurement serves as an arena of ample business opportunities for firms of all size-classes.

However, SMEs are severely under-represented in public procurement markets. SMEs secure only approximately 60 % of the contracts above the EU thresholds, and measured by contract value, the SMEs' share is only 34 %, which is 18 percentage points less than their contribution to the total business revenue in the economy (GHK, 2010). Especially micro and small enterprises are disadvantaged in the acquisition of public sector customers, because medium-sized firms do not differ from large corporations in their ability to secure procurement contracts (GHK, 2010). In addition, when contract values increase beyond 300 000 Euro, SMEs are increasingly unlikely to win large contracts (GHK, 2010).

SMEs face numerous impediments that hinder their access to public procurement. One obvious reason could be a limited supply capacity resulting from a lack of economies of scale (Bovis, 1998; Karjalainen & Kemppainen, 2008). Loader (2013, 2007) divided the impediments into two categories. In the first category, there are imperfections in the public sector environment and procurement processes. These imperfections are related to things such as policy, procurement organization and culture, contract requirements and the tendering process. In the second category, there are problems stemming from capacity constraints, lack of skills and attitudes to public procurement. Evidence shows, for example, that SMEs (i) quite seldom plan and use a formal customer acquisition process (Wang, Walker, & Redmond 2007), (ii) meet difficulties in using resources in new ways (Ambrosini, Bowman, & Collier 2009), (iii) have problems in getting financial and human resources, and (iv) lack legal and administrative resources (Karjalainen & Kemppainen 2008).

Recently, the importance of increasing the participation of SMEs in public procurement markets has been recognized by EU policy makers and specialists. The core idea in this encouraging process is the identifying and sharing of good practices among the EU member countries (European Commission, 2011). The Commission of the European Communities (2008) sees that a more active participation of SMEs would increase competition in the public procurement markets, and consequently increase value for money in public sector

purchases and, in addition, contribute positively to the creation of jobs, economic growth and the rate of innovation. In addition, there are other obvious and important benefits in increased participation, such as improved efficiency, better access to market knowledge, more extensive creation of value added and an increase in the number of innovative solutions (Van Ham & Koppenjan, 2002). Finally, it has also been argued that since SMEs are usually local by nature, they are capable of adapting to local circumstances and to the needs of the local contracting authorities (Fee, Erridge, & Hennigan, 2002). The local nature of SMEs also provides an opportunity for public purchasers to realize their wider responsibility to the local economy and society (Preuss, 2011).

Finally, since this research's purpose is to analyze how SMEs' strategic orientation influences their activity to participate in public procurement markets, it is worth naming some general features that may make the public sector an attractive customer. Firstly, the public sector is typically represented by a buyer who tends to commit to quite long-term contracts and to prompt, timely payments. This reduces the volatility of cash flow and risks related to it as noted in a report by the Association of Chartered Certified Accountants (see ACCA, 2009). Secondly, being a supplier to the public sector may also serve as a shield towards the recessionary periods typical in private sector economic activity (The Procurement Research Group, 2012). Thirdly, many SMEs who are subcontractors to larger corporations in public procurement might gain greater financial rewards when contracting directly with the public sector (ACCA, 2009). Finally, by increasing its performance in public procurement markets, an SME may win prestigious reference contacts from the public sector (The Procurement Innovation Group, 2009).

Market Orientation

Market orientation (MO) has been traditionally defined as an organizational culture (Narver & Slater, 1990), or as a set of activities (Kohli & Jaworski, 1990). From the cultural perspective MO includes three dimensions, namely customer orientation, competitor orientation and interfunctional coordination. On the other hand, the behavioral approach defines MO to comprise the activities of acquiring, sharing and responding to market information. However, there is some overlap in these definitions, as the cultural dimensions of MO are seen to be manifested in the market-oriented activities

(Narver & Slater, 1990). The idea behind both definitions is that MO is about providing superior customer value that is based on market intelligence. By meeting and satisfying customer needs firms can create competitive advantage and achieve superior performance.

Prior studies have shown that MO is relevant for SMEs who have limited financial means, such as R&D, low cost leadership or talented staff, to pursue other sources of business (González-Benito, González-Benito & Muñoz-Gallego, 2014). Despite the liabilities of smallness and sometimes newness, SMEs are often highly market-oriented and they can compete effectively with large organizations (Raju, Lonial, & Crum, 2011). MO offers them a knowledge advantage that helps them select the most productive resource combinations available to match market conditions (Morgan, Vorhies, & Mason, 2009). Furthermore, it is suggested that MO may benefit small firm performance more than that of larger firms; one reason for this is that they might be better at identifying and leveraging their strengths (Raju, Lonial, & Crum, 2011).

It could be argued that MO affects SMEs' ability and willingness to actively seek information about and participate in public tendering. Firstly, as MO is about generating market intelligence, it could be assumed that MO directs attention also towards information regarding public tendering. Secondly, with the help of MO, SMEs are better able to assess whether their strengths, as well as the resource combinations available to them, fit the needs of the public sector buyer in general and also the requirements of the tender request at hand in particular. The results of these assessments can either encourage or hinder their participation in public tendering. Thus, I hypothesize as follows:

H1A: MO affects how actively SMEs look for public sector tender opportunities.

H1B: MO affects how actively SMEs submit bids in public sector tender opportunities.

Customer Orientation

In addition to studying MO as a whole I further examined how the different dimensions of MO, namely customer orientation, competitor orientation and interfunctional coordination, affect SMEs' activity to look for tendering opportunities and to submit bids in public sector

tender opportunities. Previous research has shown that the different dimensions can have different impact, for example, on product innovation (Lukas & Ferrell, 2000) and a firm's performance (Dev, Zhou, Brown, & Agarwal, 2009, Reijonen, Laukkanen, Komppula, & Tuominen, 2012). Their influence on the activity to take part in public tendering may also vary.

The customer element is central in MO (Kohli & Jaworski, 1990). The dimension of customer orientation represents a firm's understanding of its customers so that it can offer them superior value- not only in the present but also in anticipation of the future (Narver & Slater, 1990; Zhou, Brown, & Dev, 2009). This understanding is based on collecting and processing information about customer preferences (Lukas & Ferrell, 2000). As gathering information is a prominent part of customer orientation, it could be argued that MO affects SMEs' activity in searching for information about public sector tender processes. Through this information, they acquire better understanding about the customer and thus, they will be in a good position to assess whether they are able to meet the needs of the customer. Therefore, customer orientation can affect also their willingness to submit bids in the public sector tender requests.

Hypothesis 2A: Customer orientation affects how actively SMEs look for public sector tender opportunities

Hypothesis 2B: Customer orientation affects how actively SMEs submit bids in public sector tender opportunities

Competitor Orientation

Competitor-oriented firms monitor their competitors, react to their marketing initiatives and try to understand their short-term strengths and weaknesses and long-term strategies and capabilities (Zhou, Brown, & Dev, 2009). In other words, competitor orientation relates to the firm's understanding of its competitors and how they endeavor to satisfy customer needs (Narver & Slater, 1990). At the same time, competitor orientation helps firms to identify their own weaknesses and strengths and also to choose their competition strategy (Zhou, Brown, & Dev, 2009). When comparing themselves against their rivals, competitor-oriented firms can assess their possibilities for success in public tendering. This in turn affects their willingness to take part.

Hypothesis 3A: Competitor orientation affects how actively SMEs look for public sector tender opportunities

Hypothesis 3B: Competitor orientation affects how actively SMEs submit bids in public sector tender opportunities.

Interfunctional Coordination

Little is achieved by collecting and disseminating market intelligence about customers and competitors if it is not exploited in practice (Kohli & Jaworski, 1990). Interfunctional coordination reflects firms' coordinated efforts and utilization of resources to create superior value for customers (Narver & Slater, 1990). In this way it represents the essence of MO: that is the commitment to respond to customer needs in order to maximize their satisfaction (Baker & Sinkula, 2009). This responsiveness is shown, for example, in selecting the target markets and designing services and products (Kohli & Jaworski, 1990). While considering its abilities and resources, interfunctional coordination can affect whether a firm sees the public sector as an attractive customer and thus, whether it is active in taking part in public tendering.

Hypothesis 4A: Interfunctional coordination affects how actively SMEs look for public sector tender calls.

Hypothesis 4B: Interfunctional coordination affects how actively SMEs submit bids in public sector tender calls.

QUESTIONNAIRE DEVELOPMENT, DATA AND METHODS

Questionnaire Development

To test the hypotheses we collected data from SMEs by using a questionnaire method. In addition to measuring SMEs' activity in public sector procurement and SMEs market orientation, we gathered information on several background factors. From these, firm size, firm age, and the main industry were used as control variables in the analysis. The questionnaire was sent to firms in North Karelia, Finland, in September 2012. Contact information was provided by the local regional development company, JOSEK Ltd (Joensuu Regional Development Company). Enterprises or for-profit organizations that were located in North Karelia and employed up to 249 persons were selected for the study. An online questionnaire was sent to 3,305

recipients from whom 240 responded (7.2 percent being the response rate). From this sample, 191 responses were eligible for the study.

Previous research has used different measures of market orientation. One of the best known measures is the 20-item market orientation scale (MARKOR) developed by Kohli, Jaworski, and Kumar (1993). MARKOR focuses on measurement of activities relating to the generation of market intelligence, its dissemination within the organization and responsiveness to it. Deng and Dart (1994) adopted Narver's and Slater's (1990) cultural view on market orientation and established a measure that comprises four components: customer orientation, competitor orientation, interfunctional coordination and profit emphasis. Gray, Matear, Boshoff, and Matheson (1998) subsequently developed what they call "a better measure of market orientation" in which the ideas of Narver and Slater (1990), Jaworski and Kohli (1993) and Deng and Dart (1994) are integrated. The results of Gray et al.'s (1998) study show that some of the variables measuring intelligence dissemination (Jaworski & Kohli, 1993) can be combined with the measures of interfunctional coordination (Narver & Slater, 1990).

In the current study we examine market orientation through the following three elements: customer orientation, competitor orientation and interfunctional coordination (Narver & Slater, 1990). However, as suggested by Gray et al., (1998), the scale measuring interfunctional coordination includes variables relating to intelligence dissemination. The items we used to measure market orientation and its elements are reported in Table 1.

TABLE 1
Measure Items of Market Orientation in the Questionnaire

| Measure items | Source |
|---|--|
| Customer orientation | |
| (1) We have a strong commitment to our customers | Gray et al. (1998); Deng & Dart (1994); Narver & Slater (1990) |
| (2) We are always looking at ways to create customer value in our products | Gray et al. (1998); Deng & Dart (1994); Narver & Slater (1990) |
| (3) We encourage customer comments and complaints because they help us to do a better job | Gray et al. (1998); Deng & Dart (1994); Narver & Slater (1990) |

TABLE 1 (Continued)

| Measure items | Source |
|---|--|
| (4) Our business objectives are driven by customer satisfaction. | Farrell et al. (2008); Narver & Slater (1990) |
| (5) We measure customer satisfaction on a regular basis | Gray et al. (1998); Deng & Dart (1994); Narver & Slater (1990) |
| (6) After-sales service is an important part of our business strategy | Gray et al. (1998); Deng & Dart (1994); Narver & Slater (1990) |
| <i>Competitor orientation</i> | |
| (7) We regularly monitor our competitors' marketing efforts | Gray et al. (1998); Deng & Dart (1994) |
| (8) We frequently collect marketing data on our competitors to help direct our marketing plans | Gray et al. (1998); Deng & Dart (1994) |
| (9) Our people are instructed to monitor and report on competitor activity | Gray et al. (1998); Deng & Dart (1994) |
| (10) We respond rapidly to competitors' actions | Gray et al. (1998); Deng & Dart (1994); Narver & Slater (1990) |
| (11) Our top managers often discuss competitors' actions | Gray et al. (1998); Deng & Dart (1994); Narver & Slater (1990) |
| (12) We target customers and customer groups where we have, or can develop, competitive advantage | Farrel et al. (2008); Deng & Dart (1994); Narver & Slater (1990) |
| <i>Interfunctional coordination</i> | |
| (13) Market information is shared inside our organization | Gray et al. (1998); Deng & Dart (1994) |
| (14) Persons in charge of different activities in our organization are involved in preparing business plans/ strategies | Gray et al. (1998); Deng and Dart (1994) |
| (15) We do a good job integrating the activities inside our organization | Gray et al. (1998); Deng & Dart (1994) |
| (16) We regularly have inter-organizational meetings to discuss market trends and developments | Gray et al. (1998); Jaworski & Kohli (1993) |
| (17) We regularly discuss customer needs in our organization | Gray et al. (1998); Jaworski & Kohli (1993) |

Source: Reijonen et al. (2012).

In measuring firms' activity in participating in public sector procurement we used two dimensions, the *activity in seeking* open tendering opportunities (referred to as *SEEK* as a variable) and the *activity in submitting* bids (referred to as *BID* as a variable). The following question involved the activity in seeking: "Does your firm look for public sector tender opportunities?" The alternative answers were "Never", "Irregularly", "Regularly", which were coded as 1, 2 and 3, respectively. As for the activity in submitting bids the following question was presented: "How many times have you submitted a bid to public sector tender opportunities?" The respondent was then asked to choose from the following categories: "Not at all", "From 1 to 5 times", "From 6 to 10 times", "From 11 to 20 times", "From 21 to 30 times", "From 31 to 40 times", "From 41 to 50 times", "More than 50 times". Their answers were coded from 1 to 8, respectively.

Descriptive Statistics: Respondents and the Variables in the Analyses

Table 2 shows the distribution of the respondents' occupational positions. In all 78.5 percent of the respondents were full-time entrepreneurs and owners, 7.9 percent were part-time entrepreneurs and owners, but only 2.6 percent were hired CEOs. Only 11.0 percent of respondents were experts, clerical workers or workers. It is therefore reasonable to assume that the majority of respondents were well-acquainted with their firms' operations and strategic orientations.

TABLE 2
Respondents' Background Information

| Respondent's position | (%) | Sales turnover (in euros) | (%) |
|------------------------------------|------------|----------------------------------|------------|
| Full-time entrepreneur, owner | 78.5 | Less than 100,000 | 34.6 |
| Part-time entrepreneur, owner | 7.9 | 100,000 - 199,999 | 15.7 |
| CEO | 2.6 | 200,000 - 399,999 | 13.1 |
| Experts | 2.6 | 400,000 - 999,999 | 14.1 |
| Clerical workers | 6.8 | 1,000,000 - 1,999,999 | 14.1 |
| Workers | 1.6 | 2,000 000 - 19,999,999 | 9.4 |
| | | More than 20 million | 1.0 |
| | | Missing | 0.5 |
| Geographical operating area | (%) | Main customer type | (%) |
| Local | 26.7 | Other firms | 44.5 |
| Provincial | 36.6 | Public sector | 15.7 |

TABLE 2 (Continued)

| Respondent's position | (%) | Sales turnover (in euros) | (%) |
|---|------|---------------------------|------|
| National | 27.2 | Consumers | 39.3 |
| International | 9.4 | Missing | 0.5 |
| Number of employees | (%) | Number of employees | (%) |
| Sole entrepreneur (full- and part-time) | 33.5 | 15 - 19 | 2.6 |
| 2 - 4 | 30.9 | 20 - 49 | 6.8 |
| 5 - 9 | 16.2 | 50 or more | 1.0 |
| 10 - 14 | 6.3 | Missing | 2.6 |

Almost all firms in the sample were small and micro enterprises: more than a half of the responding firms report less than 400,000 euros in annual sales turnover. Concerning the number of employees, it appears that 83.2 percent of the firms were micro-size (less than 10 employees) and 15.7 percent of them were small size (10 - 49 employees). A typical firm's geographical operating area was provincial and its main customers were other firms. No more than 15.7 percent of the firms reported that a public sector organization was their main customer.

Descriptive statistics of the variables entered in the analysis are shown in Tables 3 and 4. Table 3 shows that most firms (44 percent) sought open tenders irregularly and less than 30 percent regularly; 26.2 percent of the firms never sought open tenders.

TABLE 3
Activity in Public Procurement

| <i>Sought open public tendering opportunities (SEEK)</i> | (%) | <i>Had submitted a bid in a public tender call (BID)</i> | (%) |
|--|------|--|------|
| Never | 26.2 | Never | 41.9 |
| Irregularly | 44.0 | 1 - 5 times | 30.9 |
| Regularly | 29.8 | 6 - 10 times | 8.4 |
| | | 11 - 20 times | 4.7 |
| | | 21 - 30 times | 4.2 |
| | | 31 - 40 times | 2.1 |
| | | 41 - 50 times | 1.6 |
| | | More than 50 times | 6.3 |

TABLE 4
Descriptive Statistics and Correlations

| Variable | Descriptive statistics | | | Correlations | | | | | | | | | | | |
|--------------|------------------------|--------|--------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| | Mean | S.d. | Min. Max. | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| SEEK (1) | 2.037 | .750 | 1 3 | 1.0 | | | | | | | | | | | |
| BID (2) | 2.424 | 1.974 | 1 8 | .501 | 1.0 | | | | | | | | | | |
| IND_1 (3) | .230 | .422 | 0 1 | .068 | .225 | 1.0 | | | | | | | | | |
| IND_2 (4) | .168 | .374 | 0 1 | .091 | .068 | -.247 | 1.0 | | | | | | | | |
| IND_3 (5) | .194 | .396 | 0 1 | -.109 | -.121 | -.267 | -.213 | 1.0 | | | | | | | |
| IND_4 (6) | .099 | .300 | 0 1 | .124 | -.052 | -.190 | -.152 | -.164 | 1.0 | | | | | | |
| IND_5 (7) | .309 | .463 | 0 1 | -.126 | -.125 | -.371 | -.296 | -.320 | -.228 | 1.0 | | | | | |
| SIZE (8) | 5.884 | 9.723 | 0 75 | .313 | .437 | .181 | -.007 | -.111 | .023 | -.083 | 1.0 | | | | |
| AGE (9) | 18.267 | 15.231 | 1 113 | .226 | .326 | .126 | .127 | -.103 | -.169 | -.018 | .343 | 1.0 | | | |
| CUSTOMER(10) | .000 | 1 | -3.202 2.165 | .107 | .165 | -.007 | .134 | -.055 | -.148 | .043 | .180 | .161 | 1.0 | | |
| COMPOR(11) | .000 | 1 | -2.687 2.225 | .242 | .136 | -.130 | .132 | -.023 | -.030 | .053 | .085 | .101 | .000 | 1.0 | |
| INTFC(12) | .000 | 1 | -3.256 2.022 | .081 | -.077 | -.161 | -.107 | .089 | .150 | .060 | -.049 | -.068 | -.000 | .000 | 1.0 |
| MOR(13) | .000 | 1 | -2.585 2.462 | .246 | .202 | -.099 | .0143 | -.025 | -.103 | .065 | .169 | .164 | -.771 | .561 | .268 |

Notes: *IND_1*: Manufacturing, electricity, gas, steam and air conditioning supply, water supply; sewerage, waste management and remediation activities, construction. *IND_2*: Wholesale and retail trade, repair of motor vehicles and motorcycles, transportation and storage. *IND_3*: Information and communication, real estate activities, professional, scientific and technical services, administrative and support service activities, education, arts, entertainment and recreation. *IND_4*: Healthcare and social work activities. *IND_5*: Others (including accommodation and food services, agriculture, forestry and fishing).

However, 41.9 percent of the firms had never submitted a bid and 30.9 percent had submitted 1 – 5 times and 8.4 percent had submitted 6 – 10 times.

The firm size (*SIZE*) was measured as the number of employees in a firm (zero as a minimum meaning a part-time sole entrepreneur). The largest firm had 75 employees and the mean size was 5.9 employees. The firm's age is measured in years; the youngest firms were one year old, the oldest 113 years old, and the average age was 18.3 years. We used a five-class categorization of the firms' industries – the largest class (except "others" being production industries (23.0 percent) followed by knowledge-based service industries (19.4 percent), trade and related industries (16.8 percent) and, finally, healthcare and social work activities (9.9 percent). Table 4 also shows correlations between the variables (including MO and its components as well as the descriptive statistics of them).

Methods

The data analysis was performed in two steps. First, the principal component extraction with Varimax rotation was carried out to obtain the measures for market orientation and its separate elements. Second, multinomial and ordered logistic regressions were used to analyze SMEs' activity in participating public procurement markets. The dependent variables in the regressions were either SEEK or BID (see Table 3.). Predictors were either a one-dimensional measure for market orientation (MOR) or the three separate elements of MO. Firm size, firm age and firm industry were included as control variables (e.g. Soininen, Martikainen, Puumalainen, & Kyläheiko, 2012; Clausen & Korneliussen, 2012).

RESULTS

Principal Component Analysis

The components extracted in the principal component analysis are reported in Tables 5 and 6. The analysis used the item bank introduced in Table 1. Varimax with Kaiser normalization was used in the rotation. In Table 5, market orientation (referred to as *MOR* as a variable) as a single component has a highly acceptable value for Cronbach's Alpha (0.891). Thus, the measure can be considered to be reliable, and it explains 46.2 % of the variance in the survey

responses. Original items 1, 3, 4, and 5 (in Table 1) were dropped because of low factor loadings.

TABLE 5
Principal Component Solution for Market Orientation

| | <i>Factor loading</i> |
|---|-----------------------|
| <i>Market orientation</i> (Alpha: 0.891. Initial eigenvalue: 5.542. Percentage of variance explained: 0.462.) | |
| We are always looking at new ways to create customer value in our products | 0.493 |
| After-sales service is an important part of our customer strategy | 0.480 |
| We regularly monitor our competitors' marketing efforts | 0.766 |
| We frequently collect marketing data on our competitors to help direct our marketing plans | 0.790 |
| Our people are instructed to monitor and report on competitor activity | 0.690 |
| We respond rapidly to competitors' actions | 0.774 |
| Our top managers often discuss competitors' actions | 0.772 |
| We target customers and customer groups where we have, or can develop, competitive advantage | 0.626 |
| Market information is shared inside our organization | 0.770 |
| Persons in charge of different activities in our organization are involved in preparing business plans/activities | 0.684 |
| We do a good job integrating the activities inside our organization | 0.596 |
| We regularly discuss customer needs in our organization | 0.616 |

Notes: N = 191; Rotation: Varimax; Normalization: Kaiser; Bartlett's test of sphericity: $\chi^2 = 1055.751$ (p-value < 0.001); Kaiser-Meyer-Olkin measure of sampling adequacy: 0.890.

Table 6 shows the principal components for the separate dimensions of market orientation, namely competitor orientation (referred to as *COMPOR* as a variable), customer orientation (referred to as *CUSTOR* as a variable), and interfunctional coordination (referred to as *INTFC* as a variable). The alphas are all highly acceptable, ranging from 0.786 to 0.889 suggesting the reliability of

the measuring scales. One item (item 4 in Table 1) was dropped from the analysis due to its low loading. Each component explains approximately 20 % of the variance in the survey responses, the total explanatory percentage being 63 %.

TABLE 6
Principal Component Solution for the Components of Market Orientation

| | <i>Factor loading</i> |
|---|-----------------------|
| <i>Customer orientation</i> (Alpha: 0.786. Initial eigenvalue: 1.449. Percentage of variance explained: 0.192.) | |
| We have a strong commitment to our customers | 0.719 |
| We are always looking at new ways to create customer value in our products | 0.663 |
| We encourage customer comments and complaints because they help us do a better job | 0.793 |
| We measure customer satisfaction on a regular basis | 0.809 |
| After-sales service is an important part of our customer strategy | 0.526 |
| <i>Competitor orientation</i> (Alpha: 0.889. Initial eigenvalue: 6.103. Percentage of variance explained: 0.232.) | |
| We regularly monitor our competitors' marketing efforts | 0.838 |
| We frequently collect marketing data on our competitors to help direct our marketing plans | 0.895 |
| Our people are instructed to monitor and report on competitor activity | 0.751 |
| We respond rapidly to competitors' actions | 0.724 |
| Our top managers often discuss competitors' actions | 0.706 |
| <i>Interfunctional coordination</i> (Alpha: 0.852. Initial eigenvalue: 2.470. Percentage of variance explained: 0.202.) | |
| Market information is shared inside our organization | 0.625 |
| Persons in charge of different activities in our organization are involved in preparing business plans/ activities | 0.721 |
| We do a good job integrating the activities inside our organization | 0.786 |
| We regularly have interorganizational meetings to discuss market trends and developments | 0.798 |
| We regularly discuss customer needs in our organization | 0.703 |

Regressions

The impact of market orientation and its components on the SMEs' activeness in public procurement was analyzed using four separate regression models. The dependent variable in Models 1 and 2 is *SEEK*, which measures the activity in finding out public tendering opportunities. In Models 3 and 4, the dependent variable is *BID* measuring the activity in submitting bids in the public sector's opportunities for bids. The variables of interest in the regression models are the measures for market orientation extracted with principal component analysis. We used logarithms of the firm size (*SIZE*) and firm age (*AGE*) and industry dummies as control variables. The regression results are reported in Table 7 for all models.

Models 1 and 2 were analyzed with multinomial logistic regression. We used the response "never" (= 1) as the baseline value. Model 1 indicates that the market oriented firms were more likely to exhibit either irregular or regular activity in finding public tendering opportunities. In consequence, we cannot reject H1A. The control variables show that larger firm size and the companies in the human healthcare and social work industries were more likely to show regular activity.

Model 2 studied how the individual components of market orientation were related to the activity in seeking public tenders. Although all three components exhibited a positive sign, only interfunctional coordination was statistically significant in both irregular and regular activity. As a result, we can reject H2A and H3A, but not H4A.

Models 3 and 4 were analyzed with ordered logistic regression. They measured how market orientation was connected with the activity in submitting bids in the public sector's bidding contests. Model 3 indicates that market orientation played a role in activity as the estimate was positive and marginally significant (p -value < 0.1). Thus, we cannot reject H1B.

Model 4 shows that interfunctional coordination is the component most positively linked with bidding activity, whereas other components have a positive sign but are not statistically significant. Therefore, we can reject H2B and H3B, but not H4B. From control variables, the firm size and firm age had a positive correlation with the bidding activity.

TABLE 7
Regression Estimates for Multinomial Logistic Regression and
Ordered Logistic Regression

| Model | 1 | | 2 | | 3 | 4 |
|-----------------------|----------------------|--------------------|----------------------|--------------------|-------------------|-------------------|
| | Multinomial logistic | | Multinomial logistic | | Ordered logistic | Ordered logistic |
| Dependent variable | SEEK = 2 | SEEK = 3 | SEEK = 2 | SEEK = 3 | BID | BID |
| IND_1 | .765 (.544) | .832 (.637) | .767 (.558) | .889 (.662) | .493 (.390) | .509 (.397) |
| IND_2 | .661 (.617) | 1.112 (.697) | .602 (.631) | 1.105 (.717) | .467 (.425) | .463 (.433) |
| IND_3 | .206 (.507) | .195 (.649) | .120 (.519) | .118 (.663) | -.210 (.423) | -.175 (.428) |
| IND_4 | 1.003 (.788) | 2.070** (.846) | .797 (.797) | 1.814** (.860) | .327 (.475) | .389 (.487) |
| Ln(SIZE) | .215 (.250) | 1.086*** (3.19) | .306 (.292) | 1.140*** (.334) | .799*** (.185) | .776*** (.189) |
| Ln(AGE) | .251 (.284) | .027 (.297) | .169 (.266) | .025 (.315) | .207 (.193) | .334* (.201) |
| CUSTOMER | - | - | .172 (.190) | .336 (.236) | - | .020 (.149) |
| COMPOR | - | - | .148 (.210) | .134 (.243) | - | .129 (.156) |
| INTFC | - | - | .434** (.197) | .721*** (.245) | - | .262* (.149) |
| MOR | .421** (.207) | .615** (.243) | - | - | .292* (.158) | - |
| Obs. | 185 | | 182 | | 185 | 182 |
| χ^2 | 42.86*** | | 44.17*** | | 45.66*** | 46.22*** |
| Pseudo-R ² | .108 | | .114 | | .081 | .084 |

Notes: *SEEK* = 1 is the baseline value in multinomial logistic regression. *IND_5* is the reference category for the industry dummy variables. * p-value < 0.1; ** p-value < 0.05; *** p-value < 0.01.

In summary, we found evidence that market orientation and its components had a positive relationship with the SMEs' activity in public procurement. After controlling for the firm size, age and industry, we found that the firms that had adopted market orientation were more active in seeking tendering opportunities and submitting bids in tender opportunities in the public sector. Further analysis shows that while all three elements of market orientation had a positive sign, interfunctional coordination was the element that had the most statistically significant positive connection with the activity.

DISCUSSION

Conclusion

This study examined how a firm's activity to participate in public procurement markets was influenced by its strategic orientation towards gathering market information and using it in an organized way. This strategic orientation was defined and operationalized in the relevant literature with the construct of market orientation. This construct refers activities to acquire, share and respond to market information, while its different dimensions refer to customer orientation, competitor orientation and firm's interfunctional coordination in gathering and utilizing market information (Narver & Slater, 1990). How this strategic orientation is related to SME participation in public procurement had not been previously reported in the available literature. Therefore, this paper is an important contribution to the literature of public procurement, and it also provides further evidence on the importance of market orientation in SMEs' performance.

The results show that after controlling for firm size, firm age and industry, the firms that had adopted market orientation were more active in both seeking tendering opportunities and submitting bids in the public sector's requests for tenders. A closer look into the different dimensions of market orientation shows that while customer orientation, competitor orientation and interfunctional coordination all have positive signs, only the last one was statistically significant. This finding seems to suggest that while it is important for SMEs to know the public sector customer and its preferences, as well as the competitors' means to meet those preferences, what it comes down to is the assessment of the firm as to whether its own abilities and resources are adequate to satisfy the customer's expressed needs. The value adding integration of people, resources and activities seems to have a great impact on SME activity with regards to public tendering.

In addition to the new knowledge concerning the role of market orientation in SMEs' activity in participating in public procurement markets, the results have a bearing on the general literature on the importance of market orientation and its three dimensions on the performance of SMEs. First and foremost, the results of this study suggest that the applicability of the theoretical approach of market

orientation goes beyond the traditional boundaries of private markets, also to markets constructed by public authorities.

In sum, this study shows that market orientation, and especially interfunctional coordination as one of its dimensions, has a clear positive connection with SMEs' activity in finding information about business opportunities in public procurement and, more importantly, submitting bids in requests for tenders. Thus, encouraging the adoption of market orientation within a firm could increase that firm's chances to obtain public sector customers.

Managerial Implications

Researchers and policy makers share a concern for SMEs' low participation rate in public procurement. For them, this study emphasizes the importance of market orientation in the strategic management of SMEs regarding public procurement. To this end, SMEs would greatly benefit from gathering information on potential customers and disseminating it within the boundaries of the firm. Furthermore, the public sector procurement authorities could support this by providing feedback to its suppliers to enable them to further improve their products and services.

As interfunctional coordination seems to play an important role, those SMEs that are interested in taking part in public tendering should pay special attention to integrating different people and activities in the process. In this they should not only focus on what is inside their own firm. To overcome their limitations, SMEs could actively search for network partners with whom they could cooperate and integrate their resources. Authorities could also encourage and facilitate this kind of cooperation in public procurement.

Limitations and Future Research

As with all research, this study has some limitations. Firstly, the survey was carried out in a single geographic area. Thus, different results could be obtained from other regions or countries. Secondly, most firms in the study interacted with a centralized contracting authority. As a result, interacting with many contracting authorities might provide different answers. Thirdly, the use of electronic procurement was required by the contracting authority in the study for most respondents. Therefore, traditional forms of procurement might provide different results.

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