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## Managing sourcing team effectiveness: The need for a team perspective in purchasing organizations

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### ABSTRACT

To meet today's high demands on the purchasing function, sourcing teams have become the standard in contemporary corporate purchasing organizations. Sourcing teams are often started with high expectations. However, after making a promising start many of these teams appear to be unable to operate effectively and to meet management expectations. This study shows that sourcing team effectiveness is particularly hindered by a lack of team perspective in many purchasing organizations. In this paper, the results of a large-scale, cross-sectional survey to address the success factors for sourcing teams are discussed. We aim to clarify the factors behind sourcing team performance, taking into account the specific task and organizational context. It is concluded that purchasing executives should shift their focus towards employee involvement and team processes, to enable teams to actually meet and even surpass the expectations placed on them.

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### 1. Introduction

Although things have changed dramatically over the last decades, the purchasing profession has a history as a clerical function. During the past decades, companies started to realize the potential of, and sometimes the need for, strategic sourcing to contribute to competitive advantage. As a result, purchasing organizations in large companies have changed greatly. Today, purchasing organizations must be flexible and should allow for cross-functional and cross-business unit collaboration and communication in order to capture corporate synergies (Trent and Monczka, 1998). Functional departments that reside low in the organization no longer meet these requirements.

Against this background, companies have started to install international, cross-business, and cross-functional sourcing teams (Johnson et al., 2002; Zheng et al., 2007). Sourcing teams are thought to be an effective organizational mechanism to achieve superior purchasing performance (Giunipero and Vogt, 1997; Hardt et al., 2007; Van Weele and Rozemeijer, 1996). Sourcing teams, also referred to as category or commodity teams, are assigned the task of finding, selecting, and managing suppliers for a category of products or services across businesses, functions,

and disciplines. Typically, sourcing teams are staffed by people from different business units, with different functional backgrounds. These teams therefore have a boundary-spanning role, and have to deal with a wide range of internal and external stakeholders. A (partly) virtual team structure is common in multinational companies, since professionals involved in global sourcing work all over the world (Van Weele, 2005). In most cases, sourcing team members are assigned to the team on a part-time basis (Trent, 1998).

This trend towards the use of team structures also requires new management practices. Over the years, team performance and management have received a lot of interest from researchers, and for good reason. Creating successful teams requires careful consideration of a range of factors that enable and enhance effective teamwork, taking into account the context-specific requirements. Past studies have shown that teams in varying contexts are subject to different success factors. Team effectiveness has been studied extensively in the contexts of manufacturing, new product development, and service organizations (e.g. Alge et al., 2003; De Jong et al., 2004; Holland et al., 2000; Pinto et al., 1993). However, there have been far fewer academic studies of sourcing teams. When the team approach emerged in purchasing (Ellram and Pearson, 1993), Trent and Monczka (1994) explored a range of success factors for two dimensions of effectiveness of the then new phenomenon of sourcing teams. Later research was mostly qualitative, focusing on specific aspects like leadership (Trent, 1996), team member effort (Trent, 1998), barriers for introducing teams (Murphy and Heberling, 1996) and

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the state of team empowerment at the time (Giunipero and Vogt 1997). Most recently, Englyst et al. (2008) described the functioning of some particular sourcing teams in an exploratory case study. There has therefore been hardly any large-scale empirical research addressing sourcing team effectiveness to provide guidance for purchasing managers in today's business environment.

The main objective of the present study is to identify the current critical success factors for sourcing teams. Our aim is to provide insight into the key success factors for three dimensions of sourcing team effectiveness. This paper starts with a literature review, resulting in a conceptual model of sourcing team effectiveness. This model is then tested by means of a large quantitative survey. The survey results provide specific insights into how sourcing team effectiveness can be improved, and shed some light on the current state of affairs of team management in purchasing organizations.

## 2. Conceptual framework

On the basis of an extensive literature review, we have identified a number of potential success factors for sourcing teams. Success factors were selected that have been reported by other researchers as being critical to sourcing teams. In addition we adopted a cross-disciplinary approach, and looked at research into other types of teams for guidance while considering the characteristics of sourcing teams. We included factors derived from theory that are thought to affect sourcing team performance. Based on these factors, a preliminary conceptual framework for sourcing team effectiveness was designed. This framework was primarily inspired by Campion et al.'s (1996) and Cohen et al.'s (1996) models of group effectiveness. The selected input factors were grouped into: (a) 'employee involvement context', which refers to the extent to which the team context allows for ownership and control by team members; (b) 'organizational context', relating to organizational factors affecting team performance; (c) team leadership, relating to leadership styles; (d) 'team composition', referring to staff characteristics; and (e) team processes, which relate to team (inter-)action processes as they unfold within a team over time. Our primary interest lies in determining which group of factors currently accounts for the largest part of the variance in team effectiveness, and as a result on which group of factors management should focus to increase sourcing team performance. Furthermore, our aim is to identify individual relationships between factors and specific dimensions of sourcing team effectiveness. Identifying these relationships will provide more insight into how sourcing team effectiveness is actually affected. These dimensions of sourcing team effectiveness are discussed in the next section. Our framework is shown in Fig. 1.

### 2.1. Sourcing team effectiveness

In this study, we address three dimensions of sourcing team effectiveness. The first is labeled *general overall team effectiveness*, which covers general team effectiveness elements such as quality and quantity of work, efficiency, planning, and overall performance (e.g. Barrick et al., 1998; Campion et al., 1996; Cohen and Bailey, 1997; Cohen et al., 1996). Next, literature and practitioners suggest that sourcing team success is highly dependent on the team's ability to cooperate effectively with people outside it (Hoegl et al., 2004). Without this ability, a team's output will have no effect on company performance because of poor implementation processes and a lack of compliance. This study therefore includes a second dimension labeled *external cooperation effectiveness*, which has not been addressed in previous sourcing team effectiveness research. The third dimension covers sourcing task-specific elements such as

savings achieved, improved quality of purchased items, improved supply base responsiveness, relationship management, and support for innovation. This dimension is labeled *supply base management effectiveness* (Trent and Monczka, 1994).

### 2.2. Employee involvement context

Moving to a team approach means that a group of employees are enabled and permitted to execute a certain task (Giunipero and Vogt 1997). This means that several organizational design variables must be changed to support employee involvement and to create a sense of ownership and control (Cohen et al., 1996). The employee involvement context of Cohen et al. (1996) is therefore adopted in this study, including the context factors 'teamwork training' and 'autonomy'. These factors reflect the extent to which teams are enabled to operate effectively from a people management perspective. Adopting these elements is inherently related to installing teams, and they have been reported to be likely success factors for sourcing teams (Murphy and Heberling 1996; Trent, 1998; Trent and Monczka 1994). The positive relationships with sourcing team effectiveness can be derived from motivation and systems theories that emphasize the importance of the internal congruence of these factors (Cohen et al., 1996). However, since purchasing professionals have always by nature had a strong focus on costs, which is reflected in the prevailing management style (Carter and Narasimhan, 1996; Chapman et al., 1997), it may not follow automatically that purchasing managers easily adapt the work context to the team approach. Here, we describe the importance of each of these context factors in more detail.

First of all, according to some scholars, training in general teamwork skills is a necessity when moving from a functional setting towards a team approach (Ellis et al., 2005; Morgeson et al., 2005). This may well apply particularly to purchasing. Purchasing activities directly affect many business aspects. The profile of purchasing professionals must therefore change to adapt to the increasingly dynamic and complex context through effective communication and teamwork (Faes et al., 2001; Van Weele and Rozemeijer 1996). However, it has been suggested that this training is often perceived as a luxury (Murphy and Heberling 1996).

Secondly, literature suggests that autonomy provided to teams in general (Kirkman and Rosen, 2000), and to cross-functional teams in particular (Holland et al., 2000), improves team effectiveness. Autonomy, defined here as the ability to control internal team processes and activities, can increase the flexibility of boundary-spanning teams (De Jong et al., 2004). To be able to deal flexibly with complex end-user demands and specific supplier landscapes, boundary-spanning teams need an appropriate level of autonomy on the purchasing side. Giunipero and Vogt (1997) concluded that sourcing teams were ready for higher levels of autonomy, but empowerment may still not come naturally. Gerwin and Moffat (1997) found that the most important cause for withdrawal of autonomy from new product development teams engaged in concurrent engineering was the lack of a shared understanding of the development process. In effect managers have more occasions to interfere in teams, and teams refer more decisions upwards. In line with this, a team's autonomy might suffer when sourcing processes are not well understood widely. Another reason for low levels of autonomy of sourcing teams may be that business managers tend to try to keep some level of control over team activities, since sourcing decisions have a direct impact on many business aspects. We therefore hypothesize that:

**H1.** *The employee involvement context significantly explains sourcing team effectiveness through a positive effect of (H1<sub>a</sub>) teamwork training, and (H1<sub>b</sub>) team autonomy.*

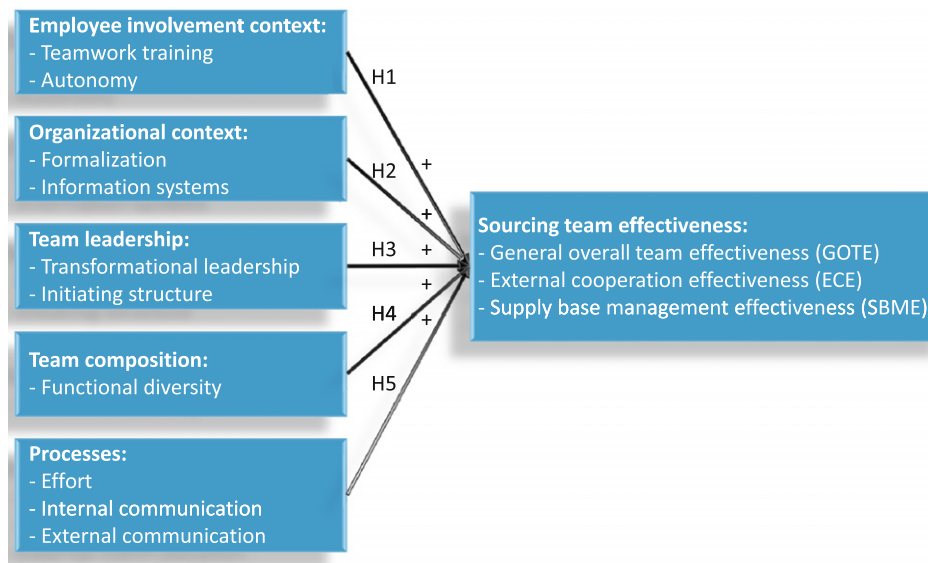


Fig. 1. Conceptual model.

### 2.3. Organizational context

The effects of the organizational context factors 'formalization' and 'information systems effectiveness' are generally assumed to have a high impact on sourcing team performance. However, there is no empirical evidence to support this.

Formalization refers to the emphasis placed on following rules and procedures in performing a team's job. Formalization appears to be positively related to the effectiveness of cross-functional teams (Pinto et al., 1993), virtual teams (Workman, 2005), and boundary-spanning service teams (De Jong et al., 2001). Clearly defined procedures facilitate the effectiveness of decision-making teams without sacrificing quality, since internal stakeholders' support for decisions increases when a fair process is followed (Andrews, 1995; Chan and Mauborgne, 2003). This support is critical for the success of sourcing teams, since their decisions typically need to be followed up by actions in the organization to implement contracts and achieve compliance. This suggests that sourcing teams should benefit from formalization. However, this has not yet been subject to research.

Sourcing teams have to decide on an adequate strategy and should make high-quality decisions based on correct, detailed, and timely information (Monczka et al., 2006). In the 1990s, information technology solutions took a central role in purchasing research and practice (Johnson and Klassen, 2005). If spend data cannot be retrieved from information systems, it can be extremely time-consuming and costly to gather the detailed information necessary for strategy planning and decision-making, which – if it is available at all – is likely to be dispersed among multiple team members. Information systems clearly facilitate information sharing. However, information systems themselves are only half of the solution. Ogden et al. (2005) concluded that managers should focus on information sharing rather than on information systems. We formulate the following hypothesis:

**H2.** *The organizational context significantly explains sourcing team effectiveness through a positive effect of (H2<sub>a</sub>) formalization, and (H2<sub>b</sub>) information system effectiveness.*

### 2.4. Team leadership

As in other types of teams, the team leader is thought to play a critical role in sourcing team success (Trent, 1996). The team

leader is not only crucial for managing the team processes and the relationships with suppliers, but also for building a constructive relationship with the internal user community (Hult et al., 2000). The characteristics of transformational leadership include charisma, individualized consideration, and intellectual stimulation (Keller, 2006). Initiating structure is defined as leadership through which the leader defines, directs, and structures the roles and activities of subordinates towards attainment of the team goals (Keller, 2006). Transformational leadership styles call for effective communication within the team and with stakeholders in the organization, and enables effective decision-making. However, the ability of the team to conduct high-quality analyses also requires structured roles and activities. Furthermore, creating trust, cohesion, and clear expectations in a virtual team is likely to require both types of leadership styles (Kayworth and Leidner, 2001). Following Keller's (2006) contingency implications, both transformational leadership and initiating structure by the leader may be important drivers for sourcing team success. This suggests that sourcing teams need highly competent leaders, who are able to deploy a variety of leadership skills.

**H3.** *Team leadership significantly explains sourcing team effectiveness through positive effects of (H3<sub>a</sub>) transformational leadership and (H3<sub>b</sub>) initiating structure.*

### 2.5. Team composition

Purchasing's increasing strategic importance requires integration with other functions (Van Weele and Rozemeijer 1996). An important driver for moving from functional departments to sourcing teams is the potential for more effectively combining knowledge and skills from different backgrounds.

Functional diversity in a team is said to facilitate communication across functional boundaries, to increase the availability of sources of information, and ultimately to result in higher team effectiveness. However, the downside is that cross-functionality can create team stress, which in turn lowers cohesiveness (Keller, 2001). As well as a purchasing perspective, sourcing teams need to have knowledge from other functional backgrounds to execute their task effectively. Authors therefore widely advocate the use of cross-functional sourcing teams (Hensley et al., 2003; Monczka et al., 2006), but the relationship between functional diversity and

sourcing team effectiveness has not yet been addressed empirically. It is here hypothesized that:

**H4.** *Team composition significantly explains sourcing team effectiveness through a positive effect of functional diversity.*

## 2.6. Team processes

Team processes reflect those things that go on in teams to influence their effectiveness. The two process factors 'effort' and 'communication' are likely to be of particular importance due to the nature of sourcing tasks. Both are affected by team leaders and managers.

Clearly, the level of effort that is brought to a team's task is an important aspect of teamwork quality (Hoegl and Gemuenden, 2001). Trent (1998) argues that gaining team member effort is a particular challenge for sourcing teams due to part-time assignment of members. Part-time memberships are still common in sourcing teams, and a risk for sourcing teams is that their members may prioritize other responsibilities outside the team (Englyst et al., 2008).

Likewise, communication is a determinant of team effectiveness (Hoegl and Gemuenden 2001). As boundary-spanning teams, sourcing teams need to communicate extensively with internal and external stakeholders. This external communication to gather information and knowledge and to assure follow-up activities after team decisions is key. Moreover, to share information and knowledge within the team, its members must rely on internal communication. Along with the increased need for further integration of the purchasing function, purchasing professionals increasingly need to rely on their communication skills (Van Weele and Rozemeijer 1996).

**H5.** *Team processes significantly explain sourcing team effectiveness through a positive effect of (H5<sub>a</sub>) effort, (H5<sub>b</sub>) internal communication, and (H4<sub>c</sub>) external communication.*

## 3. Methods

The conceptual framework in Fig. 1 was tested empirically by means of a cross-sectional survey. Team members, leaders, and managers in twelve companies took part in this survey. Companies from different industries were selected,<sup>3</sup> all of which had international operations. Companies were mainly Scandinavian and Dutch-based. In total, 392 individuals from 64 teams were contacted. Each respondent received a personalized invitation e-mail that gave access to a web-based questionnaire. This personal e-mail included the name of the respondent, the company and the respective team, explained the study's relevance and mentioned the CPO's support for the company's participation. This approach may have influenced the response rate positively. Respondents who had not filled out the online questionnaire completely received two reminders. Anonymity of respondents and non-disclosure of scores at a team level were guaranteed in the announcement of the survey, in the e-mail invitations, and in the reminders. It was therefore made clear several times that no reference would be made to individuals or to individual teams in reports, and that this research would provide no opportunity to compare team scores, reducing the risk of social desirability bias.

In total, 275 questionnaires were completed. The overall response rate was 70.2%, which can be regarded as high

**Table 1**  
Response rates.

Group	Respondents contacted	Respondents who filled out the questionnaire completely	Response rate (%)
Team members	276	193	69.9
Team leaders	52	38	73.1
Team managers	64	44	68.8
Total	392	275	70.2

(Baruch, 1999; Cook et al., 2000). Table 1 shows further details on the response rates. Only fully completed questionnaires were used for further analysis. The unit of analysis is the team. Responses that could be used for further analysis referred to 59 teams. Management ratings were obtained for 32 of these 59 teams. The average number of completed questionnaires per team was 4.7.

The results of this study were discussed in a round table meeting with purchasing executives from the participating companies. One of the aims of this meeting was to enable correct interpretation of the results, in consultation with experts from the field. This meeting was recorded and findings were summarized afterwards.

Appendix A lists the sources of the scale items used. The survey that was developed for this research was largely based on instruments that had been validated in earlier research. All scale items were measured on a 7-point Likert scale, ranging from (1) 'completely disagree' to (7) 'completely agree', except for the item measuring the level of cross-functionality. Functional diversity is not a latent variable and was not measured on an attitude scale. Instead, respondents were asked to state the absolute number of functional representations in the team on a formative scale.

With these items, separate questionnaires were developed for team members, team leaders, and managers. The questionnaire for team members included all the items described above, except the item measuring functional diversity. For team leaders, questions about leadership style were omitted, but this questionnaire included the question about cross-functionality. The assumption made here is that team leaders generally have a good overview of the functional backgrounds of individual members. The managers' questionnaire only showed the items related to sourcing team effectiveness. All questionnaires were in English. We assume that the language of the questionnaires did not affect the results, since all respondents operate in an international environment and depend on English language skills to be able to do their work. Items were randomized in all questionnaires. The questionnaire for members was divided into sections about 'team characteristics', 'organizational matters', and the team leader, respectively. Except for the leadership behavior, these sections had no relationship with the conceptual framework as shown in Fig. 1.

To test for unidimensionality, models including the employee involvement context factors, the organizational context factors, the leadership styles, the team processes, and team effectiveness measures were validated by means of exploratory factor analysis<sup>4</sup> (principal component with Varimax rotation). Items were selected for further analysis based on three criteria. Selected items showed (1) a factor loading above .5, which is generally

<sup>3</sup> The industries represented included construction, chemicals, telecommunications, office equipment, medical systems, banking, aerospace, and others. The participating companies were headquartered in the Netherlands, Sweden, Finland, and Germany.

<sup>4</sup> Factor structures were analyzed using SPSS 15.0 for Windows (Norusis, 2007)

considered necessary for practical significance (Hair et al., 2006) on the *a priori* dimension, and (2) no other factor loadings above .5. Items that did not meet one or more of these criteria were dropped from further analysis.

Several items (12) were deleted to obtain clear factor structures. Most deletions related to sourcing team effectiveness, but the number of items for each of the effectiveness dimensions remained sufficient. However, some cross-loadings provided interesting insights. Cross-loadings of items in our factor analysis suggested that best-in-class supplier selection and cost reductions, the primary focus in case of lower purchasing maturity levels (Van Weele, 2005), are related to both general overall team effectiveness and external cooperation effectiveness. This indicates that the first and second dimensions of effectiveness are most relevant for sourcing teams in organizations with a lower purchasing maturity and a focus on costs, while the third dimension, supply base management effectiveness, becomes more relevant for organizations with higher levels of purchasing maturity.

Although a minimum of three items is typically suggested (Hair et al., 2006), some of the reflective scales were measured with only one or two items. However, these items were very clear, they reflected the respective factors well, and showed high face validity. In fact, including more items sometimes only increases ambiguity (Fields, 2002). Also, our results show some Cronbach's alpha values of just below .7. These relate to autonomy ( $\alpha=.66$ ), formalization ( $\alpha=.66$ ), external communication ( $\alpha=.65$ ), and external cooperation effectiveness ( $\alpha=.68$ ). These reliability scores can be considered acceptable, since these item scales have successfully been validated in earlier research (De Jong, 2003; Keller, 2001; Kirkman et al., 2004) or, in the latter case, have an exploratory nature (Robinson et al., 1991). The average score on the items for each construct is used as a replacement variable.

The variables in this study are expected to operate at the team level, and our hypotheses identified the group as the unit of analysis. We selected scales referring to attributes of the team, not the individual. Results are aggregated at the team level, which is considered appropriate for the theoretical reasons mentioned above (James, 1982). Furthermore, this allows us to connect management ratings to individual teams. We conducted analysis of variance to justify aggregation (Danserau and Yammarino, 2000). Results confirmed that the variance between teams was greater than that within teams. Consequently, scores were aggregated by grouping and averaging individual responses per team.

The hypotheses were tested by means of multiple regression. However, because the hypotheses were tested at the team level (i.e. 59 team scores comprising 275 respondents; management ratings refer to 32 of these teams), the sample size did not allow us to test all factors in the conceptual framework simultaneously in a single multiple regression model. The effect of each group of input factors was therefore tested separately. The hypotheses were then tested by comparing  $R^2$  values. Relationships were estimated by the ordinary least squares procedure.

#### 4. Results

Table 2 shows the distributions of and correlations between all variables in the study, at both individual and team levels.

An overview of the regression results is given in Table 3.

Hypothesis 1 suggests that the employee involvement context in the form of teamwork training and team autonomy is positively related to sourcing team effectiveness. The regression results suggest that teamwork training positively affects both general overall team effectiveness and external cooperation effectiveness,

while autonomy has a strong positive effect on all three dimensions of effectiveness, implying support for H1.

As far as the second hypothesis is concerned, we expected that formalization and information system effectiveness were important elements of the organizational context explaining sourcing team effectiveness. Formalization proved to be positively correlated to the first two dimensions of effectiveness (i.e. general overall team effectiveness and external cooperation effectiveness). Effective information systems also contributed to supply base management effectiveness, as well as having a positive effect on general overall team effectiveness and a marginally significant effect on external cooperation effectiveness. H2 is therefore supported by these findings.

Hypothesis 3 postulates that transformational leadership and initiating structure both contribute to sourcing team effectiveness. In team members' perceptions, a transformational leadership style is more beneficial overall for sourcing teams than leaders who merely initiate structure, regardless of the effectiveness dimension. However, managers indicate that initiating structure has a significant positive effect on external cooperation effectiveness. This supports H3.

We found mixed results for the assumed positive effects of functional diversity presented in Hypothesis 4. In team members' perceptions, the level of supply base management effectiveness increases significantly as a result of functional diversity. However, in the perception of management the external cooperation effectiveness of teams is adversely affected by their functional diversity. H4 can therefore neither be confirmed nor rejected by this statistical analysis alone.

Finally, in relation to Hypothesis 5, the results suggest positive effects of the effort and internal communication processes on general overall team effectiveness, and a positive and significant effect of external communication on external cooperation effectiveness. In addition, team member effort appears to be positively and significantly related to supply base management effectiveness. Moreover, considering the  $R^2$  values of the different models tested, it can be seen that the team processes and the employee involvement context factors have the highest levels of explanatory power for all dimensions of effectiveness.

#### 5. Discussion

Our objective was to identify the current criteria for sourcing team performance excellence. First, this study contributes by analyzing the effects of success factors for teams on specific dimensions of sourcing team effectiveness. High performance on the general overall team effectiveness and external cooperation effectiveness dimensions generally complies with the initial, mainly cost-focused objectives that companies set when they install sourcing teams. When purchasing organizations grow beyond this transactional focus, supply base management optimization targets are introduced, and these place additional demands on sourcing teams (Van Weele, 2005). Secondly, this study contributes by identifying those factors that provide the best explanation of team effectiveness in today's purchasing organizations.

Interestingly, our findings suggest that the employee involvement context and team processes explain the variance in performance on all three dimensions of sourcing team effectiveness to a larger extent than the organizational context, team leadership, and team composition. The overall conclusion from this research is that sourcing team effectiveness depends strongly on the extent to which purchasing organizations have adopted a team management perspective, as reflected by the delegation of responsibilities to teams, providing training in teamworking skills, and the facilitation

**Table 2**  
Correlation table.

	Mean	Std.dev.	N	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Teamwork training	3.77	1.20	59	1.00															
2. Autonomy	5.15	0.68	59	.16	1.00														
3. Transformational leadership	4.56	0.93	58	.32*	.34**	1.00													
4. Initiating structure	4.72	0.82	58	.30*	.11	.63**	1.00												
5. Formalization	4.22	0.84	59	.48**	.09	.35**	.38**	1.00											
6. Information systems	3.94	0.97	59	.47**	.26*	.08	.04	.10	1.00										
7. Functional diversity	3.64	1.85	36	-.12	.04	.06	-.34*	.06	.12	1.00									
8. Effort	3.96	1.02	59	.31*	.34**	.32*	.17	.19	.07	.43**	1.00								
9. Internal communication	4.63	0.97	59	.30*	.42**	.40**	.30*	.30*	-.04	-.06	.53**	1.00							
10. External communication	4.51	0.78	59	.24	.30*	.40**	.16	.47**	-.01	.45**	.53**	.51**	1.00						
11. GOTE	5.06	0.68	59	.47**	.46**	.54**	.48**	.45**	.30*	.07	.56**	.62**	.45**	1.00					
12. GOTE†	4.865	1.11	32	.26	.22	.22	.36*	-.04	.07	-.36	-.02	.30	.26	.28	1.00				
13. ECE	5.23	0.61	59	.42**	.57**	.35**	.20	.32*	.27*	.22	.44**	.44**	.48**	.68**	.25	1.00			
14. ECE†	4.99	1.02	32	.18	.16	-.03	.25	-.00	.03	-.51*	-.20	.18	-.02	.11	.81**	-.02	1.00		
15. SBME	4.71	0.67	59	.24	.41**	.43**	.25	.15	.27*	.43**	.48**	.43**	.38**	.67**	.12	.49**	-.10	1.00	
16. SBME†	4.99	0.95	32	.31	.05	.16	.18	.12	.10	-.21	-.13	.08	-.01	.04	.72**	.12	.68**	.02	1.00

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

**Table 3**  
Regression results.

		GOTE	ECE	SBME
		GOTE <sup>a</sup>	ECE <sup>a</sup>	SBME <sup>a</sup>
<b>Employee involvement context</b>	R <sup>2</sup> :	.38	.20	.44
• Teamwork training		.41**	.34**	.18
• Autonomy		.40**	.52**	.38**
		.25	.17	.31
		.20	.15	.04
<b>Organizational context</b>	R <sup>2</sup> :	.27	.09	.16
• Formalization		.42**	.30*	.12
• Information systems effectiveness		.26*	.24	.26*
		.10	.04	.06
<b>Team leadership</b>	R <sup>2</sup> :	.32	.19	.12
• Transformational leadership		.39**	.37*	.46**
• Initiating structure		-.07	-.42	.07
		.23	-.04	-.04
		.41	.55*	.13
<b>Team composition</b>	R <sup>2</sup> :	.00	.19	.05
• Functional diversity		.13	.04	.26
		.07	.22	.43**
		-.36	-.51*	-.21
<b>Team processes</b>	R <sup>2</sup> :	.47	.28	.30
• Effort		.16	.05	.16
• Internal communication		.30*	.18	.31*
• External communication		-.33	-.37	-.23
		.30	.45	.22
		.08	.28*	.11
		.25	-.11	-.02

Note: GOTE=general overall team effectiveness; SBME=supply base management effectiveness; ECE=external collaboration effectiveness

<sup>a</sup> Management rating.  
\* Significant at a p=.05 level.  
\*\* Significant at a p=.01 level.

of effective team processes (i.e. effort and both internal and external communication). These findings confirm that purchasing organizations risk overlooking the people issues (Fawcett et al., 2008). Rather than focusing on technology, information and measurement systems, purchasing managers should enhance collaboration, teamwork, and empowerment.

In line with expectations, teamwork training enhances performance. Team members who have been trained in teamworking skills are significantly better able to work together effectively as a team, and cooperate more effectively with others outside the team, in order to achieve cost savings and best-in-class supplier selection. These findings show that purchasing managers should not *a priori* assume that team members have well-developed teamworking skills, and that such training is more a luxury than a need. The level of autonomy stands out as the strongest predictor for all three dimensions of effectiveness. This high impact of autonomy is remarkable. Giunipero and Vogt (1997) reported a high level of team empowerment readiness in purchasing organizations. However, this research indicates that after more than a decade, companies have still not fully captured the benefits of self-management by teams as far as sourcing teams are concerned. Autonomy is the essential hallmark of self-managed teams (De Jong et al., 2004). Team autonomy allows greater flexibility, better collaboration, and more efficient and accurate knowledge exchange (Berry et al., 1994). Although some authors claim that the effect of autonomy is curvilinear (Gebert et al., 2003), the current status in the field is that sourcing teams have clearly not yet passed the optimum, and in many cases still suffer from a lack of autonomy. This underlines the importance of well communicated definitions of the process to prevent frequent management interventions. To encourage managerial buy-in to team autonomy, performance criteria for managers may need adjustment (Gerwin and Moffat, 1997).

The second group of factors that show an above-average impact on sourcing team effectiveness concerns the team processes. Trent (1998) argued that the effort brought to the task by sourcing team members is a key process. This research supports this claim empirically for general overall team effectiveness and supply base management effectiveness. Moreover, the results indicate that communication should be added as a key process for enhancing effectiveness within the team and improved external collaboration. The relatively high impact observed in this research shows that purchasing managers should not take it for granted that sourcing team members will communicate sufficiently when assigned to a team. Effort, internal and external communication should be closely monitored and actively encouraged by both management and team leaders.

The groups of factors that remain are the organizational context, team leadership, and team composition. The organizational context

was represented by the level of formalization and the perceived effectiveness of the available information systems. The effect of formalization on general overall team effectiveness and external cooperation effectiveness is positive and significant. A clear sourcing process enhances general team efficiency. The positive effect on external collaboration can be explained by earlier research findings showing that fair procedures create support in organizations for team decisions (Andrews, 1995). Also, cross-functional relationships can be improved by formalization (Pinto et al., 1993). The effect on supply base management effectiveness is not significant. High levels of formalization are therefore less useful where the sourcing targets are more complex, like for example supplier relationship development. This indicates that such tasks and the context of sourcing teams with these tasks are too complex for formalization to be effective (Damanpour, 1991). The usefulness of information systems is positively related to team effectiveness, particularly to general overall team effectiveness and supply base management effectiveness. These findings support claims by other authors (e.g. Monczka et al., 2006). When systems provide easy access to accurate information, teams are able to operate more efficiently, and are able to make better strategic choices. However, the size and significance of the effects are moderate.

Based on earlier research findings, it was hypothesized that initiating structure and transformational leadership would both significantly enhance sourcing team performance (Kayworth and Leidner 2001; Keller, 2006; Trent, 1996). The findings of this study confirm that transformational leadership improves team effectiveness (Lowe et al., 1996). Managers perceive that cooperation between teams and other departments is smoother when leaders initiate structure well. Our results suggest that initiating structure makes collaboration patterns between teams and internal stakeholders better visible to managers, while a transformational leadership style has wider positive effects.

We found interesting results with regard to functional diversity. Performance in the team's perception, and particularly supply base management effectiveness, increases as functional diversity increases, while performance in the perception of management, and especially the ability to cooperate with other functions in the organization, decreases. A number of reasons raised by purchasing executives in the round table meeting may explain these findings. First, the level of functional diversity may reflect the complexity of the product or service that is sourced, and as a consequence the likelihood of success. Secondly, when only purchasers are involved in a project, the perception could be that a team has performed really well, for instance in terms of potential savings. When knowledge from more functional backgrounds is brought into the team, new requirements and practical limitations can initially make the task more difficult, which is recognized by purchasing managers. However, the end result may satisfy internal customers better and could lead to better compliance with contracts. Thirdly, when conflicts arise that cross functional boundaries, these conflicts are often escalated to management level. This means that purchasing managers experience more issues with others in the organization as the level of functional diversity in teams increases. Although the sample size to test these relationships was limited, it can at least be concluded that while functional integration is a necessity for further development of the purchasing function (Reinecke et al., 2007; Zheng et al., 2007), purchasing managers tend to perceive this integration as a troublesome process, as is shown by the negative ratings as an effect of functional diversity in teams and the explanations provided in the round table meeting. It certainly holds for purchasing organizations that the implementation of cross-functional teams is risky and should be managed cautiously (Webber and Donahue, 2001). The strong relationship between autonomy and external cooperation effectiveness, and the

negative relationship between functional diversity and management ratings of this effectiveness dimension, suggest that teams should be encouraged to improve the collaboration within an organization autonomously.

Other recent studies have emphasized the importance of people management and cross-functional integration, and advocate the implementation of sourcing teams as a best practice (Hardt et al., 2007; Reinecke et al., 2007). The present study shows that creating team structures does not automatically go hand-in-hand with successful empowerment and functional integration. Sourcing teams face some typical challenges related to their boundary-spanning role, heavy dependence on the commitment of internal stakeholders and part-time team member assignments. However, many insights retrieved from team effectiveness studies in other fields also apply to sourcing teams, but have not yet been applied as standard in purchasing organizations. Managers have a crucial role to fulfill in enabling and enhancing team performance. The factors addressed here in relation to specific dimensions of sourcing team effectiveness are a good point of departure for evaluating current practices. In the operation of cross-functional teams, effective people and team management is of vital importance.

This research is subject to a number of limitations. Although previously validated measurement scales have been used, some of these scales did not result in optimal factor structures, and a number of items had to be deleted. As a result, the recommended minimum of three items per construct is not met for each factor (Hair et al., 2006). Also, some Cronbach's alpha scores were just below .7, which is the preferred minimum level. However, the factor structure and face validity are satisfactory for validating the final measurement tool. Moreover, the reliability of the item scales adopted here has been proven in earlier studies. All effectiveness dimensions are measured on attitude scales, and common method bias has not been cancelled out. Unfortunately, objective measures of team success across companies and industries are difficult to define and to obtain. In conducting our research, we experienced this difficulty not only in relation to researchers, but also to the purchasing organizations involved, which find it difficult to develop fair performance indicators for their sourcing teams. The management ratings that we have been able to collect counterbalance this limitation by providing substantial insights. Furthermore, given the cross-sectional nature of the data, this study only provides a snapshot of input–outcome relationships. For further verification of causality, longitudinal data should be collected. Directions for further research therefore include longitudinal studies in the area of sourcing team effectiveness. The mechanisms through which input factors affect team performance in executing sourcing tasks are an area of interest for further qualitative research, as are the contrary perceptions by teams and their managers with respect to the effectiveness of functional diversity. Finally, we would like to encourage researchers to address organizational designs of the purchasing function in more rigorous studies, to support practitioners in managing their sourcing initiatives. This study confirms that research on internal purchasing management practices can provide essential guidance for practitioners. Although the field of purchasing and supply management can greatly benefit from the rich field of team research, sourcing team management remains a matter of concern in practice. Our research shows that staffing a team with experienced sourcing experts and managing them by controlling figures is tempting, but does not provide the conditions for success. It is the responsibility of purchasing executives to shift their focus towards employee involvement and team processes, so that teams are enabled to actually meet and even surpass expectations.

Table A1

	Factor	No. of items <sup>a</sup>	Adapted from
<b>Employee involvement context</b>	Teamwork training	1 (1)	Campion et al. (1996)
	Autonomy ( $\alpha=0.66$ )	2 (3)	Kirkman et al. (2004)
<b>Organizational context</b>	Formalization ( $\alpha=0.66$ )	2 (2)	De Jong (2003)
	Information systems ( $\alpha=0.96$ )	5 (5)	Davis (1989)
<b>Team leadership</b>	Transformational leadership ( $\alpha=0.96$ )	12 (13)	Keller (2006)
	Initiating structure ( $\alpha=0.75$ )	4 (6)	Keller (2006)
<b>Team composition</b>	Functional diversity	1 (1)	Developed for present study
<b>Team processes</b>	Effort ( $\alpha=0.82$ )	2 (4)	Hoegl & Gemuenden (2001)
	Internal communication	1 (1)	Keller (2001)
	External communication ( $\alpha=0.65$ )	3 (3)	Keller (2001)
<b>Sourcing team effectiveness</b>	General overall team effectiveness ( $\alpha=0.86$ )	6 (9)	Trent and Monczka (1994)
	External cooperation effectiveness ( $\alpha=0.68$ )	3 (3)	Items from Trent and Monczka (1994)
	Supply base management effectiveness ( $\alpha=0.88$ )	7 (10)	Trent and Monczka (1994)

<sup>a</sup> No. of items that met the requirements to be included for further analysis; original number of items is listed between brackets.

## Appendix A. Details of final measurement tool

See Table A1

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