

# Success factors for managing purchasing groups: an empirical survey

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## Summary

In this article, we identify success factors for managing small and intensive purchasing groups by comparing successful and unsuccessful Dutch purchasing groups in a large-scale survey. Transaction costs economics and social exchange theory are used as theoretical frameworks for our broad empirical investigation. We found that the success factors studied that are related to interorganizational trust, the formality of the group, and uniformity of the group members are not success factors for managing purchasing groups. For our data set, the most important success factors are no enforced participation, sufficient total contribution of efforts, all members contribute knowledge, all members rarely change representatives, fair allocation of savings, and communication. We discuss the academic and practical implications of the success factors found.

## Educator & practitioner summary

In this article, we identify success factors for managing small and intensive purchasing groups. The most important success factors found are no enforced participation, sufficient total contribution of efforts, all members contribute knowledge, all members rarely change representatives, fair allocation of savings, and communication. We discuss the academic and practical implications of the success factors found.

**Keywords:** Cooperative purchasing; Success factors; Discriminant analysis

## Introduction

Purchasing in relatively small and intensive groups is becoming increasingly popular in both the private and public sector (Doucette, 1997; Johnson, 1999; Nollet and Beaulieu, 2003, 2005; Polychronakis and Syntetos, 2007; Tella and Virolainen, 2005). More and more organizations pool and/or share their purchasing volumes, information, and/or resources in purchasing groups in which the members share the workload between themselves. By doing so, these organizations aim to obtain, among other things, lower purchase prices and reduced duplications of efforts and activities. Theoretically, these advantages can outweigh disadvantages such as anti-trust (legal) issues and disclosure of sensitive information in a large number of cases. Thus, at least in theory, cooperative purchasing can be a beneficial concept for business and governmental organizations. However, in practice, small and intensive purchasing groups do not always flourish and premature endings of such groups occur (Jorritsma-Lebbink, 2000; Schotanus, 2007; Vliet, 1998). A good understanding on what factors significantly influence the success or failure of a purchasing group can help such groups to flourish and prevent premature endings.

Unfortunately, current research offers little guidance on how to manage a purchasing group. On a general level, there is an extensive amount of literature dealing with interorganizational cooperation, but a comprehensive theory has not yet emerged (Hoffmann and Schlosser,

2001). In addition, most of the existing literature does not deal with the management of interorganizational cooperation, but deals with the formation of interorganizational cooperation (Spekman et al., 1998). On a more specific level, several studies on success factors for interorganizational cooperation have been carried out (e.g., Hendrick, 1997; Gottschalk and Solli-Sæther, 2005; Hoffmann and Schlosser, 2001; Kogut, 1988; Park and Ungson, 1997), but only a very limited number of studies provide a broad empirical investigation into success factors for interorganizational cooperation (Hoffmann and Schlosser, 2001). Even more specifically, the only previous empirical study that explicitly deals with several success factors for managing purchasing groups is a study carried out by Hendrick (1997) among 28 organizations that participate in purchasing groups. However, as we discuss later on in this paper, the results of Hendrick are not fully consistent with the results of existing studies on success factors for interorganizational cooperation (e.g., Hoffmann and Schlosser, 2001). It is not clear yet what explains these inconsistencies. It could be due to the specific context of cooperative purchasing, but it could also be due to the sample or the methods used in the different studies.

Summarizing above, we see struggling purchasing groups in practice and the literature does not have a consistent explanation of this phenomenon. This means that it is both practically and academically relevant to better understand how purchasing groups can be successful. Therefore, it is our objective to identify success factors for managing purchasing groups. In particular, this study contributes to the existing literature by carrying out a broad empirical investigation into potential success factors for purchasing groups.

The rest of this article has been organized in the following way. First, we define success and discuss theoretical and empirical findings regarding potential success factors for purchasing groups. Next, we describe the data collection, research procedure, response, data analysis, and the data source. In the findings and discussion section, we describe and discuss the success factors for cooperative purchasing. In the final sections, we draw our main conclusions.

## **Literature review**

### *Success*

In this article, we roughly distinguish between two methods that can be used to identify success factors. The first method is used in studies such as the studies carried out by Hendrick (1997) and Schotanus (2005). They asked their respondents what the perceived importance of several success factors was. Using this method, it is not necessary to ask the respondents about the perceived success of the purchasing group.

The second method is used in studies such as ours. For several factors, differences and similarities between successful and unsuccessful purchasing groups are measured. The factors that best predict whether a purchasing group is successful or not successful are identified as success factors. Using this method, it is necessary to determine whether a purchasing group is successful or not. Hoffmann and Schlosser (2001) note that previous studies faced difficulties with evaluating the success of groups of organizations such as alliances. As a benchmark for success, some studies consider an alliance's longevity (Kogut, 1988) or an alliance's contribution to improving the strategic position or competitiveness of the cooperating organizations (Hagedoorn and Schakenraad, 1994; Mitchell and Singh, 1996). Sarkar et al. (2001) note that as a benchmark for cooperative success, some studies consider financial survival (Killing, 1983), and ownership stability (Gomes-Casseres, 1987).

Similar to Geringer and Hebert (1989), we note that there is a lack of consensus regarding an appropriate measure of the success of partnerships and alliances. We also note that some alliance measures seem less appropriate for cooperative purchasing. For instance, longevity and survival do not apply to young purchasing groups. Additionally, the contribution to improving the strategic position or competitiveness of the cooperating organizations will be difficult to measure and does not have to apply to public purchasing groups.

We determine success in a similar way as Hoffmann and Schlosser (2001) did in their study. In our study, the perceived success of the purchasing group for the respondents' organizations was determined by the respondents themselves, taking into account the advantages and disadvantages of cooperative purchasing.

#### *Potential success factors for managing purchasing groups*

Potential success factors for cooperative purchasing can be identified by several theories. In this article, we build our potential success factors on two theories which are recognized in earlier studies as relevant theories for interorganizational cooperation. These theories are transaction cost economics and social exchange theory.

There are several theories that provide a general rationale for interorganizational cooperation. Transaction cost economics is one of these theories. Drawing on this theory, it is stated that a purchasing group can be viable when the total transaction costs of the group members involved are lower when they work together (based on Picot et al., 1996; Williamson, 1991, 2000). Looking more specifically at the rationale for an individual organization to join a purchasing group, we build on social exchange theory. Reasoning from this theory, a purchasing group can be successful when all group members perceive that they gain most by cooperating in a fair manner (based on Homans, 1958). In the next part of this section, we use these theories and several empirical findings to identify a set of potential success factors.

#### **Interorganizational trust between the group members**

In the literature, interorganizational trust is perhaps one of the most frequently discussed success factors for interorganizational cooperation (e.g., Bakker et al., 2006; Hendrick, 1997; Hoffmann and Schlosser, 2001; Nollet and Beaulieu, 2005; Polychronakis and Syntetos, 2007; Quayle, 2002; Vangen and Huxham, 2003). Several of these empirical studies confirm the importance of competence and goodwill trust in cooperative relationships.

There are also several theories that claim that trust is an important factor for the success of a purchasing group. One of these theories is transaction cost economics. Reasoning from this theory, transactions costs are lower when there is trust, because less monitoring and cooperative agreements are necessary (Park and Ungson, 1997).

#### **Formality of the group**

The importance of formality aspects for a purchasing group has been discussed by several authors (Bakker et al., 2006; Corsten and Zagler, 2001; D'Aunno and Zuckerman, 1987; Johnson, 1999). They argue that it is worthwhile to make agreements regarding important decision moments and periodically report about important performances of the group.

Reasoning from transaction costs economics, a purchasing group has to minimize uncertainty and conflicts (Hennart, 1988). It is suggested to do this by setting up cooperative agreements (Bakker et al., 2008), despite that this typically brings high transaction costs (Hennart, 1991).

#### **Uniformity of the group members**

In purchasing groups, the members complement each other by purchasing volumes, knowledge contributions, and reducing duplications of efforts and activities. Several studies

claim that some other aspects of the members should be as uniform as possible (e.g., Polychronakis and Syntetos, 2007). These studies state that all members should have similar organizational cultures, similar procedures, et cetera.

The empirical findings discussed above can be explained by transaction costs economics. Based on this theory, transaction costs are lower when organizations are more alike, as there is less uncertainty and less fine tuning is necessary.

### **Common objectives to participate in the group**

Among others, Laing and Cotton (1997) discuss that the existence of common objectives and interests of the group members is a potential success factor for purchasing groups. If the objectives differ a lot, then this may lead to stifled innovation and tensions between group members.

A similar theoretical argument can be applied here as for the uniformity of the group members. According to transaction costs economics, transaction costs are lower when organizations have common objectives, as less fine tuning and adaptations are necessary

### **Communication between the group members**

Efficient and effective communication is often considered to be a potential success factor for interorganizational cooperation. In practice, it is typically difficult to communicate properly in a purchasing group. For instance, in the study of Laing and Cotton (1997), it was indicated that cooperative purchasing often leads to communication problems, what may result in increased throughput times. Huxham (1996) and Jost et al. (2005) conceptualized this through the concept of cooperative inertia, a situation when the rate of work output from a group is slowed down considerably compared to what might be expected.

Based on transaction cost economics, it is important that there is efficient and effective communication between the group members. Otherwise, due to high communication costs, the total transaction costs of the group can become higher than a situation in which the group members do not cooperate.

### **Enforcement of cooperation**

Several authors have argued that enforced cooperation has a high failure risk (Bennett and McCoshan, 1993; Brams, 1989; Enthoven, 1994; Schotanus, 2007). Among other things, they state that is difficult to cooperate with unwilling group members.

The empirical and conceptual findings described by the authors above can be explained by social exchange theory. If members of a group are enforced to cooperate, then it is more likely that they do not perceive the gains to be larger than the costs of a purchasing group. These members could frustrate the performance of the group.

### **Influence of the group members**

For several purchasing group types, it is argued that the group members should have a similar influence on the group activities and decisions (Schotanus, 2007). This especially applies to small and intensive purchasing groups.

Here, a similar theoretical argument applies as for enforced cooperation. If members of a group find it difficult to influence the group activities and decisions, then it is more likely that their interests are not taken fully into account. As a result, they may perceive the gains of a purchasing group to be smaller than the costs.

### **Allocation of gains and costs**

Financial savings are often an important reason for individual organizations to join a purchasing group (Nollet and Beaulieu, 2003). If these savings are realized, each of the members of the group should receive a fair part of the total savings (based on Dyer, 2000; Heijboer, 2003). In practice, it may not be easy to accomplish a fair allocation of savings.

Schotanus (2007) already mentioned that it is typically difficult for purchasing groups to find agreement on a fair savings allocation method.

Drawing on social exchange theory, it is argued that every member of a purchasing group participates to obtain savings and these savings should be allocated to the members in a fair manner. If a group member perceives the allocation to be unfair, this may lead to conflicts and have a negative effect on the performance of the group. The member may even decide to join another purchasing group or purchase the needed commodities individually.

### **Cooperation of the group members**

For a small and intensive purchasing group to be successful, sufficient efforts and activities need to be contributed to be able to run the group successfully. In particular, each group member must provide similar or complementary resources, efforts, and knowledge required for the group (based on Anderson and Narus, 1990; Hoffmann and Schlosser, 2001).

Reasoning from social exchange theory, similar arguments can be used as for the allocation of gains and costs. Here, it can be argued that if a group member does not put the required efforts into the group, then the other group members may perceive this as unfair. This may lead to conflicts and members leaving the group.

### **Commitment and internal support**

Committed group members believe that the group is worth working on to ensure that it endures (based on Morgan and Hunt, 1994). To be able to obtain cooperation, the members should have internal support and be committed to the purchasing group (Bakker et al., 2006; D'Aunno and Zuckerman, 1987; Doucette, 1997).

Again, reasoning from social exchange theory, similar arguments can be used as in the previous subsections. If a group member does not have internal support and is not committed, this may negatively affect the commitment of the other members (Doucette, 1997). In the end, this can have a negative impact on the perceived success of a purchasing group.

Based on our literature review and the theoretical concepts discussed, we identified the potential success factors as shown in Table 1.

Table 1 Potential success factors for managing purchasing groups

<b>Categorized success factors</b>	<b>Categorized success factors</b>
<b>Interorganizational trust between the group members</b>	<b>Allocation of gains and costs</b>
1. All members are honest and loyal	11. Fair allocation of gains and costs
2. All members like each other personally	<b>Influence of the group members</b>
3. All members meet one's commitments	12. All members have a similar influence on the group activities and decisions
<b>Formality of the group</b>	<b>Enforcement of cooperation</b>
4. Make engagements regarding important decision moments	13. No enforced participation
5. Report important performances of the group periodically	<b>Cooperation of the group members</b>
<b>Uniformity of the group members</b>	14. All members contribute resources and efforts
6. All members have similar organizational cultures	15. All members contribute unique knowledge
7. All members have similar procedures	16. In total, sufficient efforts and activities are contributed to be able to run the group successfully
<b>Common objectives</b>	<b>Commitment and internal support</b>
8. All members have similar objectives to participate	17. All members have internal support
<b>Communication between the group members</b>	18. All members rarely change representatives
9. Communicate and keep each other up-to-date regarding current projects	19. At least one member acts as a champion
10. Communicate and keep each other up-to-date regarding new potential projects	

## Method

In this section, we discuss the methodology used to identify the most important success factors from the list of potential success factors. First, we discuss the data collection and research procedure. Next, we discuss the response, data set, and data analysis procedure.

### *Data collection and procedure*

We built a draft questionnaire that used a mix of question types. The questionnaire was first sent to a focus group to test the questions. After the focus group session, the wording of some questions was changed and some new questions were added. The final questionnaire consisted of four parts:

- Part (1):** The first part consisted of general questions about the respondent and the respondent's (purchasing) organization;
- Part (2):** The second part consisted of questions about the purchasing group, such as the name, the number of members, the life span of the group, and the number of contracts and meetings. The respondents were asked to choose a purchasing group in which they had been playing an active role for at least the past two years. Organizations engaged in more than one purchasing group were asked to choose the least successful group. We asked for the least successful group as it is usually more difficult to find unsuccessful groups than successful groups;
- Part (3):** The third part consisted of questions about potential success factors for managing purchasing groups. We asked the respondents to what extent the factors apply to the purchasing group in which the respondent was/is involved. For instance, we asked the respondents to what extent the objectives of all members are similar;
- Part (4):** The final part consisted of questions about advantages, disadvantages, and the perceived success of the purchasing group for the respondent's organization. The questions specifically referred to the purchasing group in which the respondent was/is involved.

Some issues that specifically apply to our study are the following. First, some individual organizations returned multiple questionnaires about the same purchasing group. Sometimes, these answers differed slightly. In such cases, we averaged the answers. Second, for some purchasing groups, we received multiple questionnaires filled in by different organizations. If the answers to the questions that applied specifically to the purchasing group differed, then we also averaged these answers. Finally, if a respondent did not answer a question, then the respondent was removed from the analysis of that particular question. Thus, missing values were excluded listwise.

### *Response*

The questionnaire was made available online and an invitation to respond was sent by e-mail to all members of NEVI, the Dutch purchasing association. Most of these organizations are private organizations. The total NEVI sample size, that is, the number of organizations that was reached was 797 (56% of the total sample size). Additionally, an invitation to respond was sent by e-mail to all members of PIANOo, a Dutch organization for purchasing employees of public organizations. The total PIANOo sample size, that is, the number of public organizations that was reached was 620 (44% of the total sample size). The data collection was carried out from June 2006 to October 2006.

A low response rate was expected as not all NEVI and PIANOo members are involved in a purchasing group. In addition, there is quite some overlap between the organizations in the

NEVI and PIANOo samples. After one reminder, the total response was 274, out of which 50 respondents only filled in the first part of the survey. Thus, the total useful response was 224, representing a ‘worst case’ response rate of 16%. A total of 142 organizations were involved in a purchasing group and a total of 82 organizations were not. The response covered a total of 115 different purchasing groups.

To compensate for nonresponse bias and possible misinterpretations, we developed a website that contained preliminary results with a final request for feedback on any perceived discrepancies and key issues. The website was only available to respondents that completely filled in the questionnaire. The representativeness of the response was tested in two ways:

### 1. Early and late responders

We tested potential nonresponse bias by comparing early ( $n = 118$ ) and late responding organizations ( $n = 24$ ) that are involved in a purchasing group. Respondents are considered late if their answers were received after sending a reminder. We carried out independent samples 2-tailed t-tests for 53 questions. Between the two groups, we found no significant differences between the means of the normal distributed ratings at  $p < .05$ . We also tested potential nonresponse bias by comparing early ( $n = 76$ ) and late responding organizations ( $n = 6$ ) that are not involved in a purchasing group. We carried out independent samples 2-tailed t-tests for 45 questions. Between these two groups, we found for two questions significant differences between the means of the normal distributed ratings at  $p < .05$ . These differences concerned a general question about the ‘purchasing competence’ of the organizations and a question about the advantages of cooperative purchasing. These two differences could be due to chance. Note that we asked organizations not involved in a purchasing group some different questions than organizations involved in a purchasing group. Therefore, we did not combine these two groups of organizations in one t-test;

### 2. Known purchasing groups

Before conducting the survey, we already knew the names of dozens of Dutch purchasing groups by our contacts and the professional literature. Most of the purchasing groups that we knew responded to the survey. Only a few purchasing groups responded to the survey of which we did not know their existence already.

Based on the discussions above, we argue that the data possesses desirable representativeness, which is even more important than the response rate (Yang, 2005).

### *Data description*

The Dutch organizations and purchasing groups analyzed can be characterized by the factors as shown in Table 2 to Table 4. Table 2 shows that most responding organizations are medium sized. It also shows that about half of the private organizations and most of the public organizations in the sample have been involved in a purchasing group in the past two years.

Table 2 Size of organizations analyzed

Size	Annual purchasing in million US dollars	% Total	% Involved in a purchasing group
<b>Public sector</b>			
Large	200 < 2,000	6	83
Medium	20 < 200	33	85
Small	< 20	6	100
<b>Private sector</b>			
Large	200 < 2,000	13	36
Medium	20 < 200	24	51
Small	< 20	13	36

Note:  $n = 224$

Table 3 shows some significant differences between public organizations (*Pu*), private organizations (*Pr*), organizations involved in a purchasing group (*I*), and organizations not involved in a purchasing group (*N*). We found the differences between the means of the normal distributed ratings in independent samples 1-tailed t-tests. The table suggests that organizations in group *I* expect to a higher extent than organizations in group *N* that cooperative purchasing will become more prevalent in their sector in the next two years. A similar conclusion concerns the willingness to help others by means of cooperative purchasing. Finally, the table suggests that responding organizations expect that cooperative purchasing will become more prevalent in the public than in the private sector. Again, a similar conclusion concerns the willingness to help others without engagement.

Table 3 Cooperative purchasing trends and helping others without engagement

Description	Public sector		Private sector	
	Involved	Not involved	Involved	Not involved
Expected trend	4.0	3.6 ( $I^* > N$ )	3.2 ( $Pu^{**} > Pr$ )	2.2 ( $I^{**} > N$ ) ( $Pu^{**} > Pr$ )
Helping others	3.6	3.1 ( $I^* > N$ )	3.3 ( $Pu^{**} > Pr$ )	2.6 ( $I^{**} > N$ ) ( $Pu^* > Pr$ )

\* $p < .05$ ; \*\* $p < .005$

Note:  $n = 224$ ; measured on a 5 point Likert scale from 1 (very low) to 5 (very high)

Table 4 positions the purchasing groups analyzed by the typology of Schotanus and Telgen (2007). Table 4 shows that most groups in the data set are lead buying / program-like purchasing groups. For this reason, our further analyses mainly focus on this purchasing group type. This group type is a relatively small and intensive purchasing group type. It usually involves representatives of the management teams of the cooperating organizations meeting regularly in a steering committee to discuss cooperative projects. The members often have medium to high involvement relationships with each other.

Table 4 Contextual factors of purchasing groups analyzed

Group type	% Total	% Successful
Piggy-backing	6	86
Third party	8	100
Project	12	79
Lead buying / program	74	81

Note:  $n = 115$

A total of 22 responding private organizations are involved in cooperative purchasing between business units of the same organization. Typically, these business units are more or less independent and have to be profitable on their own. Still, the business units ought to have one common goal related to the holding's overall goals. In addition, there are less or no issues regarding confidential information in business unit purchasing groups. These aspects are quite similar to the aspects concerning cooperative purchasing in the public sector (Schotanus, 2007). Hence, from now, we assume that business unit purchasing groups are comparable to public purchasing groups for our analyses.

### Data analysis

Our data analysis procedure is partly based on the procedure used by Hoffmann and Schlosser (2001). Hoffmann and Schlosser carried out an empirical study on success factors for alliances. Their study gave special consideration to the situation of small and medium sized enterprises. In our study, we focus on success factors for the management of purchasing groups. Thus, we have a different research focus than Hoffmann and Schlosser. Nevertheless, we have comparable research objectives and we make a similar distinction between successful and unsuccessful groups.

The specific steps that we carried out are as follows. First, we used independent samples t-tests to identify potential success factors that differ significantly between successful and unsuccessful purchasing groups. Second, we conducted a discriminant analysis to the success factors identified in the previous step. We conducted the discriminant analysis to analyze whether the identified success factors significantly separate successful and unsuccessful purchasing groups.

The assumptions for the t-tests and the discriminant analyses are all met. We tested the assumptions for the statistical tests as follows. We used QQ-plots to test each variable for normality assumptions. For small sample sizes ( $n \leq 75$ ), we assume unequal variances when  $p \leq .05$  in Levene's (1960) test for equality of variances. For larger sample sizes ( $n > 75$ ), we look at the variance ratio. This is the ratio of the variances between the group with the largest variance and the group with the smallest variance (Field, 2005). We assume unequal variances when this ratio is equal to or larger than 2.5. We tested the equality of covariance matrices by using Box's (1950) test. We assume unequal covariance matrices when  $p \leq .05$ .

## Findings and discussion

In this section, we present and discuss our analyses of success factors for managing purchasing groups. We first tested whether there are differences between successful and unsuccessful groups concerning the potential success factors. We conducted independent samples 1-tailed t-tests and found several significant differences as shown in Table 5. Later in this section (below Table 6), we discuss the success factors found in more detail.

Table 5 Success factors for managing purchasing groups

Success factor	Average		Sign.	
	Successful groups	Unsuccessful groups		
<b>Enforcement of cooperation</b>				
1. No enforced participation	3.8	>	2.7	.001
<b>Cooperation of the group members</b>				
2. All members contribute unique knowledge	3.4	>	2.5	.002
3. Sufficient total contribution of efforts	3.5	>	2.7	.005
<b>Commitment and internal support</b>				
4. All members rarely change representatives	3.4	>	2.7	.003
5. All members have internal support	3.5	>	2.9	.019
<b>Communication</b>				
6. Communication (current projects)	4.0	>	3.4	.005
7. Communication (new potential projects)	3.8	>	3.3	.031
<b>Influence of the group members</b>				
8. All members have a similar influence	3.9	>	3.2	.005
<b>Common objectives</b>				
9. All members have similar objectives	3.7	>	3.1	.009
<b>Allocation of gains and costs</b>				
10. Fair allocation of gains and costs	3.6	>	3.0	.016

Note: Measured on a 5 point Likert scale from 1 (strongly disagree) to 5 (strongly agree); differences are compared using independent samples 1-tailed t-tests

The analyses of the mean differences between the groups do not allow a direct examination of the total and individual contributions of the set of success factors. Therefore, we conducted a stepwise discriminant analysis to examine the total and individual contributions of the set of success factors. For the success factors in Table 6, Wilks' lambda, as a test of the discriminant function in the model, was highly significant ( $\lambda = .621$ ,  $\text{Chi}^2 = 32.429$ ,  $\text{df} = 6$ ,  $p < .001$ ). In the model, 89.3% of the purchasing groups were correctly classified as successful or unsuccessful.

Conducting the discriminant analysis in steps allows a direct examination of each factor's discriminating power (Hoffmann and Schlosser, 2001). At each step, all success factors are evaluated to determine the factor that maximizes the Mahalanobis distance between the two closest groups. Table 6 shows the success factors that contribute most to the discrimination between the groups. In other words, the table shows the factors that best predict whether a purchasing group is successful or not successful.

Table 6 Main success factors for managing purchasing groups

Step	Success factor entered in discriminant analysis	Minimum <i>D</i> squared				
		Statistic	Exact <i>F</i>			
			Statistic	df1	df2	Sign.
<b>Enforcement of cooperation</b>						
1.	No enforced participation	.937	10.007	1	71	.002
<b>Cooperation of the group members</b>						
2.	Sufficient total contribution of efforts	2.283	12.026	2	70	.000
3.	All members contribute unique knowledge	3.061	10.593	3	69	.000
<b>Commitment and internal support</b>						
4.	All members rarely change representatives	3.587	9.176	4	68	.000
<b>Allocation of gains and costs</b>						
5.	Fair allocation of gains and costs	3.947	7.960	5	67	.000
<b>Communication</b>						
6.	Communication (new projects)	4.060	6.722	6	66	.000

Note: The analysis has been made between successful and unsuccessful purchasing groups; the max. number of steps is 20; the min. partial *F* to enter is .5 and the max. to remove is .25

### *Categories without success factors for managing purchasing groups*

The success factors found cover several categories. Still, some categories do not hold factors that differ significantly between the groups. Before discussing the success factors found, we discuss these categories. Note that we do not claim that the factors in these categories are not important. Nevertheless, these factors do not predict very well whether a purchasing group is successfully managed.

### **Interorganizational trust and formality of the group**

In contrast to the findings of Hendrick (1997) and Schotanus (2005), we found that factors related to interorganizational trust (i.e., 'all members are honest and loyal, meet one's commitments, and like each other personally') and the formality of the group (i.e., 'make engagements regarding important decision moments and report important performances of the group periodically') are not identified as success factors for managing purchasing groups.

The factors discussed above are important when establishing interorganizational cooperation (Hoffmann and Schlosser, 2001), but can be considered as prerequisites for the management phase of a purchasing group. That is, without some agreements and/or interorganizational trust, a purchasing group would probably never have existed in the first place. Another possible explanation for the fact that we did not identify these factors as success factors is that both successful and unsuccessful groups are already aware of these factors and have taken appropriate actions.

Our results regarding interorganizational trust are consistent with the results of Hoffmann and Schlosser (2001). Note that the differences between the study of this article and the studies of Hendrick (1997) and Schotanus (2005) can be explained by the fact that in those studies, the perceived importance of success factors was determined. In this article, we determined the factors by studying differences between successful and unsuccessful groups.

### **Uniformity of the group members**

In contrast to some empirical studies (e.g., Hendrick, 1997; Polychronakis and Syntetos, 2007), we did not find a significant difference concerning uniformity of the group members (i.e., ‘all members have similar organizational cultures and similar procedures’). For the data set, we found that purchasing groups consisting of organizations with similar or dissimilar cultures and procedures can be both successful and unsuccessful. These results can be explained by similar arguments as used in the previous subsection.

### *Success factors for managing purchasing groups*

In this section, we present the main success factors found. We also discuss the implications of our findings.

### **Enforcement of cooperation**

As indicated in Table 6, ‘no enforced participation’ is the most important success factor for managing a purchasing group. A well-organized group should be cost-effective for all its members. In an ideal situation, this cost-effectiveness should attract members without enforcing them to cooperate. Enforced cooperation is often linked to a top-down approach (based on Adler and Borys, 1996; Barnard, 1968; Scott, 1992). Based on our data set and several studies (e.g., Brockhoff, 1992), an enforced approach seems inappropriate for cooperative purchasing in many situations. Still, we argue that after a voluntary decision has been taken to cooperate, the members need to show that they are committed, which can be done by, among other things, a formal declaration of intent. It is not shown in the tables, but note that ‘enforced cooperation’ and ‘unequal influence’ are particularly problematic for business unit groups.

### **Cooperation of the group members and communication**

Success factors such as ‘sufficient total contribution of efforts’ indicate that cooperative purchasing does not occur as a matter of course. In other words, some knowledge and efforts are necessary to coordinate the activities, to communicate with each other, and to synchronize specifications and supplier preferences. This result is consistent with the work of Hoffmann and Schlosser (2001), who found that ‘establishing required resources’ is a success factor for alliances. Our results concerning communication difficulties are consistent with the qualitative results of Laing and Cotton (1997).

### **Commitment and internal support**

Another success factor concerns ‘rarely changing representatives’. If members frequently change representatives, then this may hamper the learning curve of the group. In addition, it is not a sign of commitment to group, which has already been indicated as being an important success factor by Doucette (1997).

### **Common objectives and influence of the group members**

Table 5 and Table 6 indicate that several success factors concerning differences between members are important, what is consistent with some success factors identified by other studies (e.g., Laing and Cotton, 1997). For our study, the success factors identified are ‘all members have a similar influence and similar objectives’.

### **Allocation of gains and costs**

Finally, Table 6 indicates that the ‘fair allocation of gains and costs’ is an important success factor for the purchasing groups analyzed. To our knowledge, this factor has not yet been studied in detail in empirical studies of purchasing groups. Therefore, we further explore

allocation methods in the rest of this section. Regarding the allocation of gains and costs, we found the following:

- **Allocation of gains**

A total of 87% of the purchasing groups analyzed uses the Equal Price gain allocation method (i.e., all organizations pay an equal price per item independent of their individual purchasing volumes). The other 13% uses allocation methods that are more beneficial to larger organizations than the Equal Price method (the Equal Price method is often relatively beneficial for small organizations in a purchasing group). Typically, these purchasing groups have a lot of members or have large mutual differences between the members;

- **Allocation of costs**

A total of 30% of the purchasing groups uses no formal cost allocation method, 29% uses a ‘proportional to organizational size’ cost allocation method, 29% uses the Equal Amount cost allocation method or a fixed membership fee, and 11% uses another cost allocation method.

In the next table, the combinations of gain and cost allocation methods used by the respondents are shown. For instance, 27% of the purchasing groups combines the Equal Price gain method with no formal cost method. A total of 76% of these groups are perceived as successful. The fourth and fifth column of the table also suggest that groups with less uniform members more often combine the Equal Price gain method with a proportional cost allocation method.

Table 7 Combinations of allocation methods used

<b>Gain allocation method</b>	<b>Cost allocation method</b>	<b>% Total</b>	<b>Uniformity of contributions to the group<sup>a</sup></b>	<b>Uniformity of purchasing volume<sup>a</sup></b>	<b>% Successful</b>
Equal Price	No formal method	27	2,7	2,5	76
Equal Price	Equal Amount or fixed membership fee	26	2,7	2,2	90
Equal Price	Proportional	24	2,3	1,9	79
Equal Price	Another method	9	2,9	1,9	86
Another combination		14	2,1	1,6	82
Total / average		100	2,5	2,1	82

<sup>a</sup> Measured on a 5 point Likert scale from 1 (very dissimilar) to 5 (very similar)

The data suggests that certain combinations of gain and cost allocation methods occur more often in successful purchasing groups. But due to limited data, we could not statistically test whether the usage of certain combinations of gain and cost allocation methods occurs more often in successful purchasing groups than in unsuccessful groups while controlling for, among other things, uniformity of purchasing volumes and contributions to a group of the members of a group. This could be an interesting subject for further quantitative empirical research.

## Conclusions

This article set out to identify success factors for managing purchasing groups using transaction costs economics and social exchange theory as theoretical frameworks. The article adds to the literature by providing quantitative empirical evidence for the success factors studied. It also builds on earlier studies carried out by, among others, Hendrick (1997), Hoffmann and Schlosser (2001), Laing and Cotton (1997), and Polychronakis and Syntetos (2007).

Some limitations need to be considered regarding the present study. First, note that we focused on relatively small and intensive purchasing groups. Our results may not fully apply

to purchasing groups with many members. Second, a disadvantage of the research method used is that it is difficult and subjective to a certain extent to define what a successful group and an unsuccessful group is. Finally, as anticipated, there was a low response rate. Despite the low response rate, we already argued that the purchasing group data possesses desirable representativeness.

Our conclusions regarding the success factors are as follows. First, for our sample of Dutch purchasing groups, we found that the success factors studied that are related to 'interorganizational trust', the 'formality of the group', and 'uniformity of the group members' are not success factors for managing purchasing groups. Second, we conclude that intensive purchasing group types are less viable when group members differ strongly in their interests and actions for the group. This is because we found significant differences between successful and unsuccessful purchasing groups concerning similar 'objectives', 'influence', 'contributions of knowledge', 'commitment', and 'internal support'. Third, we conclude that 'no enforced participation', 'sufficient total contribution of efforts', 'all members contribute unique knowledge', 'all members rarely change representatives', 'fair allocation of gains and costs', and 'communication' are the main success factors. Using these success factors, we could correctly predict whether a purchasing group is perceived as successful or not successful in 89.3% of the cases.

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