

# Purchasing power and purchasing strategies

– Insights from the humanitarian sector

Ala Pazirandeh



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<p>Abstract</p> <p>In this dissertation, we discuss how buyers practice purchasing strategies in an asymmetric power situation favoring suppliers, and how their purchasing strategies practiced impact their purchasing power and buyer-supplier relationships. Organizations enter exchange relationships to access required resources not produced internally, and are exposed to uncertainty from not being able to fully control or predict flow of resources. Consequently they become dependent on their partners. Their level of dependence indicates the influence, or leverage they might have on the partner. Thus, firms that are highly dependent on their supplier base have less leverage or lower purchasing power.</p> <p>This situation can be seen in several industries; e.g. in the airline industry, in purchase of oil/gas, in monopoly supply markets, or in several purchases made by humanitarian organizations. There are several forms of purchasing strategy practiced in such situations of low purchasing power. In an exploratory pre-study of vaccine procurement in the humanitarian sector, we observed that some weaker buyers had managed to influence their supply market for better purchase terms. Considering the predictions of previous research on constraint absorption of powerful partners, this influence was surprising. In general, the focus of research has been mostly on the stronger partner in an exchange relationship, and thus less is known about the weaker partners. Thus, in this dissertation, we set to understand the purchasing strategies practiced by weaker buyers, to understand how they can have more influence on their supply than perceived.</p> <p>To do so, first the interrelation between purchasing power and purchasing strategies was conceptualized, based on the study of multiple buyers of vaccines for developing countries. Observations from the same multiple case study were also used to explain how purchasing strategies practiced by weaker partners can impact the buyer's purchasing power. The predictions from this study were extended to a single case study where the impact of one specific purchasing strategy (cooperative purchasing) found from the multiple case study, was studies on the buyers' purchasing power.</p> <p>This dissertation adds to previous literature, by introducing a more complete understanding of "purchasing power" and its elements, by increasing the understanding of purchasing strategies by less-powerful buyers and their consequence, and by increasing the understanding of purchasing strategies and operations in the humanitarian sector.</p>		
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February 2014, Lund

Ala

## Abstract

The objective of this dissertation was to understand how less-powerful buyers purchase what they need and how their purchasing strategies impact their purchase situation. Power has been considered as a factor affecting several different aspects of supply chain interrelations in the literature, and has been studied from the perspective of different disciplines including marketing, general management, sociology, supply chain management, and purchasing, to name a few. In purchasing literature, there are some classifications of different strengths for buyers. Yet, most commonly, buyers are considered the partners in control of the exchange. There are, however, several instances where suppliers control the purchase situation due to for example their dominance in the supply market, their size and reputation, or being a renowned brand. In such situations, buyers have to either comply with the constraints or attempt to change them.

Several examples of such limited purchasing power are found in the humanitarian context, especially when competing for goods and services with the commercial sector buyers. Buyers in the commercial sector often have more secure funding and more certain volumes to negotiate with, making them a more attractive business partner for the suppliers. An explorative pre-study, a multiple-case study and a single case study were conducted on the buyers in this context.

The explorative study revealed that less-powerful buyers could in fact influence their supply channels, and thus exert more control over their supply. To explain the phenomenon and to understand how less-powerful buyers can influence their supply, in the multiple-case study the inter-relation between purchasing power and purchasing strategies was further investigated using Resource Dependency Theory's (RDT) predictions on the commercial sector. The less-powerful buyers responded to the factors that gave rise to higher or lower power (i.e. *sources of power*) and not to their accumulated impact (i.e. *purchasing power*). Buyers either adapted to the constraints from sources of power (by e.g. shifting strategies to fundraising), safeguarded (by e.g. signing more stringent contracts), or attempted to change the situation (by e.g. practicing cooperative purchasing or developing suppliers). The purchasing strategies practiced, in turn, affect the sources of power. The new level of sources of power can possibly give rise to new constraints or purchasing power situations.

One purchasing strategy identified in the multiple-case study was cooperative purchasing, in which several buyers pooled their purchasing function and volumes in strive for better purchasing power. Findings from the multiple-case study were extended in a single case study of a

cooperative purchasing practice. Previous literature on cooperative purchasing and inter-organizational coordination was used to understand the strategy better. Findings from this study confirmed the interrelation between purchasing strategies and sources of power, and how all sources of power can be affected in attempts to improve purchasing power. For example, in the practice of cooperative purchasing, the mere increase of volume does not necessarily increase purchasing power if other aspects such as interconnections or information asymmetry are unfavorably changed for the buyer. The single case study also had specific findings for cooperative purchasing literature including a coordination framework developed for successful cooperative purchasing. Through this framework, it is suggested that high inter-organizational coordination, coupled with a suitable control mechanism to govern the consortium, will increase the probability of successful cooperative purchasing.

Thus, the results of the studies combined contribute to literature on purchasing, inter-organizational power, and to humanitarian logistics literature. The concept of “*purchasing power*” is introduced to purchasing literature by extending the inter-organizational concept of power to that of purchasing. In this view, the dyadic definition of power is extended to the dependence of the buyer on its supply options or the supply market. The concept is further operationalized in the “sources of power” which give rise to higher or lower purchasing power. These sources are connected to the purchase environment (e.g. substitutability or industry regulations), the organizations (e.g. reputation) and the individuals within organizations (e.g. interpersonal interconnections); thus a strong perceptual element is present in assessing purchasing power. Purchasing strategies affect the sources of power in practice.

The dissertation also adds to the understanding of “*less-powerful buyers*” by developing a framework that depicts how their purchasing strategies interact with their purchasing power, and thus what aspects should be considered to improve the purchasing power. A classification of purchasing strategies that can improve purchasing power for less-powerful buyers is introduced. The dissertation adds to inter-organizational power literature by “*re-contextualizing RDT*” to that of the humanitarian sector, confirming the predictions on interaction of power and strategies for the nonprofit buyers of this sector. Insights in this dissertation add to humanitarian logistics understanding of development projects and on the dynamics of purchasing in the humanitarian sector. The adaptive strategies of buyers in the sector are challenged, and strategies with higher influence on supply channels are recommended.

## Sammanfattning

Avhandlingens syfte var att förstå hur organisationer med svag inköpsmakt utför sina inköp och hur deras inköpsstrategier påverkar maktbalansen i inköpsituationen. Tidigare litteratur har sett begreppet makt som en faktor som påverkar flera olika aspekter av försörjningskedjans relationer, och begreppet har bl.a. studerats inom olika discipliner som marknadsföring, management, sociologi och inköp. Inom inköplitteraturen finns vissa klassificeringar av köparnas olika styrkor. Vanligtvis anses köparna vara de som kontrollerar relationen mellan köpare och leverantör. Det finns dock flera fall där leverantören kontrollerar inköpsituationen på grund av att de till exempel dominerar leverantörsmarknaden, genom sin storlek och rykte, eller genom att ha ett välkänt varumärke. I sådana situationer har köparna en svagare inköpsmakt och måste antingen agera inom de givna begränsningarna, eller försöka ändra dem.

Flera exempel på en sådan begränsad inköpsmakt finns hos biståndsorganisationer inom den humanitära sektorn, speciellt när biståndsorganisationer konkurrerar med den kommersiella sektorns inköpare om varor och tjänster. Köpare från den kommersiella sektorn har ofta en säkrare finansiering och mer stabila volymer att erbjuda i en förhandling, vilket gör dem till en mer attraktiv samarbetspartner för leverantörerna. En explorativ förstudie, en flerfallstudie, och en fallstudie genomfördes med fokus på köpande organisationer i den humanitära biståndssektorn.

Avhandlingens explorativa förstudie visade att köpare med svagare inköpsmakt faktiskt kan påverka sina försörjningskanaler, och därmed utöva större kontroll över sin försörjning. För att förklara detta fenomen, och för att förstå hur köpare med svagare inköpsmakt kan påverka sin försörjning, studerades i flerfallstudien det inbördes förhållandet mellan inköpsmakt och inköpsstrategier med hjälp av resursberoende teori och dess förutsägelser för den kommersiella sektorn. Köpare med svagare inköpsmakt svarade på de enskilda faktorer som gav upphov till högre eller lägre effekt (maktkällor, sources of power) och inte på deras samlade påverkan (inköpsmakt, purchasing power). Antingen anpassade sig köparna till maktkällornas begränsningar (t.ex. genom att skifta strategier mot penninginsamling (fundraising)), tog det säkra före det osäkra (t.ex. genom att skapa noggrannare kontrakt), eller försökte att förändra situationen (t.ex. genom att utöva kooperativt inköp eller leverantörsutveckling). De inköpsstrategier som används påverkar i sin tur också maktkällorna. Maktkällornas nya nivå kan sedan möjligen ge upphov till nya begränsningar eller situationer av inköpsmakt.

En inköpsstrategi som identifierades i flerfallstudien var kooperativt inköp, där flera köpare slagit samman sina inköpsfunktioner och volymer i en strävan att uppnå starkare inköpsmakt. Denna insikt från flerfallstudien förlängdes till en enskild fallstudie av ett exempel av kooperativt inköp. Tidigare litteratur inom kooperativa inköp och interorganisatorisk samordning användes för att bättre förstå denna strategi. Resultaten från denna studie bekräftar sambandet mellan inköpsstrategier och maktkällor, och hur alla maktkällor kan påverkas i försök att förbättra inköpsmakten. Det visade sig till exempel att i utövandet av kooperativa inköp, att enbart ökade volymen inte nödvändigtvis ökar inköpsmakten om andra aspekter som sammanlänkning eller informationsasymmetri ändras i en för köparen ogynnsam riktning. Denna fallstudie gav också bidrag till den kooperativa inköplitteraturen, bland annat ett ramverk för samordning utvecklat för mer framgångsrika kooperativa inköp.

De tre studiernas kombinerade resultat bidrar till litteratur rörande inköp, inter-organisatorisk makt, och logistik inom bistandssektorn (humanitär logistik). Konceptet inköpsmakt introduceras till inköplitteraturen genom att det inter-organisatoriska maktbegreppet utvecklas till inköpsfältet. På detta sätt utökas den dyadiska definitionen av makt till köparens beroende av försörjningsalternativ eller leveransmarknaden. Konceptet operationaliseras ytterligare genom begreppet maktkällor (sources of power) som bidrar till högre eller lägre inköpsmakt. Dessa källor är kopplade till inköpets omgivning (t.ex. substituerbarhet eller branschregleringar), organisationerna (t.ex. deras rykte) och individer inom organisationen (t.ex. interpersonella sammanlänknings). Detta ger ett starkt uppfattningsorienterat element när inköpsmakt skall uppskattas. Inköpsstrategier påverkar i praktiken inköpsmakt.

Avhandlingen bidrar också till förståelsen av organisationer med svag inköpsmakt genom att den utvecklar ett ramverk som visar hur deras inköpsstrategier samverkar med deras inköpsmakt. Därigenom visas vilka aspekter som man skall ta hänsyn till för att förbättra sin inköpsmakt. En klassificering av inköpsstrategier som kan påverka inköpsmakten för organisationer med svag inköpsmakt introduceras. Avhandlingen bidrar till inter-organisatoriska litteraturen om resursberoende genom att använda den i bistandssektorn, och där bekräfta att dess förutsägelser om samverkan mellan makt och strategier också stämmer för de ickevinstdrivande köparna i denna sektor. Insikter från avhandlingen bidrar till bistandslogistikens förståelse för utvecklingsprojekt och inköpets dynamik i denna sektor. Inköparnas anpassningsorienterade strategier utmanas, och strategier med högre påverkan på inköpskanalerna rekommenderas.

## Appended papers

1. Nonprofit Organizations shaping the supply market. *International Journal of Production Economics*, Herlin, H. Pazirandeh, A. (2011), 139 (2), 411–421 (coauthored).
2. An interrelation model of power and purchasing strategies: A study of vaccine purchase for developing countries. *Journal of Purchasing and Supply Management*, Pazirandeh, A. Norrman, A. (2014), 20 (1), 41-53 (first author).
3. Empowering the underdog buyer: A look at vaccine purchase by developing countries. Under-review at *Industrial Marketing Management*. Pazirandeh, A. (revise and resubmit) (single author).
4. Avoiding the pitfalls of cooperative purchasing through control and coordination: insights from a humanitarian context. Under review at *International Journal of Procurement Management*, Herlin, H. Pazirandeh, A. (revise and resubmit) (coauthored).
5. Unfruitful cooperative purchasing: the case of humanitarian power. *Journal of Humanitarian Logistics and Supply Chain Management*. Pazirandeh, A. Herlin, H. (Forthcoming) 4 (1), (first author).



## Related papers

1. Pazirandeh, A. (2010) Sourcing in global health supply chains for developing countries: Literature review and a decision making framework. *International Journal of Physical Distribution & Logistics Management*, 41(4), 364-384.
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3. Pazirandeh, A. Pirzamanbein, B. (2011) Local capacities and health: The importance of transportation, communication, market sophistication, and skillful labor, *Proceedings of NOFOMA conference*, June, Harstad, Norway.
4. Kovacs, G. Pazirandeh, A. Tatham, P. (2011) Gender mainstreaming in humanitarian purchasing, Gender, peace and development, *Proceedings of the 10th Annual Conference on the Horn of Africa*, Lund, Sweden, September 23– 24 2011
5. Herlin, H. Pazirandeh, A. (2011) Nonprofit Organizations shaping the supply market, *Procurement and the Millennium Development Goals: supplement to 2010 Annual Statistical Report on United Nations Procurement*, UNOPS: 16-18.
6. Herlin, H. Pazirandeh, A. (2013) Cooperative purchasing: promises and pitfalls. *Proceedings of the Nordic Logistics Research Network (NOFOMA) conference*, June, Gothenburg, Sweden.
7. Sohrabpour, V. Pazirandeh, A. Brad, D. Negreira, J. Zhang, J. (2013) Teaching and Learning Adaptation of International Students in Sweden, in *SEFI (European Society for Engineering Education) Conference proceedings*, Leuven, Belgium.



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*"Where shall I begin, please your Majesty?" he asked.  
"Begin at the beginning," the King said gravely, "and go on till you come to the end: then stop."*

*Carrol, 1865, Alice's Adventures*

# 1 Introduction

---

*This chapter is an introduction and background to the main themes of the research. First the problem is depicted by introducing purchasing in the humanitarian sector and the current state of studies on the topic. Then, the purpose, the research question and disposition of the thesis are introduced.*

---

Power is a complex concept in any relationship. Its relative, perceptive, intangible, context dependent, and multifaceted nature has made it difficult to study. In this thesis, the aim is not to study power per se, but to study purchasing in light of the existing constraints from power relations. This PhD dissertation is about less-powerful buyers, how they buy what they need, and how their decisions affect their power.

## 1.1 Prologue – purchasing in the humanitarian sector

The humanitarian sector is characterized by a large number of governmental and non-governmental organizations, predominantly non-profit institutions, with diverse legal mandates, interests and structures. These organizations interact with the commercial market when they purchase various aid and relief items or services for delivering goods to the public or beneficiaries. There are several situations in which they have to compete with multinational commercial companies for the same product or service, which then demand is often considered comparably negligible. In terms of context-specific demand, suppliers might not always find it attractive to invest, or demand is not always transparent, resulting in scarcity of supply (UNICEF, 2009).

An increased shareholder expectation from the commercial companies to act as responsible citizens, however, has increased their interest to partner with organizations within the humanitarian sector (Van Wassenhove, & Besiou, 2013; Austin, 2000). Additionally, organizations are increasingly becoming aware of the need to diversify their supply base in order to avoid the risks associated with a limited supplier base (Pelchat, 2004).

Still, purchasing is mostly carried out in a more traditional manner in the sector. Due to for example funding uncertainty and the unpredictability of beneficiary needs, long-term agreements

with suppliers are rare (Balcik et al., 2010). Establishing such supplier relationships is further complicated by strict purchasing rules and regulations meant to ensure transparency, fair competition and best-value-for-money purchases, resembling those of public procurement (Erridge and McIlroy, 2002). Consequently, the sector has historically emphasized independent and competitive practices as opposed to coordination and relationship building. For instance, instead of binding themselves to pre-disaster purchase commitments, humanitarian organizations have relied on pre-positioned stock and dormant supplier preparedness for spot purchases (Kovács & Spens, 2011; Balcik et al., 2010). Recent calls for increased public sector efficiency and effectiveness are, however, transforming purchasing practices. To avoid duplications of efforts, there is a strong push for innovation, coordination and alignment among organizations (Kovács & Spens, 2011; Gustavsson, 2003).

## **1.2 The Problem – purchasing by the less-powerful**

Management literature has widely suggested that purchasing strategies are set to absorb or change power constraints (e.g. Cox et al. 2002; Pfeffer and Salancik, 2003). There are several factors that give rise to greater or lesser constraints, or in other words higher or lower power positions (Kraljic, 1983; Pfeffer and Salancik, 1978). Several such factors have been mentioned in management literature, which henceforth we term “sources of power”.

In the most direct form, purchasing strategies impact the sources of power (e.g. Pfeffer and Salancik, 1978) and in doing so these strategies can change buyer’s purchasing power. Buyers with low purchasing power, however, do not always incorporate purchasing strategies that increase their power. In practice, buyers might also adapt to the power constraints. The question raised is “how” such buyers can improve their power position. What strategies are effective in improving purchasing power and how? What aspects should buyers think about in choosing purchasing strategies to improve their power position? This dissertation contributes to finding the answer to such questions.

The term “purchasing strategies” relates more to long-term strategic decisions and is used to discuss different parts of the purchasing process. Terpend et al. (2011: 74) define purchasing strategies as the “*patterns of decisions made by purchasing professionals during the purchasing process and in response to internal and external constraints in the business environment*”. Mintzberg (1978) argues that a strategy (such as these patterns of decisions) could also be realized and not necessarily planned. We understand purchasing strategies as realized (planned or unplanned)

patterns of decisions for each stage of the purchasing process contributing to the organizational strategy (cf. Nolle et al. 2005).

Practicing and setting purchasing strategies is not a linear process; it is a changing process based on trial and error, and on changes in the business environment (Terpend et al. 2011). There are several studies on how to set “the right” purchasing strategies, often based on contextual factors (e.g. the product, the industry, the market, or power), for example, portfolio models such as Kraljic, 1983. At least one aspect of power is considered in most of the proposed purchasing models (e.g. Caniels and Gelderman, 2005; Kraljic, 1983).

In the theory of power by Emerson (1962: 32), power is defined as a socially constructed concept in an inter-personal relationship. The relative nature of power between two sides gives rise to balanced or unbalanced relationships. The same notion is extended to inter-organizational relationships in Resource Dependency Theory (RDT). In seeking access to resources, exchange relations are formed (Cyert and March, 1963) and partners become more or less dependent on each other (Caniels and Gelderman, 2005:143). The level of dependence can indicate the level of influence, or leverage, each partner has on the other (Anderson and Narus, 1990; Batt, 2003; Pfeffer, 1981). So, buyers, suppliers and their supply chains work within power relations (Cox, 2001). Exchange relations also mean that organizations cannot entirely control or predict flow of resources from the partner (Pfeffer, 1981) and should aim at managing them. Based on such characteristics, social positions and interdependencies, some organizations have more power than others (Pfeffer and Salancik, 1978).

Drawing on RDT, purchasing power in this study is understood as *the dependence of the buyer on its supply options* (i.e. the supply market) (cf. Pfeffer and Salancik, 1978; Emerson, 1962). The concept of power in buyer-supplier relationships has been reviewed by several disciplines and several studies (e.g. Emerson, 1962, in sociology; Lusch and Brown, 1982, in marketing; Williamson, 1985, in economics; Hingley, 2005, in relational marketing; or in political sciences). They recognize power as an important factor in shaping and influencing inter-organizational relationships. The impact of organizational strategies on power is not clear, however.

There are also several studies within the purchasing field seeking to provide normative guidelines on how to interact with suppliers with different purchasing powers (e.g. Cox et al. 2002; Gelderman et al. 2008; Kraljic, 1983). Most of these studies consider buyers the influential partner, with few studying strategies by the less-powerful partner (Bastl et al. 2013, is among the

first, studying consortia formation by weaker partners). Some classic models such as that of Kraljic (1983) also mention possible strategies for buyers in locked-in relationships such as backward integration or in-sourcing; however, the focus of these studies is not on the less-powerful buyer. Historically, Emerson (1962) recommends the weaker partners in an asymmetric power situation to increase their power position by either 1) withdrawing from the relationship, 2) expanding the relationship network, 3) improving their status or 4) forming coalitions with other weak parties. These suggestions can be extended to buyer-supplier relationships.

### **1.3 Purpose**

So, in this dissertation the overall purpose is

**to understand how less-powerful buyers purchase their required needs and how their purchasing strategies practiced impact their purchase situation in terms of purchasing power.**

Even though most theories that study power are developed in the commercial sector, the situation can also be widely found in nonprofit-profit relationships as depicted in the prologue of this dissertation. Such dynamics suggest an often asymmetric power in favor of suppliers in the humanitarian sector. We look at two situations within this context to increase our understanding; 1) vaccine purchase for developing countries as an example of buyers facing a highly concentrated supply market and practicing different purchasing strategies towards it; and 2) a case of cooperative purchase of freight forwarding needs by a group of humanitarian organizations aiming to increase their purchasing power. While supply constraints make the context suitable for this study, the changed assumption as compared to theories used (i.e. from profit to nonprofit), makes the context interesting.

### **1.4 Research Questions**

To satisfy the purpose, it was aimed to answer the following questions. Firstly, to gain a general understanding of the typical purchasing strategies buyers practice in situations of less purchasing power, and so to find the answer to:

1. What typical purchasing strategies do less-powerful buyers practice?

Upon gaining the general understanding of typical strategies, the reasoning behind the practice of such strategies was also sought after, to understand its connection with purchasing power and its constraints.

## 2. Why do less-powerful buyers practice the purchasing strategies they do?

Finally, to understand if less-powerful buyers can change their purchasing power, and how, it was aimed to question the consequences of purchasing strategies practiced, and so to ask:

## 3. How do purchasing strategies practiced by less-powerful buyers, impact their buying situation in terms of their purchasing power?

The research questions were the outcome of an explorative pre-study of initiatives taken by nonprofit organizations to reshape their supply market. The research questions were then further investigated in a multiple-case study of seven nonprofit and government organizations buying their vaccines needs to explain the relationship between “purchasing strategies” and “purchasing power”. The predictions and findings from this study were then further extended in the study of a specific strategy (i.e. cooperative purchasing) practiced by a number of humanitarian organizations seeking to increase their purchasing power. The outcome of the studies is presented in 5 different papers as listed below<sup>1</sup>, and combined in this summary part of the dissertation (or ‘*kappa*’ in Swedish) (also see Figure 1).

**P1:** Nonprofit Organizations shaping the supply market. *International Journal of Production Economics*, Herlin, H. Pazirandeh, A. (2011), 139 (2), 411–421. (coauthored)

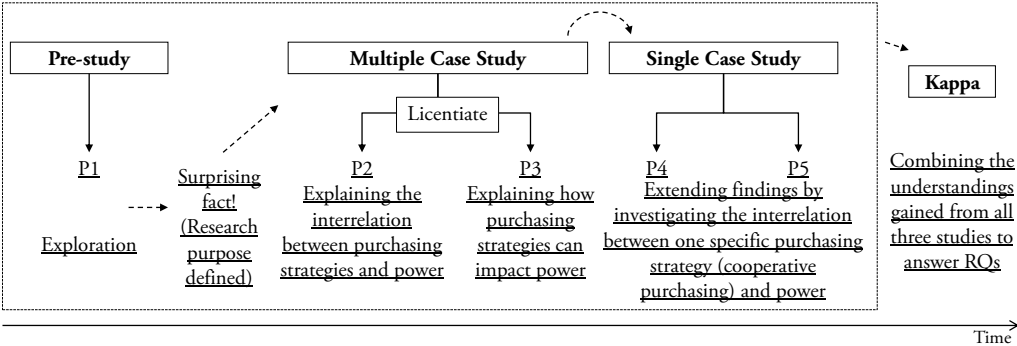
**P2:** An interrelation model of power and purchasing strategies: A study of vaccine purchase for developing countries. *Journal of Purchasing and Supply Management*, Pazirandeh, A. Norrman, A. (2014), 20 (1), 41-53. (first author)

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<sup>1</sup> The author of this dissertation has been actively involved in all stages of the studies and papers in this dissertation. In the list of papers, “single author” refers to research work and writing fully conducted by the author; “coauthored” refers to work where both authors were fully involved in the research work and writing; “first author” refers to work where the research work and main part of writing was done by the author (in P2), or where data collection was done in a joint project but the paper was mainly written by the author (in P5).

- P3:** Empowering the underdog buyer: A look at vaccine purchase by developing countries. Under-review at *Industrial Marketing Management*. Pazirandeh, A. (revise and resubmit). (single authored)
- P4:** Avoiding the pitfalls of cooperative purchasing through control and coordination: insights from a humanitarian context. Under review at *International Journal of Procurement Management*, Herlin, H. Pazirandeh, A. (revise and resubmit) (coauthored).
- P5:** Unfruitful cooperative purchasing: the case of humanitarian power. *Journal of Humanitarian Logistics and Supply Chain Management*, Pazirandeh, A. Herlin, H. (Forthcoming) 4 (1). (first author)

The findings from the pre-study were published in P1. The Multiple-case study was presented and published in a “licentiate” dissertation (Pazirandeh, 2012), and later extended in papers P2 and P3. Findings from the final study were presented in P4 and P5. Figure 1, illustrates the development of these three studies, their outcomes, and the complete dissertation within time.



**Figure 1** Development of the three studies and Kappa through time

### 1.5 Bridging the research questions with publications

The research questions (RQ) are to some extent addressed in all papers, but to different degrees. These connections are depicted in Table 1. Findings from all papers are bridged within the *Kappa* of the dissertation, to answer the research questions.

To increase our understanding of the typical purchasing strategies practiced by less-powerful buyers (RQ1), the strategies practiced by such buyers in two different supply markets were explored. Predictions developed are elaborately discussed in the licentiate dissertation (i.e.

Pazirandeh, 2012), papers P2 and P3, and further explored in all other papers. The explanation behind practicing these purchasing strategies (RQ2) was explored in paper P1, and elaborately discussed in paper P2. In papers P4 and P5, the explanations are extended for the practice of one specific example of a purchasing strategy (i.e. cooperative purchasing) by less-powerful buyers. The effect of the practiced strategies on purchasing power (RQ3) were initially explored in papers P1 and P2, explained in greater detail in paper P3, and further extended in the example of the one strategy (i.e. cooperative purchasing) in paper P5.

**Table 1 Connection of the publications to the research questions**

	Pre-study	Multiple-case study		Single case study	
Research question	P1	P2	P3	P4	P5
What typical purchasing strategies do less-powerful buyers practice?	<i>Explored throughout all studies</i> →				
Why do less-powerful buyers practice the purchasing strategies they do?	<i>Explored</i> →	<i>Explained</i>		<i>Extended</i> →	
How do purchasing strategies practiced by less-powerful buyers, impact their buying situation in terms of their purchasing power?	→	<i>Explored</i>	<i>Explained</i>	<i>Extended</i> →	

The findings from these studies suggest that purchasing strategies are carried out in response to constraints from the sources of purchasing power with the orientation to either a) safeguard against them, b) attempt to change them, or c) merely adapt to the constraints. In the two former approaches, the accumulated changed levels of sources of power can contribute to changed purchasing power. For this change to be favorable for the buyer, the impact of the strategy on all sources of power should be considered in designing the strategy (pre-implementation) and in designing the process (during implementation). Additionally, generally strategies are practiced in combination, and thus the impact of mixed strategies on sources of power should be considered. Emerson's (1962) strategies for weaker partners in an interpersonal relationship are extended to the interorganizational context, and a classification of purchasing strategies for less-powerful buyers to improve their purchase situation is proposed.

## 1.6 Thesis structure

This dissertation is a combination of a summary (i.e. *the kappa*) and appended papers. The summary is aimed at giving an overall view of the papers, the theoretical views connected to, the

methodology employed, and the overall findings in relation to the research questions. The summary is itself divided into 6 chapters:

### ***Chapter 1: Introduction***

The first chapter of the report is the current introduction chapter, defining the problem, introducing the theoretical developments on the topic, and stating the research purpose and questions addressed in this dissertation.

### ***Chapter 2: Theoretical frame of reference***

The main body of the report then begins with introducing the theoretical underpinning of the study in chapter two. In this report, we connect to purchasing research in general, to previous studies on purchasing power, and to cooperative purchasing literature. The theoretical chapter ends with a conceptual framework based on suggestions and predictions in this literature.

### ***Chapter 3: Methodology***

The methodology design of the study is elaborated in chapter three, starting with the ontological and epistemological considerations made, details of the methods employed, and ending with a section discussing quality and limitations of the studies.

### ***Chapter 4: Context***

In chapter four, the main elements of the context of the study are introduced. This chapter gives a general introduction to the humanitarian SCM, and purchasing in this context. Vaccine procurement for developing countries, and purchase of freight forwarding in the sector, as the two specific studies in this dissertation, are further introduced in this chapter.

### ***Chapter 5: Summary of papers***

A short summary of each paper is presented in chapter five. A structure is presented to explain the connection of the papers to each other and to the purpose of the thesis.

### ***Chapter 6: Conclusions***

The report ends with this final part giving a summary and an overview of the study. In chapter six, a conclusion in line with research questions is provided, theoretical, practical contributions of the study are discussed and recommendations for future research are given.

References, papers and supporting material are attached in the end of the report.

## 2. Theoretical Frame of Reference

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*In this chapter, the theoretical lenses used to study purchasing strategies and purchasing power are described. The chapter starts by giving an overview of the field of purchasing and its development in literature and practice. Thereafter, a brief definition of purchasing strategies as understood and used in this study is presented and some models developed to set purchasing strategies are reviewed. In section 3.2, purchasing power and its sources are reviewed, and a taxonomy of purchasing power is provided. Identifying the characteristics of less-powerful buyers, purchasing strategies suggested for this group are reviewed in 3.3, and cooperative purchasing (i.e. the strategy focused on in papers 4 and 5) is reviewed in more details. Finally, the chapter finishes with a conceptual framework connecting purchasing power and purchasing strategies.*

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Organizations involve in exchange relationships to access resources and competencies which bring them competitive advantage, and help supply chains fulfill final customer satisfaction. By engaging in such exchange relations, organizations become dependent on their partners. Based on the relative dependence partners have on each other, different power situations emerge.

### 2.1 Purchasing in literature

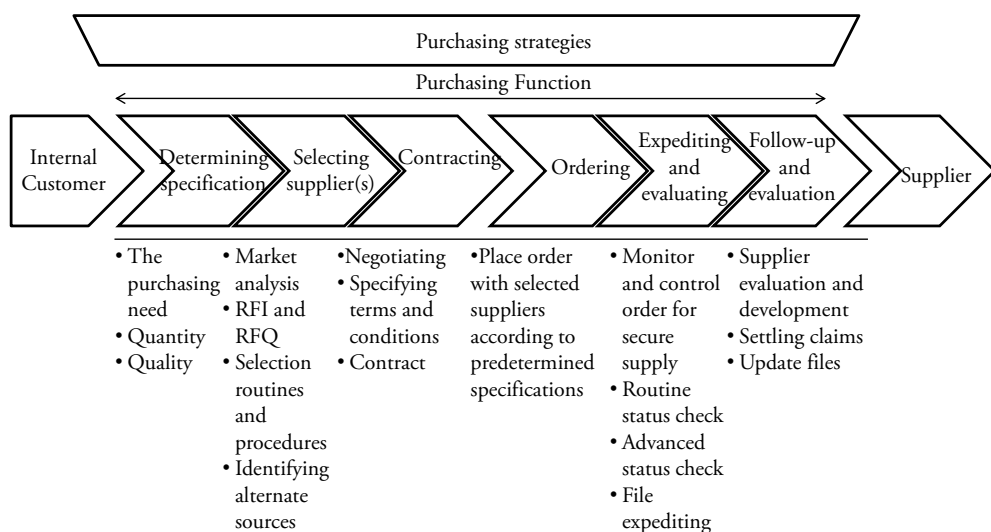
Purchasing is defined as *all activities associated with identification and specification of needs, identification of decision criteria, initial screening of preferred suppliers, selecting suppliers, and monitoring performance* (cf. Van Weele, 2010 and Kakouris et al., 2006). It is often suggested that purchasing was not traditionally considered a frontier in achieving competitive advantage or strategic goals at a company (Van Weele, 2010; Handfield et al. 2009; Cavinato, 1992). Cavinato (1992) defines purchasing as receipt of buying instructions from internal users of the company according to needs (Handfield et al., 2009; Cavinato 1992). In other words, the main purchasing decision was to select suppliers for each specific purchase (Cavinato 1992). However, through their in-depth literature review of 1830 to 1940, Leenders and Fearon (2008) found that purchasing was never considered as a mere buying activity. The predecessors in this field seem to have been well aware of the benefits of integration (*ibid.*).

Purchasing was recognized as an important function in general management literature, for the first time during 1830–1900 (*ibid.*). Lewis (1896) notes the importance of an aligned purchasing practice in 1896, suggesting that even before 1900 the need for a supply function was evident. Between 1900 – 1920 material management, centralization and outsourcing of the purchasing function were introduced (Leanders & Fearon, 2008: 18). In the later part of this time period, supply shortages and price escalations following World War I, greatly impacted purchasing practices. After the 1920s and before 1940, the public sector became more aware of the importance of purchasing, and public procurement legislations were developed to ensure ethical procedures (*ibid.* 24-5). Several studies on different purchasing strategies within different sectors and their application in different contexts have been conducted since.

Cavinato (1992) suggests more strategic importance given to procurement from early 1970s. Since the 1970s, purchasing has been integrated in the logistics functions of most companies compared to the isolated function purchasing departments had previously. In the early 1970s, purchasing was considered critical in making profit and as one of the important processes of the company in literature (Henderson, 1975; Kiser, 1976; Farmer, 1978). In the 1980s and 90s, global sourcing was the popular topic of most publications. Finally, after the turn of the century and following earlier works on identifying purchasing characteristics (e.g. Ellram & Carr, 1994; Thompson, 1996), several studies have investigated the strategic factors in making purchasing decisions (Ordoobadi, 2009; Ting and Cho, 2008; Joyce, 2006). There is still limited understanding of the contextual factors in purchasing (Ellram and Carr, 1994). More recently, globalization, electronic purchasing, sustainability and collaboration aspects are common themes within publications of the field (e.g. suggestions by Walker et al. 2012; Zheng et al. 2007).

### **2.1.1 The purchasing process and related decisions**

The purchasing process framework presented in Figure 2 suggests different parts of purchasing decisions and specifies what kind of decisions each part can include. In other words, the purchasing function is the combination of these decisions from determination of specification to follow up and evaluation of suppliers.



**Figure 2 Different parts of the purchasing process (cf. Van Weele, 2010: 9)**

Purchasing decisions, as indicated in Figure 2, are subject to needs and requirements of final users (internal or external customers or beneficiaries). Van Weele (2010) suggests these requirements to be the input to the purchasing decision. Specifications are defined based on technical requirements, quality and quantity of goods or services subject to purchase. Interwoven with this decision, the buying entity is required to understand and learn about the supplier market and use tools such as requests for information (RFI) and request for quotations (RFQ) from available suppliers. A routine or process is designed to select suppliers and to identify alternatives. These suppliers are to be negotiated with to reach acceptable prices, terms and conditions in delivery. In the last stage of the purchasing process as suggested in Figure 2, the buying organization is suggested to develop competence to control and monitor orders and delivery, and to evaluate and even develop partner suppliers. However, in practice all steps of this suggested purchasing process are not always carried out. For example, in some public procurement structures, suppliers are commonly selected directly from a tender process and contracts are signed without negotiations.

### 2.1.2 Defining purchasing strategies

Purchasing strategies are patterns of strategic decisions about different parts of the purchasing process (Terpend et al. 2011). Strategies, however, need not necessarily be planned, and can also be realized outcomes (Mintzberg, 1978). Purchasing strategies are also directly connected to organizational / corporate strategy (cf. Van Weele, 2010; Nollet et al. 2005).

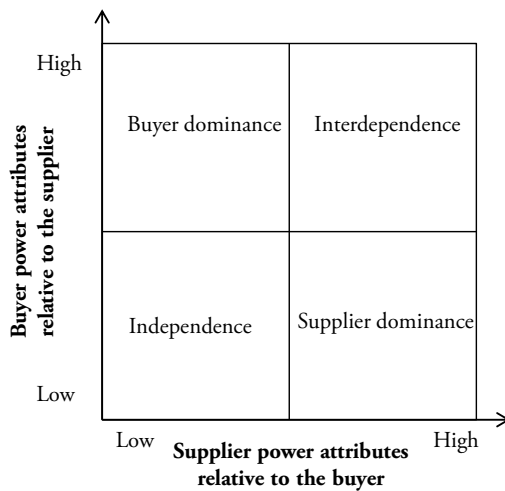
In general, purchasing strategies, practices, decision and other terms are commonly used interchangeably to express decisions carried out for different stages of the purchasing process. For example, Blattberg et al. (1978) refer to the choice between market segments on brand and store as purchasing strategies. In operations management studies, the term purchasing strategies has been commonly used to refer to decision on quantity purchased, number of suppliers, supplier selection strategies, or supplier relationship management strategies just to name a few.

Common purchasing strategies and practices suggested in literature are comparable with suggestions in studies on buyer-supplier relationships. For example, in their study, Cannon and Perreault (1999), suggest that firms continue to struggle with strategies in relation to their buyers and suppliers. They contend that even though both parties impact the relation, it is the buyer who decides whether to purchase or not. They list a number of key constructs relevant in practice of buyer-supplier relationships (Cannon and Perreault, 1999). They contend that knowledge of these constructs and their practice can help buyer-supplier relationships function more effectively. The first construct is “information exchange” defined as expectations and willingness of open information sharing that may facilitate the operation. The second construct is “operational linkage” being the degree to which processes and procedures, necessary for the operation, within the buyer organization are linked with that of suppliers (e.g. arm’s length, independent to interlinked organizations). “Legal bond”, “cooperative norms and “adaptations” are other constructs noted in Cannon and Perreault’s (1999) study. Legal bonds in form of detailed and binding contracts provide governance mechanisms to stimulate hierarchies. Cooperative norms are expectations partners have from each other to achieve mutual and individual goals. Finally, adaptations are relationship specific adaptations of partners to processes, products, or procedures of the exchange partner.

Purchasing strategies are practiced based on trial and error and changes in the business environment (Terpend et al. 2011). Studies have identified several contextual factors affecting the choice of purchasing strategies, such as the product, the industry, the market, or power (e.g. portfolio models such as Kraljic, 1983). Power has been well recognized as an important factor in making purchasing decisions (e.g. Caniels and Gelderman, 2005; Kraljic, 1983). Kraljic’s (1983) portfolio model is among the earliest and most cited, where the buyer and supply market strength is considered, however, Andrew Cox (in his multiple publications) focuses specifically on power in his portfolio model. Figure 3 shows the segmentation presented by Cox et al. (2000),

classifying buyer-supplier power into four positions: the supplier might have dominance in the relationship, the buyer might have dominance, they might be independent of the each other, or they might be mutually interdependent.

Within the buyer dominance position, the buyer can leverage suppliers' performance on quality and cost, and to maintain only normal returns for the supplier. In the interdependence position both partners have resources that require them to work closely together. Within the independent position, where neither partner has leverage Cox (2001) suggests that both partners must accept the existing price and quality levels. However, he suggests the situation to slightly favor the buyer, because the supplier will have few opportunities to increase leverage (e.g. buyer incompetence). Finally, within the supplier dominance position, the supplier is expected to incorporate market strategies against potential competitors to increase above-normal returns, and the buyer is expected to be the receiver of price and quality.



**Figure 3 Buyer-Supplier power matrix (Cox et al. 2000: 18)**

Cox et al. (2000) contend that the ideal position for suppliers would be to have monopoly ownership on the in-imitable resource subject to transaction and highly valued in the supply chain; i.e. to have dominance in relationship. For buyers on the other hand, the ideal position is to have monopsony power in being able to source from suppliers in highly competitive markets, i.e. with low switching costs and low market entry barriers.

### 2.1.3 Typically suggested purchasing strategies

The overall objectives of purchasing as suggested in purchasing literature can be categorized as in Table 2. Some of the typical purchasing strategies suggested to achieve these objectives are also listed in the table. In general, the same strategies can be used for different purposes. For example, for cost minimization, which is a common purchasing objective, several strategies within different stages of the purchasing process can be carried out. Overall, several strategies are suggested to streamline, and thus minimize, administrative and logistics cost; e.g. pooling demand or cooperative purchasing, practice of e-procurement or reverse auction. While several of these strategies are self explanatory, we will below review some theoretical controversies regarding a few of these typical purchasing strategies.

**Table 2 Implication of portfolio models in setting purchasing strategies**

Overall purchasing objective	Example typical purchasing strategies
Minimize cost	Spend management Streamlining administration Pooling demand or cooperative purchasing
Exploit purchase power	Coercive strategies
Minimize supply vulnerability	Pooling demand or cooperative purchasing Formalization Socialization Diversification
Mitigate risk of opportunism	Information sharing strategies Purchasing intermediaries / outsource of purchasing Formalization Socialization
Improve supplier relations	Increased information sharing Longer-term relationships Socialization Supplier development strategies
Improve supplier base size	Multiple sourcing vs. Single sourcing
Improve supply market choice	Global purchasing vs. Local purchasing

Cooperative purchasing (Turner et al. 2000) and pooling several demand types to buy from the same supplier (Caniels and Gelderman 2005) are possible strategies with cost and vulnerability minimization objectives. Bakker et al. (2006: 15) defines cooperative procurement as horizontal cooperation between organizations to bring together or “pool” the purchasing function of organizations. Synonymous terms are used for the same concept; e.g. purchasing synergy (e.g. Rozemeijer 2000), pooled procurement (Taylor and Bjornsson 1999), cooperative purchasing (Nollet and Beaulieu 2005), purchasing consortia (Hendrick 1997). Bakker et al. (2006), note

effectiveness and efficiency as two main drivers for cooperative purchasing. In strive for efficiency, the motive is based on realizing benefits gained from economies of scale, reduced transaction costs, better development of products or services, access to markets, and technologies among others. On the other hand, in strive for effectiveness cooperation is sought when one single organization does not have the knowledge, resource, or capabilities (*ibid.*).

Coercive strategies (Kahkonen and Virolainen, 2011; Gelderman et al. 2008) aim to motivate compliance through reward and punishment control mechanisms. They are found most effective in situations where the supplier is highly dependent on the buyer (Gelderman et al., 2008). In a situation where a buyer has leverage over suppliers, the power advantage can be used to force suppliers into accepting only normal rents and delivering quality that is more favorable and prices (Cox, 2001). In the softest form of the strategy, recommendations are given to the partner without further explanation. Other forms are to promise reward in case of compliance, threat of punishment in form of e.g. discontinuity of relation, or to plea to legal aspects of the contract.

Formalization, is a strategy in which the transactional relationship is made explicit for instance through contractual agreements. Li et al. (2010) find formalization helpful for organizations to control costs and quality, and in structuring their supply chains. However, formal agreements require higher commitment and thus mean higher risk (Turner et al. 2000:19). Both detailed contracts with several safeguards and clauses, and soft contracts with less detail are suggested in literature. Contracts are suggested to, most often, be “incomplete” forms (Williamson, 1985). An alternative, or complement, to formalization would be “socialization”, in which partners increase relationship and practice cooperative norms through informal socializing. In soft contracts, high formalization is suggested to be partly replaced with trust and such cooperative norms. Socialization is in general, suggested to be important for successful supply chain relationships (Cai and Yang 2008; Petersen et al. 2008).

Diversification is a strategy commonly incorporated in a situation where a buyer organization has limited purchase options in terms of the product type or suppliers. In situations of limited suppliers, the supplier can use its power advantage to force the buyer into a cooperative relationship and thereby reduce its own uncertainty. However, the buyer can increase its power by diversifying or increasing substitutability of supply of demand through measures of e.g. looking for alternate suppliers in the global market (i.e. global purchasing). Studies have also

suggested backward integration in situations of limited supply options, such as locked-in relations (Kraljic 1983; Williamson, 1985).

The amount of information that exchange partners share is one of the key assumptions of theory dealing with exchange relations (e.g. TCE in Williamson, 1985; or RDT in Pfeffer and Salancik 1978). Buyers should try to gain as much information about the exchange, their demand, available suppliers, and the specific supplier whom with they are negotiating, or will negotiate. In other words, buyers should carry out informed supplier selection through market analysis and tools such as RFI or RFQ. Gaining such market or transaction specific information requires considerable time and financial investments (Williamson, 1985). In contrast, in strive to maximize returns the rational supplier will try to capitalize on the buyer's misinformation (in situation of existence) keeping cost information (among others) private. Suppliers can use the low information awareness of the buyer to practice "industry standard pricing" to earn rents (Cox et al. 2002). Higher level of information sharing among partners has been suggested to develop mutual trust and commitment in longer periods.

Another purchasing strategy worth elaboration is "outsourcing of all or part of the purchasing process", or in other words "use of purchasing intermediaries". Through this strategy, a third party agent will carry out either the whole purchase process or parts of it. For example, in his study Flowers (2004), finds that several firms find purchase of high technology information systems, with the high rate of market development, a challenge. Buyers are faced with complex and infrequent purchasing situations. The complexity is even higher due to high rates of technological change (Flowers 2007). He suggests that in the absence of internal expertise and knowledge to purchase such systems, third parties can be contracted (Flowers 2004). Consequently, Flowers (2004) finds that buying organizations, in this context, use external capabilities of consultants during the procurement process. However, another way to practice this strategy is to have a third party carry out only part of the purchase process.

Dubois and Pedersen (2002) suggest many firms to perceive power and dependence as a challenging issue in making purchasing strategies. This importance is reflected in many models developed to assist purchasing strategies. For example, the relative power and dependence position of buyers and suppliers are suggested to be important factors affecting purchasing strategies in portfolio models (Caniels and Gelderman 2005; Cox et al. 2000). Most suggested

purchasing strategies are to strategically manage the supply base and to take advantage of the relative power that organizations have within their supply markets. Day (2010) emphasize the necessity of an inclusive scale defined on the power / dependence and relationship facets of segmentation in order to use portfolio models.

Even though, several suggested portfolio models (e.g. Kraljic 1983; Olsen and Ellram 1997) do not explicitly include power and dependence in their axis representations, several of their suggested strategies and aspects refer to these constructs; for example suggestions on strategies to exploit buying power (Kraljic 1983) or to reduce dependence on supplier and diversification of the supply base. In the next section, the issue of power and dependence is reviewed.

## **2.2 Purchasing power and its sources**

Power, as a factor influencing purchasing strategies, is well recognized in literature. Herein, literature on purchasing powers influencing purchasing strategies is reviewed.

### **2.2.1 A resource dependency view on purchasing power**

Historically, Emerson (1962) suggested a theory of power in social settings. In his article, he defines power equal to mutual dependence. He suggests that the power actor A has over actor B is *“the amount of resistance on the part of B which can be potentially overcome by A”* (Emerson, 1962: 32). He further suggests this power to be mutual. In other words, the power A has over B is determined by its power over B and B's power over A; which gives rise to balance or unbalanced relationships. Emerson's (1962), power-dependence theory is the core of resource dependency theory (RDT). RDT extend the concept of power to inter-organizational relationships.

According to the resource view of the firm (e.g. Wernerfelt, 1984), the environment surrounding any organization consists of scarce and valuable resources that are important for the survival of the organization. Resource dependency theory (RDT), argues that no single organization has all the resources and functions necessary for its successful operations. Consequently, organizations have to enter into exchange relationships with other organizations, behave differently and base their decisions on both internal processes and external negotiations and interactions within their markets. Thus, organizations form negotiated environments, in which they interact with one another (Cyert and March, 1963). As organizations get involved in exchange relations, in strive for competitive advantage, they become partly dependent on the exchange partner.

In transactions, organizations share control of the exchanged resource and thus become dependent on others. RDT suggests that some organizations have more power than others, due to their interdependency characteristics and their social positions (Pfeffer and Salancik, 1978). Organizations survive based on their effectiveness to manage the demand of partners that they depend on. To do so, since no organization is completely self-contained, they have to transact with others in their environment. Thus, organizations survive based on their abilities to acquire and maintain resources. However, exchange relations are formed when organizations see advantage in the relation. Given the non-existence of the advantage, the relation will no longer be continued (Pfeffer and Salancik, 1978: 2). In the same line of thoughts, RDT scholars have presented the concept of goal compatibility between partners. According to RDT, what makes goal compatibility essential in the buyer-supplier relationship is avoiding dysfunctional relationships, which can be costly and problematic (Turner et al., 2000:18).

Getting involved in exchange relations also gives rise to uncertainty. This is because the organization can neither directly control nor precisely predict the flow of resources coming from the exchange partner (Pfeffer, 1981). Another stream of research addressing the issue of uncertainty in exchange relations stems from the efficiency view of the firm, in for example transaction cost economic (TCE). TCE sees the source of uncertainty to be twofold, uncertainty stemming from the environment such as information asymmetry between exchange partners, and behavioral uncertainty of decision makers such as from opportunism and bounded rationality (Williamson, 1985). Pfeffer and Salancik, (1978) note how RDT has a power and control view of firms in contrast to the efficiency view of TCE. RDT predicts that through interdependencies due to exchange relations, different power situations raise among organizations. Based on this control view, the source of uncertainty is connected to organizations' need to acquire resources from their environments. RDT, hence, predicts that organizations will set strategies to manage constraints and uncertainties derived from exchange relations, interdependencies and power imbalances.

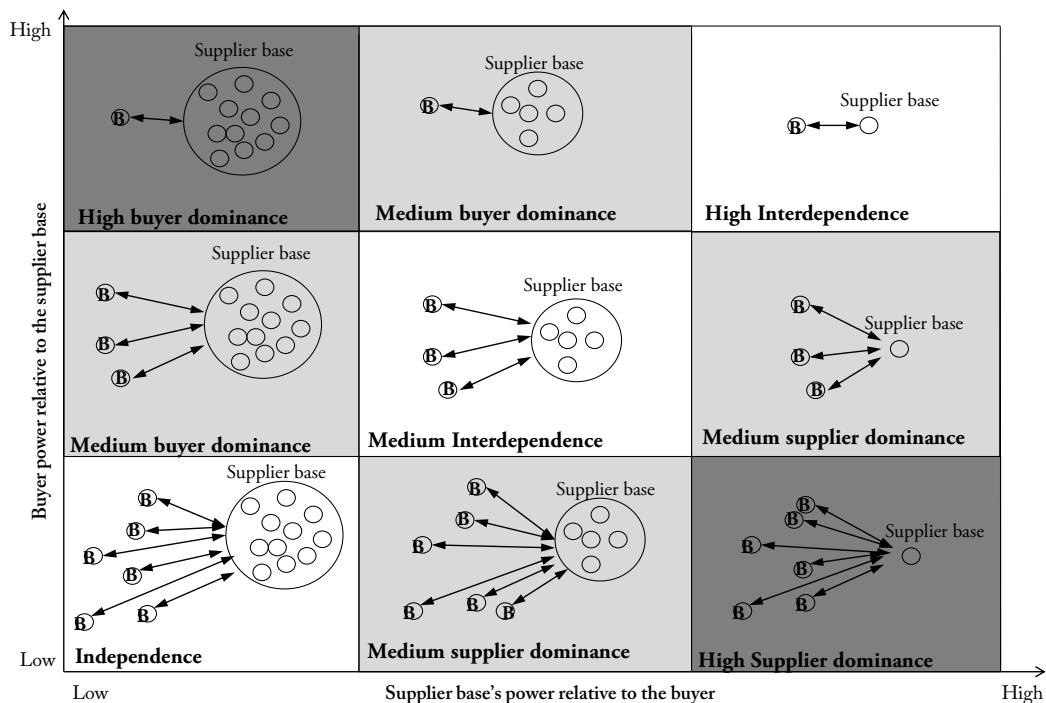
### **2.2.2 Defining purchasing power**

Katrichis and Ryan (1998: 472) suggest considerable inconsistencies existing in the definition of power and influence in social sciences. Power and influence have been used interchangeably in some literature, while others make a distinction between active power being influence and latent power (e.g. Katrichis and Ryan, 1998). We understand influence as an outcome of power.

Cox et al. (2002: 3), while maintaining a resource view of the firm, perceive power as the ability of the firm to own and control specific assets in markets and supply chains “*that allow it to sustain its ability to appropriate and accumulate value for itself by constantly leveraging its customers, competitors, and suppliers*”. They emphasize on the supply chain as a unit of analysis, to show the reflection of power in exchange relationships and how variations in power balance affect monetary and hence material flows in the supply chain. When one member of the chain controls a resource that other members require, power relations emerge in the supply chain (Batt, 2003). Yeung et al. (2009) also perceive power as an important concept in influencing the supply chain and business relationships (a view also shared by van der Vaart and van Donk, 2008).

Power, in this research, based on RDT, is understood as relative dependence; for example, the difference between the dependence of buyers on their suppliers and suppliers on buyers. Organizations are always to some extent dependent on their exchange partners, and the dependence is mutual, applying to both buyers and suppliers (Caniels and Gelderman, 2005:143). When one partner is less dependent on the other, it has more influence, known as a power advantage over the other, or leverage (Anderson and Narus, 1990:43). Due to their negotiated environments (Cyert and March, 1963), suppliers, buyers and their extended supply chains operate in an environment of relative power allocation (Cox, 2001). In other words, according to Pfeffer (1981) if, for example, the buyer is more dependent on its supplier than the supplier on the buyer, then we can say that the supplier has power over the buyer. This relative dependence shows the extent each partner can influence, or be influenced by the other (Batt, 2003). In practice, buyers face multiple options in the supply market. Thus, we define purchasing power as the buyer’s dependence on its supply options, being the supply market. Figure 4, is a simplified depiction of possible purchasing power buyers can have depending on the size of the demand and supply markets.

Several studies have argued that to understand power in buyer-supplier relationships both the relative power and the total power of relationship should be investigated (e.g. “total interdependence” in Caniels and Gelderman, 2005; Stannack, 1996). Most reviewed studies and theories, have defined the relative power of buyers and suppliers based on limited theoretical constructs with some commonalities, but also differences. Hence, to understand the purchasing power in more details, sources of power for buyers, suppliers and the exchange relationship are further reviewed in the next section.



**Figure 4** Depiction of possible purchasing power scenarios

### 2.2.3 Sources of power in buyer-supplier exchange relations

Kraljic (1983) says that no list of supplier or buyer strengths holds for all industries. He suggests a careful definition of the criteria for both suppliers and the buyer to be a prerequisite for an accurate market analysis. Cox et al. (2002) argue that, attaining critical resources within the supply chain, positions the organization in a relative dominance over exchange partners, or in other words, leverages the organization in the specific transaction. For Cox et al. (2002) critical resources are unique, of-value, inimitable and un-substitutable resources. Pfeffer and Salancik, (2003: 46) define criticality as the ability of the organization to continue without the resource or without the market for the output. Through sustained possession and exploitation of such asset within the supply chain, the organization gains relative power towards exchange partners.

A sound analysis of buyers' purchasing power requires understanding of the behavior of both buyers and suppliers (Van Weele, 2010). As mentioned, by involving in transactions with an external party, apart from dependence organizations are challenged with uncertainty (Pfeffer, 1981). The organization partly forfeits control over the planning and flow of outsourced

production or service. On the other hand, information asymmetry makes precise predictions also infeasible. Such environmental situations result in power imbalance in the supply chain.

Purchasing power is defined as a function of mutual dependence of partners on contributions, capabilities, and activities of the other partner (Pfeffer and Salancik, 2003: 27). To understand purchasing power, the factors that give rise to higher or lower power should be first identified (Kraljic, 1983; Pfeffer and Salancik, 1978). Pfeffer and Salancik, (1978) classified factors influencing dependence in three groups: the importance of the resource, the control over the resource, and the discretion over resource allocation. After Pfeffer and Salancik (1978), more studies addressed the topic and identified more factors giving rise to higher or lower power for the supplier, the buyer, or for both partners (e.g. Kahkonen and Virolainen, 2011; Cox, 2001; Kraljic, 1983) (see Appendix A for a list of factors based on reviewed studies). These factors were grouped into five categories as listed in Table 3 based on their source being the substitutability of demand and supply, the level of interconnection in relations, asymmetry of information, demand share, and the partner's reputation. These categories are henceforth mentioned as "sources of power" referring to the sources where higher or lower power comes from. The identified factors for each source of power are listed in the second column of the table and termed "indicators".

"*Substitutability*" relates to possibilities to substitute both supply and demand. Demand aspects of power are partly derived from the importance of the resource in exchange. The importance of a resource is defined as the "*ability of the organization to continue functioning in the absence of the resource*" (Pfeffer and Salancik, 2003: 46). It is, however, suggested that the importance of the resource itself is not a problem. The problem stems from dynamics and uncertainties in the market affecting the availability of the resource. Importance of the resource is also influenced by the market status: by the number of suppliers offering the resource in the market, entry barriers in the market affecting possible increase in the number of suppliers, and the availability of the product in general.

"*Interconnection*" being the perception of exchange partners towards the specific relation is also a noteworthy source of power and dependence. The extent each partner perceives the relation important in its success and functions, determines how dependent it is on that partner. Pfeffer and Salancik, (1978) note that power asymmetry results from unequal importance given to the exchange relationship by partners. In addition, social constructs such as trust and commitment should not be taken for granted either. Trust is defined as the willingness of the organization

allowing a partner to perform a particular action important to the organization regardless of control or monitoring abilities (Terpend et al., 2011: 76). Even though, it can be argued that trust is not a prime source of power, it is suggested for trust to have a direct relation with dependence and power. Relations based on higher trust and commitment, are rendered in situations of power imbalance between partners. However, power exerted by one partner does not necessarily result in higher trust. In this study, it is merely suggested that to understand power between exchange-partners their mutual trust should also be considered. Trust and commitment are also considered as outcomes of power.

**Table 3 Typical sources of power noted in literature**

Sources of power		Indicators	References used
Substitutability [10]	Supply	<ul style="list-style-type: none"> <li>• Availability of product [8]</li> <li>• Number of suppliers available [1, 2, 3, 6, 8, 9, 10, 14]</li> <li>• Entry barriers / market regulations [1, 8]</li> </ul>	[1] Batt, 2003 [2] Cox, 2001 [3] Caniels and Gelderman, 2005 [4] Ford et al. 1998 [5] Gelderman and Van Weele, 2005 [6] Kahkonen and Virolainen, 2011 [7] Katrichis and Ryan, 1998 [8] Kraljic, 1983 [9] Pfeffer, 1981 [10] Pfeffer and Salancik, 1978 [11] Porter, 1985 [12] Ramsay, 1996; 1994 [13] Stannack, 1996 [14] Tang, 1999 [15] Terpend et al. 2011
	Demand	<ul style="list-style-type: none"> <li>• Availability of demand substitutes [6, 8, 9, 10, 11]</li> </ul>	
Interconnection [6]		<ul style="list-style-type: none"> <li>• Importance of partner in the exchange decision [4, 6, 10]</li> <li>• Duration of relationship (history) [2, 6]</li> <li>• Perceived importance of the exchange by partners [1, 3, 6, 7, 10, 11]</li> <li>• Partner switching cost [1, 2, 3, 6, 11, 14]</li> <li>• Mutual trust and commitment [15]</li> </ul>	
Information asymmetry [2, 6]		<ul style="list-style-type: none"> <li>• Awareness of the demand [2]</li> <li>• Control over information / Position in the communication flow [2, 6, 7, 9, 10]</li> <li>• Knowledge of the supply market [2]</li> <li>• Knowledge on the exchange [2, 6]</li> <li>• Transparency of information [2]</li> </ul>	
Demand share [2, 4, 8, 14]		<ul style="list-style-type: none"> <li>• Competition / Number of buyers available [3, 8]</li> <li>• Volume or value exchanged compared to total volume or value in the market [2, 6, 8, 10]</li> </ul>	
Reputation [2]		<ul style="list-style-type: none"> <li>• Legitimacy [6, 10]</li> <li>• Size [6, 7, 13]</li> <li>• Brand [2, 4, 6, 12]</li> <li>• Financial status (cost/price structure)[3, 6, 7, 8, 14]</li> <li>• Technology sophistication [3, 4, 6, 8, 11]</li> <li>• Expertise, resources, and know-how [4, 5, 6, 7, 8, 13]</li> <li>• Logistics situation [3, 6, 8, 13, 14]</li> </ul>	

*“Information asymmetry”*, or in other words, control over information is suggested to be a source of power (e.g. Kahkonen and Virolainen, 2011; Cox, 2001; Katrichis and Ryan, 1998; Pfeffer, 1981; Pfeffer and Salancik, 1978). Control over information can affect purchasing power in several ways. For example, if the buyer does not have clear information about priorities of exchange relationship, the supplier can take advantage of lack of information to make a more favorable sale. On the other hand, if the supplier lacks information on demand and the market, the situation is partly reversed.

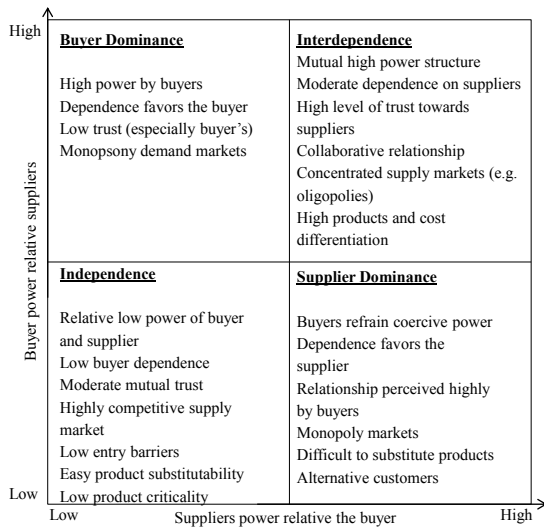
Criticality and importance of demand is suggested to be detected by: the number of buyers competing for the same resource, the volume and value exchanged between one buyer and its supplier compared to the total in the market, the possibility to substitute the demand for another resource and to continue function, and the state of awareness and knowledge about the demand. The former four aspects are related to the *“demand share”* of the buyer as listed in the table. The latter two are related indicators of substitutability and information asymmetry respectively.

Kahkonen and Virolainen (2011) investigate sources of power from the perspective of network structures and stemming from resources, interconnections and organization position. They suggest capabilities and resources of organizations determine their roles and power. This view is shared among RDT scholars. In addition, Stannack (1996) makes a distinction between physical and social powers, connecting the latter to intangible assets and the former on tangible objects. Among intangible assets, fall sources such as legitimacy and brand. As suggested in Table 3 these are part of sources of power listed as indicators of organizational *“Reputation”*. In their study, Kahkonen and Virolainen (2011), found brand to be a significant source of power in the supply market.

Pfeffer and Salancik, (1978), suggest legitimacy to be the effectiveness of the organization in satisfying the expectations of their evaluators (e.g. their customers or partners). They suggest this legitimacy to be defined by the immediate partners that are connected to the outcome or activities of the focal organization in one way or the other. Herewith, legitimacy is understood as the approval and acceptance of the outcome of the organization’s activities by its partners. For example, a socially unacceptable outcome of a firm might be acceptable between its partners and thus, not affect its survival or power in exchange relations.

### 2.2.4 A taxonomy for purchasing power

RDT suggests that these different sources of power in buyer-supplier relations result in different levels of relative dependency, which in turn result in different levels of purchasing power. Cox et al. (2004) portfolio model resembles “interdependencies” as defined in RDT (e.g. Pfeffer and Salancik, 1978). Extending the proposed portfolio model by Cox et al. (2000), and findings from other studies reviewed in this research (listed in previous tables) the following taxonomy in Figure 5 is proposed. Each segment is characterized based on the practiced power, the level of dependence, view of the market and demand, and perception on the exchange relation.



**Figure 5 A suggested taxonomy of different purchasing powers (adapted from Cox et al. 2000)**

Reputation and information asymmetry are not used in characterizing the segments in Figure 5. Reputation aspects are reflected in the level of dependence noted in the figure. However, information asymmetry might be more difficult to capture. For example, if demand information is not available and transparent for the supplier, this will also affect the supply. Suppliers might not produce sufficient amount and hence the market might experience low availability of supply. Thus, it is important for buyers to maintain supplier motivation and interest in situations of higher information control. In the same line of thoughts, in situations where suppliers control information, dysfunctional relations will form (Cox et al., 2002).

Terpend et al. (2011), find that partners have mutual trust in the independence quadrant. They explain this trust by lower risk of opportunism due to the low importance and supplier

dependence in the supply market. Studies focusing on purchasing powers suggest that for an organization to have a successful purchasing strategy it is necessary to first understand its position in the market in terms of the relative power compared to other players, and then move towards a more favorable position. In the next section, suggestions on purchasing strategies in different levels of purchasing power are reviewed.

### **2.3 Purchasing strategies for less-powerful buyers**

High dependence on the supplier base limits buyer's purchasing power (Pfeffer and Salancik, 1978). This situation can be seen in several industries, for example, in the airline industry, in purchase of oil/gas, in purchase of vaccines or other public goods. There are several forms of purchasing strategy practiced in such situations of low purchasing power.

Most studies, yet, view buyers as the partner in control of the contracts and the purchase decision (e.g. Benton and Maloni, 2005; Cox, 2001). Autry and Golicic (2010:92) suggest that the supplier often has little control over the strength of the relationship as it is up to the buyer to decide how much resource to purchase - provided that alternative sources of supply exist. At the same time, it is important to maintain suppliers' perception of a symmetrically interdependent relationship. This is because feeling too dependent will decrease supplier commitment, which may adversely influence overall supply chain performance (Feldman, 1998). To keep suppliers motivated, buyers can demonstrate their commitment to relationship through different approaches, for instance through increased information sharing or the creation of a preferred supplier list (Feldman, 1998).

From an overall supply chain perspective, it is suggested that a situation of buyer-supplier independence is a barrier to supply chain integration and usually results in fragmentation of the chain, while interdependence is the most favorable relation for supply chain integration (Watson, 2001). Only few have studied the weaker partners (i.e. buyer or supplier) (e.g. Christiansen and Maltz (2002) focus on weaker buyers developing partnership with their suppliers, and Bastl et al. (2013) look at consortia development by the weaker partner as a mean to gain more power).

Cox et al. (2004) study strategies taken in 12 cases from different supply chains with different purchasing powers. They find that cases in which strategies were aligned with the purchasing power gained better value for money. Most of these strategies fall within the non-coercive influence strategies. In addition, they emphasize the importance of organization capabilities.

Their findings stress that in situations where the organization did not have the capabilities to assess the market and the most suitable purchasing strategy, misalignments were common. In other words, they contend that just because a strategy is suitable for a certain purchasing power it does not mean it will be chosen, or that it will be implemented effectively. It is worth noting that in addition to purchasing power, other contextual factors also impact suitability and applicability of strategies (e.g. the difference between public and private procurement). Below we will look deeper into literature and suggestions on purchasing strategies for less-powerful buyers.

### **2.3.1 RDT suggestions on strategies in power asymmetry**

RDT predicts that all organizations strive to positively change their power through manipulating their relative level of dependence (e.g. Batt, 2003; Ulrich and Barney, 1984; Pfeffer and Salancik, 1978), including less-powerful buyers (Yeung et al., 2009; Emerson, 1962) through measures such as changing the size of their supply base. Cox et al. (2002) suggest that one way of either organization achieving more power is to replace existing assets with new assets with higher critical value in the supply chain.

Pfeffer and Novak (1976) note how inter-organizational relationships such as dyadic cooperation or competition are formed as a response to environmental uncertainty and lack of control resulted from power asymmetry. Cooperative forms are suggested to be unfavorable though, since it is assumed that organizations by default prefer self-sufficiency to any kind of cooperation (Turner et al., 2000: 18; Pfeffer and Salancik, 1978). In addition, since cooperation requires substantial amounts of resources, it limits the size of the supply base and substitutability, and may even result in single sourcing. From the RDT perspective, this is not optimal for the buyer, who becomes very dependent on the supplier. On the other hand, administrative and operational savings may make it worth the risk (Turner et al., 2000: 17).

Historically, Emerson (1962) recommends the weaker partners in an asymmetric social situation to increase power by either, 1) withdrawing at least part of the motivational bond from the relationship, 2) expanding the relationship network, 3) increasing its status or 4) forming coalition with other weak parties. This theory can be extended to buyer-supplier relationships. The first strategy can be compared to purchasing strategies where relationship is either terminated, or where the buyer decreases motivation through measures such as diversification. The second strategy can be seen in situations where buyers invest in development and introduction of new suppliers in a concentrated market. The third strategy can be directly related to strategies aiming

to increase the reputation sources listed in Table 7. Finally, cooperative purchasing strategies follow Emerson's (1962) fourth strategy.

### **2.3.2 Typical purchasing strategies for the less-powerful buyers**

One common strategy suggested for buyers facing limited purchasing power due to low substitutability is diversification of the supplier base (Pfeffer and Salancik, 1978). When the buyer organization has limited options from where to purchase needed resources, it can increase its power by manipulating or altering the attribute of substitutability. For example, the buyer can increase its supplier base market (e.g. from local to regional or global), or through e.g. looking for alternate suppliers in the global market (i.e. global purchasing).

According to Casciaro and Piskorski (2005:172), the less-powerful partner in an exchange relationship is always faced with higher uncertainty and undesirable exchange conditions. As a result, this partner will try to change its position through constraint absorption operations, such as long-term contracting, joint venturing, or even merging with the powerful organization (*ibid.*); i.e. formalizing its relationship.

While coercive strategies are dominantly connected to the powerful partner, some coercive strategies are suggested in situations of less power, for buyers who wish to gain more control. A powerless partner can for instance, utilize legal means to increase its influence or alternatively establish collective structures (Petersen et al., 2008). Another coercive strategy is the use of political lobbying to manage dependencies (Pfeffer and Salancik, 2003: xviii). However, formalization and coercive strategies harm mutual trust and commitment.

It is suggested that socialization can improve trust, which is otherwise weak in a relationship characterized by power imbalance (Lovaglia et al., 2003: 116). Pfeffer and Salancik (1978) suggest socialization as the suitable coordination mechanism for interdependent partners. Although no direct attempts are made to acquire greater resource control by the buyer under situations of high power imbalance, the buyer is likely to try to increasingly socialize with the supplier. Socialization fosters the development of protective cooperative norms, which direct expected behavior and allow exchange partners to set ground rules. No direct benefit is suggested from increased socialization in the independent power situation where partners won't gain any benefit from increase of collaboration.

Another reflection of cooperative forms to increase purchasing power is through pooling demand in cooperative purchasing or procurement groups (Turner et al. 2000). Nollet and Beaulieu (2005) suggest one of the first objectives of such cooperative forms to be acquirement of more bargaining power relative to their suppliers. Taylor and Bjornsson (1999) contends that usually buyers form these cooperative arrangements in situations of low power, where demand is uncertain and so the industry is fragmented.

A study conducted by the Center for Advanced Purchasing Studies (CAPS) in multiple industries, reports that cooperative procurement results in an average savings of 13.43 percent (Hendrick, 1997). An average return on investment of 767% was estimated, after comparing savings against the average annual cost of operating these cooperative groups. For example, Medical Economics (1998) reports over 550 cooperative purchasing groups being available in the healthcare industry. HICPA (1998) reports these cooperative forms to account for 80% of the current \$179 billion in annual spending by hospitals and nursing homes in the United States. Taylor and Bjornsson (1999) suggests that due to such positive figures, the practice is becoming prevalent in the industry even though it's relatively new. However, Nollet and Beaulieu (2005) note the risks of goal incompatibility between members in cooperative purchasing forms. Since, usually members competing in the same markets form the consortia, the group might become a forum to gain information (Hendrick, 1997). So, they suggest cooperative purchasing might be of more benefit in cooperative structures (Nollet and Beaulieu, 2005). Buyers can also increase leverage by pooling several demand types to be purchased from one supplier (Caniels and Gelderman, 2005).

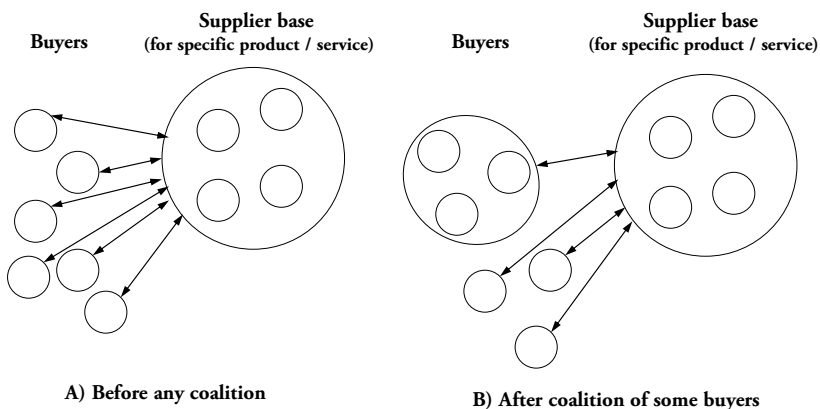
Information asymmetry between exchange partners is one of the main assumptions causing power imbalance in theory (e.g. TCE in Williamson, 1985; or RDT in Pfeffer and Salancik, 1978). This information asymmetry results in uncertainty and hence risk in making purchasing decisions. In this sense, the exchange partner owning and controlling more information will have power or leverage over the other partner. RDT suggests that this asymmetry of information negatively influences accuracy of predictions, which in turn also results in power imbalance between partners. Consequently, one method of balancing power would be for exchange partners to try to symmetrize information.

More information on the supply market can place buyers in a better purchasing power (Cox et al. 2002). Cox et al. (2002: 31) contend that the extent to which a buyer is successful in gaining

informed or ill-informed information is likely to be subject to the relative power imbalance that buyer and supplier bring to a transaction. On the other hand, the buyer should try and gain as much information about available suppliers, and the specific supplier it is negotiating or will negotiate with. On the other hand, the supplier will try to capitalize on buyer's possible lack of knowledge and withhold information. Cox et al. (2002) suggest one way of symmetrizing information in such situations, is for the buyer to use its superior knowledge on its own spending and to promise future business or relations to the supplier. This notion can also be extended to better and more information sharing with the supplier to gain their trust and commitment in longer periods. However, Williamson,(1985) suggests that exchange partners should avoid long-term dependency on opportunistic partners (i.e. counter threat of opportunism). Cox et al. (2002), nevertheless, contends symmetrizing information to be a beneficial secondary strategy in situations of power imbalance where other strategies are not feasible. However, the actual impact of these strategies on purchasing power is not clear and more studies are required.

## 2.4 A closer look at cooperative purchasing

Bastl et al. (2013) study coalitions formed by weaker partners in a triad (two buyers and a supplier, or two suppliers and a buyer), and suggest comparison of the consortia's newly gained power to that of the dominant player. However, since purchasing power in this dissertation is understood as the buyer's dependence on the supply market (see A in Figure 6), the coalition's purchasing power should be measured in relation to the supply market options as a whole (see B in Figure 6).



**Figure 6 Possible impact of cooperative purchasing (coalition of buyers) on buyer's power**

Formation of such coalition among buyers is what is termed cooperative purchasing here forth, and can be directly connected to Emerson's (1962) forth suggestion. It can be argued that the practice directly attempts to change the power situation in favor of buyers, but the impact of the strategy on purchasing power is not clearly studied within existing literature.

There is a growing body of literature on the practice using several terms such as purchasing synergy (e.g. Rozemeijer, 2000), pooled procurement (Taylor and Bjornsson, 1999), cooperative purchasing (Nollet and Beaulieu, 2005) or purchasing consortia (Hendrick, 1997). We apply the term cooperative purchasing, meaning cooperation among the buyers, which is the most commonly used term according to Essig (2000) in the public sector. The practice has gained popularity in several industries facing challenging purchase situations to increase bargaining power (cf. Bakker et al. 2006; Nollet and Beaulieu, 2005). Pooling demand and expertise from one side, and centralizing administration and management from the other, make the practice attractive.

Studies have looked into the structure and have recognized two distinct forms of cooperative purchasing, namely collaborative forms and use of third party organizations (Bakker et al. 2005; Nollet and Beaulieu, 2005; Hendrick, 1997). Our studied case is a collaborative form. Different stages of the purchasing process including, specification, bidding, negotiation, contract management, and supplier evaluation are consolidated in cooperative purchasing forms (Nollet and Beaulieu, 2003). Pedersen (1996) suggests that the main benefits of the strategy stem from the standardization of specifications.

Taylor and Bjornsson (1999) contends that usually buyers form these cooperative arrangements in situations of low power, where demand is uncertain and so the industry is fragmented. Nollet and Beaulieu (2005) suggest one of the first objectives of such cooperative forms to be gaining more bargaining power. Bastl et al. (2013) theorize consortia formation by weaker parties in triads without making any distinction between buyers and suppliers and propose that such coalition will make sense only if the power of the coalition is more than the powerful partner. It is however not clear how to extend this proposition to a real time situation where buyers face multiple suppliers within the market; specifically, when a number of weaker buyers form consortia to gain better leverage in approaching the supply market. As Bastl et al. (2013) point, their study is among the first attempts to investigate the weaker parties in buyer-supplier

relationships. Additionally, the impact of the strategy on purchasing power is not clearly studied within existing literature.

#### **2.4.1 Drivers, benefits and drawbacks of cooperative purchasing**

Decreasing administrative and labor costs, getting better terms, conditions and prices due to better leverage, access to markets, building networks to bundle resources and capabilities, and high uncertainty are other most mentioned drivers of cooperative purchasing (e.g. Gribble, 2010; Bakker et al. 2006; Nollet and Beaulieu, 2003; Gudmundsson and Rhoades, 2001; Rozemeijer, 2000; Essig, 2000).

Nollet and Beaulieu (2005) note the risks of goal incompatibility between members in cooperative purchasing forms. Since, usually members competing in the same markets form the consortia, the group might become a forum to gain information (Hendrick, 1997). So, they suggest cooperative purchasing might be of more benefit in cooperative structures (Nollet and Beaulieu, 2005). Yet, Gudmundsson and Rhoades (2001) find cooperative-purchasing alliances to have one of the highest survival rates compared to other types of alliances.

Two of the main drawbacks mentioned in literature, are increased coordination cost, and the practice becoming an entry barrier and raising unfair competition for smaller and/or local suppliers (e.g. Nollet and Beaulieu, 2005; Johnson, 1999). If the volumes pooled in cooperative purchasing forms are not strategically decided for, buyer attempts to increase their purchasing power through cooperative purchasing may backfire as the practice can lead to market domination by a few big suppliers with high asset specificity. As a result, the buyer may become locked in meaning that power shifts back to suppliers at the end of the contract period (Caldwell et al., 2005: 241).

Suppliers with sufficient capacity can, however, benefit from cooperative purchasing for instance through increased order volumes and continuous business as well as access to market information (Scheuing, 1998). While suppliers may gain from increased order volumes, better visibility, and thus improved capacity planning and communication with buyers, benefits may not outweigh the risks. A concentration of volume is for example not beneficial for all and may drive smaller suppliers out of business. Some suppliers that already have a good individual relationship with a buyer may resist the practice due to fear of losing leverage. New, relatively short-term contracts often reduce buyer loyalty. Cooperative purchasing is also reported to decrease suppliers'

operating margins and thus bring down the quality of service. Furthermore, some suppliers may fear that their trade secrets are more likely to leak out to competitors. If the level of standardization and coordination between members in the cooperative purchasing group are low, suppliers can also not achieve economies of scale. Actual effects of cooperative purchasing on buyer-supplier relationships, supplier perception of, and attitude towards working with buyers practicing cooperative purchasing are nevertheless unclear.

We aim to further understand why buyers practice cooperative purchasing, and its consequence for the purchase power. In the same line of thoughts, member coordination is important for success of cooperative formations. Thus, the meaning and process of coordination between involved buyers is discussed in the next section.

#### **2.4.2 Cooperative purchasing from a coordination view**

Coordination occurs when multiple organizations that strive towards the same goal align their tasks. In practice, coordination boils down to division of labor, resource allocation, information sharing and mediation of conflicting priorities (cf. Grandori and Soda, 1995). The act of coordination involves both careful planning of activities and joint decision-making (Malone, 1988). Calvert (1995:218) talks about coordination as “*standards, organization or conventions, in complex settings*”. Coordination is even more important in high degrees of interdependency between organizations and high levels of task uncertainty (Dekker, 2004). Coordination can be seen as a continuum in which, at the very least, organizations seek to avoid duplication (Peters, 1998). At the other end of the scale, organizations are part of a highly institutionalized system governed by uniform standards.

However, there is always a cost in coordination. Coordination cost, depends on the transaction structure and the interaction process. The total cost of coordination is an element of negotiation and bargaining, and also expenses from drafting and controlling contracts (Artz & Brush, 2000).

Xu and Beamon (2006), define coordination mechanisms based on four main attributes, each associated with specific costs: resource sharing, decision style, level of control, and risk/reward sharing. High resource sharing is associated with low physical flow costs, but high risk costs. Centralized decision-making decreases coordination costs, but increases the risk of opportunism by the partner in control. It is also more difficult to reach consensus in decentralized decision-making. The cost of coordination also increases with the level of control (Xu and Beamon, 2006).

It is worth mentioning that inter-organizational trust is one of the main modes of control in inter-organizational relationships, ensuring that members are not acting selfishly but taking the interests of others into consideration. However, as goal incongruence and performance ambiguity are common, members may find it necessary to formalize control e.g. by establishing joint policies, dispute resolution procedures or exit clauses (Dekker, 2004). When the level of control is low (and informal) coordination costs are lower, but the risk costs are high. Finally, in terms of risk/reward allocation power symmetry fosters fair allocation, which decreases risk costs. On the contrary, risk costs are higher if one or more of the involved partners gains less from the joint action and thus decides to exploit the cooperation at the expense of others (Xu and Beamon, 2006).

In theory, unlimited number of partners can coordinate their activities. In practice, however, the larger the group gets the more costly and less effective cooperation tends to get (Provan and Milward, 2001). With different stakes in getting involved and different preferred outcomes when more than two partners are involved, the issue of “*collective action*” comes into play. “*If players have different expectations about when and by whom cooperation is expected, and about when, how, and by whom punishment or reward is to be carried out, they are likely to end up punishing one another for actions intended to be appropriately cooperative*” (Calvert, 1995:242-243). Beyond expectations, different missions and target groups, divergent legal mandates, turf protection and competition for the same resources surface as other barriers to effective coordination (Jennings and Ewalt, 1998).

Connected to problem solving, Peters (1998:308) concludes that issues of implementation “*tend to be addressed at a lower level of organizations and settled around individual client issues, while policy debate emphasizes issues of turf and organizational survival*”, and are more difficult to solve. In general, in order to overcome the problems and achieve successful coordination, communication is critical. A pre-requisite for good coordination is that members of the group explicitly share their suggestions, preferences and intentions. Depending on the authority of the member and how centralized or decentralized the group is, these individual statements may or may not influence group decision-making in the end (Calvert, 1995). In order to achieve this, Akthar et al. (2012) note that coordination leadership is key, but does not guarantee success.

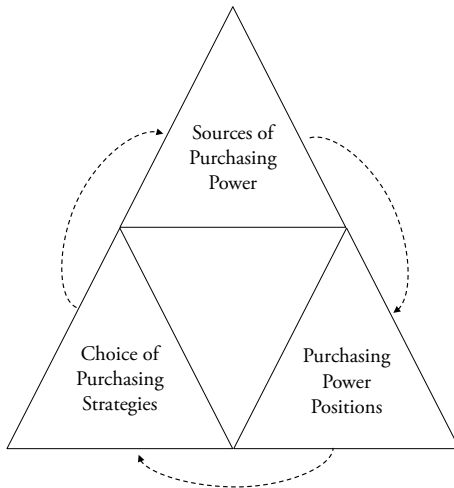
## 2.5 A conceptual model

Moving back to the main topic of this dissertation, and the relationship between purchasing strategies and purchasing power, a two-way influence relation between them is predicted (Pfeffer and Salancik, 2003). RDT suggests that purchasing strategies are directed towards positively altering one or several sources of power. Substitutability, along with other sources of power such as interconnection level of the relation, information asymmetry, volume and value of demand, and reputation affect level of dependency and power between organizations. As organizations alter the level their sources of power through e.g. their purchasing strategies practiced, they impact their level of dependency. RDT predicts that as organizations try to alter their environments through different strategies, they become subject to new and different constraints (Pfeffer and Salancik, 2003: xii). As the pattern of interdependence changes between partners, the organization will try to further negotiate in the new position.

In Figure 7, the interrelation between purchasing power and their chosen purchasing strategies is conceptualized. The combination of different sources of power, determines the purchasing power position of the buyer organization towards its supply market. This purchasing power affects the choice of purchasing strategies for buyers. This impact is because purchasing strategies are chosen to mitigate the uncertainty caused by the exchange relation and to balance shared control over the purchased resources. Purchasing strategies also impact the purchasing power. RDT suggests that the most direct way for managing and controlling dependence is to control and manage the source of that dependence (Pfeffer and Salancik, 1978: 143). Therefore, purchasing strategies practiced impact sources of power. The new level of power sources impact the previously conceived purchasing power, which in turn impacts choice of purchasing strategies again. Terpend et al. (2011), among other researchers, have previously suggested that purchasing strategies are not a one-time linear approach, and change through dynamics of the business environment.

RDT predicts that organizations have considerable possibilities to change their business environments on one hand, and also considerable possibilities, and likelihood, to change and adapt to external forces (Pfeffer and Salancik, 2003). Pfeffer and Salancik (2003: 106) suggest two common response orientations to environmental factors to be *adaptation* and *change* strategies; respectively to fit to the environmental constraints and in attempt to change the environment to fit organizational capabilities. They suggest organizations to practice strategies to

adapt their structure, their information systems, management and human relations, technology, products, values and norms, or even their definition of the environment to cope with uncertainties and constraints of the environment. The common strategies in this area are to diversify and increase substitutability.



**Figure 7 A conceptual framework of purchasing power and purchasing strategies interrelation**

Similarly, it can be inferred that purchasing strategies are developed in line with their purchasing power (i.e. their negotiated environment), and directly or indirectly affect this purchasing power. In this dissertation, we contend that organizations change purchasing powers in the environment by strategies regardless of their intentions. In other words, purchasing strategies that are not intended to alter the environment will also have an impact on purchasing power.

In summary, in this study, drawn on RDT, an inter-relation between purchasing powers and purchasing strategies is proposed. Organizations set purchasing strategies to mediate uncertainties resulted from their purchasing powers from one hand, and either consciously or unconsciously change sources of power and hence the purchasing power.



### 3. Research Design and Methodology

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*This chapter discusses methodologies used throughout this study. The chapter embarks on the ontological and epistemological views (philosophies) underpinning the study. The reasoning approach used in the study is then explained (approaches). Thereafter, the method, and specific data gathering and analysis techniques throughout the study are elaborated.*

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#### 3.1 Ontology and epistemology: A realist view on science

Science has been commonly separated from non-science by defining it as the earnest attempt to pull the veil away from the “real world”. All scientific work is based on presumptions on this reality and methods to enquire into the world; i.e. respectively, the ontological and epistemological views. In other words, different philosophies of science can be explained by their view towards “reality” or “truth” (Hacking, 1983). Among dominating views in the management literature are positivism, realism, interpretivism, and pragmatism. Realists believe in an independent reality from the observer, but positivists only believe in the observable reality. Interpretivists, on the other hand, believe in reality as a production of the subjective mind of observers, while pragmatists believe in method as a substitute of reality to ensure objectivity.

Hacking (1983) notes that the epistemological view can differ from the ontological one. Believing in factuality of entities, or “*the real world*”, does not necessarily mean truthfulness of theories derived from the world. For instance, Socrates<sup>2</sup> believes in a world independent of observers and researchers but not factuality of theories. Socrates contends science to be “*a true belief*” that has been given a justification – in other words believing in “*reality*” of the world, and communicating this belief through logical reasoning. He suggests three pillars for science being a world independent of the observer, “*real*” nature of this world, and “*logic*”.

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<sup>2</sup> Socrates was a classical Greek philosopher and credited as the founder of Western philosophy. Read more on Stanford Encyclopedia of Philosophy, available at: <http://plato.stanford.edu/entries/socrates/>

In this research, the realist ontology on entities and phenomenon is shared. The real world of this research is the inter-organizational relationships and constructs. Thus, this study strives to understand and unveil the reality of the existing social world it studies. This reality is additionally believed to be 1) transient and finite, and exist in medium of time, 2) face opposing forces, 3) gradually change as one force overcomes the other, and 4) that this change is helical not circular (as viewed in Hegelian Dialectics). The challenge is to capture this existing reality, and to theorize it the best way possible in order to produce science.

Deriving theories and science from the real world is a challenge for research. Francis Bacon<sup>3</sup>, having an anti-realist epistemological view, suggests that as human beings, researcher's values and beliefs influence derived theories and thus produced sciences. However, one way of preventing this so called "*bias*" is to incorporate stringent logic in all steps of science and arguments. Socrates takes a strong stance on "*logic*" as a tool in capturing this reality. Having a rational approach in capturing data and observations from the real world, a logical argument in expressing findings from this world, and following the basic rules of logic, can be benchmark for scientific work. At the same time, Karl Popper<sup>4</sup>, builds on the previous philosophy of science by rejecting scientific developments made on justification, for empirical refutation. He believes that theories cannot be proven, but that they can be falsified. In other words, theories can and should be scrutinized by conclusive experiments.

### **3.2 "Exploring" the context to "Explain" the real world**

Hacking (1983) suggests *theory* and *experiments* as two faces of science. Drawn on the realistic ontology, Hacking (1983) separates the two and says that theory tries to explain "*how the world is*" while experiments "*change the world*". As science tries to capture the truth from one side, it intervenes and tries to change realities for better ones on the other. This capturing and intervention can be classified as: 1) *descriptive*, where the real world is described; or 2) *explanatory*, where explanations behind existence or future of the phenomenon are addressed.

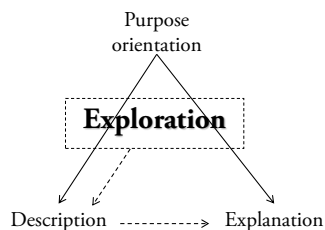
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<sup>3</sup> Francis Bacon was an English philosopher and credited as the pioneer of scientific methods. Read more on Stanford Encyclopedia of Philosophy, available at: <http://plato.stanford.edu/entries/francis-bacon/>

<sup>4</sup> Karl Popper was an Austro-British philosopher and known as the greatest philosophers of science of the 20th century. Read more on Stanford Encyclopedia of Philosophy, available at: <http://plato.stanford.edu/entries/popper/>

Aristotle defines “*explanation*” as a way to uncover new knowledge and to report relationships among different aspects of a phenomena or the real world. Theory does not always capture reality as it is though. In many instances, the chains of reasoning lack the necessary evidence and construct to represent the actual reality (e.g. Hacking, 1983). Consequently, explanation takes the form of prediction. “*Normative*” research is an extension of this prediction. Hume, being a positivist, defines explanation as “*relating the phenomenon to be explained with other phenomena by means of general laws*”. The positivist view, thus sees explanation as a tool in organizing a phenomenon and saying that it happened in “such and such a way”, that is, seeking regularities rather than causes, but not giving the realist answers to the reason behind a phenomenon (Hacking, 1983).

There is also an “*explorative*” side to scientific theories (Stebbins, 1938: 6). Researchers “explore” when there is little or no knowledge about the phenomenon they want to explain. In case of scant knowledge, explorative research leads to a description of the real world before the researcher starts explaining relations (Stebbins, 1938). Figure 8 illustrates how an explorative study is required in areas with limited previous knowledge. The dashed arrow between description and explanation in Figure 8 represents Stebbin’s (1938) view on explorative studies resulting in a description of a setting before explaining relations in it.



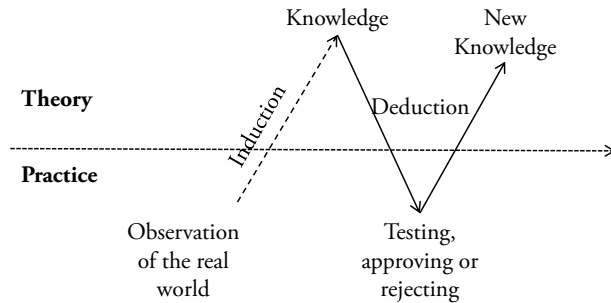
**Figure 8 Positioning exploratory research orientation in relation to descriptive and explanatory**

In this study, the context is first explored, leading to a description of the situation, which is then used to explain the purchasing strategies practiced by less-powerful buyers. The limited knowledge on purchasing in the humanitarian sector required the context to first be explored. Additionally, only after having understood the context, one can move towards explaining, anticipating and intervening. This explorative study will give rise to a description, which then, is

analyzed to “explain” relationships. Below, we will further discuss the logical (i.e. reasoning) approach to unveil reality; to collect, organize, analyze, and present data.

### 3.3 Reasoning approach

*Induction* and *deduction* are two predominant logical approaches in research (Saunders et al. 2009). There has been a debate between scientists on which approach to be most suitable. Chalmers (1999) argues inductive reasoning to be the most suitable approach to infer science. In this approach theories are derive based on observations and experiments. On the contrary, in deduction, we start with a hypothesis, and then predictions and explanations are deduced through observations and experiments. Chalmers believes that deduction is only possible after induction has based a general level of knowledge; only then, predictions can be drawn and explanations offered (Figure 9). Not all scientists agree with this thought though. For example, Popper believes that there is no true induction and all scientific research starts with hypothesized ideas, while some others such as Chalmers emphasize that all deductions are based on previous inductively produced knowledge.



**Figure 9 Induction vs. deduction in inferring knowledge (based on Chalmer's (1999) view)**

Chalmers (1999) suggests that laws and theories of science are derived by induction from factual realities through observations and experiments, and then through deduction from these laws and theories, predictions and explanations of future are delivered. Yet again, not all philosophers of science agree to this simplification. Chalmers, himself also realizes the shortcomings and suggests induction to be “*at best thoroughly inadequate*”. This inadequacy stems from complexity of the “real world” and challenges in capturing its reality. However, the extent of theories or empirics

does not always support use of either approach, which brings us to the *abductive* approach (Peirce, 1932).

### 3.3.1 An abductive approach

Although power is widely accepted as a factor affecting purchasing strategies, the concept and its consequences are found difficult to empirically study. Furthermore, buyers are often considered in control in management, purchasing and marketing literature. So, we know less about how less-powerful buyers purchase their needs. Even though, the literature review formed the basis of our propositions for investigation, an exploration phase was required and soon it was clear that a deductive approach was not suitable to find answers to our research questions. On the other hand, to induce conclusions from observations requires broad and extensive observations. Resources, geographical and time limitation of this research did not justify an inductive approach. Observations needed to be compared with theoretical suggestions (maybe from other context) to logically infer conclusions.

Lack of evidence, theory, or both gives rise to abduction, which has an intuitive and creative element (Peirce, 1932). Intuitiveness and creativity of abduction make it suitable for research intended to formulate hypotheses and propositions, which are intended to be tested afterwards (Spens and Kovacs, 2005). One starting point of abduction is real world observations that cannot be explained by existing theory (Dubois and Gadde, 2002: 556). So, the researcher iteratively, “*matches theory*” with evidence from the real world, or “*systematically combines*” them (Dubois and Gadde, 2002) to find possible explanations and to extend prior theory (Spens and Kovacs, 2005) (see Figure 10).

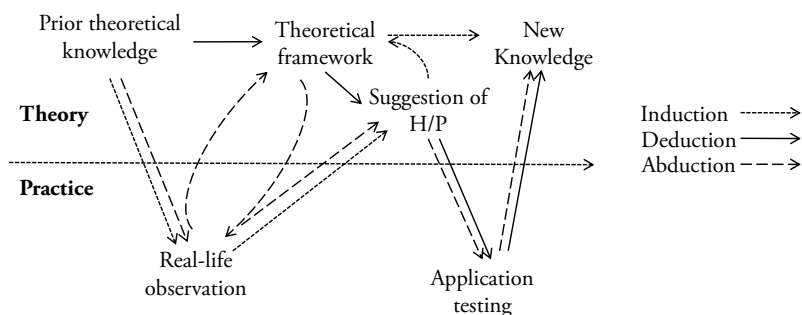


Figure 10 Illustration of abductive, inductive, and deductive by Spens and Kovács (2005: 376)

Peirce (1931 – 1935: 5.189) explains the abductive reasoning as follows:

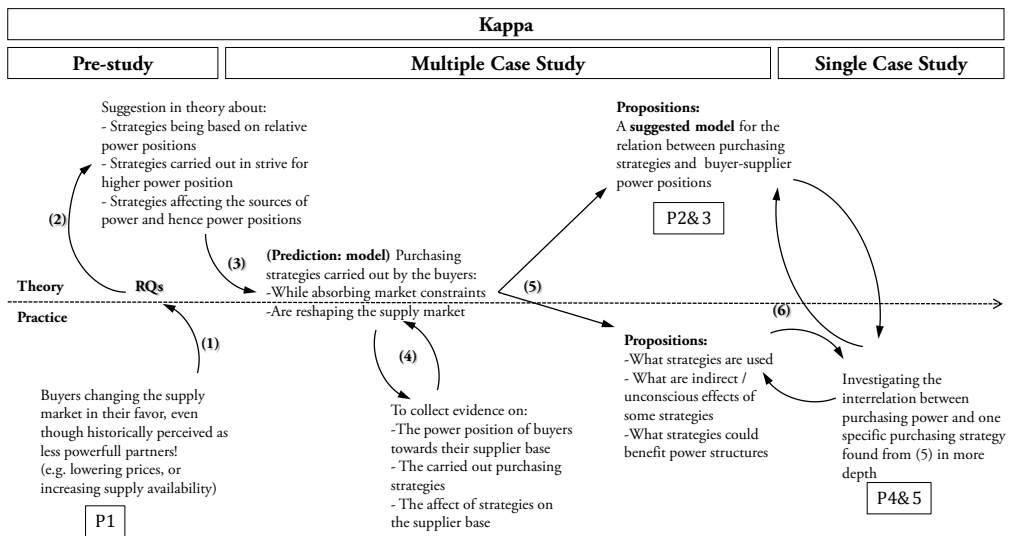
*“The surprising fact C is observed;  
But if A were true, C would be a matter of course;  
Hence, there is reason to suspect that A is true.”*

He elaborates this logic as the situation “*where we find some very curious circumstance, which would be explained by the supposition that it was a case of a certain general rule, and thereupon adopt that supposition. Or where we find that in certain respects two objects have strong resemblance, and that they resemble one another strongly in other respects*” (Peirce, 1931 – 1935: 2.624).

The abductive approach in this study is further illustrated in Figure 11. The study began with observing some characteristics of the vaccine supply market changing in favor of buyers because of their strategies. This observation was rather surprising due to the traditional perception of these specific buyers having relatively lower purchasing power compared to their suppliers (research questions formed, see (1) in Figure 11). The first publication (P1) was made based on this explorative study. To explain the situation and find answers to research questions first relevant literature was reviewed. Based on suggestions in literature, strategies carried out by organizations are based on the purchasing power buyers have towards their suppliers, and in strive for higher power (see (2) in Figure 11). The carried out strategies, in turn impact the source of power and thus power dynamics between buyers and suppliers. Thus, it is predicted that purchasing strategies carried out by buyers while absorbing market constraints, can reshape the supply market (see (3) in Figure 11).

The first empirical study was then conducted on vaccine procurement for developing countries. Evidence was gathered to understand the purchasing power of buyers, their purchasing strategies practiced, and the effect of these strategies on the supply market. Collected evidence, were matched with the predicted framework to refine connections between constructs (see (4) in Figure 11). The refined framework was proposed to explain the relation between purchasing strategies and purchasing power, and to suggest purchasing strategies currently practiced, indirect and direct effect of strategies on the supply market and hence, suggestion on strategies that could “work” (see (5) in Figure 11). The findings and cases were elaborately presented in a licentiate dissertation (Pazirandeh, 2012). The licentiate was further extended into papers number 2 and 3.

Afterwards, one of the strategies practiced by a case studied in the previous round (i.e. cooperative purchasing) was further investigated in more depth in a single case of several organizations buying their freight forwarding needs jointly (see (6) in Figure 11). The interrelation between this specific purchasing strategy and purchasing power was investigated in this single case and findings summarized in publications number 4 and 5 (power interrelations are elaborated in P5; in P4 the case is explored from a coordination perspective).



**Figure 11 The abductive reasoning logic of the research with position of publications (PX)**

### 3.4 Methods: research design

One key issue in conducting research is the design, or the logical chain of evidence depicting the move from research questions to findings. In other words, research design is the “*logical plan for getting from here to there*” (Yin, 2003: 2) - a plan for investigation, gathering, and analysis of data to reach a “*logical model of proof*” (*ibid.*). The research purpose should guide what method to choose and how to design the research.

Experiments are suggested to be a strong method to investigate casual links between different constructs. Even though, used in several social sciences, experiments require a setting in which

some elements can be kept static, and manipulations and intervention can be introduced. In addition, in experiments constructs are required to be clearly defined and measurable (Saunders et al. 2009). Surveys, on the other hand don't require the controllable setting, and are connected to the deductive reasoning approach. Hence, the theoretical constructs and connections need to be well defined (Yin 2003).

Archival studies, ethnographies, and grounded theory, on the other hand, are connected to the inductive reasoning approach. Archival studies, investigate current and historical documents and administrative records as a product of day-to-day activity and thus a reflection of reality. This method is suggested useful for study of questions with focus on changes over time. However, the method is limited to the nature of reviewed records. Ethnographies aim to study the setting of subjects under study as perceived by subjects. This method, hence, is often connected to an interpretivist or pragmatist philosophy. Grounded theory is suggested useful for investigating behaviors and to build theory about behaviors. Behaviors being a strong element in management make the method a useful tool in management studies (Saunders et al. 2009). But, in grounded theory there should be no pre-conception about the subject under investigation. This is in line with the inductive approach.

Case studies are suitable to gain deeper understanding of a situation, and so for "how" and "why" questions (Flyvbjerg, 2011; Yin, 2003; Meredith, 1998; Eisenhardt, 1989). While action research is close in nature to case studies, it is to investigate a phenomenon in action. This method, hence, requires deep insight and a relatively longer time frame to conduct. In additions, investigating the phenomenon in more than one case, or in a multiple-case study, can add insight in line with research questions; i.e. to understand how different cases carry out purchasing strategies related to their purchasing powers.

### **3.4.1 Case study research**

The core of case study research is the object of study and not the method of investigation (Naslund, 2002; Stake, 1995). Yin (2003), on the other hand, places more emphasis on the methods that constitute a case study. Some researchers associate case study research with qualitative data analysis, while others contend all quantitative forms possible (e.g. Yin 2003; Eisenhardt, 1989). Case studies are both empirical and theoretical inquiries (Ragin 1992).

*“Virtually every social scientific study is a case study or can be conceived as a case study because it is an analysis of social phenomena specific to time and place”* (Ragin 1992: 2).

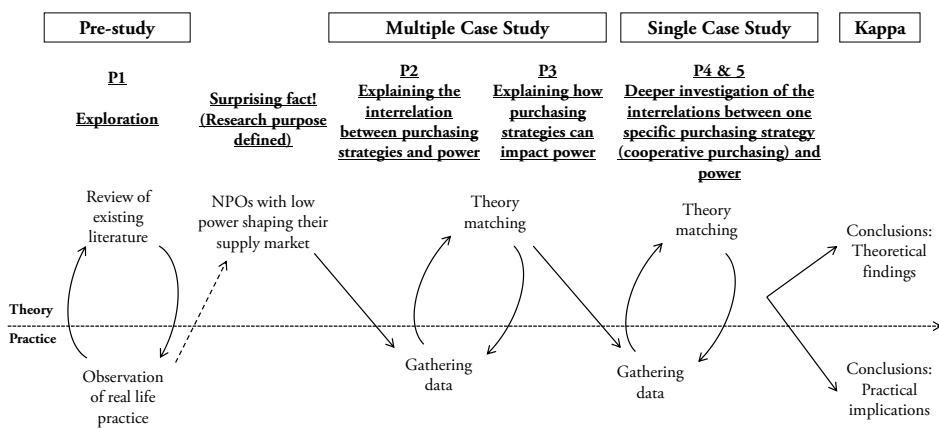
Case study research is as an intensive inquiry into an object of interest (cf. Bryman and Bell, 2003; Naslund, 2002; Stake, 1995; Eisenhardt, 1989). Case study is a method to understand dynamics present in a setting (Eisenhardt, 1989: 534). Bryman and Bell (2003: 54) even suggest that *“unless a distinction of this or some other kind is drawn, it becomes impossible to distinguish case study as a special research design, because almost any kind of research can be construed as a case study”*. In other words, case study is the inquiry in an object of interest using a combination of different methods to collect data to enrich and intensify the understanding of the object of interest as much as possible. Additionally, strength of a case study method is in the increased variables used to understand a phenomenon and not from increased data points, and so instead of relying on comparison of several observations, a pattern of observed outcomes on several variables can be compared with expectations gained from theory (Bitektine, 2007), to develop or extend it.

The concept of “case” in case study research also remains a subject of debate (e.g. see Stake (2000) classification of cases). Ragin (1992) argues that changes in how the term “case” has been used over time, has corrupted its use. Cases are *“a phenomenon of some sort, occurring in a bounded context”* and in this respect similar to the *“unit of analysis”* (Miles and Huberman 1994: 25). Bryman and Bell (2003) and Yin (2003), also point to the importance of considering from what unit of analysis or unit of measurement data will be collected. At a minimum, a case is a phenomenon specific to time and space (Ragin, 1992), it clarifies boundaries of the study (Stake 2000).

These boundaries are what limit data collection throughout a study (Yin 2003). Stake (1995) contends that these boundaries are set through clear definition of the recognizable, specific, complex, and integrated elements; that is, the object of the study which he finds more important than the process. The single population or subject of the case study should be identifiable as instances of the same phenomenon (Ragin 1992). Researchers have found that distinguishing boundaries of the case from its context is challenging (Yin, 2003; Stake 2000; Ragin, 1992). The case should still be clearly distinguished from events, behavior and actions that are outside boundaries of the case (Stake 2000), and boundaries need to be consistent with, and within, the research question asked and data collection methods used.

Flexibility and open-mindedness are also emphasized in the case study method and in selection of case(s) (Eisenhardt, 1989). Several researchers argue that one of case study's key strengths is flexibility concerning the appropriate sampling and case selection to explain a particular set of findings (Dubois and Araujo, 2007). Ragin (1992: 218) refers to this process as “casing”: “... *making something into a case or “casing” it can bring operational closure to some problematic relationship between ideas and evidence, between theory and data. Casing, viewed as a methodological step, can occur at any phase of the research process, but occurs especially at the beginning and at the end. Usually, a problematic relation between theory and data is involved when a case is declared.*”

This dissertation is based on a pre-study and two methodologically independent case studies. Figure 12 depicts a schematic illustration of the studies and the papers in this dissertation.



**Figure 12 Logical chain of the dissertation, its studies, and the publications**

All studies in this dissertation present situations of low purchasing power. In Table 4, some characteristics of sources of power connected to the two purchase situations studied are listed. While the pre-study resulted in the research questions, studying different purchasing strategies among multiple cases in a low purchasing power situation gave a general understanding of their answer. The final study complemented the previous ones by investigating the developed predictions in a specific strategy practiced to increase purchasing power.

**Table 4 Comparison of sources of power across dissertation studies**

Source of power	Pre-study	Multiple-case study	Single case study
	Vaccine procurement		Purchase of freight forwarding services
Substitutability	Very low Supply market has monopolistic tendencies High number of mergers and acquisitions Production and market entry regulations Global dispersion of few suppliers 1-2 vaccines per disease type		Low Few forwarders with humanitarian knowledge Global dispersion of these suppliers
Interconnection	Low to high interconnection level depending on the individual buyer strategies		Low to high interconnection level depending on the individual buyer strategies
Information asymmetry	Asymmetric information due to humanitarian operation constraints (see chapter 4)		Asymmetric information due to humanitarian operation constraints (see chapter 4)
Demand share	Low demand share of each individual buyer		Low demand share of individual buyers Low share where commercial buyers are present
Reputation	Low - medium buyer reputation depending on the individual buyer brand, size, resources, experience, etc. Relatively lower reputation when commercial and industrial country buyers present		Low - medium buyer reputation depending on the individual buyer brand, size, resources, experience, etc. Relatively lower reputation when commercial buyers present

Here forth, the research methods for these studies are presented individually.

### **3.5 The abductive pre-study**

The pre-study started with time spent at UNICEF (which is one representative of the humanitarian sector) to understand issues and challenges related to their purchasing. The approach was to ground the study on issues relevant to the humanitarian sector. The organization directed us to the “vaccine” unit, where maintaining supply continuity was one of the main issues. The starting point of the study was the unexpected observation that some initiatives practiced by different humanitarian organizations had influenced the market, even though they were perceived to have less power relative the supplier base. To explain this phenomenon we matched these observations with theoretical constructs and predictions (Dubois and Gadde, 2002) using the abductive reasoning approach (Peirce, 1932). Through this approach a set of predictions were proposed to be tested in later studies (as suggested in Dubois and Gadde, 2002).

The empirical data served to illustrate various initiatives by humanitarian organizations and their results on the market. These data were mainly gathered through desk study of humanitarian organizations’ reports, publications and archival data. UNICEF, the World Health Organization (WHO), the Pan American Health Organization (PAHO) and the Global Alliance for Vaccines and Immunization (GAVI) as dominant providers of vaccines were investigated. To reduce bias,

findings were shared in written form and discussed in informal open discussions with three experts working with procurement of vaccine for developing countries. Both my colleague and I simultaneously took notes and discussed the findings between ourselves afterwards.

We also found it important to empirically understand the context of the study – vaccine supply chains for developing countries – in order to reach valid conclusions. To gain a better understanding of the context through observation of meetings, presentations, the procurement process, and informal discussions, I spent 2 months at the UNICEF immunization center. Detailed field notes were gathered in this period. Three explorative unstructured interviews were conducted with the UNICEF immunization team leaders in a group of 2 researchers (i.e. with a colleague) to get a better picture of their market shaping strategies and the vaccine market. Peer reviewed journal publications and a book on vaccine supply chains for developing countries were also used to compare these data. Areas of contrast were discussed with the experts and between ourselves to find the most logical explanation.

The empirics were matched with theory during the process (following suggestions by Dubois and Gadde, 2002). Drawn on Resource Dependency Theory (RDT) a three-phase keyword search on power dominance in procurement, nonprofit-for profit relationship, and buyer–supplier relationship in the nonprofit-profit domain was conducted in peer-reviewed journals and books. The findings from all three reviews were linked in order to form a conceptual ground for the discussion of how humanitarian organizations influence their market of supplies. This ground was the basis for matching theory with the empirical data.

The final findings of the study were sent to three experts from the nonprofit sector working with vaccines, and later discussed during a session involving us and the experts. The findings were also sent to logistics/SCM experts from academia to further validate the findings and to discuss feedback.

As an outcome of this pre-study, research purpose and questions were defined for further investigation. Accordingly, a set of propositions were formulated regarding how humanitarian organizations influence and shape their supply market (see paper 1).

### **3.6 The multiple-case study**

To understand purchasing strategies carried out and the reasoning behind them, it was required to communicate with the decision makers (following suggestions by Easton, 2007, Yin, 2003 and

Ellram, 1996). Siggelkow (2007) mentions how case studies are useful methods to motivate and illustrate relations in real-life contexts. Additionally, Easton (2007) suggests that if the aim is to advance theory, a comparative case study on elements of that theory is a suitable methodology. So, to reach the study purpose and increase understanding of less-powerful buyers in the humanitarian sector firstly a multiple-case study was designed. Based on the explorative pre-study, vaccines, as a product group were the first set boundaries of the study. The focus on vaccines as the product group was made due to a number of characteristics making it a suitable product for the purpose of this study: 1) the oligopolistic / monopolistic supply market, 2) the necessary quality standards in purchase and production, and 3) the global dispersion of available suppliers, indicating power leaning more towards suppliers.

### 3.6.1 Sampling and case selection

Cases were selected to understand what purchasing strategies are practiced by different developing countries towards the same supply market challenges. Figure 13 shows the connection between the population, sample groups, cases and constructs investigated in this study. A purposive sampling method was used. Purposive sampling indicates that previous experience and theoretical frameworks will indicate where to go for data-resources (Malterud, 2001). Buyers were identified as countries and humanitarian organizations. For comparison purposes, a case of an industrial country buyer was also reviewed. Thus, the three sample groups in Figure 13 were selected.

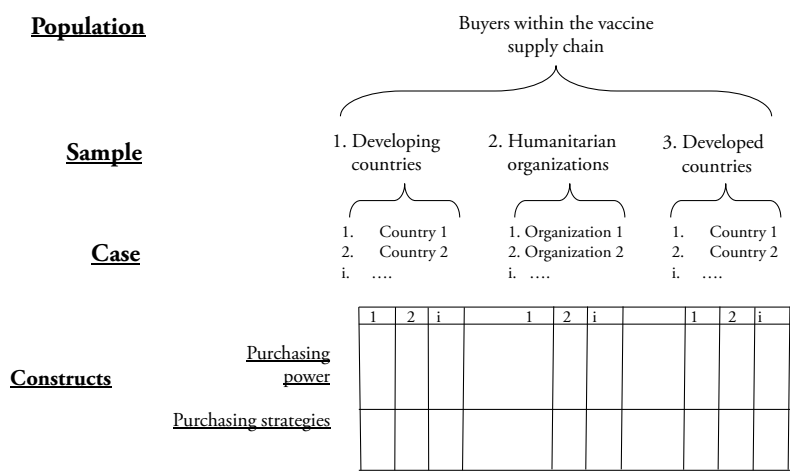


Figure 13 Population, Samples, Cases, and constructs investigated within the study

In this study, the term developing country is associated with those whom receive financial or technical support in purchase of vaccines. Countries were selected from UNICEFs list of countries within their vaccine forecast sheets. Countries on this list all purchase at least part of their vaccine need through UNICEF or acquire technical support such as training. Within each sample group a number of cases were chosen purposefully, based on the following criteria:

1. Representative of the sample group
2. Different purchase strategies (From the general understanding gained from web articles and the pre-study, four different purchasing strategies were identified in the developing countries group; purchase through UNICEF with high level support; partly purchase through UNICEF with low level support; self-purchase with low level support; cooperative purchase with low level support.
3. Different levels of received support from UNICEF
4. Access and response

The aim behind pushing for cases that practiced differing purchase strategies was to understand different purchasing strategies towards almost the same supply market and in response to the same supply challenges. It was aimed to understand possible similarities in carrying out purchasing strategies and the differences giving rise to different strategies.

Based on these criteria, 81 countries from the “developing countries” sample group, 7 organizations from the “humanitarian organizations” sample group, and Skane region (Sweden) from the “industrial country” sample group were contacted. Skane region from the final sample group was chosen based on access and to compare how a non-developing country case purchases vaccines. Respondents within each case were selected purposefully, to be directly involved in procurement, planning or implementation of vaccine procurement.

Respondents within these cases, were first contacted through an email (see appendix B) and then by follow-up letters and telephone calls. This process resulted in 16 cases in sample group 1, four cases in sample group 2, and the one case in sample group 3. These cases were then contacted with a list of structured questions and asked for an interview time. At this stage from cases that had shown interest in the previous round, some refrained from the study due to time constraints or reasons not mentioned. Cases were also given the option of returning written responses in case of preference. Written responses were circulated internally within the unit, and often were complemented with an interview. The result was participation of seven cases in the study: four

cases in sample group 1, two cases in sample group 2, and the 1 case of sample group 3. These cases are listed in Table 5.

Access and response played a critical role in selecting cases. Getting access to the right contact with the right knowledge to respond to questions was a challenging task in this study. The first step was to find the vaccine purchase unit within each country. To find the right unit, two different approaches were carried out. In the first approach, a top-down approach was taken, and the ministers or deputy ministers of health were contacted and requested to direct us towards the right contact. Part of the challenge in this approach was that the contact information available on websites (i.e. emails and telephone numbers) was often out of order. An additional challenge was that the response rate with such an approach was very low. From almost 60 countries contacted through this approach, six responded directing us to the responsible unit. From the six units, merely one unit took part in the study. In the second approach, a snowballing sampling was carried out to get in touch with the right contacts. This approach had a higher response rate. However, since there are only 1-3 people involved with strategic planning and purchasing of vaccines within each country, access to these persons in a timely manner to suit them also reduced the response rate. The result was the four developing countries listed in Table 5. Another challenge in getting access to cases in this context is the bureaucratic systems in place, especially for the public sector.

**Table 5 Selected cases base on their sample group and purchasing strategy**

<b>Sample group</b>	<b>Developing countries</b>				<b>Humanitarian orgs</b>		<b>Industrial country</b>
<b>Cases</b>	Iran	Latvia	Oman (GCC)	Zambia	UNICEF	IFRC	Skane region (Sweden)
<b>Purchasing strategies</b>	Self-purchasing with local production	Self-purchasing without local production	Cooperative purchasing with GCC	Purchasing through humanitarian organization	Humanitarian organization focusing on vaccine purchase	Humanitarian organization not focusing on vaccine purchase	Self-purchasing Outside of the context sample

Two constructs were investigated within all cases (see Figure 13): 1) the buyer purchasing power; 2) purchasing strategies carried out by each case. Then the effect of carried out purchasing strategies on sources of power and thus purchasing powers was analyzed.

### 3.6.2 Data collection

One of the strengths of case study method is the possibility of carrying out multiple data collection techniques to get a deeper understanding of the phenomenon. To understand the reasoning behind, and the expected outcome from purchasing strategies practiced, direct communication with respondents was required. Therefore, an interview guide was designed to capture the constructs. However, in this technique the aim was not to look into perceptions about the phenomenon, but rather to try to capture strategies and practices carried out by decision makers. At the same time, interview data was triangulated with data from other sources (Yin, 2003). Table 6 shows different sources of data for each of the different cases.

In addition, to limited persons involved with strategic planning and purchase of vaccines in each case (1-3 persons in each case), geographical disparity of cases combined with time and cost constraints limited the possibility of participant observation. Therefore, a number of secondary data were reviewed to triangulate the data. Some secondary data sources were used commonly for all cases (e.g. the number of suppliers per vaccine type, or country statistics on immunization from WHO website).

**Table 6 Sources of data within different cases**

Sample group		Developing countries				Humanitarian orgs		Industrial countries
Cases		Iran	Latvia	Oman (GCC)	Zambia	UNICEF	IFRC	Skane region (Sweden)
Sources of data								
Interview (In) / Survey response (S)		1(S)* 1 (In)	1(S)* 1 (In)	1 (S)* 1 (In)	1(S)* 1 (In)	3 (In)	1 (S) 1 (In)	1 (S) 2 (In)
Email communication		4	2	2	2	1	3	1
Secondary data	Presentations	1	-	-	-	19	-	-
	Reports	2	3	-	3	2	-	2
	WebPages	3	2	8	5	15	4	6
	Internal documents	-	-	1	2	8+	-	-
	Papers / Articles	3	-	3	-	2	-	-
	Videos	1	-	-	-	-	-	-
Participant observation		-	-	-	-	3m	-	-
Total		15	8	16	14	51+	9	12

\* = Survey circulated internally by the case / m = months / + = 16 documents were reviewed on different vaccines prices

Six respondents took part in the interview form and six respondents sent written answers to questions. Note that the difference in the number of interviews in Table 6 is because follow-up interviews are also included in the table; for some cases follow-ups were carried out through emails. Four interviews were conducted by telephone, and two were conducted face-to-face. All interviews were tape recorded and transcribed. Transcripts were later coded according to the analytical procedure explained in the following sections. All transcripts were sent to case representatives to increase reliability and validity of data. All cases were promised and sent an executive summary of interviews and the final report of the study upon completion. Case approval was obtained on the executive summaries before conducting the analyses.

A structured data collection guide was developed in this study. This guide was based on the developed theoretical framework (see Appendix C for the data collection guide). This approach was designed based on suggestions of for example Blumer (1954), that before entering the real world and collecting evidence, a guideline based on concepts should be developed and used as a reference. Bryman and Bell (2003) also note the importance of such reference framework based on theoretical concepts to guide the researcher. The aim with a structured guide was to standardize responses to minimize differences between interviews (as suggested by Bryman and Bell, 2003: 115; Yin, 2003).

However, as Dubois and Gadde (2002: 559) suggest, studies with an abductive approach do not incorporate the same stringent original framework as in deductive studies. They contend such frameworks to be successively modified, *“partly as a result of unanticipated empirical findings, but also of theoretical insights gained during the process”*. However, this does not mean starting the study with no theoretical ground such as in grounded theory or studies of more inductive nature. For a case study to be feasible and data to have construct validity, a blueprint is needed (Yin, 2003). This blueprint is based on established theory to tell *“a hypothetical story about why acts, events, structure, and thoughts occur”* (Sutton and Staw, 1995, in Yin, 2003: 36). Thus, a combination of open questions, closed questions and likert-scale questions were incorporated in the guide (see Appendix C).

In addition, the data collection guide (or interview guide) was altered to fit each specific and individual case (as suggested by e.g. Yin, 2003). To do this, a number of secondary data explaining the vaccine procurement situation of each case were reviewed and initial communication (through email or telephone) was carried out with case representatives. For

example, questions for the case of IFRC were tailored to capture motivations behind not focusing on vaccine procurement; or questions for Iran were tailored to make sure the local purchase situation is captured; the same with countries who purchased through UNICEF.

Questions were devised to capture the constructs as listed in Figure 13. Dimensions for how to capture each construct were based on a structured literature review. Purchasing power was captured based on sources of power (see theoretical frame of reference). “Scopus” and “JSTOR” databases were used as the outlet for a keyword search. Keywords semantically indicating purchasing (i.e. purchasing, procurement, sourcing, supply management) were cross-referenced with “power”. Articles from this search were reviewed and sources of power listed in Appendix A. Sources were then classified in homogenous groups. As much as possible RDT terms were used for the groups. However, since RDT does not fully operationalize power, in places where RDT lacked terms, terms were borrowed from other studies; for example, demand share and reputation. This list was used as dimensions to collect data for “purchasing power”.

In terms of purchasing strategies, first purchasing strategies in general were defined. Then, purchasing strategies mentioned in articles reviewed in the previous round were extracted. These strategies were then defined. Some typical models developed in literature to set purchasing strategies and practices were also reviewed and suggestions added to the list (e.g. portfolio models such as Kraljic, 1983). These strategies were used as a base for collecting data on purchasing strategies. However, in all questions regarding purchasing strategies (whether general or on specific stages of the purchasing process) an open-ended question was devised to capture other possible strategies practiced.

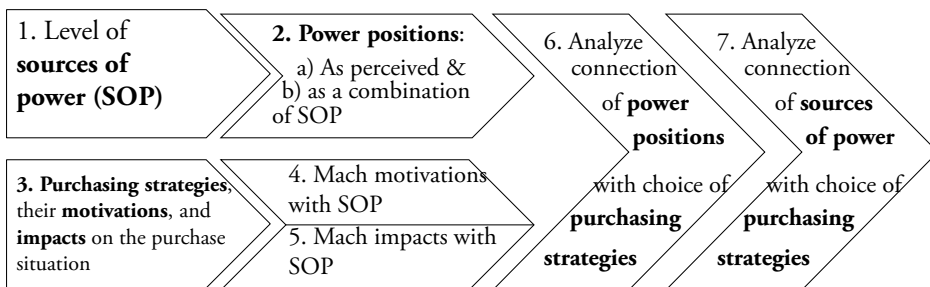
The interview guide was then tested two times with a director of purchasing (changing the product respectively to what they were buying) and a researcher in the field of purchasing and revised accordingly (following the suggestion by Bryman and Bell, 2003: 350). Questions were then sent to the respondents within cases.

### **3.6.3 Analysis procedure**

The analysis was conducted in two rounds: first for cases individually, and then across cases. In the first round, the process depicted in Figure 3 was carried out for each case. In this process, after all individual case descriptions were finalized, for each case a number of tables were devised: (as suggested by Miles and Huberman, 1994) 1) first based on data we rated the level of each source

of power, then 2) the purchasing power position of each case was listed, both as perceived by the respondents and as evaluated by the researchers based on a combination of sources of power. In parallel 3) the purchasing strategies practiced by each case, motivation for each strategy, and their perceived impact (from respondents' perspectives) were summarized. Based on tables in stage three, 4) motivations for, and 5) impacts of purchasing strategies were matched with sources of power to identify those sources of power driving and being effected by each strategy. Finally, the interconnection between purchasing strategies and 6) purchasing power positions, and 7) sources of power, were analyzed.

Coding, followed by "pattern coding" were used in the analysis. Miles and Huberman (1994: 56) define "codes" as tags or labels assigned to the "*descriptive or inferential information*" to give them "*units of meaning*". Coding is hence, defined as dissecting data meaningfully based on codes, while "*keeping relationship between the parts intact*" and used to organize and structure the data gathered. Mere classification of data using coding is not sufficient for most research purposes. Pattern and recurrences should be found to understand the plausible explanations. "Pattern coding" is the analytical tool used for this purpose. Pattern codes are explanatory or inferential codes; i.e. to identify emergent themes (*ibid.* 69). In this technique, first level coding is used to classify and summarize data. Thereafter, pattern coding is used to group these coded data into smaller groups or constructs. In other words, pattern coding can be compared to cluster analysis or factor analysis in dealing with quantitative data.



**Figure 14 The analysis process of the multiple-case study**

In this study, the theoretical frame of reference presented in chapter 2 was used to define "codes" to analyze the qualitative responses. Meanings conveyed by responses and codes were used rather than the exact words (as suggested in Miles and Huberman, 1994).

Table 7 shows three different levels of codes and their measurements used to analyze data on purchasing power of cases. Codes were measured based on interview questions in combination with secondary data from different countries and organizations. If available, data was also triangulated with statistics on the supply and demand market.

**Table 7 Codes for purchasing power (M=measurement; \* int. = Interpretive technique)**

Code Level 3	M	Code Level 2	M	Code Level 1	Measurement (M)
Substitutability	Average ratings from Level 2 codes	Demand substitutability	Average ratings from Level 1 codes	Availability of demand substitutes	Interview question (scale) Supply market data
		Supply substitutability		Number of suppliers available	Interview question (max, min, average) Supply market data
				Market entry barriers	Interview question (scale) Documents
				Availability of product	Interview question (int.*) Documents Supply market data
Interconnection		Importance of the relation		Importance of partner in the exchange decision	Interview question (scale) Interview question (int.*)
				Perceived importance of the exchange	Interview question (scale) Interview question (int.*)
				Duration of relations	Interview question (max, min, average) Documents
		Trust		Trust	Interview question (scale)
Commitment		Commitment		Interview question (scale)	
Information asymmetry		Awareness of demand		Awareness of demand	Interview question (int.*)
		Control over information		Control over information	Interview question (scale) Interview question (int.*)
		Transparency of information		Transparency of information	Interview question (scale) Interview question (based on answer to the amount of info. shared)
		Knowledge of exchange		Knowledge of the exchange	Interview question (scale) Interview question (int.*)
Demand share		Competition		Number of buyers available	Interview question (scale) Interview question (int.*, based on state of awareness in response to the question)
		Demand share		Value exchanged compared to total in the market	Interview question (scale)
Reputation		Legitimacy		Brand and size	Interview question (int.*) Documents
		Resources		Financial status	Interview question (int.*) Documents
				Experience	Interview question (int.*, based on years purchasing + responses to questions)
					Technology status, expertise, know-how

Quantitative data were extracted from the interviews, where respondents rated different situations within a 1-5 scale, questions asking the average, maximum, and minimum number of a given indicator (e.g. number of suppliers), and factual data (e.g. number of suppliers for each vaccine type based on supplier websites). Qualitative data were extracted from interview responses and secondary data. The levels of sources of power were combined and interpreted into the total power position for each case. This was compared with the perceived power position as noted by the interviewees.

Purchasing strategies were also coded according to tags found in the literature review. Codes were allocated based on the theoretical frame of reference, and the motivation behind each strategy as stated by case representatives. For example, if in the interview it was stated that the case was working on close relationships with the suppliers to improve supplier interest in demand, “long-term relationship” was coded.

The individual case analyses were sent to each case representative and asked for feedback, and their input was reviewed to increase reliability, and to further validate findings. It’s worth mentioning that little deviation was returned in this stage.

Tables from this first round were combined in the cross-case analysis; commonalities and differences were identified and discussed. Commonalities and differences were identified for discussion. The understanding gained from this analysis was compared with suggestions from theory to refine the conceptual framework and further our understanding of the topic

#### **3.6.4 Trustworthiness**

The “goodness” or quality of the research conducted is a key in trusting its findings. To judge such quality a list of appropriate criteria must be considered. According to Miles and Huberman (1994) the main idea with these criteria are firstly about genuineness of the research, consistency of the study through time and across researchers, if the study follows a salient logic, the larger import of findings, and contributions of the study. Theoretical and practical contributions of the study are discussed in the individual papers and in the last chapter of the report; i.e. the utilization criteria. Measures carried out to increase trustworthiness and to reduce unavoidable biases in this study, are discussed throughout this chapter. In this section, however, an overall view of how this aim was sought is given.

Such quality criteria are different for different philosophical views toward science (e.g. Guba and Lincoln, 1994); given that for example, positivists believe in only the observable reality and interpretivists believe in reality as the projection of individual minds. Miles and Huberman (1994: 277) list the criteria for a critical realist view matched with the more traditionally used criteria: 1) objectivity / confirmability, 2) reliability / dependability / auditability, 3) internal validity / credibility / authenticity, and 4) external validity / transferability / fittingness. These criteria are overlapping at times. Shenton (2004) lists a number of requirements for ensuring trustworthiness for the criteria. In Table 8, measures carried out to increase trustworthiness of the study, based on these requirements are listed.

One of these measures was the use of triangulation techniques. Stake (1995) defines triangulation primarily as the process of using multiple perceptions and / or perception sources to verify the repeatability and clarify the meaning of a phenomenon. He notes that observations or interpretations are hardly entirely repeatable, and so, triangulation clarifies the different ways a phenomenon is seen. Different sources of data (i.e. interviews, statistics, and secondary data), and in few places different respondents on the same case (e.g. circulating questions among different individuals, or asking the humanitarian organizations about the countries) were triangulated.

Interviews are bound to the subjective input of respondents. Secondary data are also limited to the accuracy of their source. For example, in this study, the type and number of vaccines purchased by cases and the type and number of vaccines produced were gathered from the individual websites. However, the quality and accuracy of data from different websites vary. Thus, tables indicating figures in this report do not show the factual situations. But, by triangulating the data gathered separately from different sources and comparing them to responses from purchasing experts, trustworthiness of the data were increased, and thus the understanding of the situation.

On the other hand, the consistency of the study had to also be reviewed. Conclusions were made using different techniques to interpret collected data and following the theoretical frame of reference as a roadmap. The methodology and the design of the study from the design phase, to research protocol, and the analysis have been described in details during the study. The detailed description of the data collection process increases transparency (see the full case descriptions in the licentiate dissertation Pazirandeh, 2012).

**Table 8 Measures carried out to increase trustworthiness of the study (Shenton, 2004)**

Quality criteria	Requirements	Measures carried out to increase trustworthiness
Objectivity / Confirmability	Capturing the reality of cases	Using representative cases; Getting feedback from informants
	Detailed methodological description	Documentation and detailed explanation of the different phases in planning and implementing the study
	Predispositions	"Ongoing reflective commentary" on differences between findings and theoretical assumptions in the analysis; Checking the meaning of outliers; Following up surprises
	Triangulation	Across data sources and methods triangulation; Use of different sources of data; In some cases different respondents were interviewed with the same questions for the same case
Reliability / Dependability	Research design and method	Documentation and detailed explanation of the different phases in planning and implementing the study
	Operational detail of data gathering	
	Reflective appraisal of the project	
Internal validity / Credibility	Adoption of well established research methods	Case study with designed protocol; Data gathering protocol based on theoretical background; Test of data gathering protocol before actual study ; Tailoring the protocol before collecting data; Data analysis based on literature
	Development of early familiarity with the culture of cases	Pre-study on the context; Pre-study (preliminary interview, secondary data) on each case and tailor of protocol accordingly before collecting data
	Sampling (randomizing selection)	Even though a purposive sampling was carried out for the "sample groups" representative cases from samples were chosen based on a random sampling strategy.
	Triangulation	Use of different sources of data; In some cases different respondents were interviewed for the same case
	Tactics to help ensure honesty in informants	Giving the option to refrain from study; Providing executive summary of interviews, case descriptions, and final study to all cases (explaining the use of data and the outcome of study to increase case stake)
	Iterative questioning	Getting feedback from informants on the data and the analysis; Following up surprises in answers with informants
Internal validity / Credibility	Negative case analysis	One of the analysis methods in the cross-case analysis; i.e. to identify and explain deviant cases/situations
	Frequent debriefing sessions	Monthly supervision meetings with two professors between Nov 2011 and May 2012; Presenting the preliminary results at a Humanitarian conference in March, 2012, Hamburg
	Peer scrutiny of the research project	
	Member checks	Getting feedback from informants on transcripts, on the individual case descriptions, on the final compiled case descriptions, and on the analysis
External validity / Transferability	To clearly indicate:	Details about number of cases, locations, number of data sources in each case, the position of respondents, details of documents used, and data collection methods incorporated are listed in Table 6.

Data was transcribed and reported following a structured data collection protocol, which eased the comparison of different cases. The data collection protocol (also used as the interview guide) is based on the conceptual framework developed from a structured literature review. Responses were recorded and transcribed. Thereafter, structured transcriptions were sent to respondents to avoid misunderstanding and to get additional input if necessary. Conclusions and projections were also communicated with respondents to get their input, and to increase trustworthiness of findings.

The outcome of the study was published in a licentiate thesis and in two academic papers. The thesis was sent to all participants. A summary of the findings is presented in the next chapter.

### **3.7 The single case study**

In a second study, the inter-relation predicted in the multiple-case study was extended using a single in depth study on one of the purchasing strategies. Cooperative purchasing as one strategy gaining increasing popularity in different sectors to increase purchasing power was selected. It was specifically aimed to *further understand the cooperative purchasing strategy practiced by less-powerful buyers and to understand its consequence for the buyers' purchasing power.*

During the multiple-case study, we had come across a case of several humanitarian organizations aiming to purchase their freight forwarding needs together to increase their purchase leverage. Being curious about the outcome of the study we started our investigation to realize how the strategy had not gone as planned and had created somewhat frustration among the parties involved (both buyers and suppliers). Thus, the dissertation purpose was further investigated in this single case. The following research questions were developed for this specific study:

1. What were drivers and barriers of cooperative purchasing in this single case of the strategy not materializing as expected?
2. How had the cooperative purchasing strategy impacted the purchasing power for involved buyers?

To understand the motivations for, process of, and the changes before and after, the cooperative purchase it was necessary to engage in personal conversation with individuals involved. We then compared our conceptually developed predictions with the context to extend our understandings and predictions, and to answer how cooperative purchasing influences purchasing power (the research process employed by Ross and Staw, 1993, and also suggested by Dubois and Gadde, 2002). A single case study method was preferred to other methods specifically due to the depth of understanding one can gain from studying the case from several angles. The aim here was not to compare several cases, but to understand the case, the reasons for its lack of success, and its interrelation with purchasing power.

### **3.7.1 Sampling and case selection**

This study is based on a single case of an unsuccessful cooperative purchasing involving a number of buyers and suppliers. The humanitarian sector is characterized by relatively small quantity orders of several common needs among different operating organizations, and subject to many public procurement regulations. Thus, several examples of cooperative purchasing can be found in the sector. Our case involves several humanitarian organizations joining to cooperatively purchase their air and sea freight needs. The case can be described as critical according to Yin (2003) category, where the practice did not have the expected outcome for participants.

The case was developed in interactions with the joint purchase processes happening among buyers and our theoretical understandings were affected during collection and analysis of evidence (cf. “casing” as described by Ragin and Becker, 1992; also suggested by Dubois and Araujo, 2007). The case of a joint tender carried out by some humanitarian organizations to buy their “global” air and sea freight forwarding needs was developed. There are relatively few global freight forwarders with experience and understanding of the humanitarian sector’s limitations and requirements. However, these forwarders are increasingly interested in maintaining and developing their relationship with the organizations.

The social responsibility associated with humanitarian operations, and the strong brand name of some of the organizations, are perceived to have contributed to this interest. In competition with the commercial sector, humanitarian demand is small and fragmented (i.e. based on operation / emergency), purchasing power is considered low and contracts are based on projections with usually no set figures. The purchasing power is perceived higher in areas with less commercial presence (e.g. parts of the African continent), and the joint tender was thought to increase the

attractiveness of a partnership and give the freight forwarders additional incentive to perform well. Data from this case were collected and analyzed.

### 3.7.2 Data collection

Initially, data was collected from the tender preparation phase, from the lead organization in 2011. My partner had the chance to observe discussions around the initiative between buyers, and the initial supplier reactions. A year later, when the joint tender was finalized and most suppliers had entered relationships with the buyer organizations, the study continued by first reviewing 17 available documents and then conducting 14 semi-structured interviews. The aim was to understand the case as much as possible (following Ross and Staw, 1993).

Documents ranged from preparation notes, call for expression of interests, Request for Proposals / Quotations (RFP / RFQ), tender strategy documents, evaluation methodology documents, synopsis of the organizations and the suppliers, presentations, general procurement guidelines of the organizations, freight market factsheets, to supplier guidelines. Purposive sampling followed by snowball sampling was used. In purposive sampling the aim was to contact both individuals involved during the tender, and those dealing with the aftermaths of the process within buyer and supplier organizations (see Table 9). Through snowball sampling the initial contacts, and the respondents at each interview, were asked about others involved in the joint tender.

**Table 9 Sample groups and number of participants and individuals in the study**

Sample groups	Participated organizations	Individuals interviewed	Total interviews
Buyers involved (4)*	4	6 (3) ***	8**
Buyers not taking part in the cooperative (4)	2	2 (1)	2
Suppliers who won the award (4)	4	4 (4)	4
Total	10	12 (8)	14

\* Total population of the sample group

\*\* Some individuals were interviewed more than once contributing to a higher total number

\*\*\* Figure in () indicates the number of individuals directly involved in the joint tender process

The semi-structured interviews were organized to understand 1) the joint tender process as much as possible (including motivation and barriers of the strategy and coordination aspects as recognized in the frame of reference), and then to understand the 2) impact of the joint tender on sources of power (see Appendix D). Following Eisenhardt's (1989) suggestions, while following

the general structure of the interview guide, questions were tailored for each specific organization, and each respondent. Questions were also added during the course of the study as new information was gained.

The data collection process had five stages: 1) initial data to understand the case (from the semi-structured interviews) (see Appendix D), 2) complementing data to fill in the gaps in understanding (from follow up interviews), 3) validating data on the individual organization's descriptions (from feedback on executive summaries), 4) cross-data analysis to check differences between respondent opinions (from a written questionnaire on drivers and barriers, where buyer were given a list of drivers and barriers identified by all interviewees and asked to mark those they agreed with; see Appendix E), and 5) input on viability and applicability of the findings and suggestions (from feedback on findings and recommendations).

### **3.7.3 Analysis procedure**

The case is used slightly different in addressing the different research questions. 1) To understand the drivers and barriers, we satisfied our curiosity about the unsuccessful case of cooperative purchasing by exploring the case deeper and connecting to theoretical views on coordination. 2) To learn how the strategy impacted the purchasing power for the buyers involved, we extended our predictions from the multiple-case study and so developed a theory for how cooperative purchasing impacts purchasing power (following suggestions by Ross and Staw, 1993). The developed frame of reference and suggestions on how different sources of power are impacted by practice of cooperative purchasing were matched with the understanding gained from the case. We both matched our theoretical predictions and extended them to include the aspects not included in literature.

My colleague and I conducted the research work jointly. I interviewed and recorded all respondents, my colleague transcribed them, and again I summarized the transcripts, and my colleague reviewed them. Data from transcripts were reduced into different dimensions using interpretive techniques in tabular forms and across all respondents. Then patterns were found using dimensions in tabular summaries to compare data from the semi-structured interviews and documents reviewed (as suggested by Miles and Huberman, 1994). These patterns were matched with the theory used for each research question to develop an understanding not necessarily stated or predicted in literature (followed the strategy employed by Ross and Staw, 1993:705).

In regards to drivers and barriers, these aspects were connected to theoretical predictions on coordination to draw conclusions. In addressing the second research question, we first conceptually developed our framework and suggestions on how different sources of power are impacted by practice of cooperative purchasing. Areas of ambiguity in transcripts were followed up with the respondents, to capture the case more closely. Our aim was to understand and depict the case as closely as possible and to compare case findings with our previously developed predictions of how purchasing strategies inter-relate with purchasing power. All organizations and companies were anonymized in the papers and the Kappa.

#### **3.7.4 Trustworthiness**

In Table 10, measures carried out to increase trustworthiness of this second study are listed (following Shenton, 2004 suggestions). Similar to the previous study, data was triangulated between respondents and sources of data to increase its verifiability, but also to capture the different perspectives of the same phenomenon (as defined by Stake, 1995).

Interview data are subject to the respondent bias. Using several respondents from both buyer and supplier side helped uncover the different perspectives in this study. These differences were then followed up with the respondents to reach consensus. In situations where consensus was not reached, the differences were then used as part of the analysis and basis for discussion. Data was triangulated with secondary sources in areas where it could add to the objectivity of interview responses. For example, to understand the pricing of transportation space between carriers, forwarders, and the organizations, interview responses were triangulated with two market report on transport pricing (i.e. New Zealand Ministry of Transport, 2010; Blom and Borisson, 2008). As in the previous study, different interpretive and iterative techniques were used to analyze and discuss data (as described in the method and in Table 10).

The methodology was elaborately documented. Interviews were all recorded and transcribed. The findings were discussed between my colleague and I, sent to all informants for feedback, sent to two independent professional from the sector and presented at a logistics conference. Feedback from all was treated in the study.

**Table 10 Measures carried out to increase trustworthiness of the study (Shenton, 2004)**

Quality criteria	Requirements	Measures carried out to increase trustworthiness
Objectivity / Confirmability	Capturing the reality of the case and experience and ideas of informants	Interviewing initiators and successors of the initiative; Interviewing both buyers and suppliers; Getting feedback from informants; Sending compiled anonymous responses across informants for feedback
	Detailed methodological description	Detailed documentation of the process; Explanation of the different phases in planning and implementing the study
	Predispositions	Using the iterative method of matching theory and empirics; Explaining or discussing outliers; Following up and discussing surprising findings
	Triangulation	Triangulating between informants; Triangulating with secondary data; Triangulating between buyers & suppliers
Reliability / Dependability	Research design and method	Detailed documentation of the study plan and
	Operational detail of data gathering	implementation; Reflecting back on the process within the
	Reflective appraisal of the project	limitation section of this report.
Internal validity / Credibility	Adoption of well established research methods	Single case study with designed study protocol; Interview guide based on the literature review; Desk-study on each organization and tailoring interviews accordingly; Data analysis based on suggestions in literature
	Development of early familiarity with the culture of cases	Pre-study on the context; Observation of the initial phase of the process; Tailoring interview guide per respondent
	Triangulation	Triangulating between informants; Triangulating with secondary data; Triangulating between buyers & suppliers
	Tactics to help ensure honesty in informants	Anonymizing responses; Giving the option to refrain from study at any point; Providing executive summary of interviews for feedback; Sending compiled anonymized responses for feedback; Sending final analysis and discussion for feedback
	Iterative questioning	Getting feedback from informants on the data and analysis Following up surprises in answers with informants
Internal validity / Credibility	Negative case analysis	Following up deviant responses, and in situations where consensus was not reached, treating the deviation in discussions
	Frequent debriefing sessions	Regular group meeting between the my colleague and I to discuss the research process, progress, and findings;
	Peer scrutiny of the research project	Presenting the study at a conference; Getting feedback from two independent professionals within the humanitarian sector
	Member checks	Getting feedback from informants on the individual case descriptions, on the final compiled case descriptions, and on the analysis
External validity / Transferability	To clearly indicate:	Details about number of informants, locations, date, the position of respondents, details of documents reviewed, and data collection and analysis methods incorporated
	Number and location of cases	
	Restrictions in the type of people who contributed data	
	Number of participants	
	Data collection methods	
	Number and length of the data collection	
	Time period over which the data was collected	

The outcome of the study was presented in two academic papers and an executive report sent to the involved organizations. In the next chapter the findings from the pre-study and the two case studies is presented.

### **3.8 Limitations**

Like all research, the studies in this dissertation have some limitations that need to be discussed, not least with regard to utilization of its results. The limitations in this study mainly stem from 1) shortcomings in the method, 2) in sources of data, and 3) in the scope of the context. In regards to method, there are some tradeoffs in moving from a single case study to a study using a large number of data sources (e.g. a survey). In relation to sources of data, access to cases, and to primary data for cases, are of concern. Finally, results of the study would be different if boundaries of the study were limited (e.g. to purchase of only one aid product) or expanded (e.g. to include less-powerful buyers from different sectors).

Case study research can take many forms, from a more positivistic, highly structured, investigation of several cases, to an interpretative, unstructured, inductive investigation of one case. Campbell (1975: 182) notes that in case study research theory is tested with degrees of freedom from its multiple implication points, rather than seeking degrees of freedom from a large standardized dataset. Part of the aim with case studies is to pattern-match theoretical predictions. Yin (2003) adds that the logic behind choosing multiple cases is to either literally or theoretically replicate results. In this study, first a multiple-case study was incorporated to theoretically replicate, find patterns across different purchasing strategies, and to find possible deviating situations. And then a single case study was designed to understand a specific phenomenon in more depth.

This study could have been carried out through a longitudinal in depth case study. By reducing the number of cases, the probability of increasing data points within each case would increase. A case that has changed purchase strategy through time (or a case in the process of practicing new strategies) could have been selected. A single case study on such a case with review of historical data to investigate the impact of strategies, and with several interviews could enable rich description and revealing detailed structures (cf. Yin, 2003). One advantage of the method in this study is the added understanding from different purchasing strategies that are not practiced by the same case. Use of one in-depth case study would have resulted in deeper understanding and

knowledge about the changes specific purchasing strategies, practices by the single case, produce. The breadth of different purchasing strategies gained would have, however, been missing.

The second point in relation to the method would be about generalization of results. Larger number of randomized data sources, in for example a survey format, can result in easier generalization of findings. Thus, access to more cases within each sample group, or in each purchasing strategy group could have decreased the possible biases attached to each case. Especially within the context of this study, being politically sensitive, multiple representative cases for each purchasing strategy group could enrich findings (i.e. self-purchase, cooperative purchase, etc.). This is one of the major limitations faced in conducting this study. Obtaining access to relevant cases was a challenging task. The bureaucratic systems often present in the public domain within government were one hinder in obtaining access. The political aura attached to the context of the study was both a hinder in access and also impacts the objectivity of data. Another challenge was that a database with contacts within such systems is often missing. Incentivizing and motivating the accessed contacts in partaking in a research study, and to motivate the usefulness of the study for the participants is another challenge in this area. These elements also contributed to fewer data points within the available cases. Additionally, time and cost constraints limited the extent of participant observation in this study. The nature of the theoretical sampling resulted in cases geographically dispersed in different continents.

Variations in the scope of the study would also impact results. In case of the multiple-case study, vaccines were chosen because of the challenges associated with the concentrated market. Thus, in all cases were to some extent facing a similar market. The outcome was interesting in terms of different strategies to absorb or to modify the constraints. This study could have been limited to only one vaccine type. This would have resulted in more controlled market environment. But, one implication would be even higher limitations in terms of access and response and a more concentrated population. The single case study of cooperative purchasing did not have the same limitation though. Another possibility would have been a single case study of one seasonal disease, with variations in products purchased, thus, eliminating the control factor over the market. Such a study can broaden the view over buyer-supplier power relations (as opposed to this study focusing on less-powerful buyers).

Another area of scope variation is in regards to purchasing strategies. An overall understanding of buyer strategies, the whys, and outcomes were aimed for. This limits the depth of understanding

concerning each individual purchasing strategy. For example, there are several schools of thought in literature in regards to supplier development and supplier partnerships. By changing the aim of the study to investigate one, or a limited number, of purchasing strategies within this context, a deep understanding of drivers and outcome of those strategies could have been gained. But, this is a tradeoff in which breadth was chosen. It was aimed to understand the overall picture of the existing strategies for less-powerful buyers.

## 4. Purchasing in humanitarian supply chains

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*Contextual factors are important in understanding the "outside" effects on the study. This chapter presents the context of this study. The chapter gives a general understanding of humanitarian supply chains and purchasing within these supply chains, as well as the context of the specific studies: vaccines and freight forwarding.*

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“We find a relatively unstable world on the one hand and increasingly sensitive supply chains on the other” (Wagner and Bode, 2008: 307). In today’s world, we face continuous exposure to different natural and manmade crises and increasingly vulnerable supply chains. The continuous pressure on the global business community to gain competitive advantage, become leaner, more responsive, and global has made supply chains more fragile in the unstable world of today (Wagner and Bode, 2008). The instability and sensitivity of supply chains is heightened in the humanitarian sector compared to commercial chains (Trestail et al., 2009). Thus, partners within these supply chains should seek methods to minimize both the sensitivity of the chains and the instability of the environments they are acting in. Several of the supply chain elements are mutual in between commercial and humanitarian supply chains, but there are also differences. In the next section an overview of humanitarian supply chains, their limitations and an introduction to purchasing practices within the sector is given.

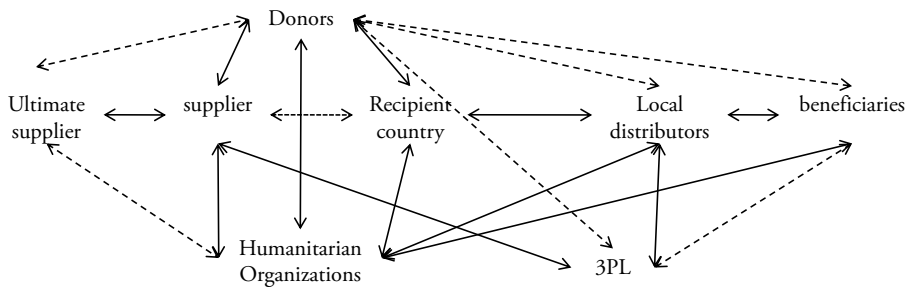
### 4.1 An overview of humanitarian supply chains

Studies have characterized the humanitarian sector one of voluntary contributions of finance and labor, in which beneficiaries are not part of any commercial transaction, and are usually located in regions with poor logistics infrastructure, with sensitive and unstable political and environmental settings (Jahre et al. 2012; Pettit and Beresford, 2009; Olorotunba and Gray, 2002; Long and Wood, 1995). A large number of organizations with different target groups and areas of performance (e.g. children, refugees, water and sanitation, food and shelter, etc.) form the sector. Some operations in the sector are focused on emergency relief, some focus entirely on long-term development, and others address both situations (Van Wassenhove, & Besiou, 2013). Emergency relief operations are not studied in this dissertation.

Some of the larger organizations in the field (Such as the UN organizations or the IFRC) have several offices in different locations around the world (country offices) with both relief and development missions and with usually decentralized decision styles (Besiou et al. 2012). In the humanitarian context, availability of essential commodities in the right quantities and at the right time and place is crucial for the survival of beneficiaries (Van Wassenhove, & Besiou, 2013). On the other hand, operations are accountable to those providing the funding (Jahre and Heigh, 2008). In this context, the industrial concepts of lost sales and backorders might translate to loss of life (Beamon and Balcik, 2008; Beamon and Kotleba, 2006). In addition, the higher purpose of humanitarian operations is helping communities reach sustainable growth and livelihoods and not just to merely deliver required goods (Coulter et al., 2007); i.e. for example, measures in reducing poverty and elevating health (UN, 2011).

Humanitarian supply chains can be compared to commercial supply chains that are globally extended within several geographical locations – especially commercial supply chains extending from developing countries to Western countries. Such global extension combined with aid related stakes, add a number of actors compared to commercial chains. Figure 15 is a schematic illustration of how different actors in humanitarian supply chains (relief or development) can add to the complexity (cf. ultimate supply chain in Mentzer et al., 2001). The full arrows show common interactions between the actors, while the dashed arrows indicate possible interactions (direct or indirect). Humanitarian organizations, donor organizations, and beneficiaries are common examples of actors not typical to commercial chains.

Several of these actors usually have conflicting incentives. For example, while humanitarian organizations compete to attract donations and resources, they also need to collaborate for efficient response to beneficiary needs and to avoid duplication of activities (Austin, 2000). Such diverse incentives result in added complexity in interactions. The complexity of humanitarian supply chains makes it challenging for actors to recognize the benefits gained from these interactions and to find working interfaces leading to mutual benefits (*ibid.*). Firms working with nonprofit organizations (NPOs) want to move beyond traditional charitable activities towards more business-oriented and entrepreneurial relationships (Van Wassenhove, & Besiou, 2013; Austin, 2000). At the same time, NPOs seek a common ground to link the beneficiaries' needs with the interests of firms to include them in their networks.



**Figure 15 A schematic illustration of actors in a humanitarian supply chain**

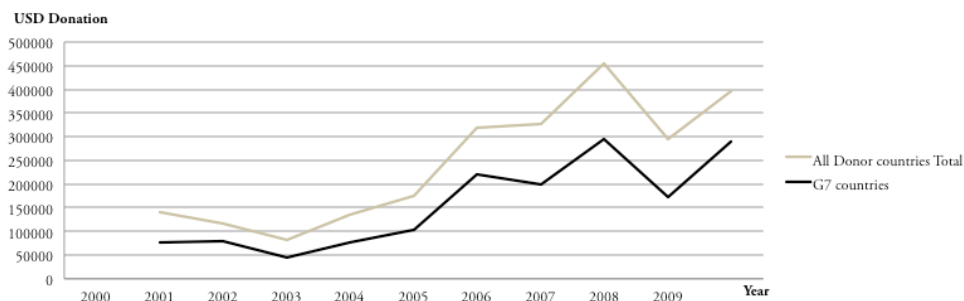
Supply chains can be managed by one core organization or various quasi-ownerships and informal forms (e.g. Cooper and Ellram 1993; Harrigan, 1985). Management in humanitarian supply chains is usually shared informally between humanitarian organizations, donors, and recipient countries involved in the specific operation. This sharing of management can also add to the supply chain complexity due to possible conflicting objectives.

Limited resources of recipient developing countries are other elements of added complexity in planning of aid delivery (Moyo, 2010). Resource limitation within developing countries can, in general, be termed as “capacity limitations”. The term capacity is widely used among humanitarian organizations. However, the term is ill defined and may refer to several different underlying aspects of a recipient developing country. We understand capacity or resources, as inputs to supply chains, which can be controlled by the management. So, capacity limitations in humanitarian supply chains may include several aspects of physical infrastructure, relevant knowledge, and financial capacity.

Lack of funds is one dominant challenge in production, purchasing, and delivery of aid products to recipient developing countries (Jahre and Heigh, 2008). Recipient developing countries are from lower or middle-lower income countries. So, the insufficiency of finance for humanitarian supply chains is partly due to shortage of local budgets. International donations are an additional source of finance for humanitarian operations. As shown in Figure 16, the collapse of the global financial market in late 2008 resulted in fewer funds from international aid.

Aside from lack of funding, existence of various funding channels is also an added complexity. Donors channel funds to each of the other actors separately and very often simultaneously (see lines connected to Donors in Figure 15). In addition, there are several donors channeling funds

to different actors. As a result, most often the monetary flow within supply chains is not transparent for the managing parties.



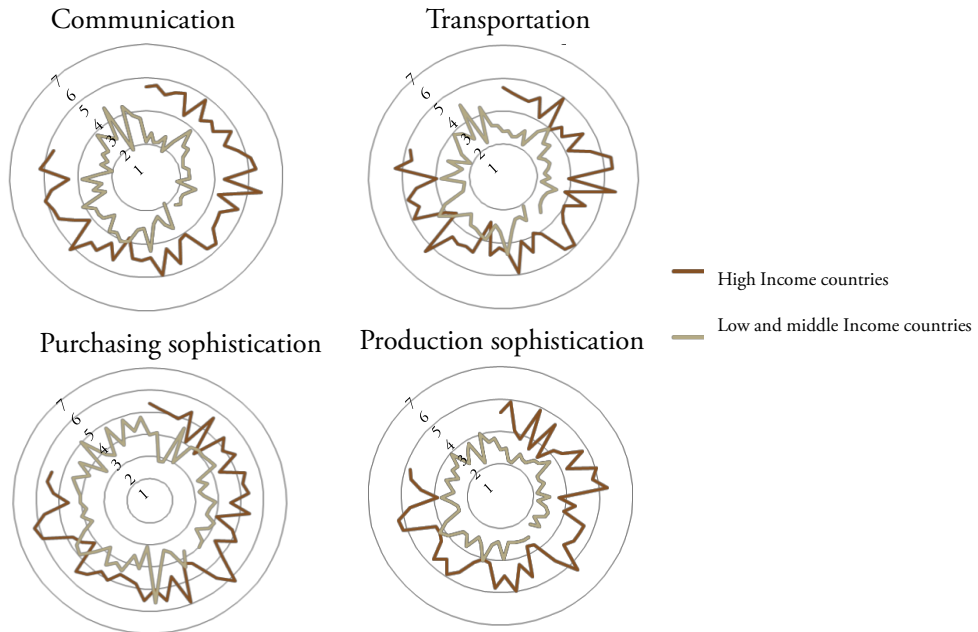
**Figure 16 Decline of donation due to the 2008 financial crisis (data from OECD, 2011)**

Most of aid recipient developing countries are also characterized by inefficient infrastructure. Figure 17 shows the infrastructure quality of low income compared to high-income countries (i.e. World Bank's classification based on national GDP in 2010; graph data is from World Economy Forum's (WEF) study of 139 countries). All data are based on a 1-7 scale (i.e. 1= lowest to 7= highest). Communication is assessed based on telephone, mobile, and Internet usage and subscription, as well as quality of electricity supply. Transportation infrastructure is based on the quality of railroad, ports, air transport and roads within countries. Purchasing sophistication depends on whether different industries within the country make purchase decisions based on merely price, or analysis of performance attributes. Finally, production sophistication is based on labor intensity and technological sophistication of the process.

As illustrated in the graphs, there is a gap between the perceived infrastructure quality of high income and low and middle-income countries. Considering information, material, and monetary flows required in supply chain management planning, such physical infrastructure are of high importance in purchasing and delivery of any product.

Transparency of information is also a stressed issue in humanitarian supply chains, due to both inefficiencies in communication infrastructure, but also information sharing systems and practices. There are several inefficiencies in planning and decision making at the recipient developing country level. Demand is not assessed or communicated efficiently with suppliers and other partners in the chain. This is partly due to poor needs assessment and demand management

within countries. In result, demand from these markets isn't always transparent or attractive for manufacturers (UNICEF, 2009a), which in turn, affects production and availability of products.



**Figure 17 Infrastructure of low compared to high income countries (Data from WEF, 2011)**

Humanitarian supply chains also lack SCM knowledge and human resource. This aspect is prevalent in both recipient developing countries, and also humanitarian organizations. For instance, in a study by Thomas and Kopczak (2005), they found that logisticians were often not included in early decision-making or field assessment by humanitarian organizations, which caused logistic bottlenecks, and in turn delays in aid-delivery. Their study indicates the following to be the most challenging obstacles in humanitarian logistics: undervalued importance of logistics, lack of professional staff, inadequate use of technology, lack of institutional learning, and limited collaboration between humanitarian organizations (Thomas & Kopczak, 2005: 5-6).

Nurske (1952) points out that basic services such as transportation and telecommunication infrastructure cannot be imported, partly due to large and costly installations, which implies the need for local existence of such capacities. Moyo (2010) suggests that not focusing on

development of such infrastructure has resulted in aid to fail in the past. She suggests this failure to be due to some underdeveloped regions becoming more dependent on donation rather than developing competency.

The outcome of investments on infrastructure capacity is not always positive on growth. This outcome is dependent on countries' comparative and competitive advantages (Button, 1998; Sharp 1980). Button (1998) argues that all opportunity costs must be considered when anticipating the impact of capacity enhancement. He suggests the diversity of regional infrastructure endowments and economies makes it unrealistic to always anticipate a positive impact. Thus, the standard infrastructure requirements should be assessed before purchasing and delivery.

## **4.2 Purchasing in humanitarian supply chains**

Research has suggested that ensuring an effective purchasing can contribute to better returns, e.g. *“up to 4% of sales value or 30% to profitability”* (Thompson, 1996: 6). However, purchasing has been researched limitedly in the humanitarian context (also from findings of Van Wassenhove, & Besiou, 2013; Kunz and Reiner, 2012, and Shahadat, 2003). This is while there are specific complexities in purchasing for humanitarian operations (Deroeck et al., 2006).

Humanitarian organizations interact with the commercial market when they purchase various aid items or freight forwarding services for delivering goods to beneficiaries, both in relief and development operations. In some organizations purchasing has been centralized to headquarters and in other cases it is more decentralized, meaning that local country offices have the authority to carry out needs-based purchasing (up to certain financial limits). Although organizations within the sector are legally independent entities with sometimes widely different mandates, there are many items and services commonly purchased. In general, the sector is characterized by small quantity orders of many different stock-keeping units. The sector has seen several pooling initiatives, or informal collaborative forms among two or more organizations (see papers 4 and 5 for examples).

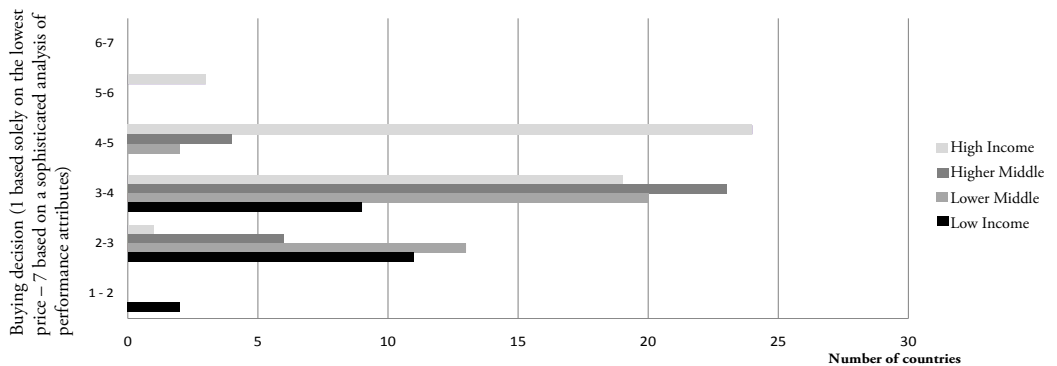
Among the main challenges in purchasing within humanitarian supply chains are the limited funding and resources, lack of demand transparency, and limited knowledge by purchasers (Based on UNICEF data, 2010; also found in several studies such as Jahre and Heigh, 2008). Whether dealing with longer-term development projects, or with disaster relief situations one reoccurring

issue is the lack of clear understanding of demand and funding uncertainties (Balcik et al., 2010). As a result, several buyers in the sector have relied on dormant supplier relationships for spot purchases (Kovács & Spens, 2011; Balcik et al., 2010).

While purchasing in the humanitarian sector is not specifically subject to public procurement regulations, the public and the non-for-profit nature of the products and services delivered requires many of same values, such as accountability, equity, probity, and transparency (cf. Erridge & Nondi, 1994). Purchasing strategies in the sector are thus, restricted by similar rules and regulations (Erridge and McIlroy, 2002), which has emphasized competitive bidding practices as opposed to coordination and relationship building. This usually results in short-term contracts that are awarded based on the lowest price (Erridge & Nondi, 1994). Such regulations also limit buyers' leverage towards their supplier base.

With the complexities attached to information gathering from the field, it is not surprising that needs assessment is a main issue in purchasing. Both longer-term development projects and disaster relief projects, introduce specific constraints that increase uncertainty and knowledge of demand. For example, in case of health related products, Taylor and Yadav (2011) note that nature of diseases being connected to weather, social, educational and economic state of livelihoods result in high uncertainty in demand. The disease incidence, transmission intensity, peak amplitudes, lengths of the disease season, food yield and famine can vary significantly in different time periods.

As a result of such constraints, it is not uncommon that goods (purchased or in-kind) and services are pushed to the country of destination without analyzing the actual need. Additionally, humanitarian supply chain constraints such as inefficient infrastructure, lack of funds, uncertainty in demand, and in some situations availability of few interested suppliers, make the purchasing practices even more challenging. One limitation worth stressing is the sophistication of decision making in terms of relevant criteria considered in developing countries. Figure 18, shows how purchasing decisions are made on more sophisticated analyses as economy groups move towards higher income countries.



**Figure 18 Sophistication of buying decisions between countries (Data from WFP, 2011)**

Additionally, some studies have suggested a move towards local sourcing in humanitarian settings due to advantages such as shorter distances, supporting the development of local markets, and reducing negative consequences of natural environments in relation to transport, among others (Coulter et al. 2007). A study conducted by the World Food Program (WFP) in Uganda and Ethiopia indicated that local purchasing, while having poorer quality was demonstrably cheaper than aid tied to donor country sources, and food aid organizations estimate a saving of 25 to 30% of the total import cost (Coulter et al. 2007). In addition, in line with the humanitarian sector mandate to help countries attain sustainable growth and livelihoods, sourcing locally and regionally are further encouraged (*ibid.*). For some products such as vaccines or other health related products with high quality requirements, there is a debate whether local producers should be encouraged. Some practitioners contend that with low existing capacities, local production of such quality sensitive products should not be lobbied for.

In addition to these general characteristics, there are specific differences between purchasing for disaster relief operations and for development operations. There are less studies focusing on these differences and this should be subject to future research, and is not within the scope of this study. However, some general differences between the two operations are related to higher predictability of demand in development programs and thus easier forecasting and supplier relationship developments. In this dissertation, two specific examples of purchase of vaccines and a special case of freight forwarding services are studied. In both examples, contracts are set in non-disaster times, but both relief and development demand is considered. The sector, however, also

purchases largely for specific relief operations (e.g. purchases done for the Haiti earthquake), which are not studied in this dissertation.

### **4.3 Two examples of purchases - Vaccines and Freight Forwarding**

Herein, we will review the specific characteristics of the two purchase categories studied in this dissertation; that is purchase of vaccines and freight forwarding needs.

#### **4.3.1 Purchasing vaccines in humanitarian supply chains**

Vaccines are one significant proportion of medication in global health. The World Bank (2011) states the importance of vaccines in three fold, stating that immunization deserves high priority in developing countries because: “*1. Vaccine-preventable diseases disproportionately affect the poorest fifth of the population, 2. Immunization is among the most cost-effective interventions, has had a major impact in reducing the burden of disease, and the benefits are public goods, and 3. Newer vaccines, and those under development, have the potential to prevent diseases, e.g., tuberculosis, malaria, and human immunodeficiency virus (HIV) that currently cause an enormous burden of disease*”. Communicable diseases, many of which are vaccine-preventable, account for 77% of the mortality gap and 79% of the disability-adjusted life years (DALY) gap, between the world’s poorest and richest 20%. Data indicate that “*in 2008, an estimated 8.8 million children died before reaching their fifth birthday*”, with almost a quarter being from vaccine-preventable diseases (GAVI, 2009: 8). UNICEF (2009b) data also show the vaccine market shifting towards a greater divergence between vaccine types used in industrialized and developing countries.

Vaccine purchasing firstly is practiced under the global health requirements. In purchasing of health related products, one of the most stressed issues among practitioners and reports from the field (e.g. the World Bank, 2006) is quality control requirements. Health related products require a standard quality to not just be effective, but to not be harmful. Ensuring the quality of product hence, becomes of utter importance. So, the executive purchasing entity should have the knowledge and capacity to assess, regulate and control products entering the health system within a country. Usually a central government organization in charge of food and drugs such as National Regulatory Authorities (NRA) takes over the responsibility. However, in many developing countries, there either is no legislative system to regulate products, or the existing authority lacks competency to monitor and control quality (UNICEF, 2009a; World Bank, 2006). In the absence of such entities, several nonprofit international entities take over

assessment, regulation, control and even enhancement of local capabilities (e.g. the World Bank or WHO).

Purchasing in this context could be both centralized and decentralized. In the centralized form, there is usually one central purchasing organization, authorized by the government, taking over purchasing, control and distribution of the health good. In the decentralized form, local health centers such as hospitals or pharmacies procure, control and directly receive products from suppliers (World Bank, 2006). Different countries may use several different variations of such purchasing organization. World Bank (2006) points how each organization has its advantages and disadvantages. The centralized form exerts more control, and has potential in lowering costs and use of the scant purchasing expertise in countries. International organizations prefer this form because of the control and quality legislations. The decentralized form, however, has an advantage in better assessment of needs. This form is preferred by local health units, which will have more control over supply. This form is also preferred for emergency products, the locally available products and low quantity requirements (*ibid.*).

In many countries, the purchasing organization is a combination of centralized and decentralized. The buying government usually allocates a certain budget to an executing organization to plan and undertake the required purchasing. Presence of such executing organizations makes the supply chain even more complex (Shahadat, 2003). This is partly because the executing organization as a government organization is obliged to buy according to a set of rules and procedures and a number of screening stages (*ibid.*).

In addition, environmental aspects specific to the local setting also add to the challenge. Complexity within macro environmental factors stems from low transparency in the need profile of the population, and financial constraints. Local markets most often exert low availability and low competence in providing products required. Political considerations and organizational structure of local authorities are often quite complex, show high hierarchy, high bureaucracy, and long lead times. In addition, financial constraints stems from both government budget limitations and multiple donor funds. Funds coming from donors are often not clear in amount or timing. Donors often tie specific criteria to their funds in forms of for example purchasing guidelines (World Bank, 2011).

Some of the common purchasing strategies taken by countries to purchase health related products are listed in Table 11. The table makes a comparison between purchasing methods recognized by

the World Bank (2006): International Competitive Bidding (ICB), National Competitive Bidding (NCB), Limited International Bidding (LIB), International or National Shopping (I/NS), Direct Contracting (DC), Purchasing from UN sources (UN), and use of purchasing assistance of UN or other organizations. However, among other aspects such as the market structure and the local governance strategy, “*the evaluation of offers or bids for health sector goods differs significantly between “consumable” items - drugs, contraceptives, nutritional supplements, and vaccines - and capital medical equipment*” (World Bank, 2006: 30).

**Table 11 Purchasing methods for health products by developing countries (World Bank, 2006)**

<b>Purchase Method</b>	<b>International Competitive Bidding</b>	<b>National Competitive Bidding</b>	<b>Limited International Bidding</b>	<b>International / National Shopping</b>	<b>Direct Contracting</b>	<b>Purchasing from UN sources</b>	<b>Purchasing Agencies</b>
<b>Method</b>	Competitive bidding	Competitive bidding in national market	Direct invitation to all available and qualified suppliers	Selecting based on comparison of price quotations	Contracting with the available source	Purchasing from UN or other agencies' warehouse	Outsourcing purchasing to the agencies with experience
<b>Supply Market</b>	Several suppliers	Several Locally qualified suppliers	Limited number of potential suppliers	Limited suppliers available	One or very few suppliers	-	-

Countries usually use international competitive bidding with a margin of preference given to domestic goods and services. However, depending on the market structure for a given product, international bidding might not be the most suitable process, and hence other methods might be used (World Bank, 2006). For medical goods, due to specialization required, bidders need to be pre-qualified. This pre-qualification is necessary to ensure participation of capable suppliers. The buying government must ascertain this prequalification based on past performance, personnel, equipment, facility capacity, and financial position of the supplier (International Trade Center UNCTAD/WTO, 1999, in Shahadat, 2003). Countries with limited resources, lacking the capacity to ensure this qualification, might benefit from an external partner taking over the task.

Usually, aid recipient developing countries lack purchasing capabilities to take into account both macro and micro environmental factors. Consequently, studies suggest that due to lack of purchasing capabilities in developing countries, “purchasing intermediaries” undertake

purchasing activities in global health supply chains to meet purchasing needs of these countries (Lalvani et al., 2010). For example, in case of prequalification of suppliers, Shahadat (2003) suggests that humanitarian organizations with almost identical features and requirements take over the task. According to the World Bank (2010: 26), awarding of the contract should be based not only on lowest price but other micro environmental factors such as “*payment schedule, delivery time, operating costs, efficiency and compatibility of the equipment, availability of service and spare parts, and related training, safety, and environmental benefits*”.

The outlook of actors within vaccine supply chains for developing countries looks similar to that of typical global health supply chains. The main actors within vaccine supply chains for developing countries are suppliers, country buyers, local distributors, final beneficiaries, donors, purchasing intermediaries, third party logistic companies, and regulating authorities (i.e. either the local government regulatory authority or the international regulatory authority).

The vaccine supply chain is driven by the willingness of country buyers to pay. This willingness is partly based on specifications and partly based on other political and social factors. Specifications are based on epidemiological and demographic history of a region. But, some countries tend to prioritize more politically popular activities such as building hospitals as opposed to vaccines (Kremer, 2008: 422-423). In addition, beneficiaries tend to be more willing to pay for treatment than prevention. Country buyers also, usually do not encourage supply increases or research in vaccines. Most often allocated budgets only cover manufacturing costs and not even close to social values of vaccines. Inefficiencies in the supply chain are partly because most governments and manufacturers undervalue the product in the market (Kremer, 2008). The product is generally considered a public good, and thus not prioritized in resource allocation in several levels of the supply chain, from production in the market to budgetary planning within country buyers. In addition, vaccines typically have short life span, and require cold chain equipment and facilities along the supply chain till they reach end beneficiaries.

The supplier base is regulated by high set-up and fixed costs due to stringent production regulations and forms difficult entry barriers. This, in turn, gives rise to monopolistic or oligopolistic markets with only a few suppliers and thus limited competition (Danzon et al., 2005). According to WHO statistics (Milstien et al., 2005: 8), the number of product types for vaccines is roughly 200, with production in only about 45 countries. The report notes that the vaccine industry in general is dominated by a small number of multinational firms:

GlaxoSmithKline, Aventis Pasteur (acquired by Sanofi in 2004 and renamed to Sanofi-Pasteur), Wyeth, and Merck. These firms have seen their share of the vaccine market (measured by revenues) rise from approximately 50% in 1988 to about 70% in 2005. Small to medium-sized companies, notably emerging companies in India, Korea, and Indonesia, comprises an additional 10%, with the remaining revenues attributable to local industrialized and developing country producers. Table 12 shows WHO qualified suppliers for typical vaccines purchased by developing countries and humanitarian organizations.

**Table 12 WHO pre-qualified suppliers (based on WHO website, 2011)**

	BB-NCIPLD Ltd.	Bhara Biotech	Bio-logical E	Bio Farma	Bio-Manguinhos	Chiron	Cuba Genetic	CSL limited	Cruceil Korea	Cruceil Switz	GPO-MBP Co.	GlaxoSmith	Green Cross Co.	Haflkine Bio	Int of P&V	Int of P&V	Japan BCG lab	LG Life Sciences	Merck & Co.	Med Immune	Novartis	NVI	Sanofi Pasteur	SBL Vaccine AB	Serum Int. India	Statens Serum	Shanta Bio.	Wyeth	Zydus Cadila	Total
BCG	x																x							x	x					4
Cholera																							x				x			2
DT	x			x																		x		x						4
DTP				x																		x		x						3
DTP-HepB				x							x													x						3
DTP-HepB/Hib			x						x		x													x						4
DTP-Hib																				x		x		x						3
HepB		x		x			x		x		x						x							x		x				8
Hib							x				x							x		x		x		x						6
HPV											x							x		x		x		x						2
Influenza											x	x								x		x								4
Influenza H1N1								x			x	x							x	x		x								6
IPV											x										x	x				x				4
Meningococcal					x						x											x		x						4
Measles			x							x										x			x		x					4
MMR											x							x				x		x						4
MR										x														x						2
OPV		x		x							x	x								x		x								6
Pneumococcal											x																	x		2
Rabies					x															x		x						x		4
Rotavirus											x							x												2
Rubella																									x					1
Td																						x								1
TT	x		x	x																			x		x		x			6
YF						x									x	x						x								4
Total	3	2	2	7	1	2	2	1	2	1	1	13	2	1	1	1	1	1	4	1	6	1	15	1	14	2	3	1	1	

*Grey shades = vaccines with 1-3 suppliers*

*Brown shades (in bottom row) = suppliers producing 1-3 vaccines*

There are several vaccine types with one to three suppliers, and several suppliers with one to three vaccines qualified by WHO. 29 of these suppliers are within 15 industrial country locations, and only 8 developing countries. In addition, 13 manufacturing locations are in developing countries

(of which two are in Eastern Europe), and 20 in industrial countries. According to the Sanofi-Aventis report, share of multinational firms increased to 84.9% in 2008, while emerging market sales accounted for almost one-quarter of total vaccine sales (814m Euros of 2.86b Euros). The number of mergers, acquisitions, and exits in the market further uphold this monopolistic tendency<sup>5</sup>.

However, it should be noted that the market structure is highly vaccine-type and target-country specific. For example, for newly developed vaccines the number of suppliers might go as low as one or two, while for some older vaccine types there might be several recently emerged suppliers in countries such as India or China. The emerging market phenomenon within the vaccine manufacturing market is the result of different policies and initiatives from the private sector and nonprofit humanitarian organizations. For instance, WHO bends strict patent protection regulations for specific developing countries, gives technical support to manufacturers in these regions, or arranges long-term agreements with them to provide manufacturing incentives.

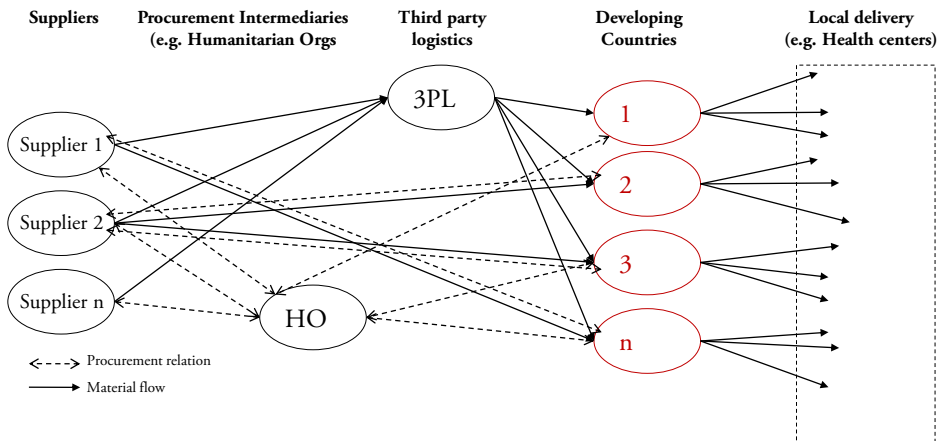
Donors on the other hand, act as intervening parties in the supply chain by both injecting monetary funds, and also reshaping the supply chain structure. Some donors have changed the supply chain structure through expecting specific change from their fund recipients, or example, nonprofits, corporate suppliers, or governments (e.g. earmarked donations). For example, earmarked funds for purchasing and introduction of specific new vaccines (rotavirus and pneumococcus) by some donor countries, has created production incentives (Andrus et al., 2008). Hence, production of these vaccines has increased and prices decreased. Another example is donations channeled through humanitarian organizations, requiring specific development projects in specific countries. Humanitarian organizations are also intermediaries with the intention of streamlining flow of supply and demand, and to coordinate monetary and information flow through different initiatives to assist buyer countries access reliable affordable quality-vaccines.

Possible variations in material flow and purchasing relations of vaccine supply chains for developing countries are illustrated in the simplified depiction in Figure 19 (based on discussions with UNICEF staff). So, developing countries either purchase vaccines directly from suppliers or

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<sup>5</sup> Data on mergers and acquisitions in the pharmaceutical and vaccine industry in 2009 can be accessed at: <http://www.sourcejuice.com/1293718/2010/01/08/Pharmaceutical-companies-mergers-acquisitions-2009/>

use the assistance of purchasing intermediaries (Hausdorf, 1996). Vaccines are delivered to countries either directly by the supplier or through third party logistic companies. Third party companies are used in both direct purchase or through purchasing intermediary situations.



**Figure 19 Possible variations in vaccine procurement for developing countries**

Vaccines, or any other product purchased by any unit or organization, require shipping services. The humanitarian sector often has to compete with the commercial sector for shipping space though. Additionally, specific characteristics of humanitarian operations require contracts, agreements, and purchasing strategies that can accommodate the specific needs. In the next section, we will review some of these specific requirements and how they impact purchasing.

#### **4.3.2 Purchasing freight forwarding in humanitarian supply chains**

All humanitarian organizations studied in this dissertation have country offices with more operational functions, and more strategic / tactical functions managed from their HQs. Country offices, generally, work independently, but under the overall organizational strategy and policies. Both country and HQ offices fully or partly outsource their logistics activities such as transportation and warehousing. Purchase of transport is also often either outsourced to freight forwarders or contracted to the goods suppliers under FOB and CFR contracts. A freight forwarder is a provider of logistics services that dispatches shipments via asset-based carriers and books or otherwise arranges space for those shipments. Carrier types can include vessels, airplanes,

trucks or railroads. Forwarders typically have the expertise to prepare and process the documentation and perform related activities pertaining to international shipments required by the carrier or country of export, import or transshipment (ART, 2010). Providing logistics services is the main activity of these companies on the global scale with the majority having more than 25 years of experience.

Five to ten of these forwarders have developed competencies in partnering with humanitarian organizations, understanding the humanitarian context and thus meeting the required needs of the sector (based on interviews with 12 humanitarian managers, 2011). These forwarders have most partnered with UN organizations, militaries and some governmental and non-governmental organizations in different extents. Before the 2004 Asian tsunami, logistics services to the humanitarian sector were mostly offered on ad-hoc basis (Navangul, 2011). Since, the operations have seen much development and forwarders operating within the humanitarian context have established programs as a part of their Corporate Social Responsibilities (CSR). In addition to the philanthropic and CSR related benefits of partnering with humanitarian organizations, there is also a less explicated commercial benefit to operate in this sector (Navangul, 2011).

These forwarders have logistical presence in most parts of the world, and have offices in, or near, at least some of the regions where humanitarian organizations operate, in Africa, Asia and Latin America. These forwarders claim that having offices in such regions equips them with a better understanding of the local conditions, thus helping them to better deliver services (Navangul, 2011). The nature of services offered by commercial organizations to the humanitarian organizations varies based on both the organization's need and the expertise and objectives of the forwarder (Navangul, 2011). Transportation by land, air or sea, warehousing, customs brokerage and airport operations, logistics training and consultancy services and fleet management are among services offered by forwarders to the humanitarian organizations.

Most forwarders have established relationships with some key humanitarian organizations for providing logistics services. Table 13 shows the background information of a number of forwarders studied in this dissertation and their historical relationships with the humanitarian organizations (all organizations and forwarders are anonymized on request). These are forwarder which won the "joint tender" studied in this dissertation. Some forwarders who placed bids in the tender were not selected due to a comparatively weak geographical presence in certain areas.

Forwarders also face challenges in partnering and participating in this emerging area of logistics. The humanitarian sector is still somewhat skeptical of their partnership motives. In result, information is not fully shared across the sectors. Navangul, (2011) suggests that there's been an increased realization of the importance of internal and external information sharing in both sectors. Additionally, demand is often fragmented and irregular, making it difficult to plan for in long-term contracts. The situation is well understood by the forwarders working with the sector, and long-term contracts are often flexible and based on could be demand. Infrastructure is also not as stable and within the standards as forwarders might be used to.

**Table 13 Profiles of selected forwarders operating partly in the humanitarian sector**

Supplier	Staff global	Staff Aid and relief	Annual business with agencies	Previous relationships with the humanitarian organizations
Alfa	12000	10-15 (special unit)	3000 TEUs 15m USD (sea freight)	Local contracts with Yellow and Blue among others No global contracts Operating per shipment basis with some others
Beta	800	20 (Special unit)	unknown	Long term agreement with Blue (+15 years) (Red has been piggybacking on this agreement) Yellow's forwarder in some local regions Operating per shipment basis with some others
Delta	100000	20 (Decentralized in other units)	30m USD	Contracts with Blue and Green Operating per shipment basis with some others
Zeta	100000	55 (Special unit)	15000 TEUs 10000 ton airfreight 170m USD	Contracts with Blue, Green, Red, White, Yellow Long term agreements with Blue (+25 years)

*TEU - The twenty-foot equivalent unit*

Humanitarian organizations, generally, tender separately as need arrives, but some organizations have now moved towards longer-term agreements. Purchase of freight forwarding needs is carried out centralized, decentralized, or in hybrid forms among different organizations. All organizations purchase freight forwarding both for the international leg from supply source to the port of entry of countries under operation, and for within country operations. Some statistics on the studied humanitarian organizations buying freight forwarding services is given in Table 14. Among these organizations, Green and Yellow purchase more in relation to emergencies. Blue purchases freight both on its own and for its clients. At Red, Green and White, the purchasing unit is responsible for purchase of freight forwarding services, while Blue and Yellow have dedicated shipping units dealing with this.

**Table 14 Profile of selected humanitarian organizations buying freight forwarding services**

Org.	Staff global *	Staff in involved unit	Average annual Int'l demand (USD)	Main shipping purpose
Blue	8000	13 (Shipping)	100 m	Development
Red	6500	18 (Purchasing)	5-10 m	Support to country offices
Green	5400	Unknown	Unknown	Emergency
White	718	20 (Purchasing)	10m	Support to country offices
Yellow	4000	30-35 (Shipping)	50000 TEUs	Emergency

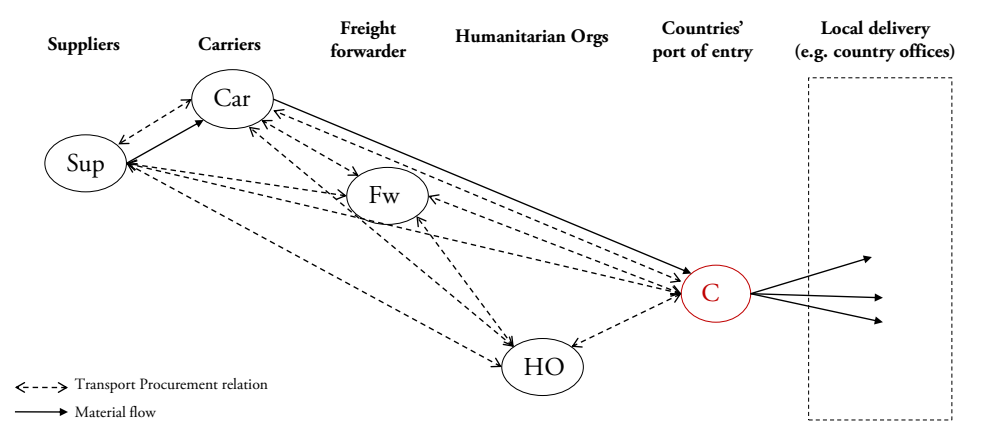
\* Data from 31 December 2011

TEU - The twenty-foot equivalent unit

All organizations listed, except for Yellow, fully outsource their freight forwarding needs and practice competitive bidding for long-term agreements of 5 years (usually in a 2-3 year initial contract with possibility of extension). The tendering process is highly resource consuming and both buyers and suppliers appear to prefer long-term agreements if they work well. In general, demand for all organizations is volatile and per operation / emergency, and contracts are based on historical projections with no set figures on the volume. These environmental conditions are well understood by the freight-forwarding partners. For all organizations except for Yellow, freight funding is a share of the general donations the organization receives; however it is not budgeted in advance and it's allocated per shipment. In contrast to the other organizations, Yellow does not have any core funding, and is thus forced to finance its freight purely from voluntary emergency donations.

Five to ten global suppliers and smaller regional suppliers form the freight forwarding market that most humanitarian organizations approach. The purchasing power of individual humanitarian organizations in the market for transportation is perceived negligible when the commercial sector is also considered. The purchasing power is perceived higher in areas with less commercial presence (e.g. parts of the African continent). However, the freight forwarders have increasingly shown interest in partnering with organizations from the humanitarian sector. The perception is that the humanitarian values associated with their operations and the strong brand name of some of the organizations can add legitimacy to associated freight forwarders. Our interviews revealed that forwarders were eager to work with the individual organizations. Humanitarian organizations generally recognize this eagerness; "... we're quite prestigious, and so suppliers want to have a relationship with us" (Shipping manager at a humanitarian organization, February 2013).

Figure 20, shows possible variations in material flow and transport procurement relations in a simplified illustration (based on the understanding gained from this study). Humanitarian organizations can purchase transportation services directly from carriers, use intermediaries (i.e. the freight forwarders), or to shift the responsibility to suppliers of goods. Goods are delivered to countries directly by the carriers. Freight forwarders are used by the suppliers, humanitarian organization, or directly by the recipient countries. Suppliers can deliver goods directly to the recipient countries. Freight forwarders are used by the suppliers, humanitarian organization, or directly by the recipient countries. Suppliers can deliver goods directly to the recipient countries. Freight forwarders are used by the suppliers, humanitarian organization, or directly by the recipient countries.



**Figure 20 Possible variations in procurement of transport in humanitarian supply chains**

In the next chapter, the relevant literature and theoretical views, used to explain the purchase situation for the different categories elaborated here, are reviewed and the theoretical frame of reference used to match data is introduced.



## 5. Summary of publications

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*In this chapter, an introduction to the scientific research papers that form the next part of this dissertation is given. Summary of findings from each publication is given, the connection between the papers and how they combined help to reach the answer to the research questions are discussed.*

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The aim of this study was **to understand how less-powerful buyers purchase their required needs and how their purchasing strategies practiced impact their purchase situation in terms of purchasing power**. Consequently, the following research questions were devised, and answers were sought in a pre-study, a multiple-case study, and a single case study contributing to five publications.

1. What typical purchasing strategies do less-powerful buyers practice?
2. Why do less-powerful buyers practice the purchasing strategies they do?
3. How do purchasing strategies practiced by less-powerful buyers, impact their buying situation in terms of their purchasing power?

The research questions in this dissertation are not treated independently in the different studies or in each of the publications. Instead, the three studies (i.e. the pre-study, multiple-case study, and single case study) are built on each other, so that combined they would give insight for the research questions. Findings of these studies were discussed in the 5 different publications, which combined answer the research questions in this dissertation (Table 15). The pre-study was designed to explore the phenomenon, while with the multiple-case study it was intended to explain the interrelation between purchasing strategies and purchasing power. The single case study was designed to further extend the predictions made from the multiple-case study. The papers are as follows:

- P1. Nonprofit Organizations shaping the supply market. *International Journal of Production Economics*, Herlin, H. Pazirandeh, A. (2011), 139 (2), 411–421.
- P2. An interrelation model of power and purchasing strategies: A study of vaccine purchase for developing countries. *Journal of Purchasing and Supply Management*, Pazirandeh, A. Norrman, A. (2014), 20 (1), 41-53.
- P3. Empowering the underdog buyer: A look at vaccine purchase by developing countries. Under-review at *Industrial Marketing Management*. Pazirandeh, A. (revise and resubmit).
- P4. Avoiding the pitfalls of cooperative purchasing through control and coordination: insights from a humanitarian context. Under review at *International Journal of Procurement Management*, Herlin, H. Pazirandeh, A. (revise and resubmit).
- P5. Unfruitful cooperative purchasing: the case of humanitarian power. *Journal of Humanitarian Logistics and Supply Chain Management*. Pazirandeh, A. Herlin, H. (Forthcoming) 4 (1).

**Table 15 Connection of the publications to the research questions**

Study	Pre-study	Multiple-case study		Single case study	
Publication	P1	P2	P3	P4	P5
Research question					
1	X	X	X	X	X
2	-	X	-	X	X
3	X	X	X	-	X

In Table 16, and overview of each publication including their specific purpose, context and methodology, theoretical stream, and contributions are summarized. In the last row of the table the contribution each paper makes to the dissertation is summarized. These contributions and findings in relation to research questions are further elaborated in the coming pages.

**Table 16 Summary of publications in the PhD dissertation**

	<b>Pre-study</b>	<b>Multiple Case Study – Vaccine procurement</b>			<b>Single Case Study – Cooperative purchasing</b>	
	<b>P1</b>	<b>P2</b>	<b>P3</b>	<b>P4</b>	<b>P5</b>	
<b>Title</b>	Nonprofit Organizations shaping the supply market	An Interrelation model of power and purchasing strategies: A study of vaccine purchase for developing countries	Empowering the underdog buyer: A look at vaccine purchase by developing countries	Avoiding the pitfalls of cooperative purchasing through control and coordination	Unfruitful cooperative purchasing: the case of humanitarian power	
<b>Purpose</b>	Explore the dominance dynamics and the degree of influence humanitarian organizations have on their supply market	Explain the interrelations between purchasing strategies and purchasing power	Explain how purchasing strategies can impact purchasing power	Explore the barriers of cooperative purchasing from a coordination perspective.	Explain the impact of cooperative purchasing on buyer's purchasing power	
<b>Context</b>	Vaccines Humanitarian supply chains	Vaccines Humanitarian supply chains	Vaccines Humanitarian supply chains	Freight forwarding Humanitarian supply chains	Freight forwarding Humanitarian supply chains	
<b>Theory</b>	RDT	RDT	RDT	Cooperative purchasing	Cooperative purchasing	
<b>Method</b>	Secondary data and participant observation	Power in purchasing Multiple Case study	Power in purchasing Multiple Case study	Coordination view Single Case study	Power in purchasing Single Case study	
	The focus on less-powerful buyers Re-contextualizing RDT to nonprofit-profit relationships					
<b>Main contribution</b>	(surprising fact!) Empirical examples of less-powerful nonprofit buyers influencing their supply market of for-profit firms.	Purchasing strategies by less-powerful buyers were set in response to individual constraints from sources of power. The response orientation of these strategies is to either a) safeguard against constraints, b) attempt to change the situation in their favor, or c) adapt to it.	A classification of purchasing strategies by less-powerful buyers, by extending Emerson's (1969) suggestions. Purchasing strategies by less-powerful buyers firstly affect the sources of power, which their cumulative effect can possibly, but not necessarily, change purchasing power.	Explaining successful cooperative purchasing strategies from a control and coordination perspective; lack of sufficient coordination and low levels of control increase the risk of cooperative purchasing's failure.	Cooperative purchasing does not necessarily increase purchasing power if other sources of power than demand share are unfavorably affected. Thus, the impact on all sources of power should be reviewed in the strategy design.	
<b>Contribution to the dissertation</b>	Foundation of the studies. Development of research questions.	Initial proposition of the purchasing power – purchasing strategies “interrelation framework”	Further explanation of how purchasing strategies impact purchasing power.	Increased understanding of cooperative purchasing as a foundation to further extend the interrelation framework	Extension of the interrelation framework	

## **5.1 P1 - Nonprofit organizations shaping the supply market**

### **Objective**

This paper is the outcome of the pre-study of this dissertation. In this paper, it was sets to explore the buyer-supplier relationships and its different patterns in the humanitarian sector. The study connects to the call for more research on formation of interdependencies between actors in humanitarian supply chains and the implications on societal outcomes. Humanitarian organizations often face a less-powerful position when partnering or competing with the commercial sector. The relative power of for-profit partners in these relationships, has given them more control on the market with implications such as higher prices and supply shortages. In this study, we observed example situations of initiatives from the humanitarian sector having reshaped these relations. Through review of such initiative, we aimed to explore the dominance dynamics and the degree of influence humanitarian organizations had on their supply market in their aspiration for better availability, quality, pricing and innovation of strategic essential supplies for the humanitarian sector. By explaining changes in the market resulted from these initiatives, conclusions were drawn.

### **Main contributions**

Based on the discussions and findings of this study, we predicted that humanitarian organizations have achieved some level of influence on the supply market. This increased influence is partly the result of their increased reputational status as humanitarian organizations. Even though these buyers had limited power relative their suppliers, their initiatives can be seen as successful attempts to change this power position in the supply market. These initiatives have in fact contributed to the reshaping of the supply market for vaccines. This reshaping has been positive according to the available data, contributing to increase in the number of suppliers, better product development, improved R&D, increase in production and hence better availability, greater competition and lower prices.

This study was an explorative study and calls for further in-depth empirical research to capture the dynamics of the buyer-supplier relationships in the humanitarian sector, and to further understand the power distribution in such relationships.

The findings of this pre-study (as documented in the paper) were the basis for formulating the research purpose and questions. Discussions in the paper, however, touch upon research questions 1 and 3 of the dissertation (see Table 17).

**Table 17 Findings of paper 1 in relation to research questions**

<b>Research question</b>	<b>Findings of the paper</b>
1	Empirical examples of purchasing strategies practiced by less-powerful buyers aimed specifically at reshaping of the supply market
3	Examples of less-powerful buyers having influence on the supply market were found, indicating that purchasing strategies could impact buyer power.

Herewith, the developed research questions were further studied in the multiple-case study.

## **5.2 P2 - An Interrelation model of power and purchasing strategies**

### **Objective**

This paper was the first of the two papers based on the multiple-case study and the licentiate dissertation (i.e. Pazirandeh, 2012), and addresses questions 2 and 3 of the dissertation, and explores possible purchasing strategies by less-powerful buyers (i.e. research question 1). The specific purpose of this paper was to develop a framework to explain the relationship between purchasing strategies and purchasing power. Organizations engage in exchange relationships (e.g. with suppliers) to get the needed resources and thus become dependent on each other (e.g. in the resource view of the firm, Wernerfelt, 1984). The interdependence is not always evenly distributed, and some partners in the supply chain have the upper hand or leverage. The weaker party thus faces specific constraints to manage through its strategies. In a situation where the buyer is highly dependent on its supplier base, purchasing strategies are carried out in response to the faced constraints.

The idea that organizations are constrained and influenced by the external factors from the environment they function in, is widely accepted in theory (e.g. Pfeffer and Salancik, 2003). Research on power has been addressed in several disciplines (e.g. Lusch and Brown, 1982; Emerson, 1962). Within the purchasing research, the concept of power has been mainly studied with the aim to provide normative recommendations to buyers to achieve competitive advantage (e.g. Gelderman et al. 2008; Cox et al. 2002; Kraljic, 1983). However, these studies also lack a

unified operationalization of power, and lack empirical support explaining the interrelation between purchasing strategies practiced and purchasing power. Finally, most of these theories and models are developed within the boundaries of the business context and based on the presumption that organizations strive to maximize power, generate profit, and based on the regulations of this sector.

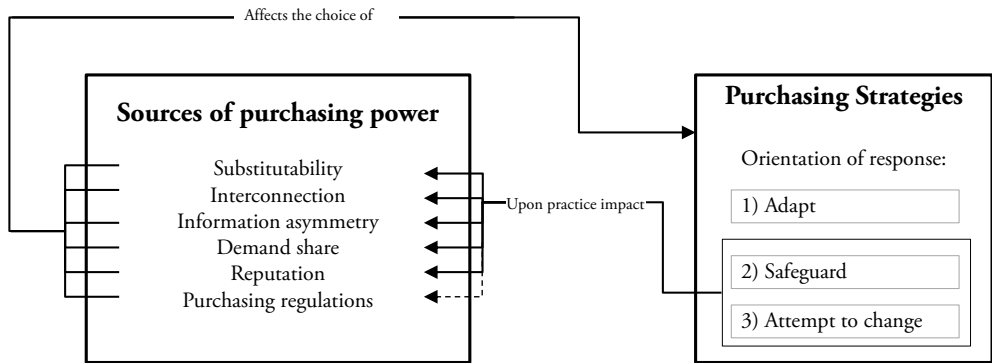
Buyer-supplier dependencies can also be found outside pure commercial contexts. An example, with high importance for global health, is vaccine purchasing for developing countries. While having limited purchasing power, as found in the pre-study of this dissertation, some strategies carried out by humanitarian organizations have influenced the supply market (see P1). For example, WHO initiatives to increase local production within developing countries have increased the number of suppliers.

Drawn on resource dependency theory, a two-way relationship was predicted between purchasing power and purchasing strategies. The theoretical predictions were then explored in the multiple-case study of vaccine buyers for developing countries.

### **Main contributions**

In this study, we connected to the ongoing conversation on inter-organizational power (e.g. Pfeffer and Salancik, 2003; 1978) and its connection to purchasing strategies (Dubois and Pedersen, 2002; Cox et al. 2002). Based on the multiple-case study of vaccine procurement for developing countries, the framework in Figure 21 was developed, predicting an interrelation between purchasing strategies and sources of purchasing power. Our aim was not to prescribe a framework of how purchasing strategies *should* interact with “purchasing power”, but to develop a framework to explain how the two constructs interact based on our observations.

The first contribution of this study is to purchasing literature by the focused study of less-powerful buyers, and how their purchasing strategies practiced interrelate with their purchasing power. In this study, cases did not consider themselves within power positions in setting purchasing strategies. In deciding which source of power to respond to, we observed our cases to respond to those sources of power that they perceived more challenging.



**Figure 21 Proposed framework on purchasing strategies and purchasing power**

This study contributes to the RDT literature by making a further distinction between adaptation and safeguarding as purchasing strategies' orientation of response. RDT suggests that organizations respond to power constraints by either adapting to the situation or attempting to change it (Pfeffer and Salancik, 2003). In this study, a further distinction between safeguarding and adapting to a situation was made. Adaptation is more oriented towards forfeiting power, and safeguarding is more of a defense orientation. For example, while one case merely adapted to the very low purchasing power situation by outsourcing its purchasing process to a buyer with better purchasing power, another case safeguarded against low power constraints (specifically from low trust) by strategizing short-term and highly formalized relationships; and yet, another case attempted to change the situation (increase the level of trust) by long-term and more socialized relationships. Safeguarding or attempting to change the situation can change the level of sources of power and can possibly change the purchasing power. No evidence of adaptive strategies changing the level of sources of power, was found in our study.

The study also contributes to purchasing literature by extending the concept of inter-organizational power to the "purchasing power" of a buyer facing varying options in the supply market. In this view, power was not viewed within the dyad of established or future relationships, but was rather viewed as the leverage a buyer has in entering a relationship with the available options in the supply market. The identified sources of power reflect this view. Additionally, while several studies have mentioned the factors giving rise to higher or lower power, suggestions were inconsistent. This paper, adds to this stream of literature, by combining the factors identified in different articles, and introducing a categorization of factors giving rise to higher or

lower purchasing power referred to as “sources of power”. In addition, we also found purchasing related regulations (such as public procurement regulations or self-sufficiency regulations) to also be sources of power, giving rise to higher or lower purchasing power and affecting the choice of purchasing strategies (see Figure 21). The impact of purchasing strategies on regulation is not fully clear and requires more studies.

Finally, this study contributes to RDT literature, through re-contextualization of predictions to that of nonprofit buyers. The interrelation between sources of power and purchasing strategies was confirmed for the nonprofit vaccine procurement for developing countries. Specifically for vaccine procurement, while quality was the critical and driving factor in purchase, price was a constraining factor for buyers with limited funding. In other words, buyers select suppliers that can accommodate quality and volumes within the limited funding they have. The implication of this finding is for model developments for purchase of vaccines in this context.

Discussions in this paper relate to all three dissertation questions as stated in Table 18.

**Table 18 Findings of paper 2 in relation to research questions**

<b>Research question</b>	<b>Findings of the paper</b>
1	Examples of several purchasing strategies practiced by less-powerful buyers facing the same supply challenges.
2	In response to constraints from sources of power, less-powerful buyers practice purchasing strategies to either 1) adapt to the constraints, 2) safeguard against them, or 3) attempt to change the situation in their favor.
3	In safeguarding or in attempts to change orientations, purchasing strategies directly impact sources of power and the cumulative effect of these changes in sources of power can contribute to a better purchasing power.

### **5.3 P3 - Empowering the underdog buyer**

#### **Objective**

Findings of the multiple-case study were further discussed in this paper. In the paper it was especially aimed to investigate how purchasing strategies practiced by less-powerful buyers can affect their purchasing power, or in other words, the arrow going from purchasing strategies to sources of power in Figure 21. Management literature widely suggests purchasing strategies to be set in response to power constraints, to adapt to, or change them (e.g. Cox et al. 2002; Pfeffer and Salancik, 2003). In the most direct form, purchasing strategies impact the source of power (e.g.

Pfeffer and Salancik, 1978) and in doing so they can change the purchasing power. Naturally, buyers with low purchasing power should incorporate purchasing strategies that increase their power. In practice, buyers might also adapt to the power constraints (cf. Pfeffer and Salancik, 2003). The question raised is how these buyers can change their less-powerful position. This question is directly related to the second research question of this dissertation. In other words understanding how purchasing strategies impact the purchasing power will illustrate what aspects less-powerful buyers should consider, to change their position.

In this study, we aim to investigate “how” purchasing strategies practiced by these less-powerful buyers can affect their purchasing power, and thus extend theoretical predictions. Most previous studies consider buyers the influential partner, with few addressing strategies by the less-powerful partner (Bastl et al. 2013, is among the first, studying consortia formation by weaker partners). We investigate the question in the multiple cases of developing countries buying vaccines. Buyer strategies against the same dominant supply-market make the context suitable for this study, the changed assumptions compared to theories used, makes the context interesting. Suggestions of Emerson (1962) for weaker partners in a social setting are extended to the purchasing context and a classification for purchasing strategies that can improve purchasing power for less-powerful buyers is introduced.

## **Main contributions**

In this study, we empirically investigated strategies practiced by weaker partners and their impacts on buyer power (cf. Bastl et al. 2013). A main contribution of this paper is using and extending Emerson's (1962) suggestions for weaker partners in a social relation to that of inter-organizational relations. Consequently, a classification of purchasing strategies for less-powerful buyers is proposed, adding two strategy groups of socialization and formalization to Emerson's (1962) original four: withdrawal, network expansion, status increase, and coalition formation strategies. Withdrawal can be practiced by complete termination of the relationship and replacing the supply channel with backward integration, functional outsource of purchasing to a third party, or shift of business focus (cf. Kraljic, 1983), or partial relationship withdrawal such as decrease of information shared. Withdrawal and formalization strategies are predicted to only improve buyer's purchasing power up to a moderate level, while the other four strategy groups have the possibility of making better improvements. Mixed strategies are advised to mitigate unfavorable outcome of some strategies depending on the context. For example, network

expansion can mitigate coalition formation's result on concentrated markets. Further in-depth studies on each of these strategies are required to more clearly understand their outcome for buyers.

Another contribution in this paper, similar to P2, is re-contextualizing the RDT theories to the nonprofit purchasing domain of the humanitarian sector (e.g. RDT suggestions by Pfeffer and Salancik, 2003; or Cox et al. 2002 model), while these models were originally developed for the profit domain of the commercial sector. The results confirm RDTs predictions that purchasing strategies can affect purchasing power for or against buyers in our context. However, firstly the sources of power are affected, which their cumulative effect can possibly, but not necessarily, change purchasing power. Buyers in this context, while not always striving to maximize their power (cf. Cox et al. 2001), responded to constraints from sources of power. Through such response sources of power were affected; whether realized or planned. So, buyers are recommended to consider the impact of their purchasing strategies on all sources of power to increase their leverage.

As summarized in Table 19, findings of this paper are directly related to research questions 1 and 3 of the dissertation.

**Table 19 Findings of paper 3 in relation to research questions**

<b>Research question</b>	<b>Findings of the paper</b>
1	Introducing a classification of purchasing strategies for less-powerful buyers based on Emerson's (1962) suggestions for social relations and our multiple-case study: 1) withdrawal, 2) network expansion, 3) status increase, 4) coalition formation, 5) socialization and 6) formalization strategies.
3	Purchasing strategies directly impact sources of power and the cumulative effect of these changes in sources of power can change buyer's purchasing power for better or worse. The classification of strategies given in this paper can impact sources of power in different extents.

Having explained the interrelation between purchasing strategies and purchasing power, and understanding how purchasing strategies can impact power, in the next study it was aimed to extend these predictions in the case of one of the purchasing strategies found and less studied in literature (i.e. the single case study of the dissertation).

## **5.4 P4 - Avoiding the pitfalls of cooperative purchasing through control and coordination**

### **Objective**

This paper is the first outcome of the single case study in which the understanding gained from the cooperative purchasing strategy was elaborated and set as the base for deeper analysis in the next paper. We aimed to further our understanding of the cooperative purchasing strategy, its attractiveness and inherent complexity. Cooperative purchasing is a practice in which a number of buyers pool their purchasing functions. Pooling demand and expertise, and centralizing administration and management, make the practice attractive. The practice has gained popularity in several industries where buyers face challenging purchase situations and seek to increase their bargaining power, such as between airlines, health centers, government organizations and humanitarian organizations among others (cf. Bakker et al. 2006; Nollet and Beaulieu, 2005).

Cooperative purchasing has especially gained much popularity in the public sector since it is believed that it can “*reduce political risk, minimize ‘red-tape’, and, in some cases, avoid all reported social equity goals that are reported to increase costs*” (McCue and Prier, 2008:1). Red tape means constraints and procedural delays due to excessive laws, rules or procedures that cause compliance burden and decrease efficiency and flexibility (Pandey and Scott, 2002). Even though many benefits are identified for cooperative purchasing, there are several examples where benefits are not reached (e.g. see Schotanus et al. 2010). In general, research on cooperative purchasing is in its forming stages and suggestions regarding the value of the practice and circumstances leading to success or failure of cooperative purchasing are yet unclear. Studies on cooperative purchasing have looked into its structure (e.g. Bakker et al. 2005; Nollet and Beaulieu, 2005; Hendrick, 1997), benefits and success factors (e.g. Schotanus et al. 2010; Pedersen, 1996), and drivers and barriers (e.g. Walker et al. 2013). Failure of cooperative purchasing has been connected to its management, coordination aspects, and goal compatibility among others (e.g. Nollet and Beaulieu, 2005).

In this study, we specifically discuss barriers in success of cooperative purchasing, analyzed from a horizontal coordination perspective. A single case of an unsuccessful attempt among humanitarian organizations to jointly purchase their freight forwarding needs is reviewed. Connecting to the dissertation, this paper, discusses, in depth, a purchasing strategy typically practiced to increase leverage and motivations behind it.

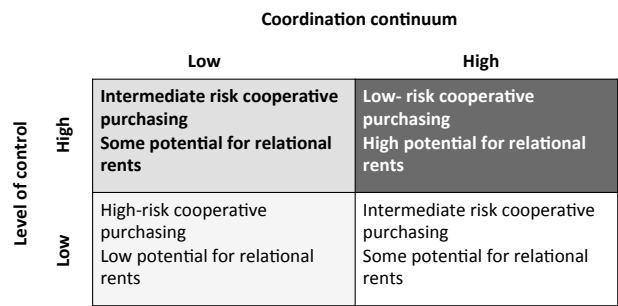
## **Main contributions**

In this paper, we connected to the literature on promises and pitfalls of cooperative purchasing and addressed reasons of failure for cooperatives from a horizontal coordination perspective. The study contributes to cooperative purchasing literature by shedding light on coordination related barriers of the strategy which have not been addressed before. Earlier studies discussed drawbacks and risks of cooperative purchasing efforts in terms of e.g. crowding out suppliers, but have revealed little to nothing about how inter-consortium dynamics can impact the outcome. One of the questions Schotanus et al. (2011) posed as unanswered in purchasing literature is the relationship between the organization of a purchasing group and its performance.

In this paper we elaborated on the joint tender process and the hurdles that our case organizations ran into. The initiative failed to meet its objectives mainly due to the fact that buying organizations were not sufficiently coordinated. There was a lack of inter-organization communication before entering into the tender and a false belief about shared expectations and process overlaps. In addition, the process was delayed due to staff turnover and organizational politics. The lack of formal control was also highlighted as an issue, along with bureaucracy, turf protection and risk adverse attitudes. The term and requirement differences which were not problematized and decided for during the specification phase, made the outcome fragmented rather than collective.

The framework in Figure 22 was proposed depicting high or low probability of successful cooperative purchasing. As illustrated in the framework we contend that lack of sufficient coordination in combination with low levels of control increases the risk of failure of the cooperative purchasing strategy. High level of coordination requires shared procurement standards and uniform rules and regulations, willingness to share resources with other consortium members in order to attain synergy effects, knowledge exchange and information transparency as well as genuine commitment of all members and a willingness to compromise for the good of the group. Simultaneously, the potential to reap relational rents through the practice of cooperative purchasing is also dependent on the existence of a functioning governance mechanism either in terms of high levels of inter-organizational trust or in the absence of such, formalized control such as a contract stipulating joint policies, principles regarding risk and reward sharing, dispute resolution procedures or exit clauses (Dekker, 2004; Dyer and Singh, 1998, Xu and Beamon, 2006). This framework does not indicate that absence of control mechanisms or coordination will

result in the consortium’s failure, but that the risk of failure is high in such circumstances. Further research should study the generality of this framework within other contexts.



**Figure 22 A coordination framework for successful cooperative purchasing**

It is worth mentioning that communication is an important success factor in coordination, which requires extensive studies on issues such as how much to communicate with which partner. In our case, however, we found that on the one hand, the earlier discrepancies are detected among participating organizations the lower the associated risk and costs will be. On the other hand, too much and too detailed communication, especially too early in the process, can risk no buy-ins. Additionally, in the context of cooperative purchase of logistics services, purchasing strategies and requirements of the associated commodities should also be considered at the specification phase of the process.

Furthermore, previous studies had suggested several gains and drawbacks for suppliers (e.g. Cadwell et al. 2005; Hendrick, 1997), but the perspective of the suppliers towards the practice was not clear. Suppliers in our case perceived the drivers of the joint tender to be much in line with buyer intentions. However, the emergent discrepancy between buyer communication and actual intentions caused frustration among suppliers. Drivers of cooperative purchasing, on the other hand, identified in this study corresponded to suggestions in earlier research despite the fact that many of the previous studies have been carried out in a private rather than a public sector environment. Thus, it seems that the drivers of cooperative purchasing are not context dependent. In contrast to earlier research, however, we found that the cooperative purchasing initiative was also strongly driven by political pressure on and in the humanitarian sector to increase efficiency.

The results of our study imply that cooperative purchasing is a difficult process, which should not be entered into lightly. In the absence of trust and in turbulent environments, formalized control mechanisms should be developed in order to avoid opportunism and ensure fair risk and reward sharing. It is essential that involved buyers align their expectations and that the terms and requirements of the agreement between the buyers are communicated accurately to affected suppliers. We also suggest that consulting suppliers prior to establishing a purchasing consortium would be a good idea in order to find out if there are benefits to be gained from working jointly or if suppliers prefer working with each buyer individually. Suppliers may also be able to provide important insights into what is required in order to achieve economies of scale and significant financial benefits.

Connecting back to the dissertation study, this paper addresses the first research question by studying a purchasing strategy that is typically aimed at increase of purchasing power. By scrutinizing the drivers and motivations in initiation of the strategy, the paper also addresses the second dissertation research question (see Table 20). While the paper also touches upon reasons of failure, the strategy's impact on the purchase situation is not directly discussed.

**Table 20 Findings of paper 4 in relation to research questions**

<b>Research question</b>	<b>Findings of the paper</b>
1	Cooperative purchasing is commonly practiced by less-powerful buyers to increase purchasing power
2	The strategy was practiced in response to purchase challenge and with hope of increase leverage. While several cooperative purchasing-specific drivers motivated the practice, pressure within and on the sector was also a strong driver of the practice.

In the second paper on the single case study, the elements of the strategy were matched with our previously developed predictions on the interrelation between purchasing power and purchasing strategies.

## **5.5 P5 - Unfruitful cooperative purchasing**

### **Objective**

In this paper, we aimed to understand the impact of cooperative purchasing on buyer's purchasing power in the humanitarian sector. Purchasing in the humanitarian sector has traditionally been characterized by a low level of coordination due to inter-organizational

competition for funding, diverging mandates and other organizational differences. Recent pushes for increased efficiency and effectiveness are driving humanitarian organizations towards other strategies such as cooperative purchasing. Gustavsson (2003) suggests that organizations would gain increased leverage and price discounts by joining forces and according to Balcik et al. (2010) cooperative purchasing can lead to beneficial synergy effects. Schultz and Søreide (2006) further claim that cooperative purchasing can reduce the risk of corruption in emergency purchasing and thereby increase “*the integrity of the entire relief effort*”. Moreover, in their thesis focusing specifically on the cooperative purchasing of transportation services, Merckx and Gresse (2012) suggest that members benefit from decreased purchasing complexity, reduced lead time, new learning opportunities, as well as capacity sharing.

In anticipation of benefits discussed above, humanitarian organizations have begun developing various joint purchasing arrangements (Kovács & Spens, 2011:34). In reality, the effectiveness of the strategy in increasing purchasing power is unclear. Our study addresses this topic. In 1998, two humanitarian organizations decided to buy their freight forwarding needs in a joint tender. The success of the practice attracted more players and by 2010, the third round of the cooperative purchasing aimed at including more organizations with hopes of increasing benefits, especially the purchase power. But, the strategy did not deliver as expected.

By understanding and explaining this situation, we aimed to further understand the impact of cooperative purchasing on buyer’s purchasing power. So, the paper extends the understandings gained from the pre-study and the multiple-case study on all three of the research questions of the dissertation.

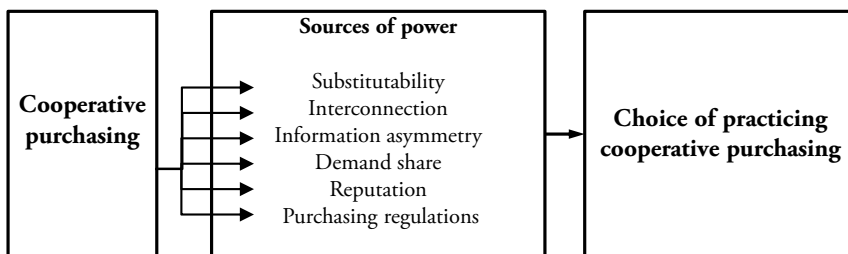
## **Main contributions**

This study contributes to the PhD dissertation by examining the predictions in the framework in Figure 21. In general, the study adds to our understanding of how purchasing strategies impact purchasing power. The cooperative purchasing strategy can be directly related to Emerson’s (1962) suggestion of forming coalitions. In forming coalition among a number of buyers facing the same supply market, theoretically, buyers should obtain more purchasing power and hence, associated benefits such as better contractual terms and negotiation power. In practice, several inter-agency cooperation challenges in strategy design and implementation process can impact this ideal outcome. In the case reviewed in this study, the coalition not only did not gain better purchasing power but also partly lost their previously developed negotiation power.

We found that cooperative purchasing can in fact impact all sources of power, which can potentially change the buyer's purchasing power. With competition being inherently reduced and demand share increased, for the outcome of consortia to benefit the coalition, their power should be more than that of the supplier base (cf. Bastl et al. 2013). This is while the impact of the strategy on other sources of power might not be favorable for buyers. In the studied case, the unfavorable impact of the strategy on other sources of power such as interconnection and reputation resulted in the purchasing power not improving for the buyer consortium.

Thus, the framework in Figure 23 is suggested for the relation between cooperative purchasing and purchasing power. It is suggested that practice of cooperative purchasing can affect the level of sources of power. Additionally, changed levels of sources of power can impact the choice of practicing cooperative purchasing. The new levels might enforce or eliminate the expected benefits of, or the need for, practicing cooperative purchasing (see Figure 23). The changed level of sources of power can result in a changed power position. This impact is the cumulative result of all sources of power after practicing cooperative purchasing.

While evidence from our case confirms strive for better leverage to be a driver of the practice, buyers did not necessarily consider themselves within a less-powerful position. On the contrary, some buyers considered themselves within the buyer dominance position. Such perspective is also based on buyer's view of the scope of their business; e.g. in our case, whether buyers considered commercial firms in the same market or not. The perceptive and relative nature of power makes it difficult to detect a direct relation between power positions and the strategy. It should be further emphasized that strive for better leverage is not merely driven from a less-powerful position.



**Figure 23 The relation between cooperative purchasing and sources of purchasing power**

Thus, to increase leverage, buyers should focus on employing the cooperative purchasing strategy in a way to increase the combination of power sources, to consequently increase their overall

purchasing power. The paper shows that merely increasing demand share (e.g. volumes) will not suffice to increase overall purchasing power, if other sources of power are impacted in an unfavorable manner for the buyer. Of course, further empirical studies are needed to test the findings of this study in different contexts.

In Table 21, findings of this paper are directly connected to the research questions of the dissertation. This paper is the extension of the predictions made after the multiple-case study and conceptualized in the previous papers.

**Table 21 Findings of paper 5 in relation to research questions**

<b>Research question</b>	<b>Findings of paper 5</b>
1	Cooperative purchasing is practiced by less-powerful buyers to increase of purchasing power
2	The strategy was practiced in response to constraints from sources of power (see paper for details).
3	The strategy impacted purchasing power by effecting sources of power individually. The combination of the effects contested whether or not the purchase situation is improved.

In the next chapter, findings from all the papers are combined to discuss the answer to the dissertations research questions and to reflect back on the theoretical streams we embarked on.



*"When she thought it over afterwards  
it occurred to her that she ought to have wondered at this, but at the time it all seemed quite natural"*

*Carrol, 1865, Alice's Adventures*

## **6. Conclusions, Contributions and Future Research**

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*In this chapter findings are summarized and the answers to research questions are discussed. Then, theoretical and practical contributions of the study are revisited. Finally, limitation of this study and possible areas for future research are discussed in the last section.*

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This dissertation is among the first to empirically investigate purchasing strategies practiced by weaker buyers, and the impact of these strategies for the buyers (cf. Bastl et al. 2013). Management literature has widely discussed the influence of power on organizations (cf. Pfeffer and Salancik, 2003). Dubois and Pedersen (2002) suggest that many firms perceive power and dependence a challenge in purchasing. Buyers in general will benefit from knowing how their purchasing strategies impact their power (Pfeffer and Salancik, 2003). There are several studies within the purchasing field providing a classification of typical purchasing strategies according to different buyer-supplier power relations (e.g. Cox et al. 2002; Gelderman et al. 2008; Kraljic, 1983). Power is commonly viewed according to the relative buyer-supplier dependence, with less-powerful buyers being those highly dependent on their suppliers. The suppliers dominating such relationships are likely to refrain from any practice of power by their buyers, and the less-powerful buyers often find it difficult to substitute their supply source. Yet, the most studies focus on buyers as the influential partner in control of the purchase decision, and thus pay less attention to the less-powerful buyers (as suggested in studies like Bastl, et al. 2013).

In this dissertation, we aimed to: *understand how less-powerful buyers purchase what they need and how their purchasing strategies practiced impact their situation in terms of purchasing power*. The interrelation was studied among less-powerful buyers in the humanitarian sector as an example situation.

In the next section, we will first discuss the general findings of the dissertation in the conceptualized model, address each research question independently and then review the

theoretical contributions and managerial implications of the findings. Finally, several topics and areas are recommended for extending the findings of this dissertation.

### 6.1 Developed framework and answer to research questions

Drawing on RDT, it was predicted that while purchasing power influences the choice of what purchasing strategy to practice, less-powerful buyers should be able to increase their purchasing power by practicing strategies that favorably change the level of sources of power (cf. Pfeffer and Salancik, 2003). Through a combination of studies done for the dissertation we found instances where less-powerful buyers had managed to increase their purchasing power (see papers 1, 2 and 3). However, several different strategies were being practiced by the cases studied, which were not all aimed at increasing the purchasing power.

Findings are conceptualized in the framework in Figure 24. In brief, there is a two-way relation between "purchasing strategies" and "sources of power". The framework is not prescriptive as to how purchasing strategies *should* interact with sources of power or “purchasing power”, but explains how the two constructs interact based on our observations. The framework is further elaborated in the answer to each research question below.

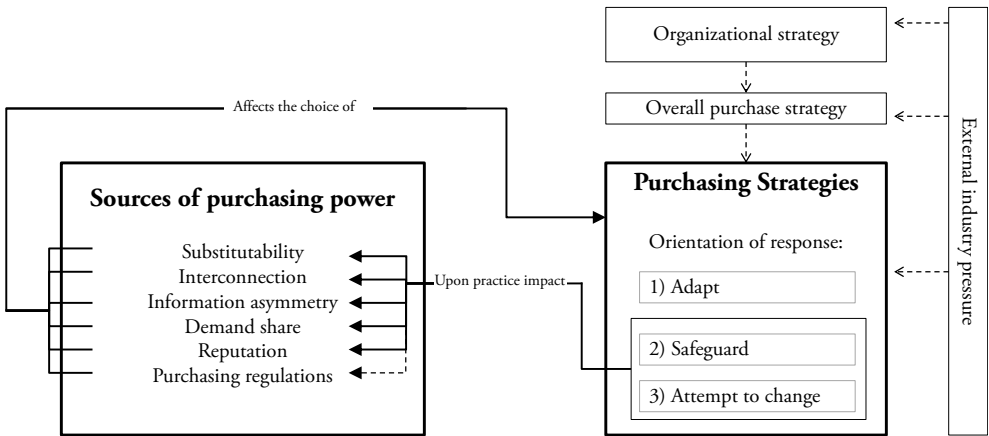


Figure 24 Proposed relation between sources of power and choice of purchasing strategies

### 6.1.1 What typical purchasing strategies do less-powerful buyers practice?

In studies in this dissertation, we observed three response orientations for less-powerful buyers; that is 1) safeguarding against constraints, 2) attempting to change the purchase situation in their favor, and 3) adapting to the situation (see “purchasing strategies: orientation of response” in Figure 24). Previously Pfeffer and Salancik (2003) had predicted that organizations respond to power constraints by either attempting to change the situation in their favor, or adapting to the situation. We make a distinction between safeguarding and adapting to the situation. While adaptation is more like forfeiting power, safeguarding is more of a defense orientation.

For example, in the multiple-case study in this dissertation, while one case (Zambia) merely adapted to high supplier leverage by outsourcing its purchasing process to a buyer with better purchasing power, some cases (Oman and Latvia) safeguarded by formalizing their supplier relationships in greater detail. Additionally, some cases attempted to change the situation by for example supporting supply market expansion (e.g. UNICEF or Iran in the multiple-case study) or practicing cooperative purchasing (e.g. Oman in the multiple-case study of the single case study example) (see papers 1, 3, and 5). Strategies oriented towards “safeguarding” or “attempting to change” the situation affect the sources of power and can change buyer’s purchasing power (see Figure 24).

Additionally, a classification of purchasing strategies that could improve the less-powerful purchase situation of buyers was introduced, as listed in Table 22 (see paper 3). Emerson (1962), historically, suggests that the weaker partner in an asymmetric power situation increase its power position by 1) withdrawing from the relationship, 2) expanding the relationship network, 3) improving its status or 4) forming coalitions with other weak parties. These suggestions were connected to sources of power and to the purchasing strategies practiced by cases in our studies, and extended to the purchasing context for less-powerful buyers. Two additional groups of strategies were also identified, namely 5) socialization and 6) formalization strategies. Examples of all these strategy groups practiced by the cases were observed. Purchasing strategies within these groups can improve the less-powerful buyer's situation to different degrees, dependent on the cumulative change of sources of power.

**Table 22 Typical purchasing strategies practiced by less-powerful buyers**

<b>Purchasing strategy groups</b>	<b>Definitions</b>	<b>Examples in each group</b>
1) Withdrawal	Buyer refrains part or all of its commitment to the relationship.	Relationship termination Functional outsource of purchasing or parts of its process Withdrawal in amount or scope of information sharing
2) Network Expansion	Buyer adds to its supplier network in order to reduce its dependence.	Diversification strategies Multiple sourcing Global sourcing (in case of limited local availability) Supplier development
3) Status improvement	Buyer employs methods to improve its status within the network to increase its attractiveness as a partner.	IT investments Fundraising strategies (e.g. in the humanitarian sector)
4) Coalition formation	The less-powerful buyer forms a coalition with another less-powerful partner in the network to jointly have a better power position.	Demand pooling Cooperative purchasing Partnership development with smaller and new suppliers
5) Socialization	The less-powerful buyer increases socialization efforts with the powerful suppliers to decrease uncertainties through developed cooperative norms.	Future agreements (non formalized) Partnership development Long-term relationship development Soft contracts
6) Formalization	The buyer explicates the commitments, processes or the transaction, to reduce uncertainties.	Detailed contractual agreements Future contracts (formalized)

Different purchasing strategies in each strategy group can have different orientation of response. For example, in the formalization group, detailed contracts have a “safeguarding” orientation, but future contracts “attempt to change” the purchasing situation. In general, withdrawal strategies are aimed to detach from sources of power, while the other five purchasing strategy groups aim to change the status quo. In the case of withdrawal strategies, the decision on how to replace the supply source determines the effect on a buyer's purchasing power. For instance, outsourcing the purchasing function to a proficient third party can potentially improve the situation more than refraining from information sharing.

### **6.1.2 Why do less-powerful buyers practice the purchasing strategies they do?**

Similar to predictions for the commercial sector, purchasing strategies in the humanitarian sector were also carried out in line with the overall purchase strategy of the organization, which in turn was a reflection of the general organizational strategy (e.g. Van Weele, 2010; Nollet et al. 2005; see top right part of Figure 24). The overall organizational strategies in the humanitarian sector are nonprofit and aimed at satisfying national or global welfare requirements. Lowering prices is an overall purchase strategy of many buyers in the sector. However, with the limited funds available in the sector, price seems to be more of a constraint in selecting suppliers than a driver in purchasing decisions. In other words, buyers select suppliers that can accommodate other requirements like quality, capacity and volumes within their funding limits. Additionally, possible external industry pressures (which in turn affect organizational strategies and overall purchase strategies) also impact the choice of purchasing strategies (see far right of Figure 24). For example, if a country's aim in regards to vaccines was to ensure immunization at any cost, securing supply would be a likely higher-level purchase strategy. In another example, the external pressures in, and on, the humanitarian sector to increase efficiency partly drove the cooperative purchasing strategy.

Within this overall organizational purchase strategy, buyers practiced purchasing strategies in response to constraints and limitations enforced by sources of power individually (in reality, the response was to indicators of each source of power, which were grouped into five sources of power in analysis), and did not necessarily respond to the cumulative effect of the sources of power (see arrow from left to right Figure 24). Cases in the studies of this dissertation did not consider themselves within power positions (cf. Cox et al. 2002) in practicing purchasing strategies, but responded to those constraints that seemed most prevalent or challenging.

Several studies have developed models in which purchasing strategies are aligned with the power position of buyers (e.g. Cox et al. 2002; Gelderman et al. 2008; Caniels and Gelderman, 2005; Kraljic, 1983). However, with the discrepancy in perception of power within a network of dependent buyers and suppliers, the applicability of such models should be revisited. Such discrepant understanding of one's power in a relationship can explain the tendency to respond to constraints from sources of power, as opposed to power positions. Further research is needed to investigate this behavior in other contexts than low power and humanitarian buyers.

### **6.1.3 How do purchasing strategies practiced by less-powerful buyers, impact their buying situation in terms of their purchasing power?**

Purchasing strategies, in turn, impact the level of power sources (see Figure 24). The cumulative level of affected sources of power can change the buyer's purchasing power position. This change is not always favorable for the buyer and is dependent on the strategy's impact on all sources of power. For example, in the study of cooperative purchasing, while demand share was improved, the unfavorable impact of the strategy on other sources of power resulted in a non-increased leverage for the buyers involved (see paper 5).

Findings from the studies confirmed the predictions that purchasing strategies can affect purchasing power of less-powerful buyers, within the humanitarian context (see papers 1, 3 and 5). Buyers in this context did not always strive to maximize their power (cf. Cox et al. 2001), and some had merely adapted to the situation. Strategies practiced to "safeguard" in "attempt to change", had impacted the sources of power though (see orientations of response in Figure 24). The impacts had not always been planned, and in some situations were realized as the consequence of the practice. Power sources are of course also subject to change by other factors not directly resulting from purchasing strategies, such as market dynamics.

The introduced classification of purchasing-strategy groups for less-powerful buyers (as suggested in Table 22 and paper 3) is proposed to affect sources of power to different degrees. Additionally, buyers rarely practice purchasing strategies in isolation, and strategies are usually practiced in combination. Thus, the effect of all strategies in such mixed forms should be analyzed with regard to sources of power. For example, the improved substitutability in the cooperative purchasing study was also the result of the combined multiple sourcing strategy (see paper 4 and 5).

The contributions of these findings to theory and practice are discussed below.

## **6.2 Contributions and implications**

Corley and Gioia (2011) suggest originality and utility as dimensions of contributions within management studies. Originality can be incremental or revelatory novelty, while utility can be practical or theoretical. Assessments have focused mostly on revelatory novelty and the theoretical utility of research. However, they argue that due to the nature of the management field, among other criteria, this focus should move towards also including the practical utility of research.

Among several others in the field (e.g. Van de Ven, 2007), they suggest knowledge to be a recursive dialogue between practice and meaning. This means to not only engage in the conversation with practice and study areas of significance and interest but also to influence these settings by “*prospective sense-making*”. In this manner, Corley and Gioia, (2011: 24) contend that perhaps to predict the future, the best way would be to “*influence the conversation about what it could or should be*”. This dissertation aimed to take one step in that direction. This dissertation was based on some of the challenges raised by humanitarian sector buyers, e.g. low negotiation leverage. It is hoped to influence the considerations carried out in the practice of purchasing strategies by showing possible consequences of their purchasing strategies based on different contextual factors.

LePine and King (2010: 507) mention “*synthesis of recent advances and ideas into fresh new theories*” as one area of theoretical contribution. This stream is often about integrating theories or theoretical perspectives to provide a theoretical structure that did not previously exist. They suggest such research to not only spark conversation among scholars but to also aim at resolving theoretical puzzles and empirical questions. In this research we aimed at combining a number of theoretical perspectives, and matching them with empirical cases, to provide a structure to answer our research questions.

## **6.2.1 Theoretical contributions**

This dissertation connects and contributes to the literature on 1) purchasing, 2) inter-organizational power, 3) humanitarian logistics, and 4) cooperative purchasing. Below the dissertation’s contribution to the literature are explicated.

### **6.2.1.1 Purchasing**

#### *The concept of purchasing power*

Firstly, this dissertation contributes to purchasing literature by introducing the concept of “*purchasing power*”, defined by extending the inter-organizational concept of power to that of purchasing. The concept of power in buyer-supplier relationships has been reviewed by several disciplines and several studies (e.g. Emerson, 1962, in sociology; Lusch and Brown, 1982, in marketing; Williamson, 1985, as control in transactions; Hingley, 2005, in relational marketing; or in political sciences). In buyer-supplier literature, power is viewed as an inter-organizational concept. However, this view does not depict the full extent of power relationships in making

purchasing decisions, where buyers face a number of suppliers within the market. Thus, it is suggested to extend the inter-organizational view (cf. Pfeffer and Salancik, 1978; Emerson, 1962) to the dependence of the buyer on its supply options or the supply market. Purchasing power, in this dissertation, is further operationalized in a framework illustrating the sources that give rise to higher or lower purchasing power (see Table 3, and papers 2 and 3).

In addition to the dynamic and relative aspects of power stressed in previous literature (cf. Pfeffer and Salancik, 1978; Emerson, 1962), in this dissertation the perceptive (i.e. perceived differently by the individuals practicing it), and multileveled (i.e. from interpersonal to inter-networks) aspects of the concept were also found important in studying purchasing power. In other words, while a buyer's purchasing power is dependent on suppliers' power in selling (i.e. relativity), and can change in time as a result of different sources (i.e. dynamism), it is also dependent on the perceptions of the beholders (which are not necessarily common among partners), and on the different level of dependencies (i.e. interpersonal, inter-organizational, and inter-networks). An example of the perceptive aspect of power is when, between two managers in a buyer organization, one perceives their purchasing power as dominant and the other perceives it to be interdependent; thus in the supply market some managers might perceive their selling power as dominant. Such discrepancies in perception can affect the interaction of practiced strategies.

Additionally, previous literature views power mainly as intra-organizational (Williamson, 1985), inter-organizational (e.g. Cox et al. 2001; Pfeffer and Salancik, 1978) or interpersonal (e.g. Hingley, 2005). It is contended that these views should be considered mutually in studying purchasing power and its impact on strategies. In this dissertation, this combination is addressed, implicitly, in the classification of sources of power. Intra-organizational sources of power address the internal organizational aspects that give rise to more or less power for the buyer (e.g. size, technological development, market share, etc.). Inter-organizational aspects are those that are relative to the supplier base / supply market (e.g. substitutability, information asymmetry, regulations, etc.). Finally, interpersonal aspects are reflected in the individual manager's power, the interconnection between the managers from different organizations, and the perception of managers about their organization's power. These aspects are determinant in discussion regarding power in purchasing.

### *Less-powerful buyers*

Secondly, the dissertation contributes to the purchasing literature, by focusing on less-powerful buyers. There are several studies within the purchasing field aiming to provide normative guidelines on how to interact with suppliers in different power positions (e.g. Cox et al. 2002; Gelderman, et al. 2008; Kraljic, 1983). While there are several low-buying power situations in practice, the focus of literature has been mainly on buyers as the actors in control (cf. Bastl, et al. 2013; Kraljic, 1983). This dissertation contributes to an increased understanding of the “supplier dominance” quadrant of portfolio models (e.g. Caniels and Gelderman, 2005; Cox et al. 2000; Kraljic, 1983).

The framework developed in Figure 24 of this dissertation contributes to the understanding of less-powerful buyers by showing how the purchasing strategies practiced by less-powerful buyers interact with sources of purchasing power. Our findings show that the less-powerful buyers in our context responded to constraints from sources of power and not to their aggregated affect.

Additionally, this dissertation also suggests a classification of the purchasing strategies that can improve a buyer’s purchasing power. Historically, Emerson (1962) suggests the following strategies for the weaker partners to increase their power position: 1) withdrawing from the relationship, 2) expanding the relationship network, 3) increasing status or 4) forming coalitions with other weak parties. In this dissertation, these suggestions were extended to the purchasing context, and a classification of purchasing strategy groups was introduced for less-powerful buyers to improve purchasing power. Two additional categories of 5) formalization, and 6) socialization, were added based on this dissertation’s studies.

### *Purchasing strategies and purchasing power interaction*

Thirdly, the framework developed in Figure 24 adds to the previous knowledge in purchasing literature on how purchasing strategies and power can interrelate. While studies such as Caniels and Gelderman (2005) and Cox et al. (2002) suggest performance benefits from alignment of purchasing strategies and buyers’ vis-a-vis relative suppliers, findings of this dissertation show how challenges, such as discrepancies in perception among individuals within an organization and individuals in partner organizations, can complicate such an alignment. Responding to constraints from sources of power instead of power positions can be due to such discrepancies in perception.

### **6.2.1.2 Inter-organizational power**

#### *Re-contextualizing RDT*

This dissertation contributes to inter-organizational power literature by re-contextualizing RDT predictions to the nonprofit buyer context of the humanitarian sector (e.g. RDT suggestions by Pfeffer and Salancik, 2003). Contrary to the commercial sector, where RDT was originally developed, products in the humanitarian sector are most often offered at no cost to final beneficiaries and thus the concept of customer satisfaction is not associated with profit generation (i.e. nonprofit). In this re-contextualization it was found that, similar to the predictions for the commercial sector, purchasing strategies are practiced in response to power constraints.

Additionally, in this response to power constraints, as depicted in the right box in Figure 24, a three-way orientation of response is suggested for purchasing strategies: to either a) safeguard against constraints from sources of power, b) attempt to change them, or c) merely adapt to the constraints. In the two latter orientations, we found evidence that the accumulated changed levels of sources of power can contribute to changed purchasing power. RDT originally suggested that organizations respond to power constraints by either adapting to the situation, or by attempting to change it (Pfeffer and Salancik, 2003). A further distinction between safeguarding and adapting to a situation is made in this three-way orientation of response.

### **6.2.1.3 Humanitarian logistics**

#### *Boundaries of humanitarian logistics*

Firstly, humanitarian logistics research is in its infancy (Tatham et al. 2009), and thus the boundaries of the field are not clearly defined. Literature has focused mostly on disaster response (response or preparedness), even though development projects are also part of the sector's mandate. By studying humanitarian operations that are not focused solely on disaster relief, this dissertation contributes to increased understanding of the boundaries of the field. More specifically, in the vaccine purchase study we looked at operations with a primarily development focus, but in the single case study freight forwarding services were purchased regardless of the disaster or development nature of the project and so included volumes from both. It is worth mentioning that studies in this dissertation are among several in the humanitarian logistics field adding to its definition of concepts, scope and limitations.

### *Purchasing by humanitarian buyers*

Secondly, the developed models and findings of the study, which are based on empirical evidence and managerial insights, contribute to increased understanding of the purchasing interactions between humanitarian buyers (countries and humanitarian organizations) and their supply markets. This contribution connects to the call for research in humanitarian logistics literature, both on a) purchasing and b) connected to managerial insights, and with managerial implications (e.g. Kovács and Spens, 2011). There is little research on purchasing-related aspects of humanitarian operations (Balcik and Ak, 2013; Falasca and Zobel, 2011), and in general, empirical evidence in humanitarian logistics literature is limited (e.g. Kovács and Spens, 2011; Jahre et al. 2009).

This dissertation contributes to increasing this understanding by empirically investigating purchasing strategies and practices in the humanitarian sector. Theories and models, developed for and used in the commercial sector, were applied to the humanitarian context to increase our understanding (in line with suggestions by Jahre et al. (2012) and Tatham and Pettit (2010)). In this dissertation, predictions of RDT were applied to the humanitarian -purchasing context. We found that constraints from sources of power impact the choice of purchasing strategies practiced by humanitarian buyers, and that purchasing strategies can impact the level of these sources of power, which in turn can change the purchasing power of these buyers. The overall purchasing strategies in humanitarian operations were found to be nonprofit, and aimed at satisfying short- or long-term relief demands. Respondents did not mention price as a driving factor in making purchasing decisions, but decisions were still practiced within the funding limitations (as also suggested by Jahre and Heigh, 2008).

### *Shift to “attempt to change” from “adaptive”*

Thirdly, the dissertation contributes to humanitarian logistics literature by showing the applicability of purchasing strategies with “attempt to change” orientation as compared to the common “adaptive” orientation of purchasing strategies in the sector. Due to reasons such as high demand and funding uncertainties, and purchasing regulation restrictions, long-term agreements are less prevalent in the humanitarian sector (Balcik et al. 2010; Erridge and McIlroy, 2002). In this dissertation, such traditional purchasing practices of the humanitarian context are challenged. We connect to the recent calls for innovative, coordinated and aligned strategies in the sector (Kovács & Spens, 2011; Gustavsson, 2003). In general, assumptions about the purchasing power

of the sector are split among individuals. However, few debate the lower power position in supply markets where buyers in this sector have to compete with the commercial sector. The traditional “*adaptive*” purchasing strategies to forfeit power and shift practices to fundraising activities are challenged in this dissertation.

Our studies revealed that less-powerful buyers such as those in the humanitarian sector could employ purchasing strategies to increase their purchasing leverage. In design and practice of purchasing strategies, thus, the impact of the strategy on all sources of power as identified in this dissertation should be considered. The *purchasing strategy groups* introduced in this dissertation for less-powerful buyers are developed based on the humanitarian sector, and classify purchasing strategies that can increase purchasing power.

#### **6.2.1.4 Cooperative purchasing**

##### *Horizontal coordination barriers of cooperative purchasing*

Finally, this dissertation also makes a contribution to the literature on cooperative purchasing by shedding light on coordination-related barriers of the strategy. The impact of inter-consortium dynamics of cooperative purchasing on its outcome has not been discussed in earlier studies (Schotanus et al., 2011). As proposed in the framework developed in Figure 22, lack of sufficient coordination in combination with low levels of control were found to increase the risk of failure of the cooperative purchasing practice. Furthermore, previous studies had suggested several gains and drawbacks for suppliers of partnering with purchasing cooperatives (e.g. Caldwell et al., 2005; Hendrick, 1997), but supplier perspective on the practice was not clear. Suppliers in our case perceived the drivers of the joint tender to be much in line with buyer intentions. Supplier perceptions on drivers and barriers of the practice were also in line with predictions in previous research.

#### **6.2.2 Practical implications**

The findings from this dissertation provide insight on what aspects less-powerful buyers should consider when practicing purchasing strategies in order to improve their purchasing power. The findings are relevant for organizations that are highly dependent on their supply options (i.e. less-powerful buyers), and specifically for such organizations in the humanitarian sector.

Buyers can use the definition and operationalization of “purchasing power” in this dissertation to gain a more complete understanding of what factors impact their purchasing power (see Table 3,

and papers 2 and 3), and how their purchasing strategies practiced can impact their purchasing power in the short and long term (see framework in Figure 24 and paper 2 and 3).

The dissertation shows that less-powerful buyers in general, and specifically in the humanitarian sector, can in fact increase their purchasing power by incorporating suitable purchasing strategies. In this dissertation, it is conceptualized how purchasing strategies impact purchasing power (see Figure 24) and predictions are made on what strategies can improve purchasing power and why (see Table 22 and paper 3). The purchasing strategy classification introduced in this dissertation (and in paper 3) can be used by less-powerful buyers to analyze possible approaches to increasing their purchasing power. In this respect, findings of the studies in this dissertation suggest what aspects less-powerful buyers should consider when aiming to increase their purchasing power (listed as sources of power).

Purchasing decision makers are advised to review findings of this dissertation on the impacts of purchasing strategies from both a short- and a long- term view, and to revise the side effect of some of their purchasing decisions. In each paper, some recommendations are provided in line with the findings. In a supply market highly regulated and concentrated, such as that of the vaccines market, purchasing strategies that limit the growth and entrance of new suppliers should be cautiously practiced (e.g. competitive bidding, tenders, awarding pooled demands to limited suppliers). In addition, high mutual trust and commitment can be developed through partnering with smaller suppliers with smaller current capacities. Investing in and partnering with local suppliers will increase the legitimacy of the buyer for these suppliers. The reason is the higher dependence of these suppliers on their local buyers.

Additionally, the explanation on how purchasing strategies interrelate with purchasing power, and the complexities of this interrelation, can help purchasing managers have a better view of how they can align their purchasing strategies with their purchasing power.

Papers 4 and 5 present lessons learnt from a specific case of “*cooperative purchasing*”. The findings on what had contributed to a less favorable outcome of this case can provide insights for organizations aiming to practice cooperative purchasing. When successful, cooperative purchasing has the potential to improve the performance of participating organizations. This dissertation provides important insights into what to consider when engaging in cooperative purchasing in order to avoid pitfalls. Coordination aspects, including a suitable control mechanism, a fair risk and reward sharing system, right level of communication, and a suitable decision style are

necessary in implementing the strategy. In designing the strategy, to increase purchasing power, the strategy's effect on all sources of power as identified in this dissertation should be considered, and not merely on volume. Other purchasing strategies such as multiple sourcing and partnership development can be mixed within the strategy design to achieve a more favorable outcome.

The results are also particularly relevant for the case organizations to better understand the advantages and disadvantages of their initiative. Findings of the study shed light on the various ways the cases are purchasing in the humanitarian context. Cases are purposefully selected to represent different purchasing strategies, and thus case descriptions provide insights into different ways in which similar constraints are handled.

### **6.3 Future research**

Several areas for future research are identified in line with the findings of this dissertation, and also areas not addressed. We first visit the possible future research on power in purchasing, then discuss future research on purchasing strategies connected to this dissertation, give specific recommendations for cooperative purchasing, and finally address future research topics in humanitarian logistics.

- Studies focusing on power distribution in a buyer-supplier network

To begin with, it should be stressed that power distribution in a network of buyers and suppliers is a very complex topic that cannot be explained by organizational strategies alone. In this dissertation, the aim was to explain how purchasing strategies interact with power, and not to explain all aspects of power. Future research should broaden the scope by looking at other factors, such as demand conditions and political context, which are also likely to influence the power distribution.

- Studies on supplier perception of purchasing power and purchasing performance.

Additionally, in this study, we only investigated *purchasing* power; i.e. limiting the scope to the buyer's interest, and thus those factors impacting buyer's purchasing power. So the supplier side is yet unexplored. An interesting question in this context is how suppliers set strategies in relation to buyer purchasing power; another is how purchasing strategies and supplier strategies interrelate in buyer-supplier power relations.

- Further studies on the impact and role of trust in power relations

In the same line of thought, the role of trust in power relations is yet unclear. Trust has been considered both an independent and a dependent variable in relation to power, and also a parallel factor impacting strategies (cf. Terpend et al. 2011; Cai and Yang 2008; Petersen et al. 2008; Heide and John 1990). In this study, trust is considered as an indicator for power, which can also be impacted by power relationships. However, the role of trust in power relations needs further extensive investigation.

- The level of impact different sources of power have on purchasing power in total

In the dissertation, the different weights given to sources of power were not investigated. However, it was observed that different decision makers respond to some sources of power more than others. Thus, it appears that that this weight is not related to the importance of the power source per se. Hence we propose that this importance is related to the level of challenge the source of power imposes; i.e. more challenging sources of power are regarded as more important. One area with potential contribution in this stream of research is to empirically investigate the level of impact each source of power has on strategies in multiple contexts.

- Studying the purchasing power post-relationship formation

Most studies (e.g. Terpend et al. 2011; Pfeffer and Salancik, 2003; Cox, 2001; Kraljic, 1983), including this dissertation, have focused on purchasing power before entering a relationship and its impact on strategies regarding which supplier to partner with and how. However, purchasing power is not affected entirely by the same sources of power when a relationship has formed with a partner. In such a situation, relationship stakes are higher and specific interconnections and information exchanges with this partner are stronger among other things. While some studies have noted some aspects important in buyer power in an established relationship (e.g. Cai and Yang 2008), the topic has not been explicitly studied and needs further conceptual and empirical theory building.

- Survey studies on 1) purchasing strategies for less-powerful buyers and 2) interrelation of purchasing power and purchasing strategies

In addition to in-depth case studies to increase knowledge in specific areas, larger scale studies are also recommended as an area of future research. With more data sources in survey studies, the propositions of the dissertation can be tested and further generalized.

- The role of “purchasing power positions” for supply strategies

In this dissertation, we developed a framework to *explain* how purchasing strategies interact with purchasing power, and not what the interaction *should be*. A main question remained unanswered though: will better outcomes be achieved if purchasing strategies are aligned with power positions instead of sources of power (as suggested by Cox, 2001). The answer to this question requires comparative studies of the two situations. The studies should also explore applicability of such models in buyer-supplier networks given the complex nature of power relations, specifically in relation to its perceptive, multi-level and relative nature.

- In-depth study of specific purchasing strategies for less-powerful buyers

Connecting to the discussion on multiple versus single case study research, in-depth study in specific areas raised in the findings can contribute to the literature. Scrutinizing specific purchasing strategies, with the aim of better understanding them, is a recommended area for future research. As in papers 4 and 5, one interesting exploration for future research is to investigate motivations and impacts of other purchasing strategies in greater detail. Longitudinal in-depth studies on how specific purchasing strategies (i.e. competitive bidding, socialization strategies, diversification strategies, formalizations, local purchasing, and outsourcing part or all of purchasing) affect purchasing power for less-powerful buyers are required. Such studies would add deep insight especially into less explored strategies such as outsourcing the purchasing process (i.e. in the “withdrawal” strategy group).

- Drivers and outcomes of “*opposing*” strategies in response to the same market constraints

Deeper investigation into drivers and outcomes of presumably “*opposing*” strategies towards the same supply market constraints is also an interesting area to be further explored; e.g. what drives some buyers to practice detailed contracts and some soft contracts towards low supplier trust, and the outcome of each strategy; or why some buyers opt for global sourcing, while others invest in local purchasing, and what the outcomes are for the buyer.

- More studies on cooperative purchasing strategies

Cooperative purchasing theories can in general greatly benefit from increased in-depth case studies from different contexts and sectors. Further studies could also study risk and reward allocation both within the purchasing consortium and between buyers and suppliers. Different attributes of coordination should also be studied in more detail. Specifically, appropriate control

mechanisms for the success of cooperative purchasing forms are a critical aspect in need of further research. Cooperative purchasing can also be mixed with other strategies to get a more favorable output (e.g. combined with multiple sourcing or supplier partnerships). The connection between such mixed strategies and the outcome on purchasing power should also be subjects for further studies.

- Further studies on the humanitarian – commercial sector relationships

Two specific purchase instances were investigated in the dissertation. Cross-border nature of buyer-supplier exchanges in this context makes the relationships challenging. However, the barriers to successful partnerships and benefits or drawbacks of such partnerships are yet unclear. More studies investigating the nature of relationships between humanitarian and commercial organizations, incentives and motivation to such partnerships, added value of such partnerships, and barriers to it can contribute to theory.

- Extending the topic of the dissertation to the emergency relief context

This study focused on ongoing purchasing strategies within the humanitarian sector. Studying the phenomenon in the emergency relief context where specificity, quantity and timing of demand are highly uncertain, and exchange relations are inconsistent, can extend the theory to a new context.

- Further empirical evidence from humanitarian logistics operations

Finally, and in general, humanitarian logistics is in its infancy and in need of models and theories to describe and explain its dynamics (Kovács and Spens, 2011; Jahre, et al. 2009). Humanitarian supply chains are challenging and contain interesting areas to be investigated. Literature in this area can benefit from research that empirically investigates barriers to performance, and areas of improvement. Deeper investigation in any of the supply chain areas can contribute to the final access of beneficiaries.



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## Appendix A

List of factors giving rise to higher or lower purchasing power based on reference and partner

Attribute of power	Measurement (References)
Mutual	<ul style="list-style-type: none"> <li>• <b>Size</b> (Kahkonen and Virolainen, 2011; Stannack, 1996; Katrichis and Ryan, 1998)</li> <li>• <b>Brand</b> (Kahkonen and Virolainen, 2011; Cox, 2001; Ford et al. 1998; Ramsay, 1996; 1994)</li> <li>• <b>Legitimacy</b> (Kahkonen and Virolainen, 2011; Pfeffer and Salancik, 1978)</li> <li>• <b>Capacity utilization</b> (Kraljic, 1983)</li> <li>• <b>Technology stability</b> (Kahkonen and Virolainen, 2011; Caniels and Gelderman, 2005; Porter, 1985; Kraljic, 1983; Ford et al., 1998)</li> <li>• <b>Cost and price structure</b> (Kahkonen and Virolainen, 2011; Kraljic, 1983; Katrichis and Ryan, 1998)</li> <li>• <b>Economies of scale</b> (Cox, 2001)</li> <li>• <b>Sale / purchase volume and price</b> (Kahkonen and Virolainen, 2011; Kraljic, 1983; Pfeffer and Salancik, 1978)</li> <li>• <b>ROI and ROC</b> (Kraljic, 1983)</li> <li>• <b>Type of product/ strategic importance of product</b> (Kahkonen and Virolainen, 2011; Caniels and Gelderman, 2005; Porter, 1985; Katrichis and Ryan, 1998; Pfeffer and Salancik, 1978)</li> <li>• <b>Importance of relationship</b> (Kahkonen and Virolainen, 2011; Ford et al., 1998; Pfeffer and Salancik, 1978)</li> <li>• <b>Dependence between partners</b> (Kahkonen and Virolainen, 2011; Cox, 2001; Pfeffer, 1981; Pfeffer and Salancik, 1978)</li> <li>• <b>Investment in the relation by partners</b> (Kahkonen and Virolainen, 2011)</li> <li>• <b>Expertise and know-how</b> (Kahkonen and Virolainen, 2011; Katrichis and Ryan, 1998)</li> <li>• <b>Resources, capabilities and competences</b> (Kahkonen and Virolainen, 2011; Gelderman and Van Weele, 2004; Stannack, 1996; Ford et al., 1998)</li> <li>• <b>Information control</b> (Kahkonen and Virolainen, 2011; Cox, 2001; Katrichis and Ryan, 1998; Pfeffer, 1981; Pfeffer and Salancik, 1978)</li> <li>• <b>Position in communication flow</b> (Katrichis and Ryan, 1998)</li> <li>• <b>Perceived importance in decision</b> (Katrichis and Ryan, 1998)</li> </ul>
Supplier	<ul style="list-style-type: none"> <li>• <b>Availability of quality material</b> (Kraljic, 1983)</li> <li>• <b>Market size</b> (Kraljic, 1983)</li> <li>• <b>Market and capacity growth</b> (Kraljic, 1983)</li> <li>• <b>Financial stability</b> (Caniels and Gelderman, 2005; Kraljic, 1983)</li> <li>• <b>Uniqueness of product</b> (Cox, 2001; Kraljic, 1983; Ford et al., 1998; Pfeffer, 1981; Pfeffer and Salancik, 1978)</li> <li>• <b>Alternative buyers</b> (Caniels and Gelderman, 2005)</li> <li>• <b>Logistics situation (lead-times, delivery, cost, etc)</b> (Kahkonen and Virolainen, 2011; Caniels and Gelderman, 2005; Stannack, 1996; Kraljic, 1983)</li> <li>• <b>Buyer switching costs</b> (Caniels and Gelderman, 2005)</li> </ul>
Buyer	<ul style="list-style-type: none"> <li>• <b>Availability of product substitutes</b> (Kahkonen and Virolainen, 2011; Kraljic, 1983; Porter, 1985; Pfeffer, 1981; Pfeffer and Salancik, 1978)</li> <li>• <b>Market share</b> (Cox, 2001; Tang, 1999; Ford et al., 1998; Kraljic, 1983)</li> <li>• <b>Demand and capacity growth</b> (Kraljic, 1983)</li> <li>• <b>Main competition</b> (Kraljic, 1983)</li> <li>• <b>Profitability of main and end products</b> (Kraljic, 1983)</li> <li>• <b>Cost of non-delivery</b> (Kraljic, 1983)</li> <li>• <b>Own production or integration capability</b> (Tang, 1999, Kraljic, 1983)</li> <li>• <b>Entry barriers (know-how and capital requirements)</b> (Kraljic, 1983; Batt, 2003)</li> </ul>

	<ul style="list-style-type: none"> <li>• <b>Entry cost for new sources versus cost of own production</b> (Kraljic, 1983)</li> <li>• <b>Supplier switching cost</b> (Kahkonen and Virolainen, 2011; Caniels and Gelderman, 2005; Cox, 2001; Batt, 2003; Tang, 1999; Porter, 1985)</li> <li>• <b>Availability of multiple suppliers in the market</b> (Batt, 2003; Kahkonen and Virolainen, 2011; Caniels and Gelderman, 2005; Cox, 2001; Tang, 1999; Pfeffer, 1981; Pfeffer and Salancik, 1978)</li> <li>• <b>Reliability in payment</b> (Tang, 1999)</li> <li>• <b>Supplier development programs</b> (Tang, 1999)</li> <li>• <b>Perceived importance of the purchase</b> (Batt, 2003; Katrichis and Ryan, 1998; Pfeffer and Salancik, 1978)</li> </ul>
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## Appendix B

Layout of the emails sent to case representatives in the “Multiple-case study”

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*To whom it may concern,*

*Hi- We, at the University of Lund in Sweden, are conducting a study on vaccine procurement. Through our study we have come across X as one of the actors within the vaccine supply chains. We also realize that X is practicing ..., which is a very interesting strategy in the market. So we would extremely appreciate a chance to understand the mechanism better.*

*Our aim is to investigate how buyers within the vaccine supply chain to developing countries set and carry out purchasing strategies in relation to suppliers. The outcome of the study will be increased understanding of the main issues and possibilities to improve purchasing (and hence availability) of vaccines from suppliers.*

*If possible I would appreciate a chance to have a telephone interview of 1-2 hours with the person responsible for vaccine procurement or planning (or if you would rather we can send you questions and get a written response). Questions will be about purchase strategies and practices, and the impact on market and supply.*

*I would happily send you a summary of findings from questions and also a copy of the final study upon completion. I highly hope for your interest and participation in the study.*

*We highly appreciate your assistance in the matter.*

*Looking forward to your response*

*Highest regards*

*Lund University, Sweden*

*Contact person:*

*...*



# Appendix C

The data collection guide (interview guide) for the “Multiple-case study”

## Study of vaccine procurement- XX

### General background to the research

*My name is Ala Pazirandeh, a PhD candidate at University of Lund in Sweden. My research concerns delivery of global health related products to developing countries, with a focus on vaccine procurement. I aim to investigate how countries make and carry out purchasing strategies in relation to their suppliers. In the past two years I have been working to gain a perspective on the challenges and issues in the vaccine supply chain to developing countries. At this point, to get a deeper and objective understanding of the situation, I would appreciate your more detailed viewpoint as one of the main actors in this chain.*

*I will happily provide you with an executive summary of findings from this interview and from the final study upon your request.*

### Country: XX

Population / Size (number of employees):

Size of vaccine group (number of employees):

Average vaccine demand / Average volume of vaccine purchased:

Budget allocated to vaccine purchase / Average value of vaccine purchased:

### Respondent profile

Name:

Position:

Office:

Contact details:

### Background (all questions related to vaccines)

1. What is your office’s role in the vaccine supply chain to the final recipients in XX?
2. What is the main aim of your group in regards to vaccines?
3. How many years has XX been purchasing vaccines?
4. What is the main background (education / experience) of purchasers in your vaccine purchase group (e.g. supply chain managers, logisticians, purchasing specialist, accountant, finance, economist, medicine, etc)?
5. What are the main vaccine-types purchased by XX?

BCG	DT	DTP	DTP-HepB	DTP-HenB/Hib	DTP-Hib	HepB	Hib	IPV	JE	Measles	MMR	MR	OPV	TT	Vitamin A	YF	Other

6. Can you briefly explain how you specify the volume and specifications of the vaccine types purchased in XX?
7. Who are the main suppliers of vaccines to XX?

## Purchase strategies (all questions related to vaccines)

8. What common purchasing strategies does XX carry out to buy vaccines at the country's central level? (fill in boxes for strategies you carry out)

Competitive bidding (Reverse auction)	Extending current agreements	Detailed contract agreements	Investing in long-term supplier relationships	Supplier development	Purchasing through organizations like UNICEF	Spot purchase	Differentiated pricing for different suppliers	Purchasing several demand types from the same supplier	Other

- What is the reason behind taking these strategies as opposed to any other?
- Which of these carried out strategies do you think has affected the supply market and in what way? (e.g. competitive bidding maintaining competition and lowering prices?)

9. Does XX base relationship with selected suppliers on formal contractual forms or do you have informal agreement forms (not written in contracts) with them?

Strategy (%)	
Contract	
Informal agreement	

- Why?
- Do you think this strategy has affected the market in any way? (e.g. on competition, on prices, on number of suppliers, etc.)

10. What was the duration of the longest / shortest relationships XX has had with vaccine suppliers? Please explain?

11. Can you give the average percentage of the vaccine requirement that XX buys from local suppliers and the percentage from global?

	Percentage purchased (%)
Local	
Global	

- What is the reason behind this allocation?
- How do you think this allocation has affected the supply market?

12. Does XX practice any collaborative / group purchase with other countries (e.g. to purchase together with neighbor countries)?

If No:

- Why not?

If Yes:

- Why?
- How do you think this strategy has affected the purchase situation? (e.g. on competition, price, quality, availability, etc.)

13. Does XX reallocate any part of vaccine purchasing function to external partners (e.g. to UNICEF, consultants, or etc.)? For example purchasing through UNICEF as opposed to self-purchase?

If no: what is the reason?

If yes:

14. If yes, which part of purchasing and to who?
15. When and how did XX start relationship with this partner?
16. Who initiated relationship in the beginning (XX or the partner) and on for what reasons?
17. How often and how does XX communicate with (this partner or suppliers)?
18. How has this strategy changed the purchase situation for XX?

### Purchase profile (all questions related to vaccines)

19. Where do you perceive XX as a buyer in the four groups listed below? (mark the one relevant and explain)

Suppliers have dominance over the purchase relation	
XX has dominance over the purchase relation	
No one has dominance and are independent of each other	
Both are equal partners and dependent on each other	

20. How substitutable are the vaccine types XX purchases? (E.g. different medicine or vaccine can be used for the same disease)

There is only one specific vaccine for each disease	1	2	3	4	5	There are several alternative products for each vaccine
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21. How many suppliers are usually available for each vaccine type XX buys (max, min, and average)?

Maximum number available	
Minimum number available	
The average number available	

22. How does XX gather information on the supply market and the available suppliers?

23. Does XX carry out any strategies to diversify the supply base? (e.g. Source globally, Invest in developing local suppliers, look for product substitutes, etc.)

1. How do you think these strategies have affected the supply market?

24. Does XX have any preferred criteria in choosing suppliers? If yes, what?

25. How does XX select suppliers? (Please indicate the selection approach)

- What is the motivation behind selecting suppliers this way?
- Do you think this strategy has affected the market in any way? (e.g. on competition, on prices, on number of suppliers, etc.)

26. How often, are new suppliers introduced in the market?

27. How often does the vaccine supply market experience mergers, acquisitions, or supplier?

28. How often does XX update supply market information? And how?

29. How regulated is the vaccine market XX buys from?

Not regulated at all, any supplier can enter the market	1	2	3	4	5	There are strict regulations imposed on suppliers
---	---	---	---	---	---	---

30. Compared to suppliers how much control does XX have on specific purchase decisions?

Very little control, the supplier has full control over purchase decisions	1	2	3	4	5	Total control, we have full control over purchase decisions.
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31. How important are established relations with suppliers for XX?

Not important at all	1	2	3	4	5	Extremely important
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32. How much does XX trust its vaccine suppliers?

We have no trust in our suppliers	1	2	3	4	5	XX extremely trusts suppliers
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33. How much is XX committed to its vaccine suppliers? (to for example continue purchase from them.)

No commitment to any supplier	1	2	3	4	5	XX is extremely committed to suppliers
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34. How costly it is to switch suppliers?

There is minimum cost to switch suppliers	1	2	3	4	5	It is extremely expensive to switch suppliers
35. How easy is it to change suppliers?						
It is very easy to change suppliers	1	2	3	4	5	It is extremely difficult to change suppliers
36. How often does XX experience shortage of vaccines due to wrong specification (volume and/or type)?						
Never	1	2	3	4	5	All the time
37. How often does XX experience shortage of vaccines due to low budgets?						
Never	1	2	3	4	5	All the time
38. How much control does XX have over information regarding a specific purchase compared to suppliers?						
Suppliers control all information in a specific purchase	1	2	3	4	5	XX has full control over information regarding the purchase
39. How much information regarding a specific purchase does XX you share with its suppliers?						
No information	1	2	3	4	5	All known details of the purchase
40. Has XX ever experienced shortage of vaccines due to lack of knowledge about how to purchase?						
Never	1	2	3	4	5	All the time
41. How much of the total market for a specific vaccine type, does XX's purchase consist?						
Very small considered to transaction in market	1	2	3	4	5	A considerable part of the exchange in market
42. What kind of information does XX share with its suppliers? (Product specifications, demand forecast, budget, future demand, etc.)						

43. Which of these shared information do you think has affected the supply market and in what way? (e.g. on the supplier relationships, on availability of vaccines, on price, etc.)

44. In selecting suppliers does XX have any preference for any specific brand or organization?

### Final remarks

- Is any of the supply market-characteristics impacting purchase decisions and strategies that XX takes? If yes which ones and what strategies?
- Does XX carry out any specific initiatives or purchase decisions to affect the supply market to your benefit?
- Any final comments?

Thank you for your valuable input to our study

Best of regards

Ala Pazirandeh

Lund University, Department of Industrial  
Management and Logistics



# Appendix D

The data collection guide (interview guide) for the “Single case study”

## Impact of cooperative purchasing on buyer-supplier relationship

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### General background to the research

*Cooperative purchasing has gained popularity among several public and private organizations. Pooling demand and resources from one side, and centralizing administration and management from the other, makes the practice attractive. The practice can also incentivize suppliers in situations of low perceived demand value. However, some studies also suggested the practice to become an entry barrier in the market and harm some buyer-supplier relationship aspects. So, in this study, we aim to investigate how cooperative purchasing can impact buyer-supplier relationships.*

*We will happily provide you with an executive summary of findings from this interview and from the final study upon your request.*

---

### Organization:

Size (number of employees):

Your department:

Your department's role and responsibilities in the organization:

Average freight forwarding demand / Average volume purchase:

Budget allocated to purchase / Average value of purchase (freight forwarding):

### Respondent profile

Name:

Position:

Office:

Contact details:

---

## BUYER PERSPECTIVE

### I. Background

1. What were the reasons behind the HUMANITARIAN agencies joining together for the global freight forwarding tender?
2. What purchasing related problems did the individual HUMANITARIAN organizations experience in the past? (high cost, low purchasing power, limited access/supply?)
3. How, when and by whom was the joint tender initiated? Was there a particular event that triggered the cooperation?
4. What outcomes “did you expect” from the joint tender?
5. Did the results correspond to your expectations? If yes, how? If no, why not?
6. Have you noticed any changes in the supply (freight forwarding) market as a result of the tender? (e.g. in terms of number or consolidation of service providers → has the tender triggered mergers and acquisitions among suppliers? Has it affected supplier entry/exit opportunities/tendencies?)

### II. Tendering process and main outcomes in terms of relationships to freight forwarders

7. Could you please outline the joint tender procedure?
  - a. what was the process like and were bids open or closed

- b. how were suppliers invited and how many bids did you get
  - c. how long was the process
  - d. which criteria were used to evaluate the suppliers
  - e. How are the selected suppliers allocated?
    - Among agencies
    - Among products (e.g. emergency vs non-emergency, development products, cold chain etc)
    - In terms of delivery location (geographical) and/or in terms of mode of transportation
    - Values/volumes awarded to suppliers
8. Where does the funding for HUMANITARIAN freight come from? How are funds allocated among the agencies? Has the joint tender affected inter-agency competition for / allocation of funds?
  9. How frequently did the HUMANITARIAN agencies get together during the tendering process and what did they discuss?
  10. How centralized / decentralized the process was (how much did your office or other HUMANITARIAN agencies have a say in what went on and how much was it driven by LEAD AGENCY)?
  11. What is your opinion about the composition and dynamics of the team that was responsible for the tendering process? What did this team look like?
  12. To what extent is the organization using the outcome of the joint tender? (*answer Italic questions only if the outcome is at least partly used*)
  13. When and why did your agency decide not to fully commit to the joint tender?
  14. Why did you decide not use the same contract / contract terms as LEAD AGENCY? What terms made you decide not to use it?
  15. Do you know how the difference in the contractual terms between HUMANITARIAN agencies was intended to be addressed after the tender?
  16. What is the main reason for the different HUMANITARIAN agencies to have different contractual terms? What are the main contractual differences?
  17. Is there anything to gain from aligning the terms of the contracts among the HUMANITARIAN agencies? And are the HUMANITARIAN agencies moving in this direction? What are the barriers in this happening?
  18. Did you feel that the organizational politics influenced (or even interfered) with the tendering process? If so, how and to what extent?
  19. What do you think should be changed to make the strategy more successful; what did you like and didn't like with the joint tender of 2011?
  20. Did you have a relationship with any of the suppliers that were awarded contracts prior to the tender and which?
  21. Did the tender end any of your previous supplier relationships?
  22. Has the tender affected your relationships to any of the current or previous freight forwarders used (winners, losers of the bidding)? If so, how?
  23. Are you allowed to use other freight forwarders than those awarded long-term contracts?
  24. Have the contract periods or terms of the supplier contracts changed as a result of the joint tender?
  25. Has the tender had an impact on supplier equity? (in terms of fairness of competition, etc...)

### III. Joint tender outcomes

#### 15. *How has the tender affected:*

- f. *the prices of transportation*
- g. *service quality of suppliers*
- h. *supplier performance (in terms of lead time, etc)*
- i. *geographical coverage in terms of delivery*
- j. *the diversity of your supplier base (in terms of local, national, international vs. global service providers)*
- k. *closeness of your relationships with freight forwarders*

16. Has the joint tender had an impact on your organization's purchasing power (in buyer-supplier relationships between HUMANITARIAN agencies and freight forwarders)? Has the relationship become more equal / unequal
17. Has the tender had an impact on the importance of individual freight forwarders for your organization? Has it made you more or less dependent on particular service providers?
18. Have you noticed a change in the level of trust and commitment of your suppliers as a result of the tender?
19. Has the joint tender had an effect on the transparency of the suppliers?
20. Has the joint tender changed the information shared with the suppliers (in terms of the frequency of contact, amount and type of information shared, information sharing process?)
21. Has your awareness of the levels of transportation demand/supply as well as the market value changed?
22. Has the joint purchasing changed the constancy / regularity of orders? (changes in demand fluctuations?)
23. Have you seen any changes in terms of forecasting the need for transportation? How is this coordinated among agencies?
24. Has the level of technological sophistication improved as a result of the tender? Have you developed joint interfaces with the other HUMANITARIAN agencies? Have you integrated your systems with those of your suppliers? If so, for what purpose and how is it working?
25. How do you think the joint tender has affected the suppliers' perception of your organization? (in terms of e.g. Legitimacy, reputation, purchasing power, importance as business partner).
26. Do you think the joint tender has changed the inter-agency relationships? Have you noticed changes in terms of pooling of other resources and capabilities?
27. How would you say the joint tender has changed the relative power (leverage) in buyer-supplier relationships between HUMANITARIAN agencies and freight forwarders? Has the relationship become more equal / unequal?

#### IV. Final remarks

- Any final comments?

---

## SUPPLIER PERSPECTIVE

### I. Background

1. Did you have a buyer-supplier relationship with any of the HUMANITARIAN agencies prior to the tender exercise? If yes, which?
2. Why do you think the HUMANITARIAN agencies joined together for the global freight forwarding tender in 2011?
3. What was your reaction to the HUMANITARIAN agencies' joint tender exercise?
4. Did you have particular hopes or concerns related to the tender, if so what?

### II. Tendering process and main outcomes in terms of relationships to freight forwarders

5. Did you have a particular bidding strategy? How did you reason and what was your strategy?
6. Have the contract periods or terms of the supplier contracts changed as a result of the joint tender

7. How did the fact that some of the HUMANITARIAN agencies backed out affect your company?
8. How did you deal with the HUMANITARIAN agencies not sticking together after the joint tender and each employing their own terms and conditions and contracts?
9. How would you say the joint tender has changed the relative power (leverage) in buyer-supplier relationships between HUMANITARIAN agencies and freight forwarders? Has the relationship become more equal / unequal?
10. Has your relationship to the HUMANITARIAN agencies changed as a result of the tender? How?
11. Has your perception of the HUMANITARIAN / HUMANITARIAN agencies changed as a result of the joint tender? If so how? (for instance in terms of legitimacy, reputation, financial stability)
12. How has the cooperative purchasing arrangement affected the value of your business with the UN?
13. Has the joint tender affected your willingness to enter into relationships with the individual HUMANITARIAN organizations?
14. Has your status / competitive advantage compared to other freight forwarders changed as a result of the change in the relationship with the HUMANITARIAN agencies?
15. Do you think the tender has had an effect on the structure of the freight forwarding market? Have you noticed any changes in the supply (freight forwarding) market as a result of the tender? (e.g. in terms of number or consolidation of service providers has the tender triggered mergers and acquisitions among suppliers? Has it affected supplier entry/exit opportunities/tendencies?)
16. Has your awareness of demand & the availability of market information changed as a result of the joint tender?
17. Has the changed terms of business with the HUMANITARIAN had an impact on the capacity allocated to your office?
18. Has the HUMANITARIAN tender motivated you to make new investments?
19. In general, what do you think the main outcome of the joint tender has been?
20. And what is your overall perception of the practice in relation to your business with them?

## Appendix E

Second-round data collection guide for the “Single case study” – validating

*Dear representatives - Please provide us with your input on drivers and barriers of the joint tender (2010-211) in the following two tables. Please mark the ones you agree with, which you might or might not have mentioned previously. Table 1 shows the different drivers as perceived by the interviewees, and Table 2 shows the different barriers.*

*Table 1 Drivers of the joint tender according to representatives (please mark the ones you agree with X)*

Driver	Agree (X)
Historical collaboration	
Taking advantage of economies of scale	
Reduce time and effort (duplication of efforts) spent on tendering	
Better rates	
Centralize similar business / Consolidate processes	
Better geographical coverage (service)	
Increase purchasing power	
Reduce supplier markets time and effort spent on tendering	
Gain leverage from each other's experience and knowledge	
Better brand name	
Consolidate resources	
Synergy benefits	
Attract new vendors	
Institutional pressure / Political push from the top	
A better contract than before	
A benchmark to compare with current rates	
Better predictability of supply / consistency of supply	
Knowledge on how other agencies purchase	
Higher transparency of the process	
Get more supply market share and knowledge	

*Table 2 Barriers of the joint tender according to representatives (please mark the ones you agree with X)*

Barriers	Agree (X)
Not considering the specific nature of service vs. good	
Lack of clear division of responsibilities	
Lack of compromise by member agencies	
No formalized inter-agency agreement	
Lack of process formalization	
Differing expectations (management vs. operations)	
Lack of supply market understanding	
Lack of inter-agency coordination / communication at different stages	
Lack of risk management maturity at all agencies	
Different commodity procurement methods	
Turf protection	
HQ bureaucracy	
Lack of standardization possibility within the large number of agencies	
Job rotation	
Migration of inter-personal relationships	
Migration of case specific knowledge	
Contractual deviation from the tender document	
Legal term requirement differences	
Different freight requirements and cargo handling methods	
Secondary bidding introduced by some agencies	
Dropping out of some agencies which affected promised volumes	



## Appended papers

1. Nonprofit Organizations shaping the supply market. *International Journal of Production Economics*, Herlin, H. Pazirandeh, A. (2011), 139 (2), 411–421 (coauthored).
2. An interrelation model of power and purchasing strategies: A study of vaccine purchase for developing countries. *Journal of Purchasing and Supply Management*, Pazirandeh, A. Norrman, A. (2014), 20 (1), 41-53 (first author).
3. Empowering the underdog buyer: A look at vaccine purchase by developing countries. Under-review at *Industrial Marketing Management*. Pazirandeh, A. (revise and resubmit) (single author).
4. Avoiding the pitfalls of cooperative purchasing through control and coordination: insights from a humanitarian context. Under review at *International Journal of Procurement Management*, Herlin, H. Pazirandeh, A. (revise and resubmit) (coauthored).
5. Unfruitful cooperative purchasing: the case of humanitarian power. *Journal of Humanitarian Logistics and Supply Chain Management*. Pazirandeh, A. Herlin, H. (Forthcoming) 4 (1), (first author).









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## Nonprofit organizations shaping the market of supplies

Heidi Herlin<sup>b</sup>, Ala Pazirandeh<sup>a,\*</sup><sup>a</sup> Department of Industrial Management and Logistics, Lund University, SE-221 00 Lund, Sweden<sup>b</sup> Department of Supply Chain Management and Corporate Geography, Hanken School of Economics, FIN-00101 Helsinki, Finland

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## ABSTRACT

The role of not-for-profit organizations (NPOs) and their relationships with various partners within humanitarian aid networks have hitherto been researched only to a limited extent. Formation of interdependencies between actors in humanitarian networks and the implications on societal outcomes require more research. In the nonprofit-for profit domain the former organizations are usually seen as the weaker actors. The relative power of for-profit actors has given them more control on the market with implications such as higher prices and supply shortages. However, different initiatives from the nonprofit sector in recent years show how NPOs are reshaping these relations. The aim of this paper is to explore the dominance dynamics and the degree of influence NPOs have on their supply market in their aspiration for better availability, quality, pricing, and innovation of strategic essential supplies within the humanitarian aid sector. Conclusions are drawn by explaining changes in the market through the NPO initiatives, by iterating the findings from practice to the constructs of Resource Dependency Theory.

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## 1. Introduction

Relationships in humanitarian aid networks are characterized by complexity. On one hand, nonprofit organizations (NPOs) compete to attract donations and resources, on the other they realize the need to collaborate with NPOs and corporate suppliers to respond more efficiently to beneficiary needs. The complexity of humanitarian aid networks makes it challenging for actors to recognize the benefits gained from these interactions and to find working interfaces leading to mutual benefits (Austin, 2000). According to Austin (2000), business corporations working with NPOs want to move beyond traditional charitable activities towards more business-oriented and entrepreneurial relationships. At the same time, NPOs seek common grounds to link beneficiaries' needs with interests of corporations to include them in their networks.

In the humanitarian aid context, availability of essential commodities in the right quantities and at the right time and place is crucial for the survival of beneficiaries. According to the United Nations Children's Fund Organization (UNICEF), ensuring a functioning market for essential aid goods is a complex process. *"The products may not always be commercially attractive, nor the market transparent. Manufacturers are often not aware of the needs,*

*or may consider the risks associated with entering the market too high"* (UNICEF, 2008: 7). This often results in scarcity of supplies. In order to avoid the risks associated with a limited supplier base, NPOs are increasingly becoming aware of the need to diversify their supply base (Pelchat, 2004), and to include the for profit (corporate) sector. At the same time, corporations are realizing the benefits of working with NPOs, and their customers and shareholders also expect them to act like responsible "citizens" by supporting important community issues and events (Austin, 2000).

Cross-sector collaboration between companies and NPOs has become increasingly popular since the late 1990s, with a growing number of initiatives undertaken to overcome market and public failures in the international public health sector. Examples include global public-private partnerships for health development (Buse and Waxman, 2001) such as the International AIDS Vaccine Initiative with a range of public and private partners for an effective vaccine against human immunodeficiency virus (HIV). These types of partnerships introduce major resources into the global health market and can benefit large populations of beneficiaries. Nevertheless, Buse and Waxman (2001) note that a potential downside of this type of cross-sector partnership is a blurring of the two sectors' aims and responsibilities.

Historically, NPOs have been funded and influenced by the for profit sector (Oster, 1995) making NPOs the weaker player in their mutual markets. In this paper, several initiatives undertaken by NPOs in influencing their supply market are investigated. As opposed to the more traditional view of the corporate sector

\* Corresponding author.

E-mail address: [ala.pazirandeh@tlog.lth.se](mailto:ala.pazirandeh@tlog.lth.se) (A. Pazirandeh).<sup>1</sup> Both authors have contributed equally to the writing of this paper.

having leverage/power over NPOs and other actors within the humanitarian network, such initiatives reshape these relationships. These initiatives suggest a stronger influence of NPOs on the global supply chain than previously perceived. Thus far, research on the distribution of power in supply chain relationships remains scarce. According to [van der Vaart and van Donk \(2008: 53\)](#) more studies on power are needed; they note power to be “among the main factors shaping and influencing” external integration between the actors in a supply chain.

Thus, this paper aims to explore the dominance dynamics of the buyer–supplier relationship between nonprofit organizations and for profit corporate suppliers, and to offer a set of propositions regarding the functioning of cross-sector interaction—more specifically, to answer the question of how NPOs influence the supply market of strategic aid in order to improve availability, quality, innovation, and pricing in these markets. Vaccines are recognized as strategic aid supplies in preventing several of the main causes of death for children under five, which is one of the millennium development goals (MDGs) introduced by the United Nations (UN). Through various market shaping initiatives NPOs, in addition to ensuring availability and favorable pricing of supply, also aim to create sustainable local markets to support countries buying the product on their own.

The paper starts with explaining the method used in reaching the aim of the study in Section 2. Thereafter, a literature review in Section 3 presents the resource dependency theory, the buyer–supplier dynamics, and the nonprofit–for profit relationship. Then, the vaccine supply markets within humanitarian health aid are introduced in Section 4. Section 5 gives an analysis, connecting the section on the NPO–for profit interface with the part regarding the vaccine market. This is followed by a presentation of initiatives taken by NPOs to shape their supply market (Section 6). The paper finishes with an analysis of findings and a discussion matching literature and practice. A set of propositions for cross-sector buyer–supplier relationship dynamics and how NPOs impact their supply market are presented in Section 7.2.

## 2. Methodology

This paper is an explanatory study of the impact – and the subsequent outcome – of power distribution and influence between NPOs and their corporate suppliers in the vaccine supply market, with particular weight given to vaccines. The starting point of the study was the unexpected observation of NPO initiatives influencing the market—NPOs are commonly perceived to have a lower power position and less leverage compared to other actors in the network. To explain this phenomenon, an abductive reasoning approach was adopted ([Dubois and Gadde, 2002](#)), iterating between theoretical constructs and practical findings.

[Peirce \(1932\)](#) defines abduction as an approach in between pure deductive and inductive logic, which is taken due to lack of evidence, theory, or both, with an intuitive creative element. [Kirkeby \(1990\)](#) suggests these aspects of abduction to be suitable for research intended to formulate hypotheses and propositions to be deductively tested afterwards. [Dubois and Gadde \(2002: 556\)](#) note one of the starting points of abduction to be an unexpected observation that cannot be explained by existing theory, “*Matching*” the real time evidence with relevant theory.

In this study, the puzzling observation of NPOs influencing their supply markets deemed the abductive logic apt to explain the phenomenon and lay the ground for a set of propositions to be tested in future research. Using the abductive approach results in “*unanticipated empirical findings*” being matched with those “of

*theoretical insights gained during the process*” ([Dubois and Gadde, 2002: 559](#)).

The empirical data serve to illustrate various NPO initiatives and their results on the market. These data were mainly gathered through desk study of humanitarian organizations’ reports, publications, and archival data. UNICEF, the World Health Organization (WHO), the Pan American Health Organization (PAHO), and the Global Alliance for Vaccines and Immunization (GAVI) as dominant providers of vaccines are investigated. To reduce bias, findings were shared in written form and discussed in informal open discussions with three experts working with procurement of vaccine for developing countries. Both authors simultaneously took notes and discussed the findings between themselves afterwards.

The authors also found it important to empirically understand the context of the study – vaccine supply chains for developing countries – in order to reach valid conclusions. A time period of about 2 months was spent at the UNICEF immunization center by one of the researchers, to gain a better understanding of the market through observation of meetings, presentations, the procurement process, and informal discussions. The author made field notes in this period. Furthermore, both authors participated in three explorative open discussions with the UNICEF immunization team to get a better picture of their market shaping strategies and the vaccine market. Peer reviewed journal publications and a book on vaccine supply chains for developing countries were also used to compare these data. Areas of contrast were discussed with the experts and between the authors to find the most logical explanation.

The empirical findings were matched with theory during the process ([Dubois and Gadde, 2002](#); [Kirkeby, 1990](#)). Based on Resource Dependency Theory a three-phase keyword search on power dominance in procurement, NPO–for profit relationship, and buyer–supplier relationship in the NPO–profit domain was conducted in peer-reviewed journals and books. The findings from all three reviews were linked in order to form a conceptual ground for the discussion of how NPOs influence their market of supplies. This ground was the basis for matching theory with the empirical data.

Accordingly, a set of propositions was formulated regarding the dynamics of the buyer–supplier relationship and in particular about how NPOs influence and shape their supply market. These propositions will be further investigated through an extended study in a future paper. The final findings of the paper were sent to three experts from the nonprofit sector working with vaccines, and later discussed during a meeting involving both authors and the experts. The findings were also sent to logistics/SCM experts from academia, and feedback was discussed by the authors to further validate the findings.

## 3. Prior research

### 3.1. Distribution of power: resource dependency theory

Theories such as resource based view (RBV) ([Wernerfelt, 1984](#)) and resource dependency theory (RDT) ([Pfeffer, 1981](#)) were developed in line with the outsourcing concept of the 1980s, arguing that by outsourcing non-core aspects of business to suppliers that have these aspects as core competencies, organizations can focus on their own core competencies, which will in turn improve the overall performance of the firm. As one of the earlier traces of RBV, [Chamberlin \(1933\)](#) in his theory of monopolistic competition explains how core competence stems from technical know-how, reputation, brand awareness, teamwork, patents and trademarks.

According to the RDT, the environment surrounding any organization consists of scarce and valuable resources that are important for the survival of the organization. It is argued that no single organization has all the resources and functions necessary for its successful operations. Consequently, it has to enter into exchange relationships with other organizations. However, in these transactions, firstly the organization becomes dependent on others, and secondly there is an issue of uncertainty as the organization can neither directly control nor precisely predict the flow of resources coming from the exchange partner (Pfeffer, 1981). This is considered highly unfavorable since it is assumed that organizations by default prefer self-sufficiency to any kind of cooperation (Turner et al., 2000: 18). RDT predicts that all organizations strive to maximize their power, by either minimizing the organization's dependence on other organizations or by increasing the dependence of other organizations on itself (Ulrich and Barney, 1984: 472).

Substitutability along with other factors such as goal compatibility, essentiality, and formalization are indicators of the level of dependency between organizations (Turner et al., 2000: 18–19). In a situation where a buyer organization has limited options from where to purchase needed resources, the supplier can use its power advantage to force the buyer into a cooperative relationship and thereby reduce its own uncertainty. According to RDT, what makes goal compatibility essential in the buyer–supplier relationship is avoiding dysfunctional relationships, which can be costly and problematic (Turner et al., 2000: 18).

When a powerful actor exploits its power within the supply chain, there is a risk of suboptimal outcomes (Petersen et al., 2008). According to Casciaro and Piskorski (2005: 172), the less powerful actor in an exchange relationship is always faced with higher uncertainty and undesirable exchange conditions. As a result, this actor will try to change its position through constraint absorption operations, such as long-term contracting, joint venturing, or even merging with the powerful organization (Casciaro and Piskorski, 2005), i.e. formalizing its relationship. Li et al. (2010) find formalization helpful for organizations to control costs and quality, and in structuring their supply networks. Apart from absorption, there are also other alternatives available for buyers who wish to acquire more control. A powerless actor can for instance utilize legal means to increase its influence or alternatively establish collective structures (Petersen et al., 2008).

Although no direct attempts are made to acquire greater resource control by the buyer under situations of high power imbalance, the buyer is likely to try to increasingly socialize with the supplier. Socialization fosters the development of protective cooperative norms, which direct expected behavior and allow exchange partners to set ground rules. Socialization is in general important for successful supply chain relationships (Cai and Yang, 2008; Petersen et al., 2008). Supposedly, socialization can also improve trust, which is otherwise weak in a relationship characterized by power imbalance (Lovaglia et al., 2003: 116).

### 3.2. Issue of power dominance in procurement

Organizations buy, sell, or deal within several markets. They behave differently and base their decisions on both internal processes and external negotiations and interactions within their markets. Different organizations also have different levels of control over their markets. Thus, organizations form negotiated environments, in which they interact with one another (Cyert and March, 1963).

As mentioned in Section 3.1, RDT argues that through these interactions, organizations become dependent on others and at the same time, cannot control or predict the incoming supply due to existing uncertainty (Pfeffer, 1981). Pfeffer and Novak (1976)

note how inter-organizational relationships such as dyadic cooperation or competition are formed as a response to this environmental uncertainty. Environmental uncertainties can also result in power imbalance in the market.

Yeung et al. (2009) perceive power as an important factor in influencing the supply chain and business relationships (a view also shared by van der Vaart and van Donk, 2008). Power, in this research, based on RDT, is understood as relative dependence, i.e. the difference between the dependence of the nonprofit organization on the corporate supplier, and the corporate supplier's dependence on the nonprofit organization. When one of the actors is less dependent on the other, it has more influence, known as a power advantage over the other, or leverage (Anderson and Narus, 1990: 43).

Suppliers, buyers, and their extended supply chains operate in an environment of relative power allocation (Cox, 2001) due to their negotiated environments (Cyert and March, 1963). "A sound analysis of the buyers' power position requires understanding of the behavior of both buyers and suppliers" (Van Weele, 2005: 79). Organizations are always to some extent dependent on their exchange partners, and the dependence is mutual, applying to both buyer and supplier (Caniels and Gelderman, 2005: 143).

RDT also predicts that organizations attempt to positively change their power position through manipulating their relative level of dependence (Ulrich and Barney, 1984: 472). Pfeffer and Salancik (1978) argue that the supplier usually has leverage over the buyer. However, other researchers have argued that either one of the actors can be more influential than the other, depending on the context (Cox, 2001). Autry and Golobic (2010: 92) suggest that the supplier often has little control over the strength of the relationship as it is up to the buyer to decide how much to source from each supplier—provided alternative sources of supply exist. However, it is argued that suppliers can improve their attractiveness by developing their capabilities and competencies, and thus their negotiation power. Interestingly, in an empirical study Halley et al. (2006: 10) found that developing competencies is a strategy that benefits suppliers only in cases of non-dominance. If the supplier already has a power advantage, only the buyer will benefit from the development.

Cox et al. (2000) contend that all buyer and supplier relationships are based on the utility and/or scarcity of the resources exchanged between them, and consequently on the relative power distribution (Fig. 1). Based on Fig. 1, Cox (2001) suggests that for an organization to have a successful procurement strategy it is necessary to first understand its position in the market in terms of the relative power compared to other players, and then move towards a more favorable position. Theoretically, the ideal position for buyers is to push all suppliers into the buyer dominance area and ensure leverage over them; however, in reality, the buyer–supplier profile in the market shapes the power distribution.

According to RDT, in situations of less power, buyers will strive to reduce their dependence on their suppliers to enhance their power position (Yeung et al., 2009) through measures such as changing the size of their supply base. At the same time, it is important to maintain suppliers' perception of a symmetrically interdependent relationship; this is because feeling too dependent will decrease supplier commitment which may adversely influence overall supply chain performance (Feldman, 1998). To keep suppliers motivated, buyers can demonstrate their commitment to the relationship through different approaches, for instance through increased information sharing or the creation of a preferred supplier list (Feldman, 1998). From an overall supply chain perspective, a situation of buyer–supplier independence is a barrier to supply chain integration and usually results in fragmentation of the chain, while interdependence is the most favorable relation for supply chain integration (Watson, 2001).

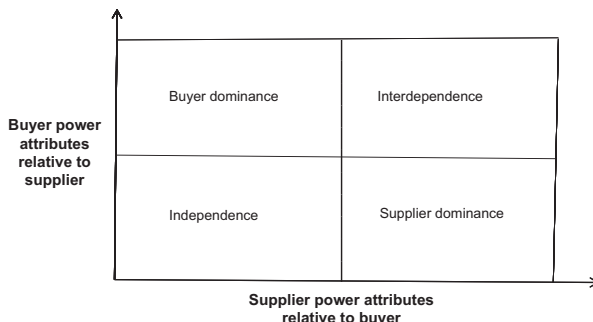


Fig. 1. Buyer-supplier power matrix (Cox et al., 2000: 18).

To understand the level of influence in the market, and the relative power position of exchange partners in inter-organizational relationships between NPO buyers and their corporate suppliers, the history and characteristics of their relationship is reviewed in the next section.

### 3.3. Nonprofit-for profit relationship

After the 1980s with the growing popularity of “globalization”, the themes global society and globalization of commerce started attracting attention. Subsequently, conflicting streams of anti- and pro-globalization discussions resulted in two main institutional forms: global multinational corporations, and nonprofit organizations (NPOs) (Senge et al., 2006; de Geus and Senge, 1997).

In the restructured global economy, on the one hand multinational corporations increasingly influence the global labor market, society, and the environment (Senge et al., 2006; Bardhan and Patwardhan, 2004); on the other hand, NPOs are fighting to mitigate the negative effects these changes bring about in terms of environment, poverty, and deterioration of natural resources (Senge et al., 2006). This has resulted in the traditional view of companies and NPOs operating separately from each other, rather than being allies (Senge et al., 2006; Sagawa and Segal, 2000).

However, this is changing; corporations are realizing the drawbacks of social and environmental effects they are causing and their stakeholders also expect them to support community issues (Mohr et al., 2001; Austin, 2000). Working with NPOs is a way for companies to put their corporate social responsibility agendas into practice and hedge against public criticism (Argenti, 2004). Simultaneously, NPOs are recognizing that they cannot mitigate global problems in isolation. “*The scale of problems is too large, the issues are too overwhelming, and structural pressures are too debilitating*” (Lindenberg, 2001: 614). Previous research recognizes that complex humanitarian emergencies commonly require extensive inter-organization and cross-sector collaboration (e.g. Kapucu, 2006: 207). Thus, several NPOs and multinational corporations are forming new links in various ways and thereby becoming more dependent on each other.

The upstream of the supply networks of these NPOs is also being impacted by the newly formed links across sector boundaries. RBV and RDT justify collaboration based on access to heterogeneous resources as an important source of competitive advantage for organizations. Nonprofit organizations, being no exception, are increasingly becoming aware of the need to

diversify their resource base to avoid falling into a single-sourcing dilemma (Pelchat, 2004). Although single sourcing may result in better relationships and higher quality products, it is also associated with significant supply risks. When a buyer is entirely dependent on one supplier, the organization is very vulnerable to potential disruptive events at the supplier’s plant as well as drastic price increases (Treleven and Schweikhart, 1988; Choi and Krause, 2006). The risk of supplier opportunism is highest in long-term close relationships (Saini, 2010: 447). To avoid a single sourcing scenario, NPOs are including the business sector in their networks, taking advantage of the experience and competence commercial companies can offer.

Several NPOs have started strategic processes to understand and develop their core competence in relation to what could be outsourced. This type of change requires redesign of supply networks, including development of relationships with suppliers, use of new technology and competence development. Examples include the Humanitarian Procurement Centers initiated by the European Commission Humanitarian Aid and Civil Protection (ECHO) in 2006, to develop procurement specialized organizations to take over procurement and regional warehousing (Schulz, 2008); other examples of similar initiatives are UNICEF and PAHO acting as procurement agents for vaccines. The next part of this paper discusses the characteristics of the vaccine supply chains in the humanitarian networks and links them to the theoretical discussion.

## 4. Vaccine supply market in humanitarian networks

### 4.1. Humanitarian health aid: essentiality of vaccine resources

With the turn of the century, increasing attention has been paid to human development and aid. Exceptional global health improvements have taken place in recent years, such as the achievement of the lowest mortality rate in world history for children under 5 years (UNICEF, 2009a; WHO, 2008a). Nevertheless, a study done by WHO (2008a) shows that these improvements are distributed unevenly around the world, and that health gaps between countries and social groups within countries have widened.

The WHO fact sheet (2008b) indicates that only less than a quarter of all people in low-income countries reach the age of 70, and more than a third of all deaths are among children under 14. The main causes of death are listed as lung infections, diarrheal diseases, HIV/AIDS, tuberculosis, and malaria (WHO, 2009). In

2002, WHO estimated that 1.4 million deaths among children under 5 could have easily been prevented by routine vaccinations (WHO, 2002).

In September 2000, more than 190 member countries of the United Nations (UN) signed the Millennium Declaration with eight development goals (MDGs) aiming at poverty reduction and human development, one being aimed at greatly reducing the number of deaths among children under 5. Immunization is key to achieving this goal; and developing countries with 85% of the world population and only 12% of global spending on health (UN, 2006) are a main focus. This means reaching the “24 million children who are not being reached with vaccines” (UNICEF, 2009a: 8).

#### 4.2. Vaccine supply market in the humanitarian chain

When it comes to medication, developing countries need access to both general medicines and specific medicines for regional diseases at affordable prices (Danzon and Towse, 2004). Vaccines constitute an important part of such medication. UNICEF (2009b) data show a growing divergence between the types of vaccines used in industrialized and developing countries.

As shown in Fig. 2, typically the supply chain of vaccines for developing countries is characterized by local governments and beneficiaries at one end and a limited supplier base at the other, with donors and humanitarian organizations intervening within the chain to secure supply and meet demand. Local governments have limited supply chain insight and buying capacities (Kremer, 2008; Milstien et al., 2005; Danzon and Towse, 2004; Woodle, 2000), and there is usually a lack of sophisticated transportation and communication infrastructure, and political complications and sensitivities.

The supplier base, on the other hand, is being regulated by high start-up and fixed costs due to stringent production regulations and forms an oligopolistic market with only a few suppliers with limited competition (Danzon et al., 2005). According to WHO statistics (Milstien et al., 2005: 8), the number of product types for vaccines is roughly 200, with production in only about 45 countries. The report notes that the vaccine industry in general is dominated by a small number of multinational firms: Glaxo-

SmithKline, Aventis Pasteur (acquired by Sanofi in 2004), Wyeth, and Merck. These firms have seen their share of the vaccine market (measured by revenues) rise from approximately 50% in 1988 to about 70% in 2005. Small to medium-sized companies, notably Chiron and emerging companies in Korea, India, and Indonesia, comprise an additional 10%, with the remaining revenues going to small industrialized and developing country producers.

This picture has changed to some extent. According to the Sanofi-Aventis report, the share of the multinational firms increased to 84.9% in 2008, while emerging market sales accounted for almost one-quarter of total vaccine sales (814m Euros of 2.86b Euros). This oligopolistic and/or monopoly tendency within the vaccine market can be seen in Fig. 4 with only one prequalified supplier for Pentavalent until 2006. In 2010, this number still remains as low as four. The number of mergers, acquisitions, and exits in the industrial market further uphold this tendency. However, it should be noted that the market structure is highly vaccine-type and target-country specific, for example the case of industrial versus developing country vaccine supply chains.

Donors intervene in the market by both injecting monetary funds and reshaping network structure and mechanisms by tying certain requirements to their donations (i.e. earmarked donations). Humanitarian organizations are also intermediaries with the intention of streamlining supply and demand, as well as coordinating the flows of money and information through different initiatives to assist buyer countries in accessing safe and affordable vaccines.

Unfortunately, despite the importance of vaccines, research investments remain low because investors are afraid of not achieving sufficient return on investments, as most end users do not have the financial means. However, this is not the whole truth. According to Kremer (2008), the vaccine market is also characterized by inefficiencies, which stem partly from the fact that vaccines are global public goods and thus undervalued by the market. Also, people in developing regions are often more willing to pay for treatment than for prevention.

On the downstream of vaccine supply chains the market is based on the willingness of the governments to pay based on epidemiological justifications for particular products; on

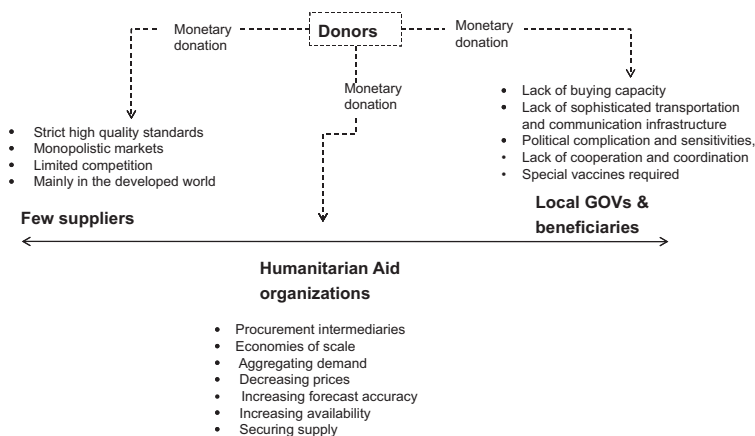


Fig. 2. A schematic view of different actors in a typical vaccine chain in humanitarian networks.

the upstream, few vaccine manufacturers result in limited competition (Milstien et al., 2005). Moreover, governments usually do not encourage either R&D in vaccines or supply increases; they pay only to cover manufacturing costs and not even close to the social values of vaccines. For political reasons, some governments also fail to prioritize vaccines and instead support more organized lobbying groups. It makes sense for governments to focus their efforts in areas where there are large concentrations of voters, and building a city hospital is likely to be more 'popular' than the distribution of vaccines around the country (Kremer, 2008: 422–423).

Consequently, "The world needs new institutions that both encourage new pharmaceutical development and provide the poor with access to these new drugs. Such institutions would ideally address both time-inconsistency (sunk-cost) and free-riding problems. The world cannot wait until a vaccine is almost ready for production to address these issues. Rather, it is necessary to put in place incentives for R&D up front in order to motivate vaccine developers" (Kremer, 2008: 423). In the absence of such institutions, there is clearly a need for humanitarian organizations to undertake measures to make sure that the supply of vital vaccines is ensured.

In theory, developing countries can either procure vaccines through NPOs like PAHO and UNICEF, or directly from the manufacturers (Hausdorff, 1996). However, most developing and low-income countries view vaccines as donor-supplied commodities, thus not including them in their annual health budget (Woodle, 2000). Consequently, WHO assesses and prequalifies a pool of manufacturers; thereafter UNICEF and PAHO (and also WHO at times) offer procurement and distribution services to many low-income countries and provide the commodities at an affordable price to the countries according to their buying ability and needs (Woodle, 2000).

Danzon and Towse (2004) studied initiatives that would make medicines affordable and accessible for developing countries. In particular, they investigated the impact of differential pricing and suggest it as a solution. Differential pricing means that prices are adjusted according to countries' buying power. Charging higher prices in developed countries compensates low-pricing strategies in less developed countries (Mascarenhas et al., 2005: 408). Strict regulation on vaccine supply chains and high standards for manufacturers to enter the supply market make differential pricing easier to implement (Milstien et al., 2005).

There are essentially two types of market shaping initiatives: push and pull. Push incentives are directed at subsidizing research input, while pull initiatives reward output (Kremer, 2008). In this paper, the focus is on pull initiatives. "Pull programs efficiently align incentives, with governments and nonprofit organizations defining the problem as commercial developers compete to design the best solution" (Kremer, 2008: 426). Kremer describes pull programs as ideologically appealing as they provide a market-based solution to the problems of low availability and high prices.

UNICEF, as one of the main providers of vaccine for developing regions, collaborates with the countries' Ministry of Health (MoH) on the annual forecast demand for each vaccine type. Vaccine suppliers are then given forecasted demand data and provide UNICEF with supply information (UNICEF, 2009b). Technical support is also given to the suppliers through an agreement UNICEF has with WHO, and provided by WHO. Due to the sensitive nature of the product, all vaccines have to pass both WHO pre-qualification standards and registration by the local country National Regulatory Authority (NRA) (WHO, 2009). However, most often the NRAs of the developing countries lack the technical capacity to assess quality.

## 5. Analysis: Buyer–supplier relationship in the nonprofit–profit domain for vaccines

Within humanitarian networks NPOs often act as buyers of aid supplies and outsource other supply chain functions to companies. According to Chamberlin's (1933) theory of monopolistic markets, key competencies such as technical know-how, reputation, brand awareness, teamwork, patents and trademarks also influence the NPO–for profit relationship. NPO buyers achieve some level of influence on the market partly as a result of their reputation and brand awareness.

Drawing on the predictions of RDT, the market shaping initiatives undertaken by some NPOs involving a high level of involvement with their suppliers (e.g. through consultation) appears surprising. However, other objectives such as higher quality and lower price are steering the cooperation from the NPOs' point of view. Nevertheless, since cooperation requires substantial amounts of resources, it limits the size of the supply base, which may even result in single sourcing. From the RDT perspective this is not optimal for the buyer, who becomes very dependent on the supplier. On the other hand, administrative and operational savings may make it worth the risk (Turner et al., 2000: 17). The problem of having a limited supplier base is facing limited substitutability. In the case of vaccines for developing countries, the number of suppliers is by default limited, which places the buyer in a disadvantaged situation even without any attempts to cooperate with the supplier.

In cross-sector relationships, conflicts can be expected due to the differing roles and motives of the organizations. Whereas corporations are driven largely by shareholder value, nonprofit organizations exist for more idealistic reasons. "The business sector exists to capitalize on market opportunities to realize profits for owners and investors. The social sector is by its nature compensatory. It exists because of market failures. It remedies, rescues, repairs" (Sagawa and Segal, 2000: 110). Due to this inherent problem, working towards goal compatibility is crucial.

Beyond diverging aims, Babiak and Thibault (2009) list several further reasons why cross-sector relationships are challenging: barriers in communication due to differences in language and culture, difficulties in developing joint modes of operating, managing perceived power imbalances, building trust, and managing the logistics of working with geographically dispersed partners. In addition, managerial values, beliefs and partnership expectations are likely to differ between the partners. Resource dependency scholars argue that many of the tensions stem from the fact that partnerships are unnatural. Wanting to maintain their power position, organizations are reluctant to share and cooperate with others. In the absence of choice, however, the "growing dependence on multiple partners from across sectors" means that organizations have to find new ways of managing their relationships (Babiak and Thibault, 2009: 117). Nonetheless, these organizations should at the same time realize that while they "enter into partnerships to capitalize on opportunity and reduce uncertainty, factors such as the loss of autonomy in decision making, power, conflict, and control may create challenges and raise additional uncertainties" (Babiak and Thibault, 2009: 120). Sagawa and Segal (2000: 113) note that the solution to this problem is not for corporate companies to stop striving for profit, nor for NPOs to focus more on the bottom line. Instead, the organizations should realize their common interest.

Essentially, the question is how necessary external resources are to an organization. In the case of NPOs and their corporate vaccines suppliers, it can be interpreted that the NPO is the more dependent organization since vaccines are essential strategic resources. Corporate suppliers serving NPO buyers are mostly working also in other pure business markets, serving other

**Table 1**

Price change for selected vaccines 1997–1998 (PAHO, 2009).

Vaccine	1997 Price USD	1998 Price USD	% Change
BCG-20	0.055	0.045	−18.2
DPT-20	0.055	0.0495	−10.0
DT (P)-10	0.06	0.0495	−17.5
Polio-10	0.0702	0.0765	9.0
TT-20	0.0291	0.0235	−19.2

corporate buyers, making them somewhat independent of the NPO buyers. Also, companies are less likely to depend on resources from the NPOs (Casciaro and Piskorski, 2005). An exception may be corporate needs for intangible and nonmonetary assets such as legitimacy (Arya and Lin, 2007; Yaziji, 2004). However, suppliers from developing countries still strive for financial incentives in collaboration with NPOs. In comparison, NPO buyers usually face a limited number of suppliers in an oligopolistic (if not monopoly) supply market, making them dependent on the suppliers. Especially for strategic items, limited sourcing options cause high supply risk (Caniels and Gelderman, 2005: 144). This means that the corporate suppliers have more leverage, resulting in the position of “supplier dominance” in Fig. 1.

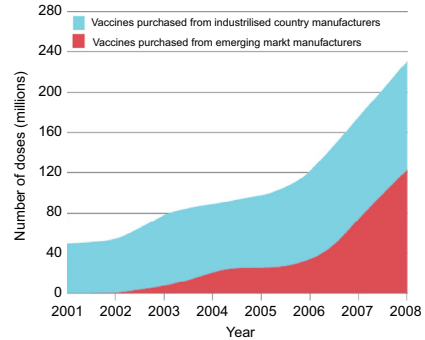
In line with the present argument, the next section of the paper illustrates real time initiatives taken by NPO organizations and their effects on the supply market.

## 6. Market shaping initiatives: vaccine supply chains in humanitarian networks

PAHO and UNICEF taking advantage of economies of scale while buying in high volumes, receive noticeable discounts, allowing them to offer the product at an affordable price to the buying country. As listed in Table 1, PAHO's bulk purchasing approach with specific initiatives in 1997, using economies of scale, resulted in a noticeable drop of prices and thus affordability and development of the product in the market in 1998.

Another example initiative is GAVI's market shaping approach. By securing long-term funding and aggregating demand, GAVI has managed to scale up production capacity in the industry and attract new suppliers to the market (see Fig. 3). This builds up competition, which in turn reduces prices. This can be observed as an increase in the number of suppliers (Figs. 3 and 4), including new manufacturers from developing economies, which has resulted in more secure supply and lower prices for developing countries. For example, GAVI's aggregated purchase of the combination DTP-HepB (tetraivalent) vaccine resulted in a 36% price drop for the product (GAVI, 2009). This has also resulted in the price of Pentavalent<sup>2</sup> dropping from USD 3.62 in 2007 to USD 2.96 in 2010, a fall of almost 20% (Fig. 4). Fig. 4 also shows the additional number of prequalified and possible prequalified manufacturers, which are possibly among the main reasons of the decline in prices.

In 1993, as the result of a resolution by WHO, called for by the World Health Assembly, all partners in health development, including NGOs and the private sector, were encouraged to deepen relationships through support and implementation of the “national strategies for all” initiative (WHO, 1993). Consequently, the relationship between the private sector and the NGOs deepened in the health care sector. Buse and Walt (2000)

**Fig. 3.** GAVI's consolidation of demand for vaccines secure supply (Gavi, 2009: 16).

mention these partnerships surpassing national boundaries between at least one corporation and one intergovernmental organization to achieve “health creating goals”. Later, Buse and Waxman (2001) also point out the numerous benefits from such partnerships, from developing industry incentives for healthier markets by providing better forecast, to improved corporate image to attract more investors. These implicit and explicit advantages have cheered the partnerships forward.

For example, the GAVI alliance, realizing the advantages, has reserved one-third of its alliance board seats for “non-affiliated independent individuals with private sector experience” to provide a fresh approach to reach their missions (GAVI, 2009). UNICEF Supply Division is responsible for procuring vaccines and devices for countries on behalf of GAVI, a broad partnership of public and private organizations. Another example is the International AIDS Vaccine Initiative (IAVI), which brings together a range of public and private interests to share the risks, costs and benefits of developing an effective vaccine against human immunodeficiency virus (HIV) (IAVI, 2007). This type of partnership introduces major resources into the health care supply market, and can benefit large populations of beneficiaries.

Additionally, UNICEF has also given special attention to market shaping as a vital part of its activities to ensure the availability of strategic essential supplies such as vaccines, therapeutic food, nutritional supplements, medical devices and medicines. Due to problems of demand in-transparency, manufacturers often overlook the vulnerability of target beneficiaries with reference to the strategic essential goods, and thus UNICEF's market shaping initiative is of utmost importance in ensuring a continuous and sufficient supply of goods and to encourage healthy markets (UNICEF, 2009b).

According to WHO (2009), procuring vaccines based only on lowest market price is not recommended, and quality must be the primary consideration above all others (WHO, 2009). The main criteria in sourcing vaccines for UNICEF are ensuring healthy supply markets and availability of quality vaccines on time and in the right quantity (UNICEF, 2009b). To achieve the set goals, UNICEF has introduced a Long Term Arrangement (LTA) initiative in dealing with its market of vaccine supplies. Subsequently, a portion of the awards given to suppliers are termed “good-faith” Long Term Arrangements (LTA), and the rest are based on firm contracts. Consequently, “Purchase Orders are issued by UNICEF against the good-faith LTAs and create a legally binding commitment to both parties”; essentially, in case of availability of funds, the forecasts become purchase orders over time (GAVI, 2005).

<sup>2</sup> Pentavalent is a combination vaccine protecting against five leading killers diseases—diphtheria, tetanus, pertussis, Hepatitis B and *Haemophilus influenzae* type b (Hib) (GAVI, 2009).

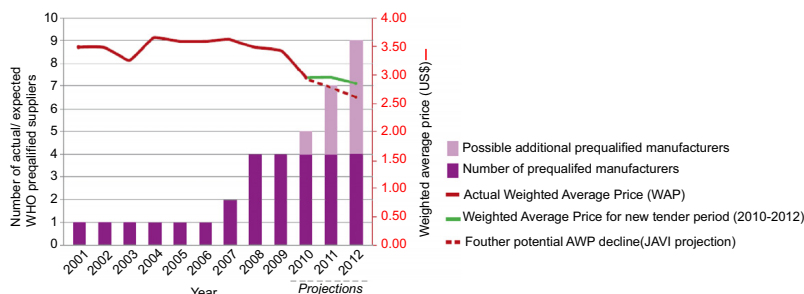


Fig. 4. Price drop of Pentavalent (GAVI, 2009: 16).

## 7. Discussion and propositions

### 7.1. Discussion

In investigating the distribution of power among actors upstream of a supply chain and the consequent relative leverage and influence in the market, the initial and vital task is to understand the market. To reach the aim of the study and to answer the research question of how NPOs influence their market of strategic aid supplies, and whether they actually have more influence than previously perceived, the NPO initiatives from Section 6 were analyzed (Table 2). The initiatives studied contributed to availability, price, quality, and innovation of vaccines as summarized in Table 2. The selected initiatives all fall under the mentioned “pull” strategy. Changes in the market resulting from these initiatives were matched with RDT constructs explaining each change in the market. As can be seen in Table 2, in contrast to assumed power imbalance within the humanitarian network, the initiatives taken by these NPOs can be seen as successful attempts to change their power position in the supply market, and have in fact contributed to the reshaping of the supply market for vaccines.

As predicted, these initiatives, while falling within the explanations given in RDT, have changed the power position of NPOs. This reshaping has been positive according to the available data, contributing to increase in the number of suppliers, better product development, improved R&D, increase in production and hence better availability, and greater competition and lower prices. In addition, initiatives 5 and 6 from Table 2 have also encouraged further collaboration between different actors. The result is secured availability and healthier markets.

### 7.2. Propositions

Power distribution is important for organizational success as defined in RDT; i.e. organizations balancing their power through the exchange of resources between actors in a network (Pfeffer, 1981). Finding the power position of actors within the network will show who is able to influence the market, to what extent, and what the societal consequences are.

The market of vaccines for developing countries, having been researched to a limited extent in SCM literature, was presented using the available data in Sections 4 and 6 of this paper. The limited number of suppliers in this market partly gives the suppliers leverage in pushing the buyer into the supplier power domain. On the other hand, the buyer organizations based on their intangible resources such as legitimacy, brand and

reputation, can have lower or higher relative power compared to suppliers (Fig. 5).

The demand structure of the network also influences this power regime, in terms of both physical and social demand. The physical demand in humanitarian networks is often characterized by a high level of uncertainty. This partly stems from low forecasting and ordering capacities, as well as specific crisis situations such as disease breakouts or natural and manmade disasters. The high uncertainty results in these markets being less attractive for suppliers, and hence favoring them in the power matrix. Social demand, on the other hand, such as corporate social responsibility, the increased awareness of stakeholders about community and global issues, and the social reputation gained through “giving back to society”, reshapes the power structure in favor of the NPOs.

In this market, either suppliers have dominating power, or they are interdependent with the NPOs. In other words, a power distribution can be proposed as shown in Fig. 5, where aside from areas of supplier dominance, in one part both big NPO buyers and the main corporate suppliers have the same level of power and in the bottom small NPO buyers and small local buyers also have the same level of power. Above the line in Fig. 5, NPOs have more influence on the market.

P 1a: The power structure of the market is either in favor of corporate suppliers or interdependent.

P 1b: NPOs are more influential in shaping their supply markets than previously perceived. NPO influence on the market can further be strengthened through redesign of the interrelationships within the network.

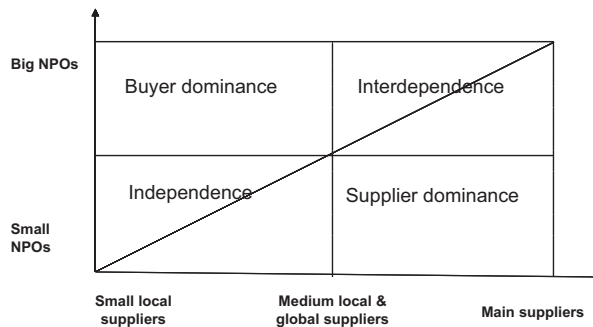
According to RDT, organizations will attempt to change the power distribution by increasing the dependence of the partners on themselves and decreasing their own dependence on others. Nevertheless, according to Casciaro and Piskorski's (2005) argument, less powerful actors will refrain from attempting to change the situation under high power imbalance. Thus, the power imbalance between the supplier companies and the bigger NPOs like WHO or PAHO and UNICEF is unlikely to be very high. The reason is that powerful actors will resist absorption attempts in order not to lose the valuable opportunity to exploit the less powerful party (Casciaro and Piskorski, 2005). Hence, we predict that the power imbalance between these NPOs and their corporate suppliers is low or medium.

P 2: The power imbalance between large NPO buyers and their corporate suppliers is low or medium. This enables the NPO actors to change their power position.

**Table 2**

Summary of selected initiatives by NPOs in shaping their market of supplies.

	Initiator NPO/NPOs	Initiative	Initiative objective	Result in the market	RDT construct compatibility
1	PAHO & UNICEF	Aggregating demand in high volume purchase	Achieving noticeable discounts	Lower prices Development of product in the market	Substitutability Essentiality
2	GAVI	Securing long term funding	Increase production capacity	New suppliers to the market	Formalization Socialization Substitutability Goal Compatibility
3	GAVI UNICEF & PAHO	Aggregating demand	Economies of scale Attract new suppliers	Increase production capacity New suppliers Build up competition Reduce prices	Substitutability Essentiality
4	WHO GAVI UNICEF	Enabling manufacturers from developing countries	Securing supply Enabling developing countries	Better availability Lower prices	Substitutability Goal compatibility
5	WHO	National strategies for all	Deeper relationships and collaboration between all players including NGOs and business sector	Developed industry incentives Healthier markets	Socialization Substitutability Goal compatibility
6	WHO	Providing better forecast on a national level	Improve corporate image and industry incentives	Healthier markets	Essentiality
7	GAVI	Collaboration with business sector	Bringing a fresh view to the board	Increase production Better availability	Socialization Formalization Substitutability Goal compatibility
8	IAVI	International collaboration between public–private sector	Share risks, cost, and benefits Develop research and product development	New resources in the market	Formalization Socialization Substitutability Goal compatibility
9	UNICEF	Long term arrangements with current & potential suppliers	Introduce and develop new suppliers in the market	New suppliers Better availability Lower prices Higher quality products	Formalization Substitutability Socialization Goal compatibility



Source: adapted from Cox et al. (2000:18)

**Fig. 5.** Distribution of power among actors in vaccine supply chains of humanitarian aid networks.

It is likely that in an attempt to correct the power imbalance between the corporate vaccine suppliers and the buyer, and to change the situation in the power matrix, the buyer pursues long-term agreements. This is the same concept existing in RDT (Pfeffer, 1981), which suggests that actors lacking essential resources (which in this case can be any of the attributes such

as reputation, competence, brand awareness, etc.), will seek relationships with other actors and hence become dependent on them. One way of making this relationship explicit is formalization, which means the extent to which the transactional relationship is made explicit, for instance through contractual agreements. Formal agreements are less common as they require

a higher commitment and thus mean higher risk (Turner et al., 2000: 19). Thinking about NPOs' relationships with their suppliers, one would expect an NPO to strive to formalize the relationship with its suppliers to a high degree to compensate for the other dimensions where it is relatively powerless compared to the companies. In other words, it is likely that the NPO tries to negotiate an extensive agreement with its suppliers including sanctions for any exploitation attempts. Optimally, NPOs will seek to avoid formal commitments in regards to buying quantity, but would persuade the company to guarantee the lowest possible price.

Interestingly enough, as intangible resources are becoming more and more important, in our knowledge-based economy companies are increasingly formalizing their relationship with NPOs. They are perceiving that the relationship with NPOs may in fact result in spill-over of important intangible assets (such as legitimacy) potentially increasing the value of their companies' products or services and making their company appear a better corporate citizen (Millar et al., 2004: 403–404). Thus, a formalized agreement may in fact be in both partner's best interest although the motives differ.

P 3: Formalizing the relationships is beneficial for both suppliers and the NPO buyer. However, the motives served are different.

In an exchange relationship where the actors have different motives in the market, such as the exchange relationship between nonprofits and their corporate partners, goal compatibility is assumed unattainable. Having separate capabilities, however, can be an advantage as both organizations have the opportunity to learn from each other. Perhaps, then, it is not the extent of goal compatibility that determines how balanced the buyer–supplier relationship is in the nonprofit–for profit domain, but rather the level of understanding of the other organization's operations, values and goals.

P 4: In the context of cross-sector relationship, especially between NPOs and their corporate suppliers, the concept of “mutual understanding” and respect replaces that of “goal compatibility”. This mutual understanding is important for well-functioning relationships.

NPO buyers, with close collaborations such as that between UNICEF, GAVI, and WHO, have realized the necessity to ensure higher production and more suppliers leading to better availability and lower prices. A well-functioning relationship is likely to be characterized by mutual understanding and respect, i.e. understanding and not compatibility of goals. In this respect, knowledge is power. The organization that knows more about the other can potentially use the information to its own advantage and influence the other. In order to avoid a dysfunctional partnership, a rule of thumb for both partners should be to be as transparent as possible.

P 5: Deeper relationships both within nonprofit sector boundaries as well as across sector boundaries through more transparent communication of goals, knowledge, and functions will result in well functioning relationships that contribute to better functioning networks.

Thus, it can be stated that to achieve the objectives for the strategic aid supplies, NPOs are required to intervene in the supply markets in different ways to motivate other actors and encourage an increase in supply of products. This has shown to improve the availability, quality, and pricing of these goods.

P 6: It is important for stakeholders such as NPOs to intervene in the supply market of strategic aid supplies to ensure healthier markets and availability of affordable quality goods.

## 8. Conclusion and future research

The aim of this study was to explore the dominance dynamics of the NPO buyer – for profit supplier relationship and to investigate how NPOs influence their market of supplies in order to have better availability, quality, pricing, and innovation of vaccine supplies as a strategically essential good for the humanitarian aid sector. Governments from developing countries can either purchase the product directly from manufacturers or purchase it through NPO organizations acting as purchasing intermediaries like PAHO and UNICEF. The former strategy, while usually placing the buyer government in the supplier dominance area, results in much higher prices and limitations in reaching agreements, and hence is unlikely. On the other hand, bigger NPOs benefiting from global reputation and brand, taking advantage of bulk purchase orders by aggregating demand, as well as collaborative initiatives such as with their corporate suppliers, can ensure lower prices and better availability. Hence, to achieve these objectives for strategic aid supplies, NPO stakeholders must intervene in the supply markets in different ways to secure supply of affordable products and to increase buying capacity of the governments. A number of such initiatives that are thought to have reshaped the supply market were investigated in this study.

It should be noted that power distribution within a network is a very complex topic that cannot be explained by organizational strategy alone. Thus, this paper, by focusing on purposeful market shaping strategies undertaken by NPOs, attempts merely to depict the NPO influence on the market. Future research should broaden the scope by looking at other factors, such as demand conditions and political context, which are also likely to influence the prevailing power distribution within a market. The authors also recognize that the time frame spent at the humanitarian organization by the researchers, the limited number of experts giving feedback on the secondary data, and the scope of the vaccine supply chains are delimitations imposed on the study. Further in-depth empirical research is required to capture the dynamics of the nonprofit–for profit relationships, as well as the power distribution in such networks. However, this research is an important starting point, proposing the changed dynamics in power and influence. Even though the focus of the study was on vaccine supply chains in developing countries, the findings can be generalized to similar situations of power imbalance. It should nevertheless be noted that the vaccine supply chain is in many ways unique compared to other humanitarian supply chains, e.g. food or shelter where NPOs are in a higher power position.

## Note added in proof

An earlier version of this paper was presented by the authors at the 8th RIRL conference of the AIRL Association for international research in Logistics and supply chain management BEM, Bordeaux, September 30, October 1st 2010.

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## Paper II





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## An interrelation model of power and purchasing strategies: A study of vaccine purchase for developing countries



Ala Pazirandeh\*, Andreas Norrman

Department of Industrial Management and Logistics, Lund University, SE-221 00 Lund, Sweden

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## ABSTRACT

The purpose of this study is to further understand the relationship between purchasing strategies practiced by less-powerful buyers and their purchasing power. Drawn on the resource dependency theory, a two-way relationship was predicted where power is both a cause and an effect. The theoretical predictions were then explored in a multiple-case study in the context of vaccine procurement for developing countries. This context presents an asymmetric power situation, favoring suppliers, and changes some of the basic assumptions of theories used; i.e. nonprofit, public procurement, and end customer satisfaction. Cases were selected to represent different strategies towards similar power constraints. The results of the study indicated that purchasing strategies were set in response to individual constraints from sources of purchasing power, and not in response to the power positions as the cumulative effect of all sources of power. In practice, some of these purchasing strategies changed the level of sources of power, and some contributed to a changed buyer power position. Based on the findings, it is recommended that less-powerful buyers, like that of vaccines, practice purchasing strategies with the orientation towards an attempt to change the environment, such as encouraging new supply market entries.

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## 1. Introduction

Organizations engage in exchange relationships (e.g. with suppliers) to get needed resources and thus become dependent on each other (e.g. in the resource view of the firm, [Wernerfelt, 1984](#)). The interdependence is not always evenly distributed, and some partners in the supply chain have the upper hand or leverage. The weaker party thus faces specific constraints to manage through its strategies. In a situation where the buyer is highly dependent on its supplier base, purchasing strategies are carried out in response to the constraints faced. The idea that organizations are constrained and influenced by external factors from the environment they function in, is widely accepted in theory. Empirical support for such predictions is limited, however (e.g. [Pfeffer and Salancik, 2003](#)).

Research on power in a social setting has been addressed in several disciplines (e.g. [Lusch and Brown, 1982](#); [Emerson, 1962](#)). But the concept of power is not operationalized commonly among studies. Researchers suggest a need for more studies on power (e.g. [van der Vaart and van Donk, 2008](#); [Pfeffer and Salancik, 2003](#)). Within purchasing research, the concept of power has

been mainly studied with the aim of providing normative recommendations to buyers to achieve competitive advantage (e.g. [Gelderman et al., 2008](#); [Cox et al., 2002](#); [Kraljic, 1983](#)). However, these studies also lack a unified and common operationalization of purchasing power, and empirical support explaining the interrelation between purchasing strategies practiced and purchasing power. Finally, most of these theories and models have been developed within the boundaries of the commercial sector and are based on the presumption that organizations strive to maximize power, generate profit, and are constrained by private sector regulations.

Buyer–supplier dependencies can also be found outside pure commercial contexts. One example, very important for global health, is vaccine purchasing for developing countries. The supply market for vaccines is highly concentrated, with a few multinationals controlling the majority of production. Developing countries buying vaccines have to either compete with industrial countries, or in the case of region-specific vaccines, face suppliers who often do not find their limited demand volume attractive. Interestingly, some strategies carried out by humanitarian organizations have reshaped the supply market ([Herlin and Pazirandeh, 2011](#)). For example, WHO initiatives to increase local production within developing countries have increased the number of suppliers.

In this study, it was sought to increase the understanding of the relationship between purchasing strategies carried out by low-power buyers (exemplified by vaccine supply chains for

\* Corresponding author. Tel. +46 46 222 81 41.

E-mail addresses: [ala.pazirandeh@tlog.lth.se](mailto:ala.pazirandeh@tlog.lth.se) (A. Pazirandeh), [andreas.norrman@tlog.lth.se](mailto:andreas.norrman@tlog.lth.se) (A. Norrman).

developing countries) and their purchasing power. In the next section, a brief overview of vaccine procurement for developing countries is presented, and then in Section 3, relevant literature on the topic is reviewed. Section 4 explains the methodology. Findings from the study follow in Section 5, are analyzed according to the conceptual model in Section 6, and are discussed in Section 7 that presents the resulting model of the study. Concluding remarks of the study are given in Section 8.

## 2. Vaccine procurement for developing countries

At a country level, vaccine demand is based on the willingness of countries to pay based on epidemiological justifications (Milstien et al., 2005). Vaccines are global public goods and undervalued by the market (Kremer, 2008). People are often more willing to pay for treatment than for prevention, and governments often prefer to lobby initiatives that are more popular. Developing countries need access to both general medicine and specific medicine for regional diseases at affordable prices (Danzon and Towse, 2004). UNICEF (2009) data show a growing divergence between the types of vaccines used in industrialized and developing countries. Developing countries can either purchase vaccines through humanitarian organizations like the United Nations Children's Fund (UNICEF), or directly from manufacturers (Hausdorff, 1996). However, most developing and low-income countries view vaccines as donor-supplied commodities, and thus do not include them in their annual health budget (Woodle, 2000).

The supplier base, on the other hand, is highly regulated with high start-up and fixed costs, and forms markets with monopoly or oligopoly tendencies (Danzon et al., 2005; Milstien et al., 2005). The number of mergers, acquisitions, and exits within the vaccine market further upholds this tendency. According to Cohen (2002) the number of suppliers producing vaccines decreased from 27 in 1967 to 17 in 1980, and to five suppliers providing the main portion of demand in 2004. There are some smaller suppliers with limited capacity supplying regional or local demand for some basic vaccines.

Due to the sensitive nature of vaccines, all products have to be registered by the local country National Regulatory Authority (NRA) (WHO, 2009). In the case of humanitarian organizations, in addition to local NRA qualifications, the organization's recognized qualification standards should also be met (e.g. the World Health Organization (WHO) pre-qualification standards).

## 3. Prior studies

To understand the interrelation between purchasing power and purchasing strategies, first literature on power in relation to purchasing was reviewed. Then literature on purchasing strategies in connection to different purchasing power positions was reviewed.

### 3.1. Power in purchasing

In his theory of power in sociology, Emerson (1962) defines power as an equivalent to mutual dependence, which gives rise to balance or unbalanced relationships. The resource dependency theory (RDT) extends the concept of power to inter-organizational relationships and predicts that through interdependencies, different power levels arise among organizations (Pfeffer and Salancik, 1978).

RDT suggests that in transactions, organizations share the control of the exchanged resource and thus become dependent on each other (Caniëls and Gelderman, 2005: 143). Some organizations have more power than others due to their interdependency characteristics and their social positions (Pfeffer and Salancik, 1978). When one actor is less dependent on the other, it has more influence, known as

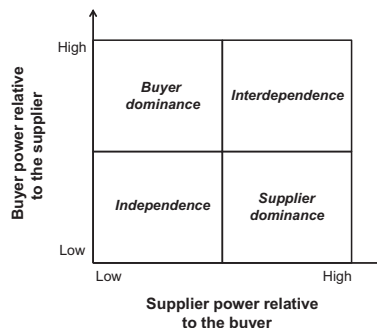


Fig. 1. Buyer–supplier power structure: The four power/dependency structures (adapted from Cox et al., 2000: 18).

a power advantage, or leverage (Anderson and Narus, 1990: 43). RDT recognized four different power/dependency positions: independence, buyer dominance, supplier dominance, and interdependence (see Fig. 1) (e.g. Cox, 2001; Pfeffer and Salancik, 1978). So, suppliers, buyers, and their extended supply chains operate in an environment of relative power allocation (Cox, 2001). This relative dependence shows the extent to which each partner can influence or be influenced by others (Batt, 2003).

To understand purchasing power, the factors that give rise to higher or lower power should be first identified (Kraljic, 1983; Pfeffer and Salancik, 1978). Several such factors have been mentioned in the literature (Kähkönen and Virolainen, 2011; Cox, 2001; Kraljic, 1983). In this study, the suggested factors for power in buyer–supplier relationships were combined and grouped into five categories and were called “sources of power” (see Table 1). The factors identified in the literature for each source of power are listed in the second column of the table and termed “indicators”.

In a situation in which the buyer has limited options in purchasing (i.e. *substitutability* of supply and demand), the supplier can reduce its own uncertainty by demanding higher cooperation from the buyer (Turner et al., 2000). Power asymmetry is also derived from unequal importance given to the exchange relationship (Pfeffer and Salancik, 1978); i.e. *interconnection* indicators (cf. Kähkönen and Virolainen, 2011). Social constructs of trust and commitment also impact the interconnection (but can also be considered the outcome of practicing purchasing power) (cf. Turner et al., 2000, and Kähkönen and Virolainen, 2011). Several authors also point to *information asymmetry* (e.g. Kähkönen and Virolainen, 2011; Cox, 2001) and *demand share* (e.g. Cox, 2001; Tang, 1999) as sources of power. *Reputation* of the organization among its partners also impacts its dependence and power. One example of power indicator related to reputations is legitimacy understood as the approval and acceptance of the outcome of an organization's activities by its stakeholders (Pfeffer and Salancik, 1978).

### 3.2. Purchasing strategies in relation to purchasing power

Within the purchasing process, shorter-term-oriented purchasing decisions differ from longer-term strategic ones (Handfield et al., 2009); these authors also note that the two decision orientations require different expertise, while both are equally important in the success of purchasing. Terpend et al., 2011: 74 define purchasing strategy as the “patterns of decisions made by purchasing professionals during the purchasing process and in response to internal and external constraints in the business environment”. They note how this definition relates to all parts of the purchasing process.

**Table 1**  
Typical sources of power noted in literature.

Sources of power	Indicators
Substitutability <sup>d</sup>	
Supply	<ul style="list-style-type: none"> <li>• Availability of product<sup>h</sup></li> <li>• Number of suppliers available<sup>a,b,c,f,h,j,k,n</sup></li> <li>• Entry barriers/market regulations<sup>a,b</sup></li> </ul>
Demand	<ul style="list-style-type: none"> <li>• Availability of demand substitutes<sup>d,h,j,k</sup></li> </ul>
Interconnection <sup>f</sup>	<ul style="list-style-type: none"> <li>• Importance of partner in the exchange decision<sup>d,f,j</sup></li> <li>• Duration of relationship (history)<sup>b,f</sup></li> <li>• Perceived importance of the exchange by partners<sup>a,c,f,g,i,k</sup></li> <li>• Partner switching cost<sup>a,b,c,f,k,n</sup></li> <li>• Mutual trust and commitment<sup>o</sup></li> </ul>
Information asymmetry <sup>g,f</sup>	<ul style="list-style-type: none"> <li>• Awareness of the demand<sup>b</sup></li> <li>• Control over information/Position in the communication flow<sup>b,f,g,i,j</sup></li> <li>• Knowledge of the supply market<sup>b</sup></li> <li>• Knowledge on the exchange<sup>b,i,f</sup></li> <li>• Transparency of information<sup>b</sup></li> </ul>
Demand share <sup>b,d,h,n</sup>	<ul style="list-style-type: none"> <li>• Competition/Number of buyers available<sup>c,h</sup></li> <li>• Volume or value exchanged compared to total volume or value in the market<sup>b,i,h,j</sup></li> </ul>
Reputation <sup>b</sup>	<ul style="list-style-type: none"> <li>• Legitimacy<sup>j</sup></li> <li>• Size<sup>f,g,m</sup></li> <li>• Brand<sup>b,d,i,j</sup></li> <li>• Financial status (cost/price structure)<sup>y,f,g,h,n</sup></li> <li>• Technology sophistication<sup>d,f,h,k</sup></li> <li>• Expertise, resources, and know-how<sup>d,e,f,g,h,m</sup></li> <li>• Logistics situation<sup>f,h,m,n</sup></li> </ul>

<sup>a</sup> Batt (2003).

<sup>b</sup> Cox (2001).

<sup>c</sup> Caniëls and Gelderman (2005).

<sup>d</sup> Ford et al. (1998).

<sup>e</sup> Gelderman and Van Weele (2005).

<sup>f</sup> Kähkönen and Virolainen, (2011).

<sup>g</sup> Katrichis and Ryan (1998).

<sup>h</sup> Kraljic (1983).

<sup>i</sup> Pfeffer (1981).

<sup>j</sup> Pfeffer and Salancik (1978).

<sup>k</sup> Porter (1985).

<sup>l</sup> Ramsay (1996, 1994).

<sup>m</sup> Stannack (1996).

<sup>n</sup> Tang (1999).

<sup>o</sup> Terpend et al. (2011).

At the highest level, purchasing strategies are connected to the corporate strategy (cf. Van Weele, 2010; Nollet et al., 2005; Cousins, 2005) directed towards the longest-term orientation, and intended to secure continuity of the organization's integrity. On lower levels, purchasing strategies are a variety of ways and means to translate plans into concrete and specific tasks (Nollet et al., 2005). Several models are developed in the literature to set purchasing strategies (e.g. Caniëls and Gelderman, 2005; Bensaou, 1999; Kraljic, 1983)—often 2 × 2 matrixes/portfolio models with each dimension being the cumulative effect of a number of factors. Most of these models consider power relations important. Dubois and Pedersen (2002) suggest that many firms perceive power and dependence a challenge in purchasing.

RDT predicts that all organizations strive to positively change their power through manipulating their relative level of dependence (e.g. Yeung et al., 2009; Batt, 2003; Ulrich and Barney, 1984; Emerson, 1962). Getting involved in exchange relations also gives rise to uncertainty. This is because the organization can neither directly control nor precisely predict the flow of resources from the exchange partner (Pfeffer, 1981). RDT assumes that organizations survive thanks to their effectiveness in managing constraints

and uncertainties derived from exchange relations, interdependencies and power imbalances.

There are several examples in the literature of purchasing strategies responding to purchasing power constraints. Pfeffer and Novak (1976) note how inter-organizational relationships such as dyadic cooperation or competition are formed as a response to environmental uncertainty and lack of control resulting from power asymmetry. Cooperative purchasing (Turner et al., 2000) in which organizations “pool” the purchasing function and resources is also recommended for increasing leverage. Another similar strategy is to pool several demand types from one supplier (Caniëls and Gelderman, 2005). Long-term contracting, joint venturing, or even merging with the powerful organization are among constraint absorption measures carried by less powerful partners in a relationship (Casario and Piskorski, 2005: 172). An alternative is to enhance relationships through informal socializing, which will develop protective norms and allow exchange partners to set ground rules. Such a practice can improve trust, which is otherwise weak in a relationship characterized by power imbalance (Lovaglia et al., 2003: 116).

A higher level of information sharing among partners has also been suggested to develop mutual trust and commitment in longer time periods (Cox et al., 2002). In situations of power imbalance resulting from limited supply options, the buyer can increase its power by diversifying or increasing substitutability of supply or demand; e.g. by looking for alternate suppliers in the global market (i.e. global purchasing), or standardizing the design of a special product to enable more suppliers to be available. Studies have also suggested backward integration in situations of limited supply options, such as locked-in relations (Kraljic, 1983; Williamson, 1985).

### 3.3. A conceptual framework

An interrelation between sources of power, purchasing power positions and purchasing strategies is predicted, as illustrated in Fig. 2. It is suggested that purchasing strategies are directed towards positively changing one or several sources of power in that exchange relation. As organizations attempt to change different sources of their power towards their exchange partners, they impact their level of dependency and thus their power position. RDT predicts that as organizations try to alter their environments through different strategies, they become subject to new and different constraints (Pfeffer and Salancik, 2003: xii). As the pattern of interdependence changes between partners, the organization will try to further negotiate in the new position (Fig. 2). Pfeffer and Salancik (2003: 106) suggest the following to be the two common purchasing strategy orientations as response to environmental contingencies (or “orientation of strategic response”): (1) adaptation strategies to fit the environment, and (2) attempting to change the environment to fit organization capabilities. In this study, this interrelation was empirically explored.

## 4. Methodology—a multiple case study

The interrelation between purchasing strategies and purchasing power is a dynamic phenomenon, which can be best studied in its real life context (Yin, 2003; Ellram, 1996; Eisenhardt, 1989). Understanding the purchasing strategies carried out requires a high level of communication and interaction with respondents. Easton (2007) suggests that if the aim is to advance theory, a comparative case study on elements of that theory is a suitable methodology. Hence, a multiple-case study design was applied. However, for those looking for statistical generalization an often stressed limitation with case study research is its aim to arrive at analytical/theoretical generalization (Yin, 2003). But cases are chosen because of their theoretical relevance, while “generalizability to the sampling population is not of main concern” (Barratt

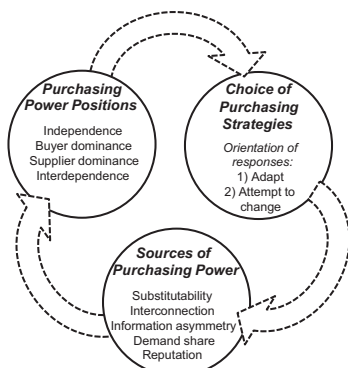


Fig. 2. A conceptual model of buyer–supplier power structures and purchasing strategies.

et al., 2011, p. 332). Barratt et al. (2011) also discusses other problems and limitations of case study research such as potential researcher bias, the challenge to demonstrate the objectivity of data analysis and how to present research outcome. This section clarifies the research process and choices made.

Based on an explorative pre-study phase, vaccines, as a product group, were the first set boundaries of the study. The focus on vaccines as the product group was made due to a number of characteristics making them suitable products for the purpose of this study: (1) the oligopolistic/monopolistic supply market (introducing several supply constraints), (2) the necessary quality standards in purchase and production (adding to supply challenge), and (3) the global dispersion of available suppliers, indicating power leaning more towards suppliers.

#### 4.1. Case selection

Cases were selected purposefully (Malterud, 2001) to represent buyers with different purchasing strategies towards the same supply market. Cases represent two main sample groups of developing

country buyers and humanitarian organizations. Through an explorative phase, three different purchase strategies were identified (i.e. self-purchase of vaccines, partly or wholly allocating purchase to humanitarian organizations, cooperative purchasing with other competitors), and through sampling, the intent was to get access to at least one case from each group. So, within each sample group a number of cases were chosen based on: (1) practice of different purchase strategies, and (2) access and response.

Based on these criteria, 81 “developing countries” and 7 “humanitarian organizations” were contacted. Respondents within these cases were first contacted by email and then by follow-up letters and telephone calls. Interested cases were then contacted with a list of structured questions. Five cases agreed to take part in the study (see Table 2).

Access was critical in this study, but the main theoretical criterion was diversity of purchase strategy and how it was organized, i.e. whether the country self-purchased, group purchased (cooperative purchasing), or purchased through humanitarian organizations (partly or wholly outsourced) (see Table 2). The aim was to understand possible different purchasing strategies towards the same supply market and in response to the same supply challenges.

#### 4.2. Data collection

Three constructs and the relationships among them were investigated within all cases: (1) sources of power, (2) purchasing power position of buyers towards vaccine suppliers, and (3) purchasing strategies carried out by each case. One of the strengths of the case study method is the possibility of carrying out multiple data collection techniques to get a deeper understanding of the phenomenon (Eisenhardt, 1989). The nature of some elements in this study (i.e. purchasing strategies and motivations behind them) called for interviews (see Appendix for the interview guide). In this technique, the aim was not to look into perceptions about the phenomenon, but rather to try and capture strategies practiced by buyers. Data were triangulated with other data collection techniques and sources (Yin, 2003; Ellram, 1996; see Table 3). For example, in approaching the market, if in the interview it was indicated that vaccines were all purchased from local sources, but in the documents reviewed no local suppliers were found, additional sources were reviewed to understand the situation better. In this case, the interviewee meant the local

Table 2  
Descriptive information about cases (statistics based on 2010 WHO factsheet data).

Cases	Iran	Latvia	Oman (GCC <sup>a</sup> )	Zambia	UNICEF
<b>Purchasing approach</b>	Self-purchasing	Self-purchasing	Cooperative purchasing	Purchasing through humanitarian organization	Humanitarian organization purchase on behalf of countries
<b>Local production</b>	~70% of local demand on basic vaccines	None	None	None	–
<b>Population (in millions)</b>	73.974	2.25	2.782 (30 for GCC)	13.09	2.5268 billion doses (annual purchase)
<b>Years of purchasing vaccines</b>	Since ~1920 (~80)	Since 2001 (12)	Since 1978 with GCC	Since 1964 (48)	Since before 1982
<b>Main background of purchasers</b>	Medical; Immunology; Vaccine production; Policy maker	Accounting; Economics; Finance	Medical; Economics; Immunology;	Mainly outsourced to UNICEF; Some local logistics partly outsourced to UNICEF	Business; Economics; Law; SCM; Public health
<b>Vaccine budget (2010)</b>	13m USD	8.9 m USD (4.7m LVL)	9.89m USD (3808386 OMR)	1.33 m USD (government); 6.9 million USD (total)	–
<b>Health expenditure (% GDP)</b>	5.5	6.5	3	6.1	–
<b>Under-five mortality rate</b>	26	10	9	111	–
<b>Life expectancy (Years)</b>	73	72	74	48	–

<sup>a</sup> Gulf cooperation council.

**Table 3**  
Sources of data within different cases.

Sample group	Developing countries				Humanitarian orgs
	Iran	Latvia	Oman (GCC)	Zambia	UNICEF
<b>Cases</b>					
<b>Sources of data</b>					
Interview (In)/Survey response (S)	1 (S) <sup>a</sup> 1 (In)	1 (S) <sup>a</sup> 1 (In)	1 (S) 1 (In)	1 (S) <sup>a</sup> 1 (In)	3 (In)
Email communication	4	2	2	2	1
<i>Secondary data</i>					
Presentations	1	–	–	–	19
Reports	2	3	–	3	2
WebPages	3	2	8	5	15
Internal documents	–	–	1	2	8 <sup>b</sup>
Papers/Articles	3	–	3	–	2
Videos	1	–	–	–	–
Participant observation	–	–	–	–	3 m
<b>Total</b>	<b>16</b>	<b>9</b>	<b>16</b>	<b>14</b>	<b>53<sup>b</sup></b>

<sup>a</sup> Survey circulated internally by the case, m=months.

<sup>b</sup> 16 Documents were reviewed on different vaccine prices.

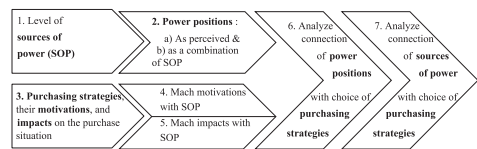
agents of global suppliers. In another example, the supplier preference of the country as indicated by the interviewee was triangulated with the country's historical data on vaccine purchase from UNICEF.

Respondents within each case were selected purposefully, to be directly involved in procurement, planning or implementation of vaccine purchase. Contacts were then given the option to participate in an interview of 2–3 h or to respond to questions and send back the written form. Access and response challenges were also limiting criteria in the number of primary data points per case. Also, a limited number of people (1–3) were involved with strategic planning and purchase of vaccines in each case. Geographical disparity of cases combined with time and cost constraints limited the possibility of participant observation. So a number of secondary data were reviewed to triangulate the primary data (Yin, 2003). Some secondary data sources were used commonly for all cases (e.g. the number of suppliers per vaccine type, or country statistics on immunization from WHO website).

Two respondents took part in the interview form and three sent written answers to questions (note that the difference in the number of interviews in Table 3 is explained by follow-up interviews also being included in the table). Interviews were conducted by telephone. All interviews were tape recorded and transcribed. All transcripts were sent to case representatives to increase reliability and validity of data. In all cases, representatives offered little feedbacks, which required further conversation and review of further documents for clarification. All cases were promised and sent an executive summary of interviews and the final report of the study upon completion. Case approval was obtained on the executive summaries before conducting the analyses. Three of the five cases had additional input to the summaries concerning insights that were not previously covered (e.g. further motivation of the purchasing strategies practiced). Transcripts were later coded according to the analytical procedure explained in the following sections.

#### 4.3. Analysis procedure

The analysis was conducted in two rounds: first for cases individually, and then across cases. In the first round, the process depicted in Fig. 3 was carried out for each case. In this process, after all individual case descriptions were finalized, a number of tables were devised for each case (as suggested by Miles and Huberman, 1984). (1) First based on data the level of each source of power was rated, then (2) the purchasing power position of each case was listed, both as perceived by the respondents and as evaluated by the researchers based on a combination of sources of power. Simultaneously, (3) the purchasing strategies practiced by each case, motivation for each strategy, and



**Fig. 3.** The analytical process of the study.

their perceived impact (from respondents' perspectives) were summarized. Based on tables in stage three, (4) motivations for, and (5) impacts of, purchasing strategies were matched with sources of power to identify those sources of power driving and being affected by each strategy. Finally, the interconnections between purchasing strategies and (6) purchasing power positions, and (7) sources of power were analyzed.

Sources of power were coded and analyzed based on labels in Table 1 (as suggested by Miles and Huberman, 1984, i.e. to use coding and pattern coding). To understand the level of each source of power, qualitative and quantitative data were all transformed into a scale of: very low, low, moderate, high, and extreme. Quantitative data were extracted from the interviews, where respondents rated different situations within a 1–5 scale, questions asking the average, maximum, and minimum number of a given indicator (e.g. number of suppliers), and factual data (e.g. number of suppliers for each vaccine type based on supplier websites). Qualitative data were extracted from interview responses and secondary data. The levels of sources of power were combined and interpreted into the total power position for each case. This was compared with the perceived power position as noted by the interviewees.

The individual case analyses were sent to each case representative and feedback was requested, and their input was reviewed to increase reliability and to further validate findings. It is worth mentioning that little deviation was returned in this stage.

Tables from this first round were combined in the cross-case analysis; commonalities and differences were identified and discussed. The understanding gained from this analysis was compared with suggestions from theory to refine the conceptual model and further our understanding of the topic.

#### 5. Observations

The observations from our multiple-case study are presented by firstly reviewing the purchasing strategies practiced by cases in

Table 4

Comparing purchasing strategies among cases.

Cases	Mandate					UNICEF Supply security	Total
	Iran Local purchasing Low-price high quality	Latvia Lowest price	Oman (GCC) High quality – low- prices	Zambia Secure affordable supply			
<b>Purchasing strategies</b>							
Competitive bidding	X <sup>b</sup>	X	X	X	X	X	5
Detailed contracts	X <sup>b</sup>	X	X	X	X	X	5
Using pre-qualified suppliers		X	X	X	X	X	4
Global purchasing	X <sup>b</sup>		X	X	X	X	4
Increased information sharing		X		X	X	X	3
Long-term supplier relationships	X					X	2
Securing funding (funding mechanisms)/receive external funding (for countries)				X	X	X	2
Local purchasing	X	X					2
Multiple sourcing	X					X	2
Standard information sharing	X <sup>b</sup>		X				2
Increasing forecast accuracy				X	X	X	2
Outsourcing all or part of purchasing process	X <sup>b</sup>			X	X		2
Pooling demands			X			X	2
Cooperative purchasing			X				1
Direct purchase							1
Soft contracts	X						1
Shorter-term supplier relationships			X				1
Developing supplier partnership	X						1
Invest in developing local suppliers	X						1
Future contracts/agreements with potential suppliers						X	1
Differentiated pricing for different suppliers						X	1
<b>Total</b>	<b>11</b>	<b>4</b>	<b>7</b>	<b>8</b>	<b>12</b>	<b>21<sup>a</sup></b>	

Dark grey=strategy common between 4 and 5 cases; Grey=strategy common between 2 and 3 cases; Light grey=strategy carried out by 1 case.

<sup>a</sup> Total strategies identified through cases as reported in the first column.<sup>b</sup> In purchase of the 30 percent locally unsatisfied demand.

5.1, and then the sources of power in 5.2 and thus the power position of each case in 5.3. Then the interrelationships among these constructs were analyzed.

#### 5.1. Purchasing strategies practiced by cases

In total, case representatives mentioned 21 purchasing strategies (see Table 4). The overall mandate of each case is given in the first row. Even though all cases aimed at gaining low prices, two other overarching themes are quality and market stability (i.e. securing supply). Zambia and UNICEF, specifically, stressed the importance of maintaining a functioning market to secure supply.

Competitive bidding in the form of public tenders was practiced by all cases. Detailed contracts and use of pre-qualified suppliers were also practiced by almost all cases. Iran, however, formalized its relationship with the global suppliers in detailed contracts, but used soft contracts based on the trust developed over time with its two local suppliers. Global purchasing was also a common strategy among cases. The structure of the market is the main reason behind the practice of global purchasing. Zambia had outsourced its purchasing process to a more powerful and reputable buyer (i.e. UNICEF), and also aimed at increasing accuracy and transparency of information shared with suppliers. In Table 4, purchasing strategies are coded, using different shades of gray, based on their frequency among cases. Our intent is to merely point towards the strategies that were more common among the limited buyers interviewed, who are essentially taking different approaches towards the same supply market. A pattern of strategies that the market dynamics might be driving will hence be indicated. However, this requires further large-scale studies, and here it is merely pointed towards it.

#### 5.2. Sources of power for different cases

First observations on each “source of power” are stated, and then the possible “power positions” for each case are concluded based on these sources. Table 5 gives an overview of characteristics of each source of power for each case and across cases. Below the characteristic for each source are discussed individually.

The vaccine market is highly concentrated with low substitutability possibilities for both supply and demand. Buyers’ perception of the substitutability level was not always the same, though. For example, Oman considered suppliers as partners who should commit to the relation. Oman’s representative described the supplier base as eager to approach the GCC group. Thus, they gave importance only to those suppliers who responded to the GCC tender calls, and not to the total supply market. Iran perceived few suppliers available in the supply market. They, however, did not consider substitutability a barrier in purchase due to the deep interconnection developed with their local suppliers.

The cases reported different levels of interconnection towards their supplier base. A common aspect among cases was high importance attached to the exchange. This was mainly due to the sensitive nature of vaccines for health programs. For information asymmetry most buyers aimed to increase information shared with their suppliers. This was especially stressed by Zambia and UNICEF, and for less attractive vaccines—with demand only existing in limited parts of the world (e.g. polio). According to UNICEF, to ensure availability buyers should consider supplier benefits, and not only focus on the lowest price. Following this perspective, UNICEF has allocated a higher level of importance to information asymmetry and interconnection aspects.

The demand share for vaccines is dependent both on the population and on the pooling strategy. In cases like UNICEF and Oman that pool demand among a number of countries, the

**Table 5**  
Different sources of power characterizations within and across cases.

Cases	Iran	Latvia	Oman (GCC)	Zambia	UNICEF
<b>Substitutability Supply</b>	Concentrated market, But suppliers are long time partners	Highly concentrated market	Dynamic market with alternatives available	Highly concentrated market	
<b>Demand General</b>	Very difficult to substitute Very low substitutability		Possible to substitute Moderate	Difficult to substitute Very low substitutability	
<b>Interconnection Importance of the relation</b>	Extreme	Low	Moderate	High	High
<b>Trust</b>	Moderate	High	High	Extreme	High
<b>Commitment</b>	Extreme	Very low	Moderate	High	Moderate–high
<b>Information asymmetry</b>	Low Most cases aim for increasing information transparency	High	Low	Moderate	Extreme
<b>Demand share</b>	Small demand share and high competition (global) High demand share and no competition (local)	Very small demand No competition perceived	Moderate (GCC)	Very small demand specific to some developing countries	High demand share Critical product Acknowledge alternate suppliers
<b>Reputation</b>	Moderate–High	Moderately low	Moderate (GCC)	Low	Moderate–High

demand share was considerably higher. Demand share for Zambia and similar countries with specific disease burdens is quite low. Suppliers' interest in producing these vaccines is also quite low. As a response to this constraint, Zambia and several other developing countries (UNICEF members) with such region-specific demand tap into UNICEF's demand-pooling strategies.

Finally, *reputation* aspects of buyers stem from experience, technology and resource levels, financial stabilities, brand, and legitimacy levels. UNICEF and Zambia (by accepting external funding) practiced strategies to stabilize finance or legitimacy of working with the humanitarian sector. Based on observations, working with “brands” such as UNICEF, seems to be more attractive to suppliers. Zambia also mentioned such preference among suppliers. Another situation, in which reputation was higher, was in the case of Iran. By developing long-term partnerships with local suppliers, legitimacy of the country was significantly increased with these partners, and hence the overall purchasing power was perceived as higher.

### 5.3. Purchasing power for different cases

None of the cases used an analytical model (portfolio or other) to determine their purchasing power position (see Table 6), but they still shared their perception of the purchasing power position. In parallel, their power positions are discussed based on the sources of power, and the results were not always the same as buyers' perceptions.

Based on the given options (see Fig. 1), Iran's representative perceived them to be in the “buyer dominance” power position in relation to its local vaccine suppliers, and “supplier dominance”

in relation to the global market. Local suppliers are extremely dependent on country demand. They are not WHO pre-qualified at this point in time (i.e. 2013). Consequently, there is a limited volume sold to buyers other than Iran. Iran perceived the purchased vaccine types to be of extremely low substitutability; i.e. only one specific vaccine type available for each disease. Iran's supplier base for vaccines is semi-concentrated. In addition to global suppliers, Iran has two local suppliers to choose from. With the deep supplier relationship with local producers, the buyer–supplier dependence is mutual, and even slightly shifted towards the Ministry of Health (MOH). They perceived the introduction of new suppliers within the market as very rare and have experienced several cases of exits, acquisitions and mergers.

Latvia regarded itself within the “supplier dominance” power position. They perceived the vaccine types purchased to be of extremely low substitutability with only one specific vaccine type available for each disease, and the supplier market to be highly concentrated.

Oman's representative perceived Oman to be in either the “interdependence” or the “buyer dominance” power position. Oman regards the vaccine types purchased to have reasonable levels of substitutability (at least two different types for each disease), and views the supply market as dynamic with substitute suppliers available (i.e. between 2 and 5 suppliers, often with the entrance of new suppliers in the tender process).

One of Zambia's vaccine managers noted that countries purchasing vaccines through UNICEF can be placed in the interdependence power position; this is when buying through UNICEF,

**Table 6**  
Discrepancy between purchasing power positions perceived by respondents and analyzed for each case.

	Using portfolio model or similar to understand power position	Countries estimation of their power positions	Researchers estimation of their power position based on indicators of sources of power	Gap in estimations
<b>Iran</b>	No	Buyer dominance (Local suppliers) Supplier dominance (global suppliers)	Interdependence (Local suppliers) Supplier dominance (global suppliers)	Yes (local suppliers) No (Global suppliers)
<b>Latvia</b>	No	Supplier dominance	Supplier dominance	No
<b>Oman (GCC)</b>	No	Buyer dominance/interdependence	Supplier dominance	Yes
<b>Zambia</b>	No	Supplier dominance (if self-purchase)	Supplier dominance	No
<b>UNICEF</b>	No	Supplier dominance/interdependence	Supplier dominance/interdependence	No

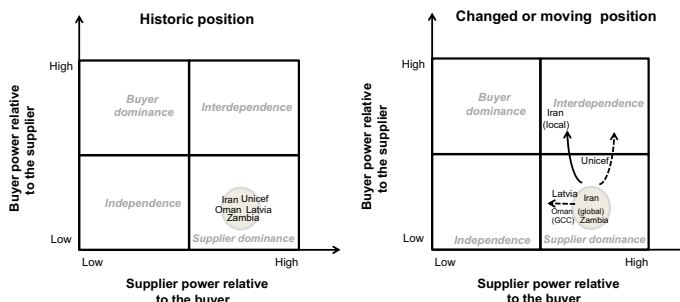


Fig. 4. Proposed purchasing power positions for cases.

otherwise they will be in a supplier dominance position. He added that this is because suppliers of routine vaccines are interrelated in a strong relationship with countries through UNICEF. Since UNICEF carries out the vaccine purchasing process, several of the market related indicators of purchasing power were referred to that of UNICEF (e.g. substitutability, or number of suppliers).

UNICEF's contract manager found it difficult to place the organization in any of the power positions. This is partly because it differs among suppliers, and "it also somewhat varies between vaccines". In this case, considering that UNICEF is part of an alliance (i.e. GAVI) and not a solo buyer in the market, the power structure leans more towards interdependence. However, the level of concentration in the market is also quite high, which indicates high dependence on suppliers.

In Fig. 4, different purchasing power positions (as analyzed by the researchers based on the combination of sources of power) are listed. In the figure, possible changes in power positions are also proposed.

Our understanding is that the Iranian self-sufficiency policy has contributed to an "interdependence" power position in relation to the two local suppliers. The government is the local supplier's sole buyer, making it highly dependent. But, in purchasing the locally unsatisfied demand from the global market, the country is still in the "supplier-dominance" power position. As for Latvia, even though they do not entirely consider themselves dependent on suppliers, market characteristics suggest it will be unlikely for them to gain "independence" from suppliers. Similarly, Oman's purchase of vaccines through GCC and allocating less importance to the supplier base shows a desire for increasing independence from suppliers. Due to the highly concentrated market structure, and thus high dependence of buyers on existing suppliers, complete "independence" from suppliers is unlikely. Zambia is highly dependent on suppliers and on UNICEF. Region-specific vaccines, which are not attractive to suppliers, and lack of trust in the profitability of demand, indicate a strong "supplier dominance" (SD). UNICEF, while realizing the importance of suppliers and allocating a high level of dependence on them, has a relatively high reputation as a vaccines buyer in the market, contributing to a move away from high "supplier dominance".

Our understanding is that most cases were originally placed in the "supplier-dominance" position, but some are moving to more favorable positions; that is to either lower their dependence on the partner, or increase the partner's dependence on them.

## 6. Analysis: interrelation between power and purchasing strategies

Connecting back to the conceptual framework, first the relationship between the intermediary construct of "purchasing power positions"

and "purchasing strategies" is assessed. Evidence suggests that all five cases were originally in the supplier-dominance power position. These cases then practiced different purchasing strategies towards the same market constraints. However, no case had explicitly analyzed their purchasing power or their power position based on a portfolio model or the like. Thus, our observations did not support an explicit connection between the buyers' power position and their purchasing strategies. However, evidence from our interviews suggested a direct connection between the choice of purchasing strategies and the individual sources of power (represented as their indicators), even though buyers do not term them as sources of power. Table 7 shows the frequency the case representatives mentioned a certain source of power as motivating the use of a purchasing strategy. Below first the impact of each source of power on choice of purchasing strategies is reviewed, and then the impact of practiced purchasing strategies on source of power and purchasing power positions is analyzed.

*Interconnection* (especially in terms of the importance of exchange for buyers) was the most common source of power impacting the choice of purchase strategies. For example, the purchasing specialist at Latvia National Health Services highlighted the vitality of "the care for country's children" (January 2012), and the UNICEF contract manager noted the "high value of vaccines purchased by UNICEF and delivered to countries" requiring special attention (January 2012). Trust and commitment (also indicators of interconnection) motivated "safeguards" such as detailed contracts, shorter-term relationships, and standard information sharing, and "strategies attempting to change the situation" such as soft contracts, long-term relationships, and increased sharing of information. Low substitutability was the other source of power driving several purchasing strategies. The cases practiced several purchase strategies (such as multiple sourcing, global sourcing, investing in local suppliers, or future contracts) to diversify the supplier base and to change this limited substitutability. Attempts at gaining higher reputation aspects such as stabilizing trust in finance, and symmetrizing information, were other common purchasing strategies in this context. Public procurement regulations and self-sufficiency policies, while not a source of power found in the literature, were mentioned by cases as reasons behind some purchase strategies. Public procurement regulations were also a main motive for competitive bidding and a motivation for detailed contracts.

On the other hand, the purchasing strategies practiced seem to have directly impacted the source of power. This impact has not always been planned before the practice, and in several instances the changes have emerged as an outcome of the practice. *Reputation*, for example, while it was not mentioned as the motivation for purchase strategies, was improved among several of the cases (i.e. all strategies except for differential pricing had affected one or

**Table 7**  
Disparity of sources of power driving purchase strategies as reported by cases

Purchasing strategies	Sources of power						
	Substitutability	Interconnection	Information asymmetry	Demand share	Reputation	Public procurement <sup>a</sup>	Self-sufficiency <sup>a</sup>
Competitive bidding		2	1		1	5	
Direct purchase	1						
Detailed contracts	1	7		1	2	2	
Soft contracts		3					1
Using pre-qualified suppliers		4					
Cooperative purchasing				2	1		
Pooling demands			1	1	1		
Long-term supplier relationships	2	5					1
Shorter-term supplier relationships		1					
Developing partnership with suppliers	1	5			1		1
Invest in developing local suppliers	1	2					1
Standard information sharing		1					
Increased information sharing		4	4		1		
Increasing forecast accuracy		3	2		1		
Global purchasing	4	2	1				
Local purchasing	3	3			1		1
Multiple sourcing	2	1					
Securing funding		3			3		
Future contracts/agreements with potential suppliers	1	1					
Differentiated pricing for different suppliers		1					
Outsourcing all or part of purchasing process	1	3	2		1		
<b>Total</b>	17	51	11	4	13	7	5

<sup>a</sup> Not a source of power listed in literature; however, was considered an important motivation behind strategies.

several reputation indicators). *Information asymmetry* and *interconnections* are other sources of power commonly affected by purchase strategies in favor of buyers (i.e. all strategies except for using pre-qualified suppliers, cooperative purchasing and pooling demand had affected one or several interconnection indicators).

An interesting observation is in regards to substitutability. Even though only some cases had aimed at increasing substitutability, strategies have, combined, positively impacted the situation. The Zambian representative, for example notes the importance of UNICEF's purchasing strategies in this matter: "Developing countries like Zambia do not have the status, the voice, the resource strength to secure supplier interest to continue and remain in the routine vaccine market. Without such a track record, the finance discipline, the ability to negotiate on prices, etc. it is not possible to see how single countries, or even a pool of such countries could retain the interest of manufacturers, particularly where they are also facing the lucrative markets of the developed world" (April 2012).

Strategies practiced to improve interconnection such as socialization with suppliers were also perceived to have favorable impact on sources of power. Iran's representative, for example, mentioned the importance of their local purchasing strategies to increase supply: "through supporting local suppliers we have been able to obtain more effective vaccines or produce new vaccine locally" (March 2012). While both local and global purchasing strategies had noticeable positive effect on sources of power, global purchasing also had negative effects. Global purchasing of vaccines means dealing with multinational global suppliers, which in turn means reduced reputation (i.e. due to relatively lower legitimacy compared to dealing with local suppliers), demand share, and interconnection compared to dealing with relatively smaller local suppliers.

## 7. Discussion—conceptualizing findings in a model

The findings of our study confirmed the predicted interrelation between purchasing power and purchasing strategies. The studied organizations did not, however, use the intermediary step to

understand power positions in setting purchasing strategies. Buyers practiced purchasing strategies as a direct response to "individual indicators of sources of power". Thus, the model was refined to that of Fig. 5.

Previously Pfeffer and Salancik (2003) had predicted that organizations strategically respond to power constraints by either attempting to change the situation in their favor, or by adapting to the situation. In this study, three orientations of strategic response were detected: (1) safeguarding against constraints, (2) attempting to change the purchase situation in their favor, and (3) adapting to the situation. A distinction between safeguarding and adapting to a situation is made in this study. While adaptation is more like forfeiting power, safeguarding is more of a defense orientation. It was also observed that in safeguarding and/or attempting to change the situation, purchasing strategies in turn impact the sources of power. This could give rise to new limitations or opportunities from a changed level of sources of power. The new level of sources of power in turn impacts the choice of new purchasing strategies.

### 7.1. Interrelation between sources of power and purchasing strategies

One finding from the study was that buyers responded to the constraints from different sources of power, and not necessarily to the cumulative effect of sources of power consolidated as the power positions. Decision makers might consider the effect of some of these sources of power more narrowly. In this study, for example, interconnection constraints were the prevailing drivers of purchasing strategies. The purchasing strategies practiced in response to each individual source of power, with the orientation of their strategic response, are illustrated in Fig. 6. Response to each power source is discussed individually below.

In response to low *substitutability* of supply and demand, buyers are safeguarded by either long-term detailed contracts, or developing long-term relationships with suppliers. Long-term contracts are suggested as a constraint absorptive method in locked-in situations (cf. Casciaro and Piskorski, 2005; Caniëls and

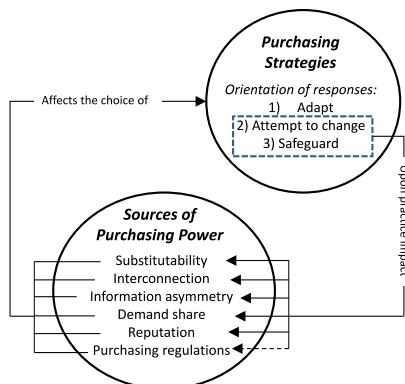


Fig. 5. Proposed two-way relation between purchasing power and purchasing Strategies.

Gelderman, 2005), and socialization practices, such as developing partnerships as practiced by Iran, are suggested to foster cooperative norms based on trust and commitment, to safeguard the uncertainties stemming from low substitutability (cf. Lovaglia, 2003). Practices such as future contracts/agreements and development of local suppliers support the entrance of new suppliers into the supply market, which by adding a link to the network of relationships will extend the existing power distribution to the added link (Emerson, 1962). This will contribute to a better power position for the buyer. Buyers practice local purchasing and multiple sourcing following the same rule, but global purchasing is practiced in adaptation to the geographical dispersion of supply.

In response to low *interconnection* levels, buyers practiced competitive bidding, detailed contracts, standard information sharing, and multiple sourcing. Formalization of relationships in detailed contracts is practiced as a safeguard towards low trust in partners (cf. Kraljic, 1983). Longer-term contracts have been suggested as a constraint absorption means for less powerful buyers (Casciaro and Piskorski, 2005; Caniels and Gelderman, 2005). To safeguard against low trust, contracts were only awarded in limited time frames. Buyers wanted to adhere to the legal terms of the contract to maintain supply security, but not become too dependent on one supplier in whom they did not fully trust. This practice resembles that of “coercive strategies” (e.g. Kähkönen and Virolainen, 2011). In the softest form of coercive strategies, the actor gives recommendations to the partner without further explanation. Other forms are to promise rewards in case of compliance, threats of punishment, or appealing to legal aspects of the contract. Coercive strategies are, however, suggested to be useful for powerful partners (Gelderman et al., 2008), while buyers in this study generally had less power than suppliers.

While Oman safeguarded against lack of trust, Iran and UNICEF aimed at changing the situation by increasing the level of trust. Iran and UNICEF improved their legitimacy and reputation through socialization practices in situations of low trust (among other interconnection aspects). Socialization practices, such as soft contracts (cf. Cai and Yang, 2008; Petersen et al., 2008), long-term supplier relationships (cf. Cox et al., 2004), and developing supplier partnerships (cf. Caniels and Gelderman, 2005), are suggested to improve trust in an asymmetric power position (Lovaglia et al., 2003). Socialization practices are, in general, suggested to foster successful supply chain relationships (e.g. Cai and Yang, 2008; Petersen et al., 2008). Two forms practiced by Iran

and UNICEF were developing local partners and future agreements/contracts, respectively. All cases except for Oman also increased their legitimacy among suppliers by increasing sharing of demand information with them (cf. Cox et al., 2002).

Zambia, facing high power imbalance with low interconnection levels, outsources part of its purchasing process to UNICEF. Casciaro and Piskorski (2005) had previously predicted that in situations of “too high of a power imbalance” it would be unlikely for the weaker party to attempt to change the situation. “Outsource of the purchasing process” has an “adaptation” orientation rather than an “attempt to change”. Additionally, it is predicted that buyers who face purchasing challenges due to lack of purchasing capabilities and resources outsource the purchase process to an expert intermediary or a consultant (Flowers, 2007; 2004). The purchasing challenge for Zambia is mainly derived from low substitutability of supply and low incentive among suppliers to increase supply, and the motivation is to take advantage of UNICEF’s purchasing strategies and to benefit from their reputation and legitimacy.

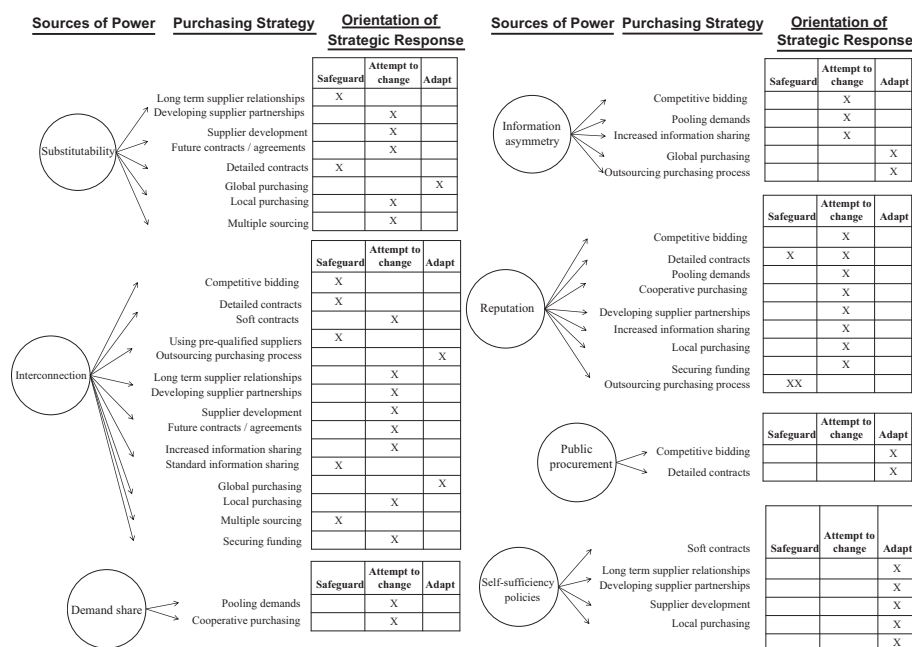
Low *reputation* was safeguarded by Oman and Zambia through formalized contracts (cf. Gelderman et al., 2008). Detailed contracts, while acting as a coercive strategy to safeguard against lower leverage (e.g. Petersen et al., 2008), in the longer-term forms are practiced to increase legitimacy and reputation. Competitive bidding was practiced by all cases except Iran, in the attempt to change three of the reputation indicators: (1) maintaining control over the purchase, (2) increasing legitimacy and (3) improving brand. Other strategies practiced to increase the “control over the purchase decision” were cooperative purchasing, pooling demand, developing supplier partnerships, and increased information sharing. Securing funding, whether practiced by humanitarian organizations or in “receipt of financial support” by countries, was aimed at increasing the financial status of buyers, and hence to increase the legitimacy and reputation of these buyers (cf. Emerson’s, 1962 suggestion to improve status for better power).

Finally, in response to public procurement regulations, and self-sufficiency policies, purchasing strategies were mainly practiced with an adaptation orientation. These sources of power act like constraints rather than motivations. From a policy making perspective, however, most public procurement regulations are set to ensure equity and to minimize areas of individual opportunism.

## 7.2. Impact of purchasing strategies on purchasing power

In general, purchasing strategies, whether planned or not, had impacted the sources of power. *Reputation*, *information asymmetry*, and *interconnection* were sources mostly impacted by purchasing strategies practiced in this study. In some cases the combination of changes on sources of power has contributed to a changed purchasing power. The high dependence on suppliers, however, makes it difficult for buyers to change their purchasing power to independence or buyer dominance. Iran and UNICEF, however, have managed to move towards interdependence.

For example, based on our analysis, UNICEF, being historically placed at the supplier-dominance position, practiced strategies to increase its leverage (e.g. demand pooled, increased information sharing, moving towards long-term supplier relationships, socialization with suppliers, investing in local supplier development). As a result of changes from the combination of these purchasing strategies, UNICEF has moved towards an interdependence purchasing power position with more leverage. Within the new position, the organization is practicing new strategies to diversify its supplier base even further—e.g. multiple sourcing, or higher socialization and cooperation with suppliers. UNICEF would have had difficulty practicing these strategies within the original supplier dominance position.



Secondly, the study contributes to the RDT literature by making a further distinction between adaptation and safeguarding as purchasing strategies' orientation of response. RDT suggests that organizations respond to power constraints by either adapting to the situation or attempting to change it (Pfeffer and Salancik, 2003). In this study, a further distinction between safeguarding and adapting to a situation was made. Adaptation is more oriented towards forfeiting power, and safeguarding is more of a defense orientation. For example, while one case merely adapted to the very low purchasing power situation by outsourcing its purchasing process to a buyer with better purchasing power, another case safeguarded against low power constraints (specifically from low-trust) by strategizing short-term and highly formalized relationships; and yet, another case attempted to change the situation (increase the level of trust) by long-term and more socialized relationships. Safeguarding or attempting to change the situation can change the level of sources of power and can possibly change

the purchasing power. No evidence of adaptive strategies changing the level of sources of power, was found in our study.

Thirdly, the study extends the concept of inter-organizational power to the “purchasing power” of a buyer facing varying options in the supply market. In this view, power was not viewed within the dyad of established or future relationships, but was rather viewed as the leverage a buyer has in entering a relationship with the available options in the supply market. The identified sources of power reflect this view. Additionally, while several studies have mentioned the factors giving rise to higher or lower power, suggestions were inconsistent (see Table 1). This paper, adds to this stream of literature, by combining the factors identified in different articles, and introducing a categorization of factors giving rise to higher or lower purchasing power referred to as “sources of power” (see Table 1).

Finally, this study contributes to literature on power in purchasing, through re-contextualization of predictions to that of nonprofit buyers. The interrelation between sources of power and purchasing strategies was confirmed for the nonprofit vaccine procurement for developing countries. Specifically for vaccine procurement, while quality was the critical and driving factor in purchase, price was a constraining factor for buyers with limited funding. In other words, buyers select suppliers that can accommodate quality and volumes within the limited funding they have. The implication of this finding is for model developments for purchase of vaccines in this context.

## 8.2. Managerial implications

Less-powerful buyers are advised to practice purchasing strategies that either attempt to change the level of constraining power sources, or to safeguard against them. This study did not find any outcome favoring mere adaptation to the situation. As such, in a highly concentrated market, like that of vaccines, strategies that maintain such concentration are not advisable. On the other hand, purchasing strategies that facilitate new market entries in order to have better alternative sources of supply in the long run can improve the buyer's position. In the same line of thought, such buyers are recommended to develop and incentivize smaller suppliers to encourage market dynamics. Several benefits were also identified from developing and partnering with local (and often small) suppliers in such supply markets; in addition to communication and collaboration opportunities of local purchasing, part of the benefits is related to the higher dependency of local suppliers to local demand.

Additionally, in deciding what purchasing strategy to practice, buyers should consider the impact of their purchasing strategy on their context-specific sources of power (as suggested in the model in Fig. 5). The strategic importance of the buyer also impacts the effect of purchasing strategies on sources of power common among competitors (e.g. on substitutability of supply). Purchasing strategies practiced by a more reputable buyer can impact sources of power to a greater degree. Thus buyers are recommended to think about the impact of the purchasing strategies they carry out on both their individual sources of power (e.g. reputation or demand share), and shared sources of power (e.g. substitutability).

## 9. Limitations and future research

While we believe that this study extends purchasing research's understanding of less-powerful buyers, it is important to understand the limitation of this study when using its findings.

A limitation of the study has been using single informants that add subjectivity and bias in evaluation of purchasing strategies. Even though, perceptions were triangulated with secondary data to reduce such bias, the subjectivity of motivations for strategies should be considered when deriving conclusions from our study.

The study is also limited to the general boundaries of case study research; for example the inherent boundaries of the range and size of the sample. However, case study research does not aim for statistical generalizability. In other words, findings of this study are proposing what the explanation could be, rather than concluding what they are. Further studies, both cases and larger scaled, are required to explore the extent our findings can be generalized and the borders of their applicability. Future research is needed to test and extend our suggested model in larger scale studies within this, and across other contexts.

This also opens up for quantitative research testing the findings in this study, and to find patterns between different types of organizations and situations. One example would be to investigate to what degree different organization use portfolio models with consolidated power positions to set purchase strategies (or if their strategic responses is based on different individual sources of power). Could differences be found between types of organizations like commercial vs. non-profit, large vs. small, powerful vs. less powerful, from industrial countries vs. developing countries, mature vs. young purchasing department etc?

It could also be investigated whether better outcomes will be achieved if purchasing strategies were aligned with consolidated power positions or with individual sources of power. To answer such a question, comparative studies of the two situations are required.

Additionally, future research should look into prescriptive studies on which purchasing strategies can improve less-powerful buyers' purchasing position. We propose research on innovative practices, from different contexts, on new strategies to handle the low-power purchasing situation, and especially on how to attempt to change this situation in their own favor.

In this study, focus was given to development project in the humanitarian context. Further research could explore the characteristics, problems and practices specific to purchasing practices of humanitarian organizations (both in disaster response and development activities). Such studies could be the foundation of discussions on what the two sectors (e.g. commercial and humanitarian) can learn from the other, and in what situations the humanitarian sector has unique challenges and circumstances that might need different purchasing solutions (e.g. where building local capacities might be more important than factors such as cost or quality). This could further be divided into different types of organizations such as international humanitarian organizations (e.g. the United Nations responsible units, the Federation of Red Cross and Red Crescent, International Non-Governmental Organizations (NGOs), etc), local governments, and local NGOs.

## Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at <http://dx.doi.org/10.1016/j.pursup.2013.11.002>.

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## Paper III



# **Empowering the underdog buyer: Vaccine purchase by developing countries**

Ala Pazirandeh

Lund University, Department of Industrial Management and Logistics, 221 00, Lund, Sweden  
E-mail: ala.pazirandeh@tlog.lth.se, Tel: +46 73202832

## **ABSTRACT**

In this study it is aimed to investigate how purchasing strategies practiced by weaker buyers can affect their purchasing power, and to propose a classification for purchasing strategies that can improve their purchasing power. The idea that purchasing strategies are set and practiced in response to power constraints is widely accepted in literature. It is also suggested that in such response, purchasing strategies can impact power; it is however, not clear how. Buyers are mostly viewed as the powerful partner controlling the purchase decision and the contract. There are several situations where buyers do not have leverage though; e.g. in facing monopoly supply-markets. We investigate the question of how purchasing strategies impact power for the less powerful buyer in a multiple case of developing countries buying vaccines. We found that some practiced strategies had impacted the purchasing power, even without buyer intention or realization. Based on previous literature and findings from the study, a classification of purchasing strategies is proposed for the less-powerful buyer to improve its purchasing power. The findings of the study provide insights for what aspects less-powerful buyers should consider when setting purchasing strategies to improve their purchasing power.

*Key Words: Humanitarian logistics, less-powerful buyer, Purchasing power, Purchasing strategies, Resource Dependency Theory, Vaccine procurement.*

## 1 Introduction

Power has been a much-discussed factor in influencing business decisions in literature (e.g. Meehan and Wright, 2012; Pfeffer and Salancik, 2003; Cox, et al. 2002), including a challenging factor in making purchasing decisions (Dubois and Pedersen, 2002). Based on different factors, buyers can be in different power situations ranging from no- to high- power. Yet, less is known about buyers in less-powerful positions (Bastl, et al. 2013), or how purchasing strategies practiced by the less-powerful buyers can improve their purchasing situation.

Vaccine purchasing by developing countries is an example of such a situation. The supplier base is highly concentrated. Production is highly regulated and thus, set up costs and fixed costs are very high. So, market entry is rare while exits and mergers are a common phenomenon. Developing countries have to either compete with industrial countries with often better purchase power, or struggle in purchase of region-specific vaccines which producers often do not find attractive. In addition, developing countries and the humanitarian sector in general often suffer funding limitations, and a historically disdain view from the business sector (van Wassenhove and Besiou, 2013; Austin, 2000). Such dynamics suggest an asymmetric power position in favor of vaccine suppliers. Different buyer strategies against this same dominant supply-market make the context suitable for this study; and, the nonprofit assumptions of the context compared to theories used, makes the context interesting.

In this study, it is aimed to investigate how purchasing strategies practiced by these less-powerful buyers can improve their purchasing power. Suggestions of Emerson (1962) for weaker partners in a social setting are extended to the purchasing context and a classification for purchasing strategies that can improve purchasing power for less-powerful buyers is introduced.

In the next section of the paper, the related literature on the topic is reviewed and theoretical anticipations presented in sections 2. In section 3, the methodology behind the paper is presented, and in section 4, case studies are analyzed. Findings are discussed and propositions presented in section 5. The paper is concluded in section 6.

## 2 Purchasing strategies, purchasing power, and its sources

Drawn on resource dependency theory (RDT) purchasing power in this study is understood as the dependence of the buyer on its supplier base (c.f. Pfeffer and Salancik, 1978; Emerson, 1962). The concept of power in relationships has been studied in several disciplines (e.g. Emerson, 1962, in sociology; Lusch and Brown, 1982, in marketing; Williamson 1982, as control in transactions; Hingley, 2005, in relational marketing; or in political sciences). Such research recognize power an important factor in shaping and influencing supply chain relationships. Discussions on the impact of supply chain strategies on power are rare though. There are also several studies within the purchasing field with the aim to provide normative guidelines on how to interact with suppliers in different power positions (e.g. Cox et al. 2002; Gelderman, et al. 2008; Kraljic, 1983). Most of these studies consider buyers the influential partner, with few addressing strategies by the less-powerful partner (Bastl, et al. 2013, is among the first, studying consortia formation by weaker partners, and Herlin and Pazirandeh, 2011, study possible initiative by weaker buyers to change their power position).

Purchasing strategies are *“patterns of decisions made by purchasing professionals during the purchasing process and in response to internal and external constraints in the business environment”* (Terpend, et al. 2011: 74). A strategy, however, could be also realized and not necessarily planned (Mintzberg, 1978). Practicing purchasing strategies is a changing process based on trial, error and changes of the business environment (Terpend et al. 2011). There are several studies on how to set “the right” purchasing strategies, often based on contingent factors (e.g. the product, the industry, the market, or power) (e.g. portfolio models such as Kraljic, 1983). Power is a factor commonly considered in the suggested purchasing models (e.g. Caniels and Gelderman, 2005; Kraljic, 1983). Purchasing power is not operationalized in these models though.

RDT explains inter-organization links as power relations based on resource exchanges. In strive for access to required resources exchange relations are formed (Cyert and March, 1963) and partners become more or less dependent on each other (Caniels and Gelderman, 2005:143). The level of dependence can indicate the level of influence, or leverage, each partner has on the other (Anderson and Narus, 1990; Batt, 2003; Pfeffer, 1981). Exchange relations also mean that organizations cannot entirely control or predict flow of resources from the partner (Pfeffer, 1981)

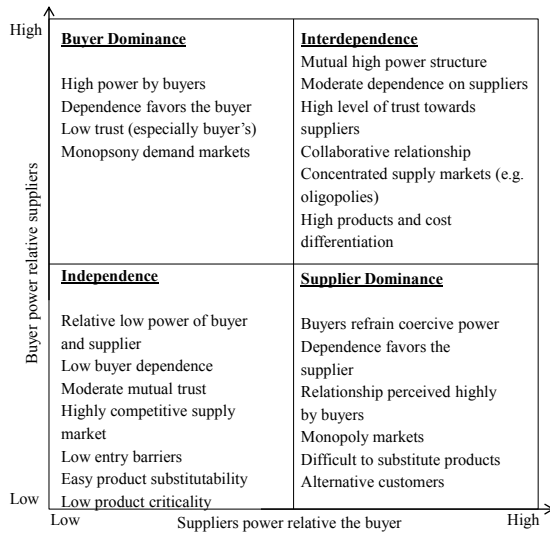
and should aim at managing them. Power is viewed relative between partners, giving rise to balanced or unbalanced relationships (Pfeffer and Salancik, 1978). So, buyers, suppliers and their supply chains work within power relations (Cox, 2001). RDT suggests that organizations set and practice strategies in response to power constraints and with the objective to gain better competitive advantages.

Based on such characteristics, social positions and interdependencies, some organizations have more power than others (Pfeffer and Salancik, 1978). However, literature is not consistent as to what gives rise to more or less power. Such discrepancy in literature is partly because power is context related, and multifaceted. As illustrated in Table 1, sources of purchasing power mentioned in different literature were combines and labeled in 5 groups: 1) substitutability of demand and supply, 2) the level of interconnection in relations, 3) asymmetry of information, 4) demand share, and 5) reputation.

**Table 1 Typical sources of power noted in literature (Pazirandeh, 2012)**

Source of power		Indicators	References
Substitutability	Supply	<ul style="list-style-type: none"> <li>• Availability of product</li> <li>• Number of suppliers available</li> <li>• Entry barriers / market regulations</li> </ul>	Batt, 2003 Cox, 2001 Caniels and Gelderman, 2005 Ford et al. 1998 Gelderman and Van Weele, 2004 Hingley, 2005 Kahkonen and Virolainen, 2011 Katrichis and Ryan, 1998 Kraljic, 1983 Pfeffer, 1981 Pfeffer and Salancik, 1978 Porter, 1985 Ramsay, 1996; 1994 Stannack, 1996 Tang, 1999 Terpend et al. 2011
	Demand	<ul style="list-style-type: none"> <li>• Availability of demand substitutes</li> </ul>	
Interconnection		<ul style="list-style-type: none"> <li>• Importance of exchange partner</li> <li>• Duration of relationship (history)</li> <li>• Perceived importance of the exchange</li> <li>• Partner switching cost</li> <li>• Mutual trust and commitment</li> </ul>	
Information asymmetry		<ul style="list-style-type: none"> <li>• Awareness of the demand</li> <li>• Control over information</li> <li>• Knowledge of the supply market</li> <li>• Knowledge on the exchange</li> <li>• Transparency of information</li> </ul>	
Demand share		<ul style="list-style-type: none"> <li>• Competition / Number of buyers available</li> <li>• Volume or value exchanged compared to total volume or value in the market</li> </ul>	
Reputation		<ul style="list-style-type: none"> <li>• Legitimacy</li> <li>• Size</li> <li>• Brand</li> <li>• Financial status (cost/price structure)</li> <li>• Technology sophistication</li> <li>• Expertise, resources, and know-how</li> <li>• Logistics situation</li> </ul>	

The combination of these power sources gives rise to different interdependencies and thus different power positions. However, whether the absolute value of all indicators contributes to the purchasing power, or if contextual factors impact one indicator to contribute more, requires further studies and falls outside the boundaries of this study. This might in fact be the reason behind different studies operationalizing power differently. Figure 1 presents a more general taxonomy for buyer-supplier power positions (c.f. Cox, et al. 2000; Pfeffer and Salancik, 1978) based on their relative power.



**Figure 1 A suggested taxonomy of different buyer-supplier power positions (adapted from Cox et al. 2000)**

Studies suggest that organizations practice strategies in strive to favorably change their power positions or adapt to it (e.g. Pfeffer and Salancik, 2003; Cox, 2001). They predict that the less-powerful partner, in strive for better leverage, will either reduce its dependence, or increase its partners dependence (e.g. Batt, 2003; Emerson, 1962; Ulrich and Barney, 1984). In the most direct form, strategies are practiced to manage and control the source of power (Hillman, et al. 2009; Pfeffer and Salancik, 1978: 143), and thus possibly can change the power position.

Few studies, however, have looked at strategies practiced by less-powerful buyers, and if these strategies can change buyer's power (Bastl, et al. 2013). Drawn on the theoretical views stated above, the answer would be yes. Emerson (1962) historically suggested four different approaches

for the weaker partners in a social relation to improve its position: 1) withdrawal from the relationship, 2) expanding the social network, 3) increase of status and 4) forming coalition. In this paper, we extend these strategies to the inter-organizational context and for the less-powerful buyers. Casciaro and Piskorski (2005), however, predict less-powerful buyers to refrain from such attempts if the power imbalance is high. This is because the powerful supplier will resist the strategies.

In this study, these questions are investigated by studying purchasing strategies practiced by four different developing countries all facing the constraints from the same powerful supplier market of vaccines for a product they are highly dependent on and which is not substitutable.

### **3 Methodology**

A multiple case study was designed for the purpose of the study. Siggelkow (2007) mentions how case studies are useful methods to motivate and illustrate relations in real-life contexts. Easton (2007) suggests a comparative case study on elements of theory to be suitable to extend that theory. To understand what purchasing strategies are practiced by different developing countries towards the same supply market challenges, first a general understanding was gained from web articles and from spending a month at UNICEF (UNICEF is a third party giving technical or financial support (i.e. in different extents) to the countries).

Four different buyer groups with different levels of acquired support and different overall purchasing strategies for vaccines were selected (i.e. purchase through UNICEF with high level support; partly purchase through UNICEF with low level support; self-purchase with low level support; cooperative purchase with low level support). Purchasing managers or program planners for vaccines, within these groups were contacted, and structured data was gathered to better understand: 1) the purchasing strategies practiced by each country, 2) the reasoning behind each practice, and 3) the impact of the strategies on sources of power. To understand the reasoning behind and the expected outcome from practiced purchasing strategies direct conversation with respondents was required. Based on the gained insights a number of propositions were developed for future studies (Dubois and Gadde, 2002).

### 3.1 Sampling and case selection

UNICEF is the main supporting body for vaccine purchase for developing countries. Based on the understanding gained from the time spent at UNICEF, a purposive sampling method was carried out to select cases (Malterud, 2001). In this study, the term developing country is associated with those whom receive minimum to high, financial or technical support in purchase of vaccines. Countries are selected from UNICEF's list of countries within their vaccine forecast sheets. Countries on this list all either purchase part of their vaccine need through UNICEF or acquire technical support such as training. During an explorative pre-study, three overall purchase strategies were identified among countries; that is self-purchase, cooperative purchasing, or outsource of part, or whole of the purchasing process. Cases were selected based on the following criteria: 1) practicing the different purchase strategies, 2) different levels of received support from UNICEF and 3) access and response. Based on these criteria, 81 developing countries were initially contacted, with a final count of four taking part in the study.

Theoretical criteria (i.e. the three different purchase strategies) were the main driver in selecting cases (see Table 2). For example, if in the first round of contacting cases, Latvia and Iran responded, in the second round focus was given to cases that practiced cooperative purchasing, and cases that purchased through humanitarian organizations. Few countries have local vaccine production, and so mostly purchase vaccines from the global market. Table 2 is a summary of some descriptive data on the cases.

Two parallel approaches were carried out to get access to the right contact with the right knowledge to respond to questions (i.e. snowballing and a top-down approach). Only 1-3 people were involved with strategic planning and purchasing of vaccines in each country. Both approaches had similar outcomes, and combined lead to the final count of cases. A cover letter briefly explaining the objective of the study, the input required from the case, the possible outcome for the case, and requested direction towards responsible(s) in purchase and / or planning of vaccine procurement in that case was sent to the samples. 16 cases showed initial interest. Respondents in these cases were contacted with a list of structured questions and asked for an interview time, or to return written responses. The final participants, were the four cases in Table 2.

**Table 2 Descriptive information about cases (statistics based on 2010 World Health Organization (WHO) factsheet data)**

Cases	Iran	Latvia	Oman (GCC*)	Zambia
Purchase strategy	Self-purchasing	Self-purchasing	Cooperative purchasing with GCC	Outsourcing purchasing to UNICEF
Vaccine production	Local production	None	None	None
Years of purchasing vaccines	Since ~1920 (~80 Y)	Since 2001 (12Y)	Since 1978 with GCC	Since 1964 (48Y)
Main background of purchasers	Medical Immunology Vaccine production Policy maker	Accounting Economics Finance	Medical Economics Immunology	Mainly outsourced to UNICEF Some local logistics
Vaccine budget (2010)	13m USD	8.9 m USD (4.7m LVL)	9.89m USD (3808386 OMR)	1.33 m USD (government) 6.9 million USD (total)
Population	73.974 million	2.25 million (90,000 under 18)	2.782 million (30 million GCC)	13.09 million
Health expenditure (% GDP)	5.5	6.5	3	6.1
Under-five mortality rate	26	10	9	111
Life expectancy	73	72	74	48

\* = Gulf Cooperation Council

### 3.2 Data collection

After the general understanding gained from the one month spent at UNICEF vaccine division, a structured data collection was carried out from the cases. To reduce single point bias, data was triangulated with archival and other sources (Yin, 2003) (see Table 3). Some data sources were used commonly for all cases (e.g. the number of suppliers per vaccine type, or country statistics on immunization from WHO website) to facilitate comparisons.

All interviews were conducted through telephone, tape recorded, and transcribed. A summary of individual interviews and the cross-case analysis was sent to all respondents. Case approval was obtained on the summaries before the analysis. The data collection guide was based on a structured literature review. A structured data collection was used to standardize responses and so, minimize differences between interviews (as suggested by Eisenhardt, 1989; Yin, 2003). A combination of open questions, closed questions and likert-scale questions were incorporated in the guide.

**Table 3 Sources of data within different cases**

Cases		Iran	Latvia	Oman (GCC)	Zambia
Sources of data					
Interview (In) / Survey response (S)		1 (S)*	1(S)*	1 (S) *	1(S)*
		1 (In)	1 (In)	1 (In)	1 (In)
Email communication		4	2	2	2
Archival data	Presentations	1	-	-	-
	Reports	2	3	-	3
	WebPages	3	2	8	5
	Internal documents	-	-	1	2
	Papers / Articles	3	-	3	-
	Videos	1	-	-	-
Total		15	8	16	14

\* = Survey circulated internally by the case

Purchasing power was captured based on sources of power listed in Table 1. An open-ended answer was devised for all questions to capture possible strategies and sources of power not listed in literature. Changes or possible changes of different strategies on the purchase situation, and the motivation behind taking each strategy were also questioned. The guide was tested two times before the study, and altered to fit each case based on archival data explaining their vaccine procurement and initial communication with case representatives.

### 3.3 Data analysis

Systematic combining, interpretive techniques and structured discussions with experts from the context were used, to analyze gathered data and validate results (Miles and Huberman, 1994). “Systematic combining” is a method in which empirical findings are matched with theory during the process (Dubois and Gadde, 2002). Outcomes of this analysis are a set of propositions. Based on this method, analyses are presented combined with case descriptions (e.g. Bygballe and Jahre, 2009).

The analysis was first carried out for each individual case. Responses were coded according to the literature review (Miles and Huberman 1994: 56). In places where literature labels were not available, suitable codes were incorporated. Analyses were sent to each case representative and asked for feedback and input. The impact of each purchasing strategy was analyzed on indicators of each source. For example, if purchasing strategy “A” had increased trust, a “plus” sign marked

the impact, and if it contributed to higher market regulations, a “minus” sign marked the impact for substitutability. Sources affected by each purchasing strategy were analyzed and listed in tabular forms. Sources affected, effective strategies, and the overall changes were identified. Then, results were compiled in tables for cross-case analysis.

## **4 Case studies and analysis**

In general, all four cases are within the less-powerful purchasing power position. All cases are facing a highly concentrated supplier market. Some sources of power were at different levels for cases, and some were common for all. Substitutability was very low for all buyers.

### **4.1 Case descriptions**

#### **4.1.1 Iran**

Iran’s purchase process is based on “*local and affordable-effective*” strategy. Two local vaccine suppliers were established in the 1920s, and have been manufacturing human vaccines since the 1940s. The ministry has a long and strong relationship with these two suppliers. There is no tender or competitive bidding process for these two local suppliers and the Ministry of Health (MOH) extends agreements (soft contracts) with these two suppliers on annual basis. A remaining 30 percent of demand that is not satisfied by these local suppliers is tendered from global suppliers and at times purchased through UNICEF.

The choice of local purchasing is motivated by the easy access to these suppliers, low prices offered by them, and also in line with their “self-sufficiency” policies. In case of global purchasing, UNICEF is a preferred channel, due to their prices and trust in the quality of products offered by them. Local purchasing and long-term relations with the local suppliers is perceived to have helped local manufacturers stay up-to-date in their products, increase production capacity and develop new vaccines. Purchasing the locally unsatisfied demand through UNICEF has helped decrease administrative and transaction cost and efforts. Maintaining a mix of local and global sources is perceived to have created competition for local manufacturers with global suppliers, resulting in increase of quality and quantities in local production. Iran also believes in sharing of correct and trustable information with suppliers to create transparency and mutual trust.

#### 4.1.2 Latvia

Latvia's purchase objective is obtaining "*lowest-price*". They have been purchasing vaccines since 2001. Latvia practices public tenders. From suppliers satisfying required volumes, those offering the lowest price for specified volumes and specifications get the contract. Local markets were mentioned to be the main target (i.e. local agents / branches of global suppliers). These global suppliers are mainly EU companies.

The tender exercise is in accordance with public procurement regulations. The sensitivity of the product motivates formalization of relationships. The relatively small demand share in the market is perceived unlikely to affect tendencies. Lowest price strategies are thought to have decrease prices in theory. Suppliers are considered incentivized to offer better prices based on transparent information.

#### 4.1.3 Oman

Oman is one of the six member countries of the Gulf Cooperation Council (GCC), who purchase part of their vaccines and pharmaceutical needs jointly. GCCs vaccine procurement system started in 1978. The member countries carry out planning and specifications jointly within the GCC system, but can also carry out tenders independently. Oman carries out independent tenders simultaneous to GCC tenders, and selects the best price. The tender process is centralized within GCC headquarters. Countries sign contracts individually though. The common practice is to have one-year contracts.

Lower prices, timely and regular provision of high-quality vaccines, increase of competition (e.g. to include all WHO pre-qualified vaccines), introduction of new vaccines, WHO production guidelines, faster tender processes, and standardizing vaccine use among members are motivations behind the cooperative practice. Lower prices were stressed as a key driver of the decision, but individual control was thought of as a success factor. Competitive bidding and the one-year duration of contracts are practiced to maintain competition. The cooperative has contributed to lower prices, facilitated introduction of new vaccines (Hib, Tetra, Pentavalent vaccine and Peumo), increased security and timeliness of supply, introduced purchase of auto-disable (AD) syringes, and has accelerated the purchase process.

#### **4.1.4 Zambia**

Zambia's MOH has been involved in planning and purchasing of vaccines since the country's independence in 1964. According to WHO factsheet, as of 2011 Zambia finances 19 percent of its national immunization program, while international donors finance the remaining part. The MOH outsources most part of its vaccine purchase process to UNICEF. There are small portions of specific vaccines directly procured by the MOH through competitive bidding and from global sources. Suppliers for vaccines purchased through UNICEF, are selected by UNICEF and in accordance with the WHO pre-qualified lists. UNICEF communicates the list of preferred suppliers to the MOH. This process also includes a dialogue by UNICEF with suppliers to ensure understanding of existing challenges in immunization, especially security of region specific supply.

Price and supplier commitment to continue production are the main drivers of Zambia's strategies. In the vaccine market, suppliers could easily switch from routine vaccines that are important for developing countries to vaccines more expensive and probably more profitable for the industrial countries. The main reason behind purchasing through UNICEF is to take advantage of economies of scale. Long-term contracts practiced by UNICEF - and on behalf of members such as Zambia - are perceived to incentivize manufacturers to remain in the routine vaccines market. Sharing accurate and sufficient information on demand and budget is also critical in this matter. Local unit prices are not competitive compared to global sources.

Purchasing through UNICEF has contributed to access to routine vaccines in a more stable manner. Pooling demands through UNICEF, specifically with the added finance assurance of donors, has resulted in higher supply security mainly because suppliers get: a) more accurate demand data, predictable demand, planned program dates, and b) the assurance of available financing. The strategy to purchase through UNICEF has not specifically contributed to the purchasing function, but rather to the finance and planning of immunization. Supplier-gained benefits also make it unlikely for suppliers to entertain direct purchase of countries like Zambia. The formal contracts practiced by UNICEF, and sharing accurate and sufficient purchase information has increased supplier incentives.

## 4.2 Impact of purchasing strategies on power

The frequency each source of power was considered affected by each purchase strategy across cases is summarized in Table 5. Data in this table merely summarizes the perceived impact of purchasing strategies across cases and not any aggregated impact. Reputation, while not the direct target of purchase strategies, has been improved. Information symmetry and interconnections are other sources of power improved in favor of buyers. Only some cases aimed at increasing substitutability, but several strategies have had an impact on it. While some strategies improved power sources specific to the individual case (e.g. reputation), some improved sources common for all buyers (e.g. number of supply substitutes).

**Table 4** Disparity of buyer-supplier power sources affected by purchase strategies carried out by cases

Purchasing strategies	Competitive bidding	Detailed contracts	Soft contracts	Using pre-qualified suppliers	Cooperative purchasing	Long-term supplier relationships	Shorter-term supplier relationships	Developing partnership with suppliers	Invest in developing local suppliers	Standard information sharing	Increased information sharing	Global purchasing	Local purchasing	Multiple sourcing	Securing funding	Outsourcing all or part of purchasing
Sources of power																
<b>Substitutability</b>	2+	1+		1-				1+	1+			2+	1+2-	1+	1+	1+
<b>Interconnection</b>	2-	3+	1+			1+	1-	1+	1+	1-	2+	1+1-	1+	1+1-	1+	2+
<b>Information asymmetry</b>		3+			1+	1+	1+	1+	1+	1+	2+		1+			1+
<b>Demand share</b>					1+			1+	1+			2-	2+	1-		1+
<b>Reputation</b>		3+	1+1-	1+	1+	1+	1+	1+	1+	1+	2+	1+2-	2+	1+	1+1-	1+

*+ = Source positively affected    - = Source negatively affected*

*Shades of grey = strategies with most perceived effect*

*Shades of brown = most affected source*

## 5 Discussion and propositions

In the next section, first the impact of each purchasing strategy on purchasing power is discussed. Then a classification for purchasing strategies that can improve purchasing power are suggested based on these discussions and suggestions from the literature.

### 5.1 Impact of purchasing strategies on power

Vaccines being a public good fall under public procurement regulations and that is why practice of competitive bidding is so prevalent among cases. Competitive bidding is a strategy commonly used in the public sector for its legitimacy and formal procedure (Rothkopf and Harstad, 1994: 368). The strategy is also practiced where suppliers are not fully trusted, but can deprive “*a selling agent of power*” (Rothkopf and Harstad, 1994: 368). Lack of trust was observed among some cases. One of the cases saw competitive bidding as a diversification strategy aimed at keeping the supplier base dynamic. The practice is however suggested suitable in supply markets with several alternatives available (Kraljic, 1983; van Weele, 2010), and not a concentrated one such as that of vaccines. The strategy can become an entry barrier and drive mergers and acquisitions within a concentrated market, and result in unfavorable purchasing power.

Cooperative purchasing, which was practiced by the GCC countries, was perceived to have increased Oman’s leverage by improving demand share, reputation and information symmetry. However, if the pooled demand is not strategically decided for, the strategy can become an entry barrier resulting in an even more concentrated supply market (as also predicted in Nolle and Beaulieu, 2005). A recommended strategy is to strategically divide the pooled demand among suppliers to maintain market dynamics and to support smaller, new, or local suppliers.

Another interesting strategy practiced by our cases, was the use of WHO pre-qualified suppliers. Buyers in the market did not all have the required knowledge base to check vaccine quality, which also requires considerable time and resources. On the other hand, WHO has developed expertise in the area, specifies technical requirements in production and for final vaccines, pre-qualifies suppliers and vaccines, and provides information publicly to buyers. Several buyers use this list, with the following motivations: 1) higher trust in the WHO list due to their own lack of knowledge, or 2) not to repeat a resource demanding procedure that a trusted entity (i.e. WHO)

has already done. Using pre-qualified suppliers can be rephrased as technical outsource of the “specification” phase in the purchasing process.

I also came across cases that outsourced other stages or all of their purchasing process to an external partner; for example Zambia and Iran tapping into UNICEF’s purchasing. The motivation behind this strategy was reported to be lower prices of quality-vaccines. Pooling demands, gives UNICEF the leverage to get better terms and conditions than individual countries. UNICEF has also developed the required expertise to purchase vaccines - the expertise that might not be present in some of the buyer countries. Flowers (2007; 2004) had previously observed the strategy in purchase of IT solutions by firms. He suggests that in situations where the buyer lacks required capabilities to carry out a complex or infrequent purchase, a third party can be contracted. For Zambia, the purchasing challenge is mainly due to suppliers not finding the region specific demand attractive to invest in. The drawback of functional outsource of purchasing is that the situation has made Zambia highly dependent on UNICEF. As a result, shifting back to self-purchase is perceived very difficult. For Iran, on the other hand, the strategy is motivated due to the more favorable terms and rates of UNICEF.

Backward integration is a strategy recommended in theory for locked-in situations such as the high supplier dominance presented in this study (e.g. Kraljic, 1983). The strategy however, requires high investment and knowledge transfer. This seems difficult and even non-cost effective for all vaccine buyers. Yet, some countries like Iran, have invested in development of local suppliers that in principal resembles backward integration. These local suppliers are fully dependent on local demand. The mutual dependence improves interconnection and results in a more favorable power position for the buyer.

Investing in local supplier development and developing partnerships with them, while greatly impacted by self-sufficiency policies, are practiced to increase control and to secure supply by Iran. By increasing interconnection aspects, a higher level of mutual dependence is developed between partners. With high stakes at place, the developed partnership can contribute to better supply security. Especially since the main customer for these local suppliers is local demand, if not the only customer. By limiting the immediate supplier base to that of local partners, reputation, demand share, and in turn interconnection and information symmetry are improved.

There were also opposing strategies practiced in response to the same power constraint. Importance of partners and trust derived both detailed and soft contracts. For soft contract the importance of developed partners and thus “higher” trust indicates less formalization required (c.f. Lovaglia, 2003), while the importance of the exchange relation with “lower” trust drives other buyers to formalize relationships. Both strategies were reported to improve importance of the exchange relation and supplier commitment. In detailed contracts, legally binding aspects ensure commitment (c.f. Gelderman et al. 2008), while in soft contracts cooperative norms based on higher trust ensure commitment (c.f. Cai and Yang, 2008).

Insufficient trust and high uncertainty derived both long and short-term supplier relationship strategies for Iran and Oman respectively. Long-term supplier relationships were practiced to increase supplier incentive and motivation (c.f. Cai and Yang, 2008; Petersen, et al. 2008). Both buyers reported increased control on the purchase decision. For Iran, long-term relationships coupled with partnership development are the likely reason for this increased control.

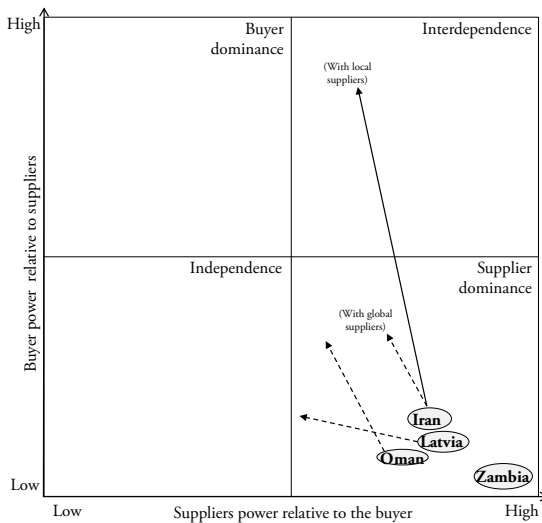
Additionally, increased information sharing has had a positive impact on interconnection, information symmetry and reputation; the specific positive impact on improved trust and commitment of suppliers is worth highlighting (c.f. Cox et al. 2002). It was also observed that while standard sharing of information practiced by Oman, is perceived to maintain control over information and the purchase decision, cases that practiced increased sharing of information have experienced the same results. This might be due to the benefits gained from higher transparency and knowledge about the exchange by buyers.

In practice of global versus local purchasing a main driver was unavailability of local suppliers (c.f. Rajagopal and Bernard, 1994). Self-sufficiency policies however, encourage investment in local suppliers and to prioritize local sources. So, Iran having national production, preferred local purchase, while others favored established brands. While global purchasing increased supply options, and decreased demand share and control over purchase, local purchasing had a contrary effect. With local suppliers gaining the incentives and investment to increase their production capacity and knowledge, local availability improves. Local purchasing has also had a positive effect on information symmetry and on developing mutual trust and commitment.

As a result of the combined impact of purchasing strategies, possible changes in purchasing power of buyers in illustrated in Figure 2 (buyer positions are schematic and not based on

numeric data). Iran is suggested to have moved to an “interdependence” structure in relation to its local suppliers, which also decreases the country’s dependence on global suppliers. Due to the high dependence on vaccine suppliers, it is unlikely for the other cases to manage a complete shift from the supplier dominance structure.

Oman has managed to move toward better power leverage mainly by increasing demand share, reputation and information symmetry, through cooperative purchasing. Latvia has moved towards more independence by shifting focus from continuous purchase. Finally, Zambia is suggested to not have changed power position. Zambia is highly dependent on suppliers that don’t find the volume or value of region-specific demand profitable to invest in. So, one way countries such as Zambia are adapting to the high power asymmetry is by outsourcing their purchasing process to intermediaries like UNICEF with better power leverage.



**Figure 2** Proposed movements of cases along the power positions

## 5.2 Classification and Propositions

Our empirics confirmed the theoretical suggestions that purchasing strategies impact sources of power (cf. Hillman, et al. 2009; Pfeffer and Salancik, 1978: 143), and that the changed level of power sources can result in a changed purchasing power. Thus, a classification of purchasing

strategies can be introduced based on sources of power. We use Emerson's (1962) suggestions for social relations as a base in our discussion, connect each strategy to the sources of power identified in this paper, and add suggestions for sources of power not connected to any strategy. Each strategy group in the introduced classification is connected to the empirical examples from our study. Consequently, two strategy groups of socialization and formalization are added. In other words, by systematically combining the findings from this study with those of Emerson (1962), six different strategy groups for less-powerful buyers to improve their purchasing power are suggested.

In *withdrawal*, the weaker partner refrains "all" or "part" of its motivational bound from the relationship (Emerson, 1962). Terminating contracts, functional outsource of purchasing or parts of its process, or withdrawal in amount or scope of information sharing, are purchasing strategies that fall within the "*withdrawal*" group. The decision on how to replace the terminated supply channel determines the new purchasing power. Withdrawal attempts at a locked-in situation where buyer purchasing power is extremely low, can contribute to a slight improvement of buyer power position, due to the reduced level of dependency (see Figure 3). In functional outsource of purchasing, since the contracted intermediary is commonly pooling demand from several buyers and specializing in the purchasing function, the purchasing power can be improved to a better extent (see P1b in Figure 3). Backward integration or shift of business focus, are examples of complete withdrawal of the relationship (Kraljic, 1983).

For example, in this study, low supplier interest in some region-specific vaccine demand, contributed to low supply availability, and thus high asymmetric power favoring suppliers. Zambia among several other countries within the similar situation, have tackled the problem by functional outsource of their purchasing process to a partner like UNICEF. Flowers (2007; 2004) had previously suggested that buyers of IT solutions outsource their purchasing process to a third party expert when they lacked purchasing capabilities and resources. In the case of Zambia, the purchasing challenge is mainly derived from low substitutability. Their motivation was reported to be taking advantage of economies of scale and hence better prices. Such withdrawal attempt is more favorable, since the intermediary outsourced to, is likely to have developed expertise in purchase from one side, and take advantage of higher volumes pooled from the other. One drawback is a functional dependence developed on the intermediary.

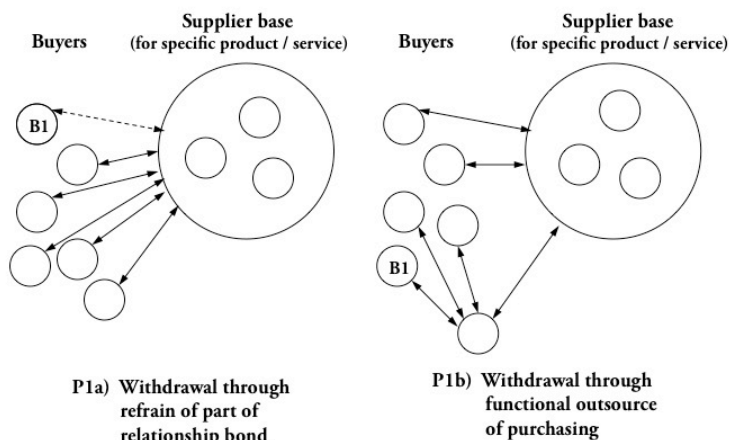


Figure 3 Illustration of two possible withdrawal strategies by a less-powerful buyer (B1)

***Proposition 1a) In high asymmetric power situation favoring suppliers, withdrawal of part or all of commitment from suppliers, reduces dependence on suppliers, and can contribute to a slightly more favorable power position (P1a in Figure 3).***

***Proposition 1b) In high asymmetric power situation favoring suppliers, functional outsource of part or all of the purchasing process to an expert intermediary, reduces dependence on suppliers, and can contribute to a moderately more favorable power position (P1b in Figure 3).***

Emerson (1962) suggests that adding a link to a network of relations extends the power position from the original network to the extended one, improving the situation for the less-powerful partner. Diversification strategies identified in our study both in terms of developing new and smaller suppliers, and developing local suppliers fall within such “*network expansion*” strategies (see Figure 4). For instance, by investing in development of new or smaller suppliers, Iran had gained a better power position. On the other hand, it was observed that local purchasing increased demand share and control over purchase. This is because local suppliers in this study were heavily dependent on local buyers. Thus, local purchasing increased legitimacy of buyers in

relation to those local suppliers. Local purchasing was also found to have a positive effect on information asymmetry aspects and on developing mutual trust and commitment.

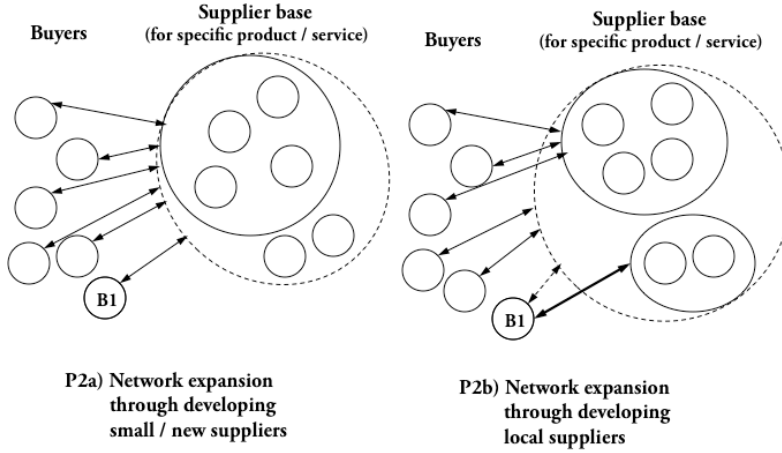


Figure 4 Illustration of two possible Network expansion strategies by a less-powerful buyer (B1)

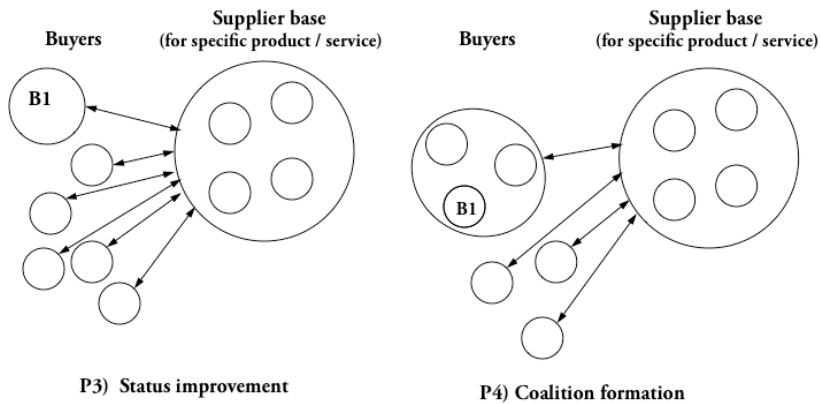
**Proposition 2a)** *For less-powerful buyers facing a concentrated market, network expansion by supporting establishment and development of new suppliers, distributes the power on more suppliers contributing to a more favorable power position (P2a in Figure 4).*

**Proposition 2b)** *For less-powerful buyers facing a concentrated market, network expansion by purchasing from smaller local suppliers can increase demand share, trust and commitment, reputational aspects, and improve information symmetry, contributing to a more favorable power position (P2b in Figure 4).*

The third strategy group is “*status improvement*” strategies, in which buyer’s power is improved by increasing the motivational investments in a relationship (Emerson 1962: 38). Investing in IT or logistics capabilities, improving organizational expertise, or funding mechanisms within the humanitarian sector are examples in this group (P3 in Figure 5). In this study, stabilizing the financial status of Zambia contributed to better supplier incentives. The legitimacy attached to socially responsible activities is another incentive for some suppliers to collaborate with the

nonprofit sector (e.g. Austin, 2000). The legitimacy attached to partnering with bigger names like UNICEF was higher than that of partnering with for example individual countries.

***Proposition 3) For less-powerful buyers with low reputational aspects, status improvement strategies aimed at stabilizing finance, improving IT, logistics capabilities, or organizational legitimacy can contribute to a more favorable power position (P3 in Figure 5).***



**Figure 5** Illustration of Status improvement and Coalition formation strategies by a less-powerful buyer (B1)

*Coalition formation* is another suggested strategy to increase purchasing power (c.f. Emerson, 1962). Cooperative purchasing (e.g. Turner, et al. 2000) is a clear reflection of this idea (see P4 in Figure 5). Nollet and Beaulieu (2005) suggest increase of bargaining power to be one of the first objectives of cooperative purchasing. Increasing the demand pooled is suggested to increase purchase leverage (c.f. Caniels and Gelderman, 2005; Nollet and Beaulieu, 2005). The strategy also increased suppliers' trust in profitability of demand without reducing the supplier base size, and thus increases their commitment. Taylor (1999) contends that buyers usually form these cooperative arrangements in situations of low power, where demand is uncertain and so the industry is fragmented. Probability of such strategies becoming entry barriers within a supply market has also been predicted in literature (e.g. Nollet and Beaulieu, 2005). The argument is that only bigger suppliers with sufficient capacities can accommodate large volumes pooled.

However, if the pooled demand is strategically used in conjunction with network expansion strategies, the negative impacts can be mitigated.

***Proposition 4a) For less-powerful buyers, cooperative purchasing, without reducing the supplier base size can foster mutual trust with suppliers, improve information symmetry, demand share, and reputational aspects and contribute to a more favorable power position (P4 in Figure 5).***

***Proposition 4b) In pooling demand in concentrated markets, awarding volumes to limited number of suppliers, can decrease supply substitutability, and result in a less favorable power position***

Less-powerful buyers can also improve their purchase situation by *socialization* strategies, or safeguarding against lack of power through *formalization* strategies. Through *socialization* strategies, buyers take advantage of developed protective norms within a relationship to improve their purchase situation (see P5 in Figure 6). On the other hand, in *formalization* strategies, legal obligations are used to safeguard the lack of power and its associated uncertainties (see P6 in Figure 6). Li et al. (2010) find formalization helpful for organizations to control costs and quality, and in structuring their supply networks. However, formal agreements require higher commitment and thus mean higher risk (Turner et al., 2000:19). In this study for example, while some buyers practiced high formalization against lack of trust, some aimed at changing the situation by increasing trust. Socialization strategies such as increased information sharing (c.f. Cox et al. 2002), long-term supplier relationships (c.f. suggestions from Casciaro and Piskorski, 2005; and Kraljic, 1983) are among strategies suggested to increase trust (c.f. suggestions from Petersen et al. 2008; and Lovaglia et al. 2003). Socialization strategies were found to also improve buyer legitimacy and reputation among suppliers. Both detailed contracts with several safeguards and clauses, and soft contracts with less detail are suggested in literature.

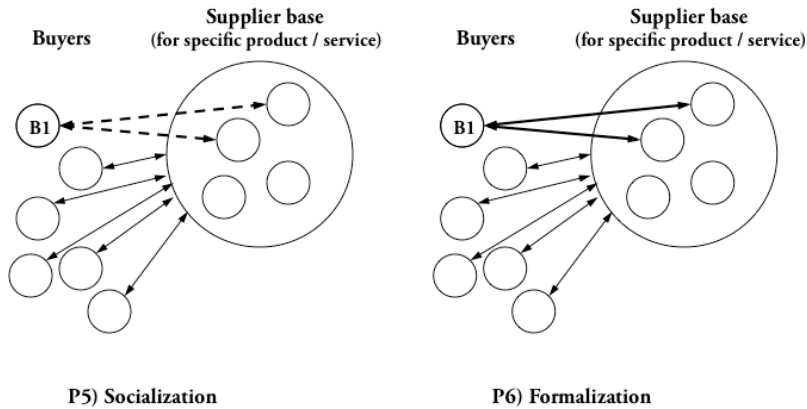


Figure 6 Illustration of Socialization and Formalization strategies by a less-powerful buyer (B1)

*Proposition 5) For less-powerful buyers, socialization strategies can foster mutual trust, improve buyer legitimacy and reputation and contribute to a more favorable power position.*

*Proposition 6) For less-powerful buyers, formalization strategies can safeguard against supply uncertainties and contribute to a moderately more favorable power position.*

## 6 Conclusion, contributions, and practical implications

In conclusion, this study connects the ongoing conversation on power in business relations (e.g. Meehan and Wright, 2012; Pfeffer and Salancik, 2003), especially, in purchasing (e.g. Dubois and Pedersen, 2002) by the less-powerful buyers (Bastl, et al. 2013). Drawn on RDT predictions, it was studied whether, and how, less-powerful buyers can affect their purchasing power. Buyers in general will benefit from knowing how their purchasing strategies impact their power.

This study is among the first to empirically investigate strategies practiced by less-powerful buyers and their impacts (c.f. Bastl, et al. 2013; Herlin and Pazirandeh, 2011). A main area of contribution in this paper, is borrowing the notion behind suggestions of social power theory for weaker partners (Emerson, 1962), to introduce a classification of purchasing strategies for less-powerful buyers in the inter-organizational context. Based on the findings from this study, two

strategy groups were added to the original four categories Emerson (1962) had introduced in social relations.

Consequently, the following classification of purchasing strategies is introduced for the less-powerful buyers to improve their purchasing power: withdrawal, network expansion, status increase, coalition formation, socialization or formalization strategies. Withdrawal can be practiced by complete termination of the relationship and replacing the supply channel with backward integration, functional outsource of purchasing to a third party, or shift of business focus (c.f. Kraljic, 1983), or partial relationship withdrawal such as decrease of information shared. Withdrawal and formalization strategies are predicted to only improve buyer's purchasing power up to a moderate level, while the other four strategy groups have the possibility of making better improvements. Mixed strategies are advisable to mitigate unfavorable outcome of some strategies depending on the context. For example, network expansion can mitigate coalition formation's result on concentrated markets. To more clearly understand the outcome of these strategies for buyers, deeper studies are needed on each of them.

Another contribution of this study is re-contextualizing purchasing power theories to the public procurement domain (e.g. RDT suggestions by Pfeffer and Salancik, 2003; or Cox et al. 2002 model). One assumption in these models is the for-profit objective of partners in the exchange relation. In the context of vaccine procurement by developing country, buyers do not have a for-profit objective, and are constrained by the public procurement regulations. The product is most often offered at no cost to final beneficiaries and thus the concept of customer satisfaction is also not associated with profit making.

The results confirm RDTs predictions that purchasing strategies can affect the power position for or against buyers, within the public and nonprofit context. However, firstly the sources of power are changed, which their cumulative effect can possibly, but not necessarily, change the power position. Buyers in this context, while not always striving to maximize their power (c.f. Cox et al. 2001), responded to constraints from sources of power. Through such realized or planned response, sources of power were affected. The strategic importance of the buyer also influences the effect of purchasing strategies on power sources common among all buyers (e.g. on substitutability).

So, it is recommended for buyers to think about the impact of their practiced purchasing strategies on both their individual power positions, and the shared power sources in the market. In this study, strategies that maintained the supply market concentration were found unfavorable (e.g. cooperative purchasing). To increase their leverage, buyers in this context are recommended to consider the impact of their strategy on all sources of power.

## **7 Limitations and future research**

Findings in this study have been subject to different methodological and theoretical limitation. While the context of the study has given rise to interesting insight, difficulties in getting extensive access to decision makers, limited the primary data points. The bureaucratic systems that are often present in the public sector, and the absence of a database with contacts within such systems was a hinder. Access to more cases within each sample group, or in each purchasing strategy group could have decreased the possible biases attached to each case. The nature of the theoretical sampling also resulted in cases being geographically dispersed in different continents.

This study could have been carried out through a longitudinal in depth case study. The aim of the study required a broader sample of countries to gain insight into different purchasing strategies towards the same supply market limitations though. Our approach limited the depth one could achieve in a single case study, but gave a broader insight. The same limitations exist in looking at vaccines as a whole compared to selecting one vaccine type, or expand to any aid product.

Both such limitations and the findings call for further research. In line with the tradeoff between depth and breadth, future research should focus on both case studies on specific purchase strategies found in this study, and larger scale quantitative studies to test the propositions. Such study would add deep insight into especially less explored strategies such as cooperative purchasing, pooling demands, securing funding, outsourcing the purchasing process and differentiated pricing for different suppliers. Further studies on the impact and role of trust in power relations are also recommended. Trust has been considered both an independent and a dependent variable in relation to power. In this study, trust is considered as an indicator for power, which can be also impacted by power relationships. This topic however needs further

investigation. Finally, only the buyer perspective was studied here. Adding the supplier perspective could add more aspects.

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## Paper IV



# **Avoiding the pitfalls of cooperative purchasing through control and coordination: insights from a humanitarian context**

Heidi Herlin \*  
Ala Pazirandeh \*\*

\* Hanken School of Economics, Department of Marketing, Helsinki, Finland

\*\* Lund University, Department of Industrial Management and Logistics, Lund, Sweden

## **ABSTRACT**

In this paper, barriers to cooperative purchasing are discussed from an inter-organizational coordination perspective, and a framework for successful cooperative purchasing is introduced. Potential benefits such as economies of scale, better transparency and more efficient information exchange have generated high interest for cooperative purchasing as a supply chain strategy. However, literature notes several instances of such cooperation not having the expected outcomes. We aimed to further the understanding of the barriers to cooperative purchasing. By studying an exemplary situation of an unsuccessful cooperative purchasing, the attractiveness and inherent complexity of a cooperative purchasing process is highlighted. This study draws on and adds to the existing literature on cooperative purchasing by discussing coordination related barriers to cooperative purchasing, and provides managerial insights into what to consider when engaging in the cooperative purchasing strategy to avoid the pitfalls.

*Key Words: Supply Chain Relationships, Cooperative Purchasing, Humanitarian logistics, Inter-organizational Coordination, Public Sector Purchasing*

# 1. INTRODUCTION

Cooperative purchasing is a supply chain strategy in which a number of buyers pool their purchasing functions to increase their bargaining power (c.f. Bakker et al., 2007; Ford and Hughes, 2007; Nollet and Beaulieu, 2005). Pooled demand and expertise in combination with centralized administration and management have made the practice attractive among several sectors and industries, for instance libraries, airlines, health centers, government organizations and humanitarian agencies.

Cooperative purchasing has attracted a lot of attention especially in the public sector since it is claimed to “*reduce political risk, minimize ‘red-tape’, and, in some cases, avoid all reported social equity goals that are reported to increase costs*” (McCue and Prier, 2008:1). Red tape means constraints and procedural delays due to excessive laws, rules or procedures that cause compliance burden and decrease efficiency and flexibility (Pandey and Scott, 2002). Even though many benefits such as economies of scale, reduced transaction costs, and access to markets (e.g. Bakker et al., 2007) are associated with the practice of cooperative purchasing, there are several examples where benefits have not been fully achieved (e.g. see Schotanus et al., 2010). Failure of cooperative purchasing has been connected to its management, coordination aspects, and goal incompatibility, among others (Nollet and Beaulieu, 2005). Despite its problems, cooperative purchasing is gaining prominence on policy agendas across the world (Walker et al., 2013) and thus deserves more research attention.

Hitherto, research in the area of supply chain management and procurement has focused extensively on vertical relationships, whereas horizontal partnerships have received comparatively little attention. According to Ghaderi et al. (2012, pp. 45-46), “*the focus on the horizontal collaboration between independent organizations that join to pool their orders is minimal*”. This claim is supported by Glock and Hochrein (2011, p. 164), who in their literature review of purchasing organizations and design, identified only 15 papers focusing on cooperative purchasing in the entire time period from 1967 to 2009. The studies on cooperative purchasing have looked into its structure (e.g. Bakker et al. 2005; Nollet and Beaulieu, 2005; Hendrick, 1997), benefits and success factors (e.g. Schotanus, et al. 2010; Pedersen, 1996), drivers and barriers (e.g. Walker et al. 2013; Fawcett et al., 2008) and the importance of norms and relationship history (Burki and Buvik, 2010), while overlooking

questions regarding the actual value of the practice as well as the importance of inter-consortium coordination. The relationship between the organization of a purchasing cooperative and its performance remains unanswered in the literature (Schotanus et al., 2011). Burley et al. (2012, p. 281) explicitly call for more investigation into how purchasing consortiums “*cooperate, coordinate, and collaborate to adapt to changing demands and environments*”.

In this study we address the above mentioned research gaps by aiming to further the understanding of barriers to cooperative purchasing. These barriers are analyzed from a horizontal coordination perspective among the consortia members. Thus, the study contributes to the literature by shedding light on coordination related barriers to cooperative purchasing, which have not been addressed before. A theoretical framework of successful cooperative purchasing is developed based on the findings.

In the next section we will first review possibilities, drawbacks and barriers to cooperative purchasing and then discuss inter-organization coordination as a precondition to cooperative purchasing. Then, in section 3, the research method is presented followed by some case background. In section 5, barriers to cooperative purchasing are discussed in the light of coordination theory. Concluding remarks and contributions are argued for in section 6, managerial implications in section 7, while limitations and future research directions are discussed in the final section of this paper.

## **2. LITERATURE REVIEW**

### ***2.1. Cooperative purchasing – possibilities, barriers & drawbacks***

Bakker et al. (2007), note effectiveness and efficiency as two main drivers for cooperative purchasing. In strive for efficiency, benefits can be gained from economies of scale, reduced transaction costs, better development of products or services, access to markets, and technologies, among others. When an organization does not have the knowledge, resources or necessary capabilities in its supply chain, it seeks cooperation with others to achieve effectiveness (ibid.). Many benefits of cooperative purchasing are closely related to those of centralized purchasing within one organization (Schotanus, 2007).

Cooperative purchasing can be practiced in a number of ways ranging from virtual member-owned networks exchanging purchasing-related ideas, to third-party outsourcing. The chosen form can depend on, for instance, whether products or services purchased jointly are considered core or non-core for the member firms, the degree of environmental uncertainty and complexity, as well as the degree of information asymmetry (Bakker et al., 2008). Different stages of the purchasing process including, specification, bidding, negotiation, contract management, and supplier evaluation are consolidated in cooperative purchasing forms (Nollet and Beaulieu, 2003). Pedersen (1996) argues that most benefits of cooperative purchasing are due to standardization of specifications in a consortium.

However, goal incompatibility between members is a risk in cooperative purchasing (Nollet and Beaulieu, 2005). In addition, since the consortium is usually composed of members competing in the same markets, appropriation is also a concern, as the group might become a forum to gain information (Hendrick, 1997). Consequently, cooperative purchasing might be of more benefit in cooperative structures (Nollet and Beaulieu, 2005). Two of the main drawbacks of cooperative purchasing, as mentioned in literature, are increased coordination cost and the risk of the practice becoming an entry barrier in the supply market and causing unfair competition for the smaller and/or local suppliers (e.g. Nollet and Beaulieu, 2005; Johnson, 1999). Furthermore, if the volumes pooled are awarded to one or few suppliers, the practice can lead to market domination by a few big suppliers with high asset specificity. As a result, the buyer may become locked-in at the end of the contract period (Caldwell et al., 2005).

On the supplier side, suppliers with sufficient capacity may gain from increased order volumes, better visibility, and thus improved capacity planning and improved communication with buyers. Benefits may, however, not outweigh the risks of cooperative purchasing. A concentration of volume is for example not beneficial for all and may drive smaller suppliers out of business. Moreover, some suppliers that already have a good individual relationship with a buyer may resist the practice due to the fear of losing leverage. New, relatively short-term contracts often reduce buyer loyalty. Cooperative purchasing is also reported to decrease suppliers' operating margins and thus bring down the quality of service. In addition, some suppliers may fear that their trade secrets are more likely to leak out to competitors. If the level of standardization and coordination between members in the cooperative purchasing

group are low, suppliers might also not achieve economies of scale (Caldwell et al., 2005; Knight et al., 2003; Ball and Pye, 2000; Johnson, 1999; Hendrick, 1997).

## **2.2. *Inter-organizational coordination***

For cooperative purchasing to be successful, it is important that members are coordinated. However, despite the importance of coordination in supply chains for overall profitability, risk sharing and flexibility, research on the topic is in its infancy (Arshinder et al. 2011, p. 41). Coordination occurs when multiple agencies that strive towards the same goal, align their tasks. In practice, coordination boils down to division of labor, resource allocation, information sharing and mediation of conflicting priorities (c.f. Grandori and Soda, 1995). The act of coordination involves both careful planning of activities and information processing, to solve a common goal (Crowston, 1997). Calvert (1995, p. 218) talks about coordination as the “*standards, organization or conventions, in complex settings*”. Coordination is particularly essential when there is a high degree of interdependency between agencies and a high level of task uncertainty (Dekker, 2004). Peters (1998), views coordination as a continuum in which agencies, at the very least, seek to avoid duplication. At the other end of the scale, agencies are part of a highly institutionalized system governed by uniform standards.

Coordination always comes at a cost, dependent on the structure of the transaction and the process of interaction. The total cost of coordination is an element of negotiation and bargaining as well as expenses from drafting and controlling contracts (Artz and Brush, 2000). According to Xu and Beamon (2006), coordination mechanisms can be divided based on four main attributes: resource sharing, decision style, level of control, and risk/reward sharing; each associated with a specific cost.

High resource sharing is associated with low physical flow costs, but high risk-costs. Centralized decision-making decreases coordination costs, but increases the risk of opportunism by the actor in control. It is also more difficult to reach consensus in decentralized decision-making. The cost of coordination also increases with the level of control (Xu and Beamon, 2006). Finally, in terms of risk/reward allocation power symmetry fosters fair allocation, which decreases risk costs. On the contrary, risk costs are higher if one or more of the involved actors gain less from the joint action and thus decide to exploit the cooperation at the expense of others (Xu and Beamon, 2006).

Inter-organizational trust is one of the main modes of control in inter-organizational relationships, ensuring that members are not acting selfishly and that they are taking the interests of others into consideration. Relationship history and relational norms play an important role in generating inter-organizational trust and counteracting opportunism (Burki and Buvik, 2010). However, as goal incongruence and performance ambiguity are common, members may find it necessary to formalize control e.g. by establishing joint policies, dispute resolution procedures or exit clauses (Dekker, 2004). When the level of control is low (and informal) coordination costs are lower, but the risk-cost is high.

In order to achieve relational rents (supernormal profits) through the practice of cooperative purchasing, buyers should be aware of four enablers in terms of cooperation; 1) partner investments in relational assets, 2) knowledge exchanges to enable joint learnings, 3) combining complementary resources, and 4) effective governance mechanisms to lower transaction costs (Dyer and Singh, 1998). Top management support, appropriate structures, and compatible purchasing philosophies are also important for achieving relational rents (Walker et al., 2013).

In theory, the number of actors coordinating their activities can be unlimited, but in practice cooperation tends to be both more costly and less effective as the network becomes larger (Provan and Milward, 2001). When multiple actors are involved, the issue of “*collective action*” comes into play as stakes in getting involved and the preferred outcomes may differ. *“If players have different expectations about when and by whom cooperation is expected, and about when, how, and by whom punishment or reward is to be carried out, they are likely to end up punishing one another for actions intended to be appropriately cooperative”* (Calvert, 1995, p. 242-243).

Beyond expectations, different missions and target groups, divergent legal mandates, turf protection and competition for the same resources also surface as barriers to effective coordination (Jennings and Ewalt, 1998). Peters (1998, p. 308) concludes that issues of implementation “*tend to be addressed at a lower level of agencies and settled around individual client issues, while policy debate emphasizes issues of turf and organizational survival*”, and are more difficult to solve. In general, in order to overcome the problems and achieve successful coordination, communication is critical.

Mental models and decision-making behaviors of participants have been shown to significantly impact coordination. In complex environments organizations often make decisions based on bias judgment or intuition, which may cause confusion and inappropriate ordering behavior in buyer-supplier networks (Wong and Acur, 2010, p. 339). Hence, a prerequisite for good coordination is that members of the group explicitly share their suggestions, preferences and intentions.

Focusing exclusively on the aid and relief environment, Balcic et al. (2010, p. 33) find that coordination between agencies can yield significant performance advantages, however, what is required are “*new and innovative ways to define relationships and contracts in ways that support the relief mission, while fairly distributing risks and benefits to all participants.*” In order to achieve this, Akthar et al. (2012) note that coordination leadership is key, but does not guarantee success. Humanitarian agencies face some particular coordination challenges due to the global scale of their networks and local field-level crisis responses (Jahre and Jensen, 2010). Moreover, as the humanitarian network is highly heterogeneous with many different needs and sources of funding, synchronization of the humanitarian supply chain becomes a challenging task (ibid.).

### **3. METHODOLOGY**

This study is based on a single case of an unsuccessful cooperative purchasing involving a number of buyers and suppliers. The humanitarian sector is characterized by relatively small quantity order of several common needs among different supply chains, which are subject to many procurement regulations. Thus, several examples of cooperative purchasing can be found in the sector. Our case involves cooperative purchasing of air and sea freight services, involving several humanitarian agencies.

In contrast to previous research which tends to put cooperative purchasing in a positive light, our case can be described as critical (Yin, 2003) and represents a “black swan” example of cooperative purchasing, in which the practice did not have the expected outcome for participants, raising questions about the actual value and real payoffs of the strategy.

Understanding the consortium dynamics required close and personal communication with the individuals involved in the joint tender. In a case study instead of relying on comparison of several observations, a pattern of observed outcomes on several variables can be compared

with expectations gained from theory (Bitekine, 2011), and with the aim to extend theory. The case was developed in parallel with the ongoing joint purchasing process and our theoretical understandings were affected during data collection and analysis (c.f. suggestions by Ragin and Becker, 1992; and Dubois and Araujo, 2007).

The study started while one of the authors was collecting data from the leading buying organization in 2011. During this period, the buying agencies had initiated the idea of cooperative purchasing, and were in the preparation phase of the initiative. The author had the chance to observe discussions around the initiative within the buyer agencies, and to see the initial supplier reactions. The second phase of the study began a year later by reviewing around 700 pages (i.e. 56 pages directly on the tender and the rest on general purchasing within the agencies and on the freight forwarding market) in 17 documents. Documents included preparation notes, call for expression of interests, Request for Proposals / Quotations (RFP / RFQ), tender strategy documents, evaluation methodology documents, synopsis of the agencies and the suppliers, presentations, general procurement guidelines of the agencies, freight market factsheets, and supplier guidelines. Primary data were collected from 14 semi-structured interviews each taking 1-2 hours (i.e. around 350 transcript pages), with individuals involved during and with the aftermaths of the process (see Table 1). Purposive sampling followed by snowball sampling was used to select and contact the respondents. From 8 buyers initially planning to cooperate in the joint tender, 4 entered the cooperation.

*Table 1 Sample groups and number of participants and individuals (indivs.) in the study*

Sample groups	Sample (Org.)	Participated (Org.)	Indivs. interviewed	No. involved in the process	Total interviews
Buyers involved (4)*	4	4	6	3	8**
Buyers not taking part in the cooperative (4)	2	2	2	1	2
Suppliers who won the award (4)	4	4	4	4	4
Total	11	10	12	8	14

\* Total population of the sample group

\*\* Individuals interviewed more than once

\*\*\* Unknown

The semi-structured interviews were designed to understand 1) the joint tender process, 2) its initiation 3) its outcome, and 4) member coordination. Following Eisenhardt's (1989) suggestions, while following the general structure of the interview guide, questions were tailored for each specific organization and each respondent. Questions were also added during the course of the study as new information was gained.

All interviews were recorded and conducted by one of the authors, transcribed by the other, and again summarized by the first author, and reviewed by the second. Summaries were sent

to interviewed individuals for approval. In most cases, the interviewees had a few corrections, which were followed. Then patterns were found using tabular summaries to compare data from the semi-structured interviews and the documents (as suggested by Miles and Huberman, 1994). These patterns were matched with our theoretical frame of reference to develop an understanding not necessarily stated or predicted in literature (followed the strategy employed by Ross and Staw, 1993, p. 705). Our aim was to gain an in-depth understanding of the case and compare and contrast findings with suggestions from literature in order to increase the understanding of the phenomenon, and in particular to identify the main barriers to success. Due to their intertwined nature, analyses are presented combined with case descriptions. All agencies and companies have been anonymized and given acronyms.

#### **4. COOPERATIVE PURCHASING AMONG THE AGENCIES**

Several supply chains involving many agencies with different target groups (e.g. children, refugees, water and sanitation, food and shelter) form the humanitarian sector. Some chains are focused on emergency while others focus entirely on long-term development. Humanitarian agencies within the sector are legally independent entities with sometimes widely different mandates. In general, the sector is characterized by small quantity orders of many different stock-keeping units contributing to several opportunities to pool purchases. The sector has seen several such initiatives (e.g. Inter-Agency Procurement Group).

One common need in the sector is shipping, which is why a number of agencies decided to consolidate their purchase of global freight forwarding. After a successful collaboration between two agencies, a number of other agencies decided to join the initiative for a second joint tender, which was finalized in 2011. The general feeling before the tender was that *“if we’re all using potentially the same freight forwarders [...] then we might as well just do it together”* (Delight manager, February 2013).

##### **4.1. Buyer and supplier profiles**

All agencies that were involved in the tender have country offices with more operational functions, and HQs with more strategic / tactical functions. Table 2 shows the organizational profile of these agencies. Delight and Benefit mainly purchase on behalf of their country

offices and local clients, while Care and Ease purchase more in relation to their emergency operations. Aid purchases freight both on its own and for its clients. At Benefit, Care and Delight, the purchasing unit is responsible for purchase of freight forwarding services, while Aid and Ease have dedicated shipping units dealing with this. In the joint tender, the HQs were consolidating their international freight forwarding needs.

*Table 2 Organizational profiles of the involved buyers*

<b>Org.</b>	<b>Staff global*</b>	<b>Staff in involved unit</b>	<b>Average annual Int'l demand (USD)</b>	<b>Main shipping purpose</b>
Aid	8000	13 (Shipping)	100 m	Development
Benefit	6500	18 (Purchasing)	5-10 m	Support to country offices
Care	5400	Data not available	Data not available	Emergency
Delight	718	20 (Purchasing)	10m	Support to country offices
Ease	4000	30-35 (Shipping)	50000 TEUs	Emergency

*\* Data from 31 December 2011*

All agencies except for Ease fully outsource their freight forwarding in long-term agreements of 5 years (usually in a 2-3 year initial contract with possibility of extension). The tendering process is highly resource consuming and both buyers and suppliers appear to prefer long-term agreements, provided that they work well. In general, demand for all agencies is volatile and per operation / emergency, and contracts are based on historical projections with no set figures on the volume. These environmental conditions are well understood by the freight-forwarding partners. For all agencies except for Ease, funding for transport is a share of the general donations the organization receives; however it is not budgeted in advance and it is allocated per shipment. Ease does not have any core funding and finances its freight purely from voluntary emergency donations.

Five to ten global suppliers and several smaller regional suppliers, form the freight forwarding market that most humanitarian agencies approach. Table 3 shows the background information of the winning suppliers and their historical relationships with the humanitarian agencies. Some suppliers who placed bids in the tender were not selected due to a comparatively weak geographical presence in certain areas.

In the past, Aid and Delight had long-term contractual relationships with 2-3 of the freight forwarders, whereas Benefit, Care, and some other smaller agencies have been piggybacking on Aid's long-term agreements. Aid and Ease have comparatively large volumes within the humanitarian sector. Ease purchases both commodities and freight at spot markets.

Depending on the market price, freight is handled in FOB or CFR contracts. The main barrier towards having longer-term agreements is the low frequency of orders, which are bound to emergencies and funding.

*Table 3 Organizational profiles of the involved suppliers*

<b>Supplier</b>	<b>Staff global</b>	<b>Staff Aid and relief</b>	<b>Annual business with agencies</b>	<b>Previous relationships with the humanitarian organizations</b>
Allocate	12000	10-15 (special unit)	3000 TEUs 15m USD (sea freight)	Local contracts with "Ease" and "Aid" among others No global contracts Operating per shipment basis with some others
Bring	800	20 (Special unit)	Data not available	Long term agreement with "Aid" (+15 years) ("Benefit" has been piggybacking on this agreement) Forwarder for "Ease" in some local regions Operating per shipment basis with some others
Connect	100000	20 (Decentralized in other units)	30m USD	Contracts with "Aid" and "Care" Operating per shipment basis with some others
Deliver	100000	55 (Special unit)	15000 TEUs 10000 ton airfreight 170m USD	Contracts with "Aid", "Care", "Benefit", "Delight", "Ease" Long term agreements with "Aid" (+25 years)

#### ***4.2. The joint tender - Initiation, reactions, and expectations***

I Some individuals at Aid and Benefit initiated the joint tender in late 2009. Aid, Delight, and Care had been collaborating the preceding 5 years in purchase of freight forwarding; mainly by the other agencies piggybacking on Aid's tender. There also was a political push within the sector to "*stop wasting resources and duplicating things*" (Delight manager, February 2013) and start working more jointly. In 2010, other agencies were approached, and after preliminary interest, the new, more extensive joint tender was initiated. Aid's freight volume in comparison to the other partners, partly, drove the expectation among the agencies for Aid to lead the process. There was also an internal desire at Aid to lead the process due to some special requirements on part of their cargo. With this new tender it was aimed to pool volumes and to include some new interested partners; especially Ease with significant volumes. According to a manager from Ease, while they knew their requirements differed widely, they were interested in the project and committed to "*see how it goes*". The manager thought that smaller agencies with less volume had more to gain from the tender, however; and thus their motivation was thought much higher than that of theirs.

The joint tender was driven from the history of collaboration between the three agencies. However, this was not the whole picture as there were other drivers for and expectations from the initiative. These drivers and expectations as noted by the representatives are summarized in Table 4.

*Table 4 Drivers (X) of the joint tender according to representatives of different agencies and their expectations (O) from entering the cooperation*

Driver	Rep1	Rep2	Rep3	Rep4	Rep5	Rep6
Historical collaboration		X	X	X		X
Taking advantage of economies of scale	0	X 0	X 0	X 0	0	X 0
Reduce time and effort (duplication of efforts) spent on tendering	X	X	X			X 0
Better rates	X	X	X	X		X 0
Better geographical coverage (service)		X	X	X 0		0
Increase purchasing power	X	X	X		X	X 0
Reduce supplier markets time and effort spent on tendering	X	X				
Gain leverage from each other's experience and knowledge		X				X 0
Better brand name	0	X	X 0			
Consolidate resources		X	X			
Synergy benefits	X					X 0
Attract new vendors		X				
Institutional pressure / Political push from the top				X		X
A better contract than before		0				
A benchmark to compare with current rates		X			0	
Better predictability of supply / consistency of supply					0	
Knowledge on how other agencies purchase					0	
Higher transparency of the process			0			0

As observed in the table, the smaller agencies all hoped for better rates, while the two bigger agencies had other hopes. In one of the initial tender documents, the goal is stated as: “*to combine the buying power, and thereby obtain the best possible market position and solutions*”. Expectations from the joint tender were different among individuals going into the process (management and operation, but also individuals within and among different agencies) (see Table 4). Obtaining better rates due to better volumes was a common denominator among. A specific expectation mentioned by one of the initiators at Aid was to develop closer collaboration with suppliers and between the individuals at the agencies. This individual perceived the individual connections as an important factor in inter-organizational collaboration.

Within Ease, there were different reactions to the joint tender. The parts of the organization that were working with more stable cargo (e.g. blankets from prepositioned warehouses) were

interested in the initiative, while the parts dealing with fluctuating cargo (both unknown order amounts and unspecified sourcing locations and cargo destinations) were resistant to the idea. The main issue was whether the rates from the long-term agreements would be competitive with the fluctuating ones Ease received at the time. However, according to the Ease's manager, buying on the spot market transferred all the risk to the beneficiaries, and long-term agreements would ensure more consistency in delivery.

Suppliers, on the other end, had heard about the joint tender through their relationships with the agencies. Table 5 shows their perception as to what drove the joint tender among the humanitarian agencies. One of the interviewed freight forwarding managers noted that the joint tender *“seemed like a wise and smart idea giving [humanitarian agencies] more power; but also giving us more leverage in front of the carriers. It was also beneficial in terms of geographical coverage”*.

*Table 5 Supplier perception about why the agencies jointly tendered*

<b>Supplier perception of what drove the joint tender</b>	<b>Rep1</b>	<b>Rep2</b>	<b>Rep3</b>	<b>Rep4</b>
Taking advantage of economies of scale	X		X	X
Reduce time and effort (duplication of efforts) spent on tendering	X	X	X	
Better rates	X	X	X	X
Better geographical coverage (service)	X	X	X	X
Increase purchasing power	X	X	X	X
Reduce supplier markets time and effort spent on tendering	X	X	X	X
Gain leverage from each other's experience and knowledge	X		X	
Better brand name	X		X	
Consolidate resources	X	X	X	
Synergy benefits	X	X	X	
Attract new vendors	X	X	X	X
A better contract than before	X	X	X	X
A benchmark to compare with current rates	X		X	
Better predictability of supply / consistency of supply	X		X	
Knowledge on how other agencies purchase	X		X	
Higher transparency of the process	X	X	X	X
Get more supply market share and knowledge	X		X	

All suppliers were initially interested in the idea, primarily since it meant one tender instead of several. *“It potentially saves the issue of having to do multiple tenders from both sides of the table”* (Allocate manager, February 2013). Allocate, however, did not see the tender as a joint initiative, which made them not have any specific initial reactions to it. They were, however, hoping for an uptake in their business with other agencies than Aid. For all suppliers the joint tender meant a possibility to increase business in one way or another. While Bring expected to lose part of its business with Aid, they hoped to gain access to

additional agencies. They also saw the joint tender as an opportunity to gain know-how. Table 6 shows the suppliers' expectations (hopes and concerns) from entering the joint tender as expressed by the managers who were involved in the process.

*Table 6 Supplier expectations (O) from joining the tender according to representatives*

<b>Supplier expectations</b>	<b>Rep1</b>	<b>Rep2</b>	<b>Rep3</b>	<b>Rep4</b>
<b><i>Hopes</i></b>				
Reduce time and effort (duplication of efforts) spent on tendering	0	0	0	0
Increase of business	0	0	0	0
Increased leverage in front of carriers				0
Increased know-how				0
To get access to the smaller agencies they didn't have any relationship		0		
<b><i>Concerns</i></b>				
Organizational politics would affect outcomes				0
Political perspectives would overtake commercial ones				0

Based on historical experience, Bring feared that organizational politics would impact the outcome; that the evaluation would not be done jointly and that political perspectives would take precedence over commercial and logistics considerations and that the agencies would fail to compromise on specific requirements and not reach consensus. While some of the agencies outsource their logistics activities and have focused on procurement, others perform their logistics in-house. So with this joint tender, some individual jobs could have been affected, which is why Bring feared that the agencies would encounter strong internal resistance to the tender as people would “*protect their jobs with tooth and nail*”.

#### ***4.3. What happened during the tender process***

From eight initially interested agencies, five took part in the preparation process, and only four conducted the tender jointly. One of the 3 agencies that dropped out never joined any of the meetings. According to one of their managers they had extremely low volumes and generally outsourced their freight forwarding function to commodity suppliers. Another of these three agencies sent in their requirements for the RFQ too late in the process and decided to stay outside with the option to piggyback on the results. The final of the three realized, early, that the timing of this tender was after the end of their current contracts, and thus, leaving a gap in their transport requirements.

Representatives from the involved agencies met to decide on the modalities of the cooperation, development of solutions to requirements, and to draft a call for EOI from suppliers. The tender was carried out in two sections, one for airfreight and one for sea

freight. “... *As there are basic differences between the sea (surface) and air mode of transport, nominations for the two modes should be done independently*” (tender document, Aug 2012). To increase transparency of the tendering process, the freight forwarder selection and costs, and to improve financial management, an electronic tendering tool was used (Aid manager, November 2012). The decision to use an e-tendering tool was a response to heightened accountability requirements in the sector and tight procurement regulations requiring fair competitive bidding. Under these circumstances agencies were slightly concerned how it might be perceived that they had used the same freight forwarders for many years. As such, a former Aid manager expressed that: “*with the scrutiny there is on public procurement [...] this is how we’re going to more or less prove to you that we are really trying to level the playing field*”.

Between 2-3 meetings were initially held by the tender project team discussing details regarding volumes, division of responsibility among member agencies, timeline of the tender, definition of geographical regions, and contract requirements needed to finalize the RFQs. Aid led the discussions and their contracts were used as a base. To decide on the geographical division, a Pareto analysis was conducted and the 20 biggest destinations corresponding to nearly 80 % of the traffic of the 5 agencies were used. However, some managers thought that the division of the regions was based primarily on Aid’s operations.

Representation in the team was at varying levels from the different agencies (there were people from high level logistics management, procurement, finance, and operational clerks). There were one or multiple representatives from each agency. Smaller agencies mostly fully trusted the capabilities and decisions of the bigger agencies, especially if they had generic cargo that was not bound to specific requirements (Delight manager, February 2013).

All individuals thought that all agencies got the opportunity to express their view and requirements. “*Aid would inform the team of the time plan, what they had envisioned, and the information and resources required from us*” (Delight manager, February 2013). The Ease manager noted that even the requirements and needs of the agencies with very small volumes were taken into account and tender documents had to accommodate particular shipping arrangements in order to please all potential members of the purchasing consortium. The Delight manager explained that some agencies “*ship goats [...] particular food supplements and things that are somewhat out of the ordinary and perhaps also request particular shipping amounts [...] so that’s what they of course stipulated in the tender documents to*

*ensure that was covered*". The wide array of difference in how agencies were procuring made the situation complicated (Ease manager, 2013). Nevertheless, Aid's shipping standards were used in most cases since the team thought it covered most other agencies' requirements.

The tender started with a pre-qualification round, where the involved agencies jointly shortlisted the freight forwarders who had submitted an EOI within the open marketplace. Pre-qualification was done based on technical qualifications, especially in terms of geographical coverage, capacity, experience and know-how. No monetary quotes were submitted in this round. The shortlisted forwarders were invited by email to submit their proposals within a closed forum in three months. Before submissions, the shortlisted forwarders were invited to a full day of question and answer seminar. Submissions were evaluated from technical and commercial aspects, with a weight of 65% and 35% given to each respectively. While sea freight forwarders were evaluated based on their capacity and coverage at the destination points, airfreight forwarders were evaluated based on their handling and coverage capacity at the point of origin. Submissions were collected and evaluated through the electronic system.

During the last phase of the tender process (i.e. before and during contracting and negotiations), staff rotation impacted most individuals involved in the process among the agencies. Only one individual remained at the same position. Other members were either relocated to other agencies or had left the member agencies. Due to staff turnover, suppliers received the results in April – May instead of, as planned, in December.

Upon receipt of the rates from suppliers and before final selection, Ease representatives saw some obstacles too big for their organization. Compared to Ease's normal procedures, "*the 30-page contract with several different rates*" seemed too difficult to justify internally at the organization. Additionally, the person in charge of the project was subject to the job rotation with merely 2 days to spend on transferring all his projects, including the joint tender, to his successor. This led to a slow withdrawal of Ease from the joint tender, where "*people just sensed that [they] weren't involved anymore*" (Ease manager, February 2013).

Four suppliers were awarded for sea freight and two for airfreight. For Aid this was an increase from the previous two suppliers. Although tendered jointly, contracts were signed independently. Original tender documents note that the five involved agencies will jointly tender and should respect the joint evaluation. However, the document does not specify how

the result was to be used by the different agencies. Interviewing individuals at different agencies shows different understanding of the matter. While it was clearer that the individual agencies would sign independent contracts, the extent of difference in terms and conditions was not clear.

This is while suppliers were all under the perception that the results would be used in a more aligned manner. *“No one anticipated the amount of deviation in terms and conditions among the agencies from the tender documents”* (Allocate manager, February 2013). Some of the freight forwarders were surprised by the fact that winning the tender did not grant them automatic contracts with all the involved agencies. *“We had to chase ourselves the individual agencies for getting something which we had already been appointed to do”* (Connect’s manager, February 2013). For some agencies, winning the tender meant only that suppliers were invited to new rounds of bidding and negotiations. As the manager from Deliver expressed with a smirk *“So in terms of securing the volume, you had only secured it in as far as you had a ticket to the negotiation table.”* What had started as a joint tender, ended in quite a complicated and fragmented process from the suppliers’ point of view. *“When we won part of the tender, we only got the agreements with Aid, then we had to go to other agencies and ask if they were willing to sign a contract too”* (Connect’s Manager, February 2013).

Aid and Care were the only agencies that followed the outlined tendering procedures entirely and stuck to the stated contract terms, albeit Care with some minor differences. For these agencies, suppliers were selected in parallel to deliver in different regions. The contracts were non-exclusive and valid for 5 years (2 initial years + possible 3 year extension). The remaining agencies realized, quite suddenly, that they had different contractual terms that required further negotiation with suppliers. One reason behind agencies signing different contracts was that each contract must get the approval from that agency’s legal authority. The main contractual differences were related to payment terms, geographical requirements and thus supplier allocation, as well as liability terms. For some suppliers the contractual deviations meant that they could not fulfill the requirements of all the agencies even though they had been appointed as winners of the joint tender. *“Benefit had their own geographical division, and Delight implied complete liability to the freight forwarder, which we could not insure”* (Deliever’s manager, February 2013). The differences in geographical division for Benefit related to the fact that the organization had widely different freight origins compared

to agencies with pre-positioned stock in warehouses. This was realized quite late in the process: *“when it came down to the actual award [...] it just looked a little scattered for our taste”*.

Benefit and Delight organized a secondary bidding with the chosen suppliers to try and achieve even lower rates. They generally used different payment terms than Aid. While Aid pays according to price at the time of invoice, Benefit and Delight lock-in the price at time of order placement. This is partly due to the different funding mechanisms. In case of Benefit, funds are allocated and fixed at order placement, and thus the price must be clear at this point. Another major contractual difference that surfaced during the last stages of the tender process related to liability. After the tender was completed, the legal departments at some agencies saw the standard shipping liability terms, which had not been questioned in the past, as a *“major risk exposure”* (Benefit manager, February 2013). They considered these terms unacceptable and required the freight forwarders to assume full liability in case of for example lost cargo, and thus *“completely broke down the contract into bits and pieces only fitting their needs and requirements”* (Bring manager, February 2013).

This created a dispute with the forwarders, who thought the new terms were not in line with the RFP document, and prolonged the contract discussions for months. According to the Bring manager, some agencies even deviated from the transport convention *“which none of the freight forwarders thought they would”*. Forwarders, who had based their proposals on the tender documents, and the initially announced volumes, perceived the tender outcome rather unfair. *“The terms and conditions that the other parties were starting to look for were completely different to what we bid for in the tender”* (Allocate manager, February 2013). The manager from Bring also noted that this was commercially unjust as handling and mark-up fees had been calculated under *“false assumptions”*. It is worth mentioning that at the time of this study (February 2013) some agencies were still negotiating terms with forwarders.

## **5. DISCUSSION AND FINDINGS**

In the case reviewed in this study, the buyer agencies aimed to consolidate their procurement of freight forwarding services to increase volumes and thus gain more purchasing power. However, the interviews revealed several reasons for the cooperative purchasing not turning out according to initial expectations, which we will further discuss below. We will then

further discuss our case in relation to the attributes of coordination, and highlight coordination and risk costs. We will finally, conceptualize our findings in a framework.

### **5.1. Challenges encountered**

Several of the challenges can be traced back to differing expectations of the buyers going into the tender. One of the main issues was the fact that the agencies did not realize how widely different their shipping requirements and contractual terms were before the tender. Using more or less the same freight forwarders and all having a basic need to ship goods globally, there was an assumption of overlap and process similarity. The process was delayed and frustration surfaced among both buyers and suppliers, as differences emerged during the tender. It appeared that the agencies should have also considered the similarity of their commodity purchasing norms and funding structures, as these had a strong impact on the organization's shipping patterns. One of the reasons that Ease decided not to join, for instance, was their completely decentralized procurement function as opposed to some of the others, and their much more volatile funding. This lack of structural symmetry between the buyer agencies was a major hurdle for Ease.

The difference in size between the agencies was another source of concern. As the agencies had disparate freight volumes, there were significant differences in their levels of interest and commitment. To please everyone, the concerns of both big and small agencies were taken into account. The process was described by one of the interviewees as *“very Scandinavian”*, since it was successfully inclusive and the lead agency was applauded for its efforts. However, multiple viewpoints sometimes made it quite difficult to reach consensus.

In general, organizational politics was mentioned as a hurdle that delayed the process. *“Every agency had their own political agenda [...] and it takes a long time to get everyone on board and to make everyone happy”* (Benefit manager, February 2013). Although there was a lot of willingness to cooperate among the agencies none of them really wanted to make any compromises (Aid manager, November 2013). Additionally, some players had quite weak representation in the project team that meant that the biggest, most active actor had *“a lot of space to maneuver”* and *“got to do pretty much do what they wanted”* (Delight manager, February 2013).

Both buyers and suppliers highlighted communication as a major issue in the process. The broken promises in terms of projected volumes, lack of coordination and alignment between the buyer agencies resulted in disappointment among suppliers. The buyer agencies realized that their organizational needs and expectations were not clear enough at the outset. They also thought that actual overlaps and the extent to which goals were shared were not fully understood. But, as one of the managers pointed, it is difficult to strike a balance between too much and too little dialogue. If discussions are too detailed too early in the process, there is a risk of little to no buy-in. *“At some stages we should’ve discussed it more, we should’ve gone into more detail beforehand. But if we had gone into too much detail beforehand we probably never would’ve done anything”* (Ease manager, February 2013).

In terms of process control, the lack of inter-agency trust came up as a problematic factor. While some of the agencies located within geographical proximity of one another had some experience of cooperation and higher levels of inter-organizational trust, a strong historical bond did not exist between all parties involved. Some individuals, at both agencies and forwarders, noted that more formalized control of the process in terms of a written agreement specifying rights and obligations of each agency would have been needed.

Distance also surfaced as a problem for some of the agencies in terms of commitment. Agencies headquartered in other places than Aid encountered practical problems such as not being able to involve all employees influenced by the process outcome. *“If people are not there sometimes they really don’t get on board”* (Ease manager, February 2013).

One agency manager noted that knowledge management was quite weak within the buyer community; *“knowledge is anchored very heavily within certain people and within certain functions”* (Benefit manager, February 2013) which is problematic when people travel a lot and change positions quickly. This means that accumulated expertise or knowledge is lost when people change jobs. Staff turnover also disrupted the process, as the people who had initiated and driven the exercise left in the middle of the process and successors had to spend a lot of time catching up and re-learning.

Further barriers mentioned were the bureaucratic and risk-averse organizational climate of the agencies. It was argued by a manager that changes at grassroots / country level and discussing practical improvements like sharing of best practices, is easier than to implement changes at headquarters where *“it tends to be quite bureaucratic and heavy with a lot of*

*policies*” (Ease manager, February 2013). Turf protection and the fear of losing power or status were also recognized as a barrier to cooperation, because streamlining in order to avoid overlaps could make some jobs redundant. Finally, a risk-averse climate could mean that agencies would pass all risk to their suppliers, which is problematic from a collaborative standpoint.

## **5.2. *Coordination related barriers***

Due to the complexity of the purchasing consortium with relatively many buyers of different size, organizational structures and aims, the initiative faced high coordination and risk costs. The different expectations entering the initiative ended in the agencies “*punishing*” each other for not acting sufficiently cooperative (c.f. Calvert, 1995). As predicted in literature, coordination of a larger group with different areas of operation gave rise to some political challenges with regard to diverging legal mandates and turf protection (c.f. Jennings and Ewalt, 1998).

The case also illustrates the consequences of weakly defined responsibilities and resource sharing. It is for instance not clear how the group intended to share resources. From the case evidence, it seems like not much resources (information or other) were shared during the tender process and not much was intended to be shared afterwards. Agencies were planning to sign independent contracts with no coordination past that. It can be argued that this limited resource sharing and only partial process coordination were important reasons behind the failure. In coordination forms with low to no resources sharing, risk costs are suggested to be low, but coordinate cost high (Xu and Beamon, 2006). The high cost of coordination itself can increase the risk of no inter-agency coordination.

While decisions during the tender process were made centrally with one of the agencies leading and coordinating the meetings, the outcome of the tender was intended to be used in a decentralized manner. Considering the lack of post-contract coordination planned, this is not surprising. However, an interesting finding is that while according to theory the risk of opportunistic behavior by the lead agency is high in centralized decision-making (Xu and Beamon, 2006), in our case the lead was subject to such opportunism. Having high volumes and undertaking much of the coordination, the lead agency had financially little to gain from the initiative. Increasing status and brand, and increasing supplier motivation were what mainly drove the decision from this actor, while other agencies were mainly striving for

better rates. In economic terms, the smaller agencies gained more by altering and exploiting the outcome of the joint tender for greater benefits (e.g. Benefit and Delight with introduced secondary biddings and altered contracts), which contradicts theoretical predictions on opportunism by the larger partners (e.g. Xu and Beamon, 2006). It can be argued that a more “fair” reward sharing mechanism agreed on early in the process could have managed expectations and controlled the unjustified opportunism of the smaller players.

In addition, no formal control mechanism had been devised within the group despite the fact that inter-agency trust was not high between all of the involved buyers. The other joint tender conducted in 2004-2005 was so successful that the management of the lead agency did not feel there was a need to maintain a steering committee, which would have acted as a control mechanism. The need for a formalized control mechanism is heightened in this case due to the job rotation policy impacting the existing inter-personal trust; which could have been a suitable control measure otherwise (c.f. Dekker, 2004). This lack of control within the group is considered another barrier to success.

Lack of clear communication about requirements and expectations was also apparent in this case. While literature suggests communication to be critical in success of coordinated groups (e.g. Calvert, 1995) there is a risk that sometimes too much communication might hamper the process early on, and demotivate member join-ins. Communication at this stage must be coupled with clear expectation management based on a “fair” risk/reward sharing mechanism and address justified requirements. Once more, this reveals the importance of a formalized control mechanism in absence of inter-agency trust.

Finally, several of the respondents mentioned that coordination of activities and cooperative initiatives are executed easier at lower operational levels such as country offices compared to the highly bureaucratic head quarters. This is partly because at higher organizational levels, turf and organizational survival are targeted (Peters, 1998). While alignment and coordination at grass roots level is undoubtedly beneficial in for example avoiding duplication, the impact is much less pervasive than if higher level policy alignments could be achieved.

### ***5.3. A coordination framework for successful cooperative purchasing***

High level of coordination requires shared procurement standards and uniform rules and regulations, willingness to share resources with other consortium members in order to attain

synergy effects, knowledge exchange and information transparency as well as genuine commitment of all members and a willingness to compromise for the good of the group. Simultaneously, the potential to reap relational rents through the practice of cooperative purchasing is also dependent on the existence of a functioning governance mechanism either in terms of high levels of inter-organizational trust, or in its absence, formalized control such as a contract stipulating joint policies, principles regarding risk and reward sharing, dispute resolution procedures and exit clauses (Dekker, 2004; Dyer and Singh, 1998; Xu and Beamon, 2006). Based on such antecedents of coordination and findings from our study the framework in Figure 1 is suggested for successful cooperative purchasing.

As illustrated in the framework, successful cooperative purchasing is most probable in the upper right corner when both the level of coordination among consortium members and the level of control are high. In contrast, in the lower left corner of the framework, characterized by a low level of coordination and a low level of control, cooperative purchasing initiatives are in high risk of failure and there is little potential to gain relational rents. In situations where either level of control or member coordination is low, there is intermediate risk for success of cooperative purchasing and there is some potential for relational rents. This model does not point to inherent failure at any of the positions but notes the situations where risk is higher or lower from a horizontal coordination perspective.

		Coordination continuum	
		Low	High
Level of control	High	Intermediate risk cooperative purchasing Some potential for relational rents	Low- risk cooperative purchasing High potential for relational rents
	Low	High-risk cooperative purchasing Low potential for relational rents	Intermediate risk cooperative purchasing Some potential for relational rents

Figure 1 A coordination framework for successful cooperative purchasing

## 6. CONCLUSIONS AND IMPLICATIONS

This study connects to discussions on cooperative purchasing in the literature. We specifically add to this literature by highlighting the horizontal-coordination related reasons

of failure for cooperatives. Earlier studies discuss drawbacks and risks of cooperative purchasing efforts in terms of e.g. goal incongruence or crowding out suppliers (e.g. Walker, et al. 2013; Nollet and Beaulieu, 2005; Johnson, 1999), but have revealed little to nothing about how inter-consortium dynamics can impact the outcome. This is while member coordination is essential in practice of cooperative purchasing. We extended the coordination attributes suggested in literature (Xu and Beamon, 2006) to the cooperative purchasing context, and to study these dynamics and their consequences. In line with our findings, we proposed a framework (Figure 1) in which inter-consortium coordination and control are connected to the success of the cooperative purchasing strategy. In this framework, it is suggested that the lack of sufficient coordination in combination with low levels of control increases the risk of failure for the cooperative purchasing strategy. This framework does not indicate that absence of control mechanisms or coordination will result in the consortium's failure, but that the risk of failure is high in such circumstances. Further research should study the generality of this framework within other contexts.

The initiative studied in this paper, failed to meet its objectives mainly due to the fact that buying agencies were not sufficiently coordinated. There was a lack of inter-agency communication before entering into the tender and a false belief about shared expectations and process overlaps. In addition, the process was delayed due to staff turnover and organizational politics. The lack of formal control was also highlighted as an issue, along with bureaucracy, turf protection and risk-averse attitudes. The term and requirement differences which were not problematized during the specification phase, made the outcome fragmented rather than collective. Our case being on the purchase of freight forwarding services, further underlined that in the context of cooperative purchasing of "logistics services", purchasing strategies and requirements of the associated commodities should also be considered at the specification phase of the process. Our findings also contribute to the literature by highlighting the importance and complexity of communication in coordination; which requires extensive studies on issues such as how much to communicate, when and with which partner. In our case, we found that on the one hand, the earlier discrepancies are detected among participating agencies the lower the associated risk and costs will be. On the other hand, too much and too detailed communication, especially too early in the process, can risk no buy-ins.

Furthermore, in our study we include the supplier perspective on the practice of cooperative purchasing, its possible benefits and the supplier's resistance to the practice. Previous studies had suggested several gains and drawbacks for suppliers to partner with purchasing cooperatives (e.g. Caldwell et al., 2005; Hendrick, 1997), but supplier perspective on the practice was not clear. Suppliers in our case perceived several benefits in partnering with the cooperative, and their main concern was in its successful implementation. This concern was intensified after the emergent discrepancy between buyer communication and actual implementation, which had consequent impact on buyer-supplier relational rents. This findings emphasizes the importance of supplier inclusion within the process; and in line with previous suggestions to consult suppliers prior to establishing a purchasing consortium to *"clarify their mental models about the cause and effect of flow behavior"* in contrast to relying solely on own judgment (Wong and Acur 2010, p. 340).

Finally, in contrast to pervious research suggesting the crowding out of suppliers as a consequence of cooperative purchasing (e.g. Johnson, 1999), suppliers perceived grater business exposure in our study; this was due to the multiple sourcing strategy which was designed as part of the cooperative purchasing. Consequently, we argue for the importance of studying mixed strategies in reducing the negative outcomes of cooperative purchasing, which have been overlooked in the literature.

## **7. MANAGERIAL IMPLICATIONS**

The results of our study imply that cooperative purchasing is a complex process, which should not be entered into lightly. Inter-consortium coordination is a pre-requisite to a successful cooperative purchasing, and elements such governance of the consortium, fair allocation of risks and rewards among member, sharing of resources and member commitment can become detrimental to the existence of the consortium. In the absence of trust to govern the members, and in turbulent environments, formalized control mechanisms should be developed in order to avoid opportunism and to ensure fair risk and reward sharing. It is also essential that involved buyers align their expectations within the consortium, and that potential suppliers be included in the purchasing process, at the least by accurate communication of the terms and requirements of the agreement between the buyers. Talking to suppliers prior to forming a consortium would also straighten out whether there are benefits to be gained from working jointly or if suppliers prefer working with each buyer

individually. Suppliers may also be able to provide important insights into what is required in order to achieve economies of scale.

## **8. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS**

This paper is limited to the boundaries of a single case-study, which to some extent constrains the generalizability of the findings. Reasons for this are manifold including the fact that information and communication technologies, which facilitate the process of cooperative purchasing, tend to be less sophisticated in the humanitarian field due to for instance weak information management and limited funding. In addition, organizational histories, values and unique missions cause NGOs to protect their autonomy and independence tooth and nail (Maiers et al., 2005). These unique characteristics, which played an important role in our case, may not be regarded barriers to cooperative purchasing in another context, at least not to the same extent.

Future research could study risk and reward allocation both within the purchasing consortium and between buyers and suppliers. The area can greatly benefit from increased in-depth case studies from different contexts and sectors. Different attributes of coordination should also be studied in greater detail. Specifically, appropriate control mechanisms for successful cooperative purchasing require further research.

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## Paper V



# Unfruitful cooperative purchasing: A case of humanitarian purchasing power

Ala Pazirandeh \*

Heidi Herlin \*\*

\* Lund University, Department of Industrial Management and Logistics, Lund, Sweden

\*\* Hanken School of Economics, Department of Marketing, Helsinki, Finland

## ABSTRACT

**Purpose** - In this study, we aim to understand the impact of cooperative purchasing on buyers' purchasing power. Purchasing in the humanitarian sector has traditionally been characterized by a low level of coordination due to inter-agency competition for funding, diverging mandates and other organizational differences. Relationships with commercial suppliers have also remained arm's-length and often dormant due to high levels of uncertainty and strict public procurement rules and regulations. However, recent pushes for increased efficiency and effectiveness are driving humanitarian agencies towards cooperative purchasing – a purchasing strategy that is claimed to be highly beneficial for members of the purchasing consortium not least for its ability to increase buyers' purchasing power. In reality, the effectiveness of the strategy in increasing purchasing power is unclear.

**Design/methodology/approach** – We study a single case of several humanitarian organizations aiming to increase their leverage in buying freight forwarding services by joining forces.

**Findings** – Following several incidents during the process, the cooperative purchasing initiative did not contribute to increased power in our case. It was found that in addition to increased volumes, the effect of the strategy on other sources of power such as interconnections is also of vital importance.

**Research limitations** - The research is limited to the boundaries of a single case study including the perceptive view of respondents interviewed.

**Practical implications** - The findings of the study provide insights for organizations aiming to practice cooperative purchasing.

**Originality/value** – This study draws on and adds to the existing literature by using an empirical example that illustrates both the attractiveness and inherent complexity of a cooperative purchasing.

*Keywords:* *Buying freight forwarding, Cooperative purchasing, Humanitarian logistics, Less powerful buyers, Pooling demand, Purchasing power, Public procurement*

# 1 Introduction

The humanitarian sector is characterized by a large number of organizations, predominantly non-profit institutions, with diverse legal mandates, interests and structures. These humanitarian agencies interact with the commercial market when they purchase various aid and relief items or freight forwarding services for delivering goods to beneficiaries. Due to for example funding uncertainty and the unpredictability of beneficiary needs, long-term agreements with suppliers are rare (Balcic et al., 2010). Establishing such supplier relationships is further complicated by strict public procurement rules and regulations meant to ensure transparency, fair competition and best value-for-money purchases (Erridge and McIlroy, 2002). Consequently, there has historically been an emphasis on independent, competitive bidding practices within public and humanitarian purchasing as opposed to coordination and relationship building. Instead of binding themselves to pre-disaster purchase commitments, humanitarian agencies have relied on pre-positioned stock and dormant (latent) supplier preparedness for spot purchases (Kovács & Spens, 2011b; Balcic et al., 2010).

Recent calls for increased public sector efficiency and effectiveness are, however, transforming purchasing practices. In order to avoid duplications of efforts, there is a strong push for coordination and alignment among humanitarian agencies. Along these lines, both practitioners and academics have promoted the practice of cooperative purchasing among humanitarian organizations. For example, Gustavsson (2003) suggests that agencies would gain increased leverage and price discounts by joining forces and according to Balcic et al. (2010) cooperative purchasing can lead to beneficial synergy effects. Shultz and Søreide (2006) further claim that cooperative purchasing can reduce the risk of corruption in emergency procurement and thereby increase *“the integrity of the entire relief effort”*. Moreover, in their thesis focusing specifically on the cooperative purchasing of transportation

services, Merckx and Gresse (2012) suggest that members benefit from decreased purchasing complexity, reduced lead time, new learning opportunities, as well as capacity sharing.

In anticipation of benefits discussed above, humanitarian organizations have begun developing various joint purchasing arrangements (Kovács & Spens, 2011b: 34). The sector is also benefiting from a number of voluntary pooled procurement initiatives such as that of HIV/AIDS by the Global Fund, or those by Clinton HIV/AIDS Initiative (CHAI). So far, however, little is known about actual outcomes of these arrangements (Kovacs and Spens, 2011; Schotanus and Telgen, 2007). Our study addresses this topic, and is a response to Kovacs and Spens's (2011a: 7) call for more research on consortia development in humanitarian logistics. In general, cooperative purchasing has gained popularity in several industries to increase bargaining power (c.f. Bakker et al. 2006; Nollet and Beaulieu, 2005; Cruijsen et al. 2007). This popularity has also contributed to a growing research attention that we connect to, for example, Schotanus, 2007; Nollet and Beaulieu, 2005; Rozemeijer, 2000; Taylor and Bjornsson, 1999; Hendrick, 1997; (for an exhaustive review of studies and gaps on the topic see Schotanus and Telgen, 2007).

In 1998, two humanitarian organizations decided to buy their freight forwarding needs in a joint tender. The success of the practice attracted more players and by 2010, the third round of the cooperative purchasing aimed to include more organizations with hopes of increasing benefits, especially the purchase power. But, the strategy did not deliver as expected. By investigating and explaining this situation, we aim to further the understanding of the impact of cooperative purchasing on buyers' purchasing power.

As we focus specifically on the impact of cooperative purchasing on purchasing power, the next section is allocated to a review of purchasing power, its sources and the connection to cooperative purchasing. Then in section 3, the methodology incorporated in this study is described. The case and its consequences are presented and analyzed in section 4, and

discussed, connecting back to theoretical predictions, in section 5. Finally, the paper is concluded by considering contributions and providing recommendations for both practitioners and other researchers in section 6.

## **2 Literature review**

In strive to access required resources organizations are exposed to uncertainty (Pfeffer, 1981), and become dependent on their partners (e.g. Caniels and Gelderman, 2005; Pfeffer and Salancik, 1978). Their level of dependence indicates the influence, or leverage they might have on the partner (Batt, 2003; Anderson and Narus, 1990; Pfeffer, 1981). The leverage the buyer has in front of its supplier base is what we term “purchasing power”. The strategies buyers take can directly impact this purchasing power for or against them (Pfeffer and Salancik, 1978). In this study, we focus on the impact of a cooperative strategy aimed at increasing purchasing power. First purchasing power is explored in detail, and then the cooperative strategy is reviewed.

### **2.1 Purchasing power and its sources**

To understand purchasing power, we first investigate the sources giving rise to less or more leverage. Compiling suggestions on sources of power in literature, these can be categorized based on substitutability of supply and demand, the level of interconnectivity with suppliers, symmetry of information, demand share, and reputation of the buyer (see Table 1 for indicators of each). Based on such characteristics, some organizations have more power than others (c.f. Pfeffer and Salancik, 1978).

Buyers decide on purchasing strategies in response to constraints from these sources of power (c.f. Pfeffer and Salancik, 1978), safeguarding against them, adapting or attempting to change them (Pazirandeh, 2012). High dependence on the supplier base limits buyers’ purchasing power (Pfeffer and Salancik, 1978). This situation can be seen in several industries such as the

airline industry, in purchase of oil/gas, in purchase of vaccines or other public sector goods. There are several forms of purchasing strategies practiced in situations of low purchasing power.

**Table 1 Typical sources of power as noted in literature (Pazirandeh, 2012: 52)**

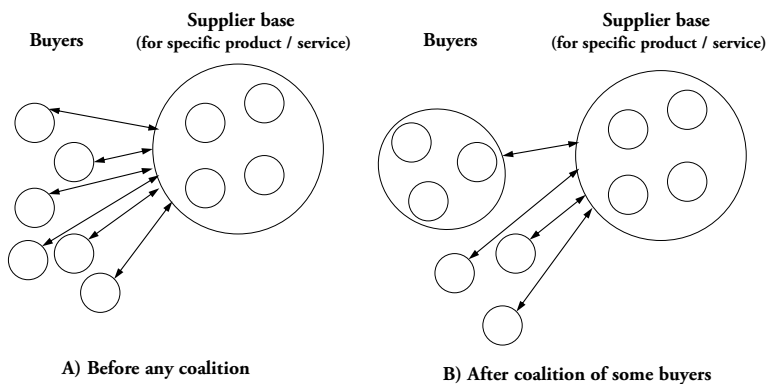
<b>Source of power</b>		<b>Indicators</b>
Substitutability	Supply	<ul style="list-style-type: none"> <li>• Availability of product</li> <li>• Number of suppliers available</li> <li>• Entry barriers/market regulations</li> </ul>
	Demand	<ul style="list-style-type: none"> <li>• Availability of demand substitutes</li> </ul>
Interconnection		<ul style="list-style-type: none"> <li>• Importance of partner in the exchange decision</li> <li>• Duration of relationship (history)</li> <li>• Perceived importance of the exchange by partners</li> <li>• Partner switching cost</li> <li>• Mutual trust and commitment</li> </ul>
Information symmetry		<ul style="list-style-type: none"> <li>• Awareness of the demand</li> <li>• Control over information / Position in the communication flow</li> <li>• Knowledge of the supply market</li> <li>• Knowledge on the exchange</li> <li>• Transparency of information</li> </ul>
Demand share		<ul style="list-style-type: none"> <li>• Competition/Number of buyers available</li> <li>• Volume or value exchanged compared to total volume or value in the market</li> </ul>
Reputation		<ul style="list-style-type: none"> <li>• Legitimacy</li> <li>• Size</li> <li>• Brand</li> <li>• Financial status (cost/price structure)</li> <li>• Technology sophistication</li> <li>• Expertise, resources, and know-how</li> <li>• Logistics situation</li> </ul>
Purchasing regulations		<ul style="list-style-type: none"> <li>• Laws and regulations for purchase</li> <li>• Corporate strategy and mandate</li> </ul>

Most earlier studies have, however, viewed buyers as the powerful actors who can control the contracts and the purchase decision (e.g. Benton and Maloni, 2005; Cox, 2001), and only few have studied them as the weaker party in buyer-supplier relationships (exceptions include e.g. Christiansen and Maltz (2002) who focus on weaker buyers developing partnerships with their suppliers, Herlin and Pazirandeh (2011), who studied possible purchasing strategies to influence the supply market, and Bastl et al. (2013) looking at consortia development by the weaker partner as a mean to gain more power). Historically, Emerson (1969) suggests for the weaker partners in an asymmetric power situation to increase their power position by 1)

withdrawing from the relationship, 2) expanding the relationship network, 3) increasing their status or 4) forming coalitions with other weak parties. This theory can be extended to buyer-supplier relationships. Herein, we specifically study cooperative purchasing as one form of consortia development, in which a number of buyers pool their purchasing functions.

## 2.2 Cooperative purchasing and purchasing power

Bastl et al. (2013) study coalitions formed by weaker partners in a triad (two buyers and a supplier, or two suppliers and a buyer), and suggest that the coalition should have greater power than the dominant player for it to make sense. Their study is among the first attempts to investigate the weaker parties in buyer-supplier relationships. It is, however, not clear how to extend this proposition to a real time situation where buyers face multiple suppliers within the market; specifically, when a number of weaker buyers form consortia to gain better leverage in approaching the supply market. We understand purchasing power as the buyer's dependence on the whole supplier base (see A in Figure 1). Thus, forming a coalition should be measured as the new power structure in front of the supplier base (see B in Figure 1).



**Figure 1** Possible impact of cooperative purchasing (coalition of buyers) on buyer's power relative the supplier base

Formation of such a coalition among buyers is what is termed cooperative purchasing here forth, and can be directly connected to Emerson's (1969) fourth suggestion. In other words, cooperative purchasing can be defined as "*sharing or bundling purchasing related*

*information, processes, resources, and/or volumes by two or more agencies in a group to improve their performance*” (Schotanus et al. 2008: 162). Different forms can be identified based on the influence of members as well as the number of activities performed in the group (e.g. use of a third party, lead buyer, or a program group) (Schotanus and Telgen, 2007). It can be argued that the practice directly attempts to change the power situation in favor of buyers, but the impact of the strategy on purchasing power is not clearly studied within existing literature. Cruijssen, et al. (2007) note how studies on horizontal cooperation are in general scarce.

According to Taylor (1999), buyers usually form cooperative arrangements in situations of low power, where demand is uncertain and the industry fragmented. To increase purchasing power, cooperative purchasing efforts should improve the different sources of purchasing power as listed in Table 1. There should be sufficient buyers available to see the benefits in the coalition and to form the coalition. The combined purchasing power of the coalition justifies the formation (Bastl et al. 2013). In addition, there should also be a driving factor such as high supplier power driving up prices, to motivate formation of such coalition.

The formed cooperative purchasing driven by a less-powerful purchasing situation, can impact sources of power, which can potentially restructure the power / interdependencies for the buyers involved. While there are suggestions on the impact of the strategy on these sources of power in literature, the impact has not been clearly studied in the past. Thus, in this study we aim to further explore this impact and by doing so both evaluate and extend existing literature suggestions.

In Table 2 possible impacts of cooperative purchasing on different power sources, as suggested in literature, are listed. In the most direct form, practicing cooperative purchasing increases power by pooling demand (Turner et al. 2000). In addition to increased demand volumes, pooling demand increases transparency of information (Schotanus and Telgen,

2007) and consolidates expertise and resources (Hendrik, 1997), which affects the reputation of buyers.

**Table 2 Possible impact of cooperative purchasing on different sources of power**

	<b>Impact of cooperative purchasing</b>	<b>References</b>
Substitutability	The practice might become an entry barrier in the market. Only larger and established suppliers might be able to accommodate the large volumes requested.	Pazirandeh, 2012 Schotanus et al. 2008 Schotanus and Telgen, 2007 Khoja and Bawazir, 2005 Nollet and Beaulieu, 2005 Schotanus, 2005 Hendrik, 1997
Interconnection	The practice can foster higher trust from suppliers and better relationships	
Information symmetry	Transparency of the purchasing process and demand information is increased.  Increased information on the market.  Better control on purchase information.	
Demand share	Increased demand share as a result of bundling volumes.	
Reputation	Knowledge, experience, resources and technology are pooled among members. The group will probably have higher control over the purchase situation and better overall reputation within the market.  Loss of flexibility and control on the overall purchasing decision	
Purchasing regulations	Regulations are mostly considered a constraining factor rather a source which would be affected.	

Studying multiple buyers of vaccines, Pazirandeh (2012) finds that practice of cooperative purchasing increased the demand share and thus the negotiation leverage, information symmetry, and reputation of buyers. Some buyers perceive the practice to decrease substitutability in the long run, arguing that only suppliers with sufficient capacity might be able to respond, pushing smaller players out of the market (Pazirandeh, 2012; Nollet and Beaulieu, 2005). Increased demand and better transparency of information can increase supplier incentives in partnering with buyers, fostering better relationships with suppliers (Schotanus and Telgen, 2007). Purchasing regulations can drive or limit the practice, but the exact interaction between the two is not clear.

### **3 Methodology**

We use findings from an in-depth single case study of four buyers joining together to cooperatively purchase their freight forwarding. Understanding change before and after the cooperative purchase on indicators of power requires conversation with individuals involved. Additionally, strength of a case study method does not come from increased data points but rather increased variables used to understand a phenomenon (Yin, 2003). So if used to extend theory, instead of relying on comparison of several observations, a pattern of observed outcomes on several variables are compared with expectations gained from theory (Bitektine, 2007). We follow the process introduced by Ross and Staw (1993), to compare our conceptually developed predictions, and to develop an understanding for how cooperative purchasing influences purchasing power. The case was developed in interaction with processes happening in reality (as suggested by Ragin and Becker, 1992) and our theoretical understanding was affected and developed while doing the study (in line with Dubois and Araujo, 2007).

There are relatively few global freight forwarders with experience and understanding of the humanitarian sector limitations and requirements. However, these forwarders are increasingly interested in maintaining and developing their relationship with the organizations. One of the reasons is the fact that the humanitarian market is commercially worth billions of dollars (Binder & Witte, 2007). Companies developing relationships with humanitarian organizations may also be attracted by the ability to realize corporate social responsibility ambitions, increase or retain staff motivation and improve their own image and reputation (Balcic et al., 2010:27).

In competition with the commercial sector, humanitarian demand is small and fragmented (i.e. based on operation / emergency), purchasing power is considered limited and contracts are based on projections with usually no set figures. The purchasing power is perceived higher in

areas with less commercial presence (e.g. parts of the African continent). The joint tender was thought to further increase the attractiveness of a buyer-supplier partnership and give the freight forwarders additional incentive to perform well. Data from this case were collected and analyzed.

### 3.1 Data collection and analysis

Initially, data was collected from the tender preparation phase, from the lead organization in 2011. One of the authors had the chance to observe discussions around the initiative between buyers, and the initial supplier reactions. A year after the joint tender was finalized, and most suppliers had entered relationships with the buyer organizations, the study continued by firstly reviewing 700 pages (56 pages directly on the tender and the rest on general purchasing within the organizations and on the freight forwarding market) in 17 documents and then conducting 14 semi-structured 1-2 hour interviews (i.e. around 350 transcript pages in total). The aim was to understand the case as much as possible (Ross and Staw, 1993).

Documents ranged from preparation notes, call for expression of interests, Request for Proposals / Quotations (RFP / RFQ), tender strategy documents, evaluation methodology documents, synopsis of the agencies and the suppliers, presentations, general procurement guidelines of the agencies, freight market factsheets, to supplier guidelines. Purposive sampling followed by snowball sampling was used to contact both individuals involved during the tender, and those dealing with the aftermaths of the process within buyer and supplier organizations (see Table 3).

**Table 3 Sample groups and number of participants and individuals (indivs.) in the study**

Sample groups	Participated (Org.)	Indivs. interviewed	Total interviews
Buyers involved (4)*	4	6 (3) ***	8**
Buyers not taking part in the cooperative (4)	2	2 (1)	2
Suppliers who won the award (4)	4	4 (4)	4
Total	10	12 (8)	14

\* Total population of the sample group

\*\* Individuals interviewed more than once

\*\*\* Figure in () indicates the number of individuals involved in the preparation process

Following Eisenhardt's (1989) suggestions, while following the general structure of the interview guide, questions were tailored for each specific organization and each respondent. Questions were also added during the course of the study as a result of gaining new information. In general, the data collection process had five stages: 1) initial data from semi-structured interviews to understand the case (see Table 3), 2) complementing data to fill in the gaps in understanding within follow-up interviews, 3) validating data on the case descriptions from feedback on executive summaries, 4) cross-data analysis to check differences between respondent opinions from a written questionnaire, where buyers were given a list of identified aspects by all interviewees and asked to mark those they agreed with, and 5) input on viability and applicability of the findings and suggestions.

All interviews were recorded and conducted by one of the authors, transcribed by the other, and again summarized by the first author, and reviewed by the second. We conceptually developed our model and suggestions on how different sources of power are impacted by practice of cooperative purchasing. We used a more "*fluid form of pattern matching*" between data and theory to develop an understanding not necessarily stated or predicted in literature (following the suggestion in Ross and Staw, 1993: 705, study). Our aim was to understand the case as much as possible and to match the single case with suggestions from literature, to, in general, increase understanding of the phenomenon. Due to the intertwined process of data and analysis (Dubois and Gadde, 2002), analyses are presented combined with case descriptions (e.g. Bygballe and Jahre, 2009).

#### **4 The case description**

In this section, we first briefly introduce the buyers and suppliers involved in this case, and then review the case from initiation to outcome. All agencies and respondents are anonymized.

## 4.1 Involved buyers and suppliers

All humanitarian agencies in the tender have country offices with more operational functions, and headquarters (HQ) with more strategic / tactical responsibilities. Table 4 shows some background data on these agencies. The country offices work independently, within the limits of the overall organization strategy and policies.

**Table 4 Organizational profile of the involved buyers**

Org.	Staff global *	Staff in involved unit	Average annual Int'l demand (USD)	Main shipping purpose
Blue	8000	13 (Shipping)	100 m	Development
Red	6500	18 (Purchasing)	5-10 m	Support to country offices
Green	5400	Unknown	Unknown	Emergency
White	718	20 (Purchasing)	10m	Support to country offices
Yellow	4000	30-35 (Shipping)	50000 TEUs	Emergency

*\* Data from 31 December 2011*

*TEU - The twenty-foot equivalent unit*

Agency Blue purchases freight both on its own and for its clients. Agencies Red and White purchase mainly on behalf of their country offices. Agencies Green and Yellow purchase more in relation to emergency situations. The agencies were jointly tendering their international freight forwarding needs at the HQs. Only Blue and Yellow have dedicated shipping units dealing with purchase of logistics needs, while at the other agencies the responsibility falls under the purchasing unit. Purchase of air and sea freight is outsourced at all agencies except for Yellow. They practice competitive bidding within 5-year agreements (usually in a 2-3 year initial contract with possibility of extension). Both buyers and suppliers prefer long-term agreements due to the highly resource intensive tendering process. All agencies except for Yellow, finance freight forwarding purchases from general donations received which is allocated per shipment. Yellow does not have any core funding and finances its freight from voluntary emergency donations.

Two of the organizations (Blue and White) have been practicing long-term contractual relationships, Yellow practices spot purchase and others have been piggybacking on Blue's contracts. Both FOB and CFR contracts are commonly practiced in the sector, which is partly driven from the market price.

Four suppliers won the joint tender in 2010-2011 for sea freight, and two for airfreight. There were also other agencies, which had hoped to win the tender, but either did not have the required geographical presence or were omitted due to a technical error at submission. Table 5 shows the background information of the winning suppliers.

**Table 5 Organizational profiles of the involved suppliers**

Supplier	Staff global	Staff Aid and relief	Annual business with agencies	Previous relationships with the humanitarian organizations
Alfa	12000	10-15 (special unit)	3000 TEUs 15m USD (sea freight)	Local contracts with Yellow and Blue among others No global contracts Operating per shipment basis with some others
Beta	800	20 (Special unit)	unknown	Long term agreement with Blue (+15 years) (Red has been piggybacking on this agreement) Yellow's forwarder in some local regions Operating per shipment basis with some others
Delta	100000	20 (Decentralized in other units)	30m USD	Contracts with Blue and Green Operating per shipment basis with some others
Zeta	100000	55 (Special unit)	15000 TEUs 10000 ton airfreight 170m USD	Contracts with Blue, Green, Red, White, Yellow Long term agreements with Blue (+25 years)

*TEU - The twenty-foot equivalent unit*

## 4.2 The initiation

Possible benefits of a joint tender drove two of the agencies to jointly purchase their need in 1998. The sector is also under much scrutiny, and there has been a call for reducing duplications of efforts at different levels. The practice was successful and raised interest from other agencies. In 2010, the agencies decided to expand the benefits by including a larger number of buyers, especially agency Yellow with their significant volumes. Even though Yellow knew they had notably different requirements, they were interested to join the group to reap possible benefits. Some perceived that the smaller agencies with less volume had more

to gain from the tender, and thus their motivation was higher. The result however did not correspond to initial expectations and created much frustration among buyers and the freight forwarders.

Some of the main drivers for expanding the new joint tender, as stated by buyers were the success in the previous cooperation rounds and to get better terms due to increased leverage. The smaller agencies were all hoping for better rates, some wanted a benchmark on their practice and rates, some were hoping for better service and geographical coverage, others were hoping to strengthen their brand, and some were hoping to learn or combine knowledge. One manager regarded the relationship among individuals as a key factor in the initiative's success. The strategy was also to diversify the supplier base and reduce dependence on the existing suppliers for agencies Blue and White.

Suppliers were open to the initiative. For them it meant to partake in one tender instead of several, possible increase of business, access to new partners, and increase in know-how. Supplier Delta however, did not see the tender as a joint approach, but rather merely one tender instead of several, which made them not have any specific initial reactions to it. However, some had concerns about the outcome being affected by organizational politics, hampering consensus among buyers. One forwarder thought the fact that the joint tender would have affected individual jobs, could have also created internal resistance to its initiation.

### **4.3 The tender process**

The buyers decided for agency Blue to take the lead, partly due to their experience and higher volumes. The team appreciated the dynamics of the team. Between 3-4 meetings were arranged to discuss requirements, modalities of the cooperation, and to develop solutions for the differing requirements. There were different levels of representatives from the

organizations (e.g. logistics, procurement, finance, clerk, etc.). This representation was mainly driven from the interest and stakes organizations had in the initiative. Several of the smaller organizations gave the baton to the lead agency, trusting that their requirements would be fulfilled but specific requirements such as differences in geographical delivery locations were also discussed to some extent.

After finalized inter-agency negotiations, a call for Expression of Interest was sent per email to suppliers. The tender was carried out in two sections: for air and sea freight. For airfreight, coverage and handling capacities at port of departure were considered most important, whereas capacity at port of entry was emphasized for sea freight. Suppliers were first shortlisted according to their technical capabilities and only later, a financial evaluation of the bids was made. An electronic tendering system was employed in order to increase process transparency and shortlisted forwarders were invited to submit their proposals within a closed forum.

At this point of the tender process, and before selecting forwarders, staff rotation decisions relocated most individuals involved from their positions. Secondly, the obstacles and differences with Yellow's traditional way of spot purchasing freight forwarding services drove them to decide not to continue with the joint tender. Withdrawal of Yellow was considered a blow to the tender process. The volumes projected and communicated with the suppliers in the tender documents were now lower. This affected both supplier strategies, and also the expected added leverage for buyers. Both incidents also prolonged the outcome by 4-5 months.

#### **4.4 Post-tender dynamics**

Based on the evaluation, four suppliers were awarded the sea freight category, and two were awarded the airfreight category. For agency Blue this decision meant a larger supplier base,

while for Yellow, it would have meant reducing the supplier base significantly. For other organizations involved, the difference was negligible. Even without Yellow, the selected suppliers were now introduced to new buyers in the group which they previously did not have a relation on international freight level.

However, except for agencies Blue and Green, which signed contracts relatively close to the tender decision, Red and White decided to tweak the contractual terms further, which prolonged negotiations and the decisions for up to a year. Red introduced a secondary bidding process upon each demand. Legal entities at both organizations did not see the liability terms fit and thus required for the liability to be shifted to the forwarders. This was considered unacceptable and extreme by the forwarder market. These buyers also realized that due to different funding mechanisms they needed to introduce different payment terms and different supply locations required different geographical terms. In the original documents, it is not clear how organizations are to use the outcome of the joint tender. Forwarders were all expecting a more harmonized approach. Consequently, several forwarders thought contract deviations from the original tender document, which they had planned and submitted bids upon, was unfair.

Forwarders still thought there would be advantages in a joint tender approach as opposed to individual organizations each having a separate tender, however, were critical to the way this joint tender was executed. One of the buyer organizations noted towards the broken relationship, stating that much personal effort has gone into mending the relationship in the past year. They thought the extent of contractual difference between organizations should be understood and aligned beforehand in future practices. It was also noted how given the current situation, and with the given lack of inter-organizational commitment, a more formalized approach would guarantee more favorable outcomes.

Buyer organizations were more skeptical and diverse in opinion. While Red's manager could not imagine freight forwarding needs being purchased any other way, Blue's manager could not imagine it being purchased jointly under these conditions. Others while critical to the 2010-2011 process, also thought higher inter-agency alignment, formalization and communication necessary for future.

#### **4.5 The outcome on indicators of purchasing power**

Table 6 gives a summary of how the joint tender impacted the different indicators of purchasing power as noted by the buyer and supplier representatives. In general, it can be concluded that the joint tender did not increase the purchasing power of the agencies and it might have even reduced this leverage to some extent. While volume has obviously increased from before due to the additional members, the fact that the volume partly dropped from what was initially promised to the forwarders has overall created an unfavorable reaction. Consequently, there has not been any noticeable effect on the rates or the service. Geographical coverage has improved, but this was due to the change in selection criteria and move towards a parallel sourcing strategy, rather than the joint tender. Based on both buyer and supplier perceptions, the main reasons for the unexpected results can be connected to information asymmetry and the impacted reputational aspects. Even though perceptions are not all similar between the actors, there are common denominators: drop of volume from what had been promised, contractual term deviation from tender documents, and the introduced secondary bidding by some agencies are the main reasons behind raised concerns.

**Table 6 Analyzing the perceived impact of the joint tender on different sources of power for buyers and suppliers**

Source of power	Impact	
	Buyers	Suppliers
Substitutability	<ul style="list-style-type: none"> <li>• Grater supplier-base diversity and thus less dependence compared to before.</li> <li>• One of the agencies is reassured of their high dependence on the forwarders after their relationship destabilized due to the long contractual discussions.</li> <li>• The forwarders in general offer higher service to the agencies compared to dealing directly with carriers (a cost benefit analysis conducted in the past shows the higher benefit for the agencies).</li> <li>• The trend towards a more concentrated market of global and bigger forwarders can increase the buyers' dependence and thus decrease their leverage.</li> </ul>	<ul style="list-style-type: none"> <li>• From one side the joint tender has attracted new suppliers, from the other 3 of the four winning forwarders are among the top 20 global forwarders. There is also a trend with more local forwarders being purchased by such global forwarders. Although the market is not highly regulated, such a trend seems to be concentrating more of the share within the few bigger global forwarders.</li> </ul>
Interconnection	<ul style="list-style-type: none"> <li>• The impact of the joint tender here was on trust and commitment. Higher transparency because of the electronic tender increased supplier trust in a fair selection process, but the drop out of one of the suppliers, the introduced secondary bidding, and the deviating contractual terms resulted in a mistrust in the relationship. One forwarder even refrained from entering a relationship with one agency due to the deviating terms; and it took another forwarder more than a year to rebuild ties, which even afterwards remain more on an arm's length.</li> </ul>	
Information symmetry	<ul style="list-style-type: none"> <li>• Increased understanding of the supply market for some partners</li> </ul>	<ul style="list-style-type: none"> <li>• In general, there is an often good level of information shared with forwarders.</li> </ul>
	<ul style="list-style-type: none"> <li>• The introduced secondary bidding and the deviating terms from the tender documents has reduced transparency of information, and understanding of demand for all parties involved</li> </ul>	
Demand share	<ul style="list-style-type: none"> <li>• The joint tender by definition reduces the number of competitors and increases the volume exchanged. In this case the increased numbers were not high enough to have any specific impact on price or service.</li> <li>• The side effect of other decisions, especially the deviating terms of contracts and the secondary bidding overweighed the positive impacts of increased volume.</li> <li>• The last minute quitting of one of the buyers with relatively higher volume disrupted the benefits of increased volumes.</li> </ul>	<ul style="list-style-type: none"> <li>• Forwarders were using the communicated initial projections to increase their own leverage in front of carriers, which the last minute quitting of one of the agencies had unfavorably affected.</li> </ul>
Reputation	<ul style="list-style-type: none"> <li>• Several representatives thought the joint tender had hurt the image of humanitarian organizations as attractive customers for the freight forwarders.</li> <li>• All the agency representatives thought the fragmented approach after the tender had hurt their professional view and reduced their reputation.</li> <li>• Legitimacy, financial stability, and brand of the agencies had been affected to a lesser extent. But, there is a clear impact on both parties' understanding of the agencies' logistics capabilities and know-how.</li> <li>• The lead organization had also felt the necessity of developing an electronic tendering tool to manage forwarder submissions more efficiently and more transparently, which had increased the technological reputation of the buyers in front of the forwarders.</li> </ul>	<ul style="list-style-type: none"> <li>• Forwarders while frustrated with some of the side effects, were all happy with the added business, and the relationship with the new agencies. They all thought "if nothing else" they were now better known by the "other" agencies, which they previously did not have any relationships with.</li> </ul>
Purchasing regulations	<ul style="list-style-type: none"> <li>• The managers are questioning some of the legal directions, which have impacted the outcome of the joint tender, and thus predict a possible change in them, or even see it necessary.</li> <li>• An institutional pressure to reduce duplicated efforts</li> </ul>	<ul style="list-style-type: none"> <li>• Forwarders are also hinting at the need for regulation changes for better business opportunities.</li> </ul>

Among solutions on how to do the joint tender next time, some suggested higher formalization of the process and procedures to ensure commitment of agencies. It was also mentioned that individuals at the buyer agencies should increase their understanding of the supply market and the power situations not to demand the unacceptable (e.g. full liability of forwarders in this case). Also, more strategic involvement of agencies in for example strategic risk management was noted. In general, most solutions address the fragmented approach of the agencies after the joint tender and suggest higher formalization, and more transparent communication of requirements and expectations in the specification phase of the process.

## **5 Discussion**

The cooperative purchasing strategy can be directly related to Emerson's (1962) suggestion of forming coalitions. In forming coalition among a number of buyers facing the same supply market, theoretically, buyers should obtain more purchasing power and hence, associated benefits such as better contractual terms and negotiation power. In practice, several inter-agency cooperation challenges in strategy design and implementation process can impact this ideal outcome. In the case reviewed in this study, the coalition not only did not gain better purchasing power but also partly lost their previously developed negotiation power.

Comparing the findings from this study (in Table 6) and those deducted from theoretical suggestions (in Table 2), gave us some insight into why this has happened. The findings are listed in Table 7. In the studies case, cooperative purchasing was combined with other strategies such as multiple (/parallel) sourcing resulting to gain a more diversified supplier base. Meena, et al. (2011) has previously suggested multiple sourcing as a superior strategy in high service and supply risk disruption environments. This shows that a combined strategy can in fact modify / intensify the expected outcomes. For example, combining the strategy with multiple sourcing and awarding a small portion of the demand to smaller suppliers can mitigate the predicted supplier base reduction side effect of cooperative purchasing.

In this specific case, the most obvious impact of cooperative purchasing on interconnection aspects was on trust and commitment. Our observations also suggest that the process design can impact the outcome on sources of power. For example, a homogenous and coordinated tender process can offer an attractive and transparent view of demand to suppliers and hence, develop higher trust and commitment, the opposite can diminish this. The same situation was observed with information symmetry being disrupted as a result of the fragmented contracting approach in our case example.

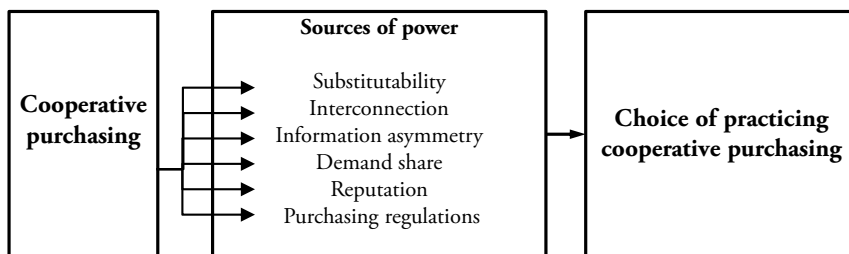
**Table 7 Findings from the study in comparison with previous studies on each source of power**

Source of power	Impact
Substitutability	We found indications that cooperative purchasing can reduce the supply market to dominant providers and become an entry barrier ( <i>confirming previous studies</i> ). The practice can also attract and incentivize suppliers to an otherwise unattractive demand ( <i>extension to previous studies</i> ).
Interconnection	The way the process is designed and implemented (i.e. fragmented approach during contracting and deviations from the tender documents in our case) can foster or discourage trust and commitment ( <i>extension to previous studies</i> ).
Information symmetry	Information transparency resulted from the way information is managed across consortium partners, and communicated with suppliers will directly impact the purchasing power (e.g. in the e-tendering tool in our case) ( <i>extension to previous studies</i> ). Such information management can also increase understanding of demand, and the group can benefit from each other's market knowledge as a whole ( <i>confirming previous studies</i> ). Deviations from consortium projections (e.g. contractual terms and secondary bidding) can disrupt both demand and supply understanding for suppliers and also buyers ( <i>extension to previous studies</i> ).
Demand share	Competition is inherently reduced and demand share increased ( <i>confirming previous studies</i> ).
Reputation	Cooperative purchasing increases volume, pools knowledge and resources. However, it will somewhat limit flexibility and control ( <i>confirming previous studies</i> ). The way the process is designed and implemented can impact the overall status and reputation of the consortium among the supplier base (e.g. the logistics capabilities and know-how reputation of the buyers hurt in our case) ( <i>extension to previous studies</i> ).
Purchasing regulations	The constraining impact of regulations can result in managers requiring policy / regulation change (e.g. managers realizing the need for regulation changes in our case) ( <i>extension to previous studies</i> ).

With competition being inherently reduced and demand share increased, for the outcome of consortia to benefit the coalition, their power should be more than that of the supplier base (c.f. Bastl et al. 2013). This is while the impact of the strategy on other sources of power might not be favorable for buyers. In the studied case, the unfavorable impact of the strategy on other sources of power such as interconnection and reputation resulted in the purchasing

power not improving for the buyer consortium. According to theory (see Table 2), reputation should increase in a cooperative purchase group, but in this case the lack of harmonization and fragmented process design somewhat hurt supplier perceptions of the buyers (as a group, and as individual agencies). Finally, we also found that differences in purchasing regulations and policies among organizations acted as a barrier to an aligned and coordinated purchasing approach. This constraining factor has resulted in several managers realizing the need for, and requiring, regulation / policy changes.

Findings of the study are conceptualized in Figure 2. It is suggested that cooperative purchasing affects purchasing power through its impact on sources of power. While evidence from our case confirms strive for better leverage to be a driver of the practice, buyers did not necessarily consider themselves within a less-powerful situation. On the contrary, some buyers considered themselves within the buyer dominance structure. Such perspective is due to, for example, whether buyers view the commercial sector as competition or not.



**Figure 2 Conceptualizing findings on the impact of cooperative purchasing on purchasing power**

Due to the perceptive and relative nature of power, it is difficult to see the direct relation between power structures (as the cumulative effect of sources of power) and the strategy. It should be further emphasized that strive for better leverage is not merely driven from a less powerful position. The changed level of sources can result in a changed power structure. This impact is the cumulative result of all sources of power after practicing cooperative

purchasing. A changed structure can possibly eliminate the expected benefits of, or the need for, practicing cooperative purchasing.

Thus, to increase leverage, buyers should focus on employing the cooperative purchasing strategy in a way to increase the combination of power sources, to consequently increase their overall purchasing power. The paper shows that merely increasing demand share (e.g. volumes) will not suffice to increase overall purchasing power, if other sources of power are impacted in an unfavorable manner for the buyer. Of course, further empirical studies are needed to test the findings of this study in different contexts.

From a societal perspective, the agencies' failure to cooperate means that valuable resources are wasted as a result of duplication of efforts and unnecessary bureaucratic procedures. To facilitate humanitarian cooperation inter-agency rules and regulations should be further harmonized and there is also a need for liberation of general public purchasing frameworks that strongly promote competition and constrict collaboration. If the benefits of cooperative purchasing would be realized in the humanitarian sector, consequences could be far-reaching as funds would be used in a more cost-efficient manner and suppliers of emergency and development goods could be 'pushed' by agencies to improve their performance both in terms of effort, quality and price.

## **6 Conclusions**

While the role of power in inter-organizational relationships, is well established in literature (e.g. Pfeffer and Salancik, 1978; Cox, 2004), buyers have been predominantly viewed as the powerful partners, influencing the contract and the purchase decision (Bastl, et al. 2013). In reality, there are several situations where buyers face a powerful supplier front. Examples of such situations can be found in the humanitarian and the public sector, where we focused on. Cooperative purchasing is becoming increasingly popular as a strategy employed to increase

leverage (Bastl, et al. 2013; Taylor, 1999). Through studying a case where unexpected outcomes resulted in non-increased purchasing power, this study contributes to 1) the discussions on less powerful buyers, 2) to the growing body of research on cooperative purchasing, and 3) to discussions on joint efforts in humanitarian logistics literature.

In relation to all three areas, we found that cooperative purchasing can impact all sources of power (see Table 7 for findings regarding this aspect; see Table 1 for sources of power and its indicators), which can potentially change the buyer's purchasing power. While as an obvious impact of cooperative purchasing, demand share is increased, the impact on other sources of power might not be as positive. In the studied case, the unfavorable impact of the strategy on other sources of power (see Table 6) resulted in the purchasing power not improving for the buyer consortium. Thus, buyers who aim to practice cooperative purchasing are recommended to consider the effect of the strategy on all sources of power and to design the process so that potential unfavorable impacts are minimized.

Further empirical studies are needed to test the findings of this study in different contexts. More studies are also needed to develop theories on the outcome of cooperative purchasing for buyers and suppliers in the consortium. Cooperative purchasing can be mixed with other strategies to get a more favorable output (e.g. combined with multiple sourcing or supplier partnerships). The connection between such mixed strategies and the outcome on purchasing power should also be subject to further studies.

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