

# The interrelationship between purchasing maturity, internal customer satisfaction and purchasing performance: an empirical case study

*Working paper*

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## **Abstract**

So far, academic literature has paid extensive attention to the importance of purchasing development within the context of the current business environment, emphasizing value creation and delivery and integrated supply chain management. In addition, the contribution of purchasing's (internal service) performance to an organization's success has been widely claimed. Despite the current focus on purchasing maturity, internal service performance and purchasing performance, only scarce attention has been given to their interrelationships. By means of an extensive literature study, a framework that outlines how purchasing maturity leads to purchasing performance is unfolded and tested. In particular, we state that internal customer satisfaction plays a mediating role between purchasing maturity and purchasing savings realized. Thereby, the moderating role of purchasing category and internal customer differentiation on the effects of purchasing maturity is depicted as well. Currently, hypotheses are tested at the purchasing project level by means of an empirical study on a large purchasing database of a case company. The present study uncovers a large and unexplored intra-organizational research field within the scope of purchasing development and performance.

*Key words: purchasing maturity, internal customer satisfaction, purchasing performance, empirical study*

## **1 Introduction**

In today's business environment, firms face new challenges emphasizing value creation and delivery for their customers (Lindgreen et al., 2009; Van Weele and Rozemeijer, 1996) and integrated supply chain management (Paulraj et al., 2006). As a firm's purchasing volume – as a percentage of the firm's turnover – continues to increase (Schiele, 2007) and purchasing specifications and supplier service requirements get more stringent (Stanley and Wisner, 2001) and grow in technical complexity (Gadde et al., 2010), purchasing and supply management (further PSM) has come to play a more strategic role at the company level (Easton et al., 2002; Paulraj et al., 2006). At the same time, total quality management practices have gained importance and are increasingly implemented in organizations (Sánchez-Rodríguez and Martínez-Lorente, 2004). This all forces purchasing to develop (further) and to perform better, whereby its internal service has become a critical value driver (Cousins et al., 2006).

In this respect, the current research focuses on three main concepts: purchasing maturity, internal customer satisfaction (further ICS) and purchasing performance. One by one they have been discussed in academic and managerial research. However, the respective literature streams

have not yet been widely integrated. As such, it is unclear whether and how the development of the purchasing department has an influence on its internal service performance, measured by ICS. In addition, further insight in how purchasing maturity relates to purchasing performance is required. So far, researchers have based their analyses and conclusions on cross-sectional data and/or single observations rather than longitudinal data (Alinaghian and Srari, 2011; Cousins et al., 2006) and far too many generalizations from small, atypical samples have been made (Ramsay and Croom, 2008). But, above all, no attention has been given to the (mediating/moderating) role of ICS in the relationship between purchasing maturity and purchasing performance. The current research aims to address this gap. Thereby, we also investigate whether the effects of purchasing maturity are moderated by the kind of internal customer department and purchasing portfolio position. So far, differentiation in purchasing maturity, ICS and purchasing performance among internal customers and purchasing categories has not been explored empirically. Relationships are researched at the purchasing project level within a company, which differs from preceding research focusing on the purchasing function and firm level (e.g. Paulraj et al., 2006; Schiele, 2007).

Hence, the aim of the present study is to investigate the interrelationship between purchasing maturity, ICS and purchasing performance. Thereby the moderating roles of purchasing category and internal customer differentiation are integrated. Research results will provide practitioners with insight on the importance of purchasing development and the role of ICS with respect to purchasing performance. Also, inspiration will be provided to purchasers on the customization and management of internal service performance.

The remainder of the paper is structured as follows: in section 2 we elaborate on the conceptual constructs focused on. In the third section the research methodology is reported. Next, our research hypotheses are depicted (section 4). In section 5 we elaborate on the theoretical and managerial implications of the current study. Finally, in section 6, the next steps within the current research are depicted.

Currently, hypotheses are being tested on a large purchasing database of a case company. We intend to include preliminary research results in March 2014, in order to present our research findings at the IPSERA 2014 conference.

## **2 Conceptual background**

**Purchasing development/ maturity** refers to “the level of professionalism in the purchasing function” (Rozemeijer et al., 2003, p.7) and originates from the multiple stage-wise purchasing maturity models that were introduced in academic and managerial literature during the last two decades (Schiele, 2007; Van Weele, 2010). Both for practitioners and academic researchers, purchasing maturity is an important construct to consider. After all, empirical evidence shows that purchasing maturity is a driver of purchasing portfolio management (Gelderman and Van Weele, 2005) and corporate purchasing synergy management (Rozemeijer et al., 2003). But above all, purchasing maturity is claimed to enhance purchasing performance (Foerstl et al., 2013; Paik, 2011), supplier performance and a firm’s success (Cousins et al., 2006; Foerstl et al., 2013; Hartmann et al., 2012; Paulraj et al., 2006; Schiele, 2007).

However, despite its importance, current knowledge and research on the construct faces some problems. First of all, different views have been taken to approach the concept. As a consequence, little consensus exists on how to model and operationalize it. For instance, based on a self-conducted extensive literature review, 17 different, original models or classifications on purchasing development were identified. In addition, a clear definition of what ‘purchasing

maturity' *exactly* means is not available, besides the often and above cited description of Rozemeijer et al. (2003) which says it is "related (among others) to the level of professionalism in the purchasing function as expressed in status of the function, role and organizational status of the purchasing department, availability of purchasing information systems, quality of the people involved in purchasing, and the level of collaboration with suppliers" (p.10). As a consequence, purchasing maturity is often considered as a broad, aggregated concept, spanning elements from organizational structure and strategy, supplier relationships to even internal processes and systems (Van Weele, 2010). This all explains the scarce attention and incorporation of purchasing maturity in empirical purchasing research. For instance, prominent purchasing maturity models contain a high conceptual content and poor empirical validation. Also, there is a significant lack of translation of these models into (context specific) purchasing development management and practices (Alinaghian and Srari, 2011; Bemelmans et al., 2013).

In the current research, three proxy elements of purchasing maturity are used: purchasing involvement, contract coverage rate and contract duration.

- The moment from whereupon the purchasing department is involved in the purchasing process (step model, Van Weele, 2010), such as product/service specification definition, supplier selection, contract management, order handling and supplier evaluation. It relates to purchasing's role within the organization, as well as to the degree of purchasing's internal involvement and integration which is a critical parameter and serves as a basis in purchasing development models (Ellram and Carr, 1994; Van Weele et al., 1998; Werr and Perner, 2007).
- The contract coverage rate (further CCR) refers to the proportion of the purchasing volume that is covered by contracts. A high CCR is pursued by the purchasing department and corresponds with a low maverick buying ratio which on its turn is associated with a more strategically developed purchasing department as it indicates a higher control over the firm's purchases by purchasing (Kroese et al., 2008). Besides this, purchasing's occupation with the tactical purchasing level - which also indicates the use of an e-procurement or integrated information system - reflects a higher level of purchasing maturity as well (Bemelmans et al., 2013).
- As purchasing develops into a strategic function, (strategic) suppliers are approached in more 'mature' ways (Chen et al., 2004; Lawson et al., 2009; Sharma and Sheth, 1997; Wynstra et al., 2003). This is reflected by long-term collaborative buyer-seller relationships (Spekman and Carraway, 2006) with techniques such as joint planning and joint problem solving (Claro and Claro, 2010), strategic partnerships (Jun and Cai, 2010; Ploetner and Ehret, 2006; Spekman, 1988) and supplier involvement in new product development (Dowlatsahi, 1998; Kibbeling, 2010; Schiele, 2006; Wagner and Hoegl, 2006) wherefore long term in contrast to short term collaboration and contracts are preferred (Seshadri and Mishra, 2004; Trent and Monczka, 1998).

Purchasing can be viewed as a supplier within the organization serving its internal customers such as R&D and manufacturing (Schiele, 2006; Wisner and Stanley, 1999; Wynstra et al., 2003; Young and Varble, 1997). Purchasing's internal service quality (further ISQ) refers to the perceived quality of service provided by purchasing to other units or employees within the organization (Brandon-Jones and Silvestro, 2010). In the current study, the degree with which internal customers are satisfied with purchasing's ISQ is called '**internal customer satisfaction**' (ICS). It is important as it is a prerequisite for organizations to build a market orientation (Conduit and Mavondo, 2001) and so to deliver service quality to external customers (Hallowell et al., 1996; Mohr-Jackson, 1991; Pfau et al., 1991).

**Purchasing performance** is defined as “the extent to which the purchasing function is able to realize its predetermined goals at the sacrifice of a minimum of the company’s resources” (Van Weele, 2010, p.60). It is important as it may lead to, among others, better decision making, higher visibility, buyer motivation and operating cost reductions (Pohl and Förstl, 2011). Although some researchers confound purchasing performance with ICS or ISQ (e.g. Hendrick & Ruch, 1988), or view internal service performance as an important element of purchasing performance (e.g. Cavinato, 1987; Sánchez-Rodríguez et al., 2005), in the current research we maintain a broader view on the construct, not restricting to the internal customer service or the perspective of internal customers. After all, as the purchasing function becomes to play a pivotal and strategic role, its performance measures must be in line with corporate strategic planning (Carr and Smeltzer, 1997; Easton et al., 2002; Pohl and Förstl, 2011). In addition, in contrast to ICS, we will maintain only objective criteria to measure purchasing performance (Chao et al., 1993). In the current research we will use ‘savings realized’ as measure of purchasing performance. After all, because of its large impact on a firm’s bottom line, cost saving still is the primary objective of PSM (Hartmann et al., 2012). This purchasing outcome measure has been used and validated by several researchers, also within the context of the purchasing maturity process (e.g. Foerstl et al., 2013; González-Benito, 2007; Hartmann et al., 2012; Schiele, 2007).

A final concept concerns **purchasing categories** which refer to the segments of organizational spend on bought-in goods and services (O’Brien, 2009) and are related to supply and purchasing strategies within purchasing portfolio literature (Gelderman and Van Weele, 2005). Thereby, per category, supply base management can range from transactional sourcing to a relational purchasing orientation focusing on cooperative relationships with suppliers (Lindgreen et al., 2013). However, insight in the link between category management and purchasing’s ability to serve its internal customers and to reduce costs is limited (Stanley and Wisner, 2002).

### **3 Research methodology**

The aim of the present study is to investigate the interrelationship between purchasing maturity, ICS and purchasing performance. Thereby the moderating roles of purchasing category and internal customer differentiation are depicted. The research framework can be found in appendix B.

#### *3.1 Research design*

In order to answer the research questions, an empirical, quantitative study is currently executed on a large purchasing database of one company. The company (further company Alpha) has systematically collected and stored multiple data about all of its purchasing projects during the last 15 years.

Company Alpha is active in the Dutch financial services industry. The purchasing department maintains a center-led and category driven purchasing structure. Purchasers serve as ‘consultants’ to the business for the tactical purchasing process, i.e. from specifying until and including contracting. For operational buying, the purchasing department provides support for the e-procurement systems in place, but it is not the main responsibility of the department. It are the different business functions – and not the purchasing department - who are the contract and purchasing budget owners within the company. The purchasing volume has been stable for the last few years and is about 60%. The annual purchasing spend excels two milliard euros wherefrom the

majority can be categorized as non-direct spend. Therefore, the primary focus of the purchasing department still is of (total) cost saving nature.

In order to develop our research framework, the following steps were undertaken: first of all, an extensive literature study on purchasing maturity, ISQ/ICS and purchasing performance was conducted, founded within social exchange theory and a resource-based and dependent view of organizations. Secondly, company documents were collected and analyzed to build insight on the company, its purchasing process and department, and the purchasing information/data that has been systematically stored within the company. Thirdly, semi-structured in-depth interviews with the head of the purchasing department, three category managers and two internal customer managers have been executed to deepen insight on the company and construct relationships.

In the current research, purchasing maturity, ICS and purchasing performance of the purchasing *department* is focused on as the purchasing *function* boundaries are ambiguous and unobservable. Thereby, each single observation represents a purchasing project whereby a *new* contract(s) is negotiated.

### 3.2 Operationalization of the constructs

Table 1 demonstrates the empirical operationalization of the main constructs. As purchasing maturity is an aggregated construct wherefore no consensus exists regarding its operationalization in academic literature, ‘purchasing involvement, ‘contract coverage rate’ and ‘contract duration’ are used as proxy measures.

Variable	Explanation	Data characteristics
Purchasing involvement	Indicates the moment from whereupon the purchasing department is involved in the tactical purchasing process (6 steps).	- Ordinal data - Available for each project
Contract Coverage Rate (CCR)	Proportion of total purchasing volume modifiable wherefore a contract exists	- Continuous data (%) - Annual
Contract duration	Duration of the supplier contract concluded	- Continuous data (# of months) - Available for each project
Internal customer satisfaction (ICS)	Satisfaction of purchasing’s internal customer with the purchasing project result, execution by the purchaser and purchaser knowledge and competence	- Nominal data (Likert scale: 1 totally dissatisfied – 10 totally satisfied) - Available for each project
Purchasing savings	Savings (sum of cost reduction and avoidance) realized in proportion to [purchasing spend + savings for the project]	- Continuous data (%) - Available for each project - In case of multiple contracts within one project: sum of savings/ (sum of purchasing spends + savings)
Purchasing category (Cat)	Purchasing category (cfr. Kraljic matrix; see appendix A)	- Ordinal data - Available for each project
Internal customer department (IC dept)	The internal customer department of the project which the purchasing department serves.	- Ordinal data - Available for each project

**Table 1: operationalization of the constructs**

## 4 Research model and hypotheses

### 4.1 *The effects of purchasing involvement, CCR and contract duration on purchasing’s ICS*

As purchasing develops, we expect purchasing’s ICS to be positively affected. After all, first, as purchasing is more strategically involved and considered (and thus earlier in the

purchasing process) by other functions within the company as it develops, a stronger integration and collaboration with user functions within the company takes place (Cousins et al., 2006; Paulraj et al., 2006; Schiele, 2007). Because purchasing's ISQ is positively affected by close interaction, i.e. alignment and collaboration, with internal customers (Fredendall et al., 2005; Rossler and Hirsz, 1996) and is an indicator of ICS (Goebel et al., 2003; Jun and Cai, 2010), we expect that early involvement of purchasing positively affects ICS. The fact that purchasing is earlier involved is often related to a higher degree of trust in and openness towards purchasing and consequently more knowledge and information sharing (Barratt, 2004; Ellegaard and Koch, 2012; Werr and Perner, 2007). The latter offers an opportunity for purchasing to improve its internal service performance, as supported by the social exchange theory (Blau, 1968; Finn et al., 1996). Thus, we state:

### **H1a: purchasing involvement positively impacts on internal customer satisfaction**

Secondly, if the purchasing volume is increasingly covered by contracts, purchasing's control – whereby the department pursues and supports contract conclusion – over the firm's purchases as well increases. Besides the ability of purchasing to negotiate favorable prices, better supplier service levels can be concluded and supply risks can be reduced in a contract (Karjalainen and van Raaij, 2011). In other words, a contract enables purchasing to play its intermediary role (i.e. between internal customer and supplier). In addition, with contracts the internal customer is able to purchase directly from an e-procurement system which has been positively related to ICS (Carr and Pearson, 1999; Croom and Johnston, 2003). Next to a higher CCR, to an increasing extent, transactional exchanges are replaced by less, but cooperative, long-term buyer-supplier relationships as purchasing develops (Koufteros et al., 2007; Spekman and Carraway, 2006). In contrast to single transactional purchases, a pre-negotiated long-term contract may be concluded for costs sharing, knowledge and expertise input from the supplier, cycle time reduction, etc. (Ragatz et al., 2002). Suppliers may for instance be fully integrated in new product/process development (Schiele, 2010; Wynstra and Pierick, 2000). One can consider these supplier relationships as critical resources for value creation and realization (Eisenhardt and Schoonhoven, 1996; Madhok and Tallman, 1998; Steinle and Schiele, 2008). Thereby, evidence shows that cooperation with suppliers positively impacts on purchasing's ISQ (Fredendall et al., 2005; Sánchez-Rodríguez et al., 2005; Stanley and Wisner, 2001) which is positively associated with ICS (Jun and Cai, 2010). Therefore, we can state:

### **H1b: the contract coverage rate positively impacts on internal customer satisfaction**

### **H1c: contract duration positively impacts on internal customer satisfaction**

## *4.2 The effect of ICS on purchasing's savings realized*

If internal customers are satisfied with purchasing's capabilities and execution of the purchasing project, they might adjust their perception of purchasing (Finn et al., 1996; Jun and Cai, 2010). As a consequence, they will be more loyal (Heskett et al., 1994) within the meaning of having more trust in and being more open towards the purchasing department, which will facilitate interdepartmental collaboration (Carr and Smeltzer, 1997; Ellegaard and Koch, 2012; Finn et al., 1996). This offers an opportunity for purchasing to increase its performance as more information and knowledge is being shared and cross-functional strategic consensus is reached (Barratt, 2004; Ellegaard and Koch, 2012; Hartmann et al., 2012). Thus:

## **H2: internal customer satisfaction positively impacts on purchasing's savings realized**

### *4.3 The effects of purchasing involvement, CCR and contract duration on purchasing's savings realized*

(Early) involvement of purchasing within other functions is a critical aspect of a mature purchasing profile (Schiele, 2007). It determines the extent to which cross-functional integration exists between purchasing and its internal customers which is positively related to purchasing performance (Ellegaard and Koch, 2012; Hartmann et al., 2012; Werr and Perner, 2007). As such, it is associated with the degree with which purchasing can play its 'cost reducing/ saving role' and to which extent purchasing's advice with respect to the total cost of ownership is incorporated in the purchasing decision process (e.g. developing specifications, supplier selection and negotiating contract terms and conditions).

In contrast to off-contract buying, larger purchasing volumes with attractive purchase conditions, such as quantity discounts and terms of payment and delivery, are often negotiated in case of a contract (Karjalainen and van Raaij, 2011; Minner, 2003). Maverick buying has been shown to negatively affect purchasing costs (Karjalainen et al., 2009). More specifically, cost reduction can be enhanced by *long term* contracts as these often imply cost sharing practices with suppliers and learning curve effects (Minner, 2003; Ragatz et al., 2002).

Based on the above, the fact that a highly developed purchasing department is associated with the realization of purchasing savings (Keough, 1993; Schiele, 2007) and because we want to test whether mediation of ICS is full or partial, we state:

**H3a: purchasing involvement positively impacts on purchasing's savings**

**H3b: the contract coverage rate positively impacts on purchasing's savings**

**H3c: contract duration positively impacts on purchasing's savings**

### *4.4 The moderating effects of purchasing categories and internal customer departments*

As mentioned above, we expect that purchasing involvement positively affects ICS through information sharing, cross-functional collaboration and alignment. However, thereby one should note the differences among purchasing categories or portfolio positions. In particular, with respect to the Kraljic matrix of a company's purchasing portfolio (Kraljic, 1983), non-critical items have often been related to a purchasing strategy and approach that focuses on efficient processes whereby catalog buying or transactional purchases are the primary means (Gelderman and Van Weele, 2002). Thereby earlier involvement of purchasing may not, per definition, result in higher ICS, as the internal customer often is just interested in an accurate operational purchasing system available and a quick delivery of the right product/service selected and ordered by the internal customer wherefore no further purchasing input for e.g. product specifications or supplier selection is required.

Similar, the advantages of a contract, i.e. supply risk management, (total) cost reduction and higher supplier service levels negotiated, might be more relevant and thus required by the internal customer for strategic items for which sourcing is more complex because of its higher profit impact and/or supply risk (Kraljic, 1983).

Further, not every sourcing strategy, as determined by the portfolio position, implies long-term contracts which are increasingly concluded with a limited number of (strategic) suppliers as purchasing develops (Spekman and Carraway, 2006; Van Weele, 2010). For instance, for non-

critical items where efficient processing is the main focus, internal customers often dislike fixed (catalog with) long-term supplier contracts which are concluded by the central purchasing department, but require a certain degree of flexibility concerning supplier selection (Kraljic, 1983). Thus:

**H4a: the effect of purchasing involvement on internal customer satisfaction is stronger for strategic purchasing items**

**H4b: the effect of contract coverage rate on internal customer satisfaction is stronger for strategic purchasing items**

**H4c: the effect of contract duration on internal customer satisfaction is stronger for strategic purchase categories**

As mentioned above, the sourcing strategy maintained depends, among others, on the portfolio position of the product/service to be purchased (Faes and Matthyssens, 2009; Lindgreen et al., 2013). Thereby, it is reported that single sourcing results in and is the preferred sourcing strategy to realize cost reductions (Buttack, 2001; Ellram and Billington, 2001; Larson and Kulchitsky, 1998). Related to the portfolio model of Kraljic (1983), single sourcing strategies are mostly used with and appropriate for strategic in contrast to non-critical items (Faes and Matthyssens, 2009). Furthermore, maverick buying, which negatively affects purchasing (total) costs, is especially related with the types of purchases wherefore a high number of transactions of relatively low value take place (Karjalainen and van Raaij, 2011). Therefore, we state:

**H5a: the effect of purchasing involvement on purchasing's savings is stronger for strategic purchase items**

**H5b: the effect of contract coverage rate on purchasing's savings is stronger for strategic purchase items**

**H5c: the effect of contract duration on purchasing's savings is stronger for strategic purchase items**

What preceding research on ISQ/ICS has in common is that internal customer expectations are treated as a mixture of views of all interested parties having different roles and problems within the organization (Auty and Long, 1999). However, different internal customers may have idiosyncratic service expectations (Cavinato, 1987; Marshall et al., 1998). Indeed, according to Marshall et al. (1998) "a proper prioritization of the services mix and subsequent effective execution of the service, both tailored to the needs of that segment, will be necessary to maximize the satisfaction of the users" (p. 391) and to yield greater organizational efficiencies. Thereby, the relationship between 'the purchasing category' and the 'internal customer department' involved is not, per definition, one to one. For instance, IT material is mainly ordered by the ICT department, but also other internal functions may order, for instance, computer hardware. In addition, whether an internal customer appreciates and values early involvement of and collaboration with purchasing and its contract management depends on the internal alignment and integration of purchasing within that specific internal customer department, which will partially depend on past experiences (Ellegaard and Koch, 2012; Goebel et al., 2003). Therefore, we state:

**H6a: the effect of purchasing involvement on internal customer satisfaction differs significantly among internal customer departments.**

**H6b: the effect of contract coverage rate on internal customer satisfaction differs significantly among internal customer departments.**

## **5 Contribution**

The present research is valuable from both an academic and managerial point of view. First, the current study is motivated from the observation that no insight into the interrelationship of purchasing maturity, ICS and purchasing savings exists. In addition, preceding research on purchasing development, ICS and purchasing performance has primarily focused on the purchasing function or firm level. Thereby, differentiation among internal customer departments and purchasing categories has not been explored and reported on. The current research addresses these gaps by means of a quantitative, empirical study within one company whereby relationships are investigated at the purchasing project level. This research project is a first study of a larger research endeavor to investigate the interrelationship between purchasing maturity, ISQ/ICS and purchasing performance. It uncovers a large and unexplored intra-organizational research field within the scope of purchasing development, which on its turn has been approached from a rather conceptual point of view so far.

Secondly, the present research project is valuable from a managerial point of view. Inspiration can be provided on the importance of purchasing development with respect to the department's internal service and cost reduction performance for different purchasing categories. In addition, based on the research outcomes, practitioners may better understand and manage internal customer relationships. Also, further identification and understanding of ICS drivers will be gained. Analogous, insight will be built on the relationship between ICS and the purchasing department's goal to realize savings. This all provides practitioners with valuable knowledge on their performance management. As such, for purchasing managers it is important to know whether both internal customer satisfaction and purchasing savings should be pursued.

## **6 Next steps and remarks**

This paper is work in progress and therefore limited in scope and empirical results. Currently, data of company Alpha is being explored and a dataset is selected in order to ensure sufficient usable observations and continuity. The data will then be analyzed wherefore regression and Structural Equation Modeling (SEM) techniques will be used. To this end, we will use the AMOS software as it provides the possibility (i.e. Bayesian techniques) to test our framework with ordinal data. We anticipate to have and include (preliminary) research findings in March 2014.

Despite the significant contribution of the current project from both a managerial as academic point of view, the present research contains some limitations from which lines for further research are derived. First of all, empirical findings could not be easily generalized as construct relationships have only been tested in one company. In addition, results will have to be interpreted within the specific context of company Alpha. For instance, data reflects the contract management consulting focus of the purchasing department within the test company. As such, research findings need to be viewed from the perspective of the tactical purchasing process. Thereby, the purchasing department functions as a consultant advising the internal customer which is the contract owner. In addition, the research should be repeated in other industry contexts whereby purchasing items also significantly reflect direct spend items in order to be able to generalize research findings.

Secondly, research findings should be put in perspective of the measures used. ICS is measured subjectively by means of perception scores. Although the reliability and validity of perceptions-only approaches have been proven (Brandon-Jones and Silvestro, 2010), no information on the internal customer's reference to give a score of seven instead of nine out of ten is available. Further, we have used proxy measures for purchasing maturity of which validity and

reliability still needs to be empirically proven. With respect to purchasing performance, we have only focused on the cost reduction objective of purchasing, whereas, nowadays, other purchasing outcomes, such as quality issues and innovation contribution should complement the financial purchasing performance measures (Hartmann et al., 2012; Pohl and Förstl, 2011).

Thirdly, as we work with multi-year data, we will have to nuance research findings for category movements of product groups/ segments in case that occurred (Faes and Matthyssens, 2009; Gelderman and Van Weele, 2003) and other important contextual occasions (e.g. economic crisis) within the time period under consideration. Also, no reverse relationships have been included yet. A second study with longitudinal data would be a valuable extension of the current research.

## References

- Alinaghian, L., Srari, J.S., 2011. Proposing a Roadmap for Purchasing and Supply System Transformation: towards a research agenda, Proceedings for the 10th annual IPSERA conference, Maastricht, The Netherlands, pp. 586-600.
- Auty, S., Long, G., 1999. 'Tribal warfare' and gaps affecting internal service quality. *International journal of service industry management* 10, 7-18.
- Barratt, M., 2004. Understanding the meaning of collaboration in the supply chain. *Supply Chain Management: An International Journal* 9, 30-42.
- Bemelmans, J., Voordijk, H., Vos, B., 2013. Designing a tool for an effective assessment of purchasing maturity in construction. *Benchmarking: An International Journal* 20, 342-361.
- Blau, P.M., 1968. Interaction: Social exchange. *International Encyclopedia of the Social Sciences* 7, 452-458.
- Brandon-Jones, A., Silvestro, R., 2010. Measuring internal service quality: comparing the gap-based and perceptions-only approaches. *International Journal of Operations & Production Management* 30, 1291-1318.
- Buttack, P., 2001. Introduction to single sourcing. *Intercom* 48, 26-30.
- Carr, A.S., Pearson, J., 1999. Strategically managed buyer-supplier relationships and performance outcomes. *Journal of Operations Management* 17, 497-519.
- Carr, A.S., Smeltzer, L.R., 1997. An empirically based operational definition of strategic purchasing. *European Journal of Purchasing & Supply Management* 3, 199-207.
- Cavinato, J.L., 1987. Purchasing performance: What makes the magic? *Journal of Purchasing and Materials Management* 23, 10-16.
- Chao, C., Scheuing, E.E., Ruch, W.A., 1993. Purchasing Performance Evaluation: An Investigation of Different Perspectives. *International journal of purchasing and materials management* 29, 33-39.
- Chen, I.J., Paulraj, A., Lado, A.A., 2004. Strategic purchasing, supply management and firm performance. *Journal of Operations Management* 22, 505-523.
- Claro, D.P., Claro, P.B.O., 2010. Collaborative buyer-supplier relationships and downstream information in marketing channels. *Industrial Marketing Management* 39, 221-228.
- Conduit, J., Mavondo, F.T., 2001. How critical is internal customer orientation to market orientation? *Journal of Business Research* 51, 11-24.
- Cousins, P.D., Lawson, B., Squire, B., 2006. An empirical taxonomy of purchasing functions. *International Journal of Operations and Production Management* 26, 775-794.
- Croom, S., Johnston, R., 2003. E-service: enhancing internal customer service through e-procurement. *International Journal of Service Industry Management* 14, 539-555.
- Dowlatshahi, S., 1998. Implementing early supplier involvement: a conceptual model. *International Journal of Operations & Production Management* 8, 143-167.
- Easton, L., Murphy, D.J., Pearson, J.N., 2002. Purchasing performance evaluation: with data envelopment analysis. *European Journal of Purchasing & Supply Management* 8, 123-134.
- Eisenhardt, K.M., Schoonhoven, C.B., 1996. Resource-based View of Strategic Alliance Formation: strategic and social effects in entrepreneurial firms. *Organization Science* 7, 136-150.
- Ellegaard, C., Koch, C., 2012. The effects of low internal integration between purchasing and operations on suppliers' resource mobilization. *Journal of Purchasing & Supply Management*.
- Ellram, L., Billington, C., 2001. Purchasing leverage considerations in the outsourcing decision. *European Journal of Purchasing & Supply Management* 7, 15-27.
- Ellram, L.M., Carr, A., 1994. Strategic purchasing: a history and review of the literature. *Journal of Purchasing and Materials Management* Spring, 10-18.

Faes, W., Matthyssens, P., 2009. Insights into the process of changing sourcing strategies. *Journal of Business & Industrial Marketing* 24, 245-255.

Finn, D.W., Baker, J., Marshall, G.W., Anderson, R., 1996. Total Quality Management and Internal Customers: measuring internal service quality. *Journal of Marketing Theory and Practice* 4, 36-51.

Foerstl, K.D., Hartmann, E., Wynstra, F., Moser, R., 2013. Cross-functional integration and functional coordination in purchasing and supply management: Antecedents and effects on purchasing and firm performance. *International Journal of Operations & Production Management* 33, 4-4.

Frendendall, L.D., Hopkins, C.D., Bhonsle, A., 2005. Purchasing's Internal Service Performance: Critical External and Internal Determinants. *The Journal of Supply Chain Management* 41, 26-38.

Gadde, L.-E., Hakansson, H., Persson, G., 2010. *Supply Network Strategies*. John Wiley & Sons, Chichester.

Gelderman, C.J., Van Weele, A.J., 2002. Strategic Direction through Purchasing Portfolio Management: A Case study. *The Journal of Supply Chain Management*, 30-37.

Gelderman, C.J., Van Weele, A.J., 2003. Handling measurement issues and strategic directions in Kraljic's purchasing portfolio model. *Journal of Purchasing and Supply Management* 9, 207-216.

Gelderman, C.J., Van Weele, A.J., 2005. Purchasing Portfolio Models: A Critique and Update. *The Journal of Supply Chain Management*, 19-28.

Goebel, D.J., Marshall, G.W., Locander, W.B., 2003. Enhancing Purchasing's Strategic Reputation: Evidence and Recommendations for Future Research. *The Journal of Supply Chain Management*, 4-14.

González-Benito, J., 2007. A theory of purchasing's contribution to business performance. *Journal of Operations Management* 25, 901-917.

Hallowell, R., Schlesinger, L.A., Zornitsky, J., 1996. Internal service quality, customer and job satisfaction: linkages and implications for management. *Human Resource Planning* 19, 20-31.

Hartmann, E., Kerkfeld, D., Henke, M., 2012. Top and bottom line relevance of purchasing and supply management. *Journal of Purchasing and Supply Management* 18, 22-34.

Heskett, J.L., Jones, T.O., Loveman, G.W., Sasser, W.E.J., Schlesinger, L.A., 1994. Putting the service-profit chain to work. *Harvard Business Review* 72, 164-170.

Jun, M., Cai, S., 2010. Examining the relationships between internal service quality and its dimensions, and internal customer satisfaction. *Total Quality Management* 21, 205-223.

Karjalainen, K., Kemppainen, K., Van Raaij, E.M., 2009. Non-compliant work behaviour in purchasing: An exploration of reasons behind maverick buying. *Journal of business ethics* 85, 245-261.

Karjalainen, K., van Raaij, E., 2011. An empirical test of contributing factors to different forms of maverick buying. *Journal of Purchasing and Supply Management* 17, 185-197.

Keough, M., 1993. Buying your way to the top. *McKinsey Quarterly* 3, 41-62.

Kibbeling, M., 2010. *Creating value in supply chains: Suppliers' Impact on Value for Customers, Society and Stakeholders*, Eindhoven, the Netherlands.

Koufteros, X.A., Cheng, T.C.E., Lai, K.H., 2007. Black-box and gray-box supplier integration in product development: antecedents, consequences and the moderating role of firm size. *Journal of Operations Management* 25, 847-870.

Kraljic, P., 1983. Purchasing must become supply management. *Harvard Business Review* September-October, 109-177.

Kroese, E.C., den Teuling, J.M., Versendaal, J.M., Batenburg, R.S., van de Kamp-Slootweg, H., 2008. Aligning procurement: An e-procurement mapping and deployment model, IPSE 2008 Proceedings of 17th Annual Conference of the International Purchasing & Supply Education and Research Association, Perth, Australia.

Larson, P.D., Kulchitsky, J.D., 1998. Single Sourcing and Supplier Certification:: Performance and Relationship Implications. *Industrial Marketing Management* 27, 73-81.

Lawson, B., Cousins, P.D., Handfield, R.B., Petersen, K.J., 2009. Strategic purchasing, supply management practices and buyer performance improvement: an empirical study of UK manufacturing organisations. *International Journal of Production Research* 47, 2649-2667.

Lindgreen, A., Révész, B., Glynn, M., 2009. Purchasing orientation. *Journal of Business & Industrial Marketing* 24, 148-153.

Lindgreen, A., Vanhamme, J., Van Raaij, E., Johnston, W.J., 2013. Go configure: the mix of purchasing practices to choose for your supply base. *California Management Review* 55, 72-96.

Madhok, A., Tallman, S.B., 1998. Resources, transactions and rents: managing value through interfirm collaborative relationships. *Organization Science* 9, 326-339.

Marshall, G.W., Baker, J., Finn, D.W., 1998. Exploring internal customer service quality. *Journal of Business & Industrial Marketing* 13, 381-392.

Minner, S., 2003. Multiple-supplier inventory models in supply chain management: A review. *International Journal of Production Economics* 81, 265-279.

Mohr-Jackson, I., 1991. Broadening the Market Orientation: An Added Focus on Internal Customers. *Human Resource Management* 30, 455-467.

O'Brien, J., 2009. *Category Management in Purchasing: A Strategic Approach to Maximize Business Profitability*. Kogan page, London.

Paik, S.-K., 2011. Supply Management in Small and Medium-Sized Enterprises: Role of SME Size, Supply Chain Forum: an International Journal. BEM-Bordeaux Management School, pp. 10-21.

Paulraj, A., Chen, I.J., Flynn, J., 2006. Levels of strategic purchasing: Impact on supply integration and performance. *Journal of Purchasing & Supply Management* 12, 107-122.

Pfau, B., Detzel, D., Geller, A., 1991. Satisfy your internal customers. *The Journal of Business Strategy* 12, 9-13.

Ploetner, O., Ehret, M., 2006. From relationships to partnerships - new forms of cooperation between buyer and seller. *Industrial Marketing Management* 35, 4-9.

Pohl, M., Förstl, K., 2011. Achieving purchasing competence through purchasing performance measurement system design - A multiple case study analysis. *Journal of Purchasing and Supply Management* 17, 231-245.

Ragatz, G.L., Handfield, R.B., Petersen, K.J., 2002. Benefits associated with supplier integration into new product development under conditions of technology uncertainty. *Journal of Business Research* 55, 389-400.

Ramsay, J., Croom, S., 2008. The impact of evolutionary and developmental metaphors on Purchasing and Supply Management: A critique. *Journal of Purchasing and Supply Management* 14, 192-204.

Rosler, P.E., Hirsz, A.B., 1996. Purchasing's interaction with customers: the effects on customer satisfaction - a case study. *International Journal of Purchasing and Materials Management*, 37-43.

Rozemeijer, F.A., van Weele, A., Weggeman, M., 2003. Creating Corporate Advantage through Purchasing: toward a contingency model. *The Journal of Supply Chain Management: a global review of purchasing and supply* 39, 4-13.

Sánchez-Rodríguez, C., Hemsworth, D., Martínez-Lorente, A.R., 2005. The effect of supplier development initiatives on purchasing performance: a structural model. *Supply Chain Management: An International Journal* 10, 289-301.

Sánchez-Rodríguez, C., Martínez-Lorente, Á.R., 2004. Quality management practices in the purchasing function. *International Journal of Operations & Production Management* 24, 666-687.

Schiele, H., 2006. How to distinguish innovative suppliers? Identifying innovative suppliers as a new task for purchasing. *Industrial Marketing Management* 35, 925-935.

Schiele, H., 2007. Supply-management maturity, cost savings and purchasing absorptive capacity: testing the procurement - performance link. *Journal of Purchasing & Supply Management* 13, 274-293.

Schiele, H., 2010. Early supplier integration: the dual role of purchasing in new product development. *R&D Management* 40, 138-153.

Seshadri, S., Mishra, R., 2004. Relationship marketing and contract theory. *Industrial Marketing Management* 33, 513-526.

Sharma, A., Sheth, J.N., 1997. Relationship Marketing: an agenda for inquiry. *Industrial Marketing Management* 26, 87-89.

Spekman, R.E., 1988. Strategic supplier selection: understanding long term buyer relationships. *Business Horizons* 31, 75-81.

Spekman, R.E., Carraway, R., 2006. Making the transition to collaborative buyer-seller relationships: An emerging framework. *Industrial Marketing Management* 35, 10-19.

Stanley, L.L., Wisner, J.D., 2001. Service quality along the supply chain: implications for purchasing. *Journal of Operations Management* 19, 287-306.

Stanley, L.L., Wisner, J.D., 2002. The determinants of service quality: issues for purchasing. *European Journal of Purchasing & Supply Management* 8, 97-109.

Steinle, C., Schiele, H., 2008. Limits to global sourcing? Strategic consequences of dependency on international suppliers: Cluster theory, resource-based view and case studies. *Journal of Purchasing & Supply Management* 14, 3-14.

Trent, R.J., Monczka, R.M., 1998. Purchasing and supply management: trends and changes throughout the 1990s. *Journal of Supply Chain Management* 34, 2-11.

Van Weele, A.J., 2010. *Purchasing and Supply Chain Management: Analysis, Strategy, Planning and Practice*, 5th ed. Cengage Learning EMEA, Hampshire.

Van Weele, A.J., Rozemeijer, F.A., 1996. Revolution in purchasing: building competitive power through proactive purchasing. *European Journal of Purchasing & Supply Management* 2, 153-160.

Van Weele, A.J., Rozemeijer, F.A., Rietveld, G., 1998. Professionalising purchasing in organisations: towards a purchasing development model. Proceedings for the 7th annual IPSERA conference.

Wagner, S.M., Hoegl, M., 2006. Involving suppliers in product development: Insights from R&D directors and project managers. *Industrial Marketing Management* 35, 936-943.

Werr, A., Perner, F., 2007. Purchasing management consulting services—From management autonomy to purchasing involvement. *Journal of Purchasing and Supply Management* 13, 98-112.

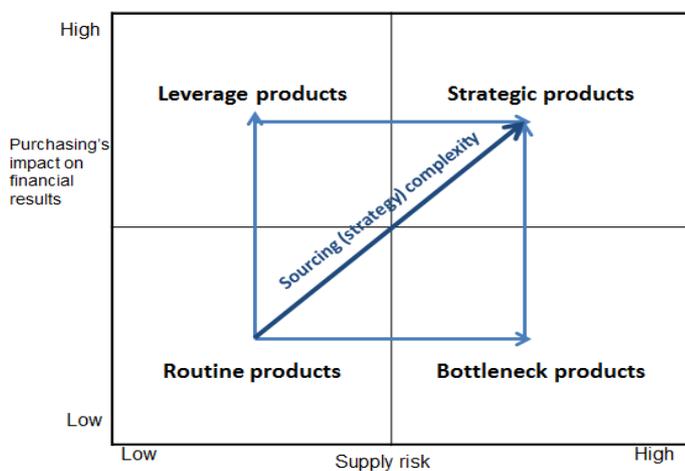
Wisner, J.D., Stanley, L.L., 1999. Internal relationships and activities associated with high levels of purchasing service quality. *The Journal of Supply Chain Management* 35, 25-32.

Wynstra, F., Pierick, E.t., 2000. Managing supplier involvement in new product development: a portfolio approach. *European Journal of Purchasing & Supply Management* 6, 49-57.

Wynstra, F., Weggeman, M., Van Weele, A., 2003. Exploring purchasing integration in product development. *Industrial Marketing Management* 32, 69-83.

Young, J.A., Varble, D.L., 1997. Purchasing's performance as seen by its internal customers: a study in a service organization. *International Journal of Purchasing and Materials Management* 33, 36-41.

**Appendix A: sourcing (strategy) complexity, based upon the portfolio model of Kraljic (1983)**



**Appendix B: research model**

