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How purchasing structures can contribute to firm performance

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Abstract

Purchasing & supply management practices may have broad impact in some organisations, where purchasing practices support the overall corporate strategy. Therefore, the purchasing strategy must be in line with the overall corporate strategy and aim for the goals that are set in the corporate strategy. Purchasing structures may have a significant impact on the purchasing strategy and performance, however the literature does not describe the influence of purchasing structures on purchasing performance extensively. Therefore, this research aims to investigate how purchasing structures can contribute to purchasing performance, and subsequently to firm performance.

This research draws on case research at a first-tier supplier to OEMs in the high-tech industry, in which two locations of the case company use different types of purchasing structures. One location employs a purchasing project management structure, the other location employs a purchasing hybrid management structure. These two purchasing structures are compared to each other by looking at the differences in the use of sourcing levers and relating sourcing levers to different performance dimensions. The case research draws on interviews conducted with purchasing professionals at the case company and observations of KPI performance.

The findings in this research indicate that the purchasing project management structure is a customer focussed purchasing structure, whereas purchasing hybrid management is a supplier-focussed structure. A model on the influence of the purchasing structures on sourcing levers and performance dimensions is introduced, in which the purchasing hybrid management structure allows for more (efficient) use of sourcing levers. Next to that contextual factors that influence this model were identified.

Additionally, this research suggests a hybrid purchasing structure to be used at the case company, to achieve supplier focus without losing (internal) customer alignment.

Keywords: Purchasing structures, purchasing project management, purchasing category management, purchasing hybrid management, sourcing levers

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1. Introduction: purchasing departments can be organised to support firm performance

1.1 PSM contributes to firm performance by alignment of strategies

Ellram et al. (2002) state that purchasing and supply management activities can help organisations by locating and aligning with the best suppliers in the industry, effectively save costs in the supply chain, identify new technologies and involve suppliers in new product development. PSM practices therefore may have a broad impact in some organisations, However, PSM generally does not set overall corporate strategy, rather PSM practices support the overall corporate strategy.[1] Therefore, it is important that the PSM strategy that is used within a company is in line with overall corporate strategy and supports the goals that are set in the corporate strategy.[2] For instance, firms that would define their competitive advantage to be cost-focused, should also focus on cost-reduction within the purchasing function. Similarly, firms that have a competitive advantage through differentiation should also have a differentiated purchasing function.[3] Internal supply management processes along with strategic alignment will have an impact on firm performance.[4] Within the research field of strategic purchasing there are different levels of strategy analysis. Starting with firm strategy, spiralling down into functional purchasing strategy, category strategies, sourcing levers and then supplier strategies.[5] In this research level 3 of the hierarchy of strategies model (figure 2) will be analysed. This level of strategy refers to category strategies, category strategies are strategies that are used within a certain group of a purchasing department, and category strategies are subordinate to firm and functional strategy.[6] The composition of these purchasing groups and how they communicate is dictated by the purchasing structure, as organisational structures define how organisational units are grouped and how the groups are linked together according to Roh et

[1] See Ellram et al. (2002), p.14

[2] See González-Benito (2007), p. 914

[3] See Cousins (2005), p. 421

[4] See Day & Lichtenstein (2006), p. 319

[5] See Hesping & Schiele (2015), p. 141

[6] See Hesping & Schiele (2015), p. 146

al. (2022).[7] Therefore, a purchasing structure could have an influence on the purchasing strategy and how the strategy is implemented.

1.2 Gap in purchasing structure literature and guideline for managers to decide purchasing structure

To investigate the influence of purchasing structures on purchasing performance and how purchasing performance can contribute to firm performance, this research discusses three types of purchasing structures: purchasing project management and purchasing category management, as well as a hybrid of these two structures.

The literature on purchasing category management is featured more extensively in literature (e.g. Burlakova & Ruzhanskaya, 2021; Heikkilä et al., 2019; O'brien, 2019), however the purchasing project management structure, in which the grouping criteria business unit/customer is used,[8] is less known and investigated. Therefore, a gap in literature was identified on the purchasing project management structure. Next to that a gap in theoretical basis for implementing purchasing structures such as category management was identified.[9] This research contributes to this gap in literature by relating purchasing levers to the purchasing structures to provide a guideline for implementing the purchasing structures. Research on tactical sourcing levers is still a work in progress, since it lacks integration with parts of the business such as engineering, logistics or quality management.[10] Next to this further investigation is needed on how to structure spending and the supply base to support certain competitive priorities.[11] Therefore, this study discusses how to structure purchasing functions for the use of sourcing levers, and how these sourcing levers influence competitive priorities. Additionally, Hesping & Schiele (2015) state that the research on tactical sourcing levers still lacks conceptual and empirical works on the influence that contextual factors may have on the success of different sourcing levers.[12] Therefore, this research assesses the situation that the case company is in and how this influences the working of the sourcing levers.

[7] See Roh et al. (2022), p. 828-829

[8] See Bals et al. (2018), p. 42-43

[9] See Burlakova & Ruzhanskaya (2021), p. 206

[10] See Hesping & Schiele (2016a), p. 113

[11] See Hesping & Schiele (2015), p. 148

[12] See Hesping & Schiele (2015), p. 148

Through interviews with the case company a need for further investigation into different purchasing structures was identified. Practical contributions include a guideline for managers to decide on purchasing structure, according to the competitive priorities. As well as a recommendation on the decision for a purchasing structure in the current business and market situation.

1.3 Research question explained through sub questions

To address the gaps in literature and practical knowledge, this research aims to answer the following research question:

How to align purchasing contribution to firm strategy by organising the purchasing department?

Through answering sub questions:

- *Which organisation structures exist within purchasing departments?*
- *How to measure purchasing contributions to firm performance?*
- *How are purchasing activities used in different organisational purchasing structures?*
- *Which purchasing activities contribute to which part of firm strategy?*
- *What influence could contextual factors have on purchasing structures and sourcing levers?*

1.4 Conducting an in-depth case study to determine the optimal organisational structure in purchasing

To answer the research questions, empirical research was conducted at two locations of a first-tier supplier to OEMs in the high-tech industry. The two locations of the case company employ different types of purchasing structures. The situation the case company is in offered a unique case in which a company that is operating in a similar environment uses different organisational purchasing structures, and therefore the different organisational purchasing structures could be compared fairly. The case company offered access to internal data, which brought the opportunity to gain deep insights into the different influences the purchasing structures have. Case research was conducted on the bases of a case study, at two locations of the case company. Case research is research based on analysis of a limited number of cases, in which it is also possible to use different cases from the same firm to study different

issues.[13] The cases were selected on the bases of the 'most similar' case selection method [14], in which the two cases that will be used operate in similar environments and the variable of interest, the different purchasing structures, differs between the two cases. This case research includes qualitative and quantitative research with data derived from both interviews and data that the case company has available in the ERP-system.

2. Literature review: purchasing structures and sourcing levers

2.1 Functions within a firm are organised through functional structure

Most organisations consist of different functions, Jones (2013) states that a function of an organisation is a subunit composed of a group of people, working together, who possess similar skills or use the same kind of knowledge, tools, or techniques to perform their jobs. Examples of functions within firms are sales and marketing, production operations, engineering, and purchasing.[15]

Organisations aim to provide their functions with the resources and the setting needed to develop superior skills and expertise, leading to a function's core competence. The strength of a function's core competence depends, along with skills and resources, on the ability of a function to coordinate the use of its resources.[16] An organisation's coordination abilities are a product of its structure.[17]

According to Roh et al. (2022), organisational structures guide the way that work flows through organisations, it prescribes how individuals and groups operate together and resources are configured. Organisational structures define the paths of communication and reporting routes, and therefore also define power among individuals and groups. Next to that structure defines how organisational units are grouped and how the groups are linked together to accomplish organisational objectives.[18] Jones (2013) adds to this that the assignment of one person to a role is the start of a process that results in the functional structure. As an organisation grows, employees increase in number and begin to specialise,

[13] See Voss et al. (2002), p. 197

[14] See Seawright & Gerring (2008), p. 304-305

[15] See Jones (2013), p. 117-118

[16] See Jones (2013), p. 237

[17] See Miller (1987), p. 27

[18] See Roh et al. (2022), p. 828-829

and vertical differentiation within functions occurs. This results in the emergence of a hierarchy within functions, which comprises the structure of these functions.[19] Therefore, managers need to decide on how to structure their functions, and that also applies to managers of the purchasing function.

2.2 Purchasing structures are characterised by centralisation, formalisation, specialisation and grouping criteria

Before going into detail on different purchasing structures and their characteristics, it is important to know how a purchasing structure influences the purchasing department. Monczka et al. (2021) describes the influence of purchasing structures as: "The overall organisational structure of P/SM affects the: (1) location of the formal power for purchasing decisions; (2) division of purchasing tasks and activities; (3) scope of the jobs in the purchasing function; (4) patterns of communication and workflow; (5) relative job satisfaction of P/SM employees; and (6) overall effectiveness of P/SM in meeting its goals and objectives."[20] Depending on the market environment, the choice of organizational structure can enhance or impede the success of the purchasing performance, and therefore the firm performance.[21] Additionally, Johnson & Leenders (2001) state that the organisation of the supply function must be consistent with the firm's strategy and structure, where the corporate structure may take precedence over optimum functional structure.[22]

Literature shows that purchasing structures can have several structural characteristics. The most described characteristics are; (de)centralisation, formalisation, and specialisation.[23] In which formalisation has a strong overlap with standardisation,[24] therefore it will not be described separately.

Johston and Bonoma (1981) define *centralisation* within the purchasing department as "the degree to which authority, responsibility, and power are concentrated within an organisation or buying unit."[25] Centralisation within the purchasing department is associated

[19] See Jones (2013), p. 143-144; Jones (2013), p. 170

[20] Monczka et al. (2021), p. 163

[21] See Richter et al. (2019), p. 19

[22] See Johnson & Leenders (2001), p. 11

[23] See Luzzini & Ronchi (2011), p. 17; Richter et al. (2019), p. 5-8; Schneider & Wallenburg (2013), p. 146

[24] See Richter et al. (2019), p. 2

[25] Johnston & Bonoma (1981), p. 148

with creating opportunities for resource sharing, to minimise idle capacity and coordination costs, and to achieve economies of scale when negotiating with suppliers. On the contrary decentralisation is associated with more flexibility, faster time to market and the speed of coordination.[26] Additionally, Johnson and Leenders (2006) state that potential benefits of centralised supply structures include greater buying specialisation, coordination of policies and systems and consolidation of requirements. While potential benefits of decentralised supply structures improving service and lowering costs by pushing decision-making responsibility closer to the end user, promoting closer working relationships between suppliers and end users, and providing increased opportunities for end users to manage total cost of ownership factors.[27]

Kotteaku et al. (1995) describes *formalisation* within the purchasing department as "the extent to which purchasing tasks/roles are defined by various formal documents describing rules, procedures and policies."[28] In other words, formalisation describes the degree to which work and tasks performed in the organisation are standardised.[29] Formalisation in the purchasing department can increase transparency regarding supplier performance by establishing formalised tracking mechanisms, and consistency in the use of contractual terms and expectations.[30]

Specialisation is "the degree to which purchasing activities are conducted by specialised departments, committees, and skilled personnel."[31] Different organisation of purchasing departments can lead to different degrees or types of specialisations. Changing the degree and principle of specialisation influences the purchasing process as well as the required competencies and skills of the purchasers.[32] Purchasing departments in larger organisations usually structure themselves to support specialised purchasing activities, in which it is not efficient or practical to have all purchasing personnel responsible for every task located within each group. Instead, most purchasing departments organise into specialised groups.[33]

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[26] See David et al. (2002), p. 871

[27] See Johnson & Leenders (2006), p. 333

[28] Kotteaku et al. (1995), p. 30

[29] See Kim (2007), p. 325

[30] See Tate & Ellram (2012), p. 22

[31] Glock & Hochrein (2011), p. 158

[32] See Lakemond et al. (2001), p. 18

[33] See Monczka et al. (2021), p. 158

Overarching these structural characteristics, purchasing structures can be different on a macro-level, which is based on the grouping criteria of purchasing structures.[34] The grouping criteria of purchasing structures on the macro level can be done by; category, business unit/customer, geography, and activity.[35] Mintzberg (1980) labels grouping criteria as unit grouping, and states that unit grouping is the design parameter by which direct supervision is most importantly affected.[36] The three structural characteristics described above can also be determined by the choice in grouping criteria.

In this research three purchasing structure types are considered, project management, category management, and a hybrid structure. The main differences in structural characteristics between these structure types are the grouping criteria of purchasing professionals, centralisation, and specialisation.

2.2.1 Purchasing project management divides purchasing professionals into business unit/customer groups

For the business unit/customer grouping structure, from the macro-level dimensions/grouping criteria (Bals et al. 2018, Mintzberg 1980), this research uses the term 'purchasing project management'. Purchasing project management is a structure that exists of purchasing groups that serve (internal) clients that the company produces for.

When purchasing authority for the majority of purchase expenditures is at the business unit, divisional or site level, then a firm has a more decentralised structure.[37] Therefore, the purchasing project management structure is characterised as a decentralised approach to purchasing. As centralisation is described as "the degree to which authority, responsibility, and power are concentrated within an organisation or buying unit",[38] in decentralised purchasing structures the purchasing authority is dispersed, in this case across the business unit/customer groups.

Decentralisation of purchasing structures provides the benefits of improved service and lower costs by pushing decision-making responsibility closer to the end user, closer working relationships between suppliers and end-users, and increased opportunities for end

[34] See Patrucco et al. (2019), p. 4

[35] See Bals et al. (2018), p. 42-43

[36] See Mintzberg (1980), p.325

[37] See Monczka et al. (2021), p. 164

[38] Johnston & Bonoma (1981), p. 148

users to manage total cost of ownership factors.[39] Additionally, Monczka et al. (2021) state that a decentralised purchasing structure can increase; the speed and responsiveness of the purchasing function which means a quick response to user and customer requirements, personnel can gain an understanding of unique operational requirements by becoming familiar with the products, processes, business practices, and customers, and it can support new-product development better through evaluating longer-term product requirements, developing strategic plans, and anticipating product requirements. Additionally, an intangible reason for organisations to prefer decentralised purchasing authority is the ownership of decisions that this structure provides, in which the assumption is that business unit personnel understand and support the objectives of the business unit and feel personal commitment to this particular operation, since they are responsible for the profitability of the unit.[40] Ownership of decisions is also noted as a potential benefit for decentralised by Johnson & Leenders (2006); "decentralisation offers business units autonomy and control over key functional activities, supporting the principle that business units must carry responsibility for major decisions if they are to be held accountable for performance."[41]

For the specialisation characteristic of purchasing structures, project management allows for better project planning and project execution. Project planning is existent of different activities, such as determining specific develop-or-buy solutions, selecting suppliers, determining the extent of supplier involvement, and determining the moment of supplier involvement. Project execution is how project planning decisions are being integrated.[42] In the case study by Wynstra et al. (2000), it became clear that some engineers argue that it is better to have purchasers specialised according to projects, to avert that purchasers have to contribute to several projects at once.[43] This is in line with the findings from Lakemond et al. (2001) and Rozemeijer et al. (2003), which state that congruent purchasing and engineering organisations can facilitate purchasing involvement in product development projects and diminish the need for coordination of this involvement.[44] This could also promote cross-functionality in purchasing, which can allow for cross-functional integration between the purchasing department and other departments within firms, linking

[39] See Johnson & Leenders (2004), p. 192

[40] See Monczka et al. (2021), p. 167-168

[41] Johnson & Leenders (2006), p. 333

[42] See Wynstra et al. (2003), p. 79

[43] See Wynstra et al. (2000), p. 136

[44] See Lakemond et al. (2001), p.18; Rozemeijer et al. (2003), p. 10

knowledge of supply markets to strategic decision making. However, cross-functionality requires investments such as personal time and information systems.[45] The purchasing project management does not focus on negotiating corporate contracts for common commodities and services, despite potential gains, these initiatives will usually meet resistance at the business unit level because of the effect these spend categories have on the bottom-line of the business unit.[46] This is in contrast with purchasing category management.

2.2.2 Purchasing category management divides purchasing professionals into product category groups

For the category grouping structure, from the macro-level dimensions/grouping criteria (Bals et al. 2018, Mintzberg 1980), the term purchasing category management is used.[47]

According to O'brien (2019), traditional category management originated in the world of sales and marketing in the early 1980s, in which it was used to segment product categories that were sold to the customers. Category management was popular in retail, but later was also adopted in manufacturing companies. In response to the need to counter growing power of suppliers born out of globalisation and of suppliers getting smarter and finding new ways to secure and retain their routes to market, category management was also adopted in purchasing.[48] Therefore, purchasing category management originates from the 1990s, where it was for example used at retail companies such as Procter&Gamble.[49] Earlier, the term commodity management was used for the segmentation of the most important production related materials, such as raw materials for production, however the term changed to purchasing category management when purchasers started segmenting the entirety of the firms spend.[50] However, the term commodity management is still used among purchasing professionals and can therefore be considered as an interchangeable term to purchasing category management.

Heikkilä & Kaipia (2009) describe purchasing category management as the systematic analysis of costs spent on purchasing and forming purchasing categories covering

[45] See Foerstl et al. (2013), p. 708

[46] See Rozemeijer et al. (2003), p. 12

[47] Trautmann et al. (2009), p. 58

[48] See O'brien (2019), p. 8

[49] See Burlakova & Ruzhanskaya (2021), p. 206-207

[50] See Heikkilä & Kaipia (2009), p. 329

the whole purchasing spend.[51] A more elaborate definition on purchasing category management is given by O'brien (2019):

"The practice of segmenting the main areas of organizational spend on bought-in goods and services into discrete groups of products and services according to the function of those goods or services and, most importantly, to mirror how individual marketplaces are organized. Using this category segmentation, organizations work cross-functionally on individual categories, examining the entire category spend, how the organization uses the products or services within the category, the marketplace and individual suppliers, in order to determine and implement sourcing strategies that will deliver significant value to the organization."[52]

Although there are few research articles available on how purchasing categories are formed, it becomes clear that product categories are groups of similar items. Trautmann et al. (2009) describes it as: "A category encompasses a group of similar items that are required for specific business activities of the firm."[53] Each product category may have its own sourcing strategy. The product category strategy should be determined by analysing the portfolio according to the strategic importance of the purchase and the difficulty of managing the purchase situation.[54] Next to this the segmentation of the spend into categories must reflect the supply market, this means the categories must mirror how the individual marketplaces are organised, in order to maximise the potential benefits from category management.[55]

Category management has the characteristic of a more centralised approach to structuring the purchasing department compared to project management. That means the purchasing authority is more centralised. The main purpose of this approach is to bring resources and knowledge together to create purchase pooling. Purchase pooling is facilitated by category management because it allows the buying firm to use its full purchasing power by negotiating a large volume once instead of negotiating several small quantities.[56] This

[51] See Heikkilä & Kaipia (2009), p. 329

[52] O'brien (2019), p. 6

[53] Trautmann et al. (2009), p. 58

[54] See Olsen & Ellram (1997), p. 111

[55] See O'brien (2019), p. 28

[56] See Schiele (2019), p. 55

can for instance involve volume bundling, which leads to economies of scale on the supplier's side.[57]

Category management also brings together knowledge, as it allows purchasing professionals to develop specialisation in a particular industry because they are solely responsible for one type of product category.[58] Next to that it is easier for a more centrally led purchasing function to initiate company-wide change.[59]

However, there are also challenges in the implementation of purchasing category management. The analysis of the product range and the whole purchasing spend, to identify commonalities for categories to be created, can be a complex process.[60] In the study by Trent and Monczka (2003) it was noticed that a material group can have a high number of different specifications within the same material group. This can be an issue for the implementation of purchasing category management, since a greater commonality of purchased products per sourcing category, can maximise the benefits a centralised purchasing structure can obtain.[61]

The previous section, and this section explained the characteristics of purchasing project management and purchasing category management, which can lead to different capabilities in the purchasing department. There are also structures that try to combine structural characteristics, these structures are called hybrid structures.

2.2.3 Hybrid structures combine (de)centralisation characteristics

Between centralised and decentralised forms of structures, there is a range of hybrid organisational structures.[62] Research by Johnson et al. (2006) even found that hybrid structures are the most used structure type within large organisations, and the use of hybrid structures is more popular in the manufacturing sector compared to the service sector.[63]

The primary benefit of using a hybrid organisational structure approach is that it provides the opportunity to combine the key features of centralised and decentralised structures,[64] as there is a trade-off between efficiency/control by centralisation, versus

[57] See Smart & Dudas (2007), p. 66

[58] See Schiele (2019), p. 55

[59] See Monczka et al. (2021), p. 167

[60] See Trent & Monczka (2003), p. 18

[61] See Heikkilä & Kaipia (2009), p. 333

[62] See Christensen & Knudsen (2010), p. 71

[63] See Johnson et al. (2006), p. 41-42

[64] See Johnson & Leenders (2006), p. 333

flexibility/service level by decentralisation.[65] Hybrid approaches tend to ensure alignment of purchasing decisions across multiple units.[66] To achieve the alignment of purchasing decisions and alignment with other parts of the business, Heikkilä et al. (2018) and Trautmann et al. (2009) integration mechanism can be used.[67] Integration mechanism can include voluntary processes, (in)formal groups, integrator roles, or matrix organisational forms. Hybrid organisational structures for the different macro-level dimensions (Bals et al. 2018, Mintzberg 1980) are also used in practice, structures combine for example the activity-category, activity-business unit, and category-business unit dimensions.[68] The latter can be seen as a hybrid between the earlier introduced purchasing project management and purchasing category management structures.

2.3 PSM strategy consists of a hierarchy of strategies

The different purchasing structures must help to implement the purchasing strategy that a firm adopts. Purchasing strategy specifies how the purchasing function will support the firm's competitive positioning and governs how PSM activities will be managed.[69] For a purchasing department to be efficient, it must be aligned with the rest of the firm. Therefore, a purchasing strategy must be developed that is aligned with the overall firm strategy, where similar goals and focus points are identified.[70] González-Benito (2007) labels the fit between business strategy and purchasing strategic objectives 'strategic alignment', and purchasing functions that are able to achieve good performance in those aspects the firm considers important, contribute significantly to overall business performance.[71] Figure 1 displays the strategic process of the purchasing function, on the basis of purchasing strategic objectives.

[65] See Luzzini et al. (2014), p. 145

[66] See Bals et al. (2018), p. 43

[67] See Heikkilä et al. (2018), p. 15; Trautmann et al. (2009), p. 69-70

[68] See Bals et al. (2018), p. 43

[69] See Baier (2008), p. 78

[70] See Carr & Pearson (1999), p. 514; Chen et al. (2004), p. 518; Cousins (2005), p. 421; González-Benito (2007), p. 914

[71] See González-Benito (2007), p. 913

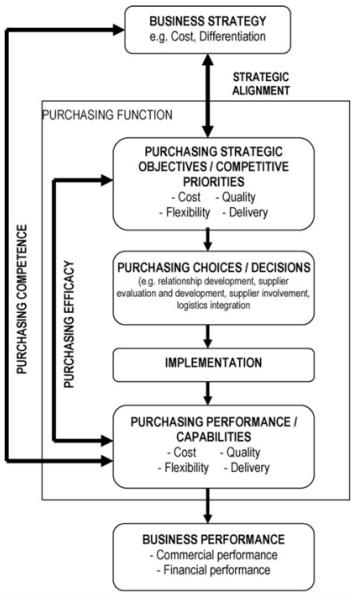

Figure 1. The concept of purchasing competence (González-Benito, 2007, p. 904)

Baier (2008) elaborates further on these purchasing objectives, and states that purchasing objectives can be described as competitive priorities, which delineate the purchasing strategy. A purchasing function must make decisions on which aspects of their operations to prioritise, since trade-offs are inevitable. A purchasing function must set priorities and excel along the dimensions outlined as most important by the firm strategy.[72]

However, Hesping & Schiele (2015) propose that there is no singular purchasing strategy, rather there are different levels of analysis that must be considered when formulating a purchasing strategy. These levels of analysis exist out of a hierarchy of strategies.[73] A comprehensive model that describes the transition from firm's strategy toward supplier strategies has been developed by Hesping and Schiele (2015) as presented in figure 2, that builds on the purchasing competence model by González-Benito (2007) that was described and displayed earlier in figure 1.

[72] See Baier (2008), p. 186

[73] See Hesping & Schiele (2015), p. 147

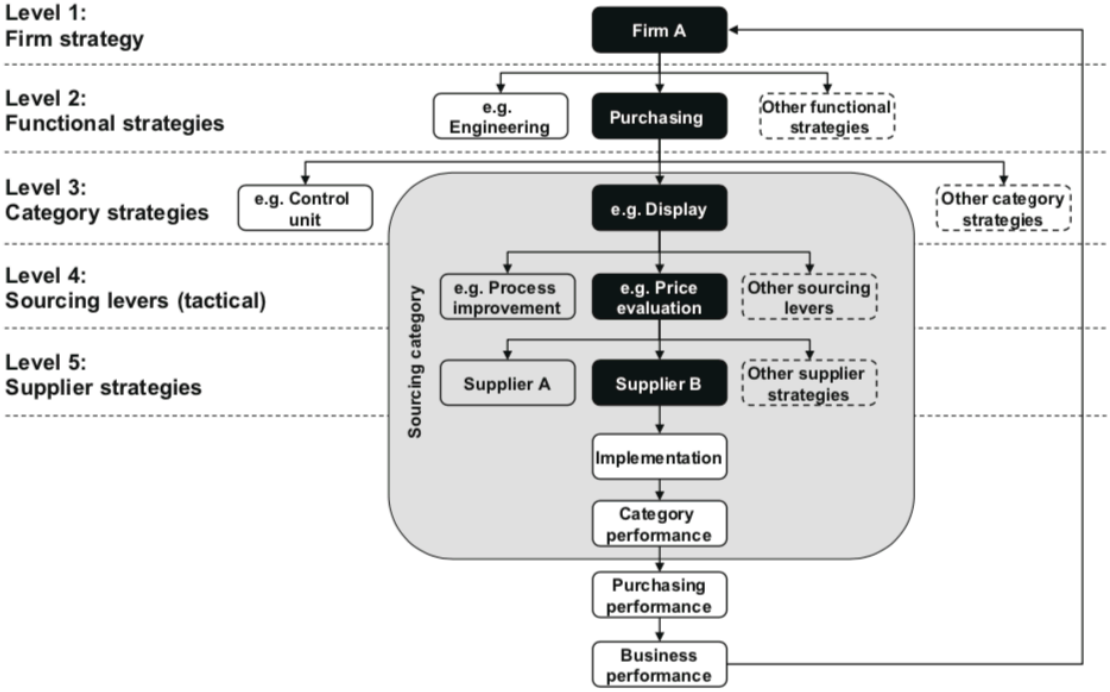

Figure 2. Hierarchy of strategies in purchasing (Hesping and Schiele, 2015, p 139)

Hesping & Schiele (2015) distinguish five levels of strategy development in purchasing: "(1) Firm strategy guiding a firms approach toward product markets, (2) purchasing strategy as an aspect of functional strategies guiding all of a firm's purchasing activities, (3) category strategies guiding activities within groups of materials and services, forming discrete supply markets, (4) sourcing levers, i.e., tactics used to plan activities to execute category strategies, and (5) supplier strategies describing how to approach each of a sourcing category's suppliers."[74] This research focusses on level 3 of purchasing strategy analysis, since purchasing structures determine the grouping of purchasing departments,[75] and how this affects level 4 of purchasing strategy analysis.

As described earlier, purchasing strategy and its alignment to the firm strategy can be delineated by competitive priorities.[76] Therefore, firms should analyse their competitive priorities to implement firm and purchasing strategy.

[74] Hesping & Schiele (2015), p. 146

[75] See Bals et al. (2018), p. 42-43

[76] See Baier (2008), p. 186

2.4 KPIs within purchasing can be classified by the QLTC-method

The competitive priorities as described by Baier (2008) and González-Benito (2007), are the performance dimensions along which a company chooses to compete.[77] According to Krause et al. (2009) competitive priorities are selected to support a company's overall strategy that is typically geared toward fulfilling market requirements and creating customer value. Traditionally, four performance dimensions are recognised: quality, cost, delivery, and flexibility.[78] More recently the most used performance dimensions in purchasing are; quality, delivery, cost, price, technology capability, flexibility, and sustainability.[79]

The performance dimensions that are considered in this research are; quality, logistics, technology, cost, risk, and sustainability. These dimensions were chosen because the case company in this research uses the QLTC method. The QLTC method distinguishes 4 types of performance dimensions that a purchasing function could put the focus on: Quality, Logistics, Technology and Cost. Q focusses on technical requirements and quality criteria, L on delivery reliability and delivery time, T on product development and innovation, C on cost price per order and cost reduction.[80] Next to the QLTC method, the case company in this study uses the performance dimension Risk. Since recent events in the past years such as the covid-19 crisis and the Ukrainian war, more firms are considering supply risk. "Supply risk is defined as the probability of an incident associated with inbound supply from individual supplier failures or the supply market occurring, in which its outcomes result in the inability of the purchasing firm to meet customer demand or cause threats to customer life and safety."[81] Additionally, the performance dimension sustainability is considered, because increasingly companies are including sustainable development in their strategy, and therefore Krause et al. (2009) propose that sustainability should be included in the traditional set of performance dimensions.[82]

To track and improve performance dimensions within purchasing departments, performance measurement systems are used to measure; contributions to company competitive performance, support better decision making, support communication and to

[77] See Ateş (2014), p. 17

[78] See Krause et al. (2009), p. 20

[79] See Ateş (2014), p. 148; Krause et al. (2001), p. 501; Krause et al. (2009), p. 20; Luzzini et al. (2012), p. 19; Rashidi et al. (2020), p. 25

[80] See Mercell (2021)

[81] Zsidisin (2003), p. 222

[82] See Krause et al. (2009), p. 20

motivate and direct behaviour.[83] To indicate the achievements of a purchasing department, and to monitor the performance of suppliers, KPIs (key performance indictors) are used. Monitoring KPIs reveals the gap between plan and execution and helps to identify and correct potential problems and issues.[84] The KPIs that belong to the performance dimensions that are considered in this research are:

The *quality* performance dimension aims to indicate the performance on product reliability, product durability and conformance to specifications. KPIs that belong to this category evolve around conformance, mostly conformance rates. Conformance rate is the degree to which a good or service meets certain design standards that are determined in the contract.[85]

The *logistics* performance dimension aims to indicate the performance on delivery reliability and speed. Two KPIs that are used are the on-time-delivery rates, and the lead time a supplier needs before an order is delivered. [86]

The *technology* performance dimension aims to indicate the performance on product innovation, technological capabilities and technology sharing with suppliers. KPIs try to measure the innovativeness of a supplier. KPIs that are often used in this category are the contribution that a supplier has in new product development, innovative proposals that a supplier makes or the time to market of new innovations.[87]

The *cost* performance dimension aims to indicate the performance on total cost and competitive pricing of purchased goods. KPIs that are most used are the cost price of products, and the total cost of orders.[88]

The *risk* performance dimension aims to grasp how risky it is to make use of certain suppliers. Although it is an important measurement category, risk is hard to measure. However, to assess the risk of using a supplier, a risk assessment scorecard can be used. This risk assessment scorecard can determine the risk level of a supplier by comparing data to criteria on the scorecard.[89]

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[83] See Monczka et al. (2021), p. 761

[84] See Chae (2009), p. 427

[85] See Caniato et al. (2014), p. 624

[86] See Caniato et al. (2014), p. 624

[87] See Caniato et al. (2014), p. 624

[88] See Krause et al. (2001), p. 506

[89] See Zsidisin et al. (2004), p. 403-405

The *sustainability* performance dimension tries to get a grip on the performance on sustainability initiatives. However, since it is a relatively new performance category, not all firms have adopted this performance measurement category yet, but firms that are considering social and environmental responsibility and social sustainability do.[90]

These performance dimensions and their appurtenant KPIs, can be prioritised as competitive priorities. After prioritising certain performance dimensions, this prioritisation must be implemented.

2.5 Sourcing levers are applied to achieve cost savings and innovation

As González-Benito (2007) described (figure 1), competitive priorities emanate from the overall firm strategy down to the purchasing function.[91] Hesping & Schiele (2015) built on this and proposed that category strategies, on level 3 of the hierarchy of purchasing strategies, guide activities within groups of materials and services along the functional purchasing strategy. Level 4 of the hierarchy of purchasing strategies, considers tactical sourcing levers, which Schiele (2007) defines as; "a set of measures that can improve sourcing performance in a commodity group."[92] These sourcing levers can be used to plan activities to execute category strategies,[93] and also cover competitive priorities such as cost, quality, innovation or security of supply that emanate from the overall firm strategy down to the purchasing function.[94]

Within the '7-levers' model proposed by Schiele et al. (2011), sourcing levers can be divided into commercial and cross-functional levers. Commercial levers are price centred; this means that the focus lies on cost reduction of purchased products. Cross-functional levers are innovation focused and achieve advantages through optimising products and processes.[95]

Besides the 7-levers model of Schiele et al. (2011), there are other scholars who developed a framework for tactical sourcing levers; the 'purchasing chessboard' by Schuh et al. (2009), and the 'purchasing bull's eye' by H&Z Management Consulting. The

[90] See Caniato et al. (2014), p. 624

[91] See González-Benito (2007), p. 914

[92] See Schiele (2007), p. 279

[93] See Hesping & Schiele (2015), p. 146

[94] See Hesping & Schiele (2016a), p. 104

[95] See Schiele et al. (2011), p. 319-323

purchasing chessboard that was proposed by Schuh et al (2009), has the goal of assisting buyers in all kinds of relations with suppliers, and its basic concept derives from the relationship between supply and demand. It distinguishes 4 basic strategies; manage spend, leverage competition among suppliers, change nature of demand, and seek joint advantage with suppliers. From these 4 basic strategies, 16 levers are derived, and from 16 levers 64 methods are derived that form the actual chessboard and provide an operating tool for use by purchasing.[96] Another framework for the use of tactical sourcing levers is the 'purchasing bull's eye', proposed by H&Z Management Consulting. The purchasing bull's eye is centred around four perspectives; demand, specification, sourcing, and execution. The tool helps procurement professionals to identify category-specific levers in order to ensure maximum cost efficiency.[97] The general idea of using this tool is to; (1) identify fields of action, (2) define key levers, (3) develop an implementation roadmap, and (4) start discussions with suppliers.[98]

However, in this research the 7-levers model by Schiele et al. (2011) is used to interpret the implementation of category strategies, because it best fits the earlier described hierarchy of strategies model by Hesping & Schiele (2015). Per sourcing lever in the 7-levers model, Hesping & Schiele (2016b) identified actionable activities that may serve as tools to implement the sourcing levers,[99] these activities are also explained in the following sections.

2.5.1 Commercial sourcing levers are price-centred purchasing activities

Commercial sourcing levers can be divided into three general types: volume bundling, price evolution and extension of supply base. Commercial levers are driven primarily by the purchasing department and make use of commercial leverage for negotiation with suppliers.[100]

Volume bundling is a commercial sourcing levers that aims to combine demand and increase the purchasing volumes per request, leading to benefits from economies of scale on supplier's side. In the case of high fixed cost products or those requiring long set-up times, scale effects can be considerable.[101] Volume bundling can be done through multiple tactics.

[96] See Schuh et al. (2009), p. 14-15

[97] See Aichbauer et al. (2022), p. 99

[98] See Aichbauer et al. (2022), p. 101

[99] See Hesping & Schiele (2016b), p. 484-485

[100] See Schiele et al. (2011), p. 319-323

[101] See Schuh et al. (2009), p. 18

Supplier reduction leads to higher volumes on the fewer suppliers that are purchased from. Bundling can also be done by bundling the volumes of different plants, regions, and even similar companies (often part of one parent company).[102] Through negotiating an ongoing series of orders that are purchased on a new project, also additional savings on the current volume can be generated. Next to that bundling can be done by packaging in larger volumes.

Price evaluation aims to get a clear picture of the price targets and cost and supply structure of suppliers. Since most suppliers are not willing to disclose their cost structures, the use of this lever requires alternative ways of determining cost structures. Cost based price modelling aims to value individual process steps in supplier's process to come to a target price of the products. Another method that is used is the cost regression analysis. Cost regression analysis is a statistical method to determine target prices based on several technical parameters. A more straightforward method that is used is price benchmarking, in which comparisons with similar products and contracts are made.[103] Through analysing these characteristics of a supplier, better prices can be negotiated. With the analysis price targets can be set for the products, and for technical alternatives for the product.

Supplier base expansion is used to increase competition between suppliers and seize opportunities from different suppliers. Global sourcing is used to obtain suppliers in regions in which factor cost and location factors are lower. Next to that cost differentials between countries could arise because of different productivity levels, exchange rate differences and lower-cost inputs for materials.[104] With localisation suppliers are used that are located close to the production place. This could shorten lead-times and stimulate collaboration between buyer and supplier. Next to that using multiple suppliers creates the opportunity to build up a supplier by gradually increasing the purchasing volume to build skills and capacity of the supplier.

2.5.2 Cross-functional levers are innovation focused purchasing activities

Cross-functional levers can also be divided into three general types: product/program optimisation, process improvement and optimisation of supplier relationships. These levers

[102] See Arnold (1999), p. 173

[103] See Schuh et al. (2009), p. 174-180

[104] See Monczka et al. (2021), p. 375-376

obtain advantage by working together with other functions, both internal and external with suppliers.[105]

Product/program optimisation is a process that is used to analyse the design, the function, and the material of a purchased product. Through this analysis firms try to save cost through innovation, standardisation, and simplification. Early involvement of suppliers in the product development process, for instance through joint development teams with suppliers, allows for a good analysis. In coordination with research and development, standardisation and/or simplification of materials/products can be achieved. Standardisation strives to use as many standard parts as possible to achieve lower material and logistics costs. In the simplification of a product the goal is to make a design of the product that is easier and cheaper to produce. Analysis of the costs of manufacturing the product is required, then for the main cost drivers lower-cost design ideas are generated.[106] Next to that innovation and concept competition between suppliers can be used to motivate the use of new ideas, technologies, processes, materials, and trends.

Process optimisation is used to optimise the processes at the interface between buyer and supplier. It aims to improve the performance dimensions logistics, planning and quality of the supplier and the delivery process. Capacity management is used to make a planning for a project with a supplier to avoid bottlenecks and overcapacity. Collaborative capacity management enables continuous communication and collaboration among suppliers, purchasing and logistics to detect potential bottlenecks early on and therefore reduce bottleneck costs.[107] Quality conversations are held with suppliers to avoid incoming inspections and repeated tests because of problems with the quality of products that are delivered by a supplier. Therefore, process optimisation allows for a better implementation of quality management, leading to better quality performance.[108] Next to that, projects are started with suppliers to improve logistics, for example by pooling the transport and optimising the packaging of products.

Optimisation of the supplier relationship aims to build and get an effective relationship between buyer and supplier. This can be achieved with supplier development, through joint projects to develop skills of suppliers or creating a programme with several

[105] See Schiele et al. (2011), p. 319-323

[106] See Schuh et al. (2009), p. 120-128

[107] See Schuh et al. (2009), p. 149-150

[108] See Forker (1997), p. 262

suppliers jointly. Next to that, becoming a preferred customer for a supplier by increasing the attractiveness of your own firm for a supplier can initiate full commitment from a supplier.[109] To be attractive as a customer multiple methods can be used, the use of for example incentives or price adjustments for good performance by a supplier. Full commitment from suppliers can allow for access to the most innovative firms or innovative ideas of suppliers.[110] Innovation ideas can arise through early supplier involvement in new product development, which may require being a preferred customer to that supplier.[111]

2.5.3 Cross-group optimisation considers the combination of sourcing levers

Cross-commodity optimisation overarches the other two types of sourcing levers, and it aims to create an overview of the different sourcing levers and product categories that are used. The coordination of sourcing levers is important because not all sourcing levers can be combined, the levers can have negative impact when used in the wrong combinations.[112] Next to that the product categories must be considered in context to each other, for example the material groups can be used to bundle materials as well. Next to categories, this research also considers the grouping criteria business-unit/customer, and therefore the term that will be used for cross-commodity optimisation in this research will be *cross-group optimisation*.

[109] See Ellegaard et al. (2003), p. 352

[110] See Schiele (2006), p. 932

[111] See Schiele (2010), p. 148

[112] See Schiele et al. (2011), p. 323

2.6 Building hypotheses through a combination of sourcing levers and performance on KPIs

To answer the research question: 'How to align purchasing contribution to firm strategy by organising the purchasing department?', several sub questions will be answered through literature research, and interviews and data will be analysed. The research question will be answered by analysing how the different purchasing structures ensure that sourcing levers can be used, and how the performance on KPIs within the QLTC-method, risk and sustainability are influenced using different purchasing levers. Next to that, contextual factors that could influence the working of the structure and sourcing levers will be considered. A schematic overview of hypotheses 1 and 2 can be found in figure 3, in which the sourcing levers and their impact on the different performance dimensions are displayed in colours to improve the readability.

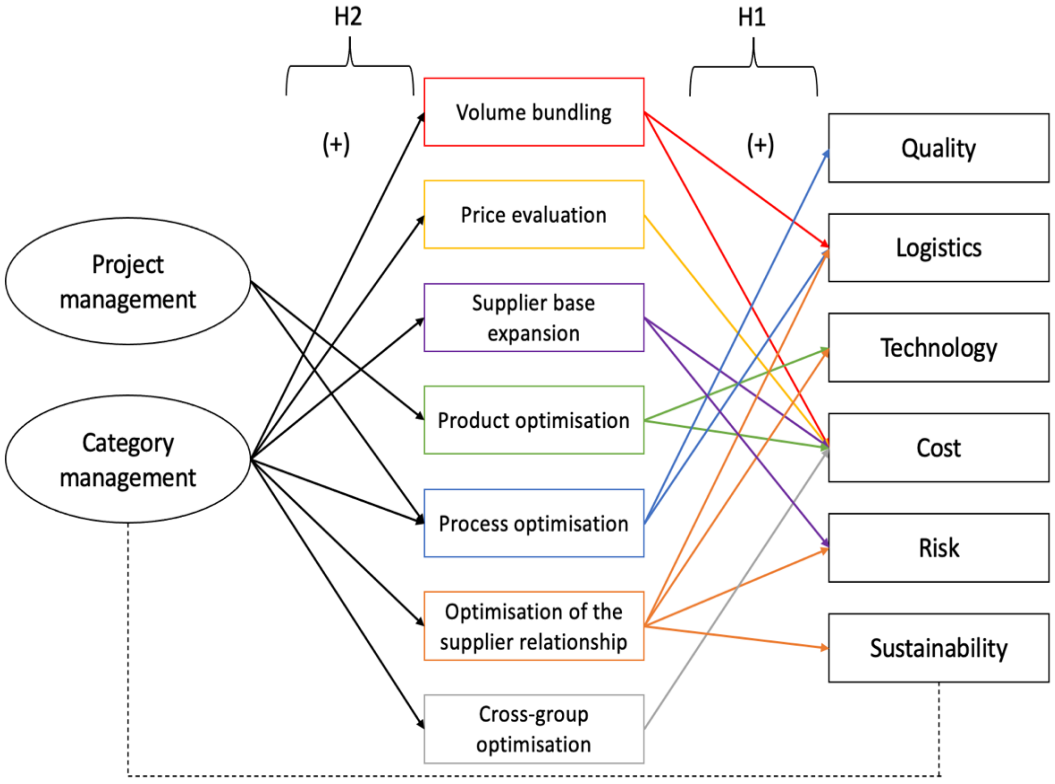

Figure 3. Schematic overview of hypotheses 1 and 2

2.6.1 Purchasing levers have an impact on different performance dimensions

The first hypothesis in this research makes claims on which sourcing levers make an impact on which performance dimensions, as can be seen in figure 3.

Volume bundling combines demand and increases the purchasing volumes per request, leading to benefits from economies of scale on the supplier's side.[113] Economies of scale will lead to a better performance on the cost performance dimension. Next to that bundling allows for the pooling of logistics, which in turn will lead to better performance on the logistics performance dimension.

Price evaluation is another commercial sourcing lever and tries to determine a target price for purchased products. Price evaluation can be done in several ways, from benchmarking to cost based price modelling.[114] Of course, because the focus of price evaluation is the price of the purchased products this sourcing lever will only have a positive impact on the cost performance dimension.

Supplier base expansion is used to increase competition between suppliers and seize opportunities from different suppliers, through global sourcing or localisation.[115] Opportunities from different suppliers could be low factory costs, better productivity levels or lower-cost inputs for materials. This could lead to a better performance on the cost performance dimension. Next to that, having a bigger supply base could ensure a better security of supply, because there will be multiple supply options. Therefore, the risk performance could be positively influenced.

Product/program optimisation aims to save cost through innovation, standardisation, and simplification. Product/program optimisation can be tried in various ways; early involvement of suppliers in the product development process, or innovations-/concept competitions.[116] The aim of product optimisation is to produce a product in an easier or cheaper way, which will make a positive impact on the cost performance. Because this process involves innovation, also the technology performance will be influenced positively.

Process optimisation is a process that consists of capacity-management, quality conversations and optimising logistics. Capacity-management will improve performance on the flexibility performance dimension since capacity-management tries to gather knowledge

[113] See Schuh et al. (2009), p. 18

[114] See Schuh et al. (2009), p. 174-180

[115] See Monczka et al. (2021), p. 375-376

[116] See Schuh et al. (2009), p. 120-128

on the ability of a supplier to up- or downscale. Quality conversations lead to better quality management, which in turn leads to better performance on quality. Logistics optimisation projects aim to improve logistics performance through for example pooling the transport, as was discussed earlier from the volume bundling lever.

Optimisation of the supplier relationship involves working on the relationship with suppliers through supplier development and becoming a preferred customer. Becoming a preferred customer to a supplier could result in gaining access to innovative ideas from suppliers.[117] Also the attractiveness as a customer could lead to obtaining more capacity from a supplier, and a more flexible use of this capacity. Therefore, the technology, logistics and risk performance could be better when a firm becomes a preferred customer to a supplier. Next to that supplier development, in which projects are organised to develop skills of suppliers, can lead to a change in sustainability efforts, leading to better sustainability performance.

Cross-group optimisation considers the coordination of sourcing levers, as not all sourcing levers can be combined, the laver can have negative impact when used in the wrong combinations. "Cost reduction in one commodity group may increase costs in another commodity group."[118] Therefore, the cross-group optimisation lever could have a positive impact on the cost performance.

2.6.2 Purchasing category management structure allows for more sourcing levers to be used

Different characteristics of the organisational structures considered in this research may allow for different purchasing levers to be used (efficiently). The second hypothesis describes this phenomenon, an overview can be found in figure 3 under H2.

Purchasing project management structure is more decentralised, this allows the purchasing personnel to gain a better understanding of unique operational requirements of products that are purchased. For instance, purchasing personnel can evaluate longer-term requirements and anticipate on product requirements in the future.[119] Communication and integration with suppliers about the specifications of a product will be more detailed than with a category management structure. Next to that a decentralised structure supports new

[117] See Schiele (2006), p. 932

[118] Schiele et al. (2011), p. 323

[119] See Monczka et al. (2021), p. 167-168

product development through the ability to develop strategic plans for products.[120] Additionally, the grouping characteristic of the purchasing project management structure allows for congruency between the purchasing and engineering departments, which facilitates purchasing involvement in product development projects and diminish the need for coordination of this involvement.[121]This allows for a more efficient use of the product optimisation lever. Knowledge of the functional requirements of purchased products also provide input for quality conversations, which are part of the process optimisation lever. The process optimisation lever also involves capacity management, in which the project management structure thrives because project management allows for better project planning and project execution.[122] Therefore, the hypothesis is that purchasing project management allows for efficient use of the product and process optimisation levers.

Purchasing category management structure aims to is to bring resources and knowledge together to create purchase pooling, order quantities will be larger than through purchasing project management.[123] Therefore category management ensures the ability to apply volume bundling. Volume bundling will also have a positive impact on the pooling of transport and optimisation of packaging, which belong to the process optimisation lever.
Purchasing category management provides the commercial negotiating power to efficiently use the price evaluation lever and allows for a higher investment in cost recalculation. Next to that purchasing professionals that work within a category management structure develop market expertise, because they are solely focused on one product category.[124] Therefore price changes for products will be noticed earlier, and benchmarking with other suppliers in the same market can be conducted. This can help to determine a target price, which belongs to the price evaluation lever. Because category management orders in higher quantities, there is more opportunity for expanding the supply base. And again, because purchasing professionals that are operating in a purchasing category management structure develop better market expertise,[125] it becomes easier to identify opportunities with other supplier in the specific product market. Because of the higher order quantities with category management, the optimisation of the supplier relationship can be used efficiently because

[120] See Monczka et al. (2021), p. 167-168

[121] See Lakemond et al. (2001), p.18; Rozemeijer et al. (2003), p. 10

[122] See Wynstra et al. (2003), p. 79

[123] See Smart & Dudas (2007), p. 66

[124] See Schiele (2019), p. 55

[125] See Schiele (2019), p. 55

the attractiveness of the firm increases when order quantities are higher. Additionally, a purchasing category management structure provides the opportunity to have a single point of contact with the supplier, whereas in the purchasing project management structure there could be several purchasing professionals approaching the same supplier. This single point of contact could improve the relationship with a supplier. Purchasing category management has a more centralised decision-making authority, therefore the cross-commodity optimisation lever will be used more efficiently.

To sum it up, category management allows for purchasing levers volume bundling, price evaluation, supplier base expansion, process optimisation, optimisation of the supplier relationship, and cross-commodity optimisation to be used efficiently. Next to that, category management will have a direct influence on the sustainability performance dimension. The sustainability dimension is relatively new compared to other performance categories in the list, that means that a change in a firm's business is needed. Category management is a centralised structure, centralised structures make it easier to initiate company-wide change.[126]

2.6.3 Contextual factors influence the use of purchasing structures and sourcing levers

As described in the hypotheses above, the right combination and efficient use of sourcing levers could lead to a better performance on the strategic priorities that a purchasing department has. Therefore, the purchasing structure that allows for the use of the right combination of levers could lead to better performance on strategic priorities. However, it is also important to consider specific situations or contexts that organisations could be in that would influence the (correct) use of purchasing structures and levers. Schneider & Wallenburg (2013) suggest that future development of strategic alignment is primarily influenced by the general setting of an extremely dynamic and volatile environment that purchasing has to face. [127] This stems from the contingency theory proposed by Lawrence & Lorsch (1967), which states that the best organisational structure depends on a firm's specific contingencies.[128] Additionally, Hesping & Schiele (2015) state that differentiating sourcing categories and suppliers was motivated by the aim of allowing for improved consideration of contextual factors when selecting sourcing strategies, and future research should address

[126] See Monczka et al. (2021), p. 167

[127] See Schneider & Wallenburg (2013), p. 153

[128] See Lawrence & Lorsch (1967), p. 47

how contextual factors influence the success of each sourcing lever.[129] Therefore, the third hypothesis considers which contextual factors could influence the efficient working of the different purchasing structures and sourcing levers, an overview of the third hypothesis is displayed in figure 4. Three contextual factors were identified through preliminary discussions with the case company:

- *Whether an organisation is experiencing growth or not:* well-defined organisational structures establish the roles and norms that enable companies to get things done, therefore it is important to examine if existing organisational structures are flexible enough to support growth.[130] When a firm is experiencing growth and employing new personnel, the span of control of managers increases. Span of control is a combination of the number of employees per manager, degree of manager and staff interaction, manager role breadth and complexity, and the availability of other managerial supports.[131] It is essential that managers have manageable span of controls to achieve exemplary job and unit outcomes while having the necessary time and energy.[132] Therefore organisational structures need to be able to adapt to growth by splitting groups up or adding hierarchy levels to groups. Category management can add hierarchy levels to groups easier because they can specify the category further. Therefore, times of growth could have a negative impact on purchasing project management.
- *Purchasing volume:* the volume of products purchased by a purchasing department may be of influence on the organisational structure, for instance by different levels of hierarchy within the department. Next to that an increase in purchasing volume could lead to a higher degree of formalisation.[133]
- *The mix of products that are purchased:* Not only the purchasing volume is important, how this purchasing volume is distributed among suppliers and products is also of influence. The mix of products consists of three purchasing concentration decisions: the number of sources, how total purchasing volume is distributed among

[129] See Hesping & Schiele (2015), p. 148

[130] See McKinsey (2011)

[131] See Meyer (2008), p.110

[132] See Wong et al. (2015), p.166

[133] See Glock & Broens (2013), p. 25

all sources, and the actual proportion allocated to a particular supplier.[134] The purchasing volume may be highly concentrated, and the purchasing mix will be of high volume for few purchased parts. However, the purchasing volume could also be more dispersed, making it a high mix-low volume distribution. This difference in purchasing mix could have an influence on the purchasing structure, especially for the centralisation dimension. When a firm has low complexity purchases, which are often commodities bought in large volumes, encourage the presence of centralisation.[135] Similarly, for a firm that has a purchasing mix of high mix-low volume, centralisation may not be as effective because it could have a negative impact on pooling opportunities. These pooling opportunities will have an impact on the (efficient) use of the souring lever volume bundling.

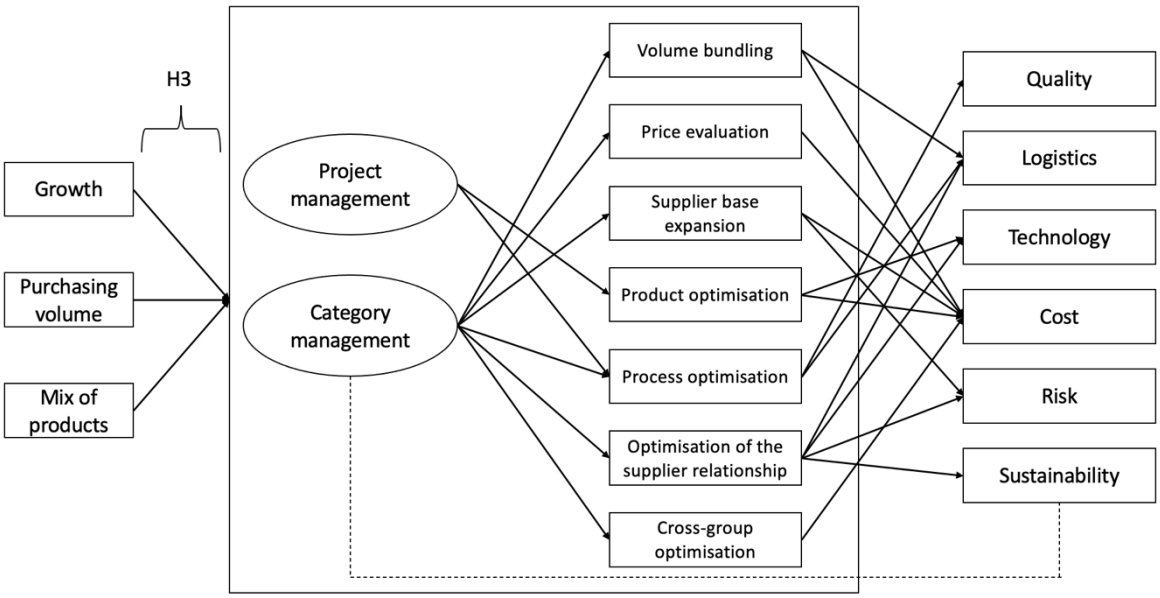

Figure 4. A schematic overview of the hypotheses

[134] See Stump (1995), p. 146

[135] See Kotteaku et al. (1995), p. 35

3. Research methodology: purchasing structures at case company were analysed

3.1 A case research methodology was used at the case company

In this paper three different types of purchasing structures; purchasing project management, purchasing category management, and purchasing hybrid management were considered. Empirical research was conducted at two locations of a first-tier supplier to OEMs within the high-tech industry, and the use of the purchasing project management and the purchasing hybrid management structure were detected. Empirical research provides a powerful tool for building or verifying theory.[136] The research was conducted by a case research approach, in which two case studies were used as the basis. Case research is research based on analysis of a limited number of cases, in which it is also possible to use different cases from the same firm to study different issues.[137] Case research was used because it is particularly useful where one needs to understand some particular problem or situation in great-depth, where one can identify a case that is rich in information.[138] The case company offers access to internal data, which brings the opportunity to gain deep insights into the different influences the organisational structures have, and therefore the data that can be gathered is very rich. The case can be justified by the 'most similar' method in case selection within case study research. The 'most similar' case selection technique is one of the oldest recognized techniques of qualitative analyses and employs a minimum of two cases. The technique aims to choose a pair of cases in which the independent variables are similar, except for the independent variable of interest.[139] The two locations in this case study research serve similar customers, work with similar suppliers, and in general operate in the same environment, however the variable of purchasing structure differs. The case research method process consists of five steps; defining the research question, instrument development, data gathering, analysing the data, and disseminating the research findings.[140] Defining the research question and instrument development has been done in previous sections of this paper. Data that was gathered in this case research includes qualitative and quantitative

[136] See Flynn et al. (1990), p. 269

[137] See Voss et al. (2002), p. 197

[138] See Noor (2008), p.1602-1603

[139] See Seawright & Gerring (2008), p. 304-305

[140] See Stuart et al. (2002), p. 420

research with data derived from both interviews and data that the case company has available in the ERP-system.

3.2 Interviews were conducted at two locations of the case company

Several interviews were held at two different locations of the case company. Interviews are the most common format of data collection in qualitative research and can be used to gain an in depth and extensive understanding of issues.[141] In this research the interviews were used to gain an understanding of how purchasing levers have an impact on performance dimensions in a purchasing department, how the different purchasing structures allow for the use of purchasing levers, and how contextual factors can influence purchasing structures and the use of sourcing levers. Two rounds of interviews were conducted, the first round focussed on the purchasing structures in relation to the purchasing levers and contextual factors, the second round of interviews focussed on the impact of sourcing levers on performance dimensions.

The sample of the interviews consists of several purchasing professionals within the two locations of the case company. When selecting interviewees, a process was used referred to as purposeful sampling, which seeks to maximise the depth and richness of the data to address the research question.[142] An effective way to sample purposefully is to let the interviewees be selected by the management of each organisation based on their job responsibilities, position and involvement in the subject studied [143], which was done in this research. An overview of the participants in the interviews can be found in table 1.

The first round of interviews included questions about the different purchasing activities/sourcing levers that are used at the case company, and the contextual factors that the case company finds itself in (appendix 1). The second round of interviews included questions on contracts/communication with suppliers in which sourcing levers were used, and how the sourcing levers had an impact on the performance dimensions (appendix 2).

The interviews were semi-structured interviews, in which a set of predetermined open-ended questions were asked. These open-ended questions resulted in a dialogue between the interview and interviewee, with other questions emerging depending on the answers of the

[141] See Jamshed (2014), p. 87

[142] See DiCicco-Bloom & Crabtree (2006), p. 317

[143] See Noor (2008), p. 1603

interviewee.[144] The interviews were recorded to have the data captured more effectively, and to make it easier for the researcher to focus on the interview content.[145] Different on-site days at the case company were planned to conduct several interviews with purchasing professionals.

The data analysis of the questions that were asked in the interviews were done by content analysis. Content analysis is a systematic and replicable technique to analysing interviews in which coding is used to transform interview answers into content categories, which is useful when dealing with large volumes of data.[146] Because content analysis is systematic and replicable it makes for a good comparison between the two locations and structures. The content categories consisted of contextual factors, purchasing levers used, and the impact purchasing levers have on performance dimensions.

Table 1. Research sample: interview participants

Number	Function Title	Location	Round of interviews
1	Purchasing Manager	A	1
2	Purchasing & Supply Chain Director	A	1
3	Purchasing Manager	A	1
4	Initial Buyer/ Lead Buyer	B	1
5	Initial Buyer/ Lead Buyer	B	1
6	Category Manager	B	1
7	Category Manager	B	1
8	Strategic Buyer	A	2
9	Purchasing Manager	A	2
10	Strategic Buyer	A	2
11	Initial Buyer/ Lead Buyer	B	2

[144] See DiCicco-Bloom & Crabtree (2006), p. 315

[145] See Jamshed (2014), p. 87

[146] See Stemler (2000), p. 1

12	Initial Buyer/ Lead Buyer	B	2
13	Initial Buyer/ Lead Buyer	B	2

3.3 Data on performance dimension KPIs of the case company was observed

To investigate the purchasing performance that both company's locations have on the strategic priorities, an observation of quantitative data that the case company gathers from its suppliers and its own performance was conducted. Observational research can serve as a confirmatory tool to test the hypotheses that were set.[147] The case company uses a 'Baan' ERP-system in which it gathers data on different KPIs. In this research relevant KPIs were gathered and observed. The data that was observed contains classified data and can therefore not be displayed in this research. However, the difference in performance can be displayed by making a comparison between the two locations, and this comparison indicates the purchasing performance on different strategic priorities.

The sample includes KPIs that are available on the ERP-system of the case company, and estimations of the purchasing professionals at the case company. The KPIs that were considered are divided into the different performance dimensions within the QLTC-method. The KPIs/data that were used, were chosen because they are used regularly within the case company and were available for use in this research; the reject rate for quality, the CLIP/ECLIP rate for logistics, the average time span of a product generation process for technology, and the percentage of total cost of orders on the companies' overall revenue for cost. Risk and sustainability KPIs are not measured at the case company, and therefore not included in this research. For the technology performance the average time of a PGP was estimated by purchasing professionals at the case company and was not retrieved from the ERP-system. For the cost performance, the percentage of total cost of orders on revenue was used, due to the lack of a more reliable KPI on the cost performance of the complete purchasing departments at the case company. The percentage of total cost of orders on revenue KPI can be unreliable for the cost performance dimension because it is also subject to other factors than savings on purchased goods, such as the percentage of outsourcing by a company. The percentage of outsourcing entails what percentage of products are produced in-house or not, therefore a high percentage of outsourcing results in a higher percentage of

[147] See Jamshed (2014), p. 88

total cost of orders on the overall revenue. However, in this research the choice was made to use this KPI regardless, by assuming that the two locations of the case company have similar percentages of outsourcing, therefore making it useful to use this KPI. An overview of the KPIs that were used, and their definitions can be found in table 2. The data was gathered over the year 2022, and over the complete purchasing departments.

Table 2. Overview used KPIs

Performance dimension	**KPI**	**KPI definition**	**Source**
Quality	Reject rate	The reject rate displays the percentage of rejected parts on all purchased parts.	ERP-System
Logistics	CLIP/ECLIP rate	The (early) confirmed line item performance rate displays the percentage of on-time deliveries on dates confirmed by suppliers.	ERP-System
Technology	Average time PGP	The average time span of a product generation process.	Estimation of purchasing professionals
Cost	Total cost of orders percentage on revenue	The percentage of total cost of orders on the companies' overall revenue.	ERP-System
Risk	-	-	-
Sustainability	-	-	-

4. Results: purchasing structures allow for different use of sourcing levers

4.1 The case company uses the purchasing structures project management and hybrid management

Through empirical research at the two locations at the case company, the current situations of the purchasing organisations at hand were described. It was found that location A employs a purchasing project management structure, and that location B employs a purchasing hybrid management structure. Location B is in transition to a category management structure, with the use of an integration mechanism in the role of program purchase lead within the purchasing hybrid management structure. This section displays the current situations of the purchasing structures at the case company by providing a schematic representation of the purchasing structures in figure 5 and 6 and elaborating on these figures further.

Figure 5 represents the current purchasing structure in location A of the case company and is labelled as a purchasing project management structure. The project purchasing managers, as displayed in figure 5 (only one project group is displayed), are the head of a purchasing group dedicated to one or more customers. There are multiple of these dedicated purchasing groups, either working for one big customer, or for a few smaller customers of the case company. Such a dedicated purchasing group consists of strategic, tactical, and operational purchasers, as well as the separate role of supplier quality managers. The strategic buyers are responsible for strategic decision making and running projects where needed, the tactical buyers are responsible for actually ordering products and setting up contracts, and the operational buyers have a supportive role. The tactical and operational purchasers are divided into spend categories. These dedicated purchasing groups are under the control of the supply chain manager, however they also answer to internal program managers, as the rest of the firm is also organised by programs.

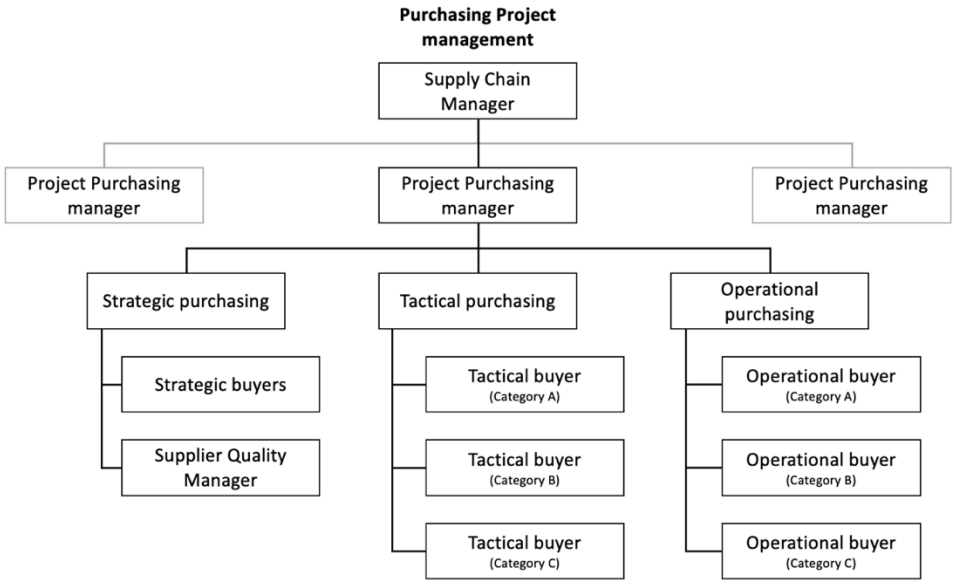

Figure 5. Purchasing project management at location A

Figure 6 represents the current purchasing structure in location B of the case company and is labelled as a purchasing hybrid management structure. The second layer of managers are the category managers, which respond to the purchasing manager of the whole purchasing department. These category managers are the heads of purchasing category groups that exist of initial/lead buyers. These initial/lead buyer roles are comparable to the strategic and tactical buyer roles of location A, and this role involves tasks such as being responsible for a supplier and initial activities with new suppliers. Next to that there is a program purchase lead role, which is a role that serves as a connecting role between the purchasing department and the internal programs of the case company.

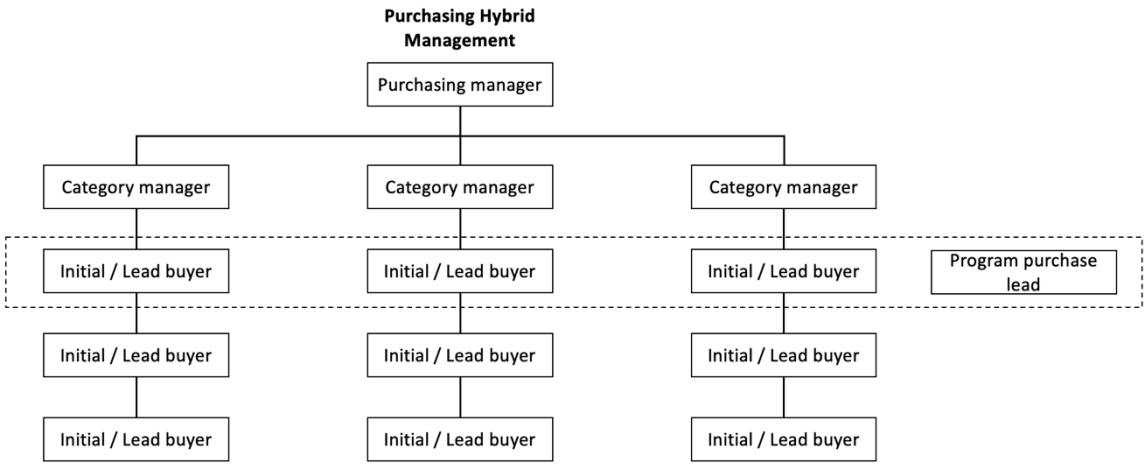

Figure 6. Purchasing hybrid management at location

4.2 First round of interviews displays a different use of sourcing levers and the influence of contextual factors between structures

This section will display and discuss the results from the first round of interviews that were held with purchasing professionals from both locations of the case company. Questions were answered about the sourcing levers that are used, contextual factors that might influence the working of the purchasing structures and sourcing levers, competitive purchasing priorities that were set at the case company, and general comments on the purchasing structures itself. Table 3 displays the data of the purchasing levers and contextual factors from the content analysis of the interviews. Table 4 displays a summary of the sourcing levers of table 3 and shows an average of the sourcing levers used per locations, in which location A works in a purchasing project management structure, and location B operates in a purchasing hybrid management structure. On the vertical axis in the tables the respondents are shown, on the horizontal axis the sourcing levers are shown. The cells of table 3 and 4 display a bullet point when a respondent mentioned the use of a sourcing lever or the influence of a contextual factor.

Table 3. Cross-comparison table sourcing levers and contextual factors

	A1	A2	A3	B1	B2	B3	B4
Sourcing Levers							
Volume Bundling							
Optimisation of ongoing series			•			•	•
Supplier reduction				•	•		•
Price evaluation							
Cherry picking by the buyers							•
Determine target price		•	•	•	•	•	•
Invest in cost valuation	•	•	•		•		
Expanding the supplier base							
Build up supplier	•	•	•	•		•	
Global Sourcing	•	•	•			•	•
Localisation	•	•				•	•
Parallel suppliers						•	

	A1	A2	A3	B1	B2	B3	B4
Sourcing Levers							
Product optimisation							
Early involvement in development teams		•	•			•	•
Innovation/ concept competition						•	
Technical simplification/ material substitution					•		
Process optimisation							
Capacity management		•		•	•	•	•
Demand forecasting	•	•		•	•	•	•
Optimise logistics	•				•	•	
Process standardisation		•	•				•
Quality conversations	•	•		•	•	•	•
Optimisation of the supplier relationship							
Become a preferred customer	•	•	•	•	•	•	•
Strategic alliances	•						
Supplier development		•			•		
Cross-group optimisation							
Coordination of supplier strategies						•	
Cross group boards					•	•	•
Contextual Factors							
Growth	•	•	•	•	•	•	
Market phase	•	•	•	•		•	•
Span of control	•	•	•	•			
Mix of products	•	•	•	•	•		
Purchasing volume							
Prescribed parts/suppliers	•	•	•	•	•	•	•
Product phase		•	•		•		

Table 4. Summary cross-comparison table sourcing levers

	Average A	Average B	A1	A2	A3	B1	B2	B3	B4
Sourcing levers									
Volume bundling		•				•	•	•	•
Price evaluation	•	•	•	•	•	•	•	•	•
Expanding the supplier base	•	•	•	•	•	•		•	•
Product optimisation	•	•		•	•		•	•	•
Process optimisation	•	•	•	•	•	•	•	•	•
Optimisation of the supplier relationship	•	•	•	•	•	•	•	•	•
Cross-group optimisation		•					•	•	•

The analysis was conducted on the hierarchical levels of purchasing strategies[148], in which the purchasing structures are constructed at level 3, facilitating the use of purchasing levers on level 4, as presented in figure 2. The tables show which sourcing levers are used at the case-company and display the contextual factors that influence the use of these sourcing levers. However, in the interviews other subjects were discussed that as well will be discussed in this chapter, such as purchasing targets/competitive priorities and personal opinions on the different purchasing structures.

4.2.1 Hybrid management facilitates more (efficient) sourcing lever use: volume bundling, and cross-group optimisation are not used in project management

Sourcing levers are tactics that are used to achieve (indirect) cost savings or innovation with suppliers.[149] Table 3 and 4 show that main differences in purchasing levers used between the two purchasing structures are the levers volume bundling and cross-group optimisation. However, there are also differences in some other purchasing levers, where they are utilised

[148] See Hesping & Schiele (2015), p. 147

[149] See Schiele et al. (2011), p. 319-323

in different ways. The differences in the use of sourcing levers between the two locations, in which location A has a purchasing project management structure and location B has a purchasing hybrid management structure, are:

The volume bundling is one of the levers in which the biggest differences between the two purchasing structures can be noticed. In the purchasing project management structure, there is a minimum focus on the volume bundling lever, where they are partly trying to optimise ongoing series of orders, in the places where it suits. In the hybrid management structure, the use of volume bundling is more apparent. They are optimising the ongoing series of orders, aiming for the ideal scale. Additionally, they are using supplier reduction where possible, to reduce (indirect) costs. Volume bundling is an increasing topic at location B, where it is expected to become an increasingly important topic.

The price evaluation sourcing lever is used in both purchasing structures, however the way in which it is utilised is slightly different. Both structures have a cost calculation board which continuously monitors the development of cost price of products, which is reviewed and when needed actions roll out of that. Next to that benchmarking is used to determine target prices. In the purchasing project management structure internal benchmarking is the most used, where internal knowledge about the production processes is used to determine a target price. In the purchasing hybrid management structure external benchmarking is used more, in which prices are compared with other product prices within the same market. At the start of negotiation this sometimes results in cherry picking between suppliers by the buyers.

Expanding the supplier base sourcing lever is used in both purchasing structures. Multiple tactics are used for the expansion of the supply bases, sourcing locally, nationally, and internationally depending on the situation of the product. The main motive for expanding the supplier base is to gain access to the needed capacity. Growth plans are discussed with suppliers, building capacity and skills with suppliers. In the hybrid management structure, there are parallel suppliers that are utilised in some cases.

The product/program optimisation sourcing lever is used where possible, depending on if the products are of own design or design of the customer, however the way in which it is used differs between the purchasing structures. In the purchasing project management structure, the contact with the technology & development department is very extensive, and therefore the product/program optimisation is mainly internally driven. There is early involvement of purchasing in the new product development process together with the technology & development environment. In the purchasing hybrid management structure,

the product/program optimisation lever driven more externally. Suppliers are involved in early development teams and are challenged to come up with solutions, in which sometimes concept competition between suppliers is used in some cases.

The process optimisation sourcing lever is used in both the purchasing structures. Demand forecasts are discussed with supplier, both on the short-term and long-term. Based on this capacity management is applied to consider supplier capabilities. If supplier capabilities are not sufficient, programs are deployed that involve the up tooling and training of suppliers. When possible, processes are standardised, for example vendor managed inventory is used which automates the ordering process by sharing inventory information with suppliers.

Optimisation of the supplier relationship is considered in both purchasing structures and acted on especially for strategic suppliers. Within the customer preference model both purchasing structures consider how suppliers view the case-company as a customer, which dictates the actions that are needed to optimise the supplier relationship. Interdependence is considered, in which the focus of the purchasing hybrid management structure focusses mainly on the percentage of revenue of the supplier is ordered by the case-company. Next to that attitude and clear communication towards suppliers are considered very important, discussing continuity and growing potential with suppliers. In the purchasing project management structure attention is also put into contact between the case-company and supplier at management level and contact between the technology & development department and suppliers to create strategic alliances.

The cross-group optimisation is a sourcing lever in which there is a big difference between the two purchasing structures. In the purchasing project management structure this sourcing lever is used very minimally, the project groups try to actively separate the supply chains. In the purchasing hybrid management structure this sourcing lever is used more because there are cross-group meetings between category managers. In these meetings sourcing activities are discussed, and in case of supply chain disruptions the important programs are prioritised over less important programs for the company.

4.2.2 Contextual factors were identified: growth, market phase, span of control, mix of products, prescribed parts/suppliers, and product phase

Before the interviews started three contextual factors that might influence the purchasing structures or the efficient use of the sourcing levers. During the interviews these contextual factors were discussed. It became clear that the contextual factor purchasing volume was not

of influence on the structures and sourcing lever, next to that some contextual factors were identified:

- In both locations of the case-company a steep *growth* curve was noticed. The purchasing organisations are growing both in purchasing volume and purchasing personnel. It is expected that this will not change for the coming years, and that the growth will be continued. Therefore, it is prognosed that the supply chain of the case-company will also expand, which has a direct impact on the supplier base expansion sourcing lever.
- The growth of the case-company can be linked to the *market phase* of the market they are operating in. The high-tech market in which the case-company is operating was described as booming, in which the case-company is trying to take the growth opportunities that are up for grabs. Additionally, the supply market was influenced by events such as COVID-19 and the Ukrainian war, leading to problems with material availability. Therefore, the market phase led to making logistics, quality, and risk management competitive priorities. On the other hand, when the market phase is different, this will also lead to different competitive priorities. This goes hand in hand with the strategy of the entire firm, which in this case is seeking to utilise the opportunities that are present in current market phase. Again, this leads to different competitive priorities.
- Due to the growth in purchasing personnel, the *span of control* of purchasing managers is also increasing. This was especially noticed in the purchasing project management structure. In the purchasing project management structure, the span of control of purchasing managers is significantly higher than within purchasing hybrid management structure. This is due to the fact that the project groups have grown, and in some cases must now be split up to make the span of control manageable again. Within the hybrid management structure, the groups are smaller, but there are more groups in comparison to the project management structure.
- The *mix of products* that are purchased by the case-company is described as ‘high mix, low volume’, where there are a lot of unique products purchased in relatively small volumes. This could influence the impact of the sourcing lever volume bundling.
- One of the reasons the mix of products of the case-company is described as high mix is that the customers of the case-company partly require *prescribed parts/suppliers*. Prescribed parts/suppliers are products that must be purchased according to

prescriptions of the customers. This can include a predefined design and specification of a product, or even a predefined supplier at which the product must be purchased. Different customers choose different prescribed product/suppliers, leading to a higher variation in products purchased. Prescribed products/suppliers also have an impact on the sourcing levers volume bundling, price evaluation, and product optimisation. Often suppliers of the case company know that they are a prescribed supplier, which gives them a strong position in negotiation and makes it hard for the case-company to apply the sourcing lever price evaluation. The use of the sourcing lever product optimisation is very dependent on the freedom that the case company has in design choices, when the design of a product is owned by a customer of the case-company, then they are only in an advisory role when it comes to changes in the design of a product.

- The *product phase* of the products that are produced at the case-company have an impact on the sourcing levers and targets of a purchasing department. When a product is still in the development face, different suppliers are needed in comparison to products that are already in the volume phase. In the development phase suppliers that can provide flexibility and a lot of engineering changes are needed, which are often sourced more locally. Therefore, the product phase has an impact on the sourcing levers supplier base expansion and product optimisation. Next to that the product phase influences the competitive priorities that are chosen, for example, in an early development phase the focus is less on the cost dimension compared to products that are in the volume phase.

4.2.3 Personal opinions of purchasing professionals on purchasing structures: project management is customer -focused and hybrid management is supplier-focused

During the interviews the purchasing professionals were asked about their own opinion on advantages and disadvantages of their purchasing structures:

The purchasing project management structure is designed to have a customer focus, in which purchasing groups are dedicated to one customer, which makes the purchasing groups aligned to the rest of the organisation since they are also organised on a customer/program basis. The structure adds value for the customer by providing a good alignment with the technology & development and sales department, making it possible to adapt quickly to customer requirements. Purchasing professionals in this structure have specialised knowledge about the entire systems that the case-company produces. The

purchasing department is involved early in the product development process together with the technology & development department. Next to that, the purchasing department is involved in the long-term planning for products, making it easier to provide demand forecasting with suppliers. However, because the structure is customer-focused, the purchasing department sits with its back towards the supply market. This means that there are multiple points of contact with suppliers from the case-company. This can lead to inefficient sourcing, or even project groups competing amongst each other for the same suppliers. The communication and synergy between the project groups is under pressure, especially in the current times of growth. Next to that, the purchasing professionals are purchasing products in a variety of different commodities because they are only purchasing products for one product/program, that leads to less specialisation in the various commodity markets.

The purchasing hybrid management structure is more supplier focused. This means that because there are category groups, the purchasing professionals have a better overview over the supply base of that specific category. This allows for example for volume bundling across programs/products. Next to that the category groups lead to deeper knowledge of purchasing professionals in the specific market, which can lead to several advantages: purchasing professionals can spot innovation opportunities, they have a good overview of supplier performance, since external benchmarking is easier. Next to that this structure leads to a single point of contact between the case-company and supplier, which makes the ordering process more efficient, and more power can be exercised towards suppliers. Because of a more centralised decision-making process, communication across groups can be supported and programs can be prioritised so that the programs are not competing for suppliers. However, this decision-making process is complex because there is need for consultation. Another disadvantage of this structure is that the purchasing department is less aligned with the technology & development department and with the customers. This can lead to less long-term product planning and less flexibility towards customers.

4.3 Sourcing levers have a positive impact on quality, logistics, cost, and risk

This section will display and discuss the results of the second round of interviews that were held with purchasing professionals from both locations of the case company. Through this round of interviews, the result from the first round of interviews was validated, and relations

between sourcing levers and performance dimensions were found. Questions were answered on the impact that the used sourcing levers had on performance dimensions. This was done by discussing contracts/communication with suppliers that were done over the past year. In table 5 an overview of the results can be found, in which the relation between a sourcing lever and performance dimensions are indicated by a low/moderate/high impact. Next to the relations that were found, relations between sourcing levers and performance dimensions that were proposed in the hypothesis section of this research and could not be proven through these interviews are displayed.

Table 5. Impact of sourcing levers on performance dimensions

Sourcing Lever	**Impact (low/moderate/high)**
Volume bundling	Quality: - Logistics: Not proven Technology: - Cost: Low impact Risk: - Sustainability: -
Price evaluation	Quality: - Logistics: - Technology: - Cost: Moderate impact Risk: - Sustainability: -
Expanding the supplier base	Quality: - Logistics: - Technology: - Cost: Not proven Risk: High impact Sustainability: -
Product optimisation	Quality: - Logistics: High impact Technology: Not proven Cost: Low impact Risk: - Sustainability: -
Process optimisation	Quality: High impact Logistics: High impact Technology: - Cost: Low impact Risk: - Sustainability: -

Optimisation of the supplier relationship	Quality: High impact Logistics: High impact Technology: Not proven Cost: - Risk: Not proven Sustainability: Not proven
Cross-group optimisation	Quality: - Logistics: - Technology: - Cost: Not proven Risk: - Sustainability: -

This is an analysis of level 4 of the hierarchy of purchasing strategies, as presented in figure 2.[150] An explanation of the results as presented in table 5:

Volume bundling is used in the purchasing hybrid management structure, and mainly done by reducing suppliers where possible. The main reason to use the volume bundling lever is to reduce the administrative burden of having a high number of suppliers. Therefore, this sourcing lever mainly yields a decrease in indirect costs for labour costs of purchasing professionals. To a lesser extent this sourcing lever is used to achieve cost savings, in the interview this relation was described as having a low impact on the performance dimension cost.

Price evaluation is used in both of the purchasing structures. It is used through internal and external benchmarking, to determine target prices. Next to that cost engineers are recalculating cost to keep it under control, by breaking down costs in the production process of supplier, where possible in joint evaluation with suppliers. A large percentage of the suppliers of the case company are prescribed suppliers, where the prices are already negotiated and established, therefore this sourcing lever cannot be applied to these suppliers. For other suppliers this sourcing levers is used in the negotiation with suppliers and can have a big impact on the performance dimension cost. However, because the case company cannot apply this sourcing lever in all negotiations, the overall relation between price evaluation and cost performance is described as having a moderate impact.

Supplier base expansion is utilised in both purchasing structures. It is mainly done by global sourcing, building up suppliers and using parallel suppliers. The main reason for

[150] See Hesping & Schiele (2015), p. 147

the case company to apply supplier base expansion is to gain access to production capacity. The current state of the market, and the growth of the case company lead to the risk of overcharging the current supply base, which could eventually lead to supply disruptions. Therefore, the supplier base expansion sourcing lever has a big impact on risk reduction, and therefore on the performance dimension of risk.

Product optimisation is used in both purchasing structures. However, this depends on the fact if products have prescribed designs or not. When there is the possibility to alternate the product design, this is done by early involvement in development teams, product standardisation or material substitution. The main reason for the use of this sourcing lever is material availability. When there is scarcity on a certain type of material/product, the aim of the case company is to substitute this particular material/product. Therefore, the product optimisation lever increases the material availability, and has a big impact on the performance dimension logistics. Another reason to use this sourcing lever is to achieve cost savings, however this is done less frequently and therefore the relation was described as low impact.

Process optimisation is used in both purchasing structures. This is done by using capacity management, quality conversations, process standardisation and demand forecasting. The use of quality conversations, for example agreeing on a quality assurance agreement, has a big impact on the performance of suppliers on the performance dimension quality. Next to this capacity management, process standardisation and demand forecasting, for example by using a VMI process or agreeing on a logistic forecast agreement, have a big impact on the logistics performance. Through the use of a VMI process or logistic forecast agreement, some slight cost savings can be achieved because suppliers can produce on their own terms. Because this can only yield slight cost savings, the relation between process optimisation and cost performance is described as low impact.

Optimisation of the supplier relationship is used in both purchasing structures. Supplier development, becoming a preferred customer and drafting contracts are conducted with suppliers. This was done by running development programs with suppliers, having clear communication, keeping an eye on mutual dependency, and drafting contracts in which commitment to the purchase of long lead-time items is agreed. This was described as having a big impact on quality and logistics performance.

From the first round of interviews, it became clear that cross-commodity optimisation is only used in the purchasing hybrid management structure. However, this could not be proven in the second round of interviews, because of how the interviews were set up

(appendix 2). The interviews included questions about contracts/communication with single suppliers, and therefore cross-commodity optimisation was not mentioned.

4.4 Comparison of performance on performance dimensions: hybrid management performs better on quality, logistics, and cost

To get an indication of the purchasing performance of both of the locations of the case company, a qualitative observation was made of data that the case company gathers from its suppliers and its own performance was conducted. The data that was gathered is about the year 2022 and applies to the entire purchasing departments. The percentages displayed in table 6 are not the actual percentages that were observed, rather they are a comparison between the KPI scores.* To compare the performances on the performance dimensions, the purchasing project management structure was taken as a base and compared to the performance of the purchasing hybrid management structure. An overview of the results is displayed in table 6. The best performance is displayed in green, and the worse performance in red.

Table 6. Performance on performance dimensions

Performance dimension (KPI used)	**Purchasing project management ***	**Purchasing hybrid management***	**Performance interpretation**
Quality (reject rate)	100%	48,46%	The hybrid structure scores better on this KPI since it has the lowest percentage of rejected parts.
Logistics (CLIP)	100%	116,67%	The hybrid structure scores better on this KPI since it has a higher percentage of on-time deliveries.
Technology (PGP)	100%	133,33%	The project structure scores better on this KPI since its

			average time span of a PGP is lower.
Cost (total cost of orders % on revenue)	100%	91,43%	The hybrid structure scores better on this KPI since it has a lower purchasing percentage on the overall revenue.
Risk	-	-	-
Sustainability	-	-	-

The *quality* performance of both locations was compared by looking at the reject rate. The reject rate displays the percentage of rejected parts on all purchased parts. The lower the reject rate, the better the quality performance is. As table 6 shows, the hybrid structure scores 51,54% lower than the project structure. However, this percentage can give a distorted picture of the difference in quality performance, since the reject rates of both locations are very low. Still, the quality performance of the hybrid structure is better than the quality performance of the project structure.

The *logistics* performance was compared by looking at the (E)CLIP rate. The CLIP/ECLIP rate stands for '(early) confirmed line item performance', which displays the percentage of on-time deliveries, on confirmed dates by suppliers. The hybrid structure scores 16,67% better than the project structure on this KPI. Therefore, the logistics performance of the hybrid structure is better than the logistics performance of the project structure.

The *technology* performance was compared by looking at the average time span of the product generation process. A lower score on this KPI means a quicker product generation process, and therefore a better performance. The hybrid structure scores 33,33% higher on this KPI than the project structure. Therefore, the technology performance of the project structure is better than the technology performance of the hybrid structure.

The *cost* performance was compared by looking at the percentage of total cost of orders on the companies' overall revenue. A lower score on this KPI means relatively lower purchasing spend. As described in chapter 3.3 this score can be influenced by outsourcing

activities that a company has, but in this research the assumption was made that the two locations of the case company have similar percentages of outsourcing activities. The hybrid structure scores 8,57% lower on this KPI than the project structure, and therefore the performance of the hybrid structure on cost performance is better than the cost performance of the project structure.

The *risk* and *sustainability* performances are harder to capture in KPIs, the case company does not track KPIs on this, and therefore they were not included in this research.

5. Discussion: model proposal and research contributions

5.1 Interpreting the analyses to construct a model for the decision on purchasing structure

To answer the research question: "How to align purchasing contribution to firm strategy by organising the purchasing department?", this research proposes a model that connects purchasing structures, sourcing levers, and performance dimensions. This was done by answering sub questions and testing three hypotheses.

The first hypothesis was tested by looking at the relations between sourcing levers and performance dimensions. An overview of the relations that were found is displayed below in figure 7, in which the connected lines represent positive relations that were found. Next to the relations that were found the dashed lines represent relations that were proposed in the hypothesis section but could not be proven through the interviews.

The relations between the different sourcing levers and performance dimensions are of varying significances, ranging from low to high, and can be found in table 6. For the sourcing lever cross-group optimisation, and the performance dimensions technology and sustainability, no relations were found in this research.

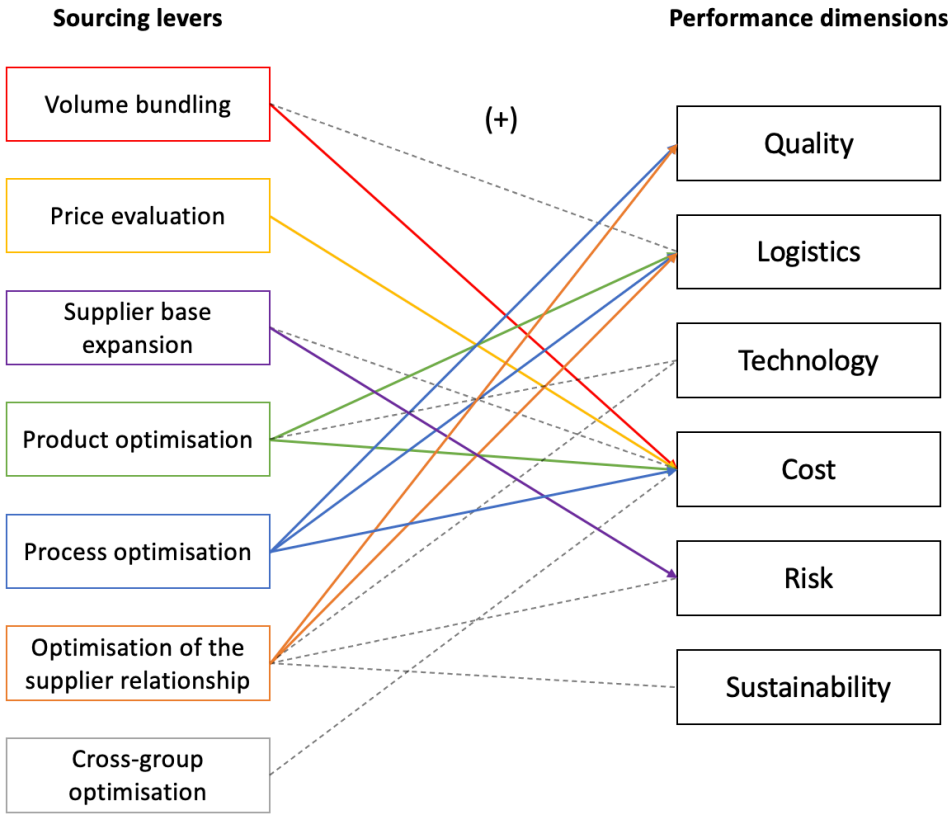

Figure 7. Impact of sourcing levers on performance dimensions

The second hypothesis was tested by looking at the use of sourcing levers in the purchasing structures that were used in the locations of the case company. A difference in the use of sourcing levers per purchasing structure was identified in the interviews. In figure 8 the findings of the second hypothesis are added to the findings from the first hypothesis, to complete the model. In this model the lines between the purchasing structures and sourcing levers represent positive relations. No line between a purchasing structure and sourcing lever does not necessarily imply that a sourcing lever is not used within this purchasing structure, however it means that this purchasing structure does not positively influence the use of a sourcing lever.

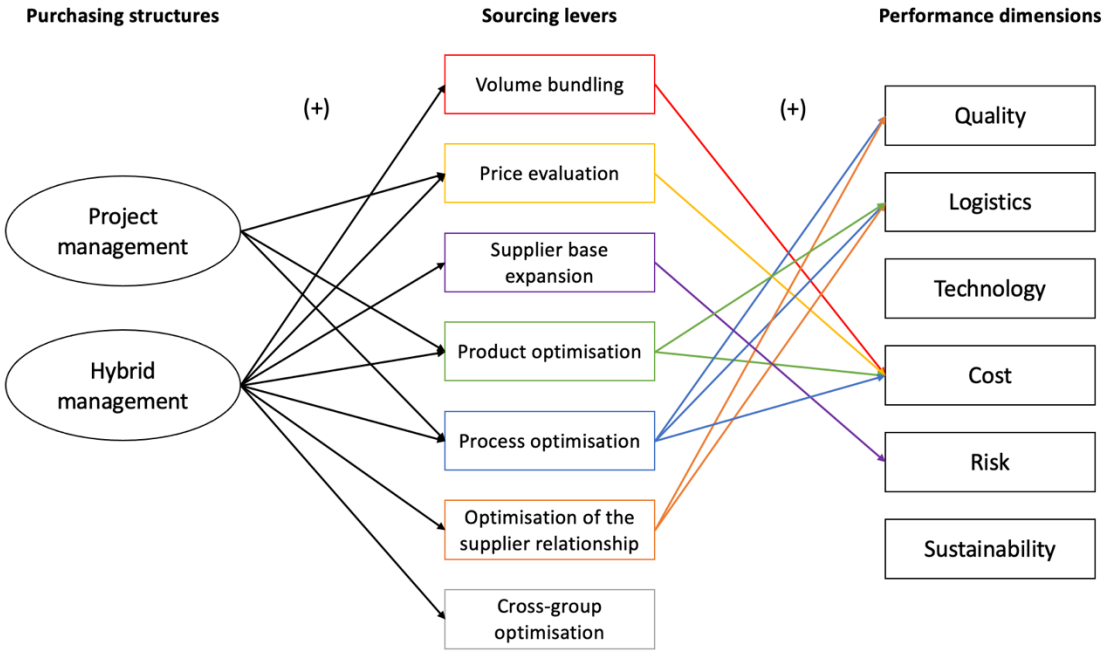

Figure 8. Aligning purchasing structure to performance dimensions through sourcing lever analysis

The purchasing project management structure supports the use of the sourcing levers price evaluation, product optimisation and process optimisation. The price evaluation lever is supported through the alignment with the rest of the firm and customers that this structure provides. Through this alignment internal knowledge can be utilised to benchmark product prices. Product optimisation is realised through internal alignment with the technology & development department, therefore there is early involvement of the purchasing department in new product development processes. It allows purchasing professionals to gain a better understanding of the products that are produced at the case-company, and it increases the

speed and responsiveness towards customer requirements. Process optimisation is supported in this structure by providing the ability to efficiently use demand forecasting through the alignment with customers.

The purchasing hybrid management structure supports all sourcing levers. The biggest difference in the use of sourcing levers between the two purchasing structures is apparent in the levers volume bundling and cross-group optimisation. These two sourcing levers are solely used in the purchasing hybrid management structure. This is due to the centralised nature of the purchasing hybrid management structure, and the ability of this purchasing structure to apply purchase pooling. Next to that, a difference in the use of the remaining five sourcing levers was identified. The price evaluation sourcing lever is mainly done through external benchmarking product prices, which is supported by the purchasing hybrid management structure because purchasing professionals gain market expertise/specialisation in this structure. The supplier base expansion sourcing lever is also supported better in this purchasing structure, again because of the market expertise purchasing professionals have in this structure, which allows them to identify new suppliers more easily. Next to that, purchasers in the hybrid management structure use one supply base for the whole purchasing department, whereas the purchasing project management structure uses separate supply bases per project group. This means the supply base in the purchasing hybrid management structure is bigger. The market expertise that purchasers have in the purchasing hybrid management structure also supports the use of product optimisation, by the ability to detect innovative products that emerge on the market at an earlier stage, and to use concept competition between suppliers where possible. The process optimisation sourcing lever is used in this structure as well, in which the advantage that hybrid management gives purchasers in this sourcing lever is that there is a single point of contact for suppliers to interact with. Compared to the purchasing project management structure, where there could be multiple purchasers seeking contact with one supplier, the hybrid management structure only has one purchaser that will contact a supplier. This makes processes such as capacity management and quality conversations more convenient. The single point of contact with suppliers that is present in the purchasing hybrid management structure also has a positive impact on the optimisation of the supplier relationship sourcing lever, by allowing effortless information sharing with suppliers. Next to that the purchase pooling that is present in the purchasing hybrid management structure, which allows purchasers to make use of larger order volumes, makes the firm more likely to become a preferred customer to suppliers.

The third hypothesis tested the contextual factors that could have an impact on the proposed model or are affected by the purchasing structures. Six contextual factors were identified; growth, market phase, span of control, mix of products, prescribed parts/suppliers, and product phase. An overview of the contextual factors in relation to the proposed model is displayed in figure 9. The only contextual factor that is influenced directly by the different purchasing structures is span of control. It was found that it is more straightforward to keep a manageable span of control for purchasing managers in the purchasing hybrid management structure, because splitting groups up is more convenient in a hybrid management structure, due to the ability to add hierarchy levels to groups by simply specifying a product category further. A further explanation on the impact of contextual factors on the proposed model can be found in chapter 4.2.2.

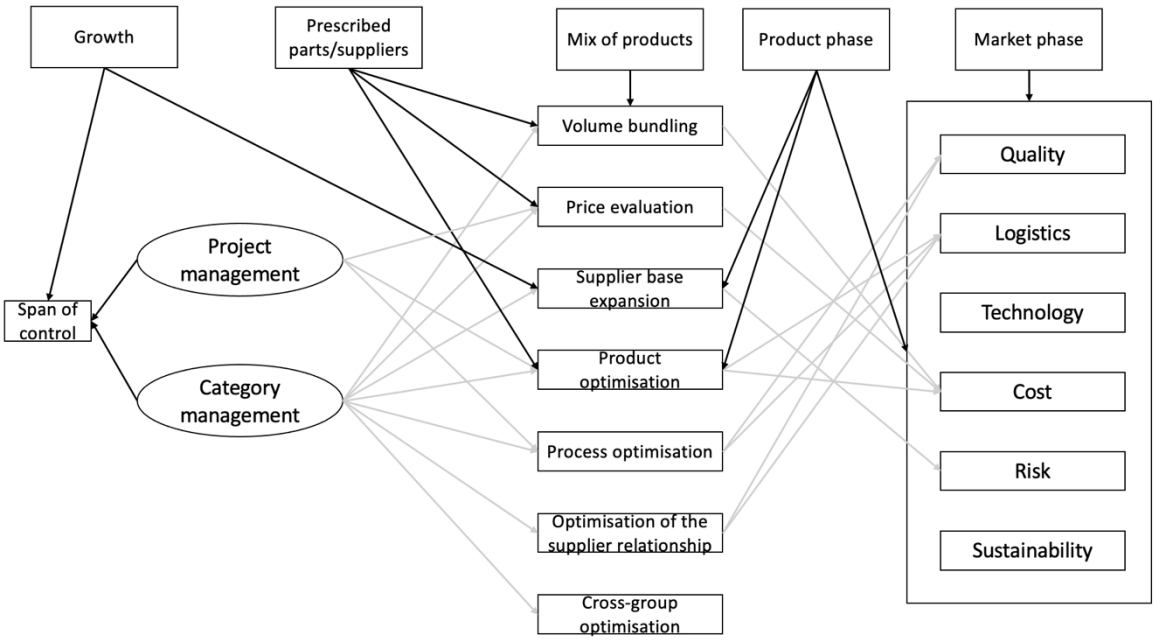

Figure 9. Contextual factors influencing the constructed model

5.2 Theoretical contributions: bridging the gap on influence of purchasing structures

This research contributes to literature through the literature review and interviews with purchasing professionals at the case company. The theoretical contributions of this research participate in bridging the gaps in literature that were identified before starting this research.

The first theoretical contribution of this research is that it introduces the term purchasing project management, for the purchasing structure with the grouping characteristic business unit/customer.[151] As there is no widely known definition on this purchasing structure type in literature, this research defines the purchasing project management structure and describes what advantages this structure type holds. Purchasing project management is a structure that exists of groups that serve specific (internal) clients that the company produces for, and has the structure characteristics of a decentralised structure and specialisation in internally produced products. The purchasing project management structure is customer focused. The decentralised characteristic of the purchasing project management structure increases the speed and responsiveness towards customer requirements and creates closer working relationships between suppliers and end-users. These are in line with the literature on decentralised purchasing departments (Johnson & Leenders, 2006; Monczka, 2021). It was found that this structure allows the specialisation of purchasing professionals of the products that are produced at the case-company. Next it facilitates alignment with the rest of the firm, which can lead to purchasing involvement in product development projects and diminish the need for coordination of this involvement.[152]

Second, this research contributes to the research on purchasing category management, by doing empirical research in a purchasing hybrid structure that divides purchasing groups along categories. Purchasing category management is a better known purchasing structures in literature, compared to purchasing project management, and therefore a definition of this purchasing structure was found in literature. Through interviews, advantages of having purchasing category groups were identified. It was found that it ensures purchase pooling and allows purchasing professionals to gain market expertise, which is in line with existing literature on purchasing category management (Burlakova & Ruzhanskaya, 2021; Heikkilä et al., 2019; O'brien, 2019).

[151] See Bals et al. (2018), p. 42-43

[152] See Lakemond et al. (2001), p.18; Rozemeijer et al. (2003), p. 10

Third, this research contributes to the research on purchasing hybrid structures. It was found that through a purchasing hybrid structure, provides the opportunity to combine the key features of centralised and decentralised structures, which is in line with current literature on hybrid structures.[153] Next to that it was found that an advantage of the purchasing hybrid structure is that it allows for a single point of contact with suppliers, and it can manage the span of control of purchasing managers in a more convenient way than purchasing project management.

Fourth, this research shows empirical evidence on how level 3 and 4 of the hierarchy of purchasing strategies from Hesping and Schiele (figure 2) interact with one another, to complement the gap that was identified by Burlakova & Ruzhanskaya (2021),[154] and provide a guideline on how to implement purchasing structures such as category management. In addition, Hesping & Schiele (2015) stated that it might be interesting to investigate how to structure spending and the supply base to support certain competitive priorities.[155] This research shows that different purchasing structures, and therefore the different grouping of purchasing professionals, influence the use of sourcing levers. More specifically this study shows how purchasing project management and purchasing hybrid management influence the use of sourcing levers, in comparison between the two structures. It was found that purchasing project management positively influences the use of sourcing levers price evaluation, product optimisation and process optimisation, and that purchasing hybrid management positively influences all seven sourcing levers.

Fifth, this research contributes to the research on tactical sourcing levers, which is still a work in progress.[156] This research contributes to the research on tactical sourcing levers because it considers the impact of sourcing levers on different performance dimensions that are considered within the purchasing field of work. Before the research on sourcing levers mainly focussed on the performance dimensions cost and innovation, rather this also considers other performance dimensions. This research does not support the influence of sourcing levers on all performance dimensions that were considered, since no relation was found between sourcing levers and the performance dimensions technology and

[153] See Johnson & Leenders (2006), p. 333; Luzzini et al. (2014), p. 145

[154] See Burlakova & Ruzhanskaya (2021), p. 206

[155] See Hesping & Schiele (2015), p. 148

[156] See Hesping & Schiele (2016a), p. 113

sustainability, however it does support the influence of the different sourcing levers on the performance dimensions quality, logistics, cost, and risk.

Finally, this research considered contextual factors that influence the working of purchasing structures and the success of sourcing levers, since Schneider & Wallenburg (2013) considered the environmental factors for the structuring and alignment of purchasing departments, and Hesping & Schiele (2015) stated that the research on tactical sourcing levers lacks conceptual and empirical works on the influence that contextual factors may have on the success of different sourcing levers.[157] Through empirical research this research found contextual factors that influence the purchasing structures, sourcing levers and performance dimensions; growth, market phase, span of control, mix of products, prescribed parts/suppliers, product phase. These contextual factors describe the overall situation a company is in, and in this research describe the current situation of the case company, and the high-tech market that the case company is in, which were found to be of significant influence on purchasing structures, the use of sourcing levers, and competitive priorities.

5.3 Managerial implications: a hybrid structure must be realised to get supplier focus without losing customer alignment

Through interviews with the case company a need for further investigation into different purchasing structures was identified. The findings in this research provide managers with deeper insights for the decision on which purchasing structure to deploy.

This research introduces the use of sourcing lever analysis for the decision making process on purchasing structures. Table 7 displays the performances on different performance dimensions of the two locations/purchasing structures at the case company, in relation to the influence of sourcing levers on this performance dimension. The percentages displayed in table 7 are not the actual percentages that were observed, rather they are a comparison between the KPI scores.* Table 7 displays the best performance in green, and the worse performance in red. As displayed, the purchasing hybrid management structure scores better on the majority of performance dimensions. This confirms the findings in this research, as this research found that the purchasing hybrid management structure allows more (efficient) use of sourcing levers, compared to the purchasing project management

[157] See Hesping & Schiele (2015), p. 148; Schneider & Wallenburg (2013), p. 153

structure. It can be concluded that purchasing hybrid management yields a better supplier performance than the purchasing project management structure.

Table 7. Relating performance to sourcing levers

Performance dimensions	Purchasing project management*	Purchasing hybrid management*	Influence sourcing levers	Difference in purchasing structure influence
Quality	100%	48,46%	Process optimisation (high impact) Optimisation of the supplier relationship (high impact)	Purchasing hybrid management performs better through a more efficient use of the optimisation of the supplier relationship levers.
Logistics	100%	116,67%	Product optimisation (high impact) Process optimisation (high impact) Optimisation of the supplier relationship (high impact)	Purchasing hybrid management performs better through the more efficient use of the optimisation of the supplier relationship lever.
Technology	100%	133,33%	-	Purchasing project management performs better through product specialisation and congruency with engineering and customers (not a sourcing lever)
Cost	100%	91,43%	Volume Bundling (low impact) Price evaluation (moderate impact) Product optimisation (low impact) Process optimisation (low impact)	Purchasing hybrid management performs better through the use of the volume bundling lever.

Risk	-	-	Supplier base expansion (high impact)	Purchasing hybrid management should perform better through the more efficient use of the supplier base expansion lever.
Sustainability	-	-	-	-

Next, this research also found that in a purchasing hybrid management structure it is easier to keep a manageable span of control of purchasing managers, compared to the purchasing project management structure, because the category groups in the hybrid structure can be split up in a more convenient way.

Finally, this research suggests the case company to move towards a hybrid structure, as displayed in figure 10, to combine the benefits of the discussed project management and category management structures.[158] In this case it means employing a purchasing category management structure to yield the benefits of the supplier focus of that structure. Alongside the category management structure an integration mechanism must be added to facilitate the alignment with (internal) customers. This could be realised by creating an integrator role between the purchasing departments and the rest of the firm, that acts as an advisory role to purchasers.[159] The integrator role should serve solely as an advisory role, so that the full potential of the advantages of a purchasing category management structure can be reached. The purchasing professional that takes on this role should have knowledge on the customer and product, as well as on the supply chain. This pairing function is most important in an early product phase, where more communication with (internal) customers is needed.

[158] See Johnson & Leenders (2006), p. 333

[159] See Heikkilä et al. (2018), p. 5; Trautmann et al. (2009), p. 69-70

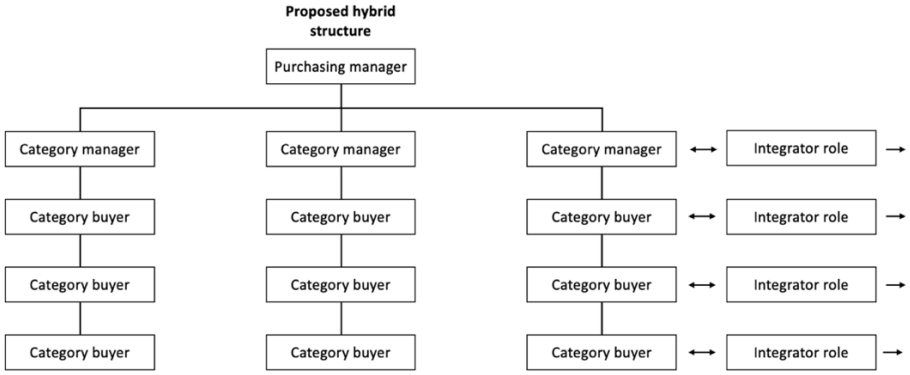

Figure 10. Proposed hybrid structure

6. Limitations / future research: future research should complement the proposed model

In addition to the theoretical contributions and managerial implications, this research has limitations and implies directions for future research.

This research is mainly of qualitative nature. To validate and strengthen the proposed model there is need for quantitative research on this topic. Therefore, future research should consider quantitative research on the influence of purchasing structures on the use of sourcing levers, as well as on the impact of sourcing levers on performance dimensions

Furthermore, in this research a case research approach was used which offered the opportunity to study the situation in great depth. However, the nature of a case research approach implies that a phenomenon is studied in one specific business context, in this case the situation at the case company. This could imply that the findings that are presented in this research are case specific, for example the working of the model and the contextual factors could be specific for the high-tech market. Therefore, future research on this topic should include data from a broader range of companies and markets.

Next, in this research the sourcing lever analysis was used to determine purchasing performance/alignment. The activities that belong to sourcing lever analysis are supplier centred. This could be in disadvantage of the purchasing project management structure, since this structure is more customer focused than the purchasing category management structure. For example, benefits from alignment with (internal) customers and increased accountability are underrepresented in the sourcing lever analysis.

For the performance dimensions technology and sustainability no relations were found, while they were proposed in the hypothesis section of this research. Future research should aim to further investigate relations between purchasing structures on these two

performance dimensions to complete the proposed model in this research. Next to that it was found that it is challenging to track performance on the risk and sustainability priorities, and therefore future research should investigate ways to measure these performance dimensions. In addition, because of the lack of more reliable KPIs that were available, the performance on technology was denoted on an estimation of purchasing professionals at the case company and may therefore be subjective, and the performance on cost was indicated by the percentage of total cost of orders on the overall revenue of the case company, which can be subject to other factors such as the degree of outsourcing.

Finally, the case company in this research did not employ an unaltered purchasing category management structure, but rather a hybrid structure with category groups. Therefore, future research should observe cases where unaltered category management structures are employed, to draw more reliable conclusions on the potential benefits of the use of purchasing category management.

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Appendix

Appendix 1. First round interview guideline

Introduction Introduction of interview moderator

Briefing **Is it possible to record the interview?**

Purpose of research

Purpose of interview

Explain the interview procedure

Question: **Do you have any questions before starting the interview?**

Question 1: **Would you be so kind to introduce yourself and your function.**

Back-up:

- Time period
- Responsibilities

Question 2: **How would you describe the current situation of the purchasing department in terms of growth?**

- Question 2a: **How does the structure of the purchasing department adapt to growth?**
- Question 2b: **What is the average span of control within the purchasing department? Is there a maximum and why?**

Back-up:

- Splitting teams up
- Important factors when restructuring

Question 3: **How would you describe the mix of products that are purchased?**

- Question 3a: **Does the mix influence the structure of the purchasing department?**
  → If yes, how does it influence the structure?
- Question 3b: **How does the number of prescribed parts influence this mix?**
- Question 3c: **How does the number of projects influence the mix?**
- Question 3d: **Do you think the mix of products purchased will change in the future?**

Back-up:

- High mix, low volume
- Low mix, high volume
- Prescribed parts → higher mix
- Number of projects → higher mix

Question 4: **The purchasing volume**

- Question 4a: **What is the total spend of the purchasing department?**
- Question 4b: **What is the total of the parts purchased?**
- Question 4c: **What is the total number of unique parts purchased?**

Back-up:

- High volume, or low volume and more specialised

Question 5: **What targets do you chase as the purchasing department?**

- Question 5a: **Are the purchasing targets related to the overall firm strategy?**
- Question 5b: **Could you allocate a total of 100 points to the different targets according to how important they are for the purchasing department? → Last page**

Back-up:

- Quality
- Logistics

- Technology (innovation)
- Cost
- Sustainability
- Flexibility

Question 6: **How do you achieve your targets? Which tactics do you use?**

- Question 6a: **What are the most important tactics?**
- Question 6b: **How much do these tactics contribute to the purchasing departments total performance?**

Back-up:

- Some examples: volume bundling, product optimisation, optimisation of the supplier relationship

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In this section of the interview, I want to ask you about sourcing levers or sourcing activities that you use. Sourcing levers are tactics that are used to achieve cost savings with suppliers. There are 7 general categories of sourcing levers. The levers are aimed to save cost in the end, however some also aim to innovate, and the improve quality and logistics.

Outline question 7: Volume bundling *is a commercial sourcing levers that aims to combine demand and increase the purchasing volumes per request, leading to benefits from economies of scale on supplier's side. In the case of high fixed cost products or those requiring long set-up times, scale effects can be considerable.*

Question 7: **Are you trying to bundle volume? And to what extent are you focused on this?**

- Question 7a: **Which methods do you use to bundle volume?**

- Question 7b: **How do you think the purchasing structure influences the ability to bundle volume?**

Back-up:

- Supplier reduction
- Bundling amongst plants/regions
- Bundling through ongoing series of orders
- Packaging in larger volumes

Outline question 8: Price evaluation *aims to get a clear picture of the price targets and cost and supply structure of suppliers.*

Question 8: **Are you actively trying to evaluate the price for products?**

→ **If yes, do you have a standard process/procedure for this?**

Back-up:

- Cost based price modelling
- Cost regression analysis
- Benchmarking

Outline question 8: Supplier base expansion *is used to increase competition between suppliers and seize opportunities from different suppliers, either globally or more local.*

Question 9: **Are you using supplier base expansion?**

- Question 9a: **What kind of opportunities or characteristics are you looking for when searching for a new supplier?**
- Question 9b: **Are you looking for global suppliers, or trying to localise the suppliers?**
- Question 9c: **Are you using new suppliers to build up their competences and capacity?**

Back-up:

- Supplier base expansion to realise cost saving, risk reduction or innovation
- Global sourcing for cost

Outline question 10: Product/program optimisation *is a process that is used to analyse the design, the function, and the material of a purchased product. Through this analysis firms try to save cost through innovation, standardisation, and simplification.*

Question 10: **Are you using product/program optimisation?**

- Question 10a: **Are you working together with suppliers to realise product optimisation?**
- Question 10b: **Are you working together with other functions internally to realise product optimisation?**
- Question 10c: **Do you use innovation or concept competition between suppliers?**

Back-up:

- Standardisation → as many standard parts as possible
- Simplification → make products easier and cheaper to produce
- Early involvement of suppliers (joint development teams)
- Working together with the R&D department

Outline question 11: Process optimisation *is used to optimise the processes at the interface between buyer and supplier. It aims to improve the performance areas logistics, planning and quality of the supplier and the delivery process.*

Question 11: **Are you using process optimisation?**

- Question 11a: **How are you managing capacity with suppliers?**
- Question 11b: **Are you participating in quality conversations with suppliers?**
- Question 11c: **Are you participating in project with suppliers to improve logistics?**

Back-up:

- Collaborative capacity management

- Improving logistics by pooling transport and optimising the packaging of goods

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Outline question 12: Optimisation of the supplier relationship *aims to build and get an effective relationship between buyer and supplier.*

Question 12: **Are you trying to improve the relationship with certain suppliers?**

- Question 12a: **Are you participating in projects to develop skills of suppliers?**
- Question 12b: **Are you actively trying to become a preferred customer to you suppliers by increasing the attractiveness of your firm?**

Back-up:

- Developing skills of supplier in programmes with several suppliers jointly
- Preferred customer through incentives or price adjustments
- Preferred customer to get full commitment from supplier

Outline question 13: Cross-commodity optimisation *overarches the other types of sourcing levers, and it aims to create an overview of the different sourcing levers and product categories that are used. The coordination of sourcing levers is important because not all sourcing levers can be combined, the levers can have negative impact when used in the wrong combinations.*

Question 13: **Do you consider sourcing tactics in a bigger picture, looking at how different tactics influence each other?**

Back-up:

- The different purchasing teams working together
- Suppliers working together
- Bundling beyond the sourcing teams

Question 14: In this section of the interview, I want to ask you to allocate a total of 100 points to the seven different lever categories according to the importance you think they have. → Last page

Question 15: **What do you think the influence of a purchasing structure is on a purchasing department?**

Debriefing Summarizing the main points mentioned during the interview.
From my side there are no further questions. Is there anything else you want to bring up before finishing the interview?

Closure Thank you for participating in the interview.

Appendix 2. Interview guideline second round

Introduction Introduction of interview moderator

Briefing **Is it possible to record the interview?**
Purpose of research
Purpose of interview
Explain the interview procedure
Question: **Do you have any questions before starting the interview?**

Question 1: **Would you like to introduce yourself, and the function you have?**

Backup:

- What period
- Responsibilities

Question 2: **What objectives or targets did you have in the purchasing department last year? → And how did you achieve these goals?**

Backup: QLTC, risk

The upcoming questions are about large contracts that you have concluded with suppliers in the past year. We're going to talk about 3 or 4 of the biggest/most important contracts, and see what was covered in those contracts. The questions below are therefore repeated 3 to 4 times.

Question 3: **Could you give an example of a contract you signed in the past year, and what kind of contract was it?**

Question 3b: **Was this contract with a new or existing supplier, and was it a new or existing product?**

Backup: short or long term

Question 4: **What was the purchase volume of this contract in money and the number of products?**

Backup: Volume in value

Question 5: **What were your objectives for this contract?**

Back-up: Quality, logistics, technology, cost, risk, sustainability

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Question 6: **Why this supplier?**

Backup: Supplier opportunities

Question 7: **How did you discuss/achieve the objectives with the supplier?**

Backup: Specifically driven by objective

Question 8: **What was your tactic in negotiating with the supplier?**

Backup: Sourcing levers

Question 9: **What has the tactic yielded? → low, medium, high impact**

Backup: Difference in quality, Logistics, technology, cost, risk, sustainability

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Question 10: **What are the differences with older contracts for this product/material?**

Backup: Difference in material availability or cost reduction

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Question 11: **Do you think your organizational structure helped in the negotiation to achieve objectives? And why?**

Backup: - Bundling, alignment with customers

Debriefing Summarizing the main points.

I don't have any further questions, do you have anything you'd like to add before the interview is finished?

Fence Thank you for participating in this interview.