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Topic: **Improvement of human resources in purchasing by creating job profiles, in small- and medium enterprises**

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Abstract

Human resources in Purchasing are recognized to be one of the main drivers for Purchasing performance. In the research of Schiele (2007), a positive relationship between a high level of maturity in the Purchasing Maturity model and organizational performance is suggested. In this model, human resources is one of the important pillars, emphasising the importance of human resource development in Purchasing. With qualitative data from 14 interviews with Purchasing professionals from 14 small- or medium enterprises, personal backgrounds, purchasing roles, skill-requirements for Purchasers, and human resource development techniques are identified, with the context of the Purchasing Maturity model.

With the interviews several Purchasing roles are identified: Chief Purchasing Officer, Strategic Purchaser, Tactical Purchaser, Operative Procurement, Technical Purchaser and Assistant Buyer. Direct- or indirect materials, and process- or project Purchasing appear to be overarching factors for Purchasing roles, instead of actual roles. Although communication skills are recognized as the most important competency for each role, findings seem to reinforce claims from the literature that purchasers' competency requirements differ based on context. Therefore, organization should create job profiles to improve recruitment and human resource development processes. Small- or medium enterprises do not appear to have a structural policy to develop Purchasing employees, which inhibits developments in the department. With these observations in mind, research has been conducted to the range of Purchasing-related educational programs in the Netherlands. With research findings, the Human Resource Development Model for Purchasing is created, which provides a roadmap to develop Purchasers through their career. To make this a continuous learning process, which is necessary to ensure the department's future needs are met, organizations need to collaborate with Universities. The goal must be to get Universities to offer education, courses and workshops to external parties. When this succeeds, organizations can implement a continuous learning process, which lead to stronger human resources, thereby increasing Purchasing maturity. It's likely that organizational performances benefit from the higher Purchasing maturity.

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III List of abbreviations

PSM	Purchasing and Supply Management
BP	Business Process
CSR	Corporate Social Responsibility
CPO	Chief Purchasing Officer
SME	Small or Medium Enterprise
HRM	Human Resource Management

1. Introduction: Purchasing maturity, roles, market developments and company size have a strong impact on the competency requirements for purchasers

1.1 The increased strategic relevance of purchasers forced the department to improve

For a long time purchasing was considered a ‘support function’ in the supply chain, only valuable to lower costs and improve profit margins.¹ However, a clear trend towards the outsourcing of non-core activities increased the reliance on external resources.² As a result, Purchasing & Supply Management (PSM) has developed into a strategic function.³ The developments forced companies to improve the purchasing department and look beyond the function’s original goal to lower costs.⁴ As a result, the attention towards the growing importance of suppliers grew. Supplier relationship management, collaborative networks, and early supplier involvement are examples of subjects introduced in the literature.⁵ The recognition of purchasing as a strategic function in organization forced companies to (re)organize their purchasing processes and acquire stronger human resources.⁶ Also, the changing purchasing department required a wider set of competencies from purchasing professionals.⁷

1.2 Business process management to professionalize processes, and explains the importance of purchasing maturity

The main goal for a business is to achieve its strategic objectives and meet the expectations of customers.⁸ To achieve a sustainable competitive advantage against the increasing competition, companies should continuously improve processes that affect organizational performance.⁹ Business Process (BP) Management is a best practice management that helps companies ensure critical activities that influence customer satisfaction are performed efficiently and effectively.¹⁰ Subsequently, researchers have introduced business process maturity as a construct to criticize the quality of processes. The literature also provides several business process maturity models that function as a roadmap to improve business processes.¹¹ According to Raschke and Ingraham (2010) order

¹ See Poissonnier (2017, p. 1)

² See Roberts (2001, p. 31) and Johnsen, Miemczyk, and Howard (2014, p. 25)

³ See (Eltantawy, Giunipero, & Fox, 2009); Schiele (2010, p. 926); van Weele and van Raaij (2014, p. 57)

⁴ See van Weele and van Raaij (2014, p. 57)

⁵ See van Weele and van Raaij (2014, p. 57)

⁶ See Johnsen et al. (2014, p. 55)

⁷ See Johnsen et al. (2014, p. 55)

⁸ See Nadarajah and Latifah Syed Abdul Kadir (2014, p. 522)

⁹ See Carpinetti, Buosi, and Gerólamo (2003, p. 543)

¹⁰ See Hung (2006, pp. 21-22)

¹¹ See Raschke and Ingraham (2010, p. 1)

fulfilment and purchasing are two core processes in businesses.¹² Purchasing's impact on the efficiency outcomes of business processes addresses the strategic relevance of the purchasing function.¹³

1.3 Purchasing maturity, a tool to improve the financial performance of the firm

In order to improve the purchasing departments' performance and fulfil the changing role of the purchasing function, Schiele (2007) introduced, similar to the business process maturity, the 'purchasing maturity'. Purchasing maturity can be defined as 'the level of professionalism in the purchasing function'.¹⁴ According to Rozemeijer et al. (2003) the purchasing maturity in an organization positively impacts the purchasing synergy among business units due to a more advanced approach.¹⁵ Also, more mature purchasing departments showed significantly more cost savings than less mature departments. This partly explains the positive relationship between purchasing maturity and the financial performance of the overall organization.¹⁶ In the past decades, many researchers developed maturity models to enable organization to measure their purchasing maturity.¹⁷ The purchasing maturity model created by Schiele (2007) is an example often used in the literature.¹⁸ Based on six main dimensions, and several subdimensions, the model offers a maturity assessment through four maturity stages.¹⁹ In the construct, the human resources available to the purchasing department is an important indicator for the organisation's purchasing maturity. In detail, the purchasing department should have job descriptions and profiles, procedures to recruit qualified personnel and mechanisms to measure and reward performances.²⁰ Even though many organisations recognize the added-value of purchasing, most CPO's felt that the available human resources do not meet the department's needs.²¹

1.4 The existence of specific purchasing roles that provide context to competency requirements identified in the literature

Following the importance of human resources in purchasing, Schiele (2019) introduced a framework that divides purchasing roles into seven different categories.²² The

¹² See Raschke and Ingraham (2010, pp. 5-6)

¹³ See Raschke and Ingraham (2010, p. 6)

¹⁴ See Rozemeijer, Aj, and Weggeman (2003, p. 7)

¹⁵ See Rozemeijer et al. (2003, p. 10)

¹⁶ See (Schiele, 2007)

¹⁷ See Rozemeijer et al. (2003, p. 5)

¹⁸ See Andreassen and Gammelgaard (2018, p. 154)

¹⁹ See Schiele (2007, pp. 274-293)

²⁰ See Schiele (2007, p. 278)

²¹ See Johnsen et al. (2014, p. 75)

²² See Schiele (2019, pp. 53-54)

framework provides guidelines to purchasing job context, which is often lacking in research on competency requirements for purchasers.²³ The need for context is addressed by findings that suggest that each job role contains different tasks and responsibilities.²⁴ This also explains the statement of Schiele (2019) that the required educational background and skill sets differ among purchasing roles.²⁵ In addition, some findings have shown differences in the importance of skills based on the nature and importance of the purchase.²⁶ However, most research on competency requirements has focused on the general purchasing role and therefore role specific findings are limited.

To exploit the possibilities that modern era offers, and keep up or even get ahead of the competition, organizations should manage their human resources and gain insights in which competencies employees need to fulfil the changing needs of their role and the purchasing department.²⁷ For example, Carr and Smeltzer (2000) found a direct impact of technical purchasing competencies on firm performance, which addresses human resources' impact on firm performance.²⁸ The literature provides several categorisations for competencies that are relevant for current or future purchasing.²⁹ Following, multiple papers contribute to the purchasing literature by identifying a list of specific competencies that are in particular required for purchasing. In the paper of Bals et al. (2019) a clear gap is shown between the current and future most relevant competencies in purchasing.³⁰ Therefore, researchers address the need for further research to cover the increasingly strategic role of purchasing and keep PSM competency models up-to-date with rapid developments in the market.³¹

1.5 Most organizations recognize the importance of human resources, but are unable to fulfil their needs

The identification of purchasing roles with the competencies that go with them are part of job-profiling. According to the purchasing maturity model, a mature purchasing departments process competencies in a job-profile and review them on group-level.³² Subsequently, an

²³ See Knight, Tu, and Preston (2014, pp. 278-281)

²⁴ See Mulder et al. (2005, pp. 193-194)

²⁵ See Schiele (2019, p. 53)

²⁶ See Knight et al. (2014, p. 278)

²⁷ See Bals et al. (2019, p. 10)

²⁸ See Carr and Smeltzer (2000, p. 46)

²⁹ See Tassabehji and Moorhouse (2008, p. 64) and Bals et al. (2019, pp. 12-13)

³⁰ See Bals et al. (2019, p. 6)

³¹ See Tassabehji and Moorhouse (2008, p. 11)

³² See Schiele (2007, p. 289)

organization can use job-profiles to acquire new talent, and create a training plan for current and future employees. The management and development of human resources presents an important aspect of the competitiveness of the firm.³³ In the acquisition process, educational background and past experiences could help explain people's skill level. However, assessing the skills, competencies and knowledge of a person can be placed next to the job-profile to assess a person's suitability for the role.

Evaluation and new analysis to job functions are necessary to know what human resources the organizations demands. The increasingly strategic purchasing function, as well as social and technical developments influence daily operations in businesses.³⁴ New technologies brought on the market create new opportunities and change business processes. Therefore, training employees to develop their skills and knowledge is necessary to keep up with competitors. Two aspects that are crucial for personal development are education and professional experiences.³⁵ To prepare a person for future jobs, educational institutions should align their courses with the demand of industry and even society.³⁶ The importance is addressed by the difficulty that organizations experience in the search for talent, and the gap in skill expectations for professionals.³⁷ Secondly, businesses could create a training and development plan to improve the performance of employees. The literature provides several methods and techniques to give substance to the plan.³⁸ However, according to Bryson and Daniels (2009) businesses, and in particular small- and medium enterprises, experience difficulties in increasing the maturity in the management of human resources.³⁹

1.6 Different characteristics between SME's and large organization influence the purchasing function

Even though developments in and around the purchasing function has increasingly been subject to research, there is limited empirical evidence on the effect of firm size.⁴⁰ Small and medium enterprises (SME's) are firms with less than 250 employees, thereby also meeting a number of extra conditions.⁴¹ SME's are different from large organization in the

³³ See Bryson and Daniels (2009, pp. 251-261)

³⁴ See Stek and Schiele (2018)

³⁵ See Chatzimouratidis, Theotokas, and Lagoudis (2012, pp. 665-670) and Pekkanen, Niemi, Puolakka, Pirttilä, and Huiskonen (2020, p. 8)

³⁶ See Boahin and Hofman (2013, p. 390)

³⁷ See Bryson and Daniels (2009, p. 256)

³⁸ See Chatzimouratidis et al. (2012, pp. 665-670)

³⁹ See Bryson and Daniels (2009, p. 256)

⁴⁰ See Paik (2011, p. 11)

⁴¹ See Eriksson (2016, p. 1395)

resources available to them. According to Adams, Kauffman, Khoja, and Coy (2016) small organizations often lack internal resources such as financials, time and expertise.⁴² Also, their lower volume purchasing results in less purchasing power or the ability to influence suppliers than larger organizations.⁴³ The need for attention towards SME's is not only addressed by different characteristics, but also their economic relevance in countries worldwide.⁴⁴ In the context of this paper, Bals et al. (2019) noticed that purchasers at SME's differ from PSM professionals in large organisations, in the sense that they often perform additional purchasing or non-purchasing roles due to the nature of the firm.⁴⁵ As a result, job profiles for purchasers in SME's could be unique and therefore an interesting subject.

1.7 Research outline: New contextual factors offer new insights into competency profiles for purchasers

To clarify the design, the figure 1. Shows a model used to summarize the concept for this research.

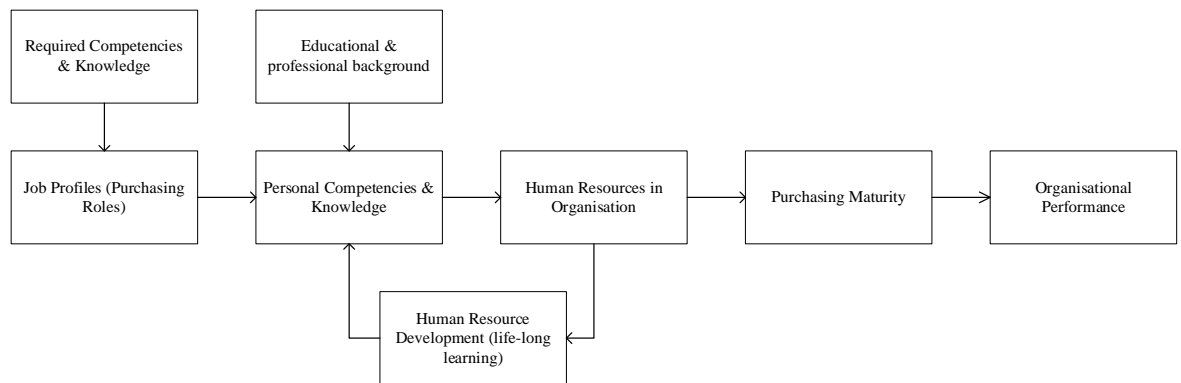


Figure 1: Research design model

At first, this research paper aims to provide a clear insight into the Purchasing function of small- and medium enterprises. Researchers have addressed the lack of focus on SME's in Purchasing literature.⁴⁶ To extend existing literature on purchasing, this paper responds to several requests for future research. At first, Knight et al. (2014) showed the effect of context on the importance of purchasing competencies requirements.⁴⁷ In this case, instead of using a purchasing 'type' portfolio approach, a distinction between purchasing roles is used to create context to skill requirements for purchasers. Therefore, this study aims to identify

⁴² See Paik (2011, pp. 11-12) and Adams et al. (2016, p. 146)

⁴³ See Adams et al. (2016, p. 146)

⁴⁴ See Paik (2011, p. 10)

⁴⁵ See Bals et al. (2019, p. 4)

⁴⁶ See Gibb (2000, p. 13); Morrissey and Pittaway (2006, pp. 274-275); Adams et al. (2016, p. 146)

⁴⁷ See Knight et al. (2014, pp. 278-282)

roles in Purchasing, to extend and strengthen limited research on this topic. Bals et al. (2019) address the study's limitations on competency requirements caused by a small sample size.⁴⁸ Therefore, this study could confirm and strengthen findings in prior research towards purchasing competencies. Thereafter, identified competency requirements per role, can be used obtain or train individuals. For this subject, the research makes a distinction between the effect of educational- and professional background, and human resource development in the organization to obtain competencies & knowledge. With that this study aims to identify how individuals obtain competencies and knowledge, but also how organization can develop employees to strengthen human resources in the organization. Methods, and techniques used to develop Purchasing employees are identified in order to be able to create a lifelong-learning process in business. This involves looking at the national supply of education or trainings to improve people. The development of human resources in organizations forms the main subject for this research, as existing literature has shown a direct- and indirect positive relationship between human resources and firm performances.⁴⁹ In order to show the link between different subject for this research, and address and strengthen findings, this paper uses Purchasing Maturity as an overarching aspect. Literature suggests that Purchasing Maturity could positively influence firm performance, and is therefore of great importance.⁵⁰ The Purchasing Maturity Model from Schiele (2007) provides a sophisticated assessment, which can be used to identify the maturity of Purchasing processes in SME's. With the findings, this research aims to convince organizations of human resource management's importance in Purchasing. Thereby, a model is created which firms can used to establish a lifelong-learning process, that helps to fulfil the future Purchasing departments' needs. Intending to fill multiple gaps in Purchasing (towards SME's) literature, the following research question has been formulated:

RQ: How to shape purchasing maturity within SME's by defining purchasing roles and assigning competencies?

⁴⁸ See Bals et al. (2019, p. 10)

⁴⁹ See Wynstra, van Weele, and Weggemann (2001, pp. 164-165); Schiele (2007, pp. 277-279); Knight et al. (2014, pp. 925, 927)

⁵⁰ See Bals et al. (2019, p. 11)

In order to answer the main research question, four sub-questions have been formulated:

SQ 1: What is the professional and educational background of purchasers working in SME's?

SQ 2: Which professional purchasing roles are in place within SME's?

SQ 3: What are the required skill sets for the current purchasing roles?

SQ 4: How do purchasing departments in SME's attain a lifelong learning process to acquire new skills, competencies and knowledge?

The findings of this paper will contribute to the literature in several ways. As mentioned earlier, the literature on purchasing competencies entails several gaps. By including purchasing roles, competencies important for specific roles are differentiated. As a result, future PSM professionals can prepare more specifically for their job. From a firms standpoint, firms can use the findings to improve their recruitment process by selecting new personnel based on job-profiles. Finally, and most importantly, organizations can use this research to shape Purchasing's personal development policy. Educational institutions can also use the results to improve education by creating courses that train students in certain skills or competencies that the industry demands. Also, Educational institutions can use findings from this research to align their interest with the business life. Last, prior purchasing research has often focused on larger organization, which does not always apply to SME's. Therefore, this study provides a clear focus on SME's as they form an important factor in national and international economy. With the results, SME's can improve their Human Resource Management in purchasing, and PSM professionals could prepare themselves differently if interested in working for a smaller organization.

1.8 Explanation of the research structure

After the introduction above to the subject of purchaser competency profiles in SME's, the study will contain the following structure. The next paragraph is a theoretical framework that explains the subject and provides insight into the existing literature on multiple (sub) topics that form this research framework. For instance, research on purchasing maturity, roles and competencies will be brought to the attention. Afterwards, the method(s) used to collect data to answer the research questions is explained in chapter 3. Then, the fourth chapter provides an overview of the most relevant collected data, this time concerning answering the research questions. The conclusion and discussion summarize findings,

implications, limitations, and suggestions for future research on the subject. In the appendices, the interviews with the purchasing professionals are summarized which could help to clarify findings.

2. Theoretical background:

2.1 Maturity as a measurement tool to improve organisational performance

2.1.1 The purchasing function as an important aspect of the business process maturity

Most firms have the primary goal to utilize all available resources to achieve strategic objectives and meet customer demand.⁵¹ The management of a company's processes has a significant impact on the firms' performance in reaching its objectives since the business processes are critical in day-to-day operations that connect systems, personnel and processes.⁵² Business process management is considered a more general approach towards continuous improvement in organizations focusing on fundamental activities (e.g. production, design, purchasing, marketing).⁵³ According to Raschke and Ingraham (2010)⁵⁴ monitoring and evaluating the process is an important step in the Business Process Lifecycle, a framework that guides process improvement. In the literature significant attention has been given to the maturity level of business process management. BP maturity measures to what extent an organisation has explicit and consistently performed business processes, that can be strengthened by improving the required skills and competences.⁵⁵ Raschke and Ingraham (2010)⁵⁶ address the effect of high business process maturity on purchasing and order fulfilment.

Business processes' maturity is a concept to evaluate and monitor processes, described many different Business Process Maturity Models.⁵⁷ The model written by Harmon (2004) contains five levels of maturity that describe the current state of the business processes: (1) initial, (2) managed, (3) defined/ standardized, (4) predictable, (5) optimizing/innovating.⁵⁸ The initial level presents an immature state of maturity, whereas the last stage enables a company to apply continuous improvement in the processes. Recent

⁵¹ See Nadarajah and Latifah Syed Abdul Kadir (2014, p. 522)

⁵² See Nadarajah and Latifah Syed Abdul Kadir (2014, pp. 522, 526) and Toufah, Jaegler, and Taj (2016, p. 7)

⁵³ See Darestani, Houshyar, Ismail, and Leman (2013, p. 1868)

⁵⁴ See Raschke and Ingraham (2010, pp. 1-2)

⁵⁵ See Van Looy and Backer (2013, p. 2)

⁵⁶ See Raschke and Ingraham (2010, p. 6)

⁵⁷ See Darestani et al. (2013, p. 1868)

⁵⁸ See Harmon (2004, pp. 2-3) and Raschke and Ingraham (2010, pp. 2-3)

literature has shown empirical evidence for a positive relationship between Business Process Management maturity and organizational performance.⁵⁹ According to Van Looy and Backer (2013)⁶⁰ the process maturity influences a firm's performance by achieving higher customer satisfaction and lower costs. This relationship addresses the importance of the business process maturity of an organisation. Within the business process management the purchasing maturity is found to positively effect on the level of efficiency in process outcomes due to its internal span and importance to meet customer demand.⁶¹ This relationship could be a result of the growing importance of purchasing towards a strategic function.⁶² The alignment of purchasing towards both the internal organization and the external environment (suppliers) has shown to have a positive impact on the performance of companies.⁶³ Therefore the organization must recognize the strategic importance, and align the business strategy with the purchasing strategy.⁶⁴

2.1.2 Purchasing maturity models offer insights and guidelines to improve the development of the purchasing department

Following the positive relationship between overall business process maturity on organisational performance, studies also identified that the maturity level of the purchasing departments also positively influences organisation's financial performance.⁶⁵ In case of purchasing, maturity can be described as the level of professionalism in the purchasing discipline.⁶⁶ Adams et al. (2016)⁶⁷ provide a more detailed definition of purchasing maturity; at first 'purchasing development' is the process of a short-term, opportunistic approach towards a strategic approach. Following, the purchasing maturity represents the levels of development progress in the department. The globalization trend led to increasing competition, forcing firms to focus more on product innovations, lower costs, and improve quality to meet customer demand.⁶⁸ The new challenges increased the importance of external

⁵⁹ See Van Looy and Backer (2013, p. 2); Nadarajah and Latifah Syed Abdul Kadir (2014, p. 526); Ongena and Ravesteyn (2019, pp. 132, 142);

⁶⁰ See Van Looy and Backer (2013, p. 2)

⁶¹ See Raschke and Ingraham (2010, pp. 3-6)

⁶² See Paulraj, Chen, and Flynn (2006, p. 107);

⁶³ See Mikalef, Pateli, Batenburg, and van de Wetering (2015, p. 626)

⁶⁴ See Baier, Hartmann, and Moser (2008, pp. 625-638)

⁶⁵ See Schiele (2007, p. 283)

⁶⁶ See Rozemeijer et al. (2003, pp. 5-6) Schiele (2007, p. 274)

⁶⁷ See Adams et al. (2016, p. 146)

⁶⁸ See Úbeda, Alsua, and Carrasco (2015, p. 177)

resource management by the purchasing department. As a result, purchasing must be able to synergize suppliers' strengths and processes with those of the company.⁶⁹

Several purchasing maturity models have been developed that describe different auditable stages of maturity. To explain, "Maturity models are a common approach to explaining and understanding the professional development required to change and achieve sophisticated PSM practices".⁷⁰ With a 111 item assessment, the maturity model of Schiele (2007) provides one of the most comprehensive assessments to measure purchasing maturity.⁷¹ The 'maturity model' consist of six dimensions: (1) planning, (2) organizational structure, (3) process organization, (4) human resources & leading and (5) controlling.⁷² Subsequently, every dimension includes multiple items that specify the main subject based on a five-level scale, similar to the BP maturity model.⁷³ The maturity on each sub-dimension is based on five stages that measure the level of maturity on the specific item based on the development stage of the department.⁷⁴ A higher level of maturity leads to better financial performances, but also indicates that the purchasing department is able to learn more from its environment.⁷⁵ Bemelmans, Voordijk, and Vos (2013)⁷⁶ claim that the purchasing maturity level also reflects to what extent purchasing is integrated into the strategic decision-making process. In conclusion, the maturity model can be used to get insights in the current situation, and offers possibilities to improve the purchasing department.⁷⁷

Andreasen and Gammelgaard (2018) claimed that maturity models are essentially frameworks for organizational change. However, they also argue that maturity models are not always sufficient as they fail to capture change management for unexpected changes in the environment. Kerkfeld and Hartmann (2010)⁷⁸ argues that purchasing models not only fail to recognize environmental change, but do not consider the context-dependency aspect overall. With the organizations' context in mind, purchasing maturity only has an indirect

⁶⁹ See Úbeda et al. (2015, pp. 177-178)

⁷⁰ See Andreasen and Gammelgaard (2018, p. 151)

⁷¹ See (Andreasen & Gammelgaard, 2018, pp. 152, 154)

⁷² See Schiele (2007, pp. 283-291)

⁷³ See Schiele (2007, pp. 283-291); (Raschke & Ingraham, 2010, pp. 2-3); Søgaaard, Skipworth Heather, Bourlakis, Mena, and Wilding (2019)

⁷⁴ See Schiele (2007, pp. 274-291) and Søgaaard et al. (2019, p. 147)

⁷⁵ See Schiele (2007, p. 281)

⁷⁶ See Bemelmans et al. (2013, p. 343)

⁷⁷ See Bemelmans et al. (2013, p. 343) and Andreasen and Gammelgaard (2018, p. 154)

⁷⁸ See Kerkfeld and Hartmann (2010, pp. 1-5)

effect on financial performance.⁷⁹ This in contrast to earlier claims that organizations directly benefit financially from higher purchasing maturity. Even though the results differ, Kerkfeld and Hartmann (2010)⁸⁰ still identified and recognized the positive influence of high purchasing maturity on business processes.

2.2 The creation of job roles with associated professional profiles to improve the purchasing department through stronger human resources

2.2.1 The skill level of the organizations' human resources is the main dimension to improve the purchasing department

From the maturity model of Schiele (2007), human resources & leadership is the most relevant dimension for this study. The skill level of purchasing professionals in an organization is found to be an important factor in establishing interfaces with technical functions.⁸¹ Knight et al. (2014)⁸² take this claim a step further by stating that the supply management performance is primarily based on the competences and skills of the purchasing staff. Carr and Smeltzer (2000)⁸³ define skills as abilities gained by practice and knowledge, which are necessary through their ability to influence the effectiveness of firm performance.⁸⁴ Various studies agree on the importance of human resources for supplier involvement,⁸⁵ supplier integration and thereby supply management performance and status⁸⁶.

The human resources & leadership dimension in the maturity model measures the professionalism in the procedures regarding (1) job descriptions & competencies, (2) the selection & (3) personal development of employees and performance measurement & career development.⁸⁷ The main subject of this study is closely related to the first sub dimension: job descriptions & competencies. A high maturity level on these dimension indicate a purchasing department that creates and consistently updates job profiles based on observations in combination with competency requirements to perform associated activities.⁸⁸ Besides competencies, prior research also identifies personal attributes in the

⁷⁹ See Kerkfeld and Hartmann (2010, p. 5)

⁸⁰ See Kerkfeld and Hartmann (2010, p. 5)

⁸¹ See Schiele (2007, pp. 277-278)

⁸² See Knight et al. (2014, pp. 925, 927)

⁸³ See Carr and Smeltzer (2000, p. 41)

⁸⁴ See Eltantawy et al. (2009, p. 927)

⁸⁵ See Wynstra et al. (2001, pp. 164-165)

⁸⁶ See (Carr & Smeltzer, 2000, p. 46) and Eltantawy et al. (2009, pp. 925, 934)

⁸⁷ See Schiele (2007, pp. 277-278)

⁸⁸ See Schiele (2007, pp. 289-290)

form of previous experience and training/ education that affect the ability to effectively participate in certain purchasing activities.⁸⁹ Both personal attributes and competency requirements are important aspect of human resources that help to develop the skills in the purchasing department and increase the effectiveness of the purchasing role.⁹⁰ Subsequently, Carr and Smeltzer (2000) found that greater skill levels support the increasingly strategic Purchasing function.⁹¹ The other way around, the increased recognition of purchasing as a strategic function forced purchasing personnel to collaborate with several other organizational functions (or departments).⁹² Remarkable is that the relationship between skill level and the strategic function of purchasing is stronger for small enterprises than large firms⁹³.

In a worldwide survey of 218 chief purchasing officers (CPO's), many of the respondents experience a lack of skills among their purchasing staff.⁹⁴ The significant gap between the required skills and the actual skill level for purchasing personnel addresses human resource management's importance in the purchasing discipline. Besides, technical and social developments as Industry 4.0 and CSR create an even bigger challenge for purchasing departments.⁹⁵ Even though much research has focused on the purchasing skills, there is no clear approach to identify skill requirements for purchasers. Whereas, much research has focused on the changing skill requirements through the increasing recognition of purchasing as a strategic function,⁹⁶ others have tried to take specific job context into account.⁹⁷

2.2.2 Differences in competency profiles per purchasing role address the importance of 'custom-made' job profiles

In recent literature, the competency requirements have been studied to capture current and future skill requirements for the general purchaser with regards to the strategic developments in the purchasing function.⁹⁸ Knight et al. (2014)⁹⁹ explained the lack of specific job context

⁸⁹ See Wynstra et al. (2001, p. 164)

⁹⁰ See Tassabehji and Moorhouse (2008, p. 65)

⁹¹ See Carr and Smeltzer (2000, p. 46)

⁹² See Johnsen et al. (2014, pp. 74-75)

⁹³ See Carr and Smeltzer (2000, p. 46)

⁹⁴ See Johnsen et al. (2014, p. 75)

⁹⁵ See Johnsen et al. (2014, pp. 75-76) and Bals et al. (2019, p. 10)

⁹⁶ See L. Giunipero, Handfield Robert, and Eltantawy (2006, pp. 822-844); Tassabehji and Moorhouse (2008, pp. 55-68); Bals et al. (2019, pp. 1-15)

⁹⁷ See Knight et al. (2014, pp. 271-283)

⁹⁸ See Tassabehji and Moorhouse (2008, pp. 55-68); Knight et al. (2014, pp. 280-281); Bals et al. (2019, pp. 1-15)

⁹⁹ See (Knight et al., 2014, pp. 278-281)

in this literature and examined purchaser competency requirements based on the value and difficulty of purchases; routine, tactical or strategic purchasing type. Schiele (2019)¹⁰⁰ used a similar approach, and identified purchasing situations based on the type of material (direct or indirect), type of purchase (spot/ project or serial) and if the object is a first-buy or re-buy. Following, the different purchasing situations can be used to distinguish purchasing roles that require specific skill sets.¹⁰¹

With the contextual factors in mind, Schiele (2019) defined seven different roles in purchasing: (1) operative procurement, (2) purchaser for direct materials, (3) purchaser for indirect materials, (4) public procurement, (5) purchasing engineer, (6) chief purchasing officer (CPO) and (7) ‘other roles’.¹⁰² Each role has its own job profile regarding for example educational background or skill sets, and is depending on firm size performed by one person.¹⁰³ However, the literature provides several lists with purchasing roles to distinguish the different tasks and responsibilities performed by each purchasers. For example, Mulder et al. (2005)¹⁰⁴ distinguish four different purchasing roles including the Purchasing Manager, Senior Buyer, Buyer and Assistant Buyer. Following, four task categories were designed based on 105 tasks identified in interviews with purchasing professionals; purchasing management, information and communication, initial purchasing and operational purchasing.¹⁰⁵ In addition, Mulder et al. (2005) provide a ‘box’ that summarize the importance of a category for the purchasing roles as shown in figure 2.¹⁰⁶

¹⁰⁰ See Schiele (2019, pp. 51-52)

¹⁰¹ See Schiele (2019, p. 53)

¹⁰² See Schiele (2019, pp. 53-54)

¹⁰³ See Schiele (2019, pp. 53-54)

¹⁰⁴ See Mulder et al. (2005, p. 192)

¹⁰⁵ See Mulder et al. (2005, pp. 192-195)

¹⁰⁶ See Mulder et al. (2005, p. 194)

	PM	SB	B	AB
Management				
1. Developing purchasing policy	++	+	-	-
2. Managing the purchasing organisation	++	+	-	-
3. Improving the purchasing organisation	++	++	+	+
Information and communication				
1. Communication with internal sectors	++	+	+	+
2. Communication with external sectors	+	++	+	-
3. Information technology	++	+	-	+
4. Globalisation	++	++	-	--
Initial purchasing				
1. Specifying the purchasing need	-	++	-	--
2. Selecting the suppliers	-	++	+	--
3. Contracting suppliers	-	++	+	-
Practical purchasing				
1. Ordering goods and services	--	-	+	++
2. Monitoring the purchasing process	--	-	++	++
3. After-care, evaluation and administrative conclusion of the purchasing process	--	-	+	++
PM = Purchasing Manager, SB = Senior Buyer, B = Buyer, AB = Assistant Buyer ++ = very important; + = important; - = unimportant; -- = very unimportant				

Figure 2: Aggregated Job profiles for purchasers according to Mulder et al. (2005, p. 194)

Lastly, the research shows not only that each role is responsible for tasks in multiple categories,¹⁰⁷ but thereby also proves that the ‘general purchaser’ does not exist. Purchasing roles with associated activities and responsibilities, can be used to identify competency requirements with strong context, and create job profiles to improve human resources.¹⁰⁸ Despite this observations, prior research have not. Instead, studies examine competency requirements in the context of: single roles (supply management)¹⁰⁹, project types¹¹⁰, Purchasing trends¹¹¹ or buyer traits¹¹². In addition, several researches focused on the general Purchasing function.¹¹³ Therefore, current Purchasing literature fails to recognize each purchasing role performs different tasks, and therefore seems to require different competencies and knowledge. By identifying Purchasing roles in SME’s, and analysing competency requirements per role, organization could create job profiles to recruit suitable personnel,¹¹⁴ or improve current human resources.

¹⁰⁷ See Mulder et al. (2005, p. 194)

¹⁰⁸ See Schiele (2007, pp. 284-291)

¹⁰⁹ See L. Giunipero et al. (2006, pp. 822-838)

¹¹⁰ See Wan Abdullah Zawawi et al. (2014, pp. 176-177)

¹¹¹ See Schulze, Bals, and Johnsen (2019, pp. 297-299)

¹¹² See Faes, Knight, and Matthyssens (2001, pp. 200-204)

¹¹³ See L. C. Giunipero and Percy (2000, pp. 8-12) and Tassabehji and Moorhouse (2008, pp. 55-66)

¹¹⁴ See Knight et al. (2014, p. 272)

2.3 The increasingly strategic purchasing function highly impacted the current and future competency requirements for purchasers

2.3.1 Frameworks to categorize purchaser competencies and fill the talent gap in the discipline

The purchasing role has moved from that of a buyer, focusing on price, costs, delivery and quality, to a purchasing professionals that manage long-term strategic partnerships with suppliers and stakeholders.¹¹⁵ As a result of social, technical and purchasing related developments, purchasers' competency requirements have become an important subject in the literature. The importance of purchasing is reinforced by the significant, positive relationship between the skill level of purchasing staff and the financial performance of the organization.¹¹⁶ Also, a study towards the gap between the supply and demand for qualified personnel in purchasing found that 65% of the CPO's felt the skill of the purchasing personnel needs improvement.¹¹⁷ In recent literature, skills have been defined as 'the ability to carry out the tasks and duties of a job in a competent manner'.¹¹⁸ Similar to the approach of Bals et al. (2019), this study uses the term 'competencies' as a broad concept that contains the competencies, knowledge and skills to examine job profiles for purchasers.¹¹⁹

The literature provides several categorisations to group skill requirements for purchasers. Tassabehji and Moorhouse (2008) define five categories of skills that fit modern-day purchasing: (1) technical skills, (2) interpersonal skills, (3) internal enterprise skills, (4) external enterprise skills and (5) strategic business skills.¹²⁰ In this approach technical skills represent the fundamental and basic skills necessary for any purchasing professional, while interpersonal skills and internal enterprise skills are important for efficient and effective cooperation between individuals and/ or departments.¹²¹ External enterprise skills are concerned with the management of external relationships, and lastly, strategic business skills are important for the broader strategic issues and the impact of purchasing on the overall organization.¹²² A more general approach is a distinction between soft skill (interpersonal and intrapersonal) and hard skills.¹²³ Johnsen et al. (2014) describe hard and soft skills as

¹¹⁵ See Faes et al. (2001, pp. 197-198)

¹¹⁶ See Cousins Paul, Lawson, and Squire (2006, pp. 788-789)

¹¹⁷ See Johnsen et al. (2014, p. 75)

¹¹⁸ See Elias and McKnight (2001, p. 511)

¹¹⁹ See Bals et al. (2019, p. 2)

¹²⁰ See Tassabehji and Moorhouse (2008, pp. 58-59)

¹²¹ See Tassabehji and Moorhouse (2008, p. 59)

¹²² See Tassabehji and Moorhouse (2008, p. 59)

¹²³ See Zheng, Knight, Harland, Humby, and James (2007, p. 75) and Zanardi (2017, p. 30)

functional (hard) and business skills (soft).¹²⁴ Soft skills contain a persons' willingness to communicate, flexibility, creativity, analytical skills and the ability to take the initiative, while hard skills present being able to negotiate, manage cost, value or risks.¹²⁵ A characteristic of soft skills is that they are more difficult to develop than hard skills, which creates new challenges for purchasing.¹²⁶ In recent literature a clear shift in focus from hard skills towards soft skills in job roles is found.¹²⁷

According to L. Giunipero et al. (2006) trends in purchasing's' environments have transformed purchasing into a more strategic function.¹²⁸ New web-based information technology has made purchasing professionals no longer responsible for non-value adding activities, and instead shift their responsibilities to value-adding activities in the sourcing policy and supply base.¹²⁹ In addition, purchasing trends like Industry 4.0 and CSR affect competency requirements for purchasers. Therefore modern competency profiles should reflect the changing business context.¹³⁰

2.3.2 Differences in current and future competency requirements force the development of purchasing professionals

Extending the work of Tassabehji and Moorhouse (2008), Bals et al. (2019) provide an updated view on current and future Purchasing & Supply Management competencies.¹³¹ The study performed interviews with 46 practitioners and identified 17 new competencies next to the framework of Tassabehji and Moorhouse (2008).¹³² However, the results apply to purchasers that perform multiple different roles instead of specific purchasing roles and therefore lack context.¹³³ Still, to ensure the comparability of the results in this study, the list of competencies identified by Bals et al. (2019) is used to categorise skill requirements for purchasers.

Following the list of competencies, Bals et al. (2019) composed a top 10 current and future competencies based on the number of times they were coded in the interviews.¹³⁴ In

¹²⁴ See Johnsen et al. (2014, p. 77)

¹²⁵ See Johnsen et al. (2014, p. 77) and Zanardi (2017, p. 30)

¹²⁶ See Zanardi (2017, p. 30)

¹²⁷ See Zheng et al. (2007, p. 75)

¹²⁸ See L. Giunipero et al. (2006, p. 823)

¹²⁹ See L. Giunipero et al. (2006, pp. 823-824)

¹³⁰ See Bals et al. (2019, p. 10)

¹³¹ See Bals et al. (2019, p. 3)

¹³² See Bals et al. (2019, p. 7)

¹³³ See Knight et al. (2014, pp. 278-281) and Bals et al. (2019, p. 10)

¹³⁴ See Bals et al. (2019, p. 6)

both the current and future state of Purchasing & Supply Management, purchasers consider analytical skills as their most important competency requirement. See table 1 for the top ten current and future competencies identified by Bals et al. (2019).

Current Competencies	Future Competencies
Basic Knowledge on PSM Role & Processes	Analytical Skills
Communication Skills	Automation
Cross-functional abilities & knowledge	Big Data Analytics
Interpersonal Communication	Computer Literacy
Negotiation	eProcurement Technology
Stakeholder Relationship Management	Holistic supply chain thinking
Strategic Sourcing	Strategic Sourcing
Strategic Thinking	Strategic Thinking
Sustainability	Sustainability

Table 1: Top 10 current and future competencies for purchasers identified by Bals et al. (2019, p. 6)

Notable is that only four out of ten competency requirements are considered to be important in both the current and future state of Purchasing & Supply Management. The differences between the current and future top ten competencies for purchasers address the effect of developments such as digitalization and Industry 4.0 on the PSM discipline.¹³⁵ To compare, Knight et al. (2014) identified communication, negotiation and influencing & persuasion skills as the current most important skill requirements.¹³⁶ However, they made a distinction between strategic, tactical, and routine product types compared to Bals et al. (2019) who did not specify purchasing roles or activities.¹³⁷ The results showed a significant impact of product type on the importance of 24 out of 33 skills and therefore, addresses the importance of adding context to future research towards Purchasing & Supply Management's competency requirements.¹³⁸

In addition to the lack of context in research towards competencies in the purchasing function, purchasing research also seems to overlook the effect of company size.¹³⁹ SME's often have different characteristics and resources compared to large organization which influence competency requirements, but also their view on the importance of Purchasing &

¹³⁵ See Bals et al. (2019, p. 10)

¹³⁶ See Knight et al. (2014, p. 278)

¹³⁷ See Knight et al. (2014, pp. 278-279)

¹³⁸ See Knight et al. (2014, p. 279)

¹³⁹ See Paik, Wedel, and Yao (2009, p. 359)

Supply Management.¹⁴⁰ Better insights in skill, competency and knowledge requirements per purchasing role could help an organization to improve their human resources. Subsequently, organization are able to create job profiles that provide guidance in talent acquisition and training plans.¹⁴¹

2.4 Talent acquisition and the training of personnel become increasingly important in a changing environment, but are often unable to satisfy the changing needs of businesses

2.4.1 Businesses recognize the importance of human resources, but fail to acquire or train new talent

The previous chapter showed a list of competencies that are important for purchasers, and therefore also for the overall organization. Thereafter companies should have the goal to acquire certain skills in the interest of the organizational performance. Following this topic, Schiele (2007) included the ‘selection and integration’ of new personnel, and the presence of relevant competencies in the purchasing maturity model.¹⁴² With that, the model emphasizes the need for sufficient human resources within the organization. In this case, sufficient human resources means the need for people that have the ability and competencies to perform certain specific tasks. There are several ways for firms to gain new or improved skills.

One way to obtain skills for firms is to recruit personnel with desired competencies that benefit the organization.¹⁴³ According to Schiele (2007) a mature purchasing department uses clear competency profiles, and performs standardized interviews & analysis to measure the extent to which a person meets the set requirements.¹⁴⁴ Secondly, firms could continuously train and develop the competencies of existing staff. Companies should have cross-functional training plans that help employees achieve target agreements based on the purchasing maturity model.¹⁴⁵ The purchasing maturity model by Schiele (2007) states that mature purchasing departments possess every competency that is related to substantial commodities. However, the management of skill is not only important in purchasing, but in the entire businesses. A firm’s competitiveness is closely related to their ability to recruit and manage employees with complementary skills¹⁴⁶. Even though companies recognize the

¹⁴⁰ See Paik et al. (2009, pp. 359-360)

¹⁴¹ See Knight et al. (2014, p. 272)

¹⁴² See Schiele (2007, pp. 277-278, 289-290)

¹⁴³ See Schiele (2007, p. 289)

¹⁴⁴ See Schiele (2007, p. 289)

¹⁴⁵ See Schiele (2007, p. 289)

¹⁴⁶ See Bryson and Daniels (2009, pp. 251-261)

importance of training to obtain new skills, financial and time costs often form barriers that keep organizations of such investments.¹⁴⁷

Also talent acquisition turns out to be a growing struggle in practice. Deters (2017) uses the metaphor a ‘war for talent’ to explain that companies not only compete with their products, but also with their human resources.¹⁴⁸ Having ‘the right talent, at the right place, at the right time, at the right price’ challenging, causing issues for almost every enterprise.¹⁴⁹ Moreover, multiple researchers endorse the ‘personnel selection and integration’ dimension in the purchasing mature model, by addressing the importance of acquisition, development and retention of talent.¹⁵⁰ Still businesses, particularly SME’s, have difficulties recruiting or training personnel due to limited available resources.¹⁵¹

2.4.2 Continuous developments in the market force firms to keep job-profiles up-to-date and develop their human resources

In the literature, human resources are considered one of the main sources to create a sustainable competitive advantage. Besides education, work experiences are important factors in the development, and improvement of competencies and skills.¹⁵² The personal development of employees is not only crucial for the competitiveness of the business, but also motivates people for their future growth in the organization.¹⁵³ Therefore organization should make (cross-functional) training plans to enhance skills, competencies and knowledge of personnel. In order to optimize the training process, firms often carry-out job analysis to discover what skills and knowledge are necessary to perform the job.¹⁵⁴ The importance of this so-called ‘job-profiling’ is stressed by the paper of Knight et al. (2014). In this research paper, the skills that are perceived as most important by purchasers are categorized into three clusters, which clearly show a difference in skill requirements among the purchasing roles.¹⁵⁵ Also, the job-profiling process should be carried-out regularly as developments affect future skill requirements for purchasers.¹⁵⁶

¹⁴⁷ See Bryson and Daniels (2009, pp. 257,259-260)

¹⁴⁸ See Deters (2017, p. 2)

¹⁴⁹ See Deters (2017, p. 2)

¹⁵⁰ See Schiele (2007, p. 289);Maura Sheehan, Ellinger, and Ellinger (2014, p. 119) ;Deters (2017, pp. 2-3)

¹⁵¹ See Bryson and Daniels (2009, pp. 264-265)

¹⁵² See Baldwin, Garza-Reyes, Kumar, and Rocha-Lona (2014, p. 1)

¹⁵³ See Baldwin et al. (2014, p. 1)

¹⁵⁴ See Knight et al. (2014, p. 272)

¹⁵⁵ See Knight et al. (2014, pp. 272, 278)

¹⁵⁶ See Bals et al. (2019, pp. 6, 10)

In a study among 123 purchasers, five megatrends are identified that influence purchasing.¹⁵⁷ Industry 4.0 and CSR are technical and social trends that influence the purchasing function. The fourth industrial revolutions present opportunities with the internet of things (IoT), cyber-physical systems, big data and machine-to-machine communication.¹⁵⁸ The impact of this for purchasers is addressed by a study in Germany which showed that 37 percent of the German companies have implemented some Industry 4.0 technologies.¹⁵⁹ On the other side, CSR can be defined as a company's commitment to minimizing or eliminating harmful effects and maximizing the positive impact on society.¹⁶⁰ According to Mohr et al. (2001) CSR entails obeying laws and ethical norms, treat personnel fairly and protect the environment.¹⁶¹ Studies have shown the positive impact of CSR on the company's reputation, and increase the willingness for stakeholders to work or invest in the company.¹⁶² The possibility to use new techniques creates opportunities.¹⁶³ However they also affect job-profiles of purchasers. Therefore, employees must be able to constantly acquire new skills, competencies and knowledge to adapt to a changing business environment.¹⁶⁴

To meet the demand of industry (or even society), education plays a pivotal role. One of the main purposes of education is to prepare students for participation in the job market.¹⁶⁵ Therefore, educational institutions should have some idea of skill, competency and knowledge requirements of potential employers.¹⁶⁶ However in practice, talent acquisition proves to be very difficult. A study based on a survey found that SME's experience the largest skill gaps among personnel through a lack of experience, and their failure to train and develop employees.¹⁶⁷ If employers recognize how people acquire new competencies & skills, and become able to affect the development of talent, the process of talent acquisition and training could become more effective and solve the lack of suitable people.

¹⁵⁷ See Stek and Schiele (2018)

¹⁵⁸ See Hofmann and Rüsch (2017, p. 23) and Stek and Schiele (2018)

¹⁵⁹ See Gottge, Menzel, and Forslund (2020, p. 731)

¹⁶⁰ See Mohr, Webb, and Harris (2001, p. 47)

¹⁶¹ See Mohr et al. (2001, p. 47)

¹⁶² See Pfau, Haigh, Sims, and Wigley (2008, pp. 150-152) and Hietbrink, Berens, and van Rekom (2010, p. 284)

¹⁶³ See See Gottge et al. (2020, p. 737)

¹⁶⁴ See Boahin and Hofman (2013, p. 385)

¹⁶⁵ See Boahin and Hofman (2013, p. 390)

¹⁶⁶ See Boahin and Hofman (2013, p. 390)

¹⁶⁷ See Bryson and Daniels (2009, p. 256)

2.4.3 Training and development methods to strengthen human assets and positively impact firm performance

So far this paragraph addressed the difficulty for businesses to acquire sufficient human resources, and the need for individuals to develop themselves to keep up with the changing environment. To satisfy both needs, organizations should create training and development programmes that directly improve performance.¹⁶⁸ This explains the growing interest in the lifelong learning concept for the benefit of future employability.¹⁶⁹ As a result, continuing education, professional development and workplace learning have become basic requirements in today's business world which is increasingly affected by technological and social developments.¹⁷⁰ Lifelong learning also aims to develop people, with education and training, to ensure sufficient human resources in a labour market with scarcity. The literature provides several methods and techniques to shape training and development programmes.

According to Chatzimouratidis et al. (2012) are a company's most important assets.¹⁷¹ The literature provides several classifications of training methods and techniques to improve the skills, competencies and knowledge of an individual. Some of the methods that are considered among the most useful techniques are on-the-job training, mentorship, apprenticeship, simulators, instructor-led classroom training and job rotations.¹⁷² Although each methods has the same goal, improving a businesses' human assets, organizations should to select the most appropriate technique. The paper of Chatzimouratidis et al. (2012) provides multiple frameworks for the selection process. For example, criteria such as cost, time, applicability, efficiency and employee motivation can help organizations evaluate each method.¹⁷³ These criteria cannot be assessed with great accuracy and are therefore subjective.¹⁷⁴ However, the described training methods with associated criteria are meant for the development program of businesses. A more efficient system would be to improve education by aligning needs of the economy and society to educational programs.¹⁷⁵ In that case, potential employees are more likely to possess the important competencies or knowledge to perform the job.

¹⁶⁸ See Chatzimouratidis et al. (2012, p. 663)

¹⁶⁹ See Richards (2018, pp. 251-252)

¹⁷⁰ See Richards (2018, pp. 251-252)

¹⁷¹ See Chatzimouratidis et al. (2012, p. 665)

¹⁷² See Chatzimouratidis et al. (2012, pp. 665-669)

¹⁷³ See Chatzimouratidis et al. (2012, pp. 670-673)

¹⁷⁴ See Chatzimouratidis et al. (2012, p. 673)

¹⁷⁵ See Pekkanen et al. (2020, p. 8)

Even though the literature recognizes the need for training and development of employees, businesses do not always implement a human resources improvement policy. According to Susomrith and Coetzer (2015) SME's are less likely to provide personnel with training and development opportunities than larger companies.¹⁷⁶ This causes SME's to miss out on opportunities when employees do not possess the competencies to take advantage of new technologies.¹⁷⁷ Also, employees' lack of personal development opportunities for employees could negatively affect their job satisfaction and commitment to the organization.¹⁷⁸ John Loan-Clarke and John (1999) found that ownership characteristics, size and the number of managers significantly impact investments in training and development programs.¹⁷⁹ To conclude, SME's staying away from training and development programmes address their lower maturity in business processes and therefore could negatively affect the company's performance.

2.5 SME's are the main driver of economies, but lack attention in the purchasing literature

2.5.1 A lack of attention in the literature towards SME's, the driver of national economies

Even though supply management has received an increasing amount of attention in the literature, the research on purchasing in SME's has received significantly less attention.¹⁸⁰ According to Adams et al. (2016) researchers and practitioners often assume that business processes and methods created with, and for large organizations, also are appropriate for SME's.¹⁸¹ However, large organizations are far more developed when it comes to the business processes' maturity.¹⁸² Especially in the development of their leadership skills, business planning and the processes, SME's are far behind.¹⁸³ Adebajo, Tickle, Laosirihongthong, and Mann (2014) explain that large organizations are more likely to improve business processes because they already applied continuous improvement and the

¹⁷⁶ See Susomrith and Coetzer (2015, pp. 561-562)

¹⁷⁷ See Simmons, Armstrong, and Durkin (2008, pp. 365, 368)

¹⁷⁸ See Susomrith and Coetzer (2015, p. 562)

¹⁷⁹ See John Loan-Clarke and John (1999, p. 307)

¹⁸⁰ See Gibb (2000, p. 13) and Morrissey and Pittaway (2006, pp. 274-275); Adams et al. (2016, p. 146)

¹⁸¹ See Adams et al. (2016, p. 146)

¹⁸² See Eriksson (2016, p. 1401)

¹⁸³ See Eriksson (2016, p. 1401)

positive impact on financial performance.¹⁸⁴ On the other hand, SME's are often forced to improve to survive, but are unwilling to invest due to a shortage of resources.¹⁸⁵

In order to provide valid and reliable findings, it's important to explain the definition of a small or medium enterprise. However, each country has its definition of SME's.¹⁸⁶ In the European Union, SME's are organizations with less than 250 employees, whereas in the United States companies with up to 500 employees are considered a small or medium enterprise.¹⁸⁷ According to the European Commission, SME's are characterized by a turnover up to a maximum of EUR 50 million, or a balance sheet total of EUR 43 million.¹⁸⁸ Purchasing department become more complicated, and interesting as companies get bigger, and therefore American standards are used. In addition, since SME's are not obliged to publish financial statements, in combination with strategic reason, this study will only use the amount of employees to determine the 'size' of the business. Therefore, for this paper, SME's are defined as companies with up to 500 employees. Companies with less than 500 employees on the relevant location, but with more than 500 employees worldwide, with a completely decentralized Purchasing policy (or management) are included in the sample. The importance of the target group is addressed by the numbers; according to Paik (2011) 99,7 % of all employer firms in the US are SME's, which employ 50% of the private sector workforce and account for 45% of the total private payroll in the country.¹⁸⁹ The United Kingdom and even the Netherlands show similar numbers. Besides the economic importance of SME's, they also are an important factor when it comes to CSR developments in supply chains.¹⁹⁰ The majority of suppliers for large organizations are formed by small or medium enterprises. Following, large organizations set CSR requirements to their SME supplier, which again expects the implementation of CSR requirements from its own suppliers.¹⁹¹

Even though SME's are often suppliers for large organizations, the lack of resources and expertise makes SME's unable to benefit from available improvement tools and techniques that larger organization offer.¹⁹² The lack of sophisticated human resource management practices may be associated with the lack of HRM specialist, but also with the

¹⁸⁴ See Adebajo et al. (2014, p. 509)

¹⁸⁵ See Adebajo et al. (2014, p. 509)

¹⁸⁶ See Paik (2011, p. 11)

¹⁸⁷ See Paik (2011, p. 11)

¹⁸⁸ https://ec.europa.eu/growth/smes/sme-definition_en

¹⁸⁹ See Bacon and Hoque (2005, p. 1976) and Paik (2011)

¹⁹⁰ See Ayuso, Roca, and Colomé (2013, pp. 505-506)

¹⁹¹ See Ayuso et al. (2013, pp. 497, 505-506)

¹⁹² See Yusof and Aspinwall (2000, pp. 31-35)

overall shortage of qualified personnel.¹⁹³ Being an SME has both advantages and disadvantages compared to larger organization when it comes to processes and strategies because of the differences in business characteristics.¹⁹⁴ Therefore, SME's should be treated differently.

2.5.2 The different nature of SME's due to business size and available resources influence their purchasing policy

In the purchasing literature, SME's have not received much attention.¹⁹⁵ However, on the other hand purchasing is not regarded as an important function in SME's either due to fear for new investments in capital, labour and equipment.¹⁹⁶ Researchers assume purchasing activities in a large organization are similar to those in SME's only in smaller scale.¹⁹⁷ Instead, according to Paik et al. (2009) numbers of research papers report significant differences in purchasing practices between SME's and larger organizations.¹⁹⁸ Not to mention that small and medium enterprises should not be regarded as a homogenous group as purchasing activities vary.¹⁹⁹ Despite the lack of attention on purchasing in SME's in the literature and the low-key focus of SME's on purchasing, several authors claim that small and medium enterprises would benefit from effective purchasing due to the higher dependence on external resources.²⁰⁰

According to Adebajo et al. (2014), innovation is one of SME's most important factors to survive in the current business climate.²⁰¹ In contrast, SME's are often unable to apply new product development projects or innovations due to the lower level of human and financial resources available to the department.²⁰² For example, small companies often have only a single person responsible for purchasing, and even if the organization is towards medium-sized, purchasing managers often are responsible for other functions within the business.²⁰³ The lack of purchasing power can explain the low priority on Purchasing, and therefore organization fail to create a strategic approach towards the purchasing function.²⁰⁴

¹⁹³ See Bacon and Hoque (2005, p. 1980) and Pullen, Weerd-Nederhof, Groen, Song, and Fisscher (2009, p. 209)

¹⁹⁴ See Yusof and Aspinwall (2000, pp. 31-32)

¹⁹⁵ See Morrissey and Pittaway (2006, pp. 274-275) and Adams et al. (2016, p. 146)

¹⁹⁶ See Perkins and Gunasekaran (1998, pp. 611-612) and Ramsay (2001, p. 261)

¹⁹⁷ See Paik et al. (2009, p. 359)

¹⁹⁸ See Paik et al. (2009, p. 359)

¹⁹⁹ See Pittaway and Morrissey (2004, p. 261)

²⁰⁰ See Pressey, Winklhofer, and Tzokas (2009, p. 214)

²⁰¹ See Adebajo et al. (2014, p. 509)

²⁰² See Nicholas, Ledwith, and Perks (2011, p. 229) Adebajo et al. (2014, p. 509)

²⁰³ See Paik (2011, p. 20)

²⁰⁴ See Zheng et al. (2004, p. 36)

Instead of playing the market and collaborating with the best suppliers, SME's often tend to buy from one trusted supplier. The main criteria in supplier selection and evaluation for SME's are still costs, quality, capabilities and reliability instead of progressive subjects like innovation.²⁰⁵ One of the main issues for the low sophistication in purchasing practices is the lack of awareness that purchasing can increase profitability and organizational performance.²⁰⁶ According to Paik (2011) the skill level of employees is the main criteria to enhance purchasing performance in SME's.

Opposite of the disadvantages, SME's are usually less bureaucratic and are more ambitious for success.²⁰⁷ As a result, they have a shorter decision-making process, less resistance to change which creates an innovation-friendly atmosphere that enables the organization to respond fast to environmental changes.²⁰⁸ A common approach for SME's is to copy the purchasing practices or strategy from larger organization which saves resources.²⁰⁹ Although SME's have considerable disadvantages in purchasing practices, they are highly involved in international purchasing.²¹⁰ The differences in organization characteristics between SME's and large organization lead to different approaches in purchasing. Together with the importance of SME's in the current economy, addresses the need for attention to SME's in purchasing research.²¹¹

3. Methodology

3.1 Research design: A multiple-case study approach in the form of interview fits the purpose of creating a portfolio of competency requirements for purchasers.

3.1.1 An explorative design consisting of a case-study

In scientific research, a distinction is made between quantitative and qualitative research methods. The most appropriate method is highly dependent on the research question(s), and previous studies in the field of interest. In this case, the study aims to identify (1) purchasing roles, (2) current purchasing skill requirements, and (3) how individuals/ organizations acquire these skills. Similar studies have used a qualitative approach to identify the most important competencies for purchasers in both the current and future state of purchasers.²¹²

²⁰⁵ See Pressey et al. (2009, p. 216)

²⁰⁶ See Pressey et al. (2009, p. 215)

²⁰⁷ See Pullen et al. (2009, p. 209)

²⁰⁸ See Nicholas et al. (2011, p. 229)

²⁰⁹ See Pressey et al. (2009, p. 215)

²¹⁰ See Knudsen and Servais (2007, p. 140)

²¹¹ See Zheng et al. (2004, p. 39)

²¹² See Tassabehji and Moorhouse (2008); Knight et al. (2014); Bals et al. (2019)

This qualitative approach seems most appropriate, since the research question will lead to a wide variety of answers. Even though there is existing literature on the subject, each respondent has a different educational- and professional background, find other competencies important, and also organizations can use numerous techniques to develop human resources. The various answers provide quantitative data that most likely does not create a clear picture of reality. For example, with a quantitative approach, it's harder to test if respondents give the same meaning to competencies. This approach also offers the possibility to explain questions, and to get into more detail. Due to limited research on purchasing competencies including contextual factors, and how people developed their competencies, this study uses an exploratory design in terms of a case study. According to R.K. Yin (2003) a case study is an empirical research which 'investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident'.²¹³ In this case, purchasing competencies, and the acquisition of skills are the phenomenon that forms the main subject for the study, and roles and business size could be the blurred boundaries that are the context. In addition, case studies benefit from theoretical propositions that could be used to guide data collection and analysis.²¹⁴ Therefore, the work of Tassabehji and Moorhouse (2008) and Bals et al. (2019) is used in the processes of defining the competencies.

3.1.2. A multiple case-study in the form of interviews to create a generalizable competency portfolio for purchasers in SME's

As explained, researchers addressed the importance of human resources in the increasingly strategic relevance of Purchasing & Supply Management. As a result, multiple studies have focused on competency requirements for purchasers in different contexts. Whereas Bals et al. (2019) used the general purchasers as a starting point, Knight et al. (2014) made a distinction by portfolio classification for purchasers in routine, tactical or strategic products based on the work of Kraljic (1983).²¹⁵ However, still only limited research has used the context of a purchasing job to define skill requirements. Also it's unclear how individuals acquire certain competencies, skills and knowledge. In this study, purchasing maturity, roles business size are contextual factors in a multiple-case study to examine skill requirements, and the acquisition of skills in the purchasing function. Pittaway and Morrissey (2004)

²¹³ See R.K. Yin (2003, p. 13)

²¹⁴ See Robert k Yin (2014, p. 17)

²¹⁵ See Kraljic (1983, pp. 112-115); Knight et al. (2014, pp. 278-281); Bals et al. (2019, pp. 1-10)

address the heterogeneity of SME's purchasing practices,²¹⁶ most likely causing a single-case study to gain invalid findings. Therefore, a multiple-case study seems to be the most appropriate approach. In more detail, for this study we've chosen to perform a semi-structured interview approach guided by a set of predefined questions. Other options included a world-café, which creates a setting to bring respondents together, and create discussions about the subjects. However, there is a big risk that respondents derive their answers from others or give similar answers, which could strongly affect results. Also, respondents could be hesitant to answer, given the possible reaction of fellow Purchasers. This while there are large differences in roles (and corresponding activities and responsibilities) between respondents in the sample group. As a result, findings are influenced heavily, and conclusions will be less valuable. Besides a multiple-case study by interviews, observations or focus groups are examples of qualitative research methods. However, these methods do not allow us to explore personal experiences or personal history. A multiple-case study in the form of interviews offers the opportunity to obtain relatively much in-depth data to answer all research questions, giving the results more power.

In addition to a semi-structured interview approach, a desk research is performed to identify Purchasing education supply in the Netherlands. Since the educational background of individuals, and Human Resource Development policy of SME's are important subjects in this research, it's necessary to examine the possibilities that the country offers to extend a persons' competencies and knowledge in the Purchasing function. Therefore, the paper makes a distinction between 'main education' and 'further education'. Main Education is public educational institutions that offer multi-year educational programs, whereas 'further education' are private institutions that often organize short courses towards a wide variety of topics. In the next paragraph, more explanation about the data collection, the units of analysis and the questionnaire is given.

3.2 Data collection: Evidence from SME's to identify competency requirements in PSM

3.2.1 A sample from SME's in the local area of the University of Twente

As mentioned before, the sample for data collection consist of purchasing professionals working for small- or medium enterprises in the local area of the University of Twente. Each respondents is working full-time in a Purchasing role, which is not always the case in SME's.

²¹⁶ See Pittaway and Morrissey (2004, p. 261)

For example, respondents could perform several roles that are, or are not, related to the purchasing function. Also, due to the focus on SMEs, the sample will consist of businesses with a maximum of 500 employees. Manufacturing firms are more likely to have a purchasing ‘department’, and thus represent most of the sample. A list of participants including additional information is found in table 2.

Sector/ Industry:	Interviewees’ role:	External Value Added:	No. of employees (local):	Size Purchasing department:
Electronics	Tactical Purchaser	High	200-250	5-10
Technology, Electronics	Supply Chain Manager (Purchasing Manager)	Low	175-225	5-10
Semiconductor	Project Buyer	High	50-100	1-3
Technology	Strategic Purchaser	Medium	300-350	1-3
Automotive	Purchasing Manager	High	250-300	10-15
Technology	Purchasing Manager	Medium	400-450	10-15
Technology, Electronics	Strategic Purchaser	Medium	450-500	15-20
Electronics	Strategic Purchaser	Medium	100-150	3-5
Furniture	Tactical Purchaser	Low	50-100	1-3
Semiconductor	Strategic Purchaser	Medium	0-50	1-3
Technology	Tactical Purchaser	Medium	200-250	3-5
Energy	Strategic/ project Buyer	Medium	450-500	15-20
Energy	Strategic Purchaser	Low	200-250	5-10
Food	Tactical Purchaser	Low	150-200	1-3

Table 2: Overview of respondents from the interviews

The role of interviewees is based on their main activities and responsibilities. That means that in some cases individuals do have some overlapping responsibilities with other roles. External value added is displayed to indicate the importance of Purchasing in the organization. Furthermore, with a view to anonymity, the number of employees and Purchasing department size is given within a range.

3.2.2 A semi-structured interview approach in order to allow follow-up, or clarifying questions

The questionnaire is used to give a basic structure to the semi-structured interviews, and has explicitly been constructed in conjunction with the theoretical background. All respondents have participated in a semi-structured interview of 30 to 60 minutes. At first, respondents are asked about their personal and professional background to gain insight in how people developed their competencies, skills and knowledge. Then, a short assessment of the purchasing maturity model is performed to create context about the maturity of the purchasing department.²¹⁷ After the assessment, the main subjects of purchasing roles, skill-sets and the acquisition of competencies in Purchasing are discussed. The interviews ends with their view on the future of purchasing. For the purpose of data analysis, the interviews

²¹⁷ See Schiele (2007, pp. 284-291)

are summarized and can be found in appendix II. Each questions is substantiated by sub-question that are meant to support respondents to give their answer to the main question.

Nr. Question text:

01)	Could you please introduce yourself and company? <ul style="list-style-type: none"> - Ethical information (Name, Age, Education) - Could you describe your professional career? (Companies, Job functions)' - In which industry or sector is your current employer active? - What is the companies' core business? - Could you describe the organizational structure? (Departments, Organization chart)
02)	How would you rate the maturity of the purchasing department? (Included in appendix I)
03)	Could you describe the purchasing department? <ul style="list-style-type: none"> - Could you describe the structure in the purchasing department? - What are the main activities/ responsibilities of the purchasing department? - What companies purchasing roles are present in the purchasing department? (List) - How are tasks distributed between roles? - What are the main responsibilities of each purchasing role?
04)	What skills, competencies and knowledge are currently important for the purchasers in the company? <ul style="list-style-type: none"> - What skills, competencies and knowledge do you need to perform your job, and why? - What skills, competencies and knowledge are important for the other purchasing roles in the department, and why?
05)	How does the organization acquire new skills, competencies and knowledge? (List) <ul style="list-style-type: none"> - Does the organization offer training/ courses for personal development? - Are there other initiatives from the organization to stimulate personal development? - Does the organization hire new permanent or temporary personnel to acquire new skills, competencies and knowledge? - Does the organization outsource certain processes to acquire new skills, competencies and knowledge?
06)	Do you think firm size (SME) affects the skill, competency and knowledge requirements of purchasers? <ul style="list-style-type: none"> - How does smaller firm size affect skill, competency and knowledge requirements for purchasers? - How can purchasing departments in SME's learn from larger organizations?
07)	What changes do you expect in the future for the purchasing department? <ul style="list-style-type: none"> - Which purchasing roles are present in the future purchasing department? - What developments do you think will affect the future purchasing department? - How do changes to the future purchasing department affect skills, competency and knowledge requirements for purchasers according to you?
08)	Are you open to verify the summarization of the interview to confirm findings?

Table 3: Questionnaire for semi-structured interview

After summarizing and analysing the interviews, each respondent is asked for conformation of the results to ensure validity and reliability of findings.

3.3 Several measures are taken to increase reliability and validity of results

In order to maximize reliability and validity, measures taken to ensure high quality of the research are shown in table 4.

Requirement	Measures
Internal validity	<ul style="list-style-type: none"> - A test-interview to ensure that each case is analysed equally - Build a theoretical construct based on multiple studies
External validity	<ul style="list-style-type: none"> - The use of multiple cases to acquire findings applicable to other cases
Reliability	<ul style="list-style-type: none"> - A questionnaire to ensure equality among cases
Validity	<ul style="list-style-type: none"> - Control questions are used to confirm that findings reflect what is intended by the interviewee

Table 4: Measures to ensure validity and reliability

Similar to the questionnaire, the measures taken for this study are similar to prior research in purchasing research.²¹⁸ For example, since earlier identified competencies support the identification of future findings, control questions are used to confirm a right interpretation of the interviewees intentions. A high-level of reliability and validity is essential for the applicability and usability of results for this study. Therefore, a test-interview was conducted to prevent mistakes in the first couple of interviews. In addition, control questions and confirmation after summarization of the interviews are measures to fix possible errors.

3.4 Interviews are coded based on prior research to ensure comparability

As mentioned before, lists of purchasing competencies identified in prior research are used to identify this study results.²¹⁹ This approach increases the comparability of findings to similar research. Atlas.ti software program is selected as the most appropriate software program to code interviews, based on recommendations from professionals. At first, each interview is coded analysed individually before identifying general findings from multiple-cases. Findings are based on the number of times competencies or roles are coded in combination with the perceived importance by respondents. In chapter four, all results from the cases are presented, whereas the main findings can be found in the conclusion. Limitations to the data collection are described in the discussion.

²¹⁸ See Bals et al. (2019, p. 13)

²¹⁹ See Tassabehji and Moorhouse (2008) and Bals et al. (2019)

4. Results: Low maturity shows SME's are not able to utilize possibilities in the Purchasing function

4.1 The majority of Purchasers do not start their educational- and professional career in Purchasing

In order to answer the first research question, concerning people's educational background, it's important to identify the supply of Purchasing education in the Netherlands based on desk research. Among general education in the country, only a single full-time program is focused on Purchasing & Supply Management. This course is organized by the University of Twente, and covers several aspects of the discipline.²²⁰ Some Universities of Applied Sciences, and regular Universities offer programs in which procurement is part of the subject. However, the contribution is very limited.²²¹ For example, the University of Tilburg included a 'Purchasing Management' course in their Supply Chain Management Master program.²²² Furthermore, in some cases, Purchasing is included in Logistics education.

Besides regular education, NCOI, ISBW, LOI, NHA, ICM are training institutes that organize recognized education on different levels, for several subject among which Purchasing.²²³ These institutions are focused on the practice-oriented development of professionals.²²⁴ The supply of educational programs (derived from their website) per institution can be found in table 5.

Institution:	NCOI	Level:	Duration	Work load (In-class/ homework):	Price:
LOI	Purchasing Management	Bachelor – University of Applied Sciences level	2 Months	0/ 108 hours	€817,25
NCOI	Purchasing Management	In-between Post – Vocational Education and Bachelor – University of Applied Sciences level	1 Year	54/ 45 hours	€3095,-
	Purchasing Management	Bachelor – University of Applied Sciences level	1 Year	48/ 56 hours	€3365,-

²²⁰ See <https://www.utwente.nl/en/education/master/programmes/business-administration/specializations/purchasing-supply-management/>

²²¹ See <https://www.tilburguniversity.edu/education/masters-programmes/supply-chain-management/program>

²²² See <https://www.tilburguniversity.edu/education/masters-programmes/supply-chain-management/program>

²²³ See https://www.isbw.nl/opleidingen/inkoopmanagement.htm?gclid=Cj0KCQiA9P__BRCOARIsAEZ6irgF-qUytzsDrZx2KUzYGZA8dMTifi4AIAGs53aiSjAX6YHIBGDNdDcaAhpQEALw_wcB&gclsrc=aw.ds; <https://www.ncoi.nl/opleidingen/Inkoop.html>; <https://www.loi.nl/logistiek-inkoop-en-transport>; <https://www.icm.nl/opleidingen-en-trainingen/sales/professioneel-inkopen/>;

²²⁴ See <https://www.ncoi.nl/ncoi-opleidingen-en-trainingen.html>

	Contract Management	Bachelor – University of Applied Sciences level	1 Year	18/ 21 hours	€1675,-
	Demand Management	Bachelor – University of Applied Sciences level	1 Year	24/ 28 hours	€2065,-
	Supplier Management	Bachelor – University of Applied Sciences level	1 Year	48/ 56 hours	€3365,-
	Business Administration – Specialization Purchasing Management	Master Degree – University level (Recognized degree)	2 Years	348/ 1342 hours (60 EC)	€20880
ISBW	Business Administration – Specialization Purchasing Management	Bachelor – University of Applied Sciences (Recognized degree)	4 Years	6720 hours total, (240 EC's, 28 hours per EC)	€16770
	Purchasing- & Contract Management	Bachelor – University of Applied Sciences level	6 Months	42/ 42 hours (16 EC)	€2445,-
	Purchasing- & Contract management (Practical Training)	Bachelor – University of Applied Sciences level	6 Months	36/ 30 hours	€2445,-
	Basics of Purchasing	Post – Vocational Education level	6 Months	30/ 25 hours	€2140,-
NHA	Purchaser	In-between Post – Vocational Education and Bachelor – University of Applied Sciences level	6 Months	0/ 108 hours	€449,-
ICM	Professional Purchasing	-	2 Days	0/ 108 hours	€449,-
	Negotiations	-	3 Days	24 / 0 hours	€1395,-

Table 5: Purchasing focused educational programs provided by private institutions

In table 5. only Purchasing related education or trainings are included. In addition to these programs, all institutions offer a wide range of programs that could improve the thinking level of individuals. Subjects for each course are not included in this table, since each course is fairly similar, and this would be at the expense of clarity. The table does provide information such as duration, workload (in-class and homework), and price to create some more context to the level of these educational programs. From the findings, a number of observations stand out. Firstly, most programs do not relate to main education by using European Credits (EC's), but instead offer a degree that is specific to the institution. Each institution (LOI, NCOI, ISBW, NHA and ICM) offer some (not all) educational programs with a degree that is recognized by The Ministry of Education, Culture and Science, or NVAO.²²⁵ Both the Ministry of Education, Culture and Science and NVAO are public

²²⁵ See <https://www.ncoi.nl/erkende-kwaliteit.html>; <https://www.isbw.nl/opleidingen/hbo-opleidingen.htm>; <https://www.loi.nl/over-de-loi/erkende->

entities that monitor the level of education.²²⁶ With a ‘recognized degree’ is also meant that the effort that people have to put in, is similar to education at a University of Applied Sciences or regular University. This gives an indication of the educational value of these programs (or institutions). It’s important to note that most of the programs in table 5. are not recognized degrees.

Secondly, it’s important to explain that most courses should not be compared with main education. Based on duration and workload, they should be compared with trainings or workshops focused on specific subjects in a field. Compared to main education, prices are relatively high for programs at these institutions, when taking duration/ workload into account. However, it can be assumed that differences in price are a result of the nature of organizations, public organization for main education, to private institutions with profit motive. Thirdly, private institutions also offer education without classroom training but instead offer online teaching materials. Besides this option, most trainings are designed to participate in, in addition to a regular full-time job. The amount of people that participate in the educational programs summarized in table 5. is unknown.

In addition to general training institutions, ‘NEVI’ and the ‘InkoopAcademie’ are organizations exclusively focused on the Purchasing function.²²⁷ The InkoopAcademie is a training institution that organizes education, trainings and workshops for Purchasing professionals in the Netherlands.²²⁸ The programs are a combination between web-based learning and classroom-led training.²²⁹ NEVI is an association, that provides a knowledge network for professionals in the field of Purchasing & Supply Management.²³⁰ With a network of over 10.000 Purchasing professionals, the association intends to bring people together to develop their knowledge in the function. Therefore, NEVI organizes education, trainings and network meetings or conferences to share (Purchasing) knowledge.²³¹ The education and trainings are focused on several different subjects, and are summarized in table 6.

[kwaliteit#:~:text=Alle%20HBO%2Dbachelor%2D%20en%20masteropleidingen,kwaliteitsstandaarden%20en%20internationaal%20erkend%20is.;](#) <https://www.nha.nl/studeren-bij-nha/officieel-erkend-diploma>

²²⁶ See <https://www.nvaio.net/en/about-us>; <https://www.rijksoverheid.nl/ministeries/ministerie-van-onderwijs-cultuur-en-wetenschap>

²²⁷ <https://www.inkoopacademie.nl/>; See <https://nevi.nl/over-nevi>

²²⁸ <https://www.inkoopacademie.nl/info/>

²²⁹ See <https://www.inkoopacademie.nl/strategisch-adviseren/>

²³⁰ See <https://nevi.nl/over-nevi>

²³¹ See <https://nevi.nl/over-nevi>

Institution:	NEVI	InkoopAcademie
Education, Courses, Subjects	NEVI I – 1 year (Public or Private) <ul style="list-style-type: none"> - Purchasing Process (Choose Public or Private focus) <ul style="list-style-type: none"> o Added value of Purchasing o Supplier Management o Sourcing Strategy o Supplier Selection & Contracting o Contract Management - Negotiations <ul style="list-style-type: none"> o Preparation o Negotiation tactics o Personal Style o Intercultural Negotiations - Personal effectivity <ul style="list-style-type: none"> o Active Listening o Career Management o Time Management o Bad-News Conversations 	Contract Management – 6 weeks <ul style="list-style-type: none"> - Purchasing Introduction - Contract Management - Stakeholder Identification - Market Research - Purchasing Strategy - Costs (KPI's) - Supplier Selection - Quotation Process - Contracting
	NEVI II – 2 year (Private) <ul style="list-style-type: none"> - Purchasing Process Advanced <ul style="list-style-type: none"> o Formulate Purchasing Strategy o Complex Quotations - Cost Management <ul style="list-style-type: none"> o Types of Cost Reduction Processes o Cost Models - Personal Effectivity 2 <ul style="list-style-type: none"> o Conversation Techniques o Conflict Solving - Negotiations <ul style="list-style-type: none"> o Negotiation Strategies o Negotiation Phases - Corporate Social Responsibility (CSR) <ul style="list-style-type: none"> o CSR Implementation o Quality Marks - Project- and Risk management <ul style="list-style-type: none"> o Risk Analysis o Stakeholder Management - Contract- and Supplier management (CSM) <ul style="list-style-type: none"> o Importance of Supplier Management to achieve goals o CSM and Purchasing Maturity 	Purchasing Practice A – 7 weeks <ul style="list-style-type: none"> - Stakeholder Identification - Market Research - Purchasing Strategy - Supplier Selection - Quotation Process - Negotiations - Contracting - Contract Management - Supplier Management
	NEVI II – 1,5 year (Public) <ul style="list-style-type: none"> - Tendering 1 and 2 - Project- and Risk Management - Communication and Negotiation - Personal Efficiency and Development 	Purchasing Practice B – 6 weeks <ul style="list-style-type: none"> - Developments and Employees - Purchasing Model - Value & Supply Chains - Purchasing Roles and Responsibilities - Purchasing Policy - Ethics - Decision Making - Purchasing Result - Purchasing Improvements
	Contract- and Supplier Management (3 Months)	Category Management
	Procurement Leadership Program (9 Months)	
	Purchasing and Logistics Employee (3-5 Months)	
	Artificial Intelligence in Purchasing	Purchasing Marketing
Trainings	Circular Purchasing	Purchasing with Neurolinguistic Programming
	Driving Results through Innovation Leadership	
	Tactical Purchasing	
	International contracting	

Table 6: Educational programs by Institutions specialized in Purchasing education (NEVI and InkoopAcademie)

In the table, the main educational programs per institution are described in detail with the program's name, courses and subjects within the courses. In addition, less relevant programs, in which fewer Purchasers participate, are not described in the same detail. At last, training programs with a duration from one up-to three days can be found at the bottom of Table 6. These trainings are not further specified by the institutions. Based on findings from the research, in combination with desk research, NEVI seems to be the more advanced institution in the Purchasing field. This is because the number of participant in the research with a NEVI degree is significantly higher than individuals with a InkoopAcademie degree.

After providing insight into the range of Purchasing-related training courses, the results of interviews are used to gain insight into Purchasers' (from SME's) actual educational background. The level and subject of education, in combination with work experience, could create insight in the personal development of Purchasers. At first, the highest level of education of Purchasers, before entering the overall Purchasing function, is used to describe a person's educational background. In addition, courses and trainings related to their functioning in Purchasing are included. Table 3 shows the level- and subject of education for each respondent. For context, interview summaries can be found in appendix III.

Interviewees' role:	Main education level:	Educational direction:	Additional courses/ trainings:
Tactical Purchaser	Master (University)	Purchasing	-
Supply Chain Manager (Purchasing Manager)	Bachelor (University of Applied Sciences)	Technical	-
Project Buyer	Bachelor (University of Applied Sciences)	Commercial	-
Strategic Purchaser	Bachelor (University of Applied Sciences)	Purchasing	InkoopAcademie – 'Purchasing Practice B' Strategic
Purchasing Manager	Master (university)	Commercial	-
Purchasing Manager	Post-Vocational Education	Commercial	Lean Six Sigma (green belt)
Strategic Purchaser	Pré-University Education	-	NEVI I & NEVI II
Strategic Purchaser	Bachelor (University of Applied Sciences)	Commercial	NEVI I
Tactical Purchaser	Bachelor (University of Applied Sciences)	Logistics	-
Strategic Purchaser	Bachelor (University of Applied Sciences)	Commercial	NEVI I
Tactical Purchaser	Post-Vocational Education	Logistics	NEVI I & NEVI II
Strategic/ project Buyer	Bachelor (University of Applied Sciences)	Facility	NEVI I
Strategic Purchaser	Master (University)	Purchasing & Logistics	NEVI I & NEVI II
Tactical Purchaser	Post-Vocational Education	Commercial	NEVI I & NEVI II

Table 7: Educational background of respondents

The results of the research show that almost all Purchasers have at least a college degree. To be more specific, most Purchasers, 10 out of 14, has finished a bachelor's degree from a University of Applied Sciences or higher. That could suggest that individuals need a certain level of work- and thinking level in order to suitable for a Purchasing position. On the other hand, the results do not show a direct relationship between education level, and the level of responsibilities a Purchaser gets. Secondly, only three respondents have finished education directly related to Purchasing. Based on the sample, most Purchasers seem to have a commercial educational background with subjects such as Business Administration or Commercial Economics. Thereafter, an educational background in Logistics is common. At last, the results show that NEVI education is often part of a buyer's resume. A common theme in the interviews was the lack of Purchasing education, courses or trainings. Also, most Education, with the exception of Purchasing Management education, have a very limited focus on the Purchasing function. This could be the reason why half of the sample (7 out of 14) have finished at least one NEVI course.

Table 5 shows the professional roles that respondents performed outside, and the Purchasing function in chronological order. The work experience is established by the nature of the job, with regard to the corresponding activities and responsibilities. In addition, work experience is split based on the business size. The current job of respondents is not included in the work experience.

Interviewees' role:	Work Experience (before current job):
Tactical Purchaser	- Tactical Purchasing – Large Organization
Supply Chain Manager (Purchasing Manager)	- Production/ Engineering Manager – Small or medium- sized Organization - Supply Chain Manager – Several small or medium- sized Organizations
Project Buyer	- Sales - Operative Procurement – Small or medium-sized Organization
Strategic Purchaser	- Operative Procurement – Large Organization - Tactical/ Strategic Purchasing – Several small- or medium- sized Organizations - Purchasing Manager – Several small- or medium sized Organizations
Purchasing Manager	- Sales, Logistics, Purchasing (Supply Chain) – Small- or medium sized Organization - Operative, Tactical, Strategic and Manager Purchasing – Several small- or medium sized organization - Strategic, Manager Purchasing – Large Organization
Purchasing Manager	- Sales - Logistics - Operative Procurement – Small- or medium sized Organization - Operative, Tactical, Strategic Purchasing – Large Organization
Strategic Purchaser	- Production - Operative, Strategic and Manager Purchasing – Several small- or medium sized Organizations - Operative, Strategic and Manager Purchasing – Several large Organizations
Strategic Purchaser	- Administration - Operative, Tactical Purchasing – Large Organization - Strategic Purchasing – Small- or medium sized Organization
Tactical Purchaser	- Logistics - Operative Procurement – Small- or medium sized Organization

Strategic Purchaser	- Planning - Operative, Tactical, Strategic Purchasing – Large Organization
Tactical Purchaser	- Logistics - Operative, Tactical, Strategic Purchasing – Small- or medium sized Organization - Operative, Tactical Purchasing – Several Large Organizations
Strategic/ project Buyer	- Operative, Tactical Purchasing – Large Organization
Strategic Purchaser	- Public Procurement – Several Public Organization
Tactical Purchaser	- (Manager) Logistics - Operative Procurement – Several Small- or medium sized Organizations

Table 8: Overview of professional backgrounds from respondents

Based on the findings of the interviews, the majority of Purchasers did not start their career in the Purchasing function. Instead, multiple respondents have progressed within an organization to Purchasing. Thereafter, people seem to develop themselves within the Purchasing function. A large majority of the sample starts within an Operative Procurement role, after which they grow into other roles, responsible for tasks such as negotiations, contracting or even for creating a strategic policy for the Purchasing department. Finally, half of the respondents is introduced to the Purchasing profession in a small- or medium sized organisation. In addition, the remaining majority was introduced into a Purchasing role in a large organization. Only a single Purchaser started in a Public Procurement role.

4.2. SME's often combine Purchasing roles into a single position, built with activities and responsibilities from different 'levels of Purchasing'

For the purpose of the second research question, the purchasing roles that exist in SME's are identified. Findings have been determined using purchasing roles identified by existing literature, in combination with new roles. Not only Purchasing roles described by the organization (present on paper) are included, but also roles are identified based on the activities and responsibilities of employees. In addition, Purchasing roles are determined only based on responsibilities within the Purchasing department. In case a Purchasing related process was performed outside the department, then it was not included in the findings. Table 5. provides an overview of the Purchasing Roles that are active in each organization.

Organization:	No. of employees (local):	Active Purchasing Roles:
Organization A.	- 200-250	- Operative Procurement – Direct Materials - Operative Procurement – Indirect Materials - Tactical Purchaser - Strategic Purchaser - Chief Purchasing Officer
Organization B.	- 175-225	- Operative Procurement – Direct Materials - Operative Procurement – Indirect Materials - Tactical Purchaser - Strategic Purchaser - Chief Purchasing Officer - Technical Purchaser
Organization C.	- 50-100	- Operative Procurement – Direct Materials - Tactical Purchaser

Organization D.	- 300-350	<ul style="list-style-type: none"> - Operative Procurement – Direct Materials - Tactical Purchaser - Strategic Purchaser - Chief Purchasing Officer
Organization E.	- 250-300	<ul style="list-style-type: none"> - Operative Procurement – Direct Materials - Operative Procurement – Indirect Materials - Tactical Purchaser - Strategic Purchaser - Chief Purchasing Officer
Organization F.	- 400-450	<ul style="list-style-type: none"> - Operative Procurement – Direct Materials - Operative Procurement – Indirect Materials - Tactical Purchaser - Strategic Purchaser - Chief Purchasing Officer - Technical Purchaser
Organization G.	- 450-500	<ul style="list-style-type: none"> - Operative Procurement – Direct Materials - Operative Procurement – Indirect Materials - Tactical Purchaser - Strategic Purchaser - Chief Purchasing Officer - Technical Purchaser
Organization H.	- 100-150	<ul style="list-style-type: none"> - Operative Procurement – Direct Materials - Tactical Purchaser - Strategic Purchaser - Chief Purchasing Officer - Assistant Buyer
Organization I.	- 50-100	<ul style="list-style-type: none"> - Operative Procurement – Direct Materials - Operative Procurement – Indirect Materials - Tactical Purchaser
Organization J.	- 0-50	<ul style="list-style-type: none"> - Operative Procurement – Direct Materials - Tactical Purchaser - Strategic Purchaser - Chief Purchasing Officer
Organization K.	- 200-250	<ul style="list-style-type: none"> - Operative Procurement – Direct Materials - Tactical Purchaser - Strategic Purchaser
Organization L.	- 450-500	<ul style="list-style-type: none"> - Operative Procurement – Direct Materials - Operative Procurement – Indirect Materials - Tactical Purchaser - Strategic Purchaser - Chief Purchasing Officer - Assistant Buyer
Organization M.	- 200-250	<ul style="list-style-type: none"> - Operative Procurement – Direct Materials - Operative Procurement – Indirect Materials - Tactical Purchaser - Strategic Purchaser - Chief Purchasing Officer
Organization N.	- 150-200	<ul style="list-style-type: none"> - Operative Procurement – Direct Materials - Tactical Purchaser

Table 9: Purchasing roles per organization

With regard to Purchasing roles identified by Schiele (2019) and Mulder et al. (2005)²³², findings show several differences. Most organizations split Purchasing activities and responsibilities based on different levels in the function: Operative, Tactical, Strategic and Management. Each level is responsible for certain tasks, which are very similar between companies. In every organization Operative Procurement was part of the process, which presents the ordering process in combination with monitoring the delivery process. Most of

²³² See Mulder et al. (2005, pp. 185-204) and Schiele (2019, pp. 53-54)

the respondents explained a clear distinction between ordering direct- or indirect materials. In some cases (4 out of 14), this distinction was not only made in Operative Procurement, but also in other levels of Purchasing. However, besides a distinction between indirect- and direct materials, respondents also indicated a split between project-based- and process (or structural) Purchasing. This is worth mentioning because it affects the nature regarding activities and responsibilities of the role. In addition, Tactical- and Strategic Purchasers are common roles in the Purchasing department of small- and medium enterprises. All organization explained a Tactical Purchasing role, whereas only 11 out of 14 companies had a specific role which was responsible for the strategic level of Purchasing. Strategic Purchasers are concerned with creating, and monitoring the department's strategic policy, and managing strategically important relationship with suppliers. Thereafter, Tactical Purchasers are often responsible for supplier selection, negotiations and contracting towards the rest of the suppliers.

Furthermore, 10 out of 14 organizations have an employee responsible for organizing the Purchasing department, and providing leadership to Purchasers. This role is also concerned with the strategic policy of the department. However, according to the definition of Chief Purchasing Officer as stated by Schiele (2019), a CPO represents the Purchasing function in the board of directors.²³³ This is not always the case in SME's. Instead, SME's have a Purchasing role that is responsible for organizing the department, creating/maintaining a strategic policy and leadership, which is often named a 'Purchasing Manager' or 'Supply Chain Manager' role. A Supply Chain Manager is responsible for multiple departments in an organization, which often includes Purchasing. For the purpose of the research, the 'Purchasing Manager' and 'Supply Chain manager' roles are included into the definition of Chief Purchasing Officer, as they only sometimes lack a position in the board of directors.

The findings show a limited distinction between Purchasing Roles. Even in the larger Purchasing departments from the sample, Purchasing roles were not divided based on specific responsibilities. Instead, almost every organizations divide responsibilities for each role based on Purchasing level, product groups, groups of suppliers and project- or process-based Purchasing. Remarkable is the observation that most organizations choose to accommodate the ordering process for indirect-materials outside the Purchasing department.

²³³ See Schiele (2019, pp. 53-54)

At last, results seem to confirm claims from the literature, which state that small- or medium enterprises often combine several Purchasing roles. Most common are combinations between Operative & Tactical Purchasing, and Strategic Purchasing & CPO.

4.3. The importance of soft skills among skill requirements that differ for each Purchasing role

After identifying Purchasing roles in the second chapter, the third research question investigates current skill requirements for Purchasers in SME's. According to multiple respondents, the competency and knowledge requirements for Purchasers is heavily dependent on the nature of the role: industry in which the company is active, business size, and activities & responsibilities. Table 6. shows a top five of skill requirements, that Purchasers in general experience to be most important.

Nr.	Competency Requirement:
1.	Communication Skills
2.	Analytical Skills
3.	Self-confidence
4.	Negotiation
5.	Curiosity

Table 10: Top five competency requirements for Purchasers in general

However, table 6. does not include context of Purchasing role. Therefore table 7. summarizes competency requirements for Purchasers per role. In both table 6. and table 7. the top five is based on the number of respondents that indicated a certain competency to be necessary for their work. In case a person performs multiple roles, their role is based on the main activities & responsibilities for the relevant function.

Nr.	Competency Requirement:		
	1. Tactical Purchaser	2. Strategic Purchaser	3. CPO
1.	Communication Skills	Communication Skills	Communication Skills
2.	Negotiation	Analytical Skills	Analytical Skills
3.	Self-confidence	Curiosity	Change Management
4.	Basic Knowledge on PSM role	Self-confidence	Leadership
5.	Computer Literacy	Critical Thinking	Conflict Resolution

Table 11: Top five competency requirements for Purchaser per role

In case of the Tactical Purchaser category, a number of competencies are equally important. Therefore, a respondents who is partly responsible for Tactical Purchasing is included. The findings show significant differences between each role. However, respondents addressed the importance of communication skills for all Purchasing roles. 'Communication skills are important for Purchasers in order to be able to represent the company in a good way towards both suppliers and (internal) customers'. In contrast to results in existing literature on

competency requirements for Purchasers, self-confidence is perceived among the most relevant competencies for Purchasers in general. Respondents refer to self-confidence by having the guts to engage (and initiate) in negotiation-, and evaluation processes with suppliers.

Furthermore, most respondents perceived ‘Basic Knowledge on the PSM role’ and ‘Product Knowledge’ (often described as affinity with technology) to be helpful, but not necessary to start in their role. For that reason, curiosity is present on top of the competency requirements list. Multiple respondents have indicated that individuals can compensate for their lack of PSM- and Product Knowledge, by being curious to learn about products and Purchasing processes. Some interviewees added ‘Learning Agility’ to this statement, which is important to be able to understand information quickly. In the CPO category, competencies that are related to leadership and management activities become more relevant than Purchasing skills. Overall, findings suggest that soft skills seem to be more important than hard skills, which is in line with earlier findings described in the second chapter.

4.4. Small- and medium enterprises do not seem to have a clear vision of the development of human resources in the organization on behalf of their performances

The fourth, and last research question is concerned with the methods organizations use to acquire new competencies and knowledge in the Purchasing department. Since literature explains a lack of qualified personnel among industries, personal development could help to improve the level of competencies, and knowledge for individuals. Therefore, a number of techniques were identified in the existing literature, which is used to assign development techniques to the department. Interviews for this research showed a clear split between education/ trainings for general competency development, and Purchasing related development. Often, SME’s do organize general trainings with regard to subjects such as sustainability and safety, but there does not seem to be focus on the development of individuals to a certain function. Also, this research makes a distinction between structural, and non-structural policy. In case of non-structural policy, individuals have to initiate personal development processes themselves, in which the organization plays a supportive role. Structural policy on the other hand, means the organization has a pre-defined development plan.

Findings show that only 2 out of the 14 companies have some kind of structural policy towards employees’ personal development. In both cases, the structural policy was designed by means of its own academy. Therefore it’s important to note that, again both

companies, are part of a larger organizations that operates worldwide. Also, the academy provides classroom-led training, that is focused on overall business, competencies, and knowledge, which is not directly related to Purchasing. That means that even though these organizations have some type of structural policy on personal development, there is no policy with the purpose to continuously improve the Purchasing department. Looking at the overall policy on personal development, almost every respondent (13 out of 14) explained that their organization has made a budget available on collective, or individual level, in order to acquire new competencies and knowledge. However, organizations expect individuals to take the initiative to participate in education, courses of trainings themselves. Some organizations stimulate this more than others. In some cases, companies do hold trainings on collective level to acquire new skills. But again, no focus on the Purchasing function. Remarkable is the fact that respondents often only mention internal or external classroom-led training, which is in some cases web-based. Almost no other initiatives for personal development in, or outside Purchasing were identified. Only two respondents explained workshops that enable individuals to share knowledge with colleagues or external parties such as suppliers. One of these respondents mentioned that the organization annually organizes meetings with a couple of suppliers to share knowledge about the products and business to improve collaboration. Besides classroom-led training, visiting fairs related to the product or services of the organization is the most common method to acquire knowledge in Purchasing. According to respondents, fairs enable individuals to connect with customers & suppliers, and provide insights into the market developments. Although fairs could be useful in order to acquire knowledge, the organization does not gain (soft) skills, which are of big importance according to the findings for this research in combination with existing literature. Also, the policy on Purchasers visiting fairs is not structural, but based on the initiative of individuals. Furthermore, a few respondents mentioned that their organization hires new personnel, on a temporary or permanent basis, which helps them to acquire new skills. Only a single respondents stated that the department pays close attention, and does a good job, to acquire the skills that the Purchasing department needs in the recruitment process.

In contrast to the reactive behaviour of SME's towards this subject, several respondents explicitly claimed that they would like to apply a more structural approach on both individual, and collective level of development. According to Purchasers, a collective approach would be easier to implement, and has effect a broader effect on the organization.

One of the respondents, a Strategic Purchaser, suggested a approach in which Purchasing discusses on regular basis about the needs of the department, and what the collective, or individuals need to achieve its goals. On the other hand, three respondents addressed differences in needs towards competencies between individuals, and therefore preferred an individual approach. These recommendations could suggest that the current policy on personal development, and acquiring new competencies or knowledge on behalf of organization, in SME's is insufficient.

4.5. Small- and medium enterprises score low on maturity due to a narrow vision on the Purchasing vision

In addition to the four research sub questions, Purchasing maturity represents a critical factor for answering the main question. The literature describes several characteristics of small- and medium enterprises that indicate a low maturity in their Purchasing department. Therefore, this research performed an analysis based on the Purchasing Maturity Model by Schiele (2007) in order to measure the maturity of processes in the Purchasing department of SME's. Due to limited time availability, the Maturity assessment has been shortened to ten items. Table 8. provides an overview of the results of the maturity assessments for this research.

Organi- zation:	No. of employees (local):	Purc. Stra.	Asses. Dem.	Proc.	Tech. Iden.	Org. Struc.	Boar. Part.	Sour. Stra.	Impr. Mark.	Orde.	Tar. Bre.	Total
A.	200-250	1.0	11.0	6.0	2.0	8.0	14.0	6.0	1.0	9.0	11.0	69.0
B.	175-225	8.0	12.0	11.0	7.0	12.0	16.0	6.0	6.0	14.0	9.0	101.0
C.	50-100	2.0	6.0	6.0	4.0	6.0	1.0	1.0	1.0	9.0	6.0	42.0
D.	300-350	3.0	3.0	6.0	2.0	11.0	14.0	3.0	6.0	3.0	11.0	62.0
E.	250-300	8.0	13.0	12.0	6.0	14.0	14.0	8.0	8.0	14.0	14.0	111.0
F.	400-450	9.0	14.0	6.0	6.0	14.0	14.0	11.0	7.0	14.0	12.0	107.0
G.	450-500	9.0	13.0	9.0	6.0	14.0	18.0	12.0	6.0	14.0	11.0	112.0
H.	100-150	6.0	2.0	6.0	1.0	6.0	16.0	4.0	6.0	8.0	12.0	67.0
I.	50-100	1.0	3.0	6.0	1.0	6.0	1.0	3.0	2.0	8.0	1.0	32.0
J.	0-50	1.0	2.0	1.0	1.0	1.0	13.0	3.0	1.0	1.0	3.0	27.0
K.	200-250	8.0	13.0	13.0	11.0	14.0	3.0	6.0	8.0	12.0	13.0	101.0
L.	450-500	8.0	8.0	3.0	1.0	14.0	20.0	9.0	7.0	15.0	11.0	96.0
M.	200-250	13.0	9.0	12.0	3.0	7.0	3.0	12.0	8.0	7.0	12.0	86.0
N.	150-200	4.0	7.0	8.0	1.0	9.0	4.0	6.0	8.0	5.0	3.0	55.0
Total:	-	81.0	116.0	105.0	52.0	136.0	151.0	90.0	75.0	133.0	129.0	1068.0

Table 12: Purchasing Maturity assessment per organization

In total, organizations were able to get 200 points at maximum, 20 points for each category. The assessment shows an average of 76,29 points per organization in total, of which exactly half of the sample under average, and the other half above average. To provide more detail, the total points per category for all organizations are included in Table 8. Given the overall average of 76,29 points per organizations, findings seem to confirm a low maturity among SME's. However, differences between categories are large. Whereas the full sample scores less than 4 points on average regarding technology identification in Purchasing, the board participation is significantly higher with an average of 10.79 per department. Across categories, differences between organizations are quite large. In two cases, two more mature Purchasing departments, the respondent stated that their product/ industry forced the department to create standard processes and structures.

As can be seen in Table 8, board Participation is the highest scoring item across assessments. However, the lower number of layers in small- and medium enterprises compared to large organizations, combined with merging several roles into a single-role, could explain the reason for this. In many organizations, the leader of the Purchasing department was a 'Supply Chain Manager', who is responsible for multiple departments. As a result of more, and broader responsibilities, it could be more likely for a Supply Chain Manager to be part of the management team compared to 'Purchasing Manager'. On the other hand, Technology Identification and 'Preferred Customer Status', items at which SME's in the sample score lowest at, are subjects who are introduced into Purchasing literature fairly recently. Findings from the assessments indicate that small- and medium enterprises have not yet adopted them into their Purchasing policy. One respondent even addressed that SME's are way slower in their adoption of new technologies and techniques/ processes.

According to this research, The Maturity assessment results seem to be in line with the low mature processes in the management of human resources in Purchasing. Most organizations in the sample, score the majority of their points on more traditional Purchasing processes such as ordering, target breakdown and organisational structure. In practice, most organizations only show developments in limited aspects of the Purchasing function. Based on findings, SME's do not seem to recognize Purchasing to be of strategic importance. This does seem to improve as the organizations grow, since the five smallest organizations also have the lowest score, whereas the larger organizations are among the highest scores. This

suspicion is reinforced by 6 respondents, who claimed that SME's could learn from the standard processes and structures of larger organization.

5. Conclusions & Discussion: Organizations should improve Human Resource Development processes in order to continuously improve Purchasing Maturity

5.1 Results show a lack of focus on Human Resource Development in Purchasing, which keeps companies from making the most of its potential

In order to answer the research question 'How to shape purchasing maturity within SME's by defining purchasing roles and assigning competencies?', 14 interviews with Purchasing professionals are interviewed. Each respondents is currently working in a Purchasing role for a small- to medium manufacturing organization, near the University of Twente. With desk research and a semi-structured interview approach, answers were sought for four sub-questions in order to answer the main research question. The questionnaire was focused on identifying the educational, and professional background of respondents, Purchasing roles, skill requirements per role, and identifying techniques/ initiatives to develop human resources in Purchasing. Therefore, the paper also takes a look at the supply of Purchasing education in the Netherlands.

Findings show that only a limited number of respondents has an educational background in Purchasing. Two out of three respondents with a Purchasing background finished the Purchasing & Supply Management Master Degree at the University of Twente. The fact that both respondents live close to the University of Twente could very well have affected their choice for Purchasing education, and is therefore very likely to be less representative for the rest of the country. This argument is strengthened by the observation that the University of Twente is the only institutions that offers general education focused on Purchasing. In conclusion, most people did not have education in Purchasing before entering the function, and therefore had to acquire the skills and knowledge about the field themselves. In addition, findings indicated that most people currently working in Purchasing did not start their career in Purchasing, but instead have progressed within a company to such a position. After that, several respondents have been promoted from Operative Procurement, towards Tactical, Strategic or Management positions in the function. The observation that most people do not start their career in Purchasing could be caused by the fact that not many people are introduced to the field during their education. The lack of educational background in Purchasing could explain why a relatively high percentage of the respondents finished a NEVI course. The NEVI association organizes courses, trainings and

meetings, which are among the most recognized Purchasing education in the country. NEVI I and NEVI II courses are very suitable for Purchasing professionals that want to improve their skills and knowledge in the function. However, NEVI courses are not main educational programs, but instead courses which people follow besides their job. Because of the limited supply of Purchasing education, and the fact that few people start in the profession, all the more important is to continuously develop Purchasing employees in order to keep up with technological, and social changes.

Furthermore, interviewees were asked to define Purchasing roles within the organization. Results from the interviews show the following Purchasing roles in small- and medium enterprises:

- *Operative Procurement*: Operative Buyers (Procurement) are concerned with placing orders and organizing & monitoring delivery processes. Thereby they are the first point of contact for suppliers, and are therefore an important aspect in the buyer-supplier relationship.
- *Tactical Purchasing*: Tactical Purchasing is one step higher in terms of activities and responsibilities than Operative Procurement. Purchasers in a tactical role are responsible for market analysis, to find the best supplier for each product, part of material. Also, Tactical Buyers select suppliers for most items, and negotiate prices, quality, delivery/ payment terms and often much more details. The last step is to contract suppliers, and prepare processes for operational output.
- *Strategic Purchasing*: Strategic Purchasers are partly responsible for the strategic policy of the Purchasing department. They are concerned with a long-term approach to business, and the processes to achieve set goals. In addition, Strategic Buyers are concerned with are sometimes responsible for market analysis, supplier selection, negotiations and contracting, but for strategically important suppliers. With that, Strategic- and Tactical Purchasing roles show significant overlap, and therefore they often form a single hierarchical layer in SME's.
- *Chief Purchasing Officer*: In SME's, CPO's are more often referred to as 'Purchasing Managers'. Purchasing Managers are concerned with the strategic policy, and to translate goals from the organization to Purchasing. In addition, CPO's in SME's are responsible for leadership, and therefore have to monitor performances from the department, or individuals. Often, CPO's are fully responsible for performances of the Purchasing department. In contrast to CPO's in large organizations, Purchasing Managers in SME's are not always part

of the board of directors in the organization. This could limit the influence of Purchasing on the business.

- *Assistant Buyer*: Assistant Buyers have similar responsibilities to Operative Buyers, and is therefore a less common role. In the Assistant Buyer role, people are responsible to support Operative Buyers with administrative activities such as archiving orders, shipping documents etc. In addition, people are sometimes responsible for less complicated suppliers, which require less effort.

- *Technical Purchaser*: Not often, but sometimes organization also have Technical Purchasers. Instead of real Purchasers, they are more like technician within a Purchasing department. Technical Purchasers are concerned with technical specification of products, part or materials that organizations buy. Thus, they form a connecting link between Purchasing processes and production. In this role, people are actively communicating with suppliers to guarantee quality. To conclude, technical Purchasers are not actual Purchasers, but technician that support Purchasers form inside the department.

Compared to earlier findings, identified Purchasing roles are significantly different. This could be a result of business size, or the state of procurement within small- and medium enterprises. SME's appear to have a lower Purchasing maturity compared to larger organizations. It's difficult to clearly define specific Purchasing roles, since they often differ per company. Also, small- or medium enterprises often combine roles, or have vague boundaries. Combining several Purchasing roles in a single function takes Schiele (2019)²³⁴ claim a step further that each role is carried out by one or more employees, dependent on business size. This confirms suspicions found in the paper of Bals et al. (2019), that business size affects Purchasing roles frameworks, and therefore it's more difficult to create a list of roles that applies to all organizations.²³⁵ Vague boundaries address the importance of specific job-profiles to improve human resources in an efficient manner. In contrast to identified Purchasing roles in the literature, SME's do not seem to have additional roles responsible for specific aspects, or processes in the department. Small- and medium enterprises divide Purchasing roles based on the type, and level of responsibilities. Specific tasks such as data analysis, looking for innovations in the market, or risk management are collective responsibilities assigned to a Purchasing layer. Schiele (2019) also identified Purchasing

²³⁴ See Schiele (2019, p. 54)

²³⁵ See Bals et al. (2019, p. 4)

roles for direct- and indirect materials, in addition to an Operative Procurement role. Based on findings from the interviews this distinction does not seem to exist in small- or medium enterprises. Instead, direct- and indirect materials are an ‘umbrella category’ that exist for almost all Purchasing roles. Some respondents stated that their organization has Operative-, Tactical-, Strategic Purchasers and even Purchasing Managers for both direct- and indirect materials. In addition, some organizations also divide roles based on the nature of the Purchasing process: project- or process (structural) Purchases. Since these are not Purchasing roles, but actually characteristics related to a role, they are not included in the list of identified Purchasing roles. To conclude, small and medium enterprises seem to use operational, tactical, strategic and management Purchasing layers to make a distinction between roles. This is in line with findings from Mulder et al. (2005), that each level of Purchasing (manager, senior, regular buyer or assistant) is associated with a different set of tasks.²³⁶ However, the name and structures of these layers differ.

For the third research questions, competency requirements for Purchasers in SME’s are identified with the context of Purchasing roles. Findings suggest that, regardless of the role, communication skills are the main skill requirement for Purchasers. Respondents stated that a professional attitude and strong communication skills both in-person and ‘on paper’, are necessary in order to represent the organization towards (internal) customers and suppliers. Existing literature addressed the importance of analytical skills.²³⁷ This research suggest that analytical skills are mainly important for Strategic Purchasers and CPO’s, but less for Tactical- and Operative Procurement. Furthermore, remarkable was that several Purchasers across roles addressed the importance of curiosity. The majority of respondents considered product knowledge (or technical affinity) and basic knowledge on PSM role & processes as helpful competencies, but certainly not necessary. In most cases, this statement was reinforced by the argument that each organization produces different products or services, with different processes, and individuals can’t be an expert in every field. Instead, curiosity and learning agility is more essential since they enable Purchasers to become an expert. Finally, respondents argued that business size, SME’s compared to large organization, does not affect competency requirements for Purchasers in general. To conclude, Purchasing roles do seem to have an effect on competency requirements for Purchasers. Activities and responsibilities related to a job therefore do explain why certain

²³⁶ See Mulder et al. (2005, p. 194)

²³⁷ See Knight et al. (2014, p. 278) and Bals et al. (2019, p. 6)

competencies are more important than others. Results give a little insight into the required skill-set for Purchasers per role. However, the sample size for this research is too small to create a clear job profile based on Purchasing roles.

The last sub question is about what organization do to develop their Purchasing employees. Findings show that only two, both part of a larger organization, have some kind of structural policy to personal development. However, even in these cases, organizations did not adjust their policy based on the needs of each department. Instead, these companies organized courses and trainings related to general subjects such as sustainability and safety. That means that no organization out of 14 from the sample has a structural policy to develop Purchasing employees in their field. This while literature addresses the importance, but also the lack of, qualified human resources.²³⁸ Instead, almost every organization applies a personal development policy based on the initiative of individuals. In some cases there was talk of encouraging employees to participate in education, courses or trainings, but this still means that there is no clear plan. This while the literature described a major shortage of qualified personnel, not just in Purchasing. Part of a solution could be to make maximum use of a persons' capabilities, by developing their competencies and knowledge with several development techniques. However, SME's do not seem to seize this opportunity. Remarkable is that most respondents recognized instructor-led classroom training as the main technique to develop individuals. Small- or medium enterprises barely use techniques such as mentorship, case studies, simulators or job rotations to develop a person's competencies.

At last, the maturity assessment, based on the Purchasing Maturity Model by Schiele (2007), show low levels of maturity in the Purchasing processes of SME's. There are outliers at the top, but these companies were among the largest in the sample. In addition, the respondents (from outliers) explained a higher level of maturity due to the industry in which the organization is active. It can therefore be concluded that SME's generally score lower on Purchasing maturity. This while the literature suggest a relationship between Purchasing maturity and organizational performance. Also, the existing literature suggest that human resources are among the most important factors that determine organizational performances. Strong human resources in Purchasing are therefore essential for almost every organization in order to improve organizational performance. Therefore, it's important that SME's

²³⁸ See Wynstra et al. (2001, pp. 164-165); Schiele (2007, pp. 277-279); Knight et al. (2014, pp. 925, 927)

improve their human resource management. Multiple respondents addressed that they would like to have a more structural approach, on both individual and collective level, to develop competencies from employees in the organization. For that reason, an advice has been drawn up for a structural policy that enables organization to develop Purchasing professionals regularly, and make better use of the knowledge available in the country about the Purchasing function.

5.2. The Human Resource Development Model for Purchasing suggests structural, and irregular techniques to improve the Purchasing department

In order to create a Human Resource Development Model for Purchasing, this paper makes a distinction between regular education and further education. Regular education are public institutions, which offer a wide range of educations. Most people attend ‘regular education’ before they start their professional career. The meaning of ‘further education’ is every private organization or association (NOCI, LOI, ISBW, NEVI) that offers education, courses or trainings for Purchasing professionals in this case. Often individuals participate in further education during their professional career. The Human Resource Development Model for Purchasing has the purpose to extend competencies and knowledge from Purchasing professionals, for the benefit of the Purchasing department. Stronger human resources could lead to higher Purchasing maturity, which could improve organizational performance.²³⁹ In figure 3. the Human Resource Development Model for Purchasing can be found.

²³⁹ See Schiele (2007, pp. 278-283)

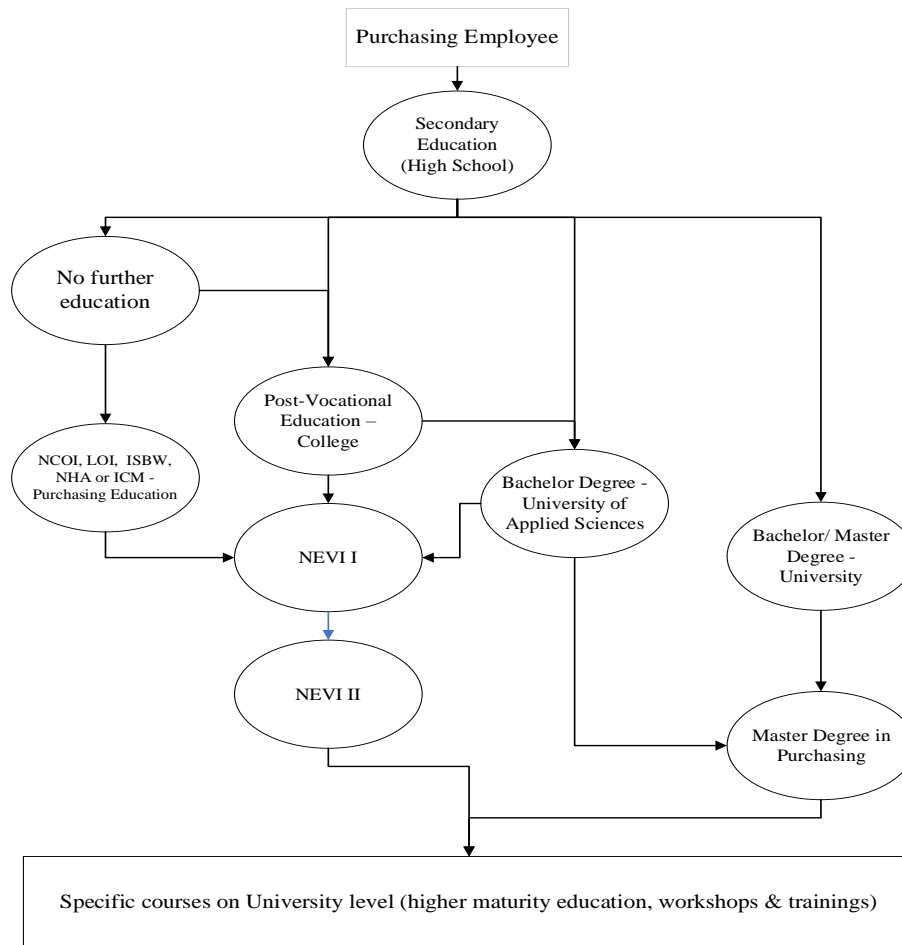


Figure 3: Human Resources Development Model for continuous learning in Purchasing

The model provides a continuous learning roadmap to improve competencies and knowledge for Purchasing professionals, by making use of the knowledge about Purchasing in the country. With this concept, the model provides a practical implication to create a lifelong learning concept, which is gaining significant attention.²⁴⁰ Increasingly, organizations recognize the importance of human capital, to strengthen their productivity for now, and in the future (employability).²⁴¹ With the model, this paper does not only try to answer each sub question, but also to bring them together in an overlapping concept: human resource development. In order to create more depth in the model, the level of Purchasing education has been taken into account by using the ‘y-axis’. So a lower spot on the y-axis indicates a higher level of Purchasing education. It’s important to address this analysis only used information from this research, and therefore is somewhat subjective. To reinforce these claims, a sophisticated analysis of courses, teachers, and teaching materials is necessary. However, this falls outside the possibilities and scope of this research. Findings from the

²⁴⁰ See Richards (2018, p. 266)

²⁴¹ See Richards (2018, pp. 251-252) and Kim and Park (2020, p. 5)

interviews have shown that the majority of Purchasers have at least a Bachelor degree from a University of Applied Sciences. This could suggest that Purchasing professionals need a certain work and think level. Therefore, a first step could be to let individuals with no further education or Post-Vocational Education, participate in ‘further education’ provided by private organizations such as NCOI, LOI, ISBW, NHA or ICM. These organizations provide education on the same levels as regular education, and could therefore improve competencies and knowledge for individuals. A positive aspect of this, is that ‘further education’ also provides the opportunity to specialize towards the Purchasing function, which regular education often lacks. The private institutions (NCOI, LOI, ISBW, NHA and ICM) do not have specialists for each field, but offer courses that introduce basics of Purchasing. Thereafter, regardless of educational level (except from a Purchasing & Supply Management Master degree), NEVI I is an educational program provides specialized Purchasing courses connects by professionals. NEVI I is a strongly recognized association, specialized in education, trainings and meetings for Purchasing professionals. Currently, NEVI is for most Purchasing individuals the first introduction to education/ training aimed at Purchasing. In this program, individuals can become acquainted with specialized Purchasing education for the first time. People with a Bachelor from a University or University of Applied Sciences, also have the option to extend their knowledge by pursuing a Master Degree. In addition, the option is even there to participate in the Purchasing & Supply Management course at the University of Twente, the only specialized Purchasing education among Universities in the Netherlands. Individuals who choose for this path could skip NEVI I, as it offers a lot of overlap. The next step that makes sense after a NEVI I training, is a Purchasing NEVI II degree. This two-year course focuses on the tactical- and strategic levels of Purchasing.²⁴² With this approach, it is assumed that people have some kind of ambition to develop themselves within the function. NEVI II offers similar in-depth knowledge on Purchasing as a PSM Master degree. Therefore, individuals also have options to pursue a PSM Master Degree, instead of NEVI education. So far, the Human Resource Development Model approach offers Purchasing professionals a strong basis of up-to-date knowledge. However, possibilities for follow-up education or trainings are very limited. This while continuous learning becomes increasingly important in a changing environment, as explained in the theoretical background. Therefore, this research encourages organizations to collaborate more with Universities, and is thus calling on Universities to offer education, workshops or

²⁴² See <https://nevi.nl/opleidingen/nevi-2-privaat>

courses for external parties. The maturity assessment shows that organizations fail to discover, and utilize new opportunities identified in the literature. Despite the knowledge that Universities possess (and share), they do not yet offer external Purchasing education or trainings to public- or private organizations. The gap between the literature (created in, and by people from Universities) about Purchasing, and reality in small- or medium enterprises create opportunities. Companies could benefit greatly if they get the Universities willing to share their knowledge, by organizing courses, trainings and meetings. The up-to-date knowledge, in combination with improving competencies from Purchasing professionals could affect organizational performance significantly. When Universities provide education, courses or workshop to share new knowledge, this enables organizations to create a strong continuous learning process. This is important not only to own knowledge and competencies needed right now, but also to meet the needs of the future Purchasing department.

In addition to the main structure of the Human Resource Development Model for Purchasing, organizations could use several other techniques, identified by the literature, to develop Purchasing personnel.²⁴³ Institutions and associations such as NEVI, 'InkoopAcademie', NCOI and LOI offer a wide range of courses to train Purchasing professionals in a targeted manner, on different levels. These institutions offer classroom led-training and web-based learning, in the form of workshops and trainings, to private- and public organizations. In addition, job rotations, on-the-job training, mentorship, apprenticeship, programmed self-instruction, case studies, and simulators are methods identified by the literature with less direct costs, and can be organized by the internal organization. In figure 4, an overview of additional training techniques can be found.

²⁴³ See Chatzimouratidis et al. (2012, p. 663)

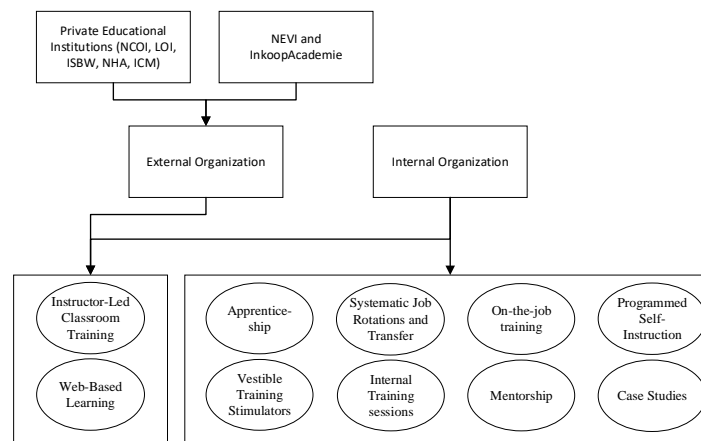


Figure 4: Additional development techniques for Purchasing

This figure is based on research from Chatzimouratidis et al. (2012), that identifies several training techniques to develop employees, not just in Purchasing.²⁴⁴ These are external training methods, but also techniques that can be organized and applied internally. In some cases, organizations have an internal academy that offers instructor-led training or web-based learning. Even though this is a very strong way to implement continuous learning, it's often not feasible for small- or medium enterprises. It's expensive to create an internal education structure, which regularly offer specialized Purchasing courses to improve the organisation's knowledge and competencies. In addition, the up-to-date knowledge that Universities have (and offer) is often not available internally. Although the model shows development techniques, it doesn't offer an additional roadmap for organizations to develop Purchasing professionals. It's not possible to identify the 'best' learning process without additional research. Also, financial resources, time constraints, and available human resources influence choices that companies make. Therefore, figure 3 provides an overview of possibilities identified by the literature to develop employees, instead of providing a roadmap. However, in practice, almost no organizations use techniques such as job rotations, case studies, mentorship etc. to improve their human resources. Often, these additional methods require less external resources, and therefore require less resources. Future research could try to develop a roadmap, which includes additional training techniques besides classroom-led training, to further improve the lifelong learning concept.

With the conclusions, this research tries to stimulate organizations to improve their maturity regarding Human Resource Management processes for Purchasing. By defining Purchasing roles in the department, and assigning competency requirements for each role,

²⁴⁴ See Chatzimouratidis et al. (2012, pp. 664-680)

organizations can create clear job profiles for each role. Job profiles could answer the call of Knight et al. (2014) to create contexts before identifying competency requirements.²⁴⁵ In addition, it extends literature on Purchasing roles from Schiele (2019), and thereby tries to clarify its importance.²⁴⁶ Existing literature shows differences between current- and future skill requirements, and therefore job profiles should be evaluated regularly.²⁴⁷ Thereafter, job profiles can be used in the process of human resource development in Purchasing. The required level of skills and knowledge can be compared with skill-sets of individuals, which enable organizations to develop people in a targeted manner. A structural policy, for example the one provided by the Human Resources Development Model for Purchasing, can be used to keep developing employees regularly, and meet future needs of the department. With the Human Resource Development Model for Purchasing, a continuous, lifelong learning process is suggested for Purchasing, to improve individuals. As explained in chapter 2, existing literature claims that more mature human resources management in Purchasing, lead to stronger human resources, which lead to higher overall maturity. Finally, according to Schiele (2007), higher maturity is positively related to organizational performance, which addresses the importance of improving people their competencies and knowledge. With that in mind, this paper encourages organizations to implement a continuous learning process in Purchasing to improve organizational performance.

5.3. Qualitative data research restricted the sample size, making it more difficult to draw conclusions

In order to be able to interpret the conclusion correctly, it's important to discuss the limitations of this research. The research uses several studies as the basis for the interviews, and to report findings and conclusions:

- Research Sub Question 1: -
- Research Sub Question 2: Mulder et al. (2005) and Schiele (2019)
- Research Sub Question 3: Knight et al. (2014) and Bals et al. (2019)
- Research Sub Question 4: Chatzimouratidis et al. (2012)

This choice has been made to make results more comparable to existing, and future research in the field. However, using existing views could create a bias when assigning findings to interviews, and drawing conclusions. In addition to a bias, statements from the interviews

²⁴⁵ See Knight et al. (2014, pp. 272-275)

²⁴⁶ See Schiele (2019, pp. 53-54)

²⁴⁷ See Bals et al. (2019, p. 6)

could be misinterpreted, leading to wrong conclusions. As a result, findings could misrepresent reality. Also, it may be that not all information was discussed during the interviews. The interview guide reduced this chance, but it could be that respondents forgot information, or that they misinterpreted questions. To minimize the possibilities for these problems, each respondents was asked to confirm findings from the interview. Missing, or wrong claims were asked, and adjusted in the summarization.

Secondly, the major limitation to qualitative research is that it's time consuming, which affects the sample size. In this case, the sample size is too small to be able to assign competency requirements to each Purchasing role. Since the research has a sample size of 14 and consists of three different roles, only a limited number of respondents form the basis of the competency profiles based on their role. The third limitation, is that part of the Human Resource Development Model for Purchasing isn't available at this point in time. Universities do not yet offer external education, courses or trainings, and therefore the model cannot be directly implemented. The research assumes that Universities are open to sharing knowledge with businesses, only more collaboration is needed with the business life.

5.4. Results from this research encourage organizations to continuously develop their human resources to improve organizational performance

This research contributes to the academic literature in multiple ways. At first, it extends the literature on Purchasing roles, by identifying Purchasing roles in SME's.²⁴⁸ Research on Purchasing roles was limited, and therefore additional research was necessary to strengthen the literature on this subject. Findings from this research show a number of differences relative to the research of Schiele (2019). Due to small sample size, and differences shown to existing literature, future research could continue to research Purchasing roles and create a better understanding of practice. With this, this paper tries to show the importance of job profiles, as explained in several chapters of this paper. A clear understanding of Purchasing roles creates the opportunity to assign competency requirements to roles, and create job profiles.²⁴⁹ Thereby, this research thus creates a link between research on competency and knowledge requirements,²⁵⁰ and Purchasing roles.²⁵¹

²⁴⁸ See Schiele (2019, pp. 53-54)

²⁴⁹ See Knight et al. (2014, pp. 271-273)

²⁵⁰ See Knight et al. (2014, p. 272) and Bals et al. (2019, pp. 1-10)

²⁵¹ See Mulder et al. (2005, p. 194) and Schiele (2019, pp. 53-54)

Future research could try to create a process, that enables organizations to create job-profiles that reflect current and future needs of their Purchasing department. New research could try to create an overall job-profile per role, but a process to create job-profiles is likely to be more implementable. Strong profiles could not only help with recruiting suitable personnel, but also to define a lifelong learning process that fulfils the need of individuals. Therefore, this paper encourages future research to continue working on the subject of job-profiles.

In addition, this research contributes to the literature by providing insight into Purchasers' educational and professional background. With the results, a better understanding of competency and knowledge requirements for Purchasers is created, by examining the current field of professionals. The main objective for this paper was to examine the Human Resource Development policy of small- and medium enterprises. The Purchasing Maturity assessment has shown, which was in line with existing literature, that SME's often score low on Purchasing Maturity. According to Knight et al. (2014) human resources is the main factor that determines Purchasing performance.²⁵² This, while the literature describes both a lack of qualified personnel, and CPO's experiences a gap between skill requirements and actual skills of Purchasing employees.²⁵³ Findings showed a lack of human resources development policy, which means that SME's are not trying to improve their situation. Therefore, this paper identified an Human Resources Development Model that enables organization to implement a lifelong learning process applicable to most individuals, and thus improve the competencies and knowledge of employees. As we've learned from the literature, stronger human resources will lead to stronger Purchasing performances. Thereafter, it's likely that organizations show stronger financial performances by improved Purchasing.²⁵⁴ Future research could contribute to this research, by examining opportunities to develop Purchasing employees in other countries. The Human Resources Development Model is only applicable for companies in, or close to the Netherlands. At last, this research answers the call of several researchers to do more research towards small and medium enterprises, which is underexposed in the literature.²⁵⁵ Results have shown significant differences relative to existing literature focused on large organizations.

²⁵² See Knight et al. (2014, pp. 925, 927)

²⁵³ See Pullen et al. (2009, p. 209) and Johnsen et al. (2014, p. 75)

²⁵⁴ See Schiele (2007, pp. 289-290)

²⁵⁵ See Susomrith and Coetzer (2015, pp. 561-562)

Therefore, this paper encourages future research on SME's and extend the literature in a broad sense based on business size.

To conclude, with one main research question, and four sub-questions, this paper brings several Purchasing subjects together. Instead of new in-depth knowledge on a single topic, this research tries to create a link between Purchasing Roles,²⁵⁶ competency & knowledge requirements,²⁵⁷ and human resource development techniques.²⁵⁸ As a result, existing knowledge from the literature, combined with new insights from this paper, have been used to create the Human Resources Development Model. The goal with this model, is to make knowledge on each topic more easily applicable for organizations in practice. To explain the importance, the Purchasing Maturity Model is used to show why organizations should pay more attention to their human capital. Not just Purchasing benefits from better processes, but also firm performances are likely to improve.

²⁵⁶ See Schiele (2019, pp. 53-54)

²⁵⁷ See Knight et al. (2014, p. 272) and Bals et al. (2019, pp. 1-10)

²⁵⁸ See Chatzimouratidis et al. (2012, pp. 662-680)

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Appendix:

Appendix I: Short version Maturity Model used for maturity assessment (Schiele, 2007)

Function:	Question for analysis:	Observed	Po- ints	Stage 1:	Stage 2:	Stage 3:	Stage 4:
Purchasing strategy	Does the organisation have a strategy for purchasing? Is purchasing involved in corporate strategy formulation?			A purchasing strategy only exists informally. It is not directly linked to corporate strategy.	There is a purchasing strategy, which reflects corporate priorities and supports corporate strategy. Purchasing priorities are clearly formulated. Corporate strategy is well known with purchasing. The purchasing strategy is reviewed annually.	Procurement is fully embedded in the corporate strategy formulation. Purchasing has a roadmap in place how to achieve strategic targets, which are regularly measured, with tools such as a balanced scorecard. Purchasing has a clear vision on how to contribute to the competitive advantage of the firm and become preferred customer of strategic suppliers.	Purchasing is strongly influencing corporate strategy. The clearly formulated, cross-functionally embedded measurable and controlled purchasing strategy is continuously developed further in a systematic process and through benchmarks.
Assessment of Demand	Where are requirements and demands derived from? How is the process described?			Demands are partly derived from sales or order income prognosis/forecasts.	Demands are derived from sales or order income prognosis/forecasts and planned for significant commodity areas.	Demands are derived systematically and in structured fashion from sales or order income prognosis/forecasts. Procurement market facts are remedially considered.	Demands are always derived systematically and in structured fashion from sales or order income prognosis/forecasts. Procurement market facts like price changes are fully considered when planning sales. System is continuously updated.
Process	How is the process of a supply market analysis described and documented? How are partner functions involved in drawing conclusions out of the analysis results?			Process is described unsatisfying. Results out of the supply market analysis remains mostly at purchasing.	Process is partially described. Less active exchange with other process partners (e.g. engineering, sales).	Process is documented and applied. Regular information exchange process with partners (e.g. engineering, sales).	Process is subject to regular reviews. Cross-functional acceptance and commitment. Exchange of market analysis results occur continuously and protected against non-authorised use.

Technology Identification	How do you keep track of technology trends? Is there a formal process of technology monitoring?	Purchasing reactively follows procedures of process partners (e.g. Engineering, Sales)	Purchasing presents remedially information about technology trends to their process partners. Technology monitoring is part of purchaser's responsibilities, but applied in a sporadic or passive form.	Purchasing acts pro-actively following established processes.	Purchasing supports systematically product or technology development. Information about technology trends used by cross-functional partners. A set of tools for innovation generation is available (value engineering, functional specifications, innovation workshops etc.)
Organisational Structure	Is a purchasing organisation established? Are responsibilities defined?	Purchasing responsible people are named. Purchasing organisation is insufficiently established.	Purchasing organisation is formally in place.	Purchasing organisation is established and is in charge of all procurement activities. Procurement policy is described and communicated.	Purchasing organisation is continuously further developed based on business strategy, benchmarks, interviews or process reviews.
Board participation	Does the purchasing director take part in board meetings?	Purchasing director participates occasionally in the board meetings.	Purchasing director is permanent member of the board committee.	Purchasing director is permanent member of the executive committee of the business unit.	Purchasing director is part of the firm's executive board.
Sourcing Strategy	How would you describe your sourcing strategy? Is it documented and known to your partner functions?	Definition of a sourcing strategy is in progress.	Sourcing strategy is documented and applied for all major material groups.	Sourcing strategy is derived out of corporate strategy, cross-functionally agreed, documented and applied.	Sourcing strategy is defined and has a project-based implementation plan, regularly updated, adjusted to corporate strategy and tied into target agreements. Key issues of the competitors' sourcing strategies are known and documented.

Improvement of standing in supply market	<p>What does the organisation do to improve its position with the supplier?</p> <p>Did it achieve preferred customer status with key suppliers?</p>	There are little systematic efforts to improve attractiveness with suppliers	Some measures are taken to improve supplier satisfaction, such as supplier feedback, preferred supplier lists, supplier days. In some cases the company achieves preferred customer status.	Regular and systematic measures to improve supplier satisfaction is been conducted (e.g. supplier day, supplier club). There is a process description and responsibilities are assigned. Internally, the perception of being preferred customer is systematically been assessed and used for sourcing decision making. Exclusive access is sometimes garanted by suppliers.	The company regularly and systematically improves its standing with the supply base. With all key suppliers preferred customer status has been achieved. Purchasing contributes to the competitive advantage of the firm.
Ordering	Is the process of initiating a requisition, approving it, and raising an order automated and performed through EP-software? How autonomous is the ordering of Direct Materials?	The ordering processes are not automated within the organisation, but involve human interaction with an ERP-system. There is no special process for ordering Direct Materials.	The ordering processes are automated on a small scale through use of EP-software, which trained purchasing personnel sometimes uses. The majority of ordering processes is still handled manually. Direct Materials are sometimes ordered based on Bills of Materials.	The EP-software of the organisation initiates, approves and raises orders autonomously, but still human intervention is needed for checking of medium-to-high impact orders. After human input and review, Direct Materials are often ordered based on Bills of Materials.	The process of initiating a requisition, approving it, and raising an order is fully automated through EP-software without human intervention. Ordering of Direct Materials happens without human intervention based on Bills of Materials. Artificial Intelligence is used as a self-learning system.
Target Breakdown	How are targets broken down? Are they detailed on employee-level?	There is no structured target breakdown in place.	Single financial results and performance figures are defined and remedially reviewed.	Substantial financial results and performance figures are defined and are reviewed regularly.	Targets are broken down and structured based on scorecard targets (e.g. processes, finance, customer/market, employee/knowledge/innovation) and reviewed regularly on the basis of rolling forecasts.

Appendix II: Questionnaire

1. Could you please introduce yourself and company?

- a. Ethical information (Name, Age, Education)
- b. Could you describe your professional career? (Companies, Job functions)'
- c. In which industry or sector is your current employer active?
- d. What is the companies' core business?
- e. Could you describe the organizational structure? (Departments, Organization chart)

2. How would you rate the maturity of the purchasing department? (Maturity assessment)

3. Could you describe the purchasing department?

- a. Could you describe the structure in the purchasing department?
- b. What are the main activities/ responsibilities of the purchasing department?
- c. What companies purchasing roles are present in the purchasing department? (List)
- d. How are tasks distributed between roles?
- e. What are the main responsibilities of each purchasing role?

4. What skills, competencies and knowledge are currently important for the purchasers in the company?

- a. What skills, competencies and knowledge do you need to perform your job, and why?
- b. What skills, competencies and knowledge are important for the other purchasing roles in the department, and why?

5. How does the organization acquire new skills, competencies and knowledge? (List)

- a. Does the organization offer training/ courses for personal development?
- b. Are there other initiatives from the organization to stimulate personal development?
- c. Does the organization hire new permanent or temporary personnel to acquire new skills, competencies and knowledge?
- d. Does the organization outsource certain processes to acquire new skills, competencies and knowledge?

6. Do you think firm size (SME) affects the skill, competency and knowledge requirements of purchasers?

- a. How does smaller firm size affect skill, competency and knowledge requirements for purchasers?
- b. How can purchasing departments in SME's learn from larger organizations?

- 7. What changes do you expect in the future for the purchasing department?**
 - a. Which purchasing roles are present in the future purchasing department?
 - b. What developments do you think will affect the future purchasing department?
 - c. How do changes to the future purchasing department affect skills, competency and knowledge requirements for purchasers according to you?
- 8. Are you open to verify the findings from the interview on a later moment?**

Appendix III: Interviews

Interview 1:

Could you please introduce yourself

- Male, approximately 30 years old, and working for a household-equipment manufacturing company.
- Purchasing Management Master degree (University).
- Started my career in a operational/ tactical role in a large multinational which is specialized in the production of high-tech equipment. Due to organizational changes, I choose to search for a new challenge. Then found my current employing company, in which I got a tactical purchasing role.
- Some time ago, the company has been taken over by a large international company. However, the company still operates mostly independent from the parent company apart from the target breakdown.
- The company is specialized in the development and production of household equipment. Our business consist mostly of 'mass-production' of different series/ types of products.
- My job function is Tactical Buyer, responsible for market analysis, supplier selection, negotiations, and contracting for several different product groups.

How would you rate the maturity of the purchasing department?

1. Item:	Points:	Stage 1:	Stage 2:	Stage 3:	Stage 4:	Comments:
Purchasing strategy	1.0	X				- Only corporate strategy, no purchasing strategy
Assessment of Demand	11.0			X		- Systematically forecasting purchasing -> supplier - Product specification documented
Process	6.0		X			- Process market analysis described (not documented) - No structural market analysis - No active exchange with partners
Technology Identification	2.0	X				- R&D is concerned with identification of (new) technology

						- If purchasing discovers new technologies, share information with R&D/ Engineering
Organisational Structure	8.0		X			- Purchasing department is formally in place. - Performs standard processes - Purchasing is responsible for most purchases (except from indirect materials)
Board participation	14.0			X		- Purchasing Manager attends meetings with the management team.
Sourcing Strategy	6.0		X			- Sourcing strategy is documented
Improvement of standing in supply market	1.0	X				- No systematic effort to improve relationship with suppliers - 'Relationship' based on low pricing
Ordering	9.0		X			- Software systems (ERP) are used for ordering - Suppliers are included in the system. - Still human intervention needed for operational purchasing
Target Breakdown	11.0			X		- Mostly financial/ delivery targets - Targets on collective and individual level
Total:	69.0	34,5%				

Could you describe the purchasing department?

- Three 'levels': Purchasing manager (1) -> tactical buyers (3) and operational buyers (3).
- Purchasing manager is responsible for the strategic policy of the department, leadership and ultimately responsible for performances. Tactical purchasing is responsible for market analysis, supplier selection, negotiations and contracting. Operational purchasing is responsible the order process and monitoring the delivery process.

- The research & development department is responsible for the development of new products. When finished, we get a list of products, parts and materials necessary for the production of the new product. Then the supplier selection, negotiations and contracting process is started. Finally, when suppliers are selected, and contract are signed, operational purchasing is responsible for the actual purchase of parts and monitoring the delivery process.
- The purchasing department is responsible for almost every transaction regarding purchasing. Administration is responsible for purchasing indirect materials.
- Our parent company breaks down targets and budgets for the purchasing department.
- The organization, and purchasing, work with Just-in-Time. That means we try to keep inventory as low as possible, which has a big impact on our purchasing process.

What skills, competencies and knowledge are currently important for purchasers in the company?

- In my function, and in purchasing overall, you need to be able to negotiate with suppliers. You need to have the guts to pick up the phone, and call suppliers for better conditions.
- I think it makes sense that communication skills are very important, because you talk a lot to suppliers for important purposes. Therefore you have to be able to stand your ground against/ towards suppliers
- Soft skills are more important for purchasers than 'hard skills' in my opinion.
- Knowledge about purchasing (techniques, processes etc.) helpful, but are not necessary.
- Affinity with technology is also helpful, but again not necessary.
- Being able to collaborate with cross-functional departments is important for a purchaser, especially when you lack affinity for technology for example. In that case you need to be able to work together with Research & Development, Engineering and/ or Production.

How does the organization acquire new skills, competencies or knowledge?

- Every employee makes a personal development plan each year.
- There is no structural policy on the development of employees. If you want to participate in courses or trainings you have to make the initiative yourself. For every employee there is a budget for personal development.
- The company does offer a lot of career opportunities within the organization. With on-the-job training, the relevant employee is trained for the new job.
- The organization does hire new personnel on a regular basis to bring new competencies and knowledge into the organization.

Do you think firm size (SME's) affect the skills, competencies or knowledge requirements of purchasers?

- Some aspects such as price savings are relevant for every organization, and therefore negotiating is important for every purchaser.
- I think purchasers in a large organization have a lower 'spread' of suppliers, and therefore relationship management is more relevant for them.
- The basis skills, such as communication skills, being able to collaborate with cross-functional departments have the same importance regardless of company size.
- A small organization can learn from the structures and standard processes that large organization use for the purchasing function. A clear purchasing strategy, with guidelines/ boundaries for processes and jobs could improve the purchasing department in small organizations.
- SME's should utilize more of the capabilities of individuals, which I think large organization do a better job at.

What changes do you expect in the future purchasing department?

- Software systems to perform the operational purchasing process will be even more important. That means purchasers have less operational tasks, and is more focused on the tactical/ strategic aspect of the function.
- Strategic purchasing is probably going to be a centralized responsibility, in which larger parent companies or headquarters are responsible for the strategic policy in purchasing. So far, decentralized purchasing was the way to go.
- The basic purchasing process, with market analysis, supplier selection, negotiations, contracting will stay the same in my opinion.
- Overall, but especially in our case, climate change will affect the purchasing function, in the sense that companies have to take their 'green-print' as a criteria in the purchasing process.

Interview 2:

Could you please introduce yourself

- Male, approximately 30 years old, working for high-tech equipment manufacturer for the chip industry.
- Commercial bachelor degree (University of Applied Sciences).
- Started with planning, then came in touch with the purchasing function in a operational/ tactical role in a large manufacturing company. After a few years, moved to another large manufacturing company, working in a more strategic purchasing role. Now, the only purchaser in small organization, with high-growth, to improve the purchasing department.
- Even though the organization is small (around 30 people) and fairly new, the company is structured with clear divided departments
- My role is strategic purchaser, basically responsible for all operational, tactical and strategic activities/ responsibilities in purchasing. The role is very broad since it's a fast-growing company without an established purchasing function so far.

How would you rate the maturity of the purchasing department?

- Overall context:

Fast growing organization which had no real purchasing department for a long time.

Purchasing was a partial task for Engineers. Recently, the company hired a purchaser to set-up the department, and create processes/ structures.

1. Item:	Points	Stage 1:	Stage 2:	Stage 3:	Stage 4:	Comments:
Purchasing strategy	1.0	X				- Under construction
Assessment of Demand	2.0	X				- Under construction
Process	1.0	X				- Under construction
Technology Identification	1.0	X				- Won't be a responsibility for the purchasing department in near future
Organisational Structure	1.0	X				- Purchasing department is formally in place, but insufficiently established yet.
Board participation	13.0			X		- Purchasing 'manager' will attend management meetings on a regular basis (not part of MT)

Sourcing Strategy	3.0	X				- Under construction
Improvement of standing in supply market	1.0	X				
Ordering	1.0	X				- Under construction, so far based on Excel-sheet. No software is used for ordering yet.
Target Breakdown	3.0	X				- Only the budget has been determined
Total	27.0	13,5%				

Could you describe the purchasing department?

- I'm the only employee in the purchasing department, therefore I'm responsible for the entire purchasing process. In addition, I'm responsible for creating a strategic policy, with guidelines and standard processes to structure the purchasing function.
- A couple months ago, the purchasing process was basically a Excel sheet with some information on parts, suppliers and prices.
- The main responsibility from the purchasing department in this company is to ensure that every part that is needed for production is bought, for the lowest possible price and at the right time.
- We are going from just operational/ tactical purchasing, to a purchasing function with a strategic policy.
- Strategic, tactical and operational purchasing. Indirect materials is done outside the purchasing department.

What skills, competencies and knowledge are currently important for purchasers in the company?

- As a purchasing, you have to have communicational skills that enable you to communicate with both the internal and external organization in a representative manner.
- You have to be 'friends' with everybody, since purchasing is right in the middle of the organization. Many different departments are indirect or directly linked to purchasing, for example engineering needs to use the product that you bought. Therefore you need to be able to communicate with them, to understand the need for certain characteristics or specifications of parts. Being able to collaborate is one of the most important competencies for a purchaser.
- Also, in today's society you need to have ICT-skills, and be able to use IT software to perform certain processes.
- Both technical knowledge about purchasing, or the products of the company are necessary to work in the organization. However, you do not need them before you join the company or function. If you have the motivation to learn new things, which I think made my jobs interesting, the technical knowledge can help you to improve your contribution to purchasing.

How does the organization acquire new skills, competencies or knowledge?

- We are a young, new, high growth company that highly values skills and knowledge. If we do not have knowledge, we buy it. That means if someone has a suggestion for trainings or courses with a certain purpose, discuss this with the management.
- For example, I've said I wanted to achieve a Nevi II degree to improve my skills and knowledge on purchasing, and they almost instantly agreed. However, you have to start the initiative yourself.
- Sometimes managers initiate a training or course that everyone in the organization should participate in.

Do you think firm size (SME's) affect the skills, competencies or knowledge requirements of purchasers?

- Obviously I think firm size affects the competencies and knowledge that is required, certainly in an organization with a less developed purchasing department. Experience in a larger organization shows you how purchasing works, which I can use now to create the purchasing department.
- Some processes from my previous employers can be implemented directly in this organization. In my previous function, I've seen how computers can be used to forecast your demand for certain parts. That means you need less operational skills to perform the purchasing process.

What changes do you expect in the future purchasing department?

- In the future, I think this organization will have a big purchasing department, with several strategic purchasers and a lot of operational buyers.
- Even though automatization affects the role of operational purchasing, I still think we will need people to ensure that delivery is on time and that suppliers keep agreements.
Therefore, I think the main structure in the purchasing department, that a lot of companies have, will stay the same: a distinction between operational, tactical and strategic purchasing.
- My expectation is that purchasing will be a more transparent process in the future. Now, buyers and suppliers do not provide each other with all the information they need. I think in the future, I will be able to look into the inventory of suppliers via a 'corporate' ERP system. That means companies are able to work together way more efficient.

Interview 3:

Could you please introduce yourself?

- Male, approximately 45 years old, working for an end-product manufacturing company (approximately 200 employees), and responsible for the management of the purchasing department.

- Technical bachelor degree (University of Applied Sciences).
- Worked for several high-tech product manufacturers in the region (mostly SME's). Started as production / engineering manager, and grew towards 'supply-chain manager', responsible for several departments in the supply chain. However, therefore no real experience in operational/ tactical purchasing.
- Two 'production segments', project-based production and mass production, of which the companies outsources the majority of the mass production products to a strategic partner located in Europe.
- At our location we produce prototypes, first- or single-orders, and serve customers that are difficult to forecast.
- The items/ products we produce are transferred directly from us to our customer (B2B).
- My role in the organization is Supply Chain Manager, responsible for the management of multiple departments including purchasing. Therefore, I'm responsible for the leadership and strategic policy of the department.

How would you rate the maturity of the purchasing department?

2. Item:	Points:	Stage 1:	Stage 2:	Stage 3:	Stage 4:	Comments:
Purchasing strategy	8.0		X			- Management Team creates Business Plan, translated by each department (not documented).
Assessment of Demand	12.0			X		- Forecasting by human + software on regular basis, derived from sales.
Process	11.0			X		- Market analysis is described (not documented) - Regular information exchange between departments
Technology Identification	7.0		X			- Passive form of technology identification by the purchasing department (no standard processes)
Organisational Structure	12.0			X		- Purchasing department is formally in place. - Responsible for all purchasing activities.
Board participation	16.0				X	- Supply Chain Manager (Purchasing manager) part of the Management Team

Sourcing Strategy	6.0		X			- Documented sourcing strategy, applied for products group (also project/ 'mass' production)
Improvement of standing in supply market	6.0		X			- Some measures taken to improve position to suppliers, but no structural approach
Ordering	14.0			X		- Automated by software systems (Incl. ERP) for operational purchasing process. - Limited human intervention needed
Target Breakdown	9.0		X			- Substantial targets on department level - No targets on individual level
Total	101.0	50,5%				

Could you describe the purchasing department?

- As explained the majority of the mass production items are outsourced to a strategic partner. Both our company, and the supplier, heavily depend on each other for this part of our business.
- As a result of the different types of production, mass production and project-based production, our purchasing department is divided into a 'outsourcing' and 'purchasing' department.
- The outsourcing department is responsible for the control and support of the production at the strategic supplier regarding quality, planning, logistics and pricing.
- The purchasing department is sort of divided into 'process' and 'technical' purchasing.
- Technical purchasers work project-based, are working with, and responsible for, specifications of parts/ products, 'first-pricing', and market analysis.
- Afterwards, the project is transferred to 'process' purchasing, which then are responsible for forecasting, the actual ordering process and the management of relationships with suppliers/ customers.
- Regarding purchasing roles, we have project- and process purchasers. Therefore, we've chosen to split roles based on product groups. Each product group, with 1-3 purchasers is responsible for all levels of purchasing (strategic, tactical, and operational), together with the purchasing manager (me).

What skills, competencies and knowledge are currently important for purchasers in the company?

- I think the skills, competencies and knowledge that are important in my role is heavily depended on firm size, and core business. In my situations you have to understand the purchasing process, and therefore need some experience or knowledge on purchasing, but also technical knowledge on the products you are working with.
- Also, being able to understand people, and read their needs/ thoughts is important from a management perspective. Therefore you also need some communication skills.
- In my role, change management towards processes, but also towards people is an essential part of my job. Especially, since technological and social development increasingly affect how businesses work, but also affects the product-development process in our company.

How does the organization acquire new skills, competencies or knowledge?

- The company has no structural policy on the development of individuals.
- For every employee, there is a budget available for education, courses or trainings that improve competencies or knowledge relevant to their job. If we recognize a lack of skill or knowledge across the entire department, we could initiate courses or trainings on group level.
- Purchasers do visit scholarships (or fairs) related to our business (or purchasing) to gain new knowledge and insight that could improve their work.

Do you think firm size (SME's) affect the skills, competencies or knowledge requirements of purchasers?

- I don't think purchasers in SME's need different skills than purchasers in larger organization. Apart from public procurement, in which tendering procedures are part of the process.
- Most large organization are split into subsidiaries that have their own purchasing department. However, strategic purchasing is more relevant in SME's as large organization, even though they have subsidiaries, often have a corporate purchasing strategy.
- Also, large organization often have more 'management' levels, which results to a 'chief-purchasing officer' that most likely doesn't know, but also does not have to know, details on technical level of products. This while at SME's I think managers should have in-depth knowledge on your products.
- At last, my job is supply chain manager (responsible for different departments), which is a regular function in SME's. However, larger organization will have a specific purchasing manager, and therefore need more in-depth skills and knowledge on purchasing instead of general soft skills.

What changes do you expect in the future purchasing department?

- A development that is already going on, which will speed up in my opinion, is transparency by transferring information/ data to each other on a 'live' basis via ICT-software. This creates new risks, but could improve cooperation with suppliers.
- This development could result in purchasing, in which the supplier is responsible for in-time delivery of parts or products, without an actual ordering process (operational purchasing) from our company.
- I do not think purchasing roles will be different in the near future. Our division of purchasing roles based on product-groups will stay the same, and will most-likely still be somewhat responsible for strategic, tactical and operational purchasing.

Interview 4:

Could you please introduce yourself?

- Male, approximately 40 years old, working for an end-product manufacturing company.
- Economics degree (post-secondary vocational education).
- Started working for a small business responsible for several function in the supply chain, including sales, purchasing and logistics. In this company developed interest in purchasing, and decided to search for a new challenge. For several years I've worked as an operational and tactical purchasers in three large, multinational companies. Thereafter, I started in a strategic purchasing role to face new challenges again.

- In order to face new challenges, and grow within the purchasing function, I've followed and finished a technical degree on an University of Applied sciences in a later stage of my career.
- The company has a large parent company, however the purchasing department works mostly decentralized. At the location I work at, we have around 400 employees.
- My role is Purchasing Manager for one of our 'value-streams', in which I am directly responsible for the work of 4 purchasers. In this function, I have to translate corporate strategy into the strategy of our value-stream (in purchasing). Also, I'm partly responsible for strategic/ tactical purchasing activities, for which I am responsible for the negotiations, and communication with strategically important suppliers.

How would you rate the maturity of the purchasing department?

3. Item:	Points	Stage 1:	Stage 2:	Stage 3:	Stage 4:	Comments:
Purchasing strategy	9.0		X			- Purchasing strategy applied to the entire department
Assessment of Demand	14.0			X		- Split between direct/ indirect materials - Forecasting for direct materials - Roadmap, checklist and audits in place to determine product specifications/ forecasting
Process	6.0		X			- Market analysis partially described (no documentation) - Systematics based on product/ market
Technology Identification	6.0		X			- No standard processes to identify new technologies - R&D and Purchasing occasionally visit fairs or scholarships to identify new applications for products - Analyse products of competitors in an annual event (organization level, not just Purchasing)
Organisational Structure	14.0			X		- Purchasing department is formally in place

						- Responsible for all purchasing activities (Incl. indirect materials)
Board participation	14.0			X		- Purchasing Manager participates in meetings of the local management
Sourcing Strategy	11.0			X		- Documented sourcing strategy, applied for products group
Improvement of standing in supply market	7.0		X			- Build long-term relationship with strategic suppliers (based on Kraljic matrix) - Transparency towards suppliers
Ordering	14.0			X		- Automated by software systems (Incl. ERP) for operational purchasing process. - Limited human intervention needed
Target Breakdown	12.0			X		- Substantial targets (5 KPI's) are defined on department level - Also targets on individual level (based on overall targets), created by the relevant department level.
Total:	107.0	53,5%				

Could you describe the purchasing department?

- In our complete purchasing department work around 15 purchasers. However, the purchasing department is at first split into two 'value-streams' based on product group. Then, each value stream is split into 'projects' and 'components'.
- To add, besides the two 'value-streams', there is also another streams in the purchasing department responsible for indirect materials.
- The purchasing department is responsible for buying everything that is bought by the company, both direct- and indirect materials. In our part of the department we buy a couple thousand 'standard materials', and some 'specials', which comes down to approximately 500 (300 active, with 80/20 rule) suppliers.
- In my part of the purchasing department, we have a clear four clear roles: (1) purchasing manager (my role), (2) strategic purchaser, partly responsible for the strategic policy, supplier selection, contracting and relationship management, (3) 'all-round' operational

purchasers, responsible for the standard materials needed for our production process and (4) a technical purchaser, responsible for materials that production, engineering and technical services need for their work (for example machines).

- Regarding our operational purchasers, both do not have a direct history in purchasing, but experience in production or engineering (1 MBO, and 1 HBO degree). In particular for the technical role, we do try to gain some new skills and knowledge on purchasing.
- In the strategic role, we want and have someone who is able to grow together with the department and therefore needs higher 'thinking level' (HBO/ WO degree).

What skills, competencies and knowledge are currently important for purchasers in the company?

- Since I grew from operational purchasing, towards a manager position, I've seen that it's more about the helicopter-view instead of looking at details and being able to work within structures. Also, the conversations with suppliers are more about issues regarding the process, then about the technical specification of products.
- It's important to understand as a manager that you cannot do everything yourself, but you need your team. Therefore, you need to be able to teach your team about expectations and how they report their work towards you as a manager. Risk management is also important in this position.
- Also, you have to show the team the corporate strategy and what the responsibility of purchasing is in this regard.
- In purchasing transparency and honesty are important towards customer, lying about certain aspect will create difficulties in later stages. In my opinion the human-aspect (and therewith soft skills) in purchasing is getting more important.
- Knowledge about the purchasing process is important. The person from whom I took over this function did not have a background in purchasing. In this case, the team (and especially operational purchasers) experienced a lot of problems with not being able to go to the purchasing manager with their questions. Therefore, I think you need at least a couple weeks or months to work within the actual purchasing process instead of getting right into a management function.
- In the present time, everyone has to have ICT skills that allow you to work efficient in ERP systems. In case of purchasing, we have for example worked with 'online auctions' with suppliers for the supplier selection process.

How does the organization acquire new skills, competencies or knowledge?

- For purchasers, the standard process is that every new employee will work for a couple weeks in different departments (such as production, logistics and engineering) to learn about the organization.
- In addition the company makes budget available for the personal development of every employee. Most purchasers use this to follow a NEVI course. However, the education, course of training should be relevant for their current or future job function.
- As a manager, the company expects us to stimulate people in the department to develop themselves by following courses or trainings. In particular young people with ambition should be stimulated to develop themselves also with knowledge and skills from outside the company. However, there is no structural policy.
- Outside the current pandemic, purchasers visit scholarships or fairs on a regular basis to gain new knowledge about products, suppliers or purchasing.
- Intern, we also organize meeting days with suppliers in which both parties learn each other some aspect about their work and business. With this we hope to gain new knowledge about products, but also processes regarding purchasing.

Do you think firm size (SME's) affect the skills, competencies or knowledge requirements of purchasers?

- In case of our company, I think the firm size does not affect the skills, competencies or knowledge that are required to be a purchasing. However, I think we do have some more structure in our processes that allow people to work within certain barriers.
- Maybe due to firm size, you do not seem more broad knowledge on technical parts, whereas in larger organization people are responsible for a small amount of materials or products.

What changes do you expect in the future purchasing department?

- I expect our purchasing department to grow to at least one more strategic purchasers, because the work is getting to much for just 1 strategic purchasers. In this case, I will be able to work more from a helicopter-view standpoint.
- In the past, there was a lot more focus on cost-savings even if this had a negative impact on quality. However the current pandemic showed the company that this approach creates a lot of risks, which led to the closing of some branches of the company. A more risk-management approach, with less focus on cost-savings, and more on for example the extension of the supplier base.
- Environmental impact will increasingly impact the choices that purchasers make. This will be included into risk-management.

Interview 5:

Could you please introduce yourself?

- Female, approximately 35 years old, working for an end-product manufacturer in a strategic purchasing role.
- Commercial/ financial bachelor degree (University of Applied Sciences) and NEVI I.

- Started in administrative functions, discovered her interest in purchasing, and grew from a purely operational role towards a job function which is responsible for tactical and strategic tasks in purchasing.
- Experience in purchasing in both small enterprises and large organizations with worldwide operations.
- Our core business is the development, production and sale of explosion proof applications of many different products (B2B). Safety rules are important aspects of our business.
- The company is part of a larger parent company, however operates almost fully independently. We make our main products ourselves, and the less important part of our range of products is produced (outsourced) towards our parent company.
- The company has slightly above 100 employees, most of whom work in production and sales.
- In my role, I am responsible for the strategic policy of the department, but not leadership. Also, I perform tactical purchasing activities for important suppliers.

How would you rate the maturity of the purchasing department?

4. Item:	Points	Stage 1:	Stage 2:	Stage 3:	Stage 4:	Comments:
Purchasing strategy	6.0		X			<ul style="list-style-type: none"> - Recently developed a purchasing strategy (+ annual plan) with how to achieve their goals - Strategy building per product group based on strategic importance (Kraljic matrix)
Assessment of Demand	2.0	X				<ul style="list-style-type: none"> - No standard processes - Demand derived from sales (limited forecasting)
Process	6.0		X			<ul style="list-style-type: none"> - Products have high-specification norms, therefore limited supplier base - Working on improvement towards using knowledge of suppliers about products. - Limited exchange of information between departments
Technology Identification	1.0	X				<ul style="list-style-type: none"> - No standard processes or intentions to identify new technologies by purchasing

Organisational Structure	6.0		X			<ul style="list-style-type: none"> - Purchasing department is formally in place - Responsible for all purchasing activities - Policy not described. Purchasing has only recently gained attention in the organization
Board participation	16.0				X	<ul style="list-style-type: none"> - Supply Chain Manager (Also Purchasing Manager) is part of the Management Team
Sourcing Strategy	4.0	X				<ul style="list-style-type: none"> - Sourcing strategy is documented, and based on strategic importance of products (Kraljic matrix)
Improvement of standing in supply market	6.0		X			<ul style="list-style-type: none"> - Recently started projects to set-up platforms for purchasing in collaboration with suppliers to improve ordering process
Ordering	8.0		X			<ul style="list-style-type: none"> - Automated by software systems (Incl. ERP) for operational purchasing process - Limited human intervention needed
Target Breakdown	12.0			X		<ul style="list-style-type: none"> - Substantial targets (KPI's) for each purchaser are defined
Total	67.0	33,5%				

Could you describe the purchasing department?

- The purchasing department is divided into purchasers responsible for purchasing towards the parent company (2 operational purchasers), and the rest responsible for external purchasing for the purpose of our production.
- In total, the company works with more than 2000 suppliers. This is the result of our project-based approach.
- Supply chain manager -> strategic/ tactical purchaser -> operational buyers (2 responsible for purchasing towards parent company/ 2 responsible for external purchasing) -> assistant/ administrative buyer. The process of purchasing indirect materials is fully outsourced.

- Operational buyers are responsible for in-time delivery of every part needed for the production of our products. Strategic/ tactical purchasing (1 employee) is responsible for the strategic policy, but also supplier selection, negotiation and relationship management, and the purchasing manager is responsible for the performance and leadership of several departments in the organization (incl. purchasing).

What skills, competencies and knowledge are currently important for purchasers in the company?

- You have to be able to think about the future for the benefit of the organization. Sometimes you have to invest a lot of resources into a project, which will pay off in the future.
- Critical- and 'independent' thinking is important. Sometimes a supplier has really friendly employees, however your job is to work together with the best supplier based on price or quality for example. Therefore we created a 'scorecard' to score suppliers based on several aspects (price, quality, service, communication).
- Strategic purchasers do need different competencies and knowledge compared to operational purchasers. For example, a professional attitude towards suppliers is more important, because you represent the company.
- You need to be able to understand the negotiation process, in the sense of what you can or cannot do.
- As a strategic purchasers, you have to be able to explain why you choose certain suppliers.
- Some departments really benefit from a purchaser that has technical knowledge about the products. However, there are not many purchasers with a engineering background. On the flip side, many people from engineering have no affinity with purchasing. Therefore, in my opinion technical affinity (or knowledge) is not really important for a purchaser, but in that case you do need to be able to work together with other departments to use their knowledge instead.

How does the organization acquire new skills, competencies or knowledge?

- When purchasing join the company, they participate in an intern 'training' performed by our quality department. They teach new employees which products we produce, what they do, and how they are built.
- There is no clear policy on education, courses, trainings or other methods for the purpose of personal development. People can propose such methods, which are then reviewed by the management team (no predetermined budget).
- The company worked together with a consultancy company to improve certain structures or processes. Also, purchasers will sometime visit scholarships or fairs to acquire knowledge. However, the pandemic has brought this to a halt.

- If it is up to me, I would organize more internal trainings in which employees teach each other about certain aspects of the business.

Do you think firm size (SME's) affect the skills, competencies or knowledge requirements of purchasers?

- I think larger organization are more focused on long-term, and working in standard structures and processes to achieve long-term goals. Small organization are more concerned with 'putting out small fires'. SME's could learn from larger organizations on this aspect in both processes, but also vision.
- Even though (purchasing in) SME's differ from larger organization, both still have the same goals. However, SME's are slower in their development compared to large organizations. The limited human resources mean there is little time left for the development of processes. Therefore you need to be patient.

What changes do you expect in the future purchasing department?

- For example, in our case purchasing will have more structure in its processes. Mapping/ documenting the process is an important step in our development, and to improve efficiency.
- There will be more automation of processes.
- Purchasing will gain attention within businesses, and organizations will increasingly recognize its potential. Not just focusing on price, but more on aligning processes with suppliers, and creating standard processes towards product specifications for the sake of quality.
- I do not think people necessarily need new competencies or knowledge to work in the future purchasing department. However, I do think there will be more focus on making maximum use of a person's competencies and knowledge.

Interview 6:

Could you please introduce yourself?

- Male, approximately 30 years old, working for a high-quality end-product manufacturer.
- Commercial bachelor degree (University of Applied Sciences).
- Started with a sales function for a small company, became responsible for multiple tasks within the supply chain including purchasing. Then joined a (large) SME, responsible for operational purchasing. After a couple years, searching for new challenges, I entered service at my current employer, responsible for the purchasing 'department'.

- The company has approximately 50 employees in the Netherlands, and up-to 200 internationally. The Dutch location is responsible for strategic policy, product development, purchasing (strategic/ tactical level) and sales, whereas the international location is mostly executive: production, logistics, quality, operational purchasing etc.
- In my role, I am responsible for strategic (limited) and tactical purchasing with a project-based approach. To explain, R&D provides a list of products, parts or materials required for our product, than I have to set-up everything (Supplier selection, pricing, contracts etc.) up-to the operational (or ordering) part of purchasing.

How would you rate the maturity of the purchasing department?

5. Item:	Points	Stage 1:	Stage 2:	Stage 3:	Stage 4:	Comments:
Purchasing strategy	2.0	X				<ul style="list-style-type: none"> - Follow general strategy (and guidelines), without a specific purchasing strategy - Individual in the department determines purchasing policy
Assessment of Demand	6.0		X			<ul style="list-style-type: none"> - No standard processes for determination of product specifications - Demand derived from sales and order income
Process	6.0		X			<ul style="list-style-type: none"> - Mostly working with existing suppliers due to high product/ process specifications - Standard process for market analysis - Limited information exchange with cross-functional departments
Technology Identification	4.0	X				<ul style="list-style-type: none"> - No standard processes for technology identification - Purchasing is concerned with (and responsible for) technology identification (pro-active) - Product-related fairs are main source for new technologies
Organisational Structure	6.0		X			<ul style="list-style-type: none"> - Purchasing department is formally in place

						- Not responsible for all purchasing activities (indirect materials)
Board participation	1.0	X				- No purchasing employees attend board meetings (or MT meetings)
Sourcing Strategy	1.0	X				- No documented sourcing strategy
Improvement of standing in supply market	1.0	X				- No efforts to try achieve 'preferred customer status' -
Ordering	9.0		X			- Automated by software systems (Incl. ERP) for operational purchasing process - Limited human intervention needed
Target Breakdown	6.0		X			- Single performance targets - Annually reviewed
Total	42.0	21%				

Could you describe the purchasing department?

- The purchasing department (on national level) consist of 2 project-purchasers. Roles are split based on product groups.
- My responsibility is everything regarding strategic and tactical purchasing, which is mainly performed with a project-based approach -> R&D delivers a bill of materials for new products, then the job of the purchasing department (myself) is to organize everything until it's ready for operational purchasing (only the order process). In addition, I do have to maintain the contracts for existing products.
- My international colleagues are only responsible for operational purchasing. Operational purchasing is almost fully automized in our software. They only have to fill in the numbers, and 'send' this to the supplier. Also they are responsible for monitoring/controlling the delivery process, to ensure items are delivered in time.
- Besides strategic and tactical purchasing (with project approach), I am partly responsible, together with R&D/ engineering, for the identification of new technologies or materials suitable for our products.
- The administration 'department' is responsible for purchasing indirect materials.

What skills, competencies and knowledge are currently important for purchasers in the company?

- Negotiations is an important aspect of purchasing.
- Because we're working with multiple projects, you need to be able to create a 'helicopter-view' and manage different projects at once.
- My personal experience is that, dependent on the sector you're working in, you don't particularly need affinity with technology or even experience for purchasing. Soft skills are more important, however in my role, because of the importance of high-quality and my responsibility for the overall purchasing function, some knowledge on purchasing (and techniques) as a discipline helps a lot.
- Technical knowledge about the product could help, but is not necessary. You can learn most of the aspect about products when you join the organization.
- A professional attitude, and communication skills are in my opinion logical competency requirements.
- Because we do a lot of business with international suppliers (mostly Asia), your language skills should be on point (at least English).

How does the organization acquire new skills, competencies or knowledge?

- For example, in order to gain up-to-date knowledge and competencies, every semester (half-year) there are some trainees to strengthen our organization. These students often decide to stay, working for the company which helps long-term.
- Our international location has a really close relationship with the local University: regularly the location receives students that are going to work on an assignment for the company. The goal is to introduce talent to the company.
- In the Netherlands, there is a budget that employees can use for personal development by participating in courses or trainings. The possibilities are there, you just need approval from the management team. However, there is no structural policy, your own initiative is key.
- If we do not have the competencies or knowledge ourselves, the company sometimes chooses to hire people temporarily (interim contract).
- In order to discover new technologies and gain knowledge on the market of possible suppliers, we do visit scholarships or trainings.
- At last, an example of an initiative to learn something that I took myself was that I visit some other purchasing department in the last couple months. I cannot know everything, and also I don't have to 'reinvent the wheel'.

Do you think firm size (SME's) affect the skills, competencies or knowledge requirements of purchasers?

- I do think purchasers in SME's need different skills and knowledge compared to working in a larger organization. For example, purchasing in large organization or often specialized in a single product/ material group. In this case you need less technical knowledge, because you simply buy less products.
- Also, purchasing roles in SME's often combine several responsibilities within purchasing in one role. Therefore you do need a broader skill-set. However, most soft skills that are important to purchasing SME's also apply to other purchasers.

What changes do you expect in the future purchasing department?

- I don't think purchasing will change much in the near future (in our case). Although I do think outsourcing will be even more important.
- For our company, the purchasing department will grow in the near future.
- If no 'game-changing' software comes onto the market, the purchasing process will most likely be the same in 10 years.

Interview 7:

Could you please introduce yourself?

- Male, approximately 50 years old, working for a high-tech OEM in the automotive industry.
- Commercial master degree (University).

- Years of experience in purchasing for multiple companies in the steel industry. In order to face new challenges and cultures, choose to find a new company. Now working for world-wide operating company in the automotive industry.
- Due to the size of his first employer, started with a purchasing role responsible for the overall purchasing department. That means operational, tactical and strategic purchasing was my responsibility. In my opinion past experience in an operational role benefits purchasing managers a lot, you need experience in actual purchasing.
- The company has around 250 employees, works business to business, and works with large companies in the industry (positioned as a market leader). The Dutch location is part of a larger parent company, however is fully responsible for their own purchasing policy.
- Production in our case is more like assembly. We do not produce materials or parts, but we put parts of different suppliers together to make a product. Each 'contract' starts with a project, and becomes 'serial-production' afterwards.
- In my role, I am responsible for the leadership of the purchasing department and creating a strategic policy. In addition, relationship management with strategically important suppliers is part of my job.

How would you rate the maturity of the purchasing department?

6. Item:	Points	Stage 1:	Stage 2:	Stage 3:	Stage 4:	Comments:
Purchasing strategy	8.0		X			- Normally the purchasing department does have a strategy, aligned with corporate strategy, due to recent organisational changes limited
Assessment of Demand	13.0			X		- Standard process to identify product specifications (documented) - Demand systematically derived from order income
Process	12.0			X		- Limited market analysis necessary, working with limited number of suppliers due to high-product specifications (LT relationships) - Regular information exchange with process partners
Technology Identification	6.0		X			- No sufficient structure in technology identification by purchasing (sporadic)

						- More resources should be dedicated to this subject (in purchasing)
Organisational Structure	14.0			X		- Purchasing department is formally in place - Purchasing department is responsible for all purchasing activities
Board participation	14.0			X		- Supply Chain Manager (Also Purchasing Manager) attends management meetings
Sourcing Strategy	8.0		X			- Sourcing strategy is documented, cross-functionally determined (and applied)
Improvement of standing in supply market	8.0		X			- Analysis of strategic relevance of suppliers, and create a corresponding strategy for the concerned product group - No structural policy, spontaneous actions
Ordering	14.0			X		- Automated by software systems (Incl. ERP) for operational purchasing process - Limited human intervention needed (only control/ monitor)
Target Breakdown	14.0			X		- Substantial collective/ individual targets - Evaluation of performance annually
Total	111.0	55,5%				

Could you describe the purchasing department?

- Our structure: supply chain manager -> split department in project- and serial purchasing. In total 4 strategic purchasers -> supply/ quality (tactical) -> operational purchasing. In total approximately 15 employees in the purchasing department.

- Operational purchasing is responsible for ordering, delivery monitoring, ensure on-time delivery. To explain, most of our operational purchasing is in the project purchasing group, because the items, parts or products they buy are not present in the software (ERP) yet.
- Strategic and tactical purchasing are responsible for supplier selection, contracting, relationship management, quality assurance etc. Strategic purchasing also present a leadership role within the department and is responsible for strategic policy of the organization.
- Clear split between project-buyers and operational buyers.
- Purchasing indirect materials is the responsibility of operational purchasing.

What skills, competencies and knowledge are currently important for purchasers in the company?

- In my opinion the skills and knowledge that you need heavily depends on the exact function a purchaser performs.
- In my position you need analytical skills, which often comes with education level (HBO or WO), to be able to absorb knowledge fast. When you absorb information in a short period of time, you don't have to be a specialist about the product you buy.
- In a management function, strategic thinking and being able to convince people about collective interest are important competencies.
- Communication skills are really important, because you're both working with intern and extern 'customers'.
- Pragmatic work is necessary. The step from strategic policy towards the practical execution is difficult, but key for your success.
- Experience in executive (or operational purchasing) should be part of someone's portfolio before becoming a purchasing manager. The barriers (or distance) between management and the work floor becomes too big.
- At last I think a strategic purchaser should be interested in things quickly (curiosity), and a helicopter view are key. You should want to know everything about the purchasing process, something a tactical or operational purchasing does not need.
- Also, operational and tactical purchasing work more within structures/ processes which means they do not need to be able to work in cross-functional teams.
- Operational and tactical purchasers should have administrative skills, should work in a structured way, and consider it important to not make mistakes. Also they need to proactive with communicating to suppliers, and be able to report their work to their managers.

How does the organization acquire new skills, competencies or knowledge?

- In my opinion the company does a great job with selecting the right employees based on clear job-profiles. They clearly select different type of people based on skills, knowledge, experience, age, gender etc. which the team misses (diversified teams).
- Personal development, acquiring new competencies and knowledge is really important for organizations. However, the company (and I think most companies) should take a way more structured (and structural) approach.
- If employees want to participate in education, courses, trainings etc. they could make a suggestion towards the manager/ management which have to give approval (budget approach). All based on a person's own initiative.
- Each individual does discuss a personal development plan with the company (often HRM), however no structural policy. In previous experience, in a larger organization, the experienced the same problem.
- Structural development of employees is important to extend the knowledge of the organization. Also, a structural policy will ensure that a company retains its knowledge and competencies. I would prefer a individual approach.
- I would like my team to participate at least once a year in a one or two day session to extend their network, talk with colleagues and up-date knowledge.
- In my opinion a strategic purchaser should be 'on-the-road' at least half of the time. You need to know where your products come from.

Do you think firm size (SME's) affect the skills, competencies or knowledge requirements of purchasers?

- Business size is important, but even more the industry. Our industry forces purchasers to pay a lot of attention to quality.
- Because of our industry and business size, a purchaser on the one moment has to buy telephones for example, and on the other moments expensive machinery. Therefore they need more broad knowledge compared to purchasers in large organizations.
- A purchasers in SME's often works with suppliers in different countries. Therefore you need to be able to work with different cultures.

What changes do you expect in the future purchasing department?

- Software will even more affect the purchasing function. At this point organization are unable to structure data, however in the future departments will use the data to automatize even more processes and monitor performance.

- Relationship management and 'human-knowledge' will become more important, because the actual ordering process is taken over by software. Therefore experience in purchasing will become even more important.
- You need to monitor technological developments initiated by your or potential suppliers to stay relevant.
- I think and hope the purchasing function will become even more strategic. Most organization do not realize the full potential of the discipline. There is too much focus on price, while there is a lot to achieve on delivery, risk management etc.
- For purchasing overall, outsourcing towards different continents was an important development in the past decades. However, I think most companies will choose to bring their production closer to them.
- At last, I want to say that I think future purchasers should be able to work data (and change to a more data analyst role) and soft skills should be more central within education. Alignment between education (so what students learn), and the needs of society and the industry should be more important. Communication between Universities and businesses is therefore crucial.

Interview 8:

Could you please introduce yourself?

- Male, approximately 50 years old, working for an end-product manufacturer.
- Purchasing Management bachelor degree (University of Applied Sciences).

- Started in a operational purchasing role for a large international organization, and grew (fast) to a purchasing manager role within different medium-sized companies.
- The company is specialized in the production of products related to ‘image technique’, and has approximately 300 employees at this point, of which half of them work at the location in the Netherlands.
- In my role, I am responsible for the leadership, strategic and tactical part of the purchasing department. That means I decide the purchasing policy, and am responsible for the entire purchasing process up-to the actual ordering process.

How would you rate the maturity of the purchasing department?

7. Item:	Points	Stage 1:	Stage 2:	Stage 3:	Stage 4:	Comments:
Purchasing strategy	3.0	X				<ul style="list-style-type: none"> - No formally (or informally) agreed purchasing strategy - Individuals in the department determine the strategic policy
Assessment of Demand	3.0	X				<ul style="list-style-type: none"> - Demand derived from sales/ order income - No significant forecasting process
Process	6.0		X			<ul style="list-style-type: none"> - Limited suppliers in the market for the product groups - No standard process for market analysis - Limited information exchange between departments
Technology Identification	2.0	X				<ul style="list-style-type: none"> - No standard processes or intentions to identify new technologies by purchasing
Organisational Structure	11.0			X		<ul style="list-style-type: none"> - Purchasing department is formally in place - Responsible for all purchasing activities
Board participation	14.0			X		<ul style="list-style-type: none"> - Purchasing ‘manager’ participates in MT meetings (not part of the board)
Sourcing Strategy	3.0	X				<ul style="list-style-type: none"> - No documented sourcing strategy

						- Sourcing strategy informally determined
Improvement of standing in supply market	6.0		X			- Strategy is to create long-term relationships with suppliers - Supplier feedback sessions (regularly) - No documented process - Transparency in needs and expectations towards suppliers
Ordering	3.0	X				- Software systems are used to perform operational purchasing, however still 'under construction' - Significant human intervention necessary
Target Breakdown	11.0			X		- Substantial targets on collective and individual level defined
Total	62.0	31%				

Could you describe the purchasing department?

- At this point, I am responsible for strategic and tactical level of the purchasing department in the company. In addition I have 1 colleague responsible for operational purchasing. However, the department will grow in the near future.
- I report directly to the management team.
- Purchasing of indirect materials is an administrative function outside the department.
- The department is responsible for almost everything that is purchased by the company, and the process that comes with this. However, product development and technology identification are not directly part of our responsibility.
- Because of size, our task distribution is simple: I am responsible for our strategic policy, supplier selection, negotiations, contracting and relationship management, whereas the operational purchaser is responsible for buying the actual products, quality, and the delivery process.

What skills, competencies and knowledge are currently important for purchasers in the company?

- As a strategic (or tactical) purchaser, with some management responsibilities, you have to be able to understand people. You have to be able to find their 'underlying' problems, and how to solve problems for them. Talk with people about their problems.

- You have to be able to explain why you make certain choices as a manager. Not from behind your desk, but by visiting others during their work.
- In this purchasing role, you have to be critical. If an engineering wants a certain quality materials or product, try to talk to them why they need the high-quality option, or that some lower-quality (for a lower price) could also work.
- A lot of things go wrong within a purchasing process with your suppliers. Therefore, you need to have communication skills. Also, these skills are important because you are the representative of the company.
- ‘Sometimes you have to be tough’ to control the purchasing process. And you should be able to discover opportunities and how to use them.

How does the organization acquire new skills, competencies or knowledge?

- In my case, the management team gives me freedom and resources to enable the purchasing department to increasing the performance of the purchasing process. ‘You are the expert in the field of purchasing, so you tell me what you need’.
- In order to move with the times, everyone has to develop themselves within or outside the company. Therefore, I think education, courses or trainings should be part of your work. In my case, recently I have followed/ and finished a purchasing related course to up-date my knowledge.
- There is no structural policy within the company on personal development, but there is a budget for suggestions.
- If I could determine the policy, I wouldn’t introduce a structural and collective ‘training/ development program’, but would leave it with individual approach (your own initiative).
- If the department would become a lot bigger, I would organize a meeting to discuss the challenges we face, and what people (and thereby the department) need to approach them.

Do you think firm size (SME’s) affect the skills, competencies or knowledge requirements of purchasers?

- The company comes from a really basic process, and already developed towards a more mature organization. However, we could really broaden our knowledge on purchasing for example. Think about incoterms, contracting etc.

- SME's often have less structured processes compared to large organization. However, in my opinion this characteristic, or approach, is also better for smaller organizations.
- Purchasers in large organizations do need different competencies and knowledge compared to purchasers in SME's. Purchasers in large organizations are more executive. You need to know to work within structures and guidelines.
- In an SME's you need to understand the collective interest, whereas a purchaser in large organizations should be more focused on their own goals/ targets. I don't like this approach from large organizations.
- Personal contact/ relationships with colleagues and suppliers is way more important in small and medium-sized organizations.

What changes do you expect in the future purchasing department?

- So far our purchasing is decentralized, that means the different locations of the company do not work together on purchasing. In the future, I think the company will choose to centralize parts of the purchasing function (which is possible due to our size). Centralized policy, but executed decentralized.
- The digital market will grow, which means an online market with suppliers.
- Increasing flexibility in working from the location, or working from home.
- The relationship between customer and supplier will become more central to the purchasing process. A relationship should be profitable for both parties, instead of full focus on price reduction (because of high volume for example).

Interview 9:

Could you please introduce yourself?

- Male, approximately 35 years old, working for a 'lifestyle' end-product manufacturer (from raw-material to end-product).
- Logistics bachelor degree (University of Applied Sciences).

Started with a job in logistics, then became acquainted with purchasing in a small organization, and now working in a operational/ tactical purchasing role in a medium sized company.

- The company is part of a larger concern. In the Netherlands, they have 2 production facilities. The location I work at has approximately 50 employees, and the other location around 150. We operate completely independent of each other.
- In my role, I am responsible for the strategic policy and operational/ tactical purchasing activities for indirect materials. The direct materials only consist of raw-materials which are purchased centralized, and therefore purchasing indirect materials is the main responsibility of the purchasing department (which is just me).

How would you rate the maturity of the purchasing department?

8. Item:	Points	Stage 1:	Stage 2:	Stage 3:	Stage 4:	Comments:
Purchasing strategy	1.0	X				- No formally or informally agreed purchasing strategy (national level)
Assessment of Demand	3.0	X				- Demand derived from earlier sales - Limited forecasting
Process	6.0		X			- Market analysis process partially described (not documented) - Limited information exchange with cross-functional departments
Technology Identification	1.0	X				- No standard processes or intentions to identify new technologies by purchasing
Organisational Structure	6.0		X			- Purchasing department is formally in place - Not responsible for all purchasing activities (large indirect materials such as machines)
Board participation	1.0	X				- Purchasing not evolved in board meetings
Sourcing Strategy	3.0	X				- No documented sourcing strategy

						- Sourcing strategy informally determined (by individuals)
Improvement of standing in supply market	2.0	X				- Only long-term contracts (with production forecast) to improve position towards supplier - No systematic initiatives
Ordering	8.0		X			- Software systems (SRP) used for order process - Limited human intervention needed (control/ monitor)
Target Breakdown	1.0	X				- No targets defined
Total	32.0	16%				

Could you describe the purchasing department?

- At the relevant location, I'm the only purchasers.
- The products/ materials we purchasing can be split into two categories: raw material, and the rest. For the raw materials, the company has a centralized purchasing policy (volume bundling to lower costs). However, the rest of purchasing is fully decentralized.
- Everything apart from the raw material, is actually purchasing indirect materials. That means the purchasing departments at the production facilities are mainly purchasers of indirect materials. However, this category is quite complicated and really important for the business.
- There is no real strategic policy in the department, apart from getting the lowest price possible. My responsibility is market analysis, supplier selection, negotiations, contracting and then operational purchasing and monitoring the delivery process.
- Big investments such as new machinery is performed by people that have the knowledge to make the right choices. Purchasing is not responsible for everything that is purchased within the company.

What skills, competencies and knowledge are currently important for purchasers in the company?

- You have to be able to understand processes and work within the structures.
- Product knowledge is really important to perform my role. With that I mean knowledge about the specification (and your needs) of a certain product, and know the market in which suppliers are candidates.
- As a purchaser, you have to be able to maintain an overview.

- You have to be confident, and be clear towards your suppliers about your needs/expectations.
- ICT skills are important, being able to work with 'Microsoft Office' or ERP software is crucial. However, for most young people this won't be very difficult.

How does the organization acquire new skills, competencies or knowledge?

- There is no structural policy on personal development.
- Nothing is done on training, apart from people that do suggestions for training or courses to the management team. Sporadically this request is approved.
- Also, we do not have to write a 'personal development plan'.

Do you think firm size (SME's) affect the skills, competencies or knowledge requirements of purchasers?

- In a small or medium-sized company, there often is only a small purchasing department. That means you sometimes are on your own, and therefore have to be able to work outside your 'comfort-zone'.
- Your own initiatives are way more important, because you are the only one responsible for the whole purchasing policy (and execution).
- Because my role is more diverse than a 'operational purchasing' role in a large organization, I do need stronger communication skills for example, but also be able to solve problems for a wide variety of products and suppliers.

What changes do you expect in the future purchasing department?

- In the next ten years, a lot of profit can still be made in automatization in the operational purchasing process.
- The importance of durability and green energy in the purchasing process will become increasingly important, also for small and medium-sized organizations.
- I'm not sure if the competencies that people need to be a purchaser will change in the near future. Developments within SME's are often slower, and therefore make it easier for people to adopt to them.

Interview 10:**Could you please introduce yourself?**

- Male, approximately 40 years old, working for a high-tech equipment manufacturer.
- Logistic degree (post-vocational education), with NEVI I and NEVI II.
- Started in a logistics role, when searching for a new challenge got in touch with purchasers due to a lack of personnel in the purchasing department of a fast-growing organization. After working for a few large multi-nationals, now employed in a medium-sized organisation, which operates internationally and has around 200 employees in the Netherlands, and 350 world-wide (in total, incl. the Netherlands).
- In my first role, I was responsible for the entire purchasing process. Therefore, I already had experience in strategic, tactical and operational purchasing.

- The company performs the full process from product development to the production of the end-product. In our product range are both custom-made products, but also a group of 'catalog products'.
- The standard product range is produced by the international part of our organization, and the project-production of custom-made product is produced at our location in the Netherlands.
- In my current role, I am responsible for strategic and tactical activities in the purchasing department. Therefore I am partly responsible for the strategic policy of the department, and also for supplier selection, negotiations and contracting.

How would you rate the maturity of the purchasing department?

9. Item:	Points	Stage 1:	Stage 2:	Stage 3:	Stage 4:	Comments:
Purchasing strategy	8.0		X			<ul style="list-style-type: none"> - No formally agreed, and documented purchasing strategy - Informal strategy based on corporate strategy, using 4 main 'pillars' that are the main goals for the department
Assessment of Demand	13.0			X		<ul style="list-style-type: none"> - Most products are custom-made, prepare product specifications and demand in conversation with the customer (for forecasting purposes) - Share forecasting with suppliers
Process	13.0			X		<ul style="list-style-type: none"> - Determine strategic importance of products based on Kraljic matrix (annually) - Use results to perform market analysis for risk management (standard, documented process) - Critical view on existing suppliers (suitability)
Technology Identification	11.0			X		<ul style="list-style-type: none"> - Partly responsible for technology identification (for standard products) - Actively stimulate suppliers to identify and use new technologies

Organisational Structure	14.0			X		- Purchasing department is formally in place - Responsible for all purchasing activities
Board participation	3.0	X				- Purchasing falls directly under the Chief Financial Officer, no board participation from purchasing
Sourcing Strategy	6.0		X			- No documented sourcing strategy - Formally agreed sourcing strategy which applies to all product groups
Improvement of standing in supply market	8.0		X			- No structural policy - Some measures are taken to improve position towards strategically important suppliers - Our suppliers can use our products to improve their business (two-way relationship)
Ordering	12.0			X		- Software systems (ERP) are used to perform operational purchasing process - Limited human intervention necessary (control/ monitor, orders are entered automatically)
Target Breakdown	13.0			X		- Substantial targets on collective and individual level defined - Reviewed annually – based on scorecard
Total	101.0	50,5%				

Could you describe the purchasing department?

- Our purchasing department consist of 2 ‘tactical’ and 2 ‘operational’ purchasers.
- Tactical purchasers are besides market analysis, supplier selection, negotiations, contracting etc. also responsible for the strategic policy of the department. There is no ‘strategic purchasers’ or ‘purchasing manager’, we report directly to the financial director.

- The tactical purchasing roles are split based on product groups and specific groups of suppliers.
- The operational purchasing is responsible for purchasers everything that has been released. Contracts and price negotiations are already finished.
- No differences in role between operational purchasers.

What skills, competencies and knowledge are currently important for purchasers in the company?

- You have to understand the company, sector, and product (technical knowledge) you're working in and with.
- Relationship management is really important in my role as a tactical purchasers. Search for a win-win situation for you and the supplier, you must therefore be able to weigh up interests.
- Openness, honesty and transparency are really important aspect which a purchasers needs to work with to maintain a good relationship with suppliers. For example, discussing your and the suppliers' problems is very important in the long-term.
- Communication skills are of course important to represent the company to the suppliers.
- Technical skills about the product help, but it's not necessary to have technical knowledge or affinity before you join a certain purchasing role.
- In my role technical purchasing knowledge, about techniques and models that are used in the discipline is very useful. Personally, I don't think they are necessary to be successful in purchasing, but just useful. Soft skills are more important.

How does the organization acquire new skills, competencies or knowledge?

- The organization 'thinks' you should take courses or trainings, but there is no structural (or active) policy on your personal development. You have to make the initiative, and suggestion for certain courses yourself.
- There is a yearly budget for the development of employees in the organization (on collective level, not individual).
- The training or course should be connected to your function, and the organization should benefit from your new skills and knowledge.
- On our own initiative, we visit scholarships and fairs to gain knowledge about the market.
- There are many career opportunities within the company. When a person expresses the ambition to grow to a higher position, then the organization will talk to you if your competences and knowledge are appropriate to the job, and what the company can do to development the person to the new job.

- If the policy on the development of personnel would be up to me, I would take a more compelling approach with structural trainings and courses. Both on collective, and individual level.

Do you think firm size (SME's) affect the skills, competencies or knowledge requirements of purchasers?

- In my opinion the company size does affect the purchasing. Processes are drawn up and determined on international level in large organizations. That means a purchaser in a large organizations has almost no impact on the overall policy in the purchasing department.
- In a large organizations you should be able to work within clear structures and processes within certain guidelines.
- Because large organizations often have more hierarchy, the distance between theoretical, and practical purchasing becomes bigger. This result in a tougher approach to the purchasing game.
- Our company could learn from larger organization to create more structure and standard processes within the organization. As a result, employees do know exactly know what to do in a certain situation. The disadvantage is that it's really hard to adapt to problems or disturbances. For example, if the cooperation with a supplier is difficult, it's not easy to search for a new supplier as a result of the hierarchy and structure.
- Larger organization could learn from the flexibility of purchasing departments in SME's.

What changes do you expect in the future purchasing department?

- I expect organization to operate more closely to its suppliers. Share information (data), your strategy and goals, and think together with suppliers about your processes. Make it clear to each other what you are, or are not good at.
- Trust between supplier and customer should grow in order to create more transparency in the process. Relationship management will become increasingly important, instead of the old fashioned approach with focus on low prices.
- With regard to SME's, future purchasing will be more affected by the management of the overall business. More structures, processes and guidelines will apply to purchasing. So far, purchasing in the company is mainly organized by the individuals in the department. I think this will change in the future.
- I expect most purchasing roles to be the same in ten years, however each role will have more clear boundaries/ limits to his/ her activities and responsibilities.

Interview 11:**Could you please introduce yourself?**

- Male, approximately 60 years old, working for a high-tech equipment ‘manufacturer’.
- Pre-University education degree, with NEVI I and NEVI II.
- Started working in production, progressed to logistics foreman and ended up in a ‘operational’ purchasing role. Thereafter quickly moved to a managerial role in the purchasing department of various high-tech equipment manufacturing companies.
- The company I’m working for is part of a large world-wide concern with thousands of employees. We are specialized in the production and assembly of custom-made application of high-tech equipment used in several different industries. The purchasing is carried out in a decentralized manner, but work with the same software packages (ERP for example) that are used worldwide.

- Our facility has approximately 500 employees, with a large engineering department that enables us to serve the different wishes of our customers.
- In my current role, I'm partly responsible for the strategic policy of the department, and for strategically important suppliers within my product group. Not like the other strategic purchasing roles, I am also responsible for leadership over several young employees in Purchasing.

How would you rate the maturity of the purchasing department?

Item:	Points	Stage 1:	Stage 2:	Stage 3:	Stage 4:	Comments:
Purchasing strategy	9.0		X			<ul style="list-style-type: none"> - Annual purchasing plan, drawn up by discussions with the purchasing team - In line with corporate strategy
Assessment of Demand	13.0			X		<ul style="list-style-type: none"> - ISO certificate, standard processes to write down product specifications (documented) - Systematic forecasts to suppliers
Process	9.0		X			<ul style="list-style-type: none"> - Materials/ parts are categorized, active market analysis for product groups - No active exchange with cross-functional departments - No documentation for market analysis
Technology Identification	6.0		X			<ul style="list-style-type: none"> - No documented responsibility - Purchasers are expected to be up-to-date on new technologies - Session with engineers, purchasing and suppliers to discuss about products
Organisational Structure	14.0			X		<ul style="list-style-type: none"> - Purchasing department is formally in place. - Performs standard processes - In charge of all purchasing activities - Responsibilities are divided
Board participation	18.0				X	<ul style="list-style-type: none"> - Supply Chain Manager is on behalf of purchasing member of the management team.

Sourcing Strategy	12.0			X		- Sourcing strategy is documented - Cross functionally applied
Improvement of standing in supply market	6.0		X			- Focus on low price instead of long-term relationships. - Our growth makes us a good customer - Forecasting
Ordering	14.0			X		- Automatized using several software systems. - Almost no human intervention necessary
Target Breakdown	11.0			X		- Targets based on department level - Financial targets and performances figures, however not always 'hard' requirements
Total	112.0	56%				

Could you describe the purchasing department?

- The purchasing department has around 20 employees: (1) Supply chain manager, (4) strategic purchasers, (5) tactical purchasers and (10) operational buyers.
- Also, 2 purchasing engineers are part of the department, responsible for technological issues at suppliers.
- Division of roles between strategic purchasers is based on product groups (Incl. indirect materials product group). Strategic purchasers are responsible for significant negotiation meetings and contracting.
- My role differs from the other strategic purchasers, in the sense that I manage a small team of young-potentials in purchasing.
- Tactical purchasing roles are the same. Tactical purchasers are to some extent responsible for market analysis, negotiations and contracting.
- Division of roles between operational purchasers is based on a group of suppliers: Each operational purchasers is responsible for a set of suppliers.

What skills, competencies and knowledge are currently important for purchasers in the company?

- The competencies and knowledge that are important for purchasers depends on the type of organization.

- In my role, communication skills are necessary. Not just in your way of communicating, but also in being able to speak in several languages.
- You have to be able to assess situations and read people's 'feelings' to avoid escalations, but also to recognize the right strategy to tackle a negotiation meeting.
- Analytical skills are really important.
- Purchasers need to have a decent level of ICT skills.
- As a purchasers you should not be scared. You need to have the guts to handle certain situations.
- Tactical, operational purchasers need more basic skills. For example, if you can type quickly, your efficiency increases significantly. Less soft skills apply to these roles.

How does the organization acquire new skills, competencies or knowledge?

- Purchasers attend meetings with engineering and suppliers to gain knowledge on materials, parts or products.
- The company has a world-wide operating academy, that hosts online courses and trainings performed regularly. Mostly basis subjects: safety, environment, risk management or technology. No specific purchasing courses, but purchasing does participate in the basic courses. Structural policy on the academy courses.
- Young- potential are (actively) offered external courses or trainings to develop their skills, competencies and knowledge. Also specifically focused on in this case purchasing.
- Besides the academy, there is no structural policy on the development of purchasers. People can suggest education, trainings or courses to develop themselves (their own initiative is key).

Do you think firm size (SME's) affect the skills, competencies or knowledge requirements of purchasers?

- Our company is quite large, which makes it necessary to understand the politics and processes that are present in the company.
- The level of purchasing is a lot higher in our purchasing department, compared to purchasing in small organizations.
- Software systems are better decorated and better thought is given to processes and structures. Almost everything in 'operational' purchasing is automatized.
- Due to the size of the organization, large organization have more difficulty to make employees work within certain processes compared to SME's.

What changes do you expect in the future purchasing department?

- As a result of the pandemic, a lot more work is done from home. Organizations discovered that working from home is more efficient than expected in advance.
- A lot of time and money is saved by online meetings, instead of flying to the relevant location for the meeting.
- Already for a lot of years, people are trying to show the strategic importance of purchaser. However, the purchasing function is still seen as a facilitating business activity

Interview 12:**Could you please introduce yourself?**

- Female, approximately 30 years old, working for an energy equipment manufacturer.
- Facility Management bachelor degree (University of Applied Sciences), with NEVI I.
- Started working in a operational purchasing function for a large multinational, in the high-tech equipment industry. Then grew to a tactical purchasing function, and now responsible for strategic, and project purchasing in a company with approximately 500 employees in the Netherlands.

- The organization has a large, worldwide operating, parent company. Purchasing is organized in a decentralized manner.
- In my role, I am responsible for strategic purchasing towards intercompany suppliers (direct materials). That means the materials, parts and products that we buy from other location of the company. In addition I'm responsible for project purchasing, in the form of buying indirect materials for the production with project purposes.
- The company is specialized in the development, production and sales (B2B) of energy management equipment.

How would you rate the maturity of the purchasing department?

Item:	Points	Stage 1:	Stage 2:	Stage 3:	Stage 4:	Comments:
Purchasing strategy	8.0		X			- Originally no specific purchasing strategy, but due to reorganization we have a clear roadmap for now - Documented
Assessment of Demand	8.0		X			- Prognosis/ forecast towards suppliers - Process for product specification is partly described
Process	3.0	X				- No clear processes or structures for market analysis. - No active exchange with cross-functional departments
Technology Identification	1.0	X				- Purchasing not responsible for identification of new technologies
Organisational Structure	14.0			X		- Purchasing formally in place. - Responsible for all purchasing activities.
Board participation	20.0				X	- Supply Chain Manager (responsible for purchasing) is part of the management team
Sourcing Strategy	9.0		X			- Sourcing strategy based on corporate strategy - Cross-functionally agreed
Improvement of standing in supply market	7.0		X			- Clear prognosis/ forecasting process towards suppliers - Supplied feedback applied

Ordering	15.0				X	- ERP automatically performs ordering process. - Majority without human intervention, 'exclusive' parts purchased with some human intervention.
Target Breakdown	11.0			X		- Substantial financial/ non-financial targets (budget, delivery, personal development)
Total	96.0	48%				

Could you describe the purchasing department?

- (1) Supply Chain Manager -> (4) Strategic Purchasers -> (8) operational purchasers -> (2) Administrative purchasers -> (1) Indirect purchasers (Indirect, basic materials: working materials for example)
- Division in roles of strategic purchasers is based on product groups. The same division in roles works through to operational purchasing (based on product groups).
- Part of the purchasing process is structural, but also partly project-based.
- Purchasing is responsible for every purchasing activity within the organization.

What skills, competencies and knowledge are currently important for purchasers in the company?

- In purchasing there is a clear split between people with a lot of product knowledge, but less purchasing experience. And on the other side, young-potentials with less product knowledge, but more purchasing affinity (and knowledge). The lack of technical/ product knowledge can be compensated by purchasing knowledge (techniques, models etc).
- A mix between people with affinity for technology, but also people with affinity for financials/ economics is the best for purchasing in my opinion.
- In my role, you need have guts and be tough in order to be able to stand your ground in the name of your company towards suppliers. Don't be scared for a discussion.
- Communication and negotiating skills are really important in purchasing.
- Knowledge on the products (technological affinity) is not a must-have in my role.
However, in that case you need to be curious, and like to learn more about these aspects.

How does the organization acquire new skills, competencies or knowledge?

- Every week, employees have a conversation with the manager that enables them to discuss their problems. This gives them the opportunity to suggest certain courses or trainings for personal development.
- Everyone discusses a personal development plan which is reflected on a year later.
- There is no structural policy on the development of competencies or knowledge in the organization. However, there is a budget which employees can use to develop themselves. They have to make the initiative to make a proposal, which is being assessed by management.
- The worldwide organization has its own academy, which organises trainings/ courses on a regular basis, for every employee (basic themes, not specifically related to purchasing).
- In my opinion, the organizations' approach to personal development with a combination of structural policy (the academy), and individual approach (based on your initiative) works really good.

Do you think firm size (SME's) affect the skills, competencies or knowledge requirements of purchasers?

- In a larger organization, there are a lot more processes, hierarchy, structures which affect the flexibility in a negative way. Applying changes to the organization are a lot slower, compared to small organizations. We could learn from this flexibility.
- In a larger organization, you have to be aware of the processes and structures and be able to work with them.

What changes do you expect in the future purchasing department?

- The trend of globalization will become even stronger in my opinion. This has consequences for purchasing. Even though risks become bigger, you are able to achieve lower prices.
- Dual-source approach, in which you search for multiple suppliers for each material, part or product to lower the risk and dependence due to single suppliers.
- I think the operational purchasing processes will increasingly be outsourced to low wage countries. The operational process, is simple and can be carried out in cheaper countries (even though there is a lower education level).

Interview 13:

Could you please introduce yourself?

- Male, approximately 35 years old, working for a company in the energy sector.
- Master degree in Engineering (University), with NEVI I and NEVI II.
- Started working for a public organization, in an advisory purchasing role. Wide experience in tendering and purchasing products/ services for large projects. The company has approximately 250 employees, of which almost half in the operation.

- The company is closely related to public organizations, which forces them to strictly take law and regulations into account in the purchasing process.
- In the current role, responsible for purchasing for large (innovative) projects. That means responsible for initiating, executing and finishing tendering programs.

How would you rate the maturity of the purchasing department?

Item:	Points	Stage 1:	Stage 2:	Stage 3:	Stage 4:	Comments:
Purchasing strategy	13.0			X		<ul style="list-style-type: none"> - Each department translates the corporate strategy into a 'department strategy'. - Documented and reviewed annually.
Assessment of Demand	9.0		X			<ul style="list-style-type: none"> - Product specifications defined in standard processes. - Demand derived based on prognosis.
Process	12.0			X		<ul style="list-style-type: none"> - Process for market analysis described in large 'guide'. - Constant information exchange between partners.
Technology Identification	3.0	X				<ul style="list-style-type: none"> - No responsibility towards technology identification (for purchasing).
Organisational Structure	7.0		X			<ul style="list-style-type: none"> - Purchasing formally in place. - Not responsible for all purchasing activities.
Board participation	3.0	X				<ul style="list-style-type: none"> - Purchasing reports to financial director.
Sourcing Strategy	12.0			X		<ul style="list-style-type: none"> - Sourcing strategy based on corporate strategy. - Cross-functionally agreed.
Improvement of standing in supply market	8.0		X			<ul style="list-style-type: none"> - Focus on long-term relationships instead of cost savings. - Some measures taken to achieve preferred customer status.

Ordering	7.0		X			- Use of ERP for ordering
Target Breakdown	12.0			X		- Substantial financial/ non-financial targets (budget, delivery, personal development)
Total	86.0	43%				

Could you describe the purchasing department?

- Supply Chain Manager -> 3 Strategic Purchasers -> 1 Tactical Purchaser -> 2 Operational Purchasers.
- Purchasing roles are divided based on the responsibility to support a certain department. Therefore, each Strategic Purchaser is responsible for purchasers items necessary for the operations at the relevant department.
- A Strategic Purchaser has the responsibility of a 'Facility Purchaser'.
- The purchasing department has to take laws- and regulations made for Public Procurement into account.
- The budget/ expenses are most likely a lot bigger compared to other SME's.

What skills, competencies and knowledge are currently important for purchasers in the company?

- A Strategic Purchaser in this role has to be able to understand laws- and regulations. In addition also the influence of politics in this business.
- Strategic Purchasers responsible for a department or product group(s) should be able to work with standard processes, structures, rules and budgets. Therefore the person should not think in problems, but in how to solve problems within the possibilities.
- Strategic Purchasers should have good communication skills in order to collaborate with suppliers
- Analytical skills are really important for purchasers.
- The personality, competencies and knowledge to be able to work together with cross-functional department is an important aspect of purchasing in such a role.

How does the organization acquire new skills, competencies or knowledge?

- There is no structural policy on the development of skills for employees. However, each (Purchasing) employee annually writes a personal development plan. The company stimulates, but even expects people to participate in at least one educational program, course or training.
- The subject of the educational program is open to your own choice.

- The company organizes several collective trainings (internally, but with external ‘teachers’) to develop the competencies and knowledge of employees.

Do you think firm size (SME’s) affect the skills, competencies or knowledge requirements of purchasers?

- Due to the high budget and expenses, in combination with a lot of large projects, the company operates like a large organization. Also, the level of professionalism in the Purchasing process is stimulated by strict laws- and regulations.
- As a result of the nature of the business, a larger firm size would most likely not affect the competencies or knowledge required for purchasers.
- In a really large organization, it is hard to maintain the current structure in which purchasers are responsible for purchasing activities/ processes in a single department.

What changes do you expect in the future purchasing department?

- The focus on long-term relationships instead of ‘hard contracts’ is increasing, and will increase even more in the future.
- Less focus on direct cost savings.
- The focus on the green footprint, and sustainability will increase even further. Therefore, in our case it’s important to plan for the future, and ensure capacity to meet demand.
- I expect Purchasing to become more accessible. Standard processes and structures could enable people outside Purchasing to perform Purchasing activities for a (or their) department. This could change the structure, responsibility (and even existence) of future Purchasing departments.

Interview 14:

Could you please introduce yourself?

- Male, approximately 50 years old, working for a production company in the food sector.
- Post-vocational Education degree, plus NEVI I and NEVI II.
- Started working for an SME in a Logistics role, grew to a Logistic Manager role, and became partly responsible for Purchasing.
- The company has approximately 200 employees, and acts internationally.

- In the current role, responsible for the entire Purchasing process including strategic policy, supplier selection, negotiations, contracting and ordering.

How would you rate the maturity of the purchasing department?

Item:	Points	Stage 1:	Stage 2:	Stage 3:	Stage 4:	Comments:
Purchasing strategy	4.0	X				<ul style="list-style-type: none"> - No documented Purchasing strategy - 'Informally' agreed focus on quality instead of costs
Assessment of Demand	7.0		X			<ul style="list-style-type: none"> - Product specifications are based on standard guidelines. - Forecasting demand based on derived 'season' sales.
Process	8.0		X			<ul style="list-style-type: none"> - Process for market analysis described, not documented. - Regular information exchange with process partners.
Technology Identification	1.0	X				<ul style="list-style-type: none"> - No responsibility towards technology identification (for purchasing).
Organisational Structure	9.0		X			<ul style="list-style-type: none"> - Purchasing formally in place. - Responsible for most purchasing activities, excluding machinery.
Board participation	4.0	X				<ul style="list-style-type: none"> - Purchasing regularly participates in 'board meetings'.
Sourcing Strategy	6.0		X			<ul style="list-style-type: none"> - Sourcing strategy based on corporate strategy.
Improvement of standing in supply market	8.0		X			<ul style="list-style-type: none"> - No systematic efforts to achieve preferred customer status.
Ordering	5.0	X				<ul style="list-style-type: none"> - Use of software programs in ordering process. - Still human intervention necessary due to seasonal demand.
Target Breakdown	3.0	X				<ul style="list-style-type: none"> - No structured breakdown of targets.

						- Targets are based on personal goals, defined by individuals.
Total	55.0	27,5%				

Could you describe the purchasing department?

- 1 Tactical/ Operational Purchaser, and 1 Assistant Operational Purchaser.
- Responsibilities divided based on a group of suppliers.
- The department has a clear focus on quality, and long term contract instead of cost savings.
- The Technical Service 'department' is responsible for purchasing technical products (machinery for example).

What skills, competencies and knowledge are currently important for purchasers in the company?

- If a person join this Purchasing role, it's really important to gain product- and market knowledge.
- Being a person who likes Purchasing is more important than having the basic knowledge on Purchasing.
- Communication skills and confidence to represent the company towards suppliers are necessary in a Purchasing role.
- A Sales person wants to sell as much products, parts or materials as possible, for the highest price possible. Your job in a Purchasing role is to agree on terms that are profitable for both, but at least for your own employer.

How does the organization acquire new skills, competencies or knowledge?

- The company actively stimulates employees to develop themselves personally in courses or trainings. However, there is no structural policy.
- On a regular basis, the company organizes collective trainings that are meant for a part or the entire organization. These trainings are concerned with general subjects, not specifically related to purchasing.
- Employees can suggest to attend education, courses or trainings that are related, and benefit their work in the role.
- Purchasers attend fairs and scholarships to gain knowledge about the market.

Do you think firm size (SME's) affect the skills, competencies or knowledge requirements of purchasers?

- A larger company size often brings more, and different department/ process structures.
- Purchasers in SME's need broader knowledge, because they work with different product groups. In large organization some Purchasers are responsible for a single, or even a just a part of a product group.
- In smaller organization, Purchasing is often not even a 'day job'.
- A Purchasing employee could need a broader skill-set because they are responsible for different tasks besides Purchasing.

What changes do you expect in the future purchasing department?

- In the future, the ordering process would be more automatized. Well-structured software systems in contrast to humans do not make mistakes.
- The communication between buyer and supplier will change as a result of online communication possibilities. It's not necessary anymore to travel to suppliers in order to make agreements.
- Software enables buyer and suppliers to meet online, instead of visiting fairs/ scholarships. However, that increases the important of communication skills because the ability to show products or processes is limited.
- I expect the Purchasing function, in combination with the processes to mostly remain the same in the next 10 or 15 years.