# Supplier Development Competencies in the German Automotive Industry

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## ABSTRACT

***Through increasing supply chain complexity and competitive pressure, supplier development (SD) has evolved to a strategic, value-creating function for manufacturing firms. Supplier development managers (SDMs) are directly involved in improving supplier capabilities, performance and quality standards, fostering long-term partnerships and driving continuous improvement; however, their role-specific competency requirements remain unexplored. This gap in research poses significant threats to manufacturing firms, risking misaligned selection, development and support of SDMs, potentially undermining the success of SD initiatives. This study aims to identify the critical competencies for SDMs, based on the German automotive industry, which is characterised by complex supply chains and the frequent utilisation of SD initiatives. A qualitative research design was adopted, involving comparisons between established purchasing and supply chain management (PSM) competency frameworks and eight semi-structured interviews with industry professionals to identify the relevant SDM competencies. This comparison revealed a set of relevant competencies for SDMs, which entail analytical & cognitive, holistic & systems thinking, organisational & strategic, social & interpersonal, and IT / computer competencies. The established PSM frameworks by Tassabehji and Moorhouse (2008), Flöthmann et al. (2018), Bals et al. (2019), and Beske-Janssen et al. (2023) were enriched through the identification of seven SDM-role-specific competencies, proving the importance of a more nuanced, role-specific evaluation of competencies for the varying PSM roles.***

## AI AND TOOL DISCLAIMER

During the preparation of this work, the author used EndNote to create the reference list and Grammarly and ChatGPT (OpenAI) to refine the language and improve the natural reading flow. After using these tools/services, the author reviewed and edited the content as needed and takes full responsibility for the content of the work.

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# 1. INTRODUCTION

## 1.1 Background

In an economy of rapidly evolving technological disruptions and supply chain volatility, the development and management of supplier capabilities has become a strategic necessity in the automotive industry. Instead of purchasing the required parts, leading manufacturers actively invest in their suppliers' performance and potential. This growing emphasis on supplier development (SD) is a result of the introduction of technological innovations and new, highly capable competition. This change is highlighted in a recent industry report, which analyses more than 100 responses from industrial goods and automotive C-suite executives in North America and Europe (Hendrik Becker, 2024). More than half of the executives anticipate generative AI to impact their business within the next three years. This poses a threat to these organisations, demanding them to fundamentally scrutinise their strategies to ensure resilience, future readiness and ultimately a sustainable competitive advantage.

An increasingly important strategic response to this challenge is the targeted development of internal competencies. A prominent example of successful competency development is BMW. Burr (2024) highlights how the company has invested heavily in building company-wide software capabilities and competencies, to reduce its dependency on externals and to be resilient in the volatile market. Even though this is an organisational-level example of the importance of competencies, it underscores a broader trend in the German automotive industry. There is an increasing focus on identifying specific critical competencies to navigate technological transformations and ensure supply chain performance, which is where specialised roles such as the Supplier Development Manager (SDM) come into play, whose task is to navigate the companies and suppliers through these developments. This trend is not limited to organisational-level competencies. Instead, recent research of Bals et al. (2019) proves that the required competencies to achieve their objectives on an individual level in the purchasing and supply chain management (PSM) role are significant and evolving, due to global trends like digitisation and sustainability. While Bals et al. (2019) focus on the evolving competencies in general PSM roles, their findings raise the question whether these developments also translate to more specialised roles such as that of the SDM, whose role differs from general PSMs. Rather than focusing on sourcing and transactional coordination, SDMs are directly involved in improving supplier capabilities, performance and quality standards, fostering long-term partnerships and driving continuous improvement (Axelsson, 2024).

SDMs are particularly important in the automotive industry because supply chains are not only extremely complex but also serve as strategic sources of innovation and competitive advantage. The current technological transitions have an immediate effect on the supply chains' capabilities, and many processes are currently changing, creating challenges and growth opportunities (Shekhar et al., 2023). Additionally, the industry relies heavily on critical raw materials (CRMs), of which the supply is threatened by increasing geopolitical tensions (Hunger et al., 2024). Given these challenges, some suppliers lack the necessary capabilities to meet the performance expectations. Hence, organisations must decide whether to replace them or develop them further. Although a wide range of highly developed, innovative suppliers that could replace underperforming current suppliers are available in the market, the transition is challenged by information asymmetry, high transition costs, and decision avoidance. As a result, Original Equipment Manufacturers (OEMs) often choose to develop current suppliers instead (Friedl, 2007).

SD initiatives are crucial for addressing the challenge of underperforming suppliers because OEMs can improve their suppliers' performance, foster innovation, and ensure long-term success through measures like incentives, communication, competitive pressures, and direct involvement (Benton et al., 2020). Supplier Development has evolved to a strategic, value-creating function, which also stems from the general increase in importance of the purchasing function from a primarily administrative and transactional role to a strategic, integrated, and value-creating role since the beginning of the 21st century (Monczka et al., 2008). Despite the growing emphasis on supply chain management, the identification of supplier development as a strategic necessity and the intense academic focus on procurement and supply chain competencies, the specific competencies for effective SDMs remain unexplored. This leaves a significant gap in understanding the qualifications for this role.

The German automotive industry is the optimal context for this study because there are several huge companies that all rely on complex and diversified supply chains to create value. Supplier relationships are crucial in this industry because the companies also rely on external innovation to maintain the desired market leader role. Many of these companies have heavily invested in SD, recognising its role as a strategic function to improve supplier performance and capability since the 1990s (Wagner, 2006), making them pioneers in this field. This maturity of the SDM role in the industry provides access to a wide range of experts in the field, offering a solid foundation for data collection and practical insights. Yet, despite this foundation, there is a lack of comprehensive, empirical understanding or structured overview about the specific managerial competencies for success as an SDM — a gap this study will address. Without clear definitions and a clear understanding of the required competencies for SDMs, firms in this volatile market risk misaligned recruitment, ineffective training, and ultimately the failure of supplier development initiatives, at a time and in an industry in which supply chain strength is more important than ever.

## 1.2 Research Objective and Question

This research aims to address the identified knowledge gap by identifying the critical competencies for SDMs in the German automotive industry. In addition, it further investigates whether specialised roles within the PSM function, such as the SDM, require a distinct competency profile compared to the general PSM role. This will be done by comparing the empirical findings with existing literature on PSM competencies.

The research is guided by the following research question:

*What are the critical competencies for supplier development Managers (SDMs) in the German automotive industry?*

By answering this question, this research contributes to both academic literature and practical industry needs by providing insights that may assist in targeted recruitment and specialised training, ultimately enhancing the effectiveness of SD initiatives and stabilising the competitive position of German automotive manufacturers in the volatile market.

# 2. LITERATURE REVIEW

To address the research question, it is essential to analyse the existing literature on competencies and supplier development. To get a holistic understanding of the topic, this chapter will first define these key concepts and frameworks and then examine how these concepts relate to the industry-relevant developments and trends within the German automotive industry. Finally, existing literature on identified competencies for purchasing and supply chain management professionals is analysed and visualised.

## 2.1 Key concepts and frameworks

The identified key concepts and frameworks that must be explained for this research are divided into three parts: the perspective, the role specification, and the context. This research applies a competence-based perspective to understand which individual characteristics, traits, and abilities enable supplier development managers to effectively perform their roles. This perspective conceptualises competencies as fundamental building blocks of individual performance within a company and highlights what enables individuals to do their tasks well. The specific role of the SDM function is then outlined and distinguished from broader PSM functions, as existing literature on competencies lacks this specification and does not acknowledge the role-specific differences between different PSM functions. Lastly, the context is set by introducing the German automotive industry as a representative environment for supplier development and managerial competency research, due to its complex and mature supply chains.

### *2.1.1 Competency*

Competencies are more than the specific know-how about a specific task. They are certain characteristics or abilities that enable a person to successfully complete a task and are demanded by an organisation to ensure optimal performance of their employees. A positive relationship between competency fit to the role and managerial job performance has been proven (Boyatzis, 1991). The widely recognised study of Le Deist (2005) has compared competence frameworks in the USA, UK, France, and Germany to develop a multifaceted definition. It proposes a holistic approach that emphasises the importance of knowledge about a task, the skills to perform a task effectively, the social competencies to perform in a team and communicate effectively, and the ability to cope with uncertainty and to learn how to learn. Combining these dimensions provides a holistic understanding of individual competencies, covering all relevant aspects, and forming the foundation for the analysis of role-specific requirements of supplier development managers, whose role is specified in the next section.

### *2.1.2 What are Supplier Development Managers?*

Several job titles have similar responsibilities and areas of expertise and therefore fall under the scope of this research and will collectively be referred to as SDMs. These include supplier development managers and engineers, and supplier quality development managers and engineers. Krause and Ellram (1997) define supplier development (SD) as: *"Any effort of a buying firm with its supplier to increase the performance and/or capabilities of the supplier and meet the buying firm's short- and/or long-term supply needs.*" Despite the age of this publication, this definition is still widely acknowledged and will also serve as a reference in this study. This study, however, focuses specifically on the professionals managing these activities, the supplier Development Managers (SDMs). SDMs are those experts who manage and oversee these SD initiatives and work closely with suppliers to improve their capabilities, performance, and quality standards. They function as a bridge between the strategic planning of the OEM and the operational execution of the suppliers (Axelsson, 2024). With SD initiatives becoming increasingly important due to a paradigm shift in the automotive industry toward the use of AI and automation (Hendrik Becker, 2024), identifying the relevant competencies for SDMs becomes a central factor to highlight. This is a consequence of the rapidly changing environment demands new managerial capabilities that were not required a decade ago, simply because technologies like AI did not yet exist. Understanding which competencies are particularly relevant to meet these emerging demands of the automotive industry is particularly important because extraordinarily complex supply chains and frequent SD initiatives demand highly capable managers to direct the flow of thousands of different car parts in a volatile landscape (Ambe & Badenhorst-Weiss, 2011). In a survey of best practices in automotive supplier development, Batson (2008) underscores the importance of SDMs in the automotive industry by highlighting their crucial role in supplier performance improvements, cross-functional collaboration, and successful implementation of development initiatives in the dynamic industry. These dynamics of the German automotive industry will be further outlined in the next section.

### *2.1.3 The German Automotive Industry*

The automotive industry is currently experiencing rapid changes that tip the balance of the competition. Since the introduction of electric vehicles, the market leaders in Germany and the US have experienced significant market share losses, as the Asian market is rapidly rising. Whilst in 2000, only 29% of the global automotives were produced in Asia, the number has risen to 57% in 2023 (Puls, 2024). A major reason for these developments is China's dominant battery supply chain capabilities, which are essential for manufacturing modern electric vehicles. Due to heavy governmental subsidies, state-owned enterprises, and the first-mover advantage, Chinese automotive manufacturers managed to internally develop suppliers and gain possession of more than 50% of the world's capability to manufacture battery cells (George, 2024). These rapid market shifts highlight the urgency for German automotive manufacturers to strengthen their supply chains' capabilities, increasing the importance of SD initiatives.

The German automotive industry was selected as a specification for the topic of SDMs in manufacturing firms because in Germany, SD initiatives are a common practice for improving the supply chains' capability, for example, in sustainability measures (WorldEconomicForum, 2022). Moreover, the complexity of the industry and reliance on strong supplier relationships make it ideal for conducting interviews, because the professionals are likely to be directly involved in structured SD activities and can share insights into knowledge about the well-established multi-tier supply chains with international long-term suppliers, displaying complex relationships. Additionally, industry surveys and reports illustrate trends like development toward automation and the use of generative AI in the automotive sector (Hendrik Becker, 2024), highlighting the importance of SD initiatives. Consequently, it is reasonable to assume that the developments lead to a shift in the competencies of SDMs. The inclusion of such reports is essential for a holistic view of the entire topic, and they also explain why shifts in relevant competencies for PSMs, and potentially also SDMs, occur.

The competency-based perspective in combination with the focus on the role of a supplier development manager within the context of the German automotive industry is a solid conceptual

foundation for this study's empirical research. The next section adds to this foundation by analysing existing literature on competencies for PSM professionals.

### *2.1.4 Literature on PSM competencies*

While this study aims at identifying the critical competencies for supplier development managers, no research on this specific topic has been conducted previously. However, various research projects have been conducted on the broader topic of PSM competencies, which can be considered as the umbrella term under which SD Competencies fall. Hence, examining established PSM competencies provides a profound starting point in order to specify a competency portfolio for SDMs, which can define their distinct role and responsibilities within the industry.

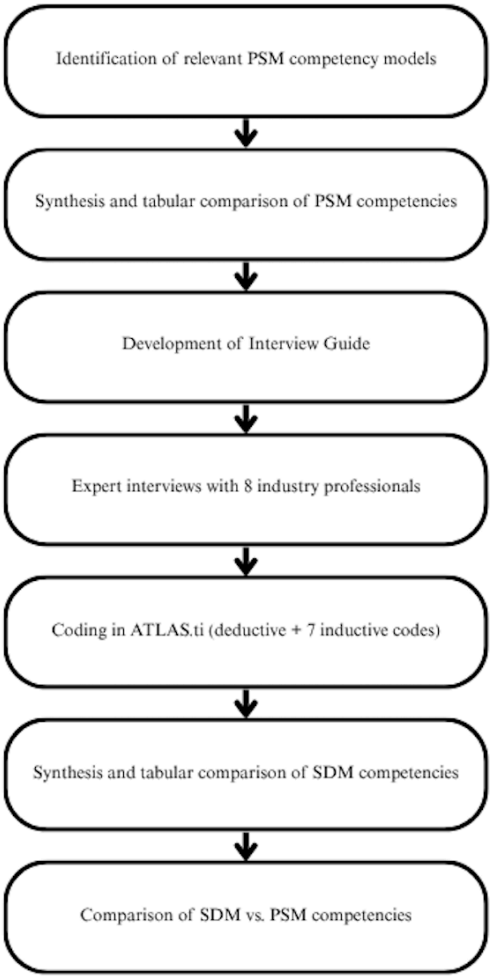
To create this basis for the analysis of critical competencies for SDMs, relevant competency models and lists for PSMs have been compiled. The identified critical competencies (Bals et al., 2019; Beske-Janssen et al., 2023; Flöthmann et al., 2018; Tassabehji & Moorhouse, 2008) have been systematically summarised and contrasted in an overview table (Appendix A). The table distinguishes between four rankings for the different competencies. "Core" competencies have been emphasised to be particularly important, and named explicitly, to be "critical", "very important", or to be "one of the top ten competencies". "Relevant" competencies have been identified to be important within the context of the study, without being reinforced as central or critical. "Mentioned" competencies are acknowledged by the studies, but without particular relevance, they have only been briefly addressed or indirectly referred to. "Not covered" indicates that the competency has not been mentioned by the study at all, neither explicitly nor implicitly. The table contains each competence that has been classified as "core" by at least one of the studies. For better clarity and comparability, the competencies have been grouped into thematic clusters, which will serve as a guiding structure for the results section of this study. Additionally, this overview assists in identifying the critical role-specific competencies for SDMs, because the identified competencies are used as deductive codes for the data analysis part of this study. Furthermore, the role-specific differences can be visualised as a basis for the discussion.

To support the weighted comparison, across studies, each ranking level was assigned a numerical value: "Core" = 3 points, "Relevant" = 2 points, "Mentioned" = 1 point, "Not Covered" = 0 points. While these values were not derived from the studies themselves, they serve as a simplified scoring system to systematically compare the different sources and create an overall competency rating to compare their frequency and importance.

## 3. METHODOLOGY

As mentioned in the literature section, this research aims to identify the critical competencies for supplier development managers in manufacturing companies, based on the German automotive industry, by building on and then extending previous research on general PSM competencies. The overall research workflow is visualised in Figure 1.

*Figure 1. Workflow Diagram*




The process began by identifying relevant, established PSM competency models and synthesising them into a comparable table. This table served as a basis for developing deductive, provisional codes, as described by Miles (2014). Developing these provisional codes is appropriate because this study is based on previous research, which suggests that certain competency areas are already known and relevant for the umbrella topic of PSM, which can then be complemented inductively to identify SDM-role-specific competencies. Based on the deductive codes, a semi-structured interview guide has been developed to ensure that the relevant topics are addressed during the expert interviews. Semi-structured interviews follow a set of guiding themes and questions, that must not be asked with particular words and in a particular order, but can alternate to allow for a better flow of the interview, resembling a conversation, in which the interviewer establishes a general direction for the conversation and to pursue specific topics that are also raised by the respondent (Babbie, 2020). These interviews were conducted with eight professionals from the German automotive industry, recorded, transcribed, translated and imported into ATLAS.ti for analysis. The deductive codes were assigned to relevant interview parts, and additionally, relevant recurring topics that were not covered by the deductive codes were derived inductively and added to the code collection. This hybrid approach ensured that the SDM-specific competencies that were not covered by the original literature review were captured and

integrated, creating a holistic framework. In total, seven new competencies were identified and are displayed in Appendix B. The final code list was then clustered into thematic categories, which form the framework for the interpretation and discussion, the codes are visualised in a coding tree in Appendix C, not only showing the clusters and codes, but also some key citations from the interviews.

To enable a direct comparison between the empirical and the literature-based findings, the same four-level ranking scheme was used to evaluate the identified competencies. This ranking was based on the frequency and importance of each code throughout the interviews and resulted in a final rating of the relevancy (Appendix D). The comparison between PSM and SDM competencies is displayed in Appendix E.

## 3.1 Sampling

For conducting the interviews, a sample of eight experts was taken from the German automotive industry. Since this research aims at identifying the critical competencies for SDMs, and only experienced individuals in this field can provide insights into these requirements, a purposive sampling method was selected. This method is a non-random technique, for which the researcher decides what needs to be known and sets out to find people who can and are willing to provide the information through knowledge or experience (Ilker et al., 2015). Using a purposive sample ensured that the respondents are representative of the German automotive industry and that they have sufficient experience to report on the topic factually and reflectively. To ensure that the participants can indeed provide expert knowledge for the research topic, some selection criteria were determined and are displayed in Appendix F. The experts were reached through social networks like LinkedIn, and search terms included *supplier development manager, automotive,* and *several German automotive manufacturers.* Additionally, existing professional contacts within the industry were leveraged to gain suitable respondents. The respondents' demographics help understand their perspectives and display their level of expertise (Appendix G).

## 3.2 Data collection

To collect valuable data and ensure consistency across the interviews, an interview guide was created (Appendix H). This interview guide consisted of three guiding themes, which contained specific questions which ensured coverage of the most important topics. The first guiding theme was: supplier development activities within the company & practical experience. Questions in this theme aimed at identifying the most relevant SD initiatives, their challenges and success factors, and the general importance of SD for the German automotive industry. The second guiding theme was: competencies of SDMs. Being the main focus of this study, this theme was the most substantial part of the interviews, and the questions asked aimed at identifying the importance of the specific SDM, the specific competency requirements for SDMs, and a differentiation between technical and behavioural competencies. The third guiding theme was related to the general development of the German automotive industry and the SDM's role within it. It was labelled trends & future outlook, and its questions covered if the competencies of SDMs have changed in recent years, if they will change in the future and how the role is affected by the changing market dynamics. To ensure that the respondents shared a common understanding of the topics, they were provided with definitions of the key concepts of this research at the start of the interview: supplier development, supplier development managers, and competency. The interviews took approximately 30-45 minutes and were conducted via the online meeting function of Microsoft Teams, which automatically recorded and transcribed the conversations with permission of the respondents. Three of the interviews were conducted in English, the other five were conducted in German. The German interview transcripts were translated into English, using the automatic document translation tool of Microsoft Word.

## 3.3 Data Analysis

For analysing the data of the interviews, the coding function of ATLAS.ti was used to follow the provisional coding method (Miles, 2014). This method allows for analysis of qualitative data, such as the transcripts of interviews, to identify recurring themes and patterns. The provisional codes were derived from the comparative table (Appendix A), which synthesised established PSM competency models. This table and the initial codes provided a structured starting point for coding the transcripts.

The codes were derived from literature that developed broader competency frameworks for the PSM function in general, without acknowledging the specific role of SDMs. Hence, the codes could only serve as a starting point, and a total of seven inductive codes were created whenever the interview participants mentioned competencies that exceeded the general PSM competency frameworks. This allowed for unbiased coding and ensured a grounded understanding of the competencies as described by the participants.

After completing the code list, five overarching clusters have been formed by grouping related codes into broader thematic categories. These clusters serve as the foundation for the analysis and discussion sections. A coding tree was created to visualise the final codes (Appendix C).

All codes were exported from ATLAS.ti into an Excel file for systematic comparison and analysis. Within this Excel file, all codes (competencies) were evaluated across the interviews, allowing for comparison and identification of relevance patterns, through application of the four-level ranking scheme (Appendix D).

# 4. RESULTS

The following section presents the results and findings of the eight conducted interviews with experts in the German automotive industry. The aim was to identify the relevant competencies for SDMs to successfully manage, oversee, and implement SD initiatives.

Based on the provisional coding from existing PSM competency literature, deductive codes were initially applied to the transcripts of the interviews. During the analysis, additional inductive codes emerged to describe relevant SDM-specific competencies. All codes were subsequently grouped into five overarching clusters, which categorise each competency, not only demonstrating relations and interconnections between the competencies but also giving a guiding structure to display and analyse the competencies. When referring to participants, the abbreviation P with the number of the interview participant (1-8) is used.

## 4.1 Analytical & Cognitive

This cluster comprises skills and abilities that enable SDMs to analyse and interpret complex scenarios, to systematically create data-driven solutions and to cognitively process correlations. These competencies help SDMs to break down supplier

problems, identify the root causes and develop solutions that require logical reasoning to ultimately enhance the supplier's performance.

### *4.1.1 Analytical & Problem-Solving skills*

Throughout the interviews, several participants (P3, P4, P5, P6, P7) indicated the importance of strong analytical and problem-solving competencies as an SDM. P4 explained that being able to analyse suppliers in various dimensions is key. Furthermore, they outlined that the SDM must know the OEM-specific analysis and rating procedures. At P4's company, there are several stages and phases of supplier evaluation and analysis, which eventually lead to the decision that the supplier should be developed to meet the OEM's expectations. Moreover, P4 emphasises that risk analysis competencies are essential. Potential break points or blocking points for the cooperation of the two companies must be identified, and solutions must be developed that prevent common problems and risks, such as delays and non-compliance with deadlines that are usually very strict in the automotive industry. Also, P6 expressed that an SDM must not only know risk analysis methods to evaluate potential suppliers, but they also need to be able to analyse the suppliers' risk analysis and measurement capabilities, because OEMs heavily rely on the suppliers' data for evaluation:

*"I will analyse that how you [the supplier] prove to me that you really make the analysis if your machines are able […] I think this, it is really important how they monitor their own performance, and if the data they collected is good."*

Furthermore, P6 states that it is the most important part of an SDM's job to develop the suppliers' understanding of rules and regulations, and that the SDM must therefore have excellent knowledge of feasibility and risk analysis methods.

Despite the criticality of analytical competencies, P7 expressed that SDMs are currently in a phase of change and re-orientation. P7 is managing approximately 60 suppliers simultaneously and must therefore analyse and evaluate many different data points. However, P7 claimed that the continuous development and integration of new technologies such as artificial intelligence assists SDMs heavily in fulfilling the analytical tasks, because it removes the need for manually analysing and visualising the data, and it can help by automatically creating error trees and visualising potential problems almost instantaneously.

### *4.1.2 Critical Thinking*

The ability to critically assess situations and to objectively evaluate information was indirectly mentioned by P1, who explained that SDMs must be able to evaluate what development opportunities lead to the desired outcomes, which requires them to assess what aspects of development are critical over the long term.

### *4.1.3 Process Optimisation*

Even though not mentioned as a core competency, P5 mentioned that the ability to optimise processes is also a scope of duties for SDMs, because they must understand and be able to analyse processes of suppliers, to control the development initiatives.

### *4.1.4 Strategic Thinking*

The cognitive ability to align specific situations with broader organisational strategies and objectives was emphasised by P3 and P7. While P7 stated that the pronounced strategic thinking ability is something which makes very good SDMs stand out from the rest, P3 stressed that this competency is so important that SDMs who cannot adapt this way of thinking even have to be laid off, even though the measuring of this competence is vague.

## 4.2 Holistic & Systems thinking

The second cluster groups competencies that draw attention to a broader perspective on supplier development projects. Through creating holistic pictures, SDMs can understand the entirety of systematic interdependencies to think beyond isolated problems and find creative solutions to the root causes of non-performance.

### *4.2.1 Holistic Thinking*

Most of the respondents highlighted the importance of the holistic thinking competency (P1, P2, P3, P6, P7, P8). Understanding interdependencies between different processes enables an SDM to localise and identify the problems a supplier has, which need development to meet the OEMs' requirements. P7 has given the example of an extraordinarily good SDM who stood out because he could understand entire organisations quickly and draw a holistic picture. This extraordinary SDM not only focused on the technical aspects of the job, but also connected them with HR management, to solve a quality issue regarding defective parts.

Additionally, P1 explained:

*"The best one [SDM] I know, he knew the product, the one who knew the parts inside out, who knew the processes, the manufacturer processes, and there actually also knew the logistical issues behind it and all politics and contacts."*

### *4.2.2 Creativity*

P7 mentioned that an extraordinarily good SDM not only creates holistic pictures of organisations and problems, but also found creative solutions to these problems:

*"In China almost everything was 100% controlled, but there were always parts that were bad […] he had asked how they use their measuring system in visual control […] maybe it would make sense to regularly do eye tests etc. and in the end, it was half a year later and of the people who sat there without glasses, now 90% of them wore glasses"*

### *4.2.3 Cross-functional abilities and knowledge*

Next to the ability to draw holistic pictures of supplier's problems and processes, P1, P2, P6, and P8 also emphasised that SDMs require cross-functional abilities and knowledge within their own organisation. P6 showcased the various functions they learned about, which helped them in pursuing their SD tasks:

*"So I learn about human resource. I learn about production side. I learn about everything in the company. And I think this is really important. You understand how the company works at all."*

## 4.3 Organisational & Strategic

In this cluster, competencies are connected that enable SDMs to align SD initiatives to company objectives and to strategically implement change within complex settings. These competencies enable the SDM to coordinate, plan and evaluate projects with a long-term perspective.

### 4.3.1 Basic knowledge about the SD Function

While the set of deductive codes included the competency: "basic knowledge on PSM/SCM role & processes", this code has been inductively revised to cover the basic knowledge about the SD function, to match the scope of this research better.

P4 and P7 have addressed the importance of assigning those managers to handle SD initiatives who have an understanding of the role-specific requirements, processes and tasks. P4 shared an example of a manager who did not possess this necessary knowledge:

*"They don't know the criticality, or they don't know how important it is. They don't know the rules of the automotive industry. They don't know, for example, our customer-specific requirements. They don't know a lot of things about this supplier development topic, and then this is very hard to manage."*

### 4.3.2 Change Management

Change management was not reaffirmed to be critical momentarily; however, P5 stated that its importance may increase in the future:

*"The change management is a point for me that will be challenging in the next years. How can I help the suppliers in the change management process?"*

### 4.3.3 Coordination

SDMs in the automotive industry are working together with many different experts on the supplier side, but also in their teams. P3 points out that the main task of an SDM could be broken down to

*"Actually only coordinating the specialists on both sides."*

Additionally, P1 has shared insights to a project, in which the main task of the SDM was also to coordinate the needs of customers, the OEM and suppliers in different countries. Coordination in this context involves organisational skills like coordination of meetings, exchange of information, and the efficient allocation and prioritisation of resources. SDMs must ensure that all parties are aligned on goals, timelines and quality standards. The participants have pointed out that coordinational problems also commonly occur when working with international suppliers. These include differences in time zones and cultural differences. By coordinating these challenges and differences, the SDM enables smoother workflows and efficient problem-solving, which is essential to meet the demanding standards of the German automotive industry, as P4 expresses:

*"Most of the time, our timeline, or our I'll say the deadline, it's very short and then we don't have too much time to do the things and you need to be able to lead the situation."*

### 4.3.4 Sustainability

The global movement toward sustainability is also reflected in the required competencies for SDMs. P4 explained that a lot of new requirements for the automotive industry have emerged in the last years, including ESG (Environmental, Social, and Governance).

## 4.4 Social & Interpersonal

This cluster comprises the competencies that are related to communication, collaboration and the general ability to interact with people. These competencies enable SDMs to build and maintain trustworthy and lasting relationships and to navigate between various internal and external stakeholders.

### 4.4.1 Communication skills

All participants have mentioned communication in the SD process to be critical. P1 has stated that communication is particularly important for an SDM because they work as an intermediary between multiple stakeholders. There is always at least the OEM and one if not more suppliers that may have differing opinions and requirements. Since the SDM is responsible for communicating the OEMs' quality and capability requirements to the supplier, they need to know how to approach people in a friendly and respectful way, while also maintaining a determined and professional attitude, to create lasting relationships and ensure efficient business (P7). Participants described communication competencies in the German automotive industry as going beyond the ability to communicate with the suppliers. Usually, an SDM does not work alone, but in a team of many SDMs that have differing specialisations or manage SD initiatives for different car parts. P1 explains the inter-team communication to be:

*"A conglomerate of interest groups and people, and the better the individual understands this communication and coordination task, and by that I don't just mean verbal or technical communication, but also the human and political dimensions, the more decisive this becomes."*

P2 and P5 emphasised that the communication has become a lot easier on a technical level in the last couple of years, through the introduction and normalisation of digital communication tools like MS Teams during and after the pandemic. Before this time, there were more communication problems that an SDM had to solve through business travel.

### 4.4.2 Conflict Management

P3 has highlighted that non-performance is one of the most prominent reasons for conflicts SDMs are engaged in, because many people have problems with addressing such issues. Since non-performance is the key reason for SD initiatives in the first place, it is crucial for SDMs not only to address the non-performing factors of a supplier but also to handle the likely confrontational response. P2 emphasised that:

*"I don't know of any attempt in the last 20 years that has been without problems"*

P7 further outlined the importance of this competency:

*"It is really important that you are really focussed on where you want to go and how you want to implement this with the suppliers and that you are not afraid to take a confrontational approach or, especially in serious problem cases, to simply tell the suppliers in advance what risk value you are actually talking about and how many components may be affected."*

### 4.4.3 International Cooperation

This Competency has emerged inductively, after explicitly being mentioned by P2, P4, P5, P6, P7, and P8. The respondents pointed out that many SD initiatives of the German automotive industry take place internationally in a variety of different countries, which requires the SDM to cooperate with people from various cultures. P2 stated that internationalisation has increased the importance of this competency:

"*The tools used to be manufactured in Germany. If you manufacture today, I'll just say it's in non-European countries,*

*so I think competence is more that you have to be able to handle projects with other nations. In my opinion, this has shifted."*

### *4.4.4 Language proficiency*

Through the internationalisation of the German automotive industry, several new challenges and problems have emerged. SDMs can evade many of these problems by improving their language skills. P5 said:

*"When I need to communicate with suppliers from another country, I had some problems to share. The problems are because of the language. Of course, when I need to speak with someone from France, they don't like to speak English, so we find some problems. As well when we need to speak with the guys from Asia, it's not so good to communicate […] So if someone was to take my position, I would give the person the tips that the languages should be on point, they should know as many languages as possible."*

### *4.4.5 Negotiation*

Negotiation skills have only been mentioned casually by P3 and did not receive attention throughout the interviews.

### *4.4.6 Stakeholder Relationship Management*

SDMs coordinate the relationship between the OEM and the supplier; the participants (P1, P2, P4, P5, P6, P8) have stressed that SDMs need to manage relationships with various stakeholders to ensure trustworthy, long-term relationships. P1 explained:

*"Many things in life are always about communication, they have several stakeholders that they have to bring together. For me it was always at least 3, but let's say usually there are at least 2 partners. At least from the entrepreneur's point of view. But also here you have the different interest groups both with the client and the OEM. That alone is a feat, there is a buyer who wants it cheap, there is a logistician who raises his demands there. Then there is production, everyone has demands, and the development continues, so here, too, they already have different stakeholders from the client side and from the contractor side it doesn't look much easier."*

### *4.4.7 Teamwork*

Building on the stakeholder relationship management competency, teamwork skills have been identified to be important for SDMs by the participants, because they rarely work on a project alone. P2 said:

*"Such a ramp-up of a project I would not attach it to one person, but to a team that has experience in the product range."*

## 4.5 Technical & Digital

The fifth cluster groups all competencies that are related to general technical know-how, the skills necessary to handle digital tools, and the required knowledge about systems and processes, relevant for the development of suppliers, leveraging technological advancements and adapting to the increasing technological complexity of the automotive industry.

### *4.5.1 Automation*

Competencies in automation technologies have only been mentioned to be potentially important in the future, by P7. They illustrate that:

*"I believe that AI can become relatively strong in the next few years. To do this and also for the supplier quality in the factory or in quality in general, you can simply have error trees etc. set up much faster, by simply saying: What is my problem? And create an error tree for me."*

Additionally, P7 stated that the data analysis part of SD may be taken over more by computers in the future.

### *4.5.2 eProcurement Technology*

eProcurement Technology is an umbrella term for supplier portals, software and databases that are utilised by PSM professionals. P4, P5, and P8 pointed out that many SD processes in the German automotive industry are based on these kinds of technologies and systems and that the SDMs use them to receive information, P4 said:

*"Nowadays we have a supplier portal, the name, it's Jäger. Basically, a lot of companies use the same portal and in this portal we have basically everything about the supplier, the supplier general information."*

### *4.5.3 IT / Computer Skills*

General IT and Computer skills are relevant for SDMs according to P1, P4, P5, P7, and P8. They improve SDM's efficiency and enhance the quality of their work. P1 described that:

*"The digital world makes it easier, at least technically. The "How-to" is no longer so much about a discussion, but you quickly have a stand, because the documentation and communication of a technical nature is not the challenge."*

### *4.5.4 Quality Management*

Quality Management is another inductively emerged competency for SDMs. The participants emphasised the importance of knowledge about quality management tools and procedures. P8 stated that:

*"In our area, of course we work very quality heavy […] we work very close to production, we work very close to the process, i.e. to the production development process"*

P4, P6, P7 stressed that specific knowledge about the quality standards ISO 9001, IATF, APQP, and VDA is critical, because they are mandatory regulations, after which the suppliers will be evaluated and subsequently developed. These methods help SDMs identify root causes of problems, and they can act as guidelines to initiate corrections and improvements, which will reduce the variability of the process. P2 clarified that a specific quality management procedure that is commonly used is "Run at Rate", which is a procedure of testing a supplier for a maximum volume of supply in a period of one or two days and subsequently evaluating the quality and quantity of the processes.

## 4.6 Unaddressed Competencies

Several pre-determined, deductive competencies from the original PSM-code framework were not mentioned at all by the respondents of this study. These are displayed in Appendix I.

# 5. DISCUSSION

## 5.1 Interpretation of Results

In the following section, the results of this research are interpreted and explained how they answer the research question:

*What are the critical competencies for supplier development managers (SDMs) in the German automotive industry?*

The previously established competency clusters serve as a structure for this discussion. Within each cluster, the identified competencies are compared with the literature-based relevancy matrix to highlight the similarities and differences with the PSM frameworks.

### *5.1.1 Analytical & Cognitive*

The importance of analytical and cognitive competencies is confirmed through both literature and the interviews. Analytical & problem-solving skills were rated highly from both sources, which underscores the transition of the purchasing function from a primarily administrative and transactional role to a strategic, integrated, and value-creating role since the beginning of the 21st century (Monczka et al., 2008). This transition is additionally emphasised through the rating of "strategic thinking" as a core competency for general PSM managers. However, the importance of the ability to strategically think was not underscored by the interviews, as it was only ranked as a mentioned competency, without deeper relevance. This difference can be explained through the nature of the SDM role, whose core tasks are mainly related to quality assessment, problem-solving and the implementation of improvement measures, which require analytical and problem-solving skills, rather than long-term strategic foresight, as required by supply chain managers who operate at a broader, organisational level.

Even though there is a strong focus on analytics and problem-solving skills for SDMs, they were not rated as core competencies, because of the development of new technologies like artificial intelligence and automation, which make the storing, handling, and analysis of data easier. This ultimately decreases the importance of analytical competencies for SDMs. Instead, SDMs must learn how to successfully use and implement these technologies to become more efficient.

### *5.1.2 Holistic & System Thinking*

The holistic & systems thinking cluster was identified to be highly relevant through the literature. PSMs require cross-functional abilities and knowledge and need to be able to think holistically and creatively to make the right sourcing and supply chain decisions that maximise the OEMs' value. The cross-functional abilities and knowledge have been rated as core competencies, because the PSM must consider all functions' requirements. While still relevant for SDMs, the importance of this knowledge is slightly lower, because they must mainly understand the manufacturing and operational processes of the OEM and the supplier to understand the product-specific requirements.

While the cross-functional abilities and knowledge requirements are slightly lower for SDMs, the ability to holistically think proved to be a core competency for SDMs. Multiple examples of extraordinarily good SDMs by the interview participants showed that they need to understand the entirety of the supplier to find root causes of problems and to improve them to ultimately enhance the supplier's performance. In this context, though only rated as a mentioned competency, creativity can be seen as an enabling factor, which helps SDMs find creative solutions to the identified problems, like in the previously mentioned example by P7 of the introduction of regular vision tests for the supplier's quality assurance staff.

### *5.1.3 Organisational & Strategic*

This cluster displays the biggest discrepancy between the literature and the interviews. While the literature suggests sustainability, strategic sourcing, and change management to be highly relevant, even core competencies of PSMs, most of these competencies have only been mentioned by the interview participants, without being emphasised as relevant or critical for SDMs.

This discrepancy is explained by the implementation-focused nature of the role. SDMs focus on implementing specific measures to solve existing problems. They rarely develop organisation-wide strategies or initiate large-scale change processes, which require deep knowledge of organisational interdependencies, or impacts of strategic decisions on the sustainability of the organisation, unlike those PSMs who must decide what sourcing strategies will be followed in the long run, that ensure optimal utilisation of the supply chain.

### *5.1.4 Social & Interpersonal*

The social and interpersonal cluster contains some of the most relevant competencies for SDMs, of which conflict management, international cooperation, language proficiency and teamwork emerged inductively and were not even covered by the relevant PSM competencies. This high relevance of social and interpersonal competencies stems from the nature of the SDM role. SDMs interact with many stakeholders, both internally and externally, and must manage relationships to foster long-term, trusting cooperation. As P3 explained:

*"They actually only coordinate the specialists on both sides."*

Doing this successfully requires excellent communication skills, which also stands out from all other competencies, because all participants expressed its high importance. The main reason for this importance is the multifaceted nature of communication. Most of the social and interpersonal competencies are based on or at least complemented by good communication competencies. An SDM who can communicate effectively and understand the other party will excel at conflict management and can coordinate the diverse stakeholders he is working with, across boundaries and language barriers.

Conflict management and international cooperation were both rated as relevant throughout the interviews, despite not being covered by the PSM competencies. This is mainly because SDMs engage with suppliers more closely and work jointly to improve processes, which has a lot more potential for conflicts than the simple selection of the fitting supplier for the OEM's needs. For the same reason, the importance of negotiation skills is drastically lower for SDMs than for PSMs, because SDMs must rarely negotiate about specific contracts.

### *5.1.5 Technical & Digital*

The technical and digital competencies were rated similarly important by the literature and the interviews. Both acknowledge the importance of utilising evolving technologies to increase efficiency and enhance data-driven decision making. For that, SDMs require equal technical skills and knowledge about PSM software and eProcurement technologies.

However, a significant difference lies in the importance of quality management. Quality management is the most referred to technical competency by the interview participants. They stressed the importance of knowing specific frameworks, rules and regulations such as ISO 9001, IATF 16949, and the VDA 6.x series. This specific knowledge is important for developing supplier processes and capabilities, because regularly identified

challenges and problems are related to underdeveloped or missing quality standards. SDMs not only require the theoretical knowledge and frameworks but must also be able to transfer this knowledge to the suppliers and implement these measures to ensure compliance. In this process, the SDM serves as a bridge between the theory and the operational reality. Since suppliers may not react positively to proposed changes, the SDM requires good social competence and must possess the ability to handle conflicts effectively. This quality management focus was not covered by the PSM literature because it is very specific for the SD role, which is naturally related to quality management activities.

### *5.1.6 SDM – The Pareto Performer*

While not part of the original competency clusters, P3 introduced the metaphor of the SDM as a "Pareto Performer", which serves as an illustrative metaphor to demonstrate the interplay of the different clusters.

Based on the early findings of the Italian civil engineer and economist, Vilfredo Pareto, that approximately 20% of the population owned 80% of the property in Italy, the Pareto distribution, otherwise known as the "80:20" rule, finds continuous relevance in various management and operational contexts. It states that in many cases, about 80% of the consequences are produced by 20% of the cause (Dunford et al., 2014). P3 referred to this principle to explain the optimal SDM for the German automotive industry. An SDM must manage a variety of topics and stakeholders, for each of these topics and stakeholders, they require specific knowledge about capabilities, part specifications and the processes. However, an SDM must rarely excel at knowledge about specific technical specifications, because they *"actually only coordinate the specialists on both sides"*. To effectively do this, SDMs must be able to quickly understand new and complex topics, to a degree that allows them to confidently communicate with experts of these topics and meaningfully contribute to discussions and negotiations. In other words, SDMs must grasp approximately 80% of a new topic with 20% of the potential effort, aligning their role with the essence of the 80:20 rule.

The identified analytical and cognitive competencies assist SDMs in quickly understanding these interdependencies. The ability to draw holistic pictures and find creative solutions underscores this metaphor of the SDM as the "Pareto Performer", and pronounced social and interpersonal competencies enable the SDM to communicate effectively with all stakeholders about their diverse demands, even though a topic might be new to them.

## 5.2 Theoretical implications

This research contributes to the literature on PSM competencies by providing a more nuanced, role-specific perspective on the SDM function. While previous studies have primarily focused on relevant competencies for the umbrella PSM function and treated PSM professionals as a homogeneous group with equal competency requirements, this study shows that the existing literature often overlooks the distinct requirements of sub-roles of the PSM domain, which can significantly differ. Besides the supplier development function, there is a variety of other sub-roles (Axelsson, 2024), which potentially also demand more nuanced competency frameworks.

The findings show that SDMs require a distinct competency portfolio. While some of the competencies have been mentioned in the existing literature, some have not been covered at all. Notably, quality management, conflict management, international collaboration, language proficiency, and communication skills emerged as more relevant for SDMs than previously recognised in the literature

## 5.3 Practical implications

This research not only aimed at filling the research gap by identifying the critical competencies for SDMs in the German automotive industry, but also at addressing practical industry needs by providing insights that may assist in targeted recruitment and specialized training, ultimately enhancing the effectiveness of SD initiatives and stabilizing the competitive position of German automotive manufacturers in the volatile market.

The identified competencies can support HR departments in creating more accurate job profiles that include the most critical competencies for SDMs, such as good communication, knowledge in quality management and the cognitive ability to create holistic pictures to solve problems. Furthermore, companies can utilise these findings to design training and development programs that are targeted at enhancing their SDMs' performance.

## 5.4 Limitations

Even though some valuable insights for the critical competencies of SDMs in the automotive industry have been identified through this study, some limitations of this research must be acknowledged.

Despite the goal of gaining insights from ten experts in the field, only eight interview participants were found. Additionally, three of these participants do not actively pursue the role of SDMs but work as consultants or have other leading positions in the German automotive industry. Despite their roles, these participants are still experts in the supply chain networks of the German automotive industry and could provide meaningful insights for this research. This constraint implies that only 5 interview participants could provide first-hand knowledge from their day-to-day jobs. To account for this constraint, the interviews were conducted and analysed with attention to the specific role backgrounds of all participants, which allowed for a differentiated integration of their experiences.

Furthermore, this study is based on data which was collected through semi-structured interviews, which rely on subjective perceptions and experiences of a small sample of professionals. Hence, the generalisability to a larger population, e.g. the entire German automotive industry, or manufacturing firms in general, is limited.

Additionally, some of the findings are based on expectations about the future, which is uncertain in the complex, volatile supply chain networks of automotive manufacturers. The identified critical competencies may therefore evolve over time, possibly requiring ongoing investigations.

Lastly, a limitation of this research is that it solely focuses on the German automotive industry to identify critical competencies for SDMs. While the German automotive industry is a good fit for such research, due to the mature and complex supply chains, the findings may not apply to other industries and require further investigation.

## 5.5 Recommendations

In this section, recommendations for future research on the topic of competency identification for manufacturing firms will be provided, alongside actionable insights for industry practice.

As identified, the various supply chain roles require distinct competencies. Hence, future research should expand on the critical competencies for various supply chain roles. For this, an expanded sample size is required, which may be enriched through participants from other geographic regions or industries, to enhance the generalisability of the findings. In practice, it is recommended that companies should adapt role-specific competency models for recruitment, training and evaluation, to ensure optimal alignment of the individuals' competencies and the strategic demands of the company, to ultimately improve the overall effectiveness.

## 5.6 Conclusion

This paper aimed at identifying the critical competencies for supplier development managers in manufacturing firms to perform effectively, based on the German automotive industry. Through conducting semi-structured interviews with eight experts in this field, a set of five competency clusters has been identified. Moreover, this paper aimed at comparing its findings with previous research that identified the critical competencies for the PSM role in general. This comparison has led to the conclusion that future research should adopt a more role-specific perspective, because competency requirements can differ notably between sub-roles. Overall, this study provided valuable theoretical insights and provided a basis for further role-specific research. Additionally, suggestions for the practical application of these findings have been made, which can help manufacturing firms to select, develop, and support supplier development managers in fulfilling their strategic role effectively.

## 6. ACKNOWLEDGEMENTS

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# 8. APPENDIX

For improved readability, the tables displayed in this Appendix are additionally submitted in an .xlsx file.

## 8.1 Appendix A – Overview Table PSM Competencies

| PSM Competencies | Tassabehji & Moorhouse, 2008 | Flöthmann et al., 2018 | Bals et al., 2019 - Current | Bals et al., 2019 – Future | Beske-Janssen et al., 2023 | Total Rating | Relevancy Rating |
|---|---|---|---|---|---|---|---|
| Analytical & Problem-Solving Skills | Core | Core | Core | Core | Core | 15 | Core Competency |
| Automation | Not Covered | Not Covered | Not Covered | Core | Mentioned | 4 | Mentioned Competency |
| Basic Knowledge on PSM/SCM role & Processes | Relevant | Core | Core | Relevant | Not Covered | 10 | Core Competency |
| Change Management | Relevant | Relevant | Mentioned | Mentioned | Relevant | 8 | Relevant Competency |
| Communication skills | Core | Relevant | Core | Relevant | Core | 13 | Core Competency |
| Creativity | Mentioned | Not Covered | Mentioned | Relevant | Relevant | 6 | Relevant Competency |
| Critical Thinking | Not Covered | Not Covered | Mentioned | Mentioned | Relevant | 4 | Mentioned Competency |
| Cross-functional abilities and knowledge | Relevant | Mentioned | Core | Relevant | Core | 11 | Core Competency |
| eProcurement Technology | Relevant | Not Covered | Not Covered | Core | Not Covered | 5 | Relevant Competency |
| Holistic Thinking | Not Covered | Not Covered | Relevant | Core | Core | 8 | Relevant Competency |
| Influencing Skills | Relevant | Not Covered | Not Covered | Not Covered | Mentioned | 3 | Mentioned Competency |
| IT / Computer Skills | Mentioned | Core | Not Covered | Core | Not Covered | 7 | Relevant Competency |
| Negotiation | Core | Mentioned | Core | Relevant | Relevant | 11 | Core Competency |
| Process Optimisation | Not Covered | Not Covered | Mentioned | Relevant | Mentioned | 4 | Mentioned Competency |
| Stakeholder Relationship Management | Core | Mentioned | Core | Mentioned | Core | 11 | Core Competency |
| Strategic Sourcing | Mentioned | Not Covered | Core | Core | Not Covered | 7 | Relevant Competency |
| Strategic Thinking | Mentioned | Mentioned | Core | Core | Core | 11 | Core Competency |
| Sustainability | Not Covered | Not Covered | Core | Core | Core | 9 | Core Competency |

Rating: "Not Covered" = 0, "Mentioned" = 1, "Relevant" = 2, "Core" = 3

Not Covered: Total Rating = 0

Mentioned: Total Rating < 4

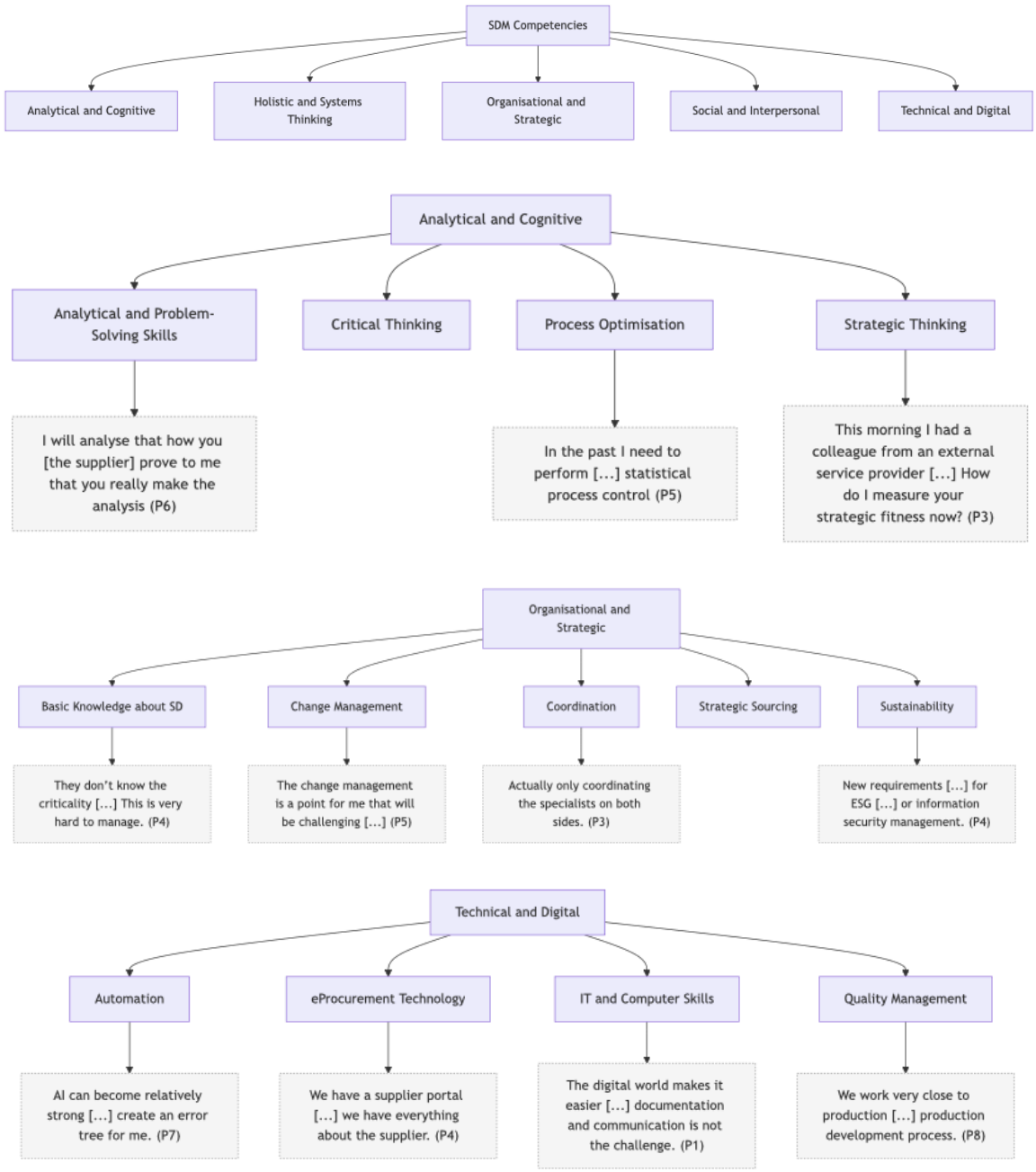
Relevant: Total Rating < 8

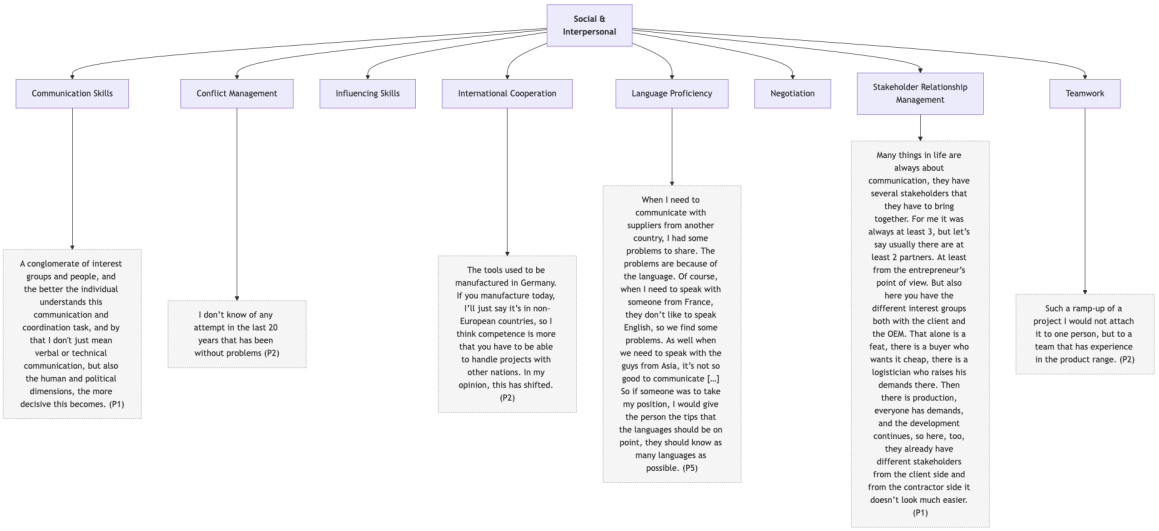
Core: Total Rating > 8

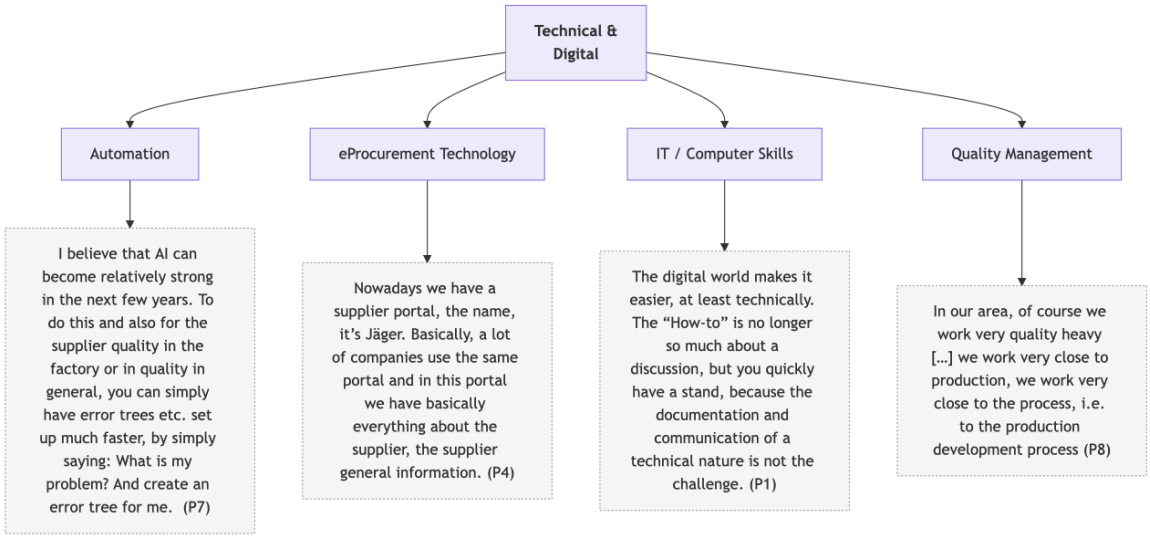
## 8.2 Appendix B – Inductively Identified Competencies

| Inductively Identified Competencies |
|---|
| Basic knowledge about SD |
| Conflict Management |
| Coordination |
| International Cooperation |
| Language Proficiency |
| Teamwork |
| Quality Management |

## 8.3 Appendix C – Coding Tree




Social & Interpersonal
Communication Skills
Conflict Management
Influencing Skills
International Cooperation
Language Proficiency
Negotiation
Stakeholder Relationship Management
Teamwork
A conglomerate of interest groups and people, and the better the individual understands this communication and coordination task, and by that I don't just mean verbal or technical communication, but also the human and political dimensions, the more decisive this becomes. (P1)
I don't know of any attempt in the last 20 years that has been without problems (P2)
The tools used to be manufactured in Germany. If you manufacture today, I'll just say it's in non-European countries, so I think competence is more that you have to be able to handle projects with other nations. In my opinion, this has shifted. (P2)
When I need to communicate with suppliers from another country, I had some problems to share. The problems are because of the language. Of course, when I need to speak with someone from France, they don't like to speak English, so we find some problems. As well when we need to speak with the guys from Asia, it's not so good to communicate […] So if someone was to take my position, I would give the person the tips that the languages should be on point, they should know as many languages as possible. (P5)
Many things in life are always about communication, they have several stakeholders that they have to bring together. For me it was always at least 3, but let's say usually there are at least 2 partners. At least from the entrepreneur's point of view. But also here you have the different interest groups both with the client and the OEM. That alone is a feat, there is a buyer who wants it cheap, there is a logistician who raises his demands there. Then there is production, everyone has demands, and the development continues, so here, too, they already have different stakeholders from the client side and from the contractor side it doesn't look much easier. (P1)
Such a ramp-up of a project I would not attach it to one person, but to a team that has experience in the product range. (P2)


Technical & Digital
Automation
eProcurement Technology
IT / Computer Skills
Quality Management
I believe that AI can become relatively strong in the next few years. To do this and also for the supplier quality in the factory or in quality in general, you can simply have error trees etc. set up much faster, by simply saying: What is my problem? And create an error tree for me. (P7)
Nowadays we have a supplier portal, the name, it's Jäger. Basically, a lot of companies use the same portal and in this portal we have basically everything about the supplier, the supplier general information. (P4)
The digital world makes it easier, at least technically. The "How-to" is no longer so much about a discussion, but you quickly have a stand, because the documentation and communication of a technical nature is not the challenge. (P1)
In our area, of course we work very quality heavy […] we work very close to production, we work very close to the process, i.e. to the production development process (P8)

## 8.4 Appendix D – Overview Table SDM Competencies

| SDM Competencies | Cluster | Participant 1 | Participant 2 | Participant 3 | Participant 4 | Participant 5 | Participant 6 | Participant 7 | Participant 8 | Total Rating | SDM Rating |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Analytical & Problem-Solving Skills | Analytical & Cognitive | Not Covered | Not Covered | Core | Core | Relevant | Relevant | Mentioned | Not Covered | 11 | Relevant Competency |
| Automation | Technical & Digital | Not Covered | Not Covered | Not Covered | Not Covered | Not Covered | Not Covered | Mentioned | Not Covered | 1 | Mentioned Competency |
| Basic knowledge about SD | Organisational & Strategic | Not Covered | Not Covered | Not Covered | Relevant | Not Covered | Not Covered | Mentioned | Not Covered | 3 | Mentioned Competency |
| Change Management | Organisational & Strategic | Not Covered | Not Covered | Not Covered | Not Covered | Mentioned | Not Covered | Not Covered | Not Covered | 1 | Mentioned Competency |
| Communication skills | Social & Interpersonal | Core | Core | Core | Core | Core | Core | Core | Core | 24 | Core Competency |
| Conflict Management | Social & Interpersonal | Not Covered | Relevant | Relevant | Relevant | Not Covered | Not Covered | Core | Not Covered | 9 | Relevant Competency |
| Coordination | Organisational & Strategic | Core | Not Covered | Not Covered | Relevant | Not Covered | Not Covered | Not Covered | Not Covered | 5 | Mentioned Competency |
| Creativity | Holistic & Systems thinking | Not Covered | Not Covered | Not Covered | Not Covered | Not Covered | Not Covered | Mentioned | Not Covered | 1 | Mentioned Competency |
| Critical Thinking | Analytical & Cognitive | Mentioned | Not Covered | Not Covered | Not Covered | Not Covered | Not Covered | Not Covered | Not Covered | 1 | Mentioned Competency |
| Cross-functional abilities and knowledge | Holistic & Systems thinking | Relevant | Relevant | Not Covered | Not Covered | Not Covered | Core | Not Covered | Mentioned | 8 | Relevant Competency |
| eProcurement Technology | Technical & Digital | Not Covered | Not Covered | Not Covered | Core | Core | Relevant | Not Covered | Mentioned | 9 | Relevant Competency |
| Holistic Thinking | Holistic & Systems thinking | Relevant | Core | Core | Not Covered | Not Covered | Mentioned | Core | Relevant | 14 | Core Competency |
| Influencing Skills | Social & Interpersonal | Not Covered | Not Covered | Not Covered | Not Covered | Not Covered | Not Covered | Not Covered | Not Covered | 0 | Not Covered |
| International Cooperation | Social & Interpersonal | Not Covered | Mentioned | Not Covered | Mentioned | Relevant | Relevant | Relevant | Core | 11 | Relevant Competency |
| IT / Computer Skills | Technical & Digital | Mentioned | Not Covered | Not Covered | Mentioned | Relevant | Not Covered | Mentioned | Relevant | 7 | Relevant Competency |
| Language Proficiency | Social & Interpersonal | Not Covered | Not Covered | Not Covered | Relevant | Core | Not Covered | Not Covered | Not Covered | 5 | Mentioned Competency |
| Negotiation | Social & Interpersonal | Not Covered | Not Covered | Mentioned | Not Covered | Not Covered | Not Covered | Not Covered | Not Covered | 1 | Mentioned Competency |
| Process Optimisation | Analytical & Cognitive | Not Covered | Not Covered | Not Covered | Not Covered | Mentioned | Not Covered | Not Covered | Not Covered | 1 | Mentioned Competency |
| Quality Management | Technical & Digital | Relevant | Relevant | Not Covered | Core | Not Covered | Core | Core | Core | 16 | Core Competency |
| Stakeholder Relationship Management | Social & Interpersonal | Core | Relevant | Core | Not Covered | Core | Mentioned | Not Covered | Relevant | 14 | Core Competency |
| Strategic Sourcing | Organisational & Strategic | Not Covered | Not Covered | Not Covered | Not Covered | Not Covered | Not Covered | Not Covered | Not Covered | 0 | Not Covered |
| Strategic Thinking | Analytical & Cognitive | Not Covered | Not Covered | Core | Not Covered | Not Covered | Not Covered | Relevant | Not Covered | 5 | Mentioned Competency |
| Sustainability | Organisational & Strategic | Not Covered | Not Covered | Not Covered | Mentioned | Not Covered | Not Covered | Not Covered | Not Covered | 1 | Mentioned Competency |
| Teamwork | Social & Interpersonal | Not Covered | Mentioned | Not Covered | Not Covered | Not Covered | Not Covered | Not Covered | Not Covered | 1 | Mentioned Competency |

Rating: "Not Covered" = 0, "Mentioned" = 1, "Relevant" = 2, "Core" = 3

Not Covered: Total Rating = 0

Mentioned: Total Rating < 6

Relevant: Total Rating < 12

Core: Total Rating > 12

## 8.5 Appendix E – Comparison PSM SDM Competencies

| Competencies | Cluster | PSM Rating | SDM Rating |
|---|---|---|---|
| **Analytical & Problem-Solving Skills** | Analytical & Cognitive | Core Competency | Relevant Competency |
| **Automation** | Technical & Digital | Mentioned Competency | Mentioned Competency |
| **Basic knowledge about SD** | Organisational & Strategic | Not Covered | Mentioned Competency |
| **Change Management** | Organisational & Strategic | Relevant Competency | Mentioned Competency |
| **Communication skills** | Social & Interpersonal | Core Competency | Core Competency |
| **Conflict Management** | Social & Interpersonal | Not Covered | Relevant Competency |
| **Coordination** | Organisational & Strategic | Not Covered | Mentioned Competency |
| **Creativity** | Holistic & Systems thinking | Relevant Competency | Mentioned Competency |
| **Critical Thinking** | Analytical & Cognitive | Mentioned Competency | Mentioned Competency |
| **Cross-functional abilities and knowledge** | Holistic & Systems thinking | Core Competency | Relevant Competency |
| **eProcurement Technology** | Technical & Digital | Relevant Competency | Relevant Competency |
| **Holistic Thinking** | Holistic & Systems thinking | Relevant Competency | Core Competency |
| **Influencing Skills** | Social & Interpersonal | Mentioned Competency | Not Covered |
| **International Cooperation** | Social & Interpersonal | Not Covered | Relevant Competency |
| **IT / Computer Skills** | Technical & Digital | Relevant Competency | Relevant Competency |
| **Language Proficiency** | Social & Interpersonal | Not Covered | Mentioned Competency |
| **Negotiation** | Social & Interpersonal | Core Competency | Mentioned Competency |
| **Process Optimisation** | Analytical & Cognitive | Mentioned Competency | Mentioned Competency |
| **Quality Management** | Technical & Digital | Not Covered | Core Competency |
| **Stakeholder Relationship Management** | Social & Interpersonal | Core Competency | Core Competency |
| **Strategic Sourcing** | Organisational & Strategic | Relevant Competency | Not Covered |
| **Strategic Thinking** | Analytical & Cognitive | Core Competency | Mentioned Competency |
| **Sustainability** | Organisational & Strategic | Core Competency | Mentioned Competency |
| **Teamwork** | Social & Interpersonal | Not Covered | Mentioned Competency |

## 8.6 Appendix F – Criteria Selection Participants

| Criteria Selection Participants |
|---|
| Participant had to be employed at a German automotive manufacturer, or Tier 1 Supplier, or work as a consultant on this topic |
| Participant should have at least 5 years of work experience in the supply chain function |
| Participant needs to have expertise in the field of Supplier Development (e.g. through direct involvement in SD projects, or related consulting activities) |

## 8.7 Appendix G – Demographics Participants

| Participant-ID | Job Title / Role | Educational Level | Years of work experience | Company Size | Country / Region |
|---|---|---|---|---|---|
| **P1** | Consultant | Diploma in Engineering | 32 | 1 | Germany |
| **P2** | Consultant | Diploma in Lean management / Financing (equivalent to MSc) | 13 | <50 | Germany |
| **P3** | Head of Enterprise IT | PhD in Purchasing | 21 | >5,000 | Germany |
| **P4** | Supplier Quality Engineer | BSc in Business Administration | 15 | >70,000 | Germany |
| **P5** | Quality Analyst | BSc in Mechanical engineering | 12 | >70,000 | Brazil |
| **P6** | Supplier Quality Engineer | Master of Business Administration – (MBA) | 12 | >70,000 | Germany |
| **P7** | Supplier Quality Development | Master of Engineering – (Meng) | 14 | >70,000 | Germany |
| **P8** | Global Supplier Development Manager | Master of Science – (MS) Engineering/Industrial Management | 10 | >150,000 | China |

## 8.8 Appendix H – Interview Guide

# Interview Guide Bachelor Thesis – Supplier Development Competencies

Duration: 30 minutes

Goal: Identification of critical Competencies for Supplier Development Managers (SDMs) in the German automotive Industry

## INTRODUCTION & WARMUP (3-5 MINUTES)

Key definitions to be explained before the interview starts:

- **Supplier Development** is any effort by a buying firm to improve the performance or capabilities of its suppliers to meet short- and long-term supply needs
- **Supplier Development Managers** are professionals who coordinate and manage these improvement efforts, working closely with suppliers to align them with the buyer's standards.
- **Competencies** are a combination of knowledge, technical skills, interpersonal abilities, and the capacity to adapt and learn. They go beyond task-specific know-how.

Questions:

- Could you please briefly introduce yourself and describe your professional background?
- How is your work related to Supplier Development?

## SUPPLIER DEVELOPMENT ACTIVITIES WITHIN THE COMPANY & PRACTICAL EXPERIENCE (10 MINUTES)

Questions:

- What types of Supplier Development initiatives are commonly used in your company?
- What are the common challenges in these projects?
- In your experience, what makes a supplier development project particularly successful – or challenging?
- How important is Supplier Development for the automotive industry?

## COMPETENCIES OF SDMS (10-12 MINUTES)

Questions:

- How important do you think the individual manager behind the Supplier Development Initiative is for the success?
- Do you think there are specific competency requirements for these individuals that differ from other roles in Procurement and Supply Chain management?
- What technical competencies do you consider essential for Supplier Development Managers?
- What interpersonal skills do you consider important for Supplier Development Managers?
- Could you share an example of a particularly good or bad Supplier Development Manager you have worked with, and tell me what made them stand out?

## TRENDS & FUTURE OUTLOOK (5-7 MINUTES)

Questions:

- Have the relevant competencies for Supplier Development Managers changed in recent years? If yes, how and why?
- What competencies do you think will become even more important in the future, and why?
- Asia's, and especially China's market share is rapidly growing. In your opinion, how do these developments influence European automotive manufacturers? Please elaborate specifically on the effects on the Supply Chains and supplier development.

## CLOSING (1-2 MINUTES)

Questions:

- Is there any topic you think is relevant that we haven't covered?
- Would it be okay to reach out to you again in case of follow-up questions?

## 8.9 Appendix I – Unaddressed Competencies

| Unaddressed Competencies |
| --- |
| Automation |
| Basic knowledge on PSM/SCM role & processes |
| Influencing Skills |
| Strategic Sourcing |