

Beyond Individual Skills: Cultivating Competence Synergies in Thai Automotive Production

Abstract

Purpose - Production employees and their competences are pivotal in the generation of value and shaping human resource management (HRM) strategies for small and medium-sized manufacturing enterprises (SMEs) operating within the supply chain. This study aims to understand and model how individual competences of production employees are developed and utilized within SMEs in the Thai automotive sector, highlighting the role these competences play in enhancing organizational competitiveness.

Design/methodology/approach - Employing a grounded theory methodology, this study analyzes data from in-depth interviews with 30 participants—10 owners and 20 production employees. The research systematically categorizes competences and investigates their synergistic effects on organizational performance.

Findings - The result identifies key competences of production employees, such as inquisitiveness, functional, emotional intelligence, and integration competences. It is found that these competences, when combined, lead to synergistic effects that significantly enhance employee performance and organizational efficiency.

Originality/value - The study provides novel insights into the competence-based theory of firm competitiveness in emerging markets by demonstrating how individual competences of production employees interact to produce greater collective capabilities within SMEs.

Keywords Supply chain management, Competence development, Production employee competence, Employee development, Grounded theory, Thai automotive SMEs.

Paper type Research paper

Introduction

In the rapidly evolving domain of supply chain management (SCM), recognizing and leveraging individual competences is important for shaping human resource management (HRM) strategies that enhance human performance and sustain competitive advantage in dynamic markets (Derwik and Hellström, 2017). According to Flöthmann *et al.* (2018), harnessing these competences ensures that organizations position the right individuals in suitable roles at optimal times, significantly enhancing operational efficiency. Patrucco *et al.* (2022) underscore this point by noting that an overwhelming majority of proficient corporate leaders in SCM deliberately appoint specialists to manage these roles, emphasizing the recruitment of individuals with robust technical and functional competences.

While advanced information systems and the cultivation of transparent, inter-departmental information flows are vital (Jin *et al.*, 2014; Teller *et al.*, 2012), the core of SCM success lies in the competences each participant in the supply chain possesses. These competences are

essential for fostering effective collaboration and integration across various organizational echelons (Jin *et al.*, 2010; Flöthmann *et al.*, 2018).

Derwik and Hellström (2017) and others have noted that traditional SCM competence research has predominantly focused on the competences necessary for managers in specific supply chain functions, such as logistics (Sangka *et al.*, 2019) and procurement (Karttunen, 2018). This manager-centric focus, however, offers a limited view of the multifaceted and layered competences required across all levels of organizational roles. There is a compelling need to broaden this scope to include competences across various employment levels, reflecting the diverse roles that contribute to the supply chain's effectiveness (Salman *et al.*, 2020).

In Thailand, where small and medium-sized enterprises (SMEs) form the backbone of the manufacturing sector—particularly within the automotive industry—employee competences are critical. SMEs represent a substantial portion of the automotive sector, significantly contributing to Thailand's economic growth and employment landscape (Intarakumnerd, 2021). Unlike larger corporations that might leverage sophisticated technologies, SMEs depend heavily on the competences of their production staff to meet the operational demands of the supply chain (Turner *et al.*, 2016).

Despite the acknowledged importance of individual competences in achieving superior supply chain performance, there is a notable gap in the literature concerning the competences of production employees within SMEs (Gámez-Pérez *et al.*, 2020; Derwik and Hellström, 2017). This study seeks to address this gap by employing Practice Theory to elucidate the competences within the SCM field further, particularly as they apply to everyday practices rather than theoretical constructs alone (Derwik *et al.*, 2016).

Also, our research aims to explore the competences of production employees in the Thai automotive sector, focusing on how these competences interact within teams to produce synergistic effects that enhance both individual and organizational performance. This is because Derwik and Hellström (2017) underscore the need for a deeper exploration into the interactions among specific competence groups, especially within the areas of supply chain competence. While the concept of a synergistic effect arising from different individual competences is noted by Derwik *et al.* (2016), prior research has yet to provide a framework for understanding how a synergistic effect among individual competences. So, by integrating Practice Theory, this study aims to not only identify the competences applied by production employees but also to uncover the deeper, intrinsic logic behind their application, thus providing a richer understanding of competence dynamics within SMEs.

To address these aims, the following research questions are posed:

1. What competences are essential for SMEs production employees in the Thai automotive SMEs?
2. How do the competences across distinct production employee groups drive mutual enhancement and impact?

The remaining of this paper is structured as follows. Section 2 presents a literature review of individual competences in SCM, employee competences and manufacturing SMEs, and practice theory. Section 3 outlines the research methodology employed in this research, while Section 4 presents the results, along with a discussion and proposed propositions. Finally, in Section 5, the concluding remarks address the research limitations and underscore the implications for future research.

Literature Review

Individual Competence in SCM

In the complex landscape of SCM, individual competences embody a mosaic of knowledge, skills, abilities, capabilities, and resources that are pivotal for superior performance and strategic competitiveness (Teece *et al.*, 1997; Athey and Orth, 1999). These competences shape the trajectory of strategy development, influencing not only the performance of the company but also its adaptability in rapidly evolving markets (Hohenstein *et al.*, 2014; Flöthmann *et al.*, 2018). The core utility of these individual competences lies in their capacity to inform recruitment criteria, guide the development of training programs, and establish benchmarks for performance appraisals and incentives (Campion *et al.*, 2011; Salman *et al.*, 2020).

Acknowledging the criticality of aligning individual competences with specific job roles, the concept of “person-job fit” has emerged as a significant predictor of both job satisfaction and performance efficiency (Caldwell and O'Reilly, 1990). This alignment is not just a passive fit but an active engagement where strategic recruitment practices are structured to enhance this fit, thus optimizing organizational effectiveness across various functions of the supply chain (Salman *et al.*, 2020; Flöthmann *et al.*, 2018).

Employee Competences and Manufacturing SMEs

Compared to their larger counterparts, SMEs often operate under tighter constraints, notably in financial resources and access to cutting-edge technology (Juergensen *et al.*, 2020). This limitation is particularly pronounced in the manufacturing sector, where SMEs traditionally rely more heavily on human resources than on technological solutions to meet production demands (Turner *et al.*, 2016). The importance of employee competences in such environments cannot be overstated, as these competences directly influence the creation of value and the effective interaction with the supply chain, often matching or even surpassing the impact of managerial roles (Huo *et al.*, 2015).

A survey conducted by the National Institute of Development Administration highlighted a divide in productivity among SMEs, attributing inefficiencies to the competences of the workforce (Nida, 2015). Addressing these competences offers a clear pathway to enhancing both organizational performance and the robustness of supply chain linkages (Swanson *et al.*, 2020). In sectors like Thai automotive manufacturing, the role of production employees is crucial not only for internal operations but also for the seamless function of the entire supply chain (Kitchot *et al.*, 2021).

Thai Automotive Manufacturing SMEs

Building on the critical role that employee competences play in manufacturing performance, the Thai automotive parts manufacturing SMEs exemplify how workforce skills can drive broader economic and supply chain outcomes. These SMEs have significantly contributed to Thai economic growth and employment (Thaiautopart, 2022) and operate in the second-tier group of the Thai automotive industry (Thaiautopart, 2022). Often referred to as “Local Thai” (Khompatriaporn *et al.*, 2017), these second-tier SMEs account for 70 percent of the Thai automotive industry (Thaiautopart, 2022). Their key responsibility is to produce parts for first-tier and assembly manufacturers. In other words, these SMEs occupy the upstream position of the Thai automotive supply chain (Khompatriaporn *et al.*, 2017). Despite this crucial role in the automotive supply chain, the Thai automotive industry has faced challenges, such as rapid globalisation and increased competition (Vinodh *et al.*, 2013; WEF, 2019). Consequently, the Thai automotive parts group—Tier 1 (primarily comprising large companies) and Tier 2 (primarily consisting of SMEs)—must prepare for the demands of a highly competitive global industry. However, the response of SMEs to these challenges differs from the response of large enterprises (Turner *et al.*, 2016), partly because large enterprises with Japanese and Thai shareholders regularly collaborate to develop dependable systems and management strategies, sharing knowledge and information (Thaiautopart, 2022). As a result, these large enterprises possess significantly greater production and technological capabilities than Thai-owned local companies or SMEs without foreign shareholders (Punyasavatsut, 2007). In light of these disparities, SMEs must formulate strategic choices to remain competitive (Chittithaworn *et al.*, 2011).

To better understand these challenges, the Thai Ministry of Industry and the National Institute of Development Administration (Nida, 2015) conducted a survey of Thai SMEs in the automotive parts sector. The survey revealed that 55.31% of respondents reported no issues with low productivity, whereas the remaining respondents acknowledged suffering from low productivity. Among the latter group, 59.87% claimed an inefficient workforce, 18.47% identified ineffective or outmoded machinery, and 18.04% cited ineffective production methods (Nida, 2015).

Existing Research on Competences

Much of the literature on competences has focused predominantly on manager roles in larger firms (Derwik and Hellström, 2017). Although these studies have improved our understanding of individual manager competences within specific departments—such as purchasing and supply chain—there remains a lack of research on the individual competences of employees, either in general or within specific industries (Derwik and Hellström, 2017). Yet, as Huo *et al.* (2015) and Ellinger *et al.* (2010) point out, employees directly develop value and interact with the supply chain, making them equally critical to a company’s success as managers. Moreover, individual employee competences can be both valuable and rare (Jin *et al.*, 2010; Bhattacharya *et al.*, 2005). Enhancing these competences can improve organizational performance and strengthen supply chain linkages (Swanson *et al.*, 2020). Consequently, examining employee competences across specific areas—particularly production—remains crucial.

There is thus a need to explore critical individual competences in different job roles (Bak *et al.*, 2019; Altaf *et al.*, 2021; Rikala *et al.*, 2024). The literature review for this research indicates that, to date, no study has focused specifically on production-employee competences (Derwik and Hellström, 2017), even though the production area is central to the supply chain. Production is where firms must manufacture products at the expected quality and volume levels before delivering them to customers (Koren *et al.*, 2018; Palucha, 2012). Production employees are therefore indispensable for ensuring smooth operations (Michael *et al.*, 2006). However, current research on competences lacks a holistic perspective of individual production-employee competences, leaving it unclear which specific competences are needed.

Gaps in the Literature and Importance for SMEs

The literature has also overlooked the nuanced competences of production employees in SMEs (Derwik and Hellström, 2017). This oversight complicates the alignment of job-specific competences with the operational requirements unique to SMEs, highlighting a critical gap that this study aims to address. Moreover, existing research (e.g., Derwik *et al.*, 2016) suggests that competences should be viewed not as isolated factors but rather as interconnected attributes that enhance problem-solving and operational efficiency through a combination of knowledge, information processing, and organizational experience.

SMEs, especially in the Thai automotive sector, face distinct constraints such as limited resources, multi-functional roles, and a high reliance on interpersonal competences (Nolan *et al.*, 2010). These challenges necessitate agility in supply chain management and underscore the need for a balance between operational and strategic skill sets tailored to the industry (Nolan *et al.*, 2010). By adopting a synergistic view of competences in the SME context, this research illustrates how competences interact within teams to enhance individual and organizational performance, offering a deeper understanding of competence dynamics in SMEs. This approach not only answers call for a more integrated perspective on competences but also aligns with contemporary challenges that SMEs encounter in maintaining competitiveness and operational efficacy.

Practice Theory

Practice theory offers an in-depth understanding of how practices shape and are shaped by social structures, emphasizing the role of human activities in creating and sustaining these structures (Gherardi, 2009). Within this framework, practices are viewed as aggregations of routinized yet purposive behaviors, involving physical and mental activities ranked according to their social significance (Schatzki, 2012). In organizational settings, these social structures can encompass formal hierarchies, cultural norms, and shared belief systems that, in turn, guide and are reinforced by everyday actions.

Practice theory serves as an umbrella for a wide array of sociological theories that inform the practice-based approach (Silva and Figueiredo, 2020). It primarily examines how daily activities and routines occur and their impact on organizational dynamics (Silva and Figueiredo, 2020). However, the practice lens, which focuses on everyday organizational actions, does not explicitly account for intentional attitudes or individual choices (Gherardi, 2009). A practice is defined as a recurring pattern of action that fosters a shared understanding among those who

engage in it, potentially leading to optimal performance (Silva and Figueiredo, 2017). In this sense, social structures—such as power relations, institutional rules, and cultural assumptions—are simultaneously produced by, and productive of, these recurring patterns of action

In the context of logistics and SCM studies, (1) scholars often reveal little beyond what already exists in practice (Sweeney, 2013). We challenge the concept of “best practice” because it implies a single optimal solution, overlooking how social structures vary across different organizational and cultural contexts. When developing or implementing best practices (Mejías *et al.*, 2016), the question arises: “Best practices for whom?” (Touboulic and McCarthy, 2020). It is essential to consider who carries out a particular practice (Silva and Figueiredo, 2017) and under which social conditions it unfolds. This perspective questions the universal applicability of “best practice” lists, given that each company’s products, processes, workforce, and culture—integral parts of its social structure—are unique (Sweeney, 2013). As such, applying the same “practice” universally every time, everywhere, and for everyone may not be practical.

Further building on the application of practice theory by Derwik *et al.* (2016), this study employs it as a critical lens to explore the interactive dynamics of competences within SCM. This approach not only helps in identifying the competences crucial to SCM but also in understanding the underlying mechanisms through which these competences interact and co-evolve.

Practice theory thus serves as a foundational framework that guides the analysis of how individual actions and organizational practices intersect to produce significant outcomes in SCM. Additionally, it underscores the importance of the researcher’s role in co-constructing knowledge, suggesting that scholars should engage more actively with practical implementations rather than restricting themselves to theoretical explorations (Antonacopoulou, 2015; Silva *et al.*, 2022). This engagement is vital for understanding the socially embedded nature of competences and how they shape—and are shaped by—the organizational environments in which they operate. In summary, by integrating practice theory, this research not only broadens the conceptualization of SCM competences but also demonstrates how social structures influence, and are influenced by, the ways these competences are enacted. In so doing, it provides deeper insights into their practical implications and contributions to organizational success, offering a powerful vantage point for analyzing and advancing SCM practices in context.

Methodology

Research Method

Grounded theory is chosen for this research due to its strength in generating theory in areas that are not well-understood and for providing new insights into existing knowledge (Goulding, 2002). This methodology is particularly suitable for exploring the competences of production employees, an area with significant gaps in understanding. Grounded theory facilitates the emergence of interpretations directly from the data, offering fresh perspectives within the research domain (Strauss and Corbin, 1990).

To gain this insight, we conducted an in-depth interview study with an expert panel of profoundly competent and experienced production employee. Interview studies are well-documented for their effectiveness in exploring human behavior within logistics and supply chain management research (Thornton *et al.*, 2013). Grounded theory supports the use of interviews by highlighting their capacity to delve into respondents' internal thoughts and viewpoints (Goulding, 2002). The research adopts social constructivist lens, emphasizing the significance of participants' perceptions and interpretations (Stentoft Arlbjørn and Halldorsson, 2002; Gephart, 2004). We emphasize storytelling as a foundational element of the research process, as highlighted in the works of Diefenbach (2009) and Gallagher (2011). Storytelling proves instrumental in revealing the intricate viewpoints of production employees, adeptly brings to light the multifaceted interplay among these perspectives and thereby enriching our understanding of the subject matter for a more in-depth exploration and analysis in our research (Fawcett *et al.*, 2014).

Sampling Method

Purposeful sampling was employed to select participants who brought a wide range of insights on the focal phenomenon (Palinkas *et al.*, 2015). The setting for this research was Thai automotive SMEs, recognized not only for their critical role in industrial production but also for their significant contributions to Thailand's economic growth and employment (Boi, 2017).

The sampling focused on both owners and production staff of these SMEs. Owners were included to provide strategic perspectives on competence development, while production staff were selected for their operational insights into day-to-day competences. Relying solely on data collected from the production employees would be inadequate for gaining comprehensive insights and understanding of competences. This dual approach facilitated a comprehensive understanding of competences from both strategic and operational viewpoints. Therefore, incorporating the perspectives of production managers/owners allows the research to encompass their insights regarding production employee competences.

To ensure the richness and diversity of the data, the sample included participants from 10 different companies, resulting in a robust dataset of 30 interviews (see Table 1). This strategy aimed to mitigate bias and enhance the representativeness of the findings across the industry.

Company	Owner			Production Employee 1			Production Employee 2		
	Ages	Experience	Education	Ages	Experience	Education	Ages	Experience	Education
1	52	15	Bachelor's degree	30	8	Vocational education	23	5	Vocational education
2	55	21	Grade 12	47	16	Grade 12	37	10	Grade 12
3	53	29	Master's degree	29	7	Grade 12	40	7	Grade 12
4	44	17	Bachelor's degree	36	10	Bachelor's degree	49	12	Bachelor's degree
5	42	15	Master's degree	29	7	Grade 12	27	5	Grade 12
6	47	20	Bachelor's degree	43	15	Grade 12	29	7	Grade 12
7	49	20	Bachelor's degree	56	20	Grade 12	34	7	Grade 12
8	36	16	Grade 12	36	5	Grade 12	33	7	Grade 12
9	43	18	Master's degree	28	5	Vocational education	25	6	Vocational education
10	40	20	Grade 12	29	5	Vocational education	32	5	Grade 12

Table 1: Profiles of selected interviewees (Source: Authors' own work)

The research has selected participants with more than five years of experience. It assumes that the participants who work with an average of five years of experience in the Thai automotive SMEs have a high possibility of adequate knowledge in their field to offer in-depth insights into this study.

In addition, this study utilised a snowball sampling strategy to find appropriate participants who met the selection criteria. According to Ritchie *et al.* (2013), in snowball sampling, participants are asked to identify other individuals in their network who may possess valuable information that can help answer the research questions and who can thus be included in the study. This research employs this strategy to address the challenges of recruiting participants in the investigation. The snowball sampling strategy is used when research concerns a specialised population cohort who are knowledgeable and experienced (Patton, 2014).

Overall, the recruitment of participants was guided by their known and experience in the field, ensuring that the study benefited from relevant and significant insights into production competences within the automotive sector.

Data Collection

We adopted a systematic approach to collect empirical data, guided by the principles of grounded theory which emphasize theoretical sampling, theoretical sensitivity, and the constant comparison method (Chun Tie *et al.*, 2019; Bryant and Charmaz, 2007). The data collection was carried out in stages, starting with a pilot study followed by extended fieldwork, enhancing the depth and reliability of our findings. The initial stage began with a pilot study in November 2021, involving two Thai automotive SMEs. This phase included interviews with two company

owners and four production employees, serving as a critical step to refine our data collection strategies and interview protocols.

The research then expanded from January to June 2022 to include ten companies, resulting in thirty comprehensive interviews with a diverse set of participants. These interviews were digitally recorded for accurate transcription and to facilitate full engagement in the conversations, improving the quality of the data (Edwards and Holland, 2013). The process was divided into three distinct phases: the initial phase with three companies provided foundational insights through nine interviews; participants reviewed their transcripts to verify information, ensuring data reliability (Ritchie *et al.*, 2013). Subsequent phases involved iterative rounds of interviews, deepening the investigation into emerging themes and utilizing a snowball sampling technique to identify new participants. The interview process was deemed complete after the third phase when further interviews did not yield new information, indicating that saturation had been reached (Bell *et al.*, 2018). This comprehensive data collection was followed by a detailed analysis, strictly adhering to the principles of grounded theory to ensure a thorough understanding of the data.

The focus on 10 companies (30 interviewees) was a deliberate methodological choice to ensure depth and diversity in data collection while maintaining the feasibility of grounded theory's iterative approach. By selecting these companies purposefully, the study sought to balance representation and detailed inquiry, capturing the nuances of employee competences within Thai automotive SMEs. Each company was carefully chosen based on its operational relevance and strategic contributions to the sector, ensuring rich, context-specific insights. Small sample sizes in qualitative research are supported by methodological principles, as the emphasis is on achieving data saturation, where no new themes emerge, rather than on statistical generalizability (Bryant and Charmaz, 2007; Palinkas *et al.*, 2015). Saturation was achieved in this study, as additional interviews did not yield new findings, confirming the adequacy of the sample size for addressing the research objectives.

Data Analysis and Coding

The analysis began with a detailed transcription of the interviews, followed by a manual examination to identify key elements such as words and phrases. NVivo 12, a qualitative data analysis software, was used solely for data processing, which could not replace the critical thinking necessary in interpretive research (Minichiello *et al.*, 1995). The narratives of all respondents were analyzed using a coding scheme from grounded theory (Strauss and Corbin, 1990). The three coding stages commonly accepted in the concept of grounded theory, namely open coding, axial coding, and selective coding, were closely followed. These stages help researchers observe patterns in the collected data. In this study, the open coding of empirical material within each node led to the identification of sub-concepts associated with each competence, thereby providing a more detailed description and understanding of the competences of production employees. An initial code was assigned, representing the discrete incidents, concerns, issues, events, and acts identified from the analysis. The developed data (coded) were grouped to form "an abstract concept" that explains the dynamics observed and to understand the issues and concerns that were vital in the study. Then, axial coding was used to organize the large amounts of fractured data from the open coding and to create new

categories or merge existing ones pertinent to the same idea. This activity naturally guided the researcher toward the emergence of patterns and concepts. The formation of new composite categories by elevating them to a higher conceptual level provided enhanced explanation and comprehension. During the ongoing process of data collection and analysis, concepts and patterns were thoroughly examined, leading to a re-coding of the empirical data. Concurrently, selective coding was employed to pinpoint the core category or theme within the empirical data. This offered insights into various aspects of competences among production employees in the Thai automotive part manufacturing SMEs (refer to Figure 1).



Figure 1: Production employee competence: coding and categorization (Source: Authors' own work)

Findings

The aim of this research is to present the results and to develop propositions for future research. In total, this research puts forward five propositions.

Competence Profile

This research has identified four distinct production employee competences and their respective elements based on the coding system of the grounded theory method (see Figure 1). They are labelled as (1) Inquisitiveness competence; (2) Functional competence; (3) Emotional intelligence competence; and (4) Integration competence.

Inquisitiveness Competence

Inquisitiveness competence emerges as an important theme in the competence framework for production employees, as derived from insights shared by both the owners and the employees themselves. This competence is typified by a mindset of actively exploring new ideas and showing a keen interest in the environment. It comprises two key elements: motivated learning and an enthusiastic mindset.

Central to inquisitiveness competence is motivated learning, which enables production employees to continually extend their knowledge boundaries, essential for both their immediate effectiveness and long-term professional growth within the sector. This learning ethos is not just a route to individual success but a foundational pillar for sustained high performance. In the recruitment process, a marked emphasis is placed on a candidate's demonstrated capacity for motivated learning, often valued above existing technical skills, underscoring the critical role of a growth-oriented mindset in high-quality production settings. For instance, Employee 5 recounted the initial challenges faced and how persistence led to competence: *"I remember when I started working here, I initially found it challenging to figure out the placement of parts and locating specific details within the various pages of the menu. It took me about a month to get a good grasp of it."* Similarly, an owner highlighted the dynamic nature of the industry: *"Today's production employees need to constantly focus on learning because our world and production technologies have evolved rapidly in the past 10 years."* (Owner 2).

Additionally, an enthusiastic mindset is identified as another integral element of inquisitiveness competence. This mindset amalgamates self-discipline, determination, self-awareness, and ambition. It is an active trait, manifesting as a passion for knowledge acquisition and a proactive pursuit of skill enhancement opportunities. This disposition not only benefits the individual by fostering personal and professional growth but also positions them as highly desirable candidates in the job market. For example, another employee shared, *"When we spot a problem, it's crucial to keep track of the specifics of what happened. This helps us grasp the issue and work out a solution to fix it."* (Employee 15), reflecting a sentiment aligned with industry literature that highlights enthusiasm as essential within supply chain roles (Thai and Yeo, 2015; Derwik and Hellström, 2021). Based on the findings, this research suggests the following:

Proposition 1: Inquisitiveness competence encompassing a propensity for motivated learning and an enthusiastic mindset is prerequisite for production employees to perform their job effectively.

Functional Competence

Functional competence is vital for proficient task execution, merging manufacturing expertise with essential awareness for operational proficiency. Within Thai automotive SMEs, the extent of an individual's functional competence significantly influences their task performance efficiency. This competence integrates three important elements: quality assurance, practical skills and knowledge, and technological skills and knowledge.

In quality assurance, the findings underscore the necessity for production employees to deeply understand and commit to customer and process orientations. Cultivating an environment where quality lapses are unacceptable is crucial. This element of functional competence is particularly beneficial for Thai automotive SMEs as it not only bolsters productivity but also elevates overall performance. Quality assurance enables each production employee to consistently uphold high-quality standards. Employee 1 exemplifies this, stating, *“Production employees keep an eye on and examine the products they’re making. This is important because even though they follow the production steps closely, small mistakes can still happen in the parts during manufacturing. I want my team members to spot and assess these errors before they send the parts to me for the next process.”* This reflects the views of Dubey *et al.* (2015) and Trentin *et al.* (2019) on the importance of each employee's participation and understanding of quality requirements in achieving high-quality outcomes.

This research identifies practical skill and knowledge as critical dimensions of having essential proficiencies for specific roles, which is evident from discussions with both production employees and owners. A fundamental skill such as understanding technical drawings is highlighted as crucial. This skill allows production employees to use detailed drawings as a roadmap for part production, informing every step of the manufacturing process. Owner 3 emphasizes the importance of this skill: *“Another key skill we now require is the ability to read technical drawings. Previously, we simply directed our operators to follow these drawings, but this approach often led to defects. Nowadays, we ensure our operators are trained to understand and read these drawings effectively. This change has significantly reduced the likelihood of defects occurring.”* This aligns with the findings of Priksat *et al.* (2019) and Finch *et al.* (2016), which stress the critical role of practical skills and knowledge in work performance. In the context of Thai automotive SMEs, these practical skills and knowledge are not merely requisite attributes but constitute a crucial aspect of production employee competence. This is particularly significant when considering the unique employment needs of these employees. It underscores the importance of functional competence as a key factor in enhancing the workforce efficiency and effectiveness of the automotive sector.

This research further demonstrates that the performance of Thai automotive SMEs heavily relies on the technological adeptness of their staff, necessitating focused training on technology use and adaptation. The importance of continually updating and enhancing employees' technological skills is paramount to maintaining and improving functional competence within the industry. Employee 6 describes the ongoing learning process: *“The company updates our equipment every four to five years. Each time this happens, they give us training on how to use these new machines for our production work.”* Owner 4 adds, *“We introduce new tools and machines about every three to four years. This new technology helps us improve our work to*

better meet our customers' needs, while also allowing us to effectively monitor and manage our employees at the same time.” Businesses leverage technological skills and knowledge to expand rapidly and effectively, aligning with the consumers' dynamic preferences. Technology acts as a key facilitator in improving production and service capabilities, enabling operations to be both efficient and responsive. These findings align with the research by Ndeye *et al.* (2018), highlighting the crucial role of functional competence in the evolving business landscape, emphasizing the need for continuous skill development and technology adaptation to sustain competitive performance. Based on the findings, this research suggests the following:

Proposition 2: Functional competence, including quality assurance, practical skill and knowledge, and technological skill and knowledge, is essential competence for production employees to perform their job effectively.

Emotional Intelligence Competence

Emotional intelligence, encompassing elements such as social awareness and emotional control, is critically recognized by both owners and production employees as crucial to operational success in the workplace. This competence significantly influences interpersonal dynamics and enhances collective productivity.

Social Awareness is central to emotional intelligence, with a demonstrable link to positive workplace outcomes. It involves the recognition and appropriate response to the emotional states of others, fostering an environment built on trust and mutual respect. In Asian cultural contexts, where team cohesion is vital, the ability to maintain a positive disposition and engage constructively with colleagues is invaluable. For example, Employee 3 described the challenges of differing personalities: *“In my work environment, I often find that my personality differs significantly from my colleagues, which can make it challenging to get along well with them. However, since we share the same workplace, we must separate professional interactions from personal matters. It's difficult to change someone else's way of thinking in a work environment, so the best approach is to adapt our own attitudes and behaviors.”* Another noted, *“We should try to balance our own views with those of our colleagues. It's important not to push our ideas on others or expect them to always agree with us. While our opinions may often be correct, maintaining harmony means being willing to compromise. This is because not every situation will be in favor of our viewpoints, and adapting to these situations is crucial.”* (Employee 12) These insights underscore the relevance of social awareness in operational effectiveness, as corroborated by Zhao and Jung (2018) and Li (2014).

Emotional Control refers to the management of one's emotional responses, particularly in high-pressure or provoking situations. It enables individuals to remain composed, thus preventing potential conflicts and fostering a stable work environment. This facet of emotional intelligence is especially crucial for leaders and managers who must navigate the complexities of organizational dynamics effectively. As highlighted in the study by Employee 8, *“When there are problems in the workflow, employees with a low emotional quotient often create conflicts or hold grudges; they don't work towards resolving issues together. On the other hand, those with a high emotional quotient are open to others' ideas and collaborate to find solutions.”* This ability to manage emotions effectively is aligned with findings by Keller *et al.* (2020) and

Callahan (2016), who note that emotional stability is key to successful leadership and team management.

The integration of these components of emotional intelligence competence—social awareness and emotional control—is crucial for maintaining a healthy, effective work environment, thereby enhancing overall organizational performance. This understanding supports the proposition that robust emotional intelligence competence is essential for the effective performance of production employees. Based on the findings, this research suggests the following:

Proposition 3: Emotional intelligence competence comprising social awareness and emotional control is crucial for production employees to perform their job effectively.

Integration Competence

In the context of Thai automotive SMEs, where resource constraints are commonplace and operational agility is critical, integration competence emerges as a fundamental capability. This competence amalgamates multiple skills—multitasking, mentorship, intellectual ability, and a lean mindset—each critical to the overarching goal of enhancing organizational performance and achieving strategic objectives (Derwik and Hellström, 2017).

The findings stress the importance of multitasking skill in scenarios where manpower is scarce, a skill that involves managing multiple tasks concurrently and is frequently utilized by production employees. Employee 7 illustrates this, “*Due to a lack of enough staff, we need to operate several machines at the same time. The component goes through different machines in sequence.*” Owner 5 shares a similar view: “*Each employee must be capable of operating not just their own machine, but also every other machine in our workplace.*” The capability to handle multiple tasks efficiently ensures that production deadlines are met and that there are minimal stoppages in the workflow, thus directly contributing to the throughput and overall productivity of the SMEs. Notably, while previous literature, such as Derwik and Hellström (2017) in supply chain competence, has acknowledged various challenges, it has overlooked multitasking as a critical aspect of employee competence. This gap is particularly striking given the work of Derwik *et al.* (2016), whose work emphasizes multitasking skills as an essential component of managerial competence in supply chain management. This gap suggests that the ability to effectively manage multiple tasks is a crucial, yet often overlooked, competence in supply chain management.

Mentorship refers to the capability to effectively guide and support others. Production employees report that, after gaining experience in their roles, they often take on the responsibility of mentoring new colleagues. This mentoring process provides essential support to less experienced employees, fostering their professional growth. Notably, a mentor acts not only as a teacher but also as an advocate, playing a critical role in the development of their mentees. Employee 5 shares an example: “*When I first started working here, my supervisor trained me in safety, how to use the machines, the right way to work, and what the customers need. Now, when new employees join, it's not my supervisor but us, the experienced production operators, who train them.*” This synergy not only diversifies the workforce's strengths but also significantly enhances team performance. The importance of mentorship skills as a crucial

component of employee competence in supply chain management has been largely overlooked (Derwik and Hellström, 2017).

The interviews also reveal the importance of a lean mindset, which has become a vital skill in organizations. The evidence suggests that an organization's overall performance depends on production employees with a lean mindset, aimed at eliminating waste, lowering costs, and enhancing work processes. However, adopting this mentality may take time for certain employees, who learn the lean concept through various methods, including in-house training and hands-on activities. Employee 15 shares an example: *"We're taught to organize and clean our own tools and equipment. Every Saturday, we do a major clean up. Initially, I didn't see the point of it. But after practicing and mastering this skill, I now understand the principle and it has made my work more efficient."* Some individuals are naturally inclined towards a lean mindset, while others may find it challenging to adopt this perspective. A conducive environment, fostered by the owner, can facilitate the assimilation of a lean mindset. This involves identifying and eliminating elements that do not contribute value. Earley (2016) agrees, highlighting that the cultivation of lean principle depends on multiple factors, including a robust understanding of essential tools and comprehensive in-house training.

In an industry driven by innovation and efficiency, intellectual skills are crucial for continuous improvement and problem-solving. Employees are expected to possess not only the technical knowledge of their tasks but also the intellectual capacity to understand and improve processes. This includes the ability to analyze production bottlenecks, propose viable solutions, and implement changes that enhance productivity and reduce waste. Intellectual skills are particularly important in environments where technology and processes evolve rapidly; employees must adapt quickly and learn continuously to maintain operational effectiveness. Employee 7 shares an example: *"Our aim is to understand why issues with machines or equipment frequently arise. This understanding allows our team and the wider organization to come together, brainstorm, and find solutions."* Business owners are advocating for high schools and colleges to enrich their curricula. The goal is to provide more opportunities for young people to improve their analytical skills and gain confidence in articulating their ideas. Many manufacturers are taking proactive measures to foster those essential skills within their workforce. They are doing so by providing in-house training programs and practical activities to ensure that production employees not only learn these crucial skills but also have the chance to apply them in real-world situations. Owner 9 shares an example: *"To improve the critical thinking and problem-solving abilities of the young generation in Thailand, there need to be effective methods. By nurturing these skills effectively, they will be able to use what they've learned in their professional lives as they begin their careers."* The results presented align with previous literature which indicates that this kind of attitude is the key element for work operation (Trentin *et al.*, 2019; Campos *et al.*, 2019). Based on the findings, this research suggests the following:

Proposition 4: Integration competence including multitasking skill, mentorship skill, intellectual skill, and a lean mindset is essential for a production employee to perform their job effectively.

Combinations of Competences

Contrary to the traditional perspective that often portrays competences as distinct and isolated, our research identifies that competences are interdependent, resulting in synergistic effects that significantly effects (see Table 2). A notable example is the interplay between functional and inquisitiveness competences. Functional competence is crucial as it relates directly to task execution and operational efficiency. Inquisitiveness competence, on the other hand, fosters a culture of continuous learning and curiosity, which is essential for adapting to new methods and technologies, thus enhancing functional competence. For instance, Employee 8 illustrates this synergy: *“In the mornings, we often talk about the feedback we've received from our customers. This includes a list of issues we need to work on and resolve together. We might encounter these problems repeatedly, but it's crucial for us to continuously learn, improve, and find solutions.”*

Linkage Between Competence Themes	Exemplar Quote
A linkage between inquisitiveness competence and functional competence	<i>Different customers have different priorities and requirements, something I've personally encountered. They offer varied feedback on our products, and it's crucial that we pay attention to their comments, learn from them, and make improvements as recommended (Employee 8)</i>
	<i>In our work operations, we often use tools and equipment that are designed for complex tasks or parts. These tools can be challenging to use and control. Therefore, it's important for our employees to dedicate time to practice and learn how to properly operate them (Owner 4)</i>
	<i>When we get new machines and equipment at work, I need to learn how to operate them. It's important for me to understand how these machines function so that the parts I produce meet our customers' needs (Employee 11)</i>
A linkage between functional competence and integration competence	<i>In our company, I encourage employees who have been with us for a year to take on different tasks. I focus on teaching them how to continuously operate and manage their machines. This approach helps them become versatile and multitasking, which is vital in addressing any potential manpower shortages (Owner 4)</i>
	<i>During my five years with the company, they assigned me to train and instruct new employees because of my long-standing experience there (Employee 2)</i>
	<i>Employees sometimes struggle to resolve production issues due to a lack of fundamental knowledge. This can result in defects. When these problems can't be swiftly resolved, it can cause interruptions in the production process (Employee 17)</i>
A linkage between emotional intelligence competence and	<i>While it's important for employees to express their opinions and ideas, it's crucial to be aware that some individuals may do so in a way that gives them an unfair advantage over their colleagues. These individuals are highly skilled and may subtly</i>

<p>integration competence</p>	<p><i>undermine others while promoting their own abilities. For instance, they might claim, “Only I can solve this problem, not that person” (Employee 18)</i></p>
	<p><i>The company uses the 5S principles to minimize waste in our production line, but we haven't achieved a full 100% implementation. Some of my colleagues may not adhere to the 5S principles due to their personal habits. Achieving the 5S principles' full potential requires cooperation from every employee in the company. When only some employees follow these principles, the impact may not be immediately obvious, but it still affects our work operations. For instance, it makes work more convenient as equipment and tools are neatly organized and easy to access. Additionally, our machines experience fewer jams because they are regularly cleaned (Employee 11)</i></p>
	<p><i>I've adapted to effectively communicate and connect with my colleagues at work. When working in a team, it's crucial to remember that team members have diverse learning styles. Some of my co-workers are not fast learners, so I take my time to explain things slowly and get to know their individual learning styles (Employee 17)</i></p>
<p>A linkage between integration competence and operation performance</p>	<p><i>Today, work rotation has become a common practice in production, including the automotive industry. It's quite beneficial because there are times when employees may need to take leave, encounter personal issues, or face unexpected situations while commuting to work, like accidents and such. These situations can result in a shortage of workers, and work rotation proves to be a helpful solution to alleviate this challenge (Owner 2)</i></p>
	<p><i>A lean mindset speeds up work on the production line and boosts overall efficiency. It enables our team to achieve the company's monthly goals and creates a more welcoming work environment. This is because it gives us a chance to assist our fellow employees, fostering better working relationships and increasing camaraderie in our department (Employee 4)</i></p>
	<p><i>The company allows us to express our thoughts and viewpoints, which I believe is beneficial. This enables us to clearly communicate our production capabilities, the number of units we can manufacture daily, and any issues that may affect the workflow, ensuring seamless operations (Employee 5)</i></p>

Table 2: Examples of quotes related to influence among production employee competence themes (Source: Authors' own work)

The field of supply chain competence has often neglected the vital connection between inquisitiveness and functional competences (Derwik and Hellström, 2017). This research illuminates the significance of inquisitiveness in the acquisition of functional competences, a critical aspect that has been overlooked. While the concept of functional competence itself has been thoroughly examined in the literature, as noted by Derwik and Hellström (2017), there remains a gap in understanding the process through which employees develop these

competences. Our findings bridge this gap, underscoring the role of inquisitiveness as a foundational element in cultivating functional competences within the supply chain domain.

One example is integration competence, which intersects with functional and emotional intelligence competences, plays a crucial role in mentorship and teaching effectiveness. For mentors, acquiring this competence involves more than possessing strong skills and knowledge. It also requires the ability to regulate their emotions and to listen empathetically. This concept parallels the requirements for effective lecturers. In addition to their subject matter expertise, their emotional management and open-minded listening are equally important. Employee 4 shares an example: *“After completing my training, I often assist in training my colleagues who might need extra help. We work together to ensure everyone is skilled in the production line.”*

The research findings presented here demonstrate that integration competence significantly influences operational performance. This is evidenced through the role of mentorship skills, which is instrumental in establishing a connection between new associates and their workplace. By fostering this relationship, mentorship aids in acquainting the new production employee with the organizational operations and culture. Such immersion results in valuable learning experiences for the newcomer, allowing them to integrate effectively into the organization. This, in turn, enhances their contribution to the organization’s operational performance. Additionally, mentorship provides new production employees with a vital communication channel, particularly valuable during periods of uncertainty. This aspect of mentorship further underscores its role in promoting operational efficiency through effective integration of new personnel. Owner 1 shares an example: *“They act as mentors and assist other employees. This is hugely beneficial for us, as they possess extensive knowledge and expertise. My employees are able to quickly understand their responsibilities and adapt to the work environment.”*

A thorough understanding of how these competences combine is crucial for pinpointing the root causes of insufficient skills. For instance, to improve mentorship capabilities of production employees, it is essential to first enhance their emotional intelligence and functional competence. This approach leads to the development of robust mentorship skills, which subsequently contribute to improved performance and resilience in the workplace. Derived from analysis based on grounded theory, this finding reveals that the overall competence in a practical setting is not merely the aggregate of individual competences. Derwik *et al.* (2016) encourage researchers to analyse the synergistic effects of combined competences, rather than examining them in isolation. This research sheds light on the significant role of ‘integration competence’, especially in linking functional and emotional intelligence competences. Consequently, this research suggests the following proposition.

Proposition 5: Companies that consider combinations of competences during the recruitment and development of employee competences can unlock untapped synergies, resulting in enhanced potential to maximize the performance of employees.

Discussion

The Production Employee Competence Model

The proposed competence model (Figure 2) provides a condensed overview of the discussion concerning the competence model for production employees in this study. This model illustrates a competence group and underscores the significance of the elements within that group for production employees. Notably, the model shows the interrelationships among various competence groups within the supply chain. The more the relationships among individual competences are understood, the more precise the primary mechanism of building them would be. Notably, there has been a lack of a model that explains the types of relationships between competences in the past. From 1991 to 2024, we only see the work of Derwik and Hellström (2017), and Derwik *et al.* (2016) mention the relationship between competences, but they do not explain it in detail. From the findings of this study, we gathered evidence from the interview and decided to develop a model to shed light on the relationships between individual competence groups in the supply chain area, aiming to contribute further to the knowledge of individual competence in this domain.

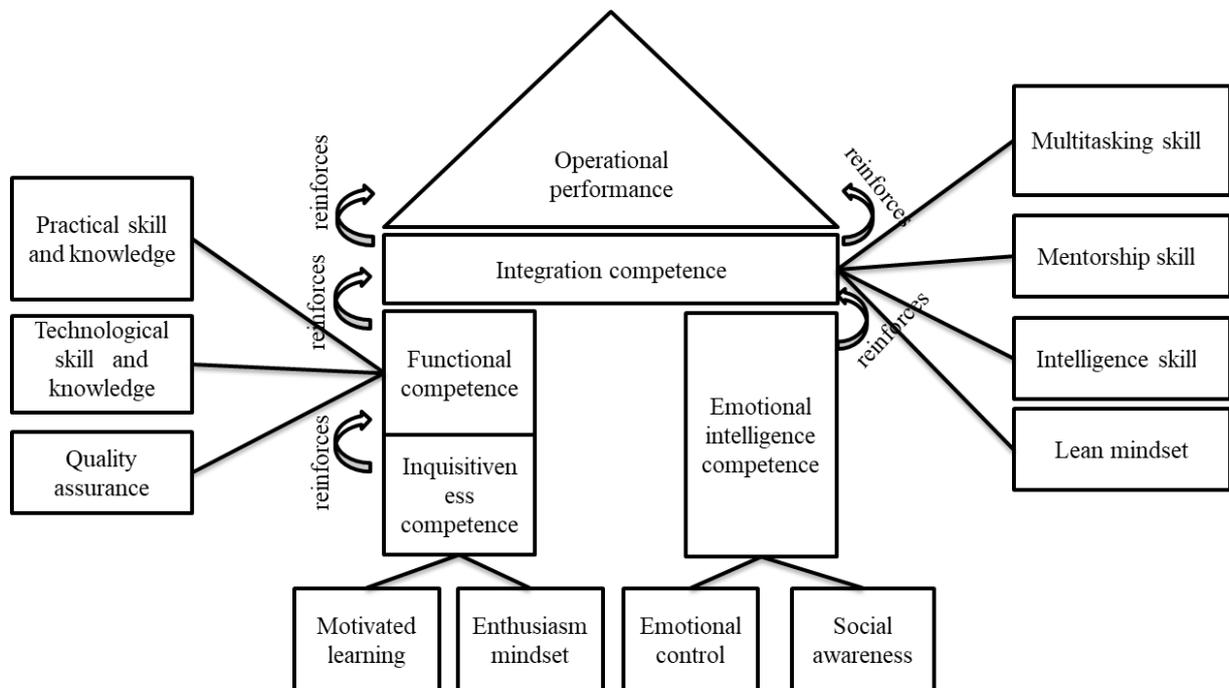


Figure 2: Production employee competence model (Source: Authors' own work)

For example, components within the inquisitiveness competence group, such as motivated learning and enthusiasm mindset, could facilitate the achievement of components related to functional competence groups. A strong inquisitiveness competence leads to the emergence of a powerful functional competence group. Then, when employees or managers possess diverse knowledge and skills, they can have information and knowledge gathering to develop integration competence groups. However, in the absence of necessary components with functional competence group among individuals, the effective operation of components within the integration competence group, such as multitasking and mentorship skills, becomes

challenging. Apart from functional competence groups, emotional intelligence groups could also be critical to the development of integration competence groups. Personal characteristics could make an employee look trustworthy, which helps to form cooperative working relationships. This leads to enhanced communication and, ultimately, strengthened teamwork. The postulated relationships among the various individual competence groups are shown in Figure 2.

Our model introduces novel perspectives that have the potential to enhance the value within the domain of individual competence in the supply chain. The model does not only show what competences are necessary, but also what combination of competences is. This insight, drawn from grounded theory, indicates that the level of competence in practice extends beyond the sum of individual competences. It can help create a comprehensive understanding of individual competence in the supply chain domain for future research and practical application by companies aiming to enhance their performance.

Enhancing Efficiency of Thai Automotive SMEs

Harney *et al.* (2022) described the characteristics of SMEs, including aspects such as resource constraints, environmental turbulence, and informality. Regarding resource constraints, SMEs face significant limitations not only in financial resources but also in terms of available slack and time for strategic decision-making. This scarcity, coupled with their labor-intensive nature, increases reliance on employee effort, engagement, and discretionary contributions. Effective employee management is, therefore, vital for SME survival and growth (Amarakoon and Colley, 2023; Barrett and Mayson, 2008). As noted by Klofsten *et al.* (2021), SMEs are particularly susceptible to the impacts of inadequate human resource management, including issues such as poor hiring decisions, suboptimal performance. The findings of this research contribute to the advancement of HRM, particularly in employee competence. For instance, a motivated learning attitude and an enthusiastic mindset from the inquisitiveness competence group can strengthen the functional competence group, forming a foundation for effective management and supporting SME sustainability and growth.

In terms of environmental turbulence, the close connection between SMEs and the external environment makes them particularly vulnerable to socio-economic disruptions (Lim *et al.*, 2020; Psychogios *et al.*, 2019). Unlike larger organizations, they often lack the buffers needed to withstand turbulence and shocks, making them more reactive than proactive in adapting to external changes (Wapshott and Mallett, 2021). SMEs rely heavily on employees' effort, engagement, and discretionary contributions. To effectively navigate environmental turbulence, employee management becomes a critical factor in ensuring the organization's survival. Our findings highlight key competences employees can develop to navigate such turbulence, such as inquisitiveness—a mindset marked by strong curiosity about the surrounding environment.

Regarding informality, SMEs often rely on informal working methods and HRM practices (Harney *et al.*, 2022). Similarly, in Thai automotive SMEs, informal approaches to work and HRM are common. However, such informality can lead to inefficiencies, such as hiring employees who may lack adequate skills or qualifications (Nida, 2015). Our findings provide insights to help identify and recruit more capable and well-suited employees. In summary, our

research could contribute to the development of formal policies in SMEs, enhancing employee efficiency and operational performance. Furthermore, it could foster the establishment of stronger proximity of relations between employers and employees, uniting them under shared values and aligned goals.

Impacts on the Thai Automotive Industry Supply Chain

SCM competences, while grounded in broader competence frameworks like interpersonal and operational skills (Nolan et al., 2010), are expanded in these findings to encompass emotional intelligence and integration competence. This distinction is critical in the Thai automotive sector, where the integration of these specialized skills supports resilience and efficiency in multi-tier supply chains. According to Campion *et al.* (2011), competence model serves a crucial function in human resource systems, such as serving as a guide for hiring new employees (Bartram, 2005), designing courses for the development of specific competences (Shippmann *et al.*, 2000; Lawler, 1994), arranging the appraisal process around competences (Posthuma and Campion, 2008), and establishing pay differences among jobs or evaluating employees for salary increases (Lawler, 1994; Zingheim *et al.*, 1996). The findings of this study could provide guideline for addressing or resolving human resources faced by the Thai automotive parts SMEs which have faced low productivity over the period from 2005 to 2015 according to Nida (2015). The productivity up to the current era is still a problem (Thaiautopart, 2022). Human resources have proven to be the main obstacle to low productivity in Thai automotive parts SMEs, as HRM accounts for about 60 per cent of the problem (Nida, 2015). The underlying cause of human resources is inefficient recruitment system, performance appraisal or incentive system. Therefore, the findings of this study, which formed the basis of the proposed production employee competence model, can help to guide the development of efficient recruitment, performance appraisal, and incentive systems. In the end, productivity could be improved.

Theoretical Contributions

This investigation significantly propels the discourse on individual competences within supply chain management, particularly emphasizing the pivotal role of production employees in SMEs within developing economies. Three major theoretical contributions have been delineated, which collectively refine the conceptualization of competences and their operational interdependencies in enhancing organizational performance.

Firstly, the research offers a holistic identification of necessary competences for production employees. This is particularly crucial in developing countries where human resources in SMEs are becoming increasingly fundamental. By conceptualizing the competences of production employee, this research significantly enhances the knowledge base for competence strategies in SMEs, extending beyond the manager focus prevalent in prior studies. Existing literature, such as Derwik and Hellström (2017), has primarily focused on manager competences in supply chain management, often neglecting the detailed exploration of competences at the production level. By expanding the scope to include both hard and soft skills, such as inquisitiveness (motivated learning and enthusiastic mindset) and emotional intelligence, this study enriches the broader discourse on employee competence. It specifically adds to

competence-based theory by emphasizing how these competences are operationalized in the high-demand environments of Thai automotive SMEs, an area underexplored in prior studies (e.g., Flöthmann *et al.* (2018)). The findings suggest that these competences not only enhance individual functional proficiency but also contribute to organizational adaptability and resilience in a rapidly evolving industry context.

Secondly, this research advances the understanding of the interplay among different groups of competences, challenging the prevalent view of competences as isolated attributes. It highlights the synergistic effects that arise when inquisitiveness, functional, emotional intelligence, and integration competences interact. Previous studies (e.g., Derwik *et al.* (2016)) have noted the significance of individual competence groups but have not thoroughly explored their interdependencies or mechanisms of interaction. This research provides empirical evidence that these interdependencies enhance team dynamics and organizational performance. For example, the findings demonstrate how inquisitiveness fosters functional competence development, which, in turn, supports the cultivation of integration competences like mentorship and multitasking. These insights deepen the theoretical understanding of how competences co-evolve and interact, offering a comprehensive framework for competence development that aligns with practice theory's focus on the interconnectedness of social and operational behaviors.

Finally, the adoption of practice theory in this study introduces a novel theoretical lens to the evaluation of competences within supply chain management. By anchoring the discussion in real-world applications and emphasizing the day-to-day enactment of competences, this approach not only diversifies the theoretical base but also enhances the practical understanding of competence deployment in SMEs. This theoretical contribution is particularly salient as it elucidates the contextual and behavioral intricacies that underpin competence effectiveness, thereby offering a richer, more actionable framework for understanding and leveraging competences in dynamic market environments (Antonacopoulou, 2015; Silva *et al.*, 2022).

In summation, this research bridges the theoretical underpinnings with practical realities, thereby furnishing a robust framework for exploring and enhancing competence-based strategies in supply chain management. The implications of this study are profound, providing a foundational platform for future scholarly inquiry and practical application within the field.

Implication for Practitioners

This research outlines three significant managerial contributions for owners of SMEs. Firstly, the competence model developed can significantly enhance competence management of Thai automotive SMEs. By understanding and fostering the key competences identified, namely inquisitiveness, functional, emotional intelligence, and integration, SME owners and managers can improve the recruitment, training, and development of production employees. This could lead to increased efficiency, productivity, and innovation in these enterprises.

Secondly, policymakers in Thailand and similar developing countries can use the insights from this study to formulate educational and training strategies. By integrating these key competences into the educational curriculum and professional training programs, the workforce can be better prepared to meet the demands of the modern automotive industry. This

can lead to improved performance at individual and organizational levels and contribute to the overall growth of the industry.

Lastly, drawing from Nolan *et al.* (2010), the findings emphasize the need for competence frameworks in SMEs to directly address industry-specific demands. For SMEs in the automotive sector and similar industries, adopting a competence-based strategy can be a pathway to gaining a competitive edge. Our model could serve as a framework for workforce planning and development tailored to individuals' backgrounds. For example, some production employees might have relatively low levels of functional competence, so companies can focus on enhancing inquisitiveness competence through certain methods to elevate the level of functional competence. By focusing on the development of production employee competences as a strategic element, companies can create a more adaptable, skilled, and innovative workforce. The findings translate into targeted training programs that combine operational skills with supply chain expertise, ensuring alignment with industry expectations and reducing the competence gaps often observed in SME contexts. Our result can assist companies in aligning individuals' competences with the demands of the work environment, thereby facilitating success related to performance.

In summary, the findings of this research have profound implications for talent acquisition, professional development, policymakers, and educational training within the SMEs sector, promising to enhance both individual and organizational effectiveness.

Conclusion

Through a comprehensive series of interviews with seasoned SME owners and production employees in the Thai automotive part manufacturing sector, our research has illuminated the core competences essential for production employees and the dynamic interplay among various competence groups. The insights drawn from our discussions and analysis underscore that production employee competences are not isolated constructs but are deeply interconnected, forming a robust framework that enhances individual and organizational performance.

We discovered that the inquisitiveness, functional, emotional intelligence, and integration competences form a coherent system where each component synergistically supports and amplifies the others. For instance, a strong inquisitiveness competence not only fosters the acquisition and application of functional competences but also sets a foundation for effective integration competences, which are critical in navigating complex production environments and fostering team collaboration.

Our findings highlight the crucial role of emotional intelligence in this mix, acting as a catalyst that facilitates smoother interactions and cooperation within teams, thereby enhancing productivity and workplace harmony. The integration competence, with its emphasis on multitasking and mentorship, emerges as a key player in translating individual capabilities into collective success, thereby significantly impacting operational efficiency and organizational goals.

This integrated approach to understanding competences within the Thai automotive SME sector not only sheds light on the mechanisms that underpin effective production processes but also provides a strategic framework that can be leveraged to enhance training programs, recruitment strategies, and overall organizational development. Our research contributes to the broader discourse on competence development by illustrating how intertwined and mutually reinforcing competences can lead to superior performance and sustainable competitive advantage in a rapidly evolving industrial landscape.

Limitations and Future Research

This research has certain limitations. First, despite the sample being drawn from a panel of practitioners with extensive experience and understanding of production competences, the number of respondents was limited. Nevertheless, the interviews were highly focused, exceptionally informative, and resulted in a wealth of empirical data, demonstrating a major consensus of views among the interviewees. Ultimately, we can pinpoint the essential competences and formulate a conceptualization of competence mechanisms, providing a theoretical reference point. Second, all respondents were employed by SMEs, and their foundational cultural background was rooted in Thailand. As a result, our findings may have restricted applicability to production employees in different countries and cultures. Third, this study did not analyze gender-specific differences as it focused on competence synergies across organizational levels rather than demographic factors. Lastly, bias in analysis may occur as depicted in Hermeneutic Cycle (Gadamer, 1977) because interpretation of the text may be influenced by literary contexts, the researcher's interpretation of the story as told by the participants interviewed, and the researcher's own personal context. It is important to note that biases cannot be completely eliminated or disregarded (Strauss and Corbin, 1990).

We offer a few directions for future research. First, the propositions presented in this paper can be subjected to hypothesis testing in empirical studies. Second, increasing the sample size and diversity may help reveal more themes and offer a more comprehensive understanding of the competence set. Third, future research could explore gender-based variations in competence development to enrich the understanding of diversity in this area. Finally, comparative research on competence theme between developing and developed countries could help reveal detailed differences in competences between developing and develop countries.

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Appendix 1

Semi-structured Interview Guide

The interview protocol is shown below. The following interview questions were completed by a sample of owners and production employees.

Interview questions for owners.

Section 1 - Experience and background of owners

1. Could you tell me about your current role in your organisation?
2. How long have you been working in Thai automotive part SMEs?
3. Would you describe the company, its type of products?

Section 2 – Production employee competences

4. How do you recruit production staff?
5. How do you create the criteria used to assess production staff's performance?
6. Could you give an example of what rules are at your company?

7. Could you tell me about the different skillsets between the past and the present?
8. Would you please explain whether there are any issues the production staff encountering in the production department?
9. Is there a shortage of qualified production employees working in your production department?
10. Could you describe a situation in which production employees were required to work in a team?
11. Could you give me an example of a stressful situation in which your production employees encounter?
12. Could you give an example of what wastes are, including defects, waiting time, and unnecessary motion at your company?
13. What challenges did your production employees encounter along the way?
14. Do you have any further comment about the skills, abilities, and knowledge of your production employees or production employees in general?

Interview questions for production employees.

Section 1 - Experience and background of production employees

1. Could you tell me about your current role in your organisation?
2. How long have you been working in Thai automotive part SMEs?

Section 2 – Production employee competences

3. What training between on-the-job and off-the-job training do you get at your company?
4. Since you have been working in automotive part SMEs, what adjustments have you made and what else do you need to learn?
5. Please Tell me about a situation when you encountered difficulty/problem in your current role.
 - a. How did you handle this situation?
6. Do you recall a time when you were assigned with a new task at short notice?
 - a. How did you handle this situation?
7. Could you share your experience when work was not always easy, and you became frustrated when dealing with the task?

8. What are the common waste issues encountered in your workplace?
9. In your opinion, what are the most important skill, ability or knowledge influencing your performance?
10. Do you have any further comment about production employee competences?

Source(s): Authors own creation