

# Current and Future Trends in Strategic Procurement with Generative AI

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## ABSTRACT

*It is difficult to predict with certainty how the outlook for strategic procurement will be in the next decade, but the current trends of Generative AI have already had a significant impact. This study aims to analyse the recent research focused on Generative AI strategic procurement and global supply chains with structured pros and cons of the way they could impact the strategies. For this purpose, a literature review based on 19 research articles and studies was performed to identify the areas of strategic procurement where the Generative AI could effectively perform specific tasks and to formulate shared perspectives for greater impacts. As with any new technology, the use of Generative AI is not without effort and setbacks. There are several outstanding topics, and it is important to consider the highlights and the lowlights when integrating Generative AI into strategic procurement processes. Based on this analysis, the following areas of the strategic procurement activities, with most of the value added by the implementation of the new AI technologies, were identified, in this priority order: 1. Ethical considerations, 2. Market intelligence, 3. Risk management, 4. Supplier management, 5. Contract management. The results of this research may be of interest to category procurement professionals. Further research is needed to investigate cost-effective methods for further development of the Generative AI digital transformation.*

**KEYWORDS:** *AI technologies, category procurement, Generative AI, global supply chain, strategic procurement*

**JEL CLASSIFICATION:** *F23, O14, L69.*

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## 1. INTRODUCTION

After the pandemic, procurement professionals must find solutions for global supply chain resilience, reliable quality and delivery on time, value chain optimisation, and digital transformation. (Chowdhury et al., 2021). The latest AI (Artificial Intelligence) technologies are transforming the global supply chain, improving efficiency and resilience (Toorajipour et al., 2020). The use of Generative AI brings versatility in many fields of activities, including strategic procurement (Shekhar et al., 2023).

The prevalence of vast quantities of data and unorganised information, can pose significant challenges and the unstructured data in strategic procurement can be difficult to handle efficiently (Assur & Rowshankish, 2022). According to Generative AI (2004), the employees need extended time with systems and data access, and cross-functional collaboration is complex within global corporates. There are overlapping and overprocessing due to multiple digital applications, and specialised expertise is required more often than available. The goal is to transform these challenges into an efficient and streamlined workflow. Generative AI assistants are working as an interface between humans and data, driving a revolutionary shift in the future of enterprise software. According to other authors' study (Tekin et al., 2024),

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only 9% of the global enterprises have already implemented AI solutions in their procurement departments. However, according to the same survey, 65% of procurement professionals believe that Generative AI will have a significant impact on strategic procurement functions and productivity in the next few years. Also, there are expected cost savings generated by using AI technologies and a significant reduction in global supply chain forecast errors (George et al., 2023; Tekin et al., 2024).

This article aims to draft the outlook of the future trends in strategic procurement. The utilisation of AI technologies is already present within several areas of activity of operational procurement where some repetitive processes are subject to robot automation and machine learning (Krenkova & Sato, 2021); however, in strategic procurement things are much more difficult to be approached. Category managers are the procurement professionals responsible for the design of the global supply chain, risk mitigations and contract negotiation (Burlakova & Ruzhanskaya, 2020). Category procurement encompasses various areas of expertise such as contract procurement, supplier management, risk management and market and competitor intelligence (Lorentz et al., 2020) and is further linked with engineering design to cost, supplier quality manufacturing (Rane, 2023) and total costs of the transportation logistics (Min, 2010). Adherence to legal and ethical guidelines are also an important aspect the category professionals have to comply with (Biliavska et al., 2023). For procurement excellence, global supply chain resilience, cost savings, and proximity to the business and suppliers are essential. Consequently, the logical question is:

*What would be the Strategic Procurement areas with Generative AI applicability and the logical AI Implementation priorities?*

To provide an answer to the above research question, an in-depth review of the specialised literature was carried out with the main aim of 1. identification of the areas of the strategic procurement with Generative AI applicability and 2. providing a structured ordering for the further steps of Generative AI implementation.

Based on this, the following five areas of the strategic procurement activities with most of the value added by implementing the new AI technologies were identified: 1. Supplier management, 2. Contract management, 3. Risk management, 4. Ethical considerations and 5. Market Intelligence.

The study begins with an introductory section presenting the AI definitions and general framework research in procurement with a focus on category management areas of interest. Based on highlights and lowlights, there is a logical prioritisation of the Generative AI implementation priorities within these five focused areas of activities. Finally, there is a section that contains the conclusions of the study and their significance along with its implications and limitations.

## **2. LITERATURE REVIEW**

Since its early beginnings, Artificial Intelligence has evolved in the last decade and most significantly after the pandemic (Toorajipour et al., 2020). Several AI trends are to emerge in post-pandemic times, such as the increased adoption of automated processes and intelligent algorithms (Krenkova & Sato, 2021; Dijmarescu, 2023). Artificial Intelligence is the simulation of human intelligence processes by machines and computer systems (Feuerriegel et al., 2023). Initially, it was the idea of developing machines capable of imitating human intellect and accomplishing tasks that necessitate human intelligence (Min, 2010). Over time,

advancements in technology and computing power have enabled the development of AI algorithms that can learn from data and make predictions or decisions without being explicitly programmed (Atwani et al., 2022).

Artificial Intelligence systems work by learning and analysing the data for correlations and patterns to make predictions of future states (Atwani et al., 2022; Min, 2010) and according to Microsoft, Artificial Intelligence is the overarching concept focusing on creating machines capable of replicating human intelligence. Machine Learning uses statistical methods to automatically learn patterns in the received data and make decisions or predictions. Deep Learning models consist of a network of neurons, enabled to process data and make decisions. Generative AI focuses on generating original content from the input data it was trained on. These AI technologies are able to process large quantities of unstructured data (Feuerriegel et al., 2023) and are a catalyst leading to new data that boost various use cases in global supply chain management (Shekhar et al., 2023).

**Table 1. AI Technology roadmap – Exponential improvement for each stage**

AI Technology		Years	Definitions
Artificial Intelligence		1950’s	The field of computer science that seeks to create intelligent machines that can replicate or exceed human intelligence
	Machine Learning	1990’s	Subset of AI that enables machines to learn from existing data and improve upon that data to make decisions or predictions
	Deep Learning	2010’s	A machine learning technique in which layers of neural networks are used to process the data and make decisions
	Generative AI	2020’s	Create new written, visual and auditory content given prompts or existing data

Source: Microsoft, 2023

Further, this article focuses on Generative AI whose main scope is intended to help enhance human capabilities and to make tasks simple and fast to process (Kaushik et al., 2023). It does not intend to replace humans, like what people think, due to its integration into everything we use today (Dash et al., 2019). Generative AI has transformed various sectors and manufacturing industries and offers a broad range of applications, including within the global supply chain and strategic procurement (Feuerriegel et al., 2023). The use of AI chatbots in the global supply chain has evolved significantly over the years (Verma, 2023); currently, organisations are looking to optimise their supply chain operations (Krenkova & Sato, 2021) and improve sustainability (Naz et al., 2023).

The latest Generative AI technology is a revolutionary development to reinvent procurement (Kaushik et al., 2023). Companies that integrate this technology into a strong digital core can boost innovation and accelerate progress and performance (Lagunas et al., 2023). Generative AI was identified as one of the technology trends driving the next phase of business transformation. It significantly improves global supply chain performance by optimising costs and large data analysis (Assur & Rowshankish, 2022; Wamba et al., 2023). The latest AI technologies detect patterns to regulate inventory and planning, and hence to minimise lead times. and also anticipate future demand using historical data, thus improving response to demand fluctuations (Pournader et al., 2021). Generative AI improves decision-making in areas such as supplier selection and supplier relationship management, leading to improved quality and waste reduction (Shekhar et al., 2023). For risk management, Generative AI refers to the use of advanced algorithms to identify potential risks in the global supply chain and

develop strategies to mitigate those risks (Kutzner & Caminada, 2024). According to the same study, Generative AI can help category managers identify potential risks, such as disruptions in the supply chain due to natural disasters, geopolitical conflicts, or other unforeseen events, and develop proactive strategies to mitigate risks. This can include identifying alternative suppliers and developing contingency plans for various scenarios (Atwani et al., 2022).

Generative AI and latest AI technologies can analyse vast amounts of financial data to detect cyber fraud and to avoid it by making accurate predictions and by optimising data quality (Dhoni, 2023). Additionally, regulations and policies need to be in place to address sustainability by ensuring responsible and ethical use of Generative AI (Naz et al., 2023). AI algorithms can analyse satellite real-time traffic data and optimise routes, reducing congestion and improving overall transportation costs (Rane, 2023; Toorajipour et al., 2020).

According to several “procurement iceberg” studies (George et al., 2023), what people think is that Generative AI helps with writing emails, translating texts, or getting the minutes from meetings real-time transcripts. However, the iceberg procurement consists of what people do not see. It showcases the strategic category procurement, which could be grouped as the following five main focused areas: Supplier management (supplier selection, onboarding, qualification and development, supplier relationship management, spend analysis, and supplier ecosystems strategies), Contract management (preparation, negotiation and contract management, administration and order processing), Risk management (supplier insolvency risks, raw material availability, inventory control, quality control, logistical issues, geopolitical, overall resilience), Market Intelligence (macroeconomics, energy and raw material price trends, competition), Ethical regulations (Legal, cybersecurity, ethical usage of Generative AI).

Procurement is a complex process with many unseen challenges beneath the tip of the iceberg. While Generative AI is developed to be used for tactical procurement tasks as a procurement assistant (Waseem et al., 2024), other authors (George et al., 2023) explore its potential to transform the hidden-category procurement activities. Other studies (Korziynski et al., 2023) offer a thorough examination of the challenges and prospects connected with Generative AI which prompt engineering or within the manufacturing processes linked to the digital transformation (Doanh et al., 2023). Several other bibliometric studies have shown the usage of Generative AI in the supply chain (Naz, 2023; Rane, 2023; Riahi et al., 2021). Generative AI is likely to transform category procurement and global supply chain resilience (Belhadi et al., 2020). It is crucial for organisations to stay updated with the latest developments and invest in AI talents and infrastructure to fully leverage the benefits of these technologies for strategic procurement (Ahmed, 2023).

### **3. RESEARCH METHODOLOGY**

As the main purpose of our study is to highlight the important areas of the category strategic procurement with real needs of digital transformation by Generative AI, a systematic review of the literature was conducted to uncover these specific areas. Numerous studies were identified, using keywords such as: “risk mitigation”, “contract management”, “supplier selection”, “forecast/planning”, “quality”, “ethical”, “geopolitical”, “market intelligence”, “transportation/ logistics” juxtaposed with “Generative AI/ Artificial Intelligence”. A number of 19 pieces of research and studies (with a focus on the global supply chain and the category procurement for the manufacturing industrial sector) were selected as the most suitable for the purpose of the research. The selection was based on the following criteria: presentation of

empirical data, publication in a peer-reviewed journal, and publication in the English language. Following the steps outlined in the literature (Dziopa & Ahern, 2011; Xiao & Watson, 2019), the study formulated the question, identified relevant research and studies, structured the topics, and interpreted the findings. The selected pieces of research and studies were investigated in the attempt to understand *what would be the procurement areas with Generative AI applicability*. Thus, the following areas of interest emerged: 1. Supplier management, 2. Contract management, 3. Risk Management, 4. Ethical considerations and 5. Market Intelligence. A summary of the evidence was done for each investigated article research and study (Table 2).

**Table 2. Strategic Procurement main areas with Generative AI applicability**

No.	Article Research/ Study	Contract management	Supplier relationship management (including forecast and planning, capacity, quality control)	Risk management (incl. supplier selection, financial instability, cybersecurity, logistical risks, geopolitical)	Market Intelligence (country risks index, raw material price trends, competition strategies)	Ethical regulations
1	Ahmed et al., 2023	■	■	■	■	■
2	Alicke et al., 2021 (McKinsey)	■	■	■	■	
3	Atwani et al., 2022	■	■	■		
4	Dash et al., 2019		■	■		
5	Doanh et al., 2023		■			
6	George et al., 2023	■	■	■	■	■
7	Gupta et al., 2023 (BCG)	■	■	■		■
8	Korzynski et al., 2023		■			■
9	Kumar, 2020		■	■		
10	Kutzner & Caminada, 2024 (Deloitte)	■	■	■	■	■
11	Lagunas et al., 2023 (Accenture)	■	■	■		■
12	Min, 2010	■	■	■		
13	Naz et al., 2021		■	■		
14	Pournader et al., 2021		■	■		
15	Rane, 2023	■	■	■	■	■
16	Riahi et al., 2021		■	■		
17	Tekin et al., 2024 (Capgemini)	■	■	■	■	■
18	Toorajipour et al., 2020		■	■		
19	Wamba et al., 2023		■	■		

Source: author’s own research

Moreover, to understand *what would be the logical AI Implementation priorities of the detected Procurement areas* the so-called “under-the-water Procurement iceberg” side was analysed and grouped into the above-mentioned five areas of activities. The logical inductive theory states that the order precedence for Generative AI implementation has to be, according to the Eisenhower matrix: the most important and the most urgent areas. Most of the research and studies, including procurement experts, consider the ethical usage of Generative AI and data safety as priority number one (Lagunas et al., 2023; Wamba et al., 2023). Based on this

approach, *Ethical considerations* and cybersecurity are the first immediate priority and urgency (Tekin et al., 2024). The next important to ensure global supply chain resilience, with structured data available (macroeconomics, raw material trade indexes, countries risk indexes, etc.) are *Market intelligence* and consequently *Risk management* mitigation. Following the logical argumentation and only after the structuring of the existing internal data are the *Contract management* and the *Supplier relationship management*. Table 3 showcases as highlights the already in-place digital transformation and the existing data analytics as structured data. On the other hand, as lowlights are considered, the situation of the unstructured data and consequently the higher costs of the Generative AI implementation.

**Table 3. Generative AI priority implementation within Strategic Procurement focused areas**

No. Priority	Main Procurement focused areas	Strategic Procurement activities	Highlights	Lowlights
1	Ethical considerations	<ul style="list-style-type: none"> <li>▪ Guidelines and Ethical Regulations for usage of Generative AI</li> <li>▪ Cybersecurity - Data security</li> </ul>	Data Analytics  Digital transformation	Medium to high costs  Unstructured data
2	Market intelligence	<ul style="list-style-type: none"> <li>▪ Macroeconomics and Energy</li> <li>▪ Countries risk index - Geopolitics uncertainties, trade wars, global sanctions</li> <li>▪ Raw material availability, index prices - Metals, Chemicals, Plastics</li> <li>▪ Logistics – Transportations</li> <li>▪ Cyber risks – Data leakage</li> <li>▪ Climate changes, Pandemic, Force majeure</li> </ul>	Data Analytics  Digital transformation	High costs  External platforms with Data structured
3.	Risk management	<ul style="list-style-type: none"> <li>▪ Supply Chain Resilience                             <ul style="list-style-type: none"> <li>• Risk mitigation - Supplier delivery reliability</li> <li>• Risk mitigation - Supplier insolvency risk</li> <li>• Risk mitigation - Quality conformance – Production bottlenecks or process failures</li> <li>• Risk mitigation - Raw material</li> <li>• Risk mitigation – Logistics and Transportations</li> <li>• Risk mitigation – Geopolitical uncertainties</li> <li>• Risk mitigations</li> </ul> </li> <li>▪ Cross-functional Technical support Quality management/ Cost value/ Design-to-Cost/ Technical product clarifications</li> </ul>	Data Analytics  Digital transformation	High costs  Unstructured data
4.	Contract management	<ul style="list-style-type: none"> <li>▪ Contract management                             <ul style="list-style-type: none"> <li>• Non-disclosure agreement contracts</li> <li>• Frame contracts/ Price agreements/ E-Auctions/ E- Bidding/</li> <li>• Contract negotiations</li> </ul> </li> <li>▪ Legal aspects contracts</li> <li>▪ Law regulation management/ Legal documents review</li> <li>▪ Miscellanies – effective translations, save</li> </ul>	Data Analytics  Digital transformation	Medium costs  Unstructured data

No. Priority	Main Procurement focused areas	Strategic Procurement activities	Highlights	Lowlights
		time to not create but check the contents; Minutes and summaries from real-time transcripts		
5.	Supplier relationship management	<ul style="list-style-type: none"> <li>▪ Ecosystems strategies – Circle of commodities</li> <li>▪ Supplier categorisation – Capabilities assessment</li> <li>▪ Supplier relationship management (collaboration, transparency n-tier)                             <ul style="list-style-type: none"> <li>• Supplier scorecard – Supplier profile</li> <li>• Supplier key performance indicators</li> </ul> </li> <li>▪ Supplier financial reports</li> <li>▪ Supplier quality development</li> <li>▪ Sourcing – Scouting - Onboarding new suppliers</li> <li>▪ Request for Quotations – Bid evaluation - Benchmarking</li> <li>▪ Supplier Resilience – Risks and opportunities – Competition strategies alerts - other specific category procurement or n-tier supply chain aspects</li> </ul>	Data Analytics  Digital transformation	Medium to High costs  External surveys  Unstructured data

Source: author’s own research

#### 4. RESULTS AND DISCUSSIONS

**4.1 Ethical considerations** – A prerequisite for the responsible usage of Generative AI in strategic procurement is ethical regulation (Ahmed et al., 2023). It is important to distinguish between correct and fake information from the very early beginning and avoid any misguidance (Rane, 2023). According to Gupta et al. (2023), several multinational industrial corporations have already introduced Generative AI within the procurement process based on ethical considerations. On the other hand, as Dhoni (2023) claimed, the measure is necessary for cybersecurity reasons and data quality. The first step to start the Generative AI journey can only happen by securing the Generative AI service provider, and even so the returned AI-generated answers have to be critically collected for an accurate interpretation (Korzynski et al., 2023). Ethical guidelines and regulations are needed to ensure that should address issues such as bias in AI algorithms, data privacy, or the potential for misuse (Wamba et al., 2023). The companies have to figure out how to benefit from the several outcomes that Generative AI offers (Tekin et al., 2024), and the category managers have to cross-check upfront the information accuracy and how to minimise potential harm (Lagunas et al., 2023). IT professionals responsible for AI development and deployment are vital to address these ethical considerations (George et al., 2023). Developers and organisations must consider transparency and accountability in the design and implementation of Generative AI systems within procurement. This includes evaluating algorithms for bias and taking steps to mitigate it, as well as being transparent about the data sources and methods used in developing Generative AI models (Kutzner & Caminada, 2024).

**4.2 Market intelligence** – Category procurement strategies are highly dependent on Market Intelligence considering that raw material prices are volatile and dependent on several factors (Biliavska et al., 2023). Macroeconomics and geographical uncertainties play an important

role in supply chain design, logistics, and transportation and AI can enable faster decision making according to Alicke et al. (2021). To adapt to mitigate any risks, the category managers have to collect the information via several country index risks or raw material trading indexes or other specialised credible sources. Several external global platforms that offer procurement intelligence and risk analytics, gathered from trusted sources, as shown by George et al.'s (2023) study are now looking to automate the collecting processes through advanced AI algorithms. These analysing market trends platforms deliver intelligence and insights that enable companies to make smarter sourcing decisions (Doanh et al., 2023). This support for category procurement to discover market price information, manage risks, and provide accurate macroeconomics is handy, but it comes with a cost not negligible as claimed by Kutzner & Carminada (2024). As highlighted by Tekin et al. (2024), the order preference for Generative AI-powered Market Intelligence is early possible to be implemented within the strategic procurement strategies, as an important part of the risk mitigation and ecosystems plans. The external Market intelligence platforms with structured offered data are impacting positively by speeding up the company's digital transformation (Gupta et al., 2023). Implementing Generative AI is useful for increasing early risk awareness in industrial sectors (Rane, 2023), due to climate changes, geographical uncertainties, trade wars, logistic congestions, or raw material price volatility ([www.beroeinc.com/market-intelligence](http://www.beroeinc.com/market-intelligence)). These actions are directly impacting the global supply chain and the supplier's selection (Tekin et al., 2024; Toorajipour et al., 2020). The implementation of Generative AI does not mean solving all the risks, it requires a good understanding of the problematics and market trends as stressed out by Ahmed (2023), it is needed a clear definition of the problem to be solved and careful validation to ensure that Generative AI behaves as expected. Also, the regular monitoring of the AI-powered model's performance and specific updates are necessary to be addressed, this involves additional attention and effort from the procurement (Alicke et al., 2021).

**4.3 Risk management** – Risk management in procurement is vital for a sustainable business, and Generative AI can enhance risk mitigation according to several authors and Alicke et al. (2021). As the procurement process involves multiple stages such as supplier selection, negotiation, contract execution by manufacturing at the supplier site, and delivery (Ahmed et al., 2021; Pournader et al., 2021), any potential risk in these stages can significantly impact the business operation. Risks could be assessed as low-average-severe and can occur due to a range of reasons: supplier insolvency risk, raw material scarcity, price volatility, quality non-conformance (Rane, 2023) and supplier fabrication failures (Dash et al., 2019), delivery delays due to logistics (Kumar, 2020; Min, 2010) or unforeseen external factors like geopolitical changes or natural disasters (Pournader et al., 2021). To foresee any potential failure, the usage of AI-powered Market Intelligence is very useful for early risk awareness and for preparation of the back-up plans. Generative AI can substantially enhance risk mitigation by analysing a large amount of data from various sources to identify patterns and trends, which can help in predicting potential risks. According to the authors George et al. (2023) and Naz et al. (2021), Generative AI can monitor news and social media or other data sources to detect early signs of geopolitical changes or other external disruptions. Basis of the smart platforms providing Market Intelligence, this approach analyses a huge unstructured data from the Internet, interprets and offers alerts. For instance, AI can track a supplier's past performance and financial stability as presented by Rane (2023), to predict their reliability. This includes tasks such as supplier scorecards as automated risk scoring of suppliers, generation of risk reports, and implementation of mitigation strategies based on different triggering risk situations. Further, Generative AI allows procurement category managers to make strategic decisions that minimise risk and optimise procurement performance. The



implementation of the AI algorithms for risk management is medium to high costs according to Atwani et al. (2022) and is linked with the AI-powered Market Intelligence provided model. The roadmap of the digital transformation has to consider holistic all the stages and AI market intelligence has to be connected with risk mitigation and supplier relationship management altogether.

**4.4 Contract management** – Introducing Generative AI in procurement contract management can potentially streamline the process and reduce errors (Min, 2010), not at least, to enhance operational efficiency (Gupta et al., 2023). Also, it helps in automating routine tasks, identifying discrepancies or risks, ensuring compliance, and generating insights for strategic procurement decision-making. The process requires adapting from an unstructured data input to more structured and organised data analytics, and this could involve medium to high costs (Alicke et al., 2021). The AI algorithms (robots or Generative AI) have to be developed based on the existing data analytics and the required digital transformation of the company, as pointed out by Tekin et al. (2024). The selected model could be suitable for understanding contract languages according to the authors (Lagunas et al., 2023). During the test pilot of the AI-powered model for contract management, the specific training involves feeding the model with the input data and iteratively adjusting the model's parameters and improving its performance (Lagunas et al., 2023). During the contract step process, the human presence is highly important, and final decision-making comes from the category managers who can consolidate the result. With the help of the AI leveraged model, the contract procurement became able to get contract results faster and errorless (Atwani et al., 2022) including all the needed law regulations and specific risk mitigation clauses (Kutzner & Carminada, 2024). This helps procurement professionals further with contract negotiation and manage supplier relationships effectively, as highlighted by Ahmed et al. (2023). Procurement E-auctions are also part of the scope of the AI automated process (Waseem et al., 2024), including communication, commercial, and technical verifications, and eventually automated processing steps (Lagunas et al., 2023). Several studies and bibliometric analyses show the success factors within the areas of contract procurement and supply chain as presented by Riahi et al. (2021). The contract tracking is eased by digitally established reminders and milestones (Atwani et al., 2022; George et al., 2023). By continuously strengthening the contract management, “it can be realised the maximum value while safeguarding interests” according to George et al. (2023).

**4.5 Supplier relationship management** - Generative AI can play a significant role by supporting procurement in decision-making, as highlighted by several research and studies (Dash et al., 2019; Min, 2010), mainly by fast processing of a multitude of data inputs (Kumar, 2020; Lagunas et al., 2023). Using this vast amount of data related to the supplier, prices, quality, delivery, reliability according to Pournader et al. (2021), Generative AI can generate a comprehensible supplier profile and rank the suppliers based on pre-defined criteria. Also, by analysing the historical data and current market intelligence and trends, the AI algorithms can predict potential risks associated with supplier financial instability or non-compliance with requirements or regulations. Several studies have shown these predictive approaches (Doanh et al., 2023; Riahi et al., 2021). The supplier management relationship is meant to be human entirely but, in the background, the AI support could improve the reliability and the adherence to the requirements and highly motivate the supplier. For example, Engineering or quality performance monitoring by AI-powered CAD analysis and simulation is highly beneficial to achieve product compliance at suppliers (Korzynski et al., 2023) and with these manufacturing, further costs decrease and faster delivery reliability (Dijmarescu, 2023). Any support in the early production stage at the supplier facility is a

value multiplier, and eventually the supplier will choose to partner with those customers which are AI-powered companies. Driving continuous supplier development also benefits from analytical capabilities in identifying performance gaps as claimed by George et al. (2023). Additionally, an accurate forecast of the demand helps the supplier's planning (Alicke et al., 2021) and manufacturing (Pournader et al., 2021), and further the logistic (Toorajipour et al., 2020; Wamba et al., 2023). According to Verma et al. (2020), supply chain resilience and performance have become increasingly important in subsequent pandemics and crises. The supplier resilience depends on the entire supply chain's resilience and reliability as emerged from the Naz et al.'s study (2021) and further, based on the supplier management relationship, the transparency of the subsequent tiers is essential for early risk mitigation or other business opportunities. Fostering positive supplier relationships requires constantly engaging with suppliers to align objectives, and mostly to identify improvement areas, according to the authors (George et al., 2023). The role of the category manager in supplier relationship management based on trust (Pournader et al., 2021), with specific skills and expertise, is important to lead the supplier management and if "the input is AI-powered this brings ambidexterity" as cited from Tekin et al. (2024).

## **5. CONCLUSIONS**

Utilising Generative AI can change radically the category management approach and several studies showed that the benefits of the implementation outweigh the efforts put into its implementation. There are many authors with divisive debates about the advantages, costs and risks that come with it. The key advantages of the new technology are the economic gains generated by increased productivity through automation and efficient activity, optimising category management. However careful attention is needed to ensure the proper use of the AI algorithms, including data privacy and ethical considerations. Embracing Generative AI in category management can lead to significant improvements in efficiency and profitability.

The procurement iceberg theory suggests that there are just a few visible areas for the usage of Generative AI with many more difficulties to approach. These so-called 'underwater' procurement areas (supplier relationship management, contract procurement, risk management, market intelligence, and ethical regulations) include the strategic procurement areas where category professional roles are essential, and the Generative AI implementation will bring value added. The article provides the logical priority of the implementation, starting with the ethical consideration as a prerequisite in every aspect of the strategic procurement. This ensures the responsible use of AI by promoting transparency and avoiding bias. The next important area is Market intelligence and the raised awareness needed to predict disturbances and mitigate risks. Risk mitigation, supplier relationship management, and contract management are next to be empowered by the digital transformation of the companies and Generative AI-powered strategic procurement.

In all these areas, the main advantage of using Generative AI appeared to be its ability to analyse large amounts of data and generate useful insights for category management. However, it is very important to remember that the success of AI in these areas depends on the quality of the data used and the appropriateness of the AI model chosen, not last of the new skills the category managers are to be learned and for further development. There are several common misconceptions about AI and Machine Learning that further studies need to address, such as the fear that AI algorithms will replace human jobs. While it is true that AI and Machine Learning can automate certain tasks, they also create new job opportunities and enhance procurement productivity for category managers. For example, several companies

have already invested in digital transformation and AI, allowing category procurement to focus on supplier relationship management and more complex tasks. This collaboration between humans and AI systems is critical for successful implementation and achieving the expected results.

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