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Determining Environmental Dynamics and Strategy: A Qualitative Study on the Comparison Between Human Manager and Artificial Intelligence

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Abstract
This study examines the functionality of artificial intelligence (AI) in decision-making processes within managerial roles and presents a comparative analysis with a human manager. The research focuses on three main themes: environmental changes, the definition of the business world, and strategic behavior. The study compares the human manager and AI across conceptual dimensions such as environmental perception, strategic awareness, and decision motivation. In the research, data were obtained through semi-structured forms directed at both the human manager and AI, and analyzed using content analysis, one of the qualitative research methods. The findings reveal a 71% similarity between AI and the human manager across all codes. Additionally, a 61% similarity was found in identifying environmental changes and an 89% similarity in defining the business world. Regarding strategic behavior recommendations, a complete overlap was observed between the two. The study demonstrates that the human manager perceives the business world as more dynamic and unpredictable compared to AI. Notably, the human manager also focuses on social and economic dynamics, such as poverty, which receive less emphasis from AI. Both AI and the human manager commonly emphasize the phenomena of digital transformation and globalization. These findings indicate that AI can function similarly to humans in perceiving environmental dynamics and engaging in strategic decision-making processes. However, the human manager's ability to integrate intuition, ethics, and emotional factors into decision-making highlights that AI cannot fully replace human judgment. Therefore, a hybrid managerial model that combines the analytical power of AI with the emotional intelligence of the human manager emerges as the most balanced approach for future decision-making processes.

Keywords: Artificial Intelligence, Indusrty 4.0, AI manager, Leadership, Maxqda

Çevresel Dinamiklerin ve Stratejinin Belirlenmesi: İnsan Yönetici ve Yapay Zekâ karşılaştırması Üzerine Nitel Bir Araştırma

Öz
Bu çalışma, yönetsel roller bağlamında yapay zekânın (YZ) karar alma süreçlerindeki işlevselliğini incelemekte ve insan yönetici ile karşılaştırmalı bir analiz sunmaktadır. Araştırma, üç ana tema üzerine odaklanmaktadır: çevresel değişimler, iş dünyasının tanımı ve stratejik davranış. Çalışma, insan yönetici ve YZ'yi çevresel algı, stratejik farkındalık ve karar motivasyonu gibi kavramsal boyutlarda karşılaştırmaktadır. Araştırmada, insan ve YZ'ye yöneltilen yarı yapılandırılmış formlar aracılığıyla elde edilen veriler, nitel araştırma yöntemlerinden içerik analizi kullanılarak incelenmiştir. Bulgular, yapay zekâ ile insan yönetici arasında tüm kodlar bazında %71 oranında benzerlik bulunduğunu göstermektedir. Ayrıca, çevresel değişimlerin belirlenmesinde %61, iş dünyasının tanımlanmasında ise %89 oranında benzerlik tespit edilmiştir. Stratejik davranış önerileri açısından ise iki taraf arasında tam bir örtüşme gözlemlenmiştir. Çalışma, insan yöneticinin iş dünyasını YZ'ye kıyasla daha dinamik ve öngörülemez olarak değerlendirdiğini ortaya koymuştur. Dikkat çekici biçimde, insan yöneticinin YZ'nin daha az önem verdiği yoksulluk gibi sosyal ve ekonomik dinamiklere de odaklandığı görülmektedir. Hem YZ hem de insan yönetici, dijital dönüşüm ve küreselleşme olgularını ortak biçimde vurgulamaktadır. Bu bulgular, YZ'nin çevresel dinamikleri algılama ve stratejik karar verme süreçlerinde insana benzer biçimde işlev gösterebildiğini ortaya koymaktadır. Ancak, insan yöneticinin sezgisel, etik ve duygusal faktörleri dikkate alma yeteneği, YZ'nin tamamen ikame edilemeyeceğini göstermektedir. Dolayısıyla, YZ'nin analitik gücü ile insan yöneticinin duygusal zekâsının birleştiği hibrit bir yönetsel model, geleceğin karar verme süreçleri için en dengeli yaklaşım olarak öne çıkmaktadır.

Anahtar Kelimeler: Yapay Zekâ, Endüstri 4.0, YZ Yöneticisi, Liderlik, Maxqda

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Introduction

Artificial intelligence (AI) is a computer system that processes data obtained from various sources, makes decisions based on this data, learns from emerging patterns, and demonstrates intelligent behavior similar to humans by solving problems (Rai et al., 2019; Hassani et al., 2020; Huang et al., 2019; Zhang & Lu, 2021). Today, AI is regarded not only as a technical tool but also as a cognitive partner in managerial decision-making processes (Ameen,et al., 2025). The modern global market of the 21st century—defined by uncertainty and complexity—makes collaboration with artificial intelligence increasingly essential. This necessity is linked to the unprecedented volume and complexity of data produced by organizations, ranging from businesses and research institutions to governments and international bodies, and the need for this data to be processed rapidly and accurately. In this context, artificial intelligence can provide operational-level support to managers or serve as an alternative actor in decision-making processes. Indeed, studies in the literature emphasize AI's ability to collect data from internal and external sources, analyze and interpret it through pattern recognition, and support decision-making through predictive analysis (Perifanis & Kitsios, 2023; Choi et al., 2025). These findings indicate that AI's contribution to decision-making processes in data-intensive markets is steadily increasing.

Recent developments in AI—particularly innovations in deep learning algorithms and the proliferation of big data—have shifted its role in organizations from operational levels toward strategic management (Weiser & von Krogh, 2023). As frequently discussed in the literature, the forefront of AI applications has gradually moved from operational management to strategic management, with tools evolving from being information-driven to action-oriented (Biloslavo et al., 2024). This transformation raises a fundamental question: is AI merely a tool for data processing, or can it act as a cognitive system integrated into strategic thinking processes?

At this point, the main research question arises: "Is artificial intelligence merely a decision-support system, or can it possess strategic thinking capacity as a manager?" This question is crucial for understanding whether AI's managerial roles have evolved beyond technical functions into cognitive processes. While human managers make decisions based on experience, intuition, ethical judgment, and emotional intelligence, AI operates through data-driven models, algorithmic predictions, and pattern recognition mechanisms. Comparing these two approaches in terms of how they perceive environmental variables reopens the discussion on the boundaries of managerial cognition.

This study aims to explore the practical implications of the existing theoretical knowledge that emphasizes AI's effectiveness in managerial decision-making processes, particularly in uncertain environments (Weiser et al., 2020; Weiser & von Krogh, 2023; Biloslavo et al., 2024), and to support this theoretical framework with empirical findings. By testing AI's position in management literature not only theoretically but also through a simulated application, the study seeks to make an original contribution to the field. It compares the human manager and AI across conceptual dimensions such as environmental perception, strategic awareness, and decision motivation, thereby focusing on strategic-level motivation for decision-making. This comparison also aims to provide a practical perspective to the ongoing discussion: "Can artificial intelligence become a manager?"

In line with this structure, the study is organized as follows. The first part develops the cognitive foundations of strategic management by discussing decision making, meaning-making, and dynamic capabilities. The second part discusses the growing role of artificial intelligence in business, emphasizing its impact on managerial decision-making under uncertainty and its implications for strategic reasoning and leadership roles. The third part presents the methodological framework, while the final part reports and discusses the empirical results based on a qualitative comparative analysis of human managers' and artificial intelligence's responses in terms of environmental perception, strategic awareness, and decision motivation.

Cognitive Foundations of Strategic Management: Decision Making, Sensemaking, and Dynamic Capabilities

The concept of strategic management forms the theoretical basis for businesses' efforts to determine their long-term direction and create a competitive advantage. In classical literature, strategic management has mostly been defined as the process of setting goals, analyzing the environment, and structuring resources towards these goals (Cohen & Cyert, 1973). Chandler (1962) considered strategy as the determination of an organization's long-term goals and the action plans necessary to achieve these goals; while Porter (1980) evaluated strategic management in the context of competitive positioning and industry structure. Mintzberg

(1994), on the other hand, reinterpreted strategic management as a dynamic decision-making area, emphasizing that strategy is not only planned but also an emergent phenomenon. These classical approaches converge on a common point: strategic management is not merely a technical planning activity, but a process of determining direction under uncertainty.

In today's business world, the increasingly complex, unpredictable, and rapidly changing environmental conditions have transformed strategic management from static models into a continuous decision-making practice (Ulrich & Wiersema, 1989; Eisenhardt, 1999). Therefore, in contemporary literature, strategic management is considered a management field that determines not only what organizations will do, but also how they will think. It is precisely here that strategic management is conceptualized not only as a process of goal setting and resource allocation, but also as the capacity to create meaning and make decisions under uncertainty, information overload, and environmental dynamism (Cravens, Piercy, & Baldauf, 2009). In other words, strategic management represents the cognitive dimension of organizations' relationship with their environment. This approach places strategic management directly at the center of decision-making processes.

Indeed, in the strategic management literature, the decision-making process has long been addressed within the framework of rational models (Eisenhardt & Zbaracki, 1992). The classical approach assumed that managers evaluated all alternatives, predicted the outcomes, and determined the best option. However, this idealized model proved insufficient to explain the complexity of real organizational life. At this point, Herbert A. Simon's (1997) bounded rationality approach created a radical transformation in the strategic decision-making literature. Bounded rationality is a fundamental theoretical approach based on the assumption that decision-makers do not always possess complete information, unlimited cognitive capacity, and flawless computational ability (Rubinstein, 1998; Jones, 1999). According to this perspective, individuals, rather than making the "best" decision under complex environmental conditions, produce satisficing solutions to the extent that their available information, time, and mental resources allow. Therefore, the decision-making process is shaped less by idealized rational models and more by practices of coping with uncertainty, using cognitive shortcuts, and simplifying environmental complexity.

The bounded rationality approach redefines decision-making in strategic management not merely as a technical selection process, but as a cognitive adjustment mechanism. Managers develop mental shortcuts, intuitions, and experience-based judgments to simplify environmental complexity under uncertainty, time pressure, and information overload (Vudugula et al., 2023). This demonstrates that strategic decisions are often shaped around the most contextually meaningful options, rather than the mathematically “most rational” ones.

However, in this process, the human being is not merely a decision-maker acting solely within a cognitive framework defined by limited rationality; they are also positioned as an active subject who adds meaning to the strategic process through their values, emotions, and social interactions. Although the role of the human manager has long been defined in strategic management literature through the rational decision-maker model, studies over time have revealed that managers are not merely actors who perform technical analysis; they are also social beings who create meaning, establish context, and act according to value judgments. Hamel and Prahalad's (1993) "core competencies" approach emphasizes that managers achieve strategic success not only through resource allocation but also through their capacity to direct organizational knowledge and human capital. Similarly, the dynamic capabilities framework developed by Teece, Pisano & Shuen (1997) links the human factor in strategic management to the capacity to perceive change, seize opportunities, and restructure the organization. Accordingly, dynamic capabilities refer not only to the efficient use of existing resources by businesses, but also to their ability to restructure these resources in a way that adapts to rapidly changing environmental conditions (Teece, 2017). In this context, dynamic capabilities are shaped around three fundamental capacities: sensing environmental changes, seizing opportunities, and reconfiguring organizational structure (Teece, 2018). Remarkably, this three-part structure directly coincides with the sensemaking process. This is because managers' perception of environmental signals is possible only by interpreting them within a specific context; and their ability to seize opportunities is possible by transforming this meaning into strategic decisions. While ordinary capabilities enable an organization to survive in its current state, dynamic capabilities change the way an organization survives (Helfat & Winter, 2011). Therefore, dynamic capabilities can be considered not only a structural adaptation mechanism but also the institutionalized form of organizations' capacity to produce meaning. In other words, the faster organizations learn, the more deeply they interpret, and the more agilely they act in the face of environmental uncertainty, the greater their strategic resilience becomes.

This theoretical background positions the human manager not merely as a "decision executor" in strategic management, but as a producer of strategic meaning. According to Weick's (1995) theory of sensemaking, managers perceive environmental events not as objective realities, but as experiences that are interpreted, selected, and transformed into narratives. In this process, decision-making is not only about choosing between alternatives, but also about producing a collective response to the questions "what is happening?" and "what should we do in this situation?" (Maitlis & Sonenshein, 2010; Kornberger, Leixnering, & Meyer, 2019). Therefore, the fundamental competence of human managers in strategic management is their ability to create a meaningful sense of direction in complex and uncertain situations.

Another dimension that human managers bring to strategic decision-making processes is ethical reasoning and value-based evaluation. Strategic management is not only about creating a competitive advantage; it also requires managing stakeholder relationships, social responsibility, and organizational legitimacy (Freeman, Gilbert Jr, & Hartman, 1988). In this context, human managers tend to evaluate their decisions not only on whether they are "effective" or "efficient," but also on whether they are "right" and "fair." This characteristic transforms strategic management from a purely technical process into a normative and value-laden field (Bagley et al., 2020).

In this context, human managers stand out in strategic management with three fundamental competency areas: cognitive competency, sensemaking competency, and ethical reasoning. These competencies demonstrate that human managers are actors who guide not only "what to do" but also "how and why to do it" in the strategic management process. However, the rise of digital transformation and artificial intelligence technologies confronts the human-centered strategic management approach with a new area of questioning. As strategic decision-making processes are increasingly supported—and in some contexts even guided—by algorithmic systems, the role of cognitive and ethical competencies undertaken by human managers in this process needs to be redefined. At this point, the fundamental question is: How do human-specific strategic capacities such as sensemaking, ethical reasoning, and contextual intuition relate to the algorithmic reasoning of artificial intelligence?

In this context, the inclusion of artificial intelligence systems in strategic decision-making processes brings about a fundamental transformation in the nature of decision-making. While human managers make decisions based on experience, intuition, and value judgments under conditions of limited rationality, artificial intelligence systems operate through probabilistic inferences derived from large datasets. Both actors attempt to cope with uncertainty, but they do so in different cognitive ways: Human managers simplify by making sense of and contextualizing environmental complexity, while artificial intelligence manages complexity through algorithmic pattern recognition.

The Rise of Artificial Intelligence in Business: Management, Decision-Making, and Strategic Behaviors

The strategic decision-making process forces managers not only to choose among alternatives but also to make sense of situations amidst uncertainty, information overload, and environmental dynamics. In today's business world, managers must simultaneously monitor rapidly changing market conditions and sift through incomplete, contradictory, or excessive information. This situation leads to strategic decisions becoming less of a technical calculation process and more of a cognitive and contextual evaluation field. While human managers rely on experience, intuition, and value-based reasoning in this process, artificial intelligence systems shape their decisions through data patterns and algorithmic inferences under the same conditions. Both actors face similar problems in strategic management: managing uncertainty, interpreting environmental signals, and determining future direction. However, their responses to these problems are based on different forms of rationality. Human managers excel in context-building and ethical evaluation, while artificial intelligence offers advantages in speed, scale, and analytical consistency. These differences mean that the strategic decision-making process is no longer simply a matter of "who makes the better decision?" Rather than reducing it to a simple question, it raises the question of how different cognitive logics can be compared. For this very reason, the rise of artificial intelligence in strategic management necessitates rethinking the decision-making challenges faced by human managers from a new perspective.

Recent advancements in artificial intelligence (AI) have introduced numerous critical competencies by integrating more powerful and effective AI technologies into daily life, fundamentally transforming the structures of both organizations and the business world (Colbert, Yee & George, 2016; Koçyiğit & Darı, 2023). In today's highly complex world, AI offers people faster and more efficient workflows, flexibility, and unconventional solutions. In the business field, AI is employed in various areas such as data analysis

and forecasting (Grønsund & Aanestad, 2020; Marabelli et al., 2021), human–AI collaboration (Brachten et al., 2020; Mirbabaie et al., 2021), and managerial decision-making processes (Haesevoets et al., 2021). AI influences individual roles and behaviors, reshapes job descriptions, and transforms collaboration and decision-making processes. This not only triggers radical changes in the workplace but also lays the foundation for future work paradigms (Colbert, Yee & George, 2016; Carter & Wynne, 2024). However, the support provided by AI is sometimes perceived as a threat to the future (Acemoglu & Restrepo, 2018; Mirbabaie, 2022). The possibility that AI may replace human workers by automating tasks rather than supporting them has raised serious concerns (Samila, 2023). These concerns extend beyond blue-collar jobs to include white-collar employees as well. Initially, automation was seen as a threat primarily to manual labor, but digital technologies have transformed this dynamic (Baldwin, 2021). Indeed, Mika, developed through a research project between the Polish rum producer Dictador and Hanson Robotics, has been appointed as the CEO to represent the company and its values (MIKA, 2023). Thanks to advanced AI and machine learning algorithms, Mika is capable of making data-driven decisions rapidly (Bailey, 2023). Furthermore, companies such as Amazon and IBM have been reported to use automation and AI systems to manage employee performance in white-collar positions (Pal, 2023).

The increasing interest in the use of artificial intelligence (AI) in business can fundamentally be associated with the difficulty of decision-making under conditions of radical uncertainty and with the bounded rationality of human behavior. Simon (1990) defines bounded rationality as "rational choice that takes into account the cognitive limitations of the decision-maker — limitations of both knowledge and computational capacity." The decision-making process is inherently complex, and the personal characteristics and cognitive biases of human managers can make it even more challenging (Grandori, 2023; Chen et al., 2025). The selection of information (data) in this process is crucial; within the framework of bounded rationality, preferences or choices are often biased or irrational, leading to weak or unpredictable outcomes (Kahneman, 2011; Thaler, 2015; Muller, 2018). When negative traits associated with human nature and bounded rationality—such as favoritism, toxic organizational culture, greed, the pursuit of power, and mistreatment of employees—are considered, AI-supported solutions may prove to be effective in leadership positions. AI can bring a new level of objectivity, efficiency, and fairness to leadership, potentially preventing the kinds of errors that have historically led to organizational failures. Under conditions of radical uncertainty, similar to how individuals with bounded rationality develop strategies by combining existing elements in innovative ways, artificial intelligence can also contribute to defining more comprehensive decision alternatives through analogical pattern recognition and creative recombination of large datasets derived from past experiences (Martins et al., 2015).

AI can be used to simulate different decision situations that individuals with bounded rationality are unable to evaluate due to the complexities involved. During these simulations, AI can learn from human decisions and predict potential outcomes. Indeed, with the increasing volume of data, AI technologies are now being utilized to extract valuable insights from vast amounts of information. In the age of technology, humans generate petabytes of new information every second, creating both unprecedented opportunities and challenges for humanity. This is precisely where technology intervenes. Unlike human decision-makers, AI technology has the capacity to process massive datasets at high speed and with a high degree of rationality (Smith & McKeen, 2011). This capability makes AI a critical tool, particularly in the unpredictable business environments of the 21st century where rapid and data-driven decisions are essential. AI can be effectively employed in complex decision-making situations characterized by radical uncertainty. It has emerged as a promising technology that can assist human managers in the decision-making process—and potentially even replace them (Leyer & Schneider, 2021). With its powerful data-processing capacity, AI supports employees in decision-making (Dellermann et al., 2019; Metaxiotis, 2000) and facilitates the development of strategic decisions (Aversa et al., 2018). Indeed, several academic studies have addressed the use of artificial intelligence in decision-making processes. Weiser and von Krogh (2023) describe how AI can be utilized in various sub-processes of decision-making under uncertainty—including agenda setting, problem formulation, identification of alternative solutions, selection among alternatives, evaluation, and adaptation.

The effectiveness of decision-making under uncertainty is directly related to an organization's ability to detect or anticipate changes in its internal and external environment and to respond accordingly (Porter, 2008). However, merely identifying environmental dynamics is not sufficient; developing solutions within a cause-and-effect framework and making contextual evaluations during the decision-making process are equally important. In this regard, AI can assist humans by providing valuable support. AI can help explore new "world states" under uncertainty, offering insights into the causes, context, and scope of problems,

thereby supporting the problem formulation process (Weiser & von Krogh, 2023). Another important role of AI in decision-making under uncertainty lies in its ability to develop scenarios, generate alternatives, and implement adaptive actions rapidly and effectively (Weiser et al., 2020; Weiser & von Krogh, 2023). AI's ability to process large datasets free from cognitive limitations enables the identification of patterns and relationships that might otherwise be overlooked by human decision-makers. Therefore, the integration of AI into decision-making processes is expected to increase, reshaping organizational strategies and operational efficiencies within complex and uncertain environments.

Its potential benefits and capabilities provide a reasonable justification for AI to assume managerial roles and suggest that AI could bring the following advantages to the management levels (Pal, 2023):

- Reliability Over Time: Unlike humans, AI does not experience cognitive decline; on the contrary, its decision-making ability improves as learning increases. AI can make informed, data-driven decisions aligned with the organization's interests and can learn and apply the necessary skills as needed.
- Emotion-Free Responses: AI is free from negative human traits such as favoritism, megalomania, insecurity, political bias, or greed. It can be trained to act with integrity and logic, making it a fully rational tool.
- Learning Ability: AI can mimic certain human abilities such as learning from past experiences, avoiding mistakes, understanding people based on data, and making decisions grounded in both historical and current information.

Methodology

This study is designed as a theoretically guided qualitative comparative case study aiming to compare how human managers and artificial intelligence perceive environmental dynamics and develop strategic behaviors. In the research, two analytically distinct "cases"—a human manager and an artificial intelligence system—were examined using the same semi-structured interview questions.

The study adopts a qualitative research approach that allows for in-depth comparative analysis, rather than a quantitative design aimed at generalization. In this context, the research is structured as a comparative case study supported by thematic content analysis. Qualitative research takes an interpretive approach aimed at understanding complex social phenomena and allows the researcher to analyze the internal dynamics of the process in detail.

The research design is directly aligned with the study's central question: Is artificial intelligence merely a decision support tool, or can it function as a cognitive actor at the strategic level? In seeking an answer to this question, the aim is to reveal how different actors interpret the same environmental conditions and the logics they use to ground their strategic behaviors.

Therefore, rather than describing individual phenomena, the research focuses on comparatively analyzing two different decision logics. The qualitative comparative case study approach allows for an analytical comparison of human experience-based managerial cognition and algorithmic pattern recognition-based artificial intelligence outputs. In other words, it avoids ontological comparison, acknowledging the inherent differences between human cognition and AI outputs; however, it treats these two distinct modes of production as comparable analytical categories in terms of their decision-making logic and strategic reasoning styles. Therefore, artificial intelligence is positioned not as a "social actor" or subject, but as a representative of algorithmic reasoning. Thus, the comparison is not based on equating human experience with machine outputs, but on systematically juxtaposing these two different cognitive logics.

As a data collection tool, the semi-structured interview technique was employed. This technique provides flexibility within predetermined themes, enabling participants to express their thoughts and experiences in greater detail. The interviews with the human manager and AI were conducted between July 1 and July 31, 2024.

The interview with the human participant was conducted with a partner from a globally recognized management consultancy firm, who possesses extensive experience in strategic management and digital transformation. The participant's expertise provided a practice-based and in-depth perspective on the strategic dimension of managerial decision-making, closely aligning with the overall purpose of the study. The recorded interview lasted approximately 45 minutes and contributed significantly to the qualitative depth and contextual richness of the findings.

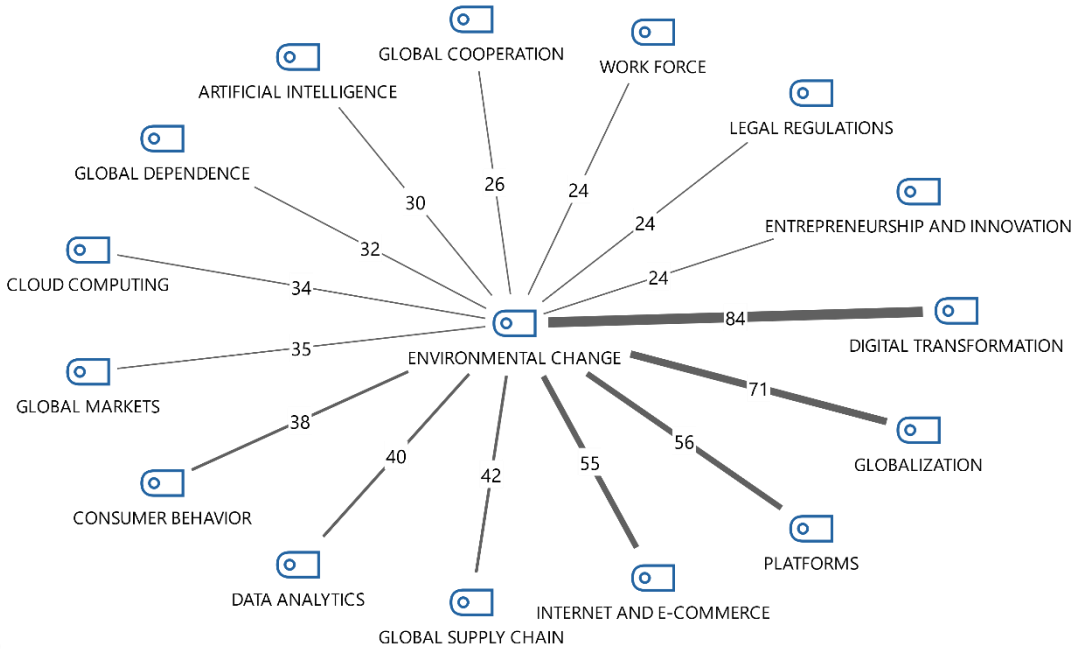
The AI-related component of the study was carried out using ChatGPT, one of the most advanced examples of artificial intelligence applications. Such AI systems are increasingly used for generating a wide variety of language forms—from short messages and social media posts to computer programs and dialogues (Hohenstein et al., 2023). ChatGPT, developed by OpenAI in 2020, is an AI software designed to simulate conversations with human users and is based on six billion parameters. In this study, the GPT-4 version of ChatGPT was used, and the same semi-structured interview questions directed at the human manager were posed to the AI under identical conditions.

Data analysis was conducted using the MAXQDA Analytics Pro 2024 software. In this study, the content analysis method was employed to systematically examine the data. Content analysis is a technique that identifies meaningful patterns related to the research topic by revealing the frequency and distribution of specific concepts and themes within texts (Krippendorff, 2018). Following the coding process, the data were grouped under identified themes, which were presented visually along with their frequency values. This approach systematically highlighted the conceptual intensities and emphases associated with artificial intelligence and decision-making processes, in alignment with the overall purpose of the study.

The textual data were subjected to open coding by two independent researchers to extract thematic structures. Two independent researchers performed open coding on the interview transcripts and created a preliminary code pool of concepts derived from the data. The differing codes and categories were discussed in a reconciliation meeting, and a common coding scheme was developed. Conceptual overlap and content consistency were the main principles in this process. All data were re-coded according to the agreed-upon coding scheme, and the final analysis was conducted using this structure. The consistency of the analyses performed by the two independent researchers during the coding process was calculated using the reliability formula proposed by Miles and Huberman (1994). Inter-coder reliability was determined by dividing the agreed-upon code number by the total code number, and the resulting value was found to be 0.826. This ratio indicates that the coding process of the study is reliable (Yıldırım & Şimşek, 2021).

Results

The analysis of the coding system revealed three main themes: environmental change, business life, and strategic behavior. Each theme has its own sub-codes. Responses to the question about environmental changes were coded, resulting in the hierarchical structure shown in Figure 1. The environmental change theme was identified with a total of 7 sub-codes and 23 associated codes.



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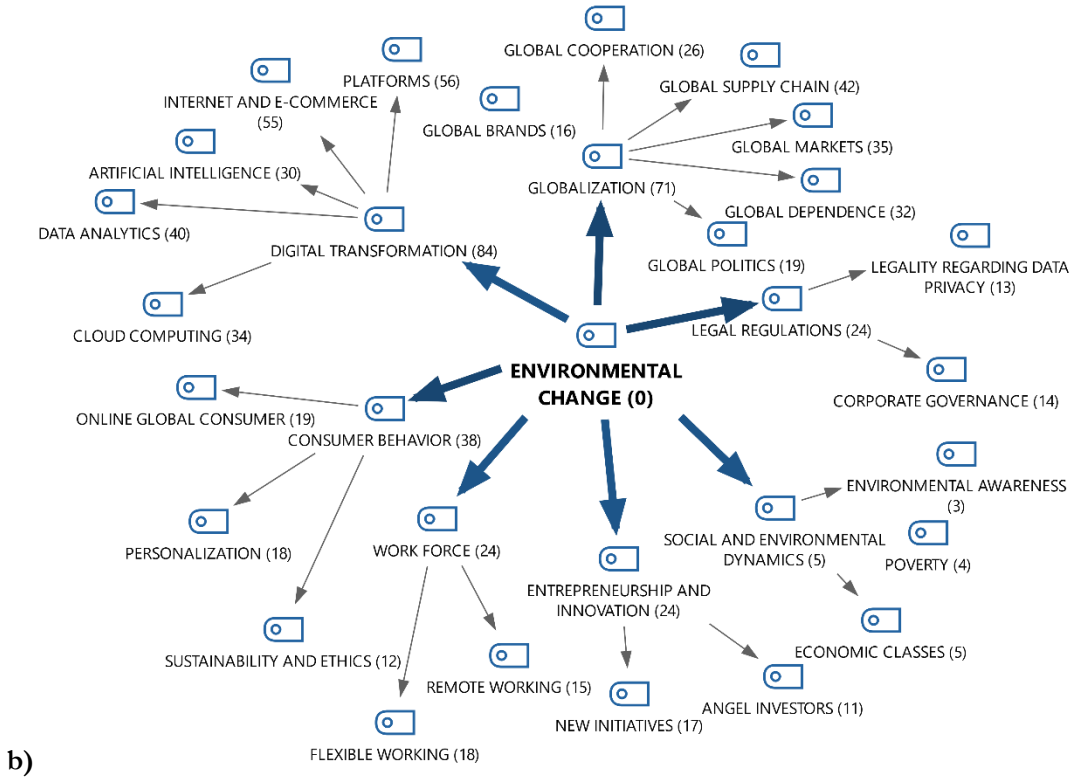


b)

Figure 1. *Environmental Changes Code Sub-Code Model (a), Hierarchical Code Sub-Code Model (b)*

Definitions related to business life have been derived from the responses of the two participants. Accordingly, a code-subcode model related to the business life theme, as shown in Figure 2, has been established. Eight subcodes defining business life have been identified.

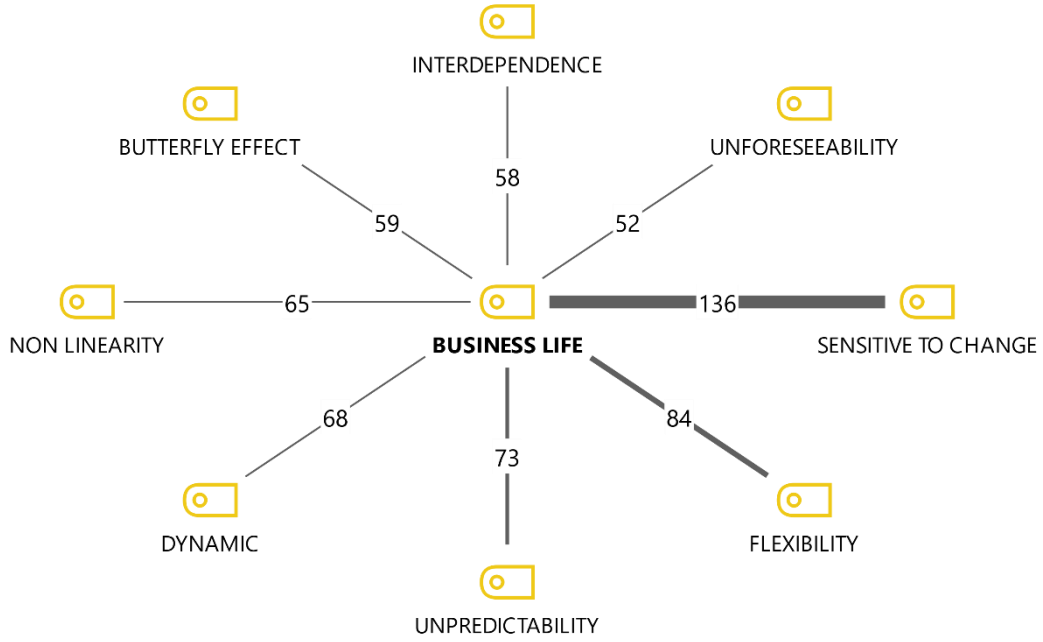


Figure 2. *Business Life Code Sub-Code Model*

Responses to the question about recommending strategic behavior for businesses, considering current environmental changes and business life, were examined and coded. The resulting codes were categorized, as illustrated in Figure 3.

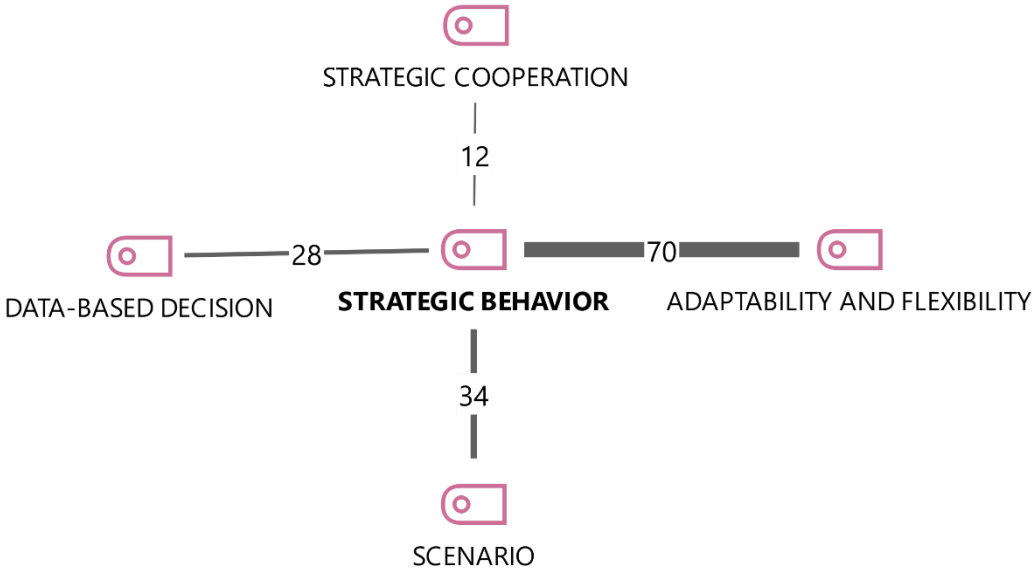


Figure 3. *Strategic Behavior Code Sub-Code Model*

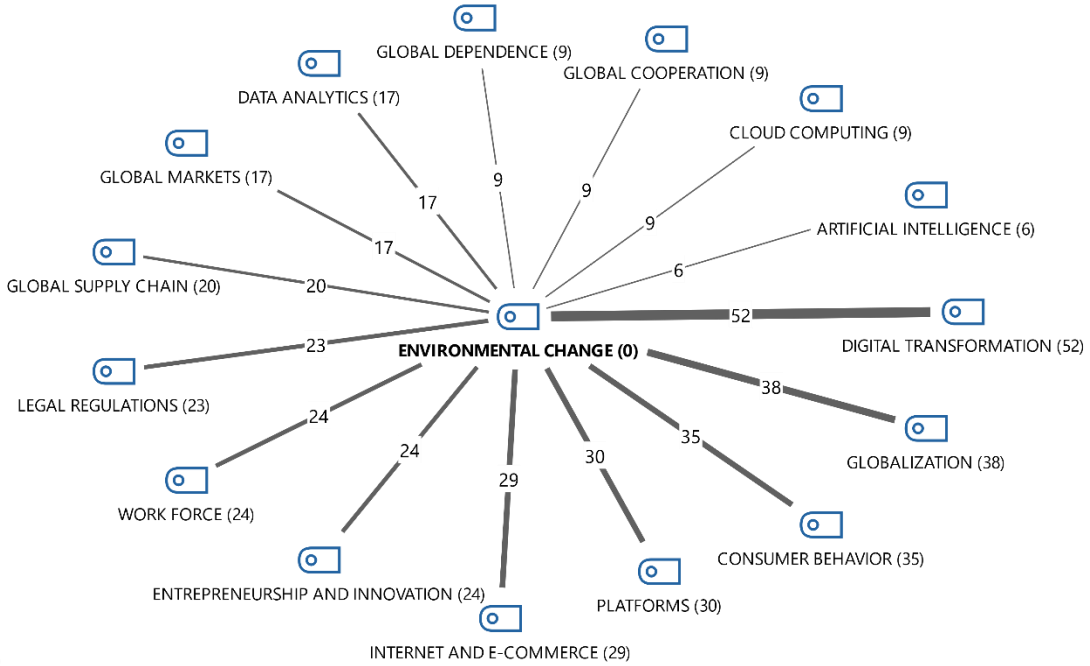
AI Interview Analysis Results

In the study, questions directed at AI were addressed, and the responses provided by the AI were coded. The matches of AI responses to the sub-codes of the environmental change theme are shown in Figure 4. The width of the lines reflects the frequency of the codes. According to the results, the most frequently coded sub-code is "digital transformation."

"Since the 1990s, the business world has undergone significant transformations due to advancements in technology, globalization, and changes in consumer behavior. Among these, Digital Transformation stands out as one of the most important."

"The rise of the internet revolutionized business operations, leading to the growth of e-commerce. Companies like Amazon and Alibaba transformed retail sales, while platforms like eBay enabled peer-to-peer sales."

"The adoption of cloud technology allowed businesses to scale their operations more efficiently, reduce costs, and enhance collaboration."



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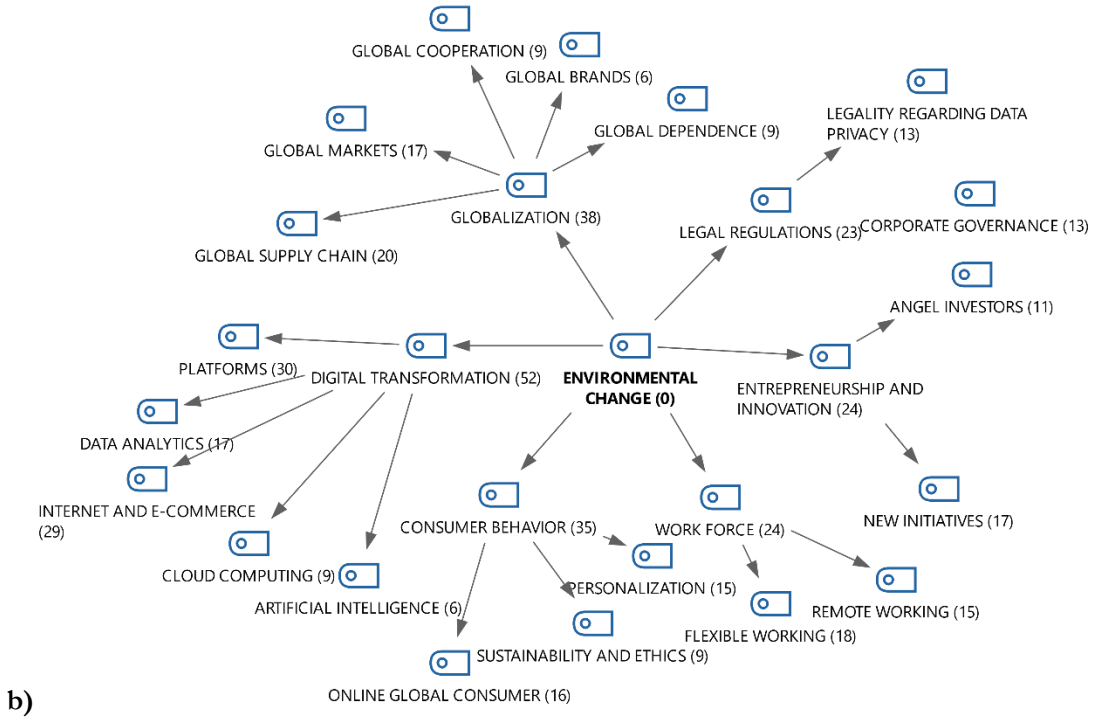


Figure 4. *AI's Code Sub-Code Model (a), Hierarchical Code Sub-Code Model (b)*

The definitions of AI related to business life have been coded and are shown in Figure 5. The width of the lines reflects the frequency of the codes. According to the results, the most frequently coded sub-code is "change sensitivity."

"These changes have created a dynamic and challenging business environment that requires companies to be agile, innovative, and responsive to market trends."

"Businesses that can adapt to these changes are more likely to succeed in the long term."

"These dynamics have reshaped the business environment by creating both opportunities and challenges."

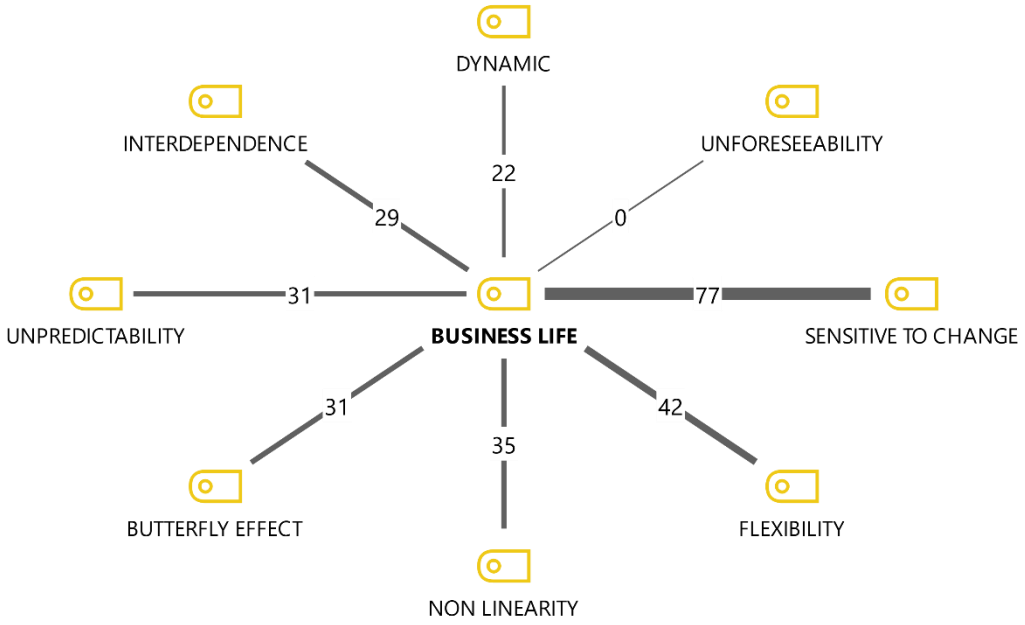


Figure 5. *AI's Business World Code Sub-Code Model*

The responses from AI related to strategic behavior have been coded and are shown in Figure 6. The width of the lines reflects the frequency of the codes. According to the results, the most frequently coded sub-codes are "change sensitivity" and "flexibility."

"Balance long-term goals with the ability to adapt quickly when necessary."

"While being flexible enough to adapt to short-term changes, maintain a long-term strategic vision."

"Develop flexible strategies that can adapt to various possible futures."

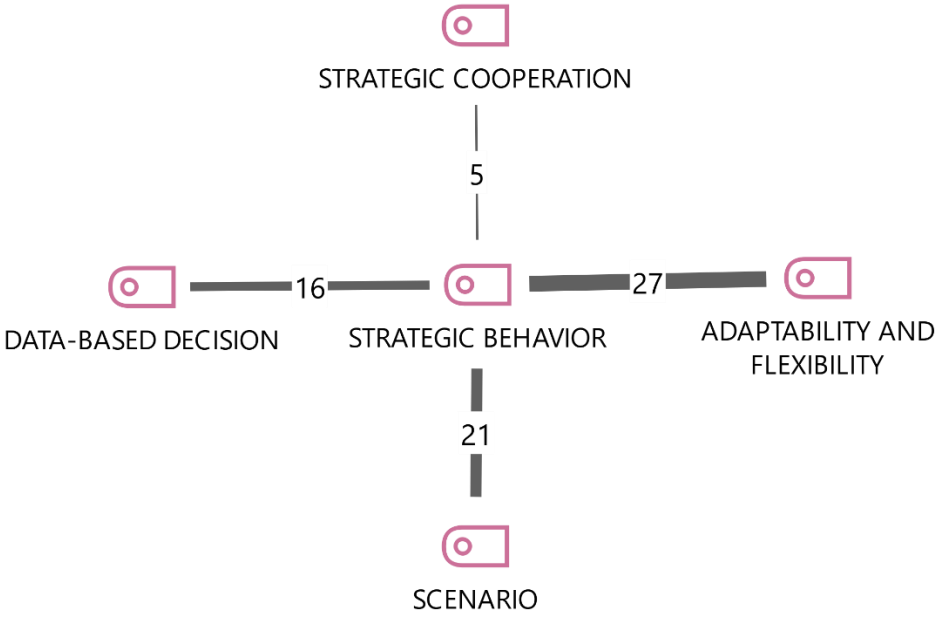


Figure 6. *AI's Strategic Behavior Code Sub-Code Model*

To provide a general overview of the AI-generated interview document, a single case analysis was conducted. The single case model allows for an in-depth examination of qualitative case studies. The results are summarized in Figure 7. The most frequently coded categories within the document are visible in the visual representation.

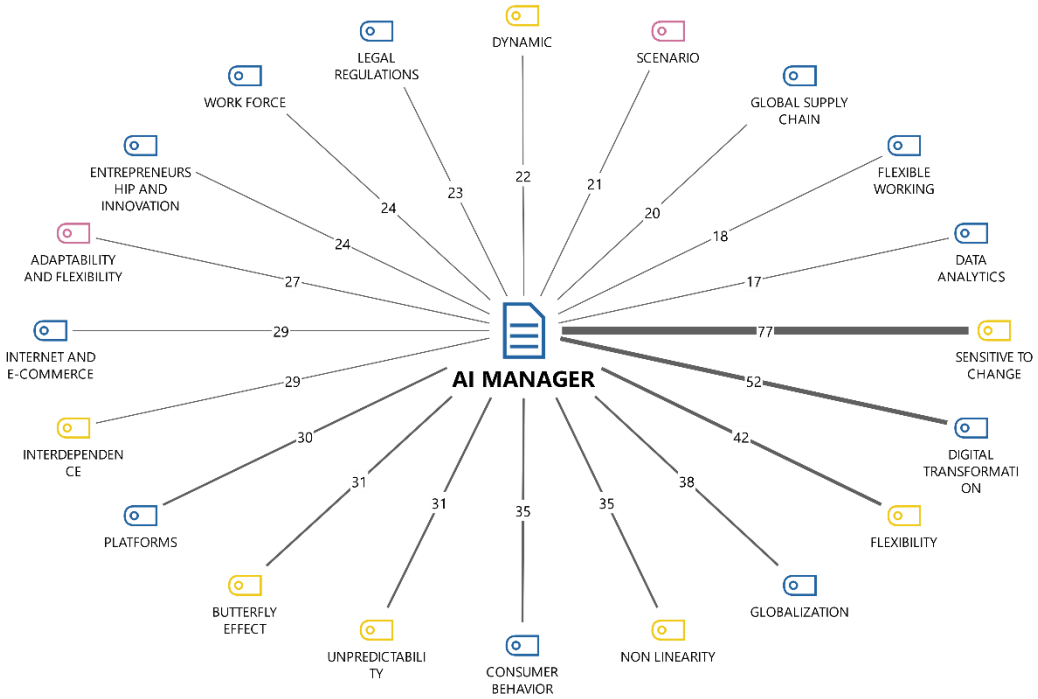


Figure 7. *Single Case Model of AI Interview Document*

Results of the Human Manager's Interview Analysis

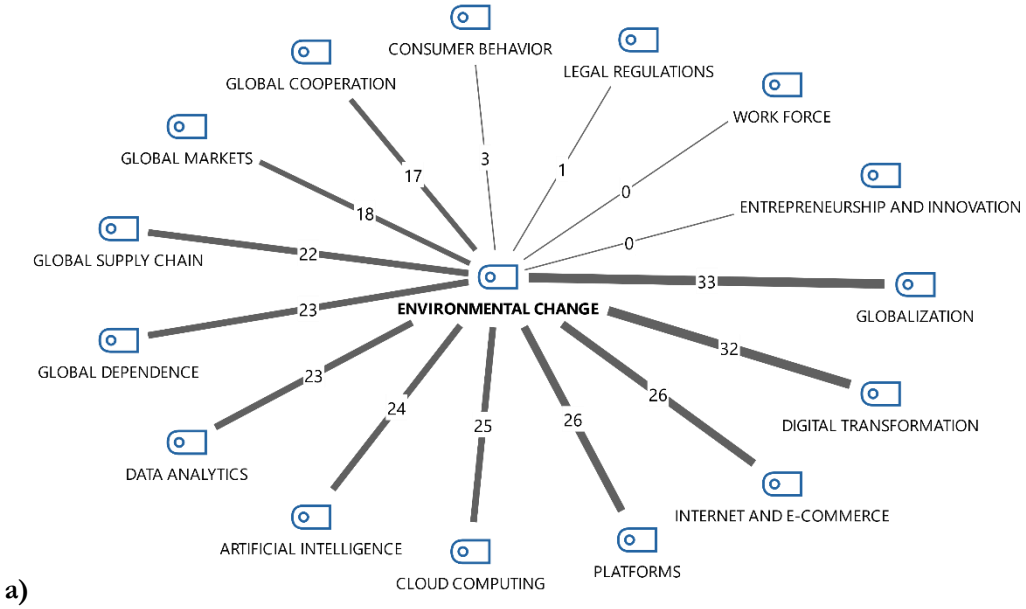
The interviews with human managers have been analyzed, and visuals of the codings of the responses provided by human managers are presented in this section. First, the sub-coding model for the theme of environmental change has been developed. Figure 8 presents the sub-coding model for environmental change.

The responses from the human manager regarding environmental change are as follows:

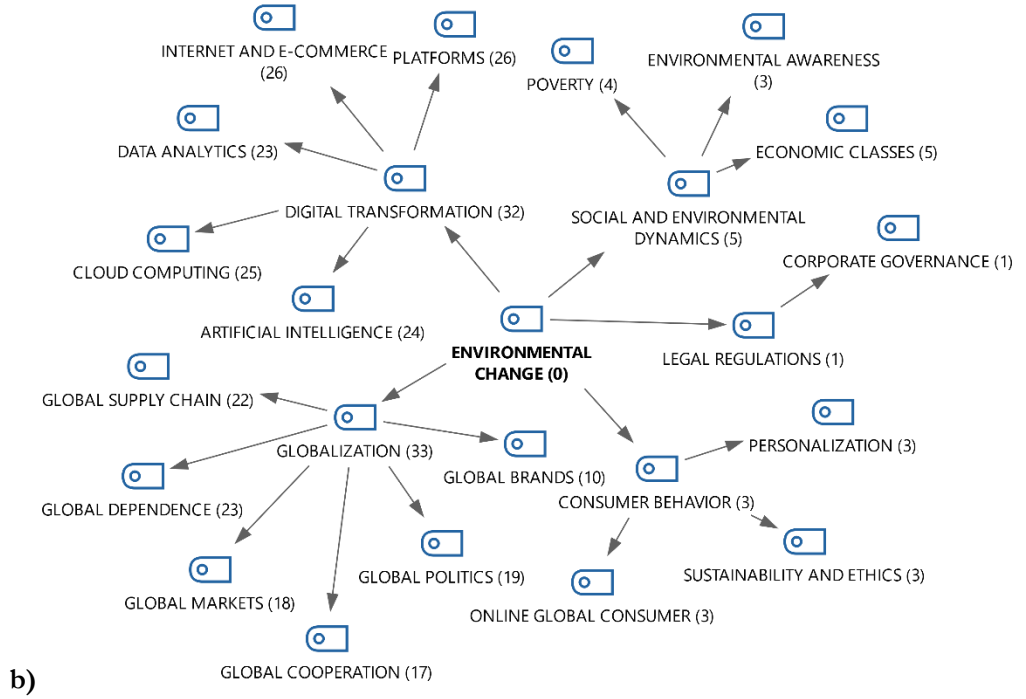
"In the 1990s, when we talk about environmental conditions, it was a time when globalization increased significantly."

"Global trade became a bit more liberalized."

"Globalization has a very significant impact on business strategy."



a)



b)

Figure 8. *Human Manager's Environmental Change Code Sub-Code Model (a), Hierarchical Code Sub-Code Model (b)*

The definitions provided by the human manager regarding the business world have been coded and are shown in Figure 9. The width of the lines reflects the frequency of the codes. According to this, the most frequently coded theme is 'sensitivity to change.

"For example, I previously mentioned e-commerce. In labor-intensive sectors, robot technology is such a technology. They need to be aware of these because if they don't, they will be left exposed when their business models and the structure of competition change."

"It is crucial to monitor critical technologies for the survival of the business and to integrate them into the strategy."

"In the economic system we are currently in, we have seen a more dynamic framework with decreased predictability over the past 2-3 years."

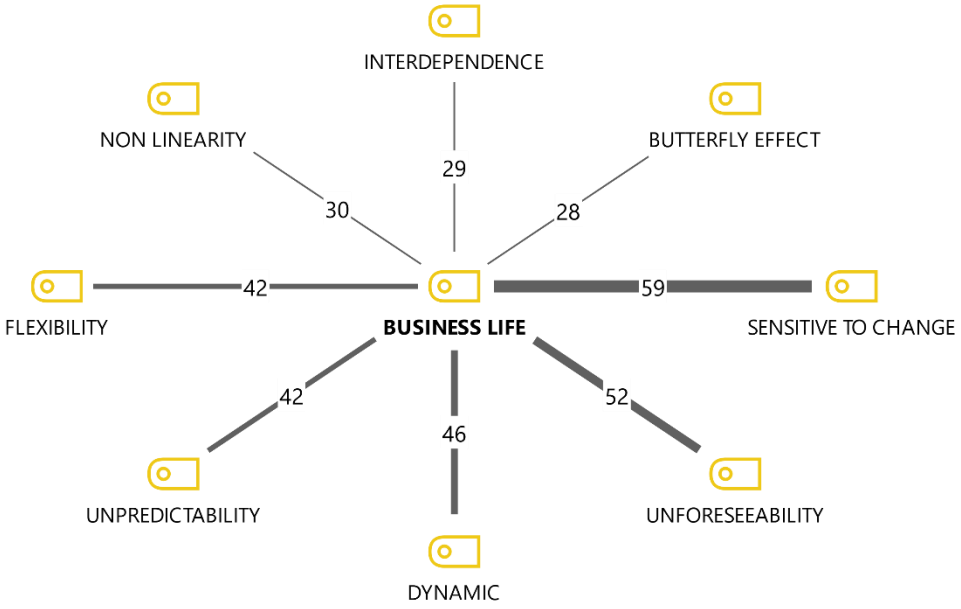


Figure 9. *Human Manager's Business World Code Sub-Code Model*

The responses of the human manager regarding strategic behavior have been coded and are shown in Figure 10. The line width reflects the frequency of the codes. Accordingly, the most frequently coded themes are adaptability to change and flexibility.

"Unpredictable crises need to be reflected in this planning process in some way. There is a more flexible planning process."

"In order to gain a share of a particular market, you need to create options for yourself. This requires having flexible planning processes."

"Scenario analyses need to be more integrated into strategic planning. Companies think like this: we have a business plan and we will stick to it. It doesn't work like that."

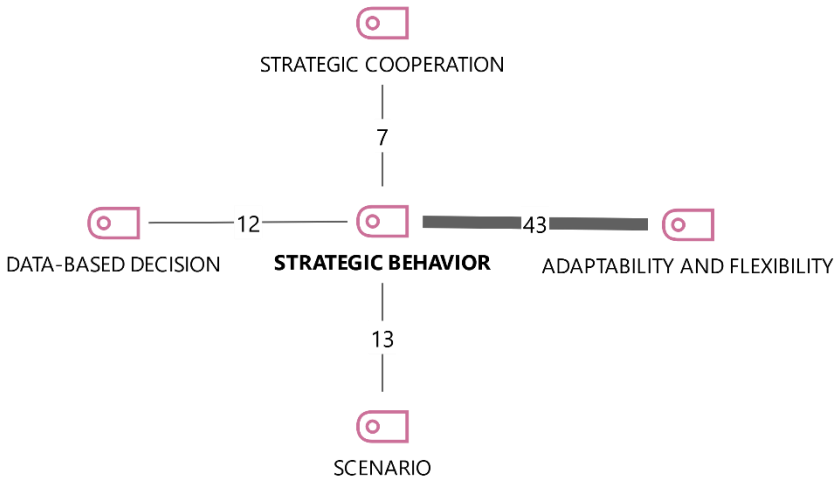


Figure 10. *Strategic Behavior Code Sub-Code Model of Human Manager Interview Document*

Overall, a single case analysis was conducted to provide a general overview of the document from the interview with the human manager. The results of this analysis are summarized in Figure 11. The visual shows the most frequently coded categories within the document.

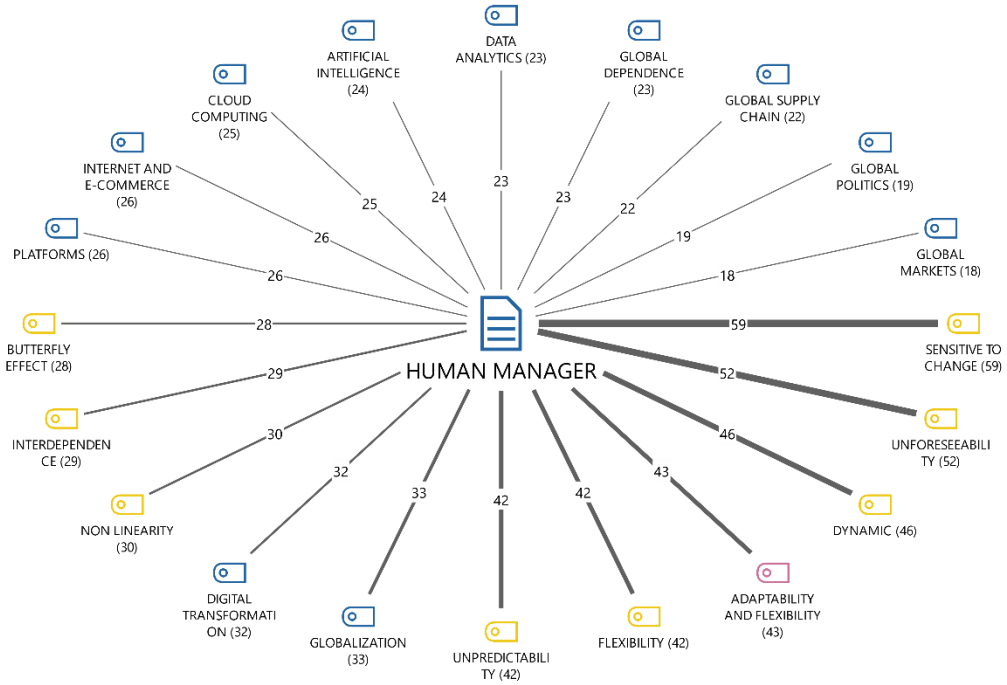


Figure 11. *Single Case Model of Human Manager Interview Document*

Similarity Analysis Results

A similarity analysis was conducted to measure the similarities between the coding in the documents. Similarity calculations were performed using the "code similarity" function of the MAXQDA Analytics Pro 2024 software.

This function compares the coding structures in two different documents based on:

- the presence of common codes,
- the distribution of these codes within the text,

and reveals the level of conceptual overlap.

These ratios are not statistically significant correlation coefficients; they indicate the degree of thematic proximity and analytical similarity between qualitative data. In other words, the calculated values express the

extent to which the responses of the human manager and the artificial intelligence intersect within the same conceptual framework. The results of this analysis are summarized in Table 1.

When comparing the codes across the entire document, the similarity between the presence of codes for artificial intelligence and human managers was calculated, resulting in a score of 0.71. This ratio represents the overall conceptual overlap between human managers' and artificial intelligence responses when all code sets are considered.

Table 1. *Similarity Matrix of AI and Human Manager*

	AI	***HUMAN***
AI	1.00	0.71
HUMAN	0.71	1.00

The similarity analysis was first conducted for the coding related to the theme of environmental change. The results are summarized in Table 2. The similarity ratio of the provided responses was found to be 0.61. This ratio indicates the thematic proximity between the two data sources in their coding related to the theme of environmental change.

Table 2. *Environmental Changes Similarity Matrix*

	AI	***HUMAN***
AI	1.00	0.61
HUMAN	0.61	1.00

The similarity analysis for the coding related to the theme of strategic behavior has been conducted. The results are summarized in Table 3. The similarity ratio of the provided responses was found to be 1.

Table 3. *Strategic Behavior Similarity Matrix*

	AI	***HUMAN***
AI	1.00	1.00
HUMAN	1.00	1.00

The similarity analysis was conducted for the coding related to the theme of "business world." The results are summarized in Table 4. The similarity ratio of the provided responses was found to be 0.89. This ratio indicates a high level of analytical similarity in the coding related to the definition of the business world.

Table 4. *Business Similarity Matrix*

	AI	***HUMAN***
AI	1.00	0.89
HUMAN	0.89	1.00

Cross-tabulation Results

The frequency of codes in the responses from artificial intelligence and human managers was compared and a cross-tabulation analysis was conducted. The results are presented in Table 5.

Table 5. *Cross-tabulation Results*

	AI MANAGER	*HUMAN MANAGER*
Business life		
Unforeseeability	0	52
Flexibility	42	42
Sensitive to change	77	59
Interdependence	29	29
Unpredictability	31	42
Butterfly effect	31	28
Non linearity	35	30
Dynamic	22	46
Strategic behavior		
Strategic cooperation	5	7
Data-based decision	16	12
Scenario	21	13
Adaptability and flexibility	27	43
Environmental change		
Social and environmental dynamics	0	5
Economic classes	0	5
Poverty	0	4
Environmental awareness	0	3
Legal regulations	23	1
Corporate governance	13	1
Legality regarding data privacy	13	0
Digital transformation	52	32
Artificial intelligence	6	24
Platforms	30	26
Data analytics	17	23
Cloud computing	9	25
Internet and e-commerce	29	26
Entrepreneurship and innovation	24	0
Angel investors	11	0
New initiatives	17	0
Consumer behavior	35	3
Online global consumer	16	3
Sustainability and ethics	9	3
Personalization	15	3
Work force	24	0
Flexible working	18	0
Remote working	15	0
Globalization	38	33
Global politics	0	19
Global dependence	9	23
Global cooperation	9	17
Global brands	6	10
Global supply chain	20	22
Global markets	17	18

Comparison of Artificial Intelligence and Human Managers

The coding of the responses from artificial intelligence and human managers has been compared. The results of this comparison are presented in Figure 12. The visual representation of the most frequently coded items shows that some codes are unique to a single respondent. The intersecting codes include digital transformation, globalization, platforms, internet and e-commerce, data analytics, and consumer behavior for the environmental change theme. For the business world theme, the intersecting codes are sensitivity to change, unpredictability, flexibility, dynamism, deviation from linearity, interdependence, and the butterfly effect. In the strategic behavior theme, both documents share the common points of adaptability and flexibility.

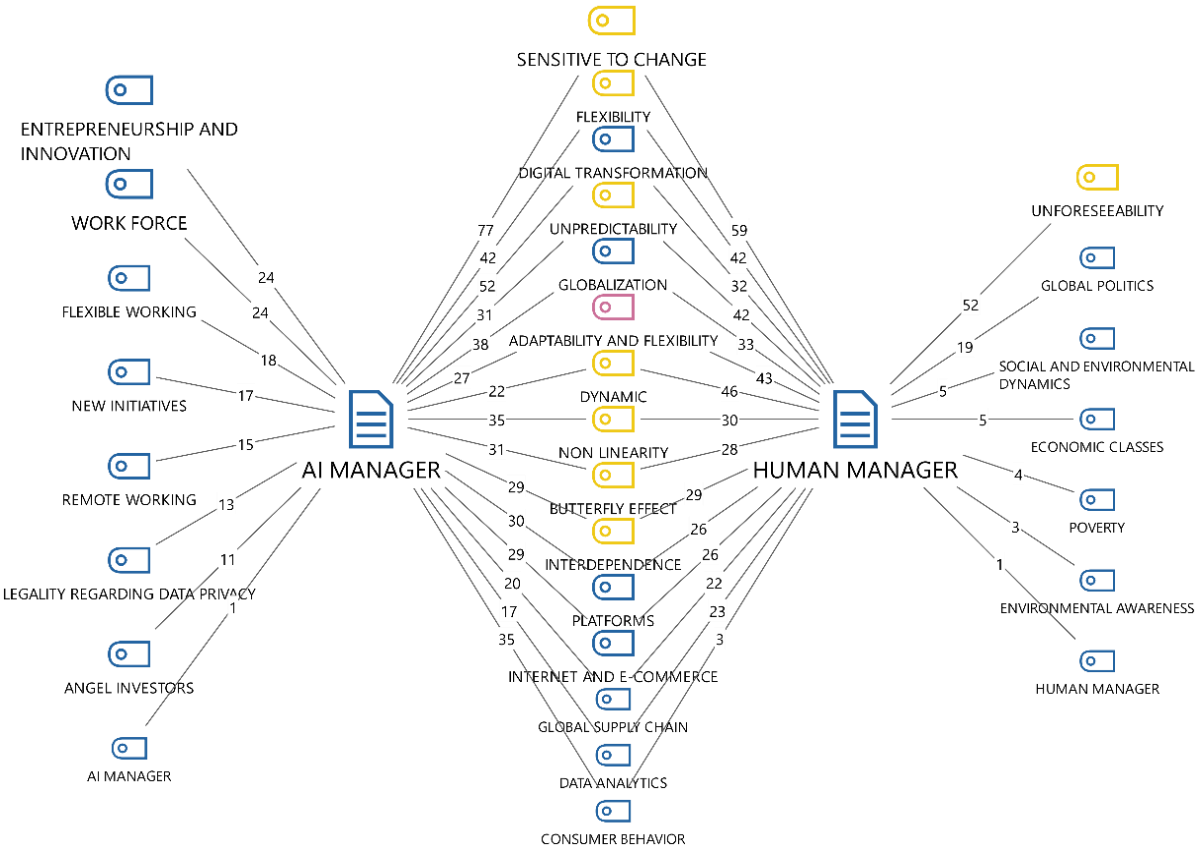


Figure 12. *Comparison of Artificial Intelligence and Human Managers: Two Case Models*

The top five codes most frequently mentioned in the documents of AI and human managers are shown in Figure 13. In the AI interviews, the top five codes are digital transformation, globalization, consumer behavior, platforms, and the internet and e-commerce. In the interviews with human managers, the top five codes are globalization, digital transformation, the internet and e-commerce, platforms, and cloud computing. Although similar codes appear in the top five, the frequency of the codes identified among the environmental changes differs.

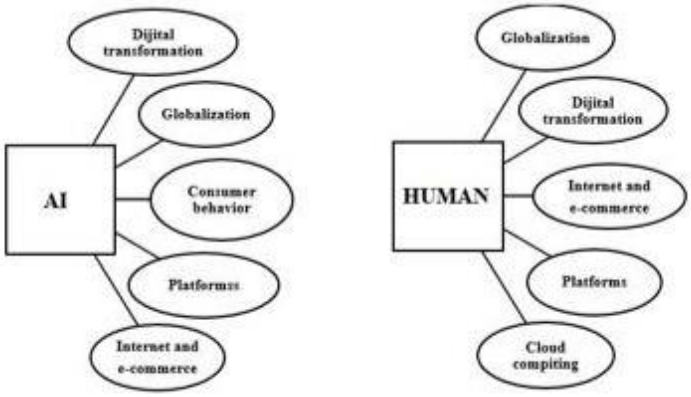


Figure 13. *Comparison of Artificial Intelligence and Human Managers top five codes*

Discussion

In recent years, with the development of artificial intelligence (AI) applications, interest in using AI-supported systems in managerial positions has increased. The digitization of workplaces has made digital work a new norm for organizations. The interaction between AI and humans is increasingly accepted, leading to efforts to understand AI's impact on employees and managers. The study compares human

managers and AI in identifying environmental factors. Three main themes were identified in the analysis results: environmental changes, the definition of the business world, and strategic behavior.

Since the 1990s, global-scale transformations have been a frequently discussed topic in the literature (Greenspan, 2008; Turan, 2020; Kotler & Caslione, 2011; Lane, 2019; McKinsey, 2017; Rifkin, 2015; Friedman, 2002). These discussions have revolved around key agendas such as globalization, technological revolutions, global markets, the importance of collaboration, interdependent economies, platform technologies, and digital innovations. The findings of this research also show significant similarities with these thematic discussions in the literature. The responses obtained indicate that both AI and the human manager recognized the existence of environmental changes. When the responses from AI and the human manager are evaluated separately, it is observed that AI primarily emphasized digital transformation, globalization, and changing consumer behaviors. Similarly, the National Intelligence Council's 2008 report, "Global Trends 2025: A Transformed World," presents comparable predictions concerning changes in economic systems (Kotler & Caslione, 2011). Within the context of digital transformation, the most frequently discussed topics included platforms and e-commerce. Today's era can largely be characterized as a period of change driven by economic and technological developments (Kennedy, 2001).

In the past, economic systems were driven by companies selling products and services, but in the 21st century, traditional business models are gradually being replaced by the platform economy. With these new platform models shaped by digital processes, consumers no longer need to obtain their needs from nearby locations (Ōmae & Ohmae, 1995). Today, platforms such as Amazon and Alibaba for sales, and Uber and BlaBlaCar for sharing, exemplify this shift. Both AI and the human manager referred to changing trade trends and the rise of platform-based systems as indicators of this transformation. When the responses were examined, the concept of globalization emerged prominently in both sets of interviews. Among the subcodes, global trade chains and markets stood out as dominant themes.

When combined, digitization and globalization have a profound and striking impact on businesses and individuals (Niemi, 2017; McKinsey, 2017). Digital technologies accelerate production, enable flexible manufacturing, provide cost advantages, and allow for personalized production, all contributing to increased efficiency (PWC, 2017). Trade barriers are diminishing, and international trade in goods and services is growing faster than local production (Ristovska & Ristovska, 2014). As societies become more interconnected, economic dependencies deepen, leading to the formation of a transnational economic system (Drucker, 1996; Beaverstock et al., 2000). Castells (2008) notes that the networks enabling capital mobility also promote centralization, though not through a single dominant center, but rather through multiple competing centers of power. This dynamic demonstrates that globalization both unites the world and simultaneously fragments traditional forms of centralization. Even today, the most advanced nations do not fully maintain traditional sovereignty (Barber, 1996).

Artificial intelligence highlights changing consumer behaviors. With technological advancements, the world has become a connected sphere. For example, the concept of 'global cities' has become widespread; these cities are detached from their surroundings and form strong connections with each other (Dirlik, 2012; Castells, 2008; Ōmae & Ohmae, 1995). The dissolution of spatial and temporal boundaries is also changing consumption habits. In the past, most consumers shopped through only a few channels, but today a new type of digital consumer has emerged (Calugar-Pop & Lee, 2020). AI emphasizes online global consumers and personalized products as key aspects of changing consumer behaviors. According to a survey by McKinsey (2021) conducted across 13 countries, in nine of these countries, at least two-thirds of consumers have tried new types of shopping. Today, people are increasingly turning to online consumption (Charm et al., 2020)

When we examine the expressions used by artificial intelligence to describe the business world, concepts such as a change-sensitive environment, flexibility, and non-linearity come to the forefront. Today's era is shaped by economic and technological developments (Kennedy, 2001). Since the late 20th century, the world is no longer stable and predictable; this has necessitated new approaches to explain the organization-environment relationship (Debnath, 2022). The 21st century is characterized by chaos and turbulence (Greenspan, 2008). In today's chaotic business environment, everything is interdependent and fragile (Arıcıoğlu & Berk, 2022). The prevalence of environmental changes and the resulting uncertainty shows that chaos theory offers valuable insights for management (Courtney, 2001; Debnath, 2022). Chaos theory emphasizes that understanding systems as linear and predictable is unsustainable (Alan, 2021).

Given today's rapidly changing environment and business world, artificial intelligence suggests that companies should focus on adaptability and flexibility. It also emphasizes making decisions based on scenarios and data analysis. Environmental turbulence makes flexible planning and flexible strategic management even more important (Eppink, 1978). Bonn and Christodoulou (1996) observed a trend toward greater flexibility in planning systems.

Adaptability and flexibility help companies use resources more effectively, restructure processes, and respond quickly to dynamic environments (Sanchez, 1995; Nadkarni & Narayanan, 2007; Helfat & Peteraf, 2009; Schreyögg & Sydow, 2010; Zhou & Wu, 2010). These qualities are essential dynamic capabilities that allow organizations to re-plan and utilize resources efficiently as conditions change (Eisenhardt & Martin, 2000). Studies on flexible time and flexible planning include works by Albrechts (2004), Kalpande et al. (2010), Özer (2015), Loewenstein et al. (2003), and Farjoun (2002).

When examining the responses of human managers, it is evident that they also emphasize environmental changes such as globalization and digital transformation. In digital transformation, platforms and e-commerce are highlighted, while in globalization, global supply chains and dependency stand out. When defining the business world, they emphasize sensitivity to change, unpredictability, and dynamism. In strategic behavior recommendations, they focus on adaptability, flexibility, and scenario planning.

The similarities and differences between artificial intelligence and human managers can be summarized as follows:

• Environmental Changes: Both AI and human managers emphasize digital transformation and globalization. AI also highlights data analytics and cloud computing, while human managers focus more on economic classes and poverty.

• Workforce: Flexible and remote work are emphasized by AI but not addressed by human managers. Entrepreneurship and innovation are also only discussed by AI.

• Legal Regulations: This topic is a more significant focus for AI compared to human managers."

This comparison shows overlap in major themes while also highlighting the different areas of focus for AI and human managers on environmental and strategic issues. In defining the business world, subcategories like sensitivity to change, flexibility, and interdependence show full alignment between AI and human managers, while other subcategories differ. Specifically, human managers describe the business world as more dynamic and unpredictable compared to AI; unpredictability was not mentioned by AI. For strategic behavior recommendations, adaptability/flexibility and scenario planning are common focus areas for both groups. While subcategories within these codes are emphasized at different frequencies, both sides acknowledge them.

The overall similarity rate between artificial intelligence and human managers across all codes was measured at 0.71. The similarity rate for detecting environmental changes is 61%, and for defining the business world, it is 89%. In terms of strategic behavior recommendations, there is complete overlap in the answers provided by both respondents. However, these similarity rates should not be interpreted as meaning that the decision-making processes of humans and artificial intelligence are identical. The calculated values only show conceptual proximity at the thematic level; they do not claim that cognitive processes, experiential foundations, and modes of sensemaking are the same. Therefore, similarity analysis was used as a supporting analytical tool in the study; the interpretation of the findings was considered together with qualitative analysis.

While there is no definitive answer yet to whether AI can become a manager, it is evident that there has been a significant development due to the similarity in values between AI and human managers in determining environmental dynamics and analyzing the business world to suggest strategic alternatives. From the perspective of this study's objective, AI provides highly accurate results in identifying environmental dynamics, comparable to those of a human manager.

The differences between human managers and artificial intelligence need to be addressed not only at the heuristic level but also at the ontological level. This study, while discussing the increasing role of artificial intelligence in decision-making processes, makes visible the distinction between the contextual depth of human experience and the pattern-based nature of algorithmic generation. This distinction shows the limitations of claims that artificial intelligence can replace humans in managerial decision-making processes;

conversely, it reveals that hybrid models based on human-AI collaboration offer a more consistent ground, both theoretically and practically.

Conclusion

Differences and overlaps in environmental perceptions between humans and artificial intelligence create profound effects on management approaches. Experimental findings indicate that there are both similarities and significant differences in how human managers and AI systems perceive and interpret environmental factors. Based on the research results, it can be observed that AI has the ability to perceive environmental changes and shows similarities with human characteristics. Prioritizing artificial intelligence diagnoses can lead to a management approach that is more rational, data-driven, and inclined toward automation. The possible consequences of this are:

- Reduction of Human Elements: There is a risk that emotional intelligence, empathy, and ethical considerations may be pushed into the background in decision-making processes. Factors like human relationships, employee motivation, and organizational culture may not be adequately considered.

- Increase in Efficiency and Speed: The objectivity and big data analysis capabilities of artificial intelligence can enable faster and more effective decision-making. Operational efficiency may increase while errors are minimized.

- Innovation and Adaptation: A technology-focused management can adapt more quickly to new trends and technological developments. However, this adaptation might come at the expense of human-centered innovation.

Prioritizing artificial intelligence diagnoses may lead to adopting a less human-centered approach in management. While this approach can bring short-term efficiency and speed gains, it may lead to the neglect of human values and employee satisfaction in the long term. The most effective management model would be a hybrid approach that combines AI's analytical and processing power with the emotional intelligence and empathy skills of human managers. This would allow for:

- Balanced Decisions: Data-driven analyses can be blended with human intuition and experience to make more balanced decisions.

- Valuing Human Resources: Employee motivation, engagement, and creative potential can be preserved and enhanced.

- Sustainable Success: A management approach that adapts to technological advancements while centering human values will bring sustainable success in the long run.

In conclusion, the differences in environmental perceptions between AI and human managers can profoundly impact management approaches. Rather than fully prioritizing AI diagnoses, balancing these insights with a human-centered perspective is the ideal path for both business success and employee satisfaction.

This research expands the understanding of collaboration with AI, contributing to both theory and practice. However, the study is not without limitations. Since it was shaped by interviews conducted with a popular AI-based application tool, the results may vary depending on participant variability. Additionally, interview questions not considered in the study could provide a different perspective on the results. These inferences are certainly made based on the current state of artificial intelligence technology. It is difficult to predict where artificial intelligence will reach in the future. Therefore, future advancements have the potential to elevate the study's outcomes to a different level.

This research is designed as a theoretically oriented qualitative comparative case study. While this design allows for in-depth analytical comparison, it has limitations in terms of the statistical generalizability of the findings. The aim of the study is not to generalize to large samples, but to make visible the differences in strategic cognition between human managers and artificial intelligence at the analytical and theoretical levels.

One of the other significant limitations of this study is that the data obtained from human managers and the outputs of artificial intelligence have ontologically and epistemologically different natures. While the responses of human managers are based on lived experience, intuition, and contextual evaluations; artificial intelligence responses are textual outputs produced through probabilistic language modeling. Therefore, the

similarities and differences reported in the study do not imply absolute equivalence of these two data sources. The findings are limited to allowing for an analytical comparison of human cognition and algorithmic reasoning. While this is a limiting factor in the internal validity of the study, it also offers an important methodological awareness in discussing the role of artificial intelligence in managerial decision-making processes.

Ethical Declaration

During the writing process of the study "*Determining Environmental Dynamics and Strategy: A Qualitative Study on the Comparison Between Human Manager and Artificial Intelligence*" scientific rules, ethical and citation rules were followed. No falsification was made on the collected data and this study was not sent to any other academic publication medium for evaluation. Ethics Committee Permission is not required.

Etik Beyan

"Çevresel Dinamiklerin ve Stratejinin Belirlenmesi: İnsan Yönetici ve Yapay Zekâ karşılaştırması Üzerine Nitel Bir Araştırma" başlıklı çalışmanın yazım sürecinde bilimsel kurallara, etik ve alıntı kurallarına uyulmuş; toplanan veriler üzerinde herhangi bir tahrifat yapılmamış ve bu çalışma herhangi başka bir akademik yayın ortamına değerlendirme için gönderilmemiştir. Bu araştırma da etik kurul kararı zorunluluğu bulunmamaktadır.

Declaration of Conflict

There is no potential conflict of interest in the study.

Çatışma Beyanı

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Statement of Use for Artificial Intelligence and Its Types

Artificial intelligence and its various types were not used in the writing of this article.

Yapay Zeka ve Türleri Kullanım Beyanı

Bu makalenin yazımında yapay zeka ve türleri kullanılmamıştır.

Data Sharing Statement

I declare that, upon reasonable request for the purpose of verifying the findings, I can share the data of this study according to the conditions specified in the relevant section of the "ethical principles and publication policy".

Veri Paylaşım Beyanı

Bu çalışmanın verilerini bulguların doğrulanması amacıyla makul bir talep üzerine "etik ilkeler ve yayın politikası"nın ilgili kısmında belirtilen şartlara göre paylaşabileceğimi beyan ederim.

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