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Ethical Impacts, Risks and Challenges of Artificial Intelligence Technologies in Business Consulting: A New Modelling Approach Based on Structural Equations

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Abstract: Artificial intelligence (AI) affects all aspects of a business, significantly contributing to problem-solving and introducing new operational processes within companies. Interest in AI is growing due to its capacities regarding the efficiency of operations, reduced working time, and quality improvements. However, to ensure proper development, businesses should also address the ethical effects generated by AI technologies. This research aims to identify AI's ethical impact and associated challenges in the business consulting industry and the consultants' perspective on AI's future implementation in their specific sector. The methodology is based on the design of a structural equation modelling using data collected through a survey addressed to business consultants. The results highlight that ethical concerns are positively correlated with the identified harmful consequences of AI, such as high implementation costs, the possibility that this technology will lead to job losses, or a lack of human interaction and creativity. The consultants' perspective on the future aspects of AI's use in business consulting is negatively impacted by the following ethical outcomes: discrimination, invasions of privacy, denial of individual autonomy, unjustifiable results, and disintegration of social connection.

Keywords: artificial intelligence; ethical challenges; business consulting; technological impact; structural equation modelling



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1. Introduction

Artificial intelligence is generally perceived as a research field of information technology and computer science, and it mainly focuses on designing and projecting intelligent providers [1], generating a remarkable impact on large domains of society and the economy [2]. The linguistic concept of “artificial intelligence (AI)” originated in 1956, and, as a field of study, it aims to conceptualize and represent intelligent behavior as a computing process. According to Boucher [3], AI illustrates a specific program that provides intelligent behavior by continuously examining its surroundings and making the necessary efforts to achieve its goal.

In terms of practical applications, AI has become one of the most attractive, but also emerging and disruptive technologies of the last years [4]. It is a widely debated research topic in various fields such as engineering, science, education, medicine, or economics. In business, AI-based systems with access to a vast database can be used in management, accounting, finance, human resources, marketing, and sales, potentially increasing revenue and decreasing costs. Artificial intelligence and the continuous learning capability of AI-equipped programs thus generate increased innovation, optimization within processes or resource management, and quality improvement [5].

In this complex framework, this research innovatively addresses the ethical impacts and associated challenges of AI in the business consulting industry and the consultants' perspective on AI's future implementation in their specific sector, through a new modelling approach based on structural/simultaneous equations. The main scientific goal of this study is to identify the ethical concerns and risks of AI related to business consulting and to determine the interlinkages between the consultants' professional characteristics and field of activity, their perception of AI's future application in business consulting, and their perceived detrimental consequences and ethical impact of these technologies. The research endeavour was planned extensively and fully to reach the main objective and then executed through phases, such as the outcome of one phase acting as the input for the next phase sequentially. More specifically, following the critical analysis of the specialized literature, we identified the advantages, disadvantages, and main ethical challenges associated with using AI in businesses. Next, based on these findings, we created a survey addressed to business consultants to determine their perspective on AI technology. Using these collected data from 98 respondents, we identify perceptions of AI adoption in the consulting profession and its associated risks and ethical challenges. Our methodology is based on a structural equation modelling (SEM) analysis of the interplay between the professional characteristics of business consultants and their perception of the AI risks and their willingness to accept this technology by deciding to invest in AI in order to implement it in their company or transfer a part of their tasks to an automatic program. SEM is an econometric analysis method that accurately determines the interdependencies between various constructs (i.e., independent, mediator, moderator, control, and dependent variables), which allows a richer understanding of their correlations [6]. The influences of some variables are thus identified through statistical and mathematical data leading to precise and highly accurate conclusions. Our results offer valuable insights for both practitioners and policy makers and bring to the fore the fact that ethical concerns are positively correlated with the identified harmful consequences of AI, such as the high implementation costs, the possibility that this technology will lead to job losses, or a lack of human interaction and creativity. Moreover, the consultants' perspective on the future aspects of AI's use in business consulting is negatively impacted by several ethical outcomes, such as discrimination, invasions of privacy, the denial of individual autonomy, unjustifiable results, and the disintegration of social connection.

The paper is structured as follows: The first part of this paper provides a brief presentation of AI and its professional and ethical impact on the business consulting industry. The second part is devoted to a detailed review of the scientific literature on the professional and ethical challenges of AI, while also grasping the working hypotheses. The third section embeds the research variables, the methodology applied, and the designed SEM model. The main results, discussion, and final remarks conclude the paper, complemented by Appendix A.

2. Professional and Ethical Challenges of Artificial Intelligence: Review of the Scientific Literature

2.1. The Evolution of Artificial Intelligence and Its Professional and Ethical Impact

An intelligent agent is defined as a knowledge-based system that analyzes the surroundings, reasons to interpret the perceptions, solves issues, and determines solutions to accomplish specific tasks for which it was designed [7]. It extracts its data and knowledge based on which it will act, and continuously adapts to the given assignment [7]. Artificial intelligence is intelligence associated with machines, in contrast to natural intelligence specific to humans and animals [8]. AI is mainly developed to have speech recognition, machine-learning, planning, and problem-solving attributes [9]. AI is applicable in computer science. Therefore, it implicates constructing devices that execute specific operations that would require intelligence if accomplished by humans [10].

The technical and managerial scientific literature offers multiple definitions of AI. Thus, AI can be seen as a new way computers are programmed to think in the same

way that people do [11]. Artificial intelligence reflects the automation of human thinking, such as decision making, problem solving, or learning [12]. On the other hand, AI is characterized by a study of the computations that make perception, reason, and action possible [9]. Russell and Norvig [13] distinguish four approaches to AI that aim to simulate human thought, rational thinking, human actions, and rational actions by a programmable machine. Finally, it is reasonable to predict that AI will eventually impact all human activities, individual, professional, and social [14].

Large companies use this technology to implement marketing, human resources, or production strategies. However, increasingly frequent questions arise from the considerable development of AI applications and the determined implications, such as the replacement of the workforce and activities carried out by humans, or ethical issues: AI may cause significant job losses and could change the idea of employment [15], or it may exit from human control and even have the power of managing its own evolution [16].

Numerous researchers broadly study data privacy and security, as individuals should have complete control over their personal data, and their usage should not cause any harm or discrimination [17]. Privacy refers to controlling information about oneself and the right to keep it secret [18]. Artificial intelligence offers the ability to organize and store a large set of data, which entails the vulnerability and risk of personal information being accessed by other entities and used without the owners' consent [19]. There may be situations where personal information is traded for a fee between entities and used in marketing and advertising processes, more quickly identifying the target market to promote their products or services [20].

Because controlling personal data is much more difficult online than in a physical format, most of the details of people's lives are becoming increasingly accessible digitally, where data are collected and visible on high-capacity servers or in the cloud [21]. Many technologies that use AI amplify these problems. By using specific techniques, such as fingerprints or facial recognition, these technologies enable the identification of individuals and create a profile for each user [22]. Well-established legal protection of individual rights, including consumer rights or the responsibility for protecting intellectual property rights, is often lacking in digital products, or is challenging to implement [18]. Leslie [23] summarizes (Table 1) the potential damages a system based on artificial intelligence can produce.

Table 1. Risks of artificial intelligence.

Bias and Discrimination	Data-driven technologies have the potential to duplicate, reinforce, and magnify practices of marginalization, inequality, and prejudice that are presently found in societies. Similarly, these technologies risk replicating their developers' preconceptions and biases because many of the features, metrics, and analytical frameworks of the models that allow data mining are selected by their developers.
Denial of Individual Autonomy, Recourse, and Rights	If individuals are subject to conclusions, forecasts, or categories created by AI algorithms, circumstances might occur where such individuals cannot hold the parties responsible for the results directly accountable. AI systems can automate cognitive tasks previously only performed by responsible human representatives. Such a lack of responsibility may impair autonomy and breach the rights of those impacted in the event of harm or bad results.
Non-transparent, Unexplainable, or Unjustifiable Outcomes	AI algorithms may deliver unreliable or poor-quality results if there is irresponsible data management, negligent design or programming processes, and uncertain implementation practices. These results can directly harm the well-being of individuals and the public welfare.
Invasions of Privacy	Because AI projects are anchored in data structuring and processing, the development of AI technologies will frequently involve personal data. These data are sometimes collected and extracted without obtaining the approval of the data owner or are processed in a way that reveals personal information.
Isolation and Disintegration of Social Connection	AI algorithms can vastly improve consumer lives and service delivery by generating unique experiences and personalizing digital services, although this ability also has potential risks. Excessive automation could decrease the need for human interactions.

Source: Adapted from the relevant literature [23].

The digitalization is continuously expanding, and technology is undergoing significant changes. Therefore, regulations should be adapted accordingly [24]. Artificial intelligence must comply with all applicable national and international legislation and regulations, and a set of requirements, such as safe, reliable, and robust algorithms to correct mistakes or inconsistencies throughout all phases of the AI systems lifecycle [25]. All AI systems should guarantee transparency, diversity, non-discrimination, and fairness while equally ensuring the accessibility of all users [26]. The European Commission's High-Level Expert Group on AI [27] states that the well-being of society and the environment must be protected by intelligent systems and AI should be used to promote positive social change and improve environmental sustainability.

2.2. Business Consulting and the Impact of Artificial Intelligence on Business Professionals

Business consultants operate in multiple industries and with a variety of clients. Through their activities, they gather experience and valuable information that they can use and adapt according to the requirements. Nowadays, most consultants are asked to provide not only advice but also solutions, such as changing a company's strategy [28]. Generally, there are no universal, standardized criteria for selecting a consultant because each client can define personal standards which reflect the company's expectations and experience in consulting services. However, the price is often seen as an indicator of quality [29].

With digital access to data and equally available technologies, it takes more effort to differentiate between consulting firms. What can be considered a general characteristic is the consultant's focus on the client and his needs, the goal of the consulting services being to solve the problems he faces as quickly and efficiently as possible [28]. Understanding and fully leveraging the data they operate with is one of the most important skills a consultant must possess [30]. Companies collect data continuously, being, at the same time, concerned with how these data are processed and exploited by consultants. They must maintain professional and ethical standards when working with their clients, having an obligation to keep the information obtained confidential [31].

The concept of digital business transformation is the use of technology to design unique business models, procedures, or techniques, providing greater efficiency, attracting additional revenue, and increasing the competitive advantage [32]. Digital transformation is also specific to companies in the field of business consulting, being able to have a positive and successful impact only with a solid strategy and management [33]. Machine-learning algorithms can build models and understand complex correlations through pattern detection, a challenging process for even the most promising and effective consulting teams [34]. If managed precisely, AI and automation can remarkably improve these firms' functionality and customer services [35]. The benefits of using AI in business consulting are considered, according to Bayati [36], the following: AI has a fast and accurate ability to analyze large-scale data, better knowledge of the market and users, high efficiency in performing administrative tasks, and it can guide companies to allocate their financial resources properly.

All AI-based systems have a social and ethical impact on stakeholders and communities. The main goal regarding these systems is to achieve innovation to benefit society, but there are situations where they have the opposite impact. The new field of AI ethics has mainly appeared as a reaction to the individual and societal harms that the mishandling, poor configuration, or unintended damaging results of AI technologies can generate [37]. Leslie [23] suggests that, to develop and use a system based on artificial intelligence responsibly, it must be equitable and ethical, considering its impact on the well-being of individuals and the community. The use of an AI-based system must be fair and non-discriminatory, trustworthy, and transparent [23].

2.3. Research Hypotheses and Conceptual Model

Technology and specific computer programs have made employees' work more efficient and, with AI's development, these technologies' limits continue to be exceeded. A computer could be programmed to analyze and enter data much faster than a person, but in order to follow these results, there remains the need for interpretation and creativity, which intelligent systems cannot yet replace [38]. To identify the perception of accounting professionals and educators on AI and its associated threats, Whitman [39] used survey data. In this study, younger and, therefore, less experienced participants believed that AI implementation could be helpful and improve their work by taking over their repetitive and administrative tasks [39].

The results of Abdullah's [40] study indicated a need for training among healthcare employees regarding AI technologies and revealed that 78% of respondents worried that AI could completely replace the human workforce. Alexandre and Blanckaert [41] indicated that in the business consulting sector, small firms can hardly define and implement AI technologies, while bigger firms are able to internally develop and use it to make decisions. The implementation of AI is also strongly correlated with the company size and, at the same time, the opportunities for adopting AI programs are often found in more significant firms, while, for small companies, they are harder to implement [42]. Due to the financial capacity that allows large- and medium-scale firms to adopt the latest technology infrastructure, Gaafars' [43] study revealed considerable distinctions between the responses concerning the application of AI tools according to the company's characteristics.

Lestari and Djastuti [44] indicated different perspectives on AI in a specific sector (banking industry) according to the respondents' attributes and company positions. Their research revealed that most employees working in frontline roles are concerned that AI technologies will be able to replace their jobs. On the contrary, respondents with back-office positions believed that human actions would still be required to conduct analysis procedures correctly and did not feel threatened by AI replacement [44]. These results show that professional characteristics (field of activity and position in the company) influence the perceived disadvantage of AI (possibility of replacing jobs). Taking into consideration the above literature, we assume that:

Hypothesis H1. *Professional characteristics and the field of activity determine the perceived disadvantages of using AI.*

Many companies have used AI as an opportunity to develop, leading to increasing competition through consulting firms, including start-ups [41]. Assigning tasks to AI could determine that consultants would focus less on repetitive tasks and allocate more time to assessing problems and providing solutions. Workforce perspectives of the employees whose professional tasks are automated by a robotic process were examined by Zande [45] through eight interviews. The results showed that the interviewees positively perceived this technology because it lessened their workload.

Because many companies have already implemented AI systems, candidates capable of working with AI programs may be favored in hiring processes and a higher qualification would be required [41]. Understanding these innovations that fundamentally change a company's internal processes can help leaders, managers, and the rest of the employees evolve. Choi [46] has shown that the clarity of the user and AI's functions is positively associated with the user's eagerness to accept AI implementation. According to Jaiswal [15], employees must possess five critical skills: data analysis, digital, complex cognitive, decision-making, and continuous learning skills.

Focusing on the internal implementation of AI, Alexandre and Blanckaert's study [41] concluded that there are different results according to the firm's size and its clients. Investments in AI technologies can have a notable effect on consulting firms. Besides the financial implications that require a concise strategy, the employees must also rapidly adapt to these changes [41]. All these arguments can lead to the following hypothesis:

Hypothesis H2. *Professional characteristics and the field of activity determine the future perspective of AI implementation.*

Consultants spend considerable time analyzing data and information, an activity that a system based on AI could replace. According to Streib [47], the most common concern is that some professions and jobs will disappear due to the implementation of automatic analytics systems. Another issue pointed out refers to the explainability of AI processes [47]. For an AI management system to have interaction fairness while operating with employees and clients, the information it provides would require explainability of the procedures being carried out and its decisions or outcomes [48].

According to Ardon [49], AI mechanisms' successful implementation must address workforce concerns. In his study, most employees are worried about job loss, unreliable algorithms, or security issues. Related to job losses is data privacy because AI systems will operate with more personal information. The capabilities of AI raised significant risks in business and the economy [47]. Streib [47] states that the insurance companies may use private data to evaluate the insurance premium or its coverage, and financial institutions could deliver credits and determine solutions based on such data.

Social interaction is a human need felt by every individual. Research has demonstrated that connections and interactions with colleagues in the workplace are essential to providing job satisfaction and reducing turnover intentions [48]. Therefore, the lack of communication could negatively affect a company's professional activity and customers' perceptions of that organization. The lack of social interaction could have an impact on the services provided by consultants, as clients could feel the absence of a real conversation. AI systems cannot offer the same advice or guidance as a person [38]. Consequently, we propose the following hypothesis:

Hypothesis H3. *The perceived disadvantages of using AI positively influences the perception of the ethical challenges of AI implementation.*

AI and its capacity to develop patterns and generate insights might raise privacy threats, even without direct access to confidential data. Therefore, privacy and data security risks contest AI systems' reliability. While there are doubts regarding the reliability of all technological devices, the machine-learning systems' opacity and their unpredictability thus generate difficulties in testing their results [50]. The willingness to accept AI technology was negatively correlated to privacy concerns [46]. AI can affect ethical standards, safety, transparency, and public fear, and AI governance might be rigid and hard to control, discouraging new business ideas and containing their execution [47].

From a cognitive viewpoint, if employees have a better understanding of AI technologies, specifically their limitations and coverage, they can develop realistic expectations regarding these systems. Employees are less likely to pursue the suggestions of an AI management program if they are concerned that their actions will not have a beneficial effect or if they believe that it is not easy to use [48]. When encountering potential harmful outcomes emerging from AI, employees with higher levels of knowledge will be capable of determining solutions to overcome or diminish such threats [51]. Based on these findings, we assume that:

Hypothesis H4. *The perception of the ethical challenges of using AI negatively influences the future perspective of AI implementation.*

3. Methodology

3.1. Research Variables

To conduct this study, we designed a survey containing questions and specific credentials from prior research validated in the scientific literature. The target group was Romanian business consultants, and the respondents were based in the cities of Timișoara

and Arad. The questionnaire was distributed electronically over two months in 2022, and we received 98 complete responses.

Our main objectives were to determine the influences of AI on the business consulting industry regarding the risks and ethical challenges, as well as the business consultants' perspective on AI implementation based on their professional characteristics and field of activity. We also studied whether the perception of AI's ethical risks influences the business consultants' future implementation perception of this technology. To measure their perspective on AI, we used the following variables (Table 2):

Table 2. Variables used in analysis.

Latent Variables	Observed Variables	Acronym
Professional characteristics and the field of activity (PCFA)	➤ Domain (management or financial consulting, accounting, financial audit, or valuation)	Domain
	➤ Work experience (under 5 years, 5–10 years, or over 10 years)	Experience
	➤ Clients (big companies, small, or both categorized by the number of employees: less or over 50 employees)	Clients
	➤ Administrative tasks required by their current position (less than 25%, 25–50%, or over 50%)	Tasks
The perceived disadvantages of using AI (DSG)	➤ Lack of human interaction caused by using AI systems (evaluated by respondents from 1 to 5: 1—no impact; 5—critical impact)	Interaction
	➤ Job losses due to automation of tasks (evaluated by respondents from 1 to 5: 1—no impact; 5—critical impact)	Jobs
	➤ High costs and significant investments for consulting firms in building and implementing AI technologies (evaluated by respondents from 1 to 5: 1—no impact; 5—critical impact)	Costs
	➤ The lack of creativity and innovation in AI programs (evaluated by respondents from 1 to 5: 1—no impact; 5—critical impact)	Creativity
The perception of the ethical challenges of using AI (ECLG)	➤ Discrimination in AI decision-making processes (evaluated by respondents from 1 to 5: 1—no impact; 5—critical impact)	Discrimination
	➤ The responsibility of the AI systems regarding the rights and the denial of individual autonomy (evaluated by respondents from 1 to 5: 1—no impact; 5—critical impact)	Responsibility
	➤ Privacy invasions (evaluated by respondents from 1 to 5: 1—no impact; 5—critical impact)	Privacy
	➤ Unreliable and inexplicable results (evaluated by respondents from 1 to 5: 1—no impact; 5—critical impact)	Results
	➤ Isolation and disintegration of social connection (evaluated by respondents from 1 to 5: 1—no impact; 5—critical impact)	Connection
Future dimensions of AI implementation in business consulting (AIP)	➤ The consultants' willingness to transfer a part of their tasks to automatic intelligent systems (operational dimension) (yes/no question)	Transfer
	➤ Their perspective on the current necessity of investments in such programs (investment dimension) (yes/no question)	Investment
	➤ Their perception of the competitive advantage gained by consulting firms that implement AI in their procedures (strategic dimensions based on hard capabilities) (yes/no question)	Competitive
	➤ Their perception of the competitive edge in recruitment processes obtained by candidates that are experienced in working with AI systems (strategic dimensions based on soft capabilities) (yes/no question)	Recruitment

Source: Own contribution.

3.2. Methodology—Research Model

The research methodology is based on the application of structural equation modelling (SEM). SEM is a multivariate statistical method frequently used to conduct fundamental or applied research in behavioral, managerial, or quantitative social sciences [52]. It provides a

complex underlying statistical theory and can address a variety of research hypotheses. As a modern econometric procedure, SEM demonstrates the capacity to estimate complex model correlations while measuring the error inherent in the indicators [53] and it has developed to support specific, accurate network models to match observations to theory [54]. Jeon [55] identified, among the advantages of SEM, the following: the possibility to capture latent variables and measurement equations; the capacity to determine the correlations between the dependent variables and pursue simultaneous estimation; the possibility to identify the direct effect, indirect effect, and total effect; to apply multiple statistical methods in one model (SEM contains measurement equations and structural equations); and to specify the reciprocal causal relationship between the latent variables. This method was also applied to previous studies regarding AI usage and employee perspective [56], and the impact of AI solutions and ethical concerns [57]. The popularity of this method can also be explained by the existence of various available and easily accessible software programs that allow researchers to apply SEM efficiently [55].

The SEM general diagram designed according to the above-formulated hypotheses is presented in Figure 1:

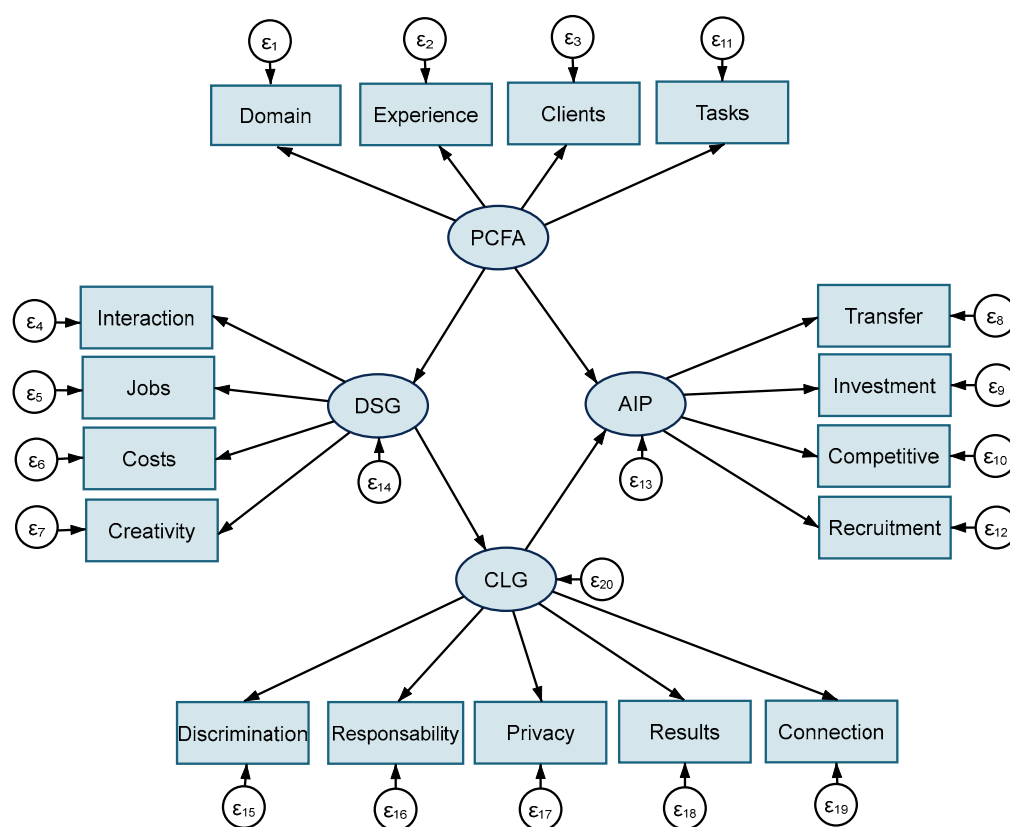


Figure 1. Configuration of the structural equation model (SEM). Source: Authors' contribution in Stata 13.0.

We used SEM to identify the relationships between our selected variables (Table 2) and our study focused on the influence professional characteristics and the field of activity have on the business consultants' perception of the disadvantages of AI and their future perspective of AI implementation. We also analyzed the correlation between the perceived ethical challenges of AI and the identified drawbacks of this technology. Lastly, our study showed the impact of the ethical concerns evaluated by the business consultants on their perception of future AI implementation in consulting firms.

4. Results

The SEM model was processed through the maximum likelihood estimator (MLE) method in Stata (Figure 2). To test for the SEM models' accuracy, we processed several robustness tests. In the goodness-of-fit test (Table A1), the comparative fit index (CFI) and Tucker–Lewis index (TLI) present a value close to 1, meaning that the model has a proper degree of fit. The coefficient of determination (CD) indicates that in over 54.9% of cases, the proposed observed variables influence the latent variables. We also processed the following tests: Cronbach's alpha test (Table A2), where the total scale of the coefficient alpha is optimal (>0.7), and the Wald test (Table A3), that concluded with a p -value of 0.000 for one latent variable (CLG), 0.05 for the second (AIP), and 0.4 for the third latent variable (DSG).

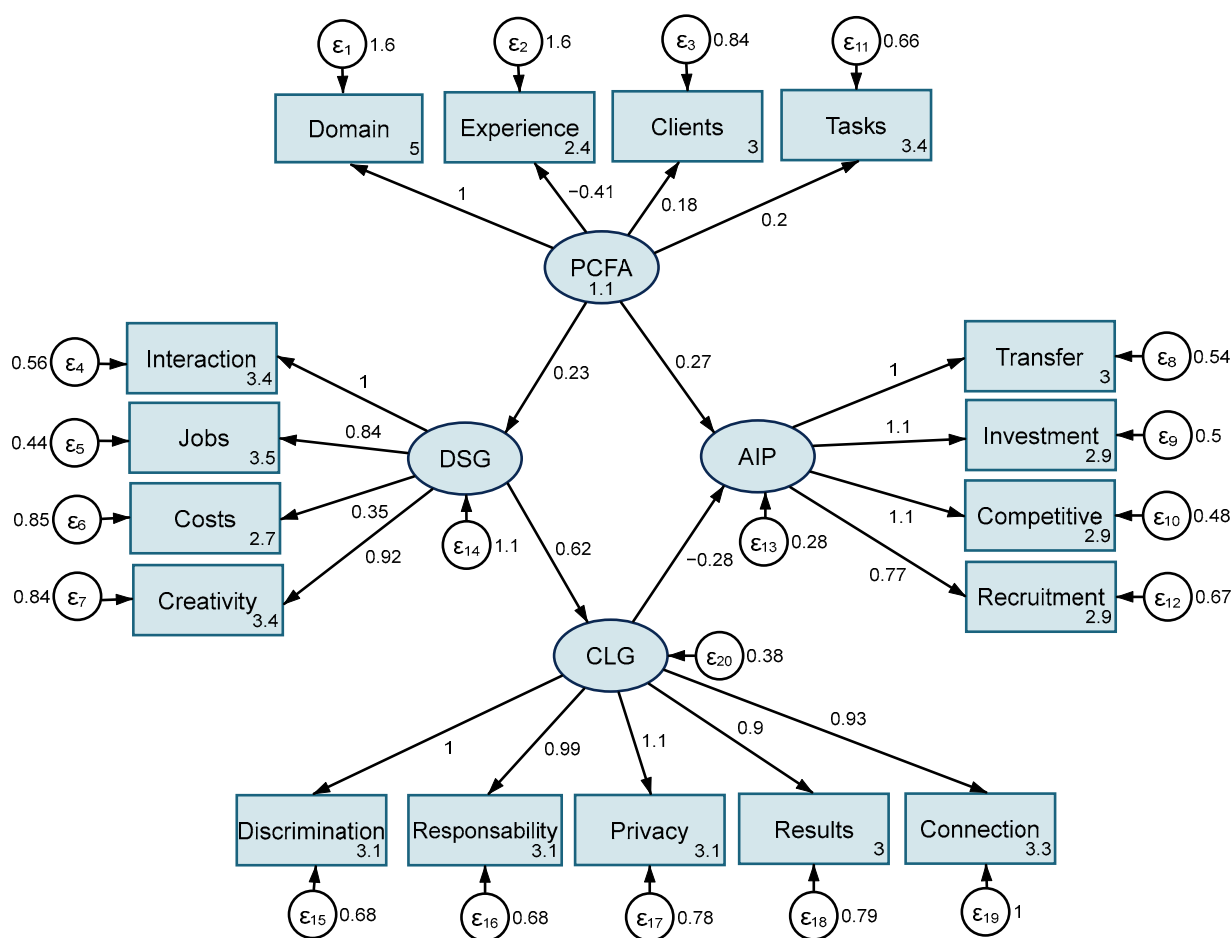


Figure 2. Results of the structural equation model (SEM). Source: Authors' contribution in Stata 13.0.

In the present study, the perceived disadvantages of AI were considered on four dimensions: effects on communication (lack of human interaction caused by using AI systems, coefficient 1, the most decisive perceived disadvantage), social impact (job losses due to the automation of tasks, coefficient 0.84), economic–financial outcomes (high costs and significant investments for consulting firms in building and implementing AI, coefficient 0.35, the least relevant perceived disadvantage), and operational effect (the lack of creativity and innovation in AI programs, factor 0.92). The ethical challenges, in turn, were considered from five perspectives: the risk of discrimination (coefficient 1), the effect on personal responsibility and autonomy (coefficient 0.99), privacy invasion (coefficient 1.1, the most relevant perceived ethical risk), the potentially unreliable character (coefficient 0.9, the lowest perceived ethical risk), and the lack of social communication (coefficient 0.93).

The prospects for the future use of AI applications in consulting targeted four directions: the acceptability of AI implementation, measured by the consultants' willingness to transfer a part of their tasks to automatic intelligent systems (coefficient 1), the awareness of the necessity for investments in AI programs (coefficient 1.1), the possibility of developing competitive advantages based on the use of AI technologies in the operational area (coefficient 1.1, the most relevant, along with the previous one), and the need of human personnel with previous experience in working with AI (coefficient 0.77, less relevant indicator).

Based on statistical analysis, we identified that hypothesis H1 and hypothesis H2 are only partially supported because of the reduced statistical significance of the estimated coefficients (Table 3). Our SEM results show a positive correlation between the professional characteristics and field of activity and the perceived disadvantages of AI (coef. = 0.23, Table A4) but present a reduced statistical significance (Table A4). Moreover, we identify that the professional characteristics and field of activity have a positive impact on business consultants' future perceptions of AI implementation, but this hypothesis is only partially supported because of its statistical significance (Table A4).

Table 3. Results of research hypothesis testing.

Hypothesis	Results	Main Findings
H1. Professional characteristics and the field of activity determine the perceived disadvantages of using AI.	Partially validated (not statistically significant)	Domain and professional characteristics partially influence the perceived disadvantages of AI.
H2. Professional characteristics and the field of activity determine the future perspective of AI implementation.	Partially validated (not statistically significant)	Domain and professional characteristics partially influence future perspective of AI implementation in business consulting sector.
H3. The perceived disadvantages of using AI positively influences the perception of the ethical challenges of AI implementation.	Validated ($p < 0.001$)	Perceived disadvantages of AI positively influence the ethical challenges and risks: the greater the perceived disadvantages are, the greater the ethical risks and challenges become.
H4. The perception of the ethical challenges of using AI negatively influences the future perspective of AI implementation.	Validated ($p < 0.05$)	The perceived ethical challenges and risks of AI use negatively influence the willingness of AI application in professional activity: the greater the perceived ethical risks are, the lower the intention of AI implementation becomes.

Source: Authors' contribution.

Regarding hypothesis H3, the SEM estimation results present a positive correlation (statistically significant at the 0.1% threshold, Table A4) between the disadvantages of AI revealed by the business consultant's evaluation and their perception of AI ethical risks in business consulting industry. The results show that the perceived disadvantages of AI are a significant positive predictor (coef. = 0.62, Table A4) of the respondents' evaluation of the gravity and ethical impact this technology can have on their activity, such as discrimination, lack of responsibility, privacy invasions, and lack of human interaction and connection.

Regarding hypothesis H4, according to our study, the ethical challenges of AI are negatively correlated to the future perspective of AI implementation (statistically significant, p -value < 0.05 , Table A4). The results show that the perceived ethical challenges of AI are a significant negative predictor (-0.28 , Table A4) for the intention of business consultants to transfer a part of their job responsibilities to AI, to invest in AI professional application, to accept that AI could lead to a competitive advantage, or to prioritize candidates with AI knowledge in the recruitment process. The perceived ethical challenges strongly influence the perspective of materializing future implementation directions (coefficient 0.28) and the validation of this hypothesis means that the moral outcomes of using AI in business consulting also influence technological, economic, and strategic views. AI can be seen as

a technology that can raise several ethical issues in consulting, such as algorithmic bias and the security of client data and information: the stronger these risks are perceived, the greater the potential future benefits are diminished.

5. Discussion

The previously described results are consistent with prior studies, but we could also identify some results contrary to our findings. Araujo [58] also underlined that privacy risks are negatively correlated with perceptions of fairness and the usefulness of AI capabilities, and positively linked with perceived threats. Christensen et al. [29] state that the focus placed on internal adaptation to the radical changes generated by the digital growth within consulting services is decisive, with consulting firms having to advise client companies pleasingly, while also considering cyber security threats. Reddy and Reinartz [59] also evidenced, among the AI challenges, the possibility of automation replacing the human workforce, the risk of customers losing their data confidentiality, and the rapid appearance of new competitors on the market.

Employee perspectives may intensely impact technology endorsement decisions, affecting a company's innovation outcomes and performance [60]. Therefore, business consultants are less likely to transfer their administrative tasks to an automatic machine or to consider an investment in such technologies if they perceive these AI risks to have a critical impact on their activity. Choi [46] presented similar results and indicated that trust positively impacts the relationship between ability and the employees' acceptance of AI technology. Therefore, a lack of confidence will cause employees to reject AI programs.

Firms are using AI tools to recruit, select, and manage their employees, and even if AI may seem neutral and objective, these systems function according to how they were programmed [61]. Indicating the risk that AI might replicate human biases or even create other types of discrimination, Kim and Bodie [61] refer to the case of Amazon. The company designed an algorithm to detect viable candidates for specific jobs but rejected the method because it devalued qualified female applicants. Prior studies also reveal that hiring processes and decisions are seen as less fair when accomplished by AI than by human personnel [62].

Previous research has also highlighted that employees are worried about the potential job losses AI adoption can cause [49,63]. On the other hand, Ourdedine [64] states that even if this technology will eventually replace low-skilled jobs, it can also be capable of creating new jobs as it develops and becomes more implemented through organizations. The lack of human interaction can also be distinguished in other studies [62], where AI interviews were generally perceived as less procedural and interactional just in comparison with the human conducted interviews.

Our result is also consistent with other previous similar studies [65,66], which indicated that the positive relationship between firm size and AI implementation is not supported at a statistically significant level. On the contrary, Pan et al. [67] indicated that the industry and the company size have no significant effect on AI usage. These results can be explained by the rapid appearance of new start-ups on the market that use AI or innovative technologies, regardless of their company size and professional characteristics.

However, referring to professional experience, our findings are inconsistent with Kambur et al. [68]'s study, where employees revealed different perceptions of AI based on their working experience. The previously mentioned research was conducted on managers and employees of the biggest firms in Turkey based on their capital. These results may differ in our study because of the domain and location of our target group.

The validation of the hypothesis that there is a direct relationship (coefficient 0.62) between the perceived disadvantages of using AI and the ethical challenges generated by them has several explanations in the consulting field. The most critical link is revealed at the level of affecting direct interpersonal interactions, which are still considered necessary in business consulting because dialogue and informal meetings can strengthen professional client–consultant relationships. Moreover, the use of AI in the consulting process may

involve the collection and storage of clients' personal data, equivalent to the violation of confidentiality and the risk of exposing some of their private information. At the same time, in many cases, AI algorithms make decisions without the consultants being able to understand the decision-making process, verify the findings, and are able to explain them later to their clients. Following the lack of creativity and innovation, AI can make wrong decisions, leading to adverse outcomes on the quality of the consulting services and amplifying the costs of development and implementation (this, however, being the least perceived disadvantage). In addition, some jobs (routine ones, especially, e.g., accounting and financial analysis) can be automated through AI, leading to job losses for professionals in these categories.

This research contributes to a better understanding of the effects of AI technologies in the business consulting sector, one of the business sectors in which AI will likely generate a significant impact in the future [69]. The novelty of the study compared to the existing literature is represented by the innovative configuration of a structural equation model based on four research hypotheses formulated through the analysis of the scientific literature and tested with an original questionnaire-type research instrument. Furthermore, the originality of this research consists in designing a new advanced modelling approach based on the authors' visualization and construction of 17 observed variables divided into four latent variables, which aim to emphasize the business consultants' perception of AI and its related drawbacks and ethical concerns. The results determine the general and specific implications for the consultancy companies' management as well as for independent consultants.

6. Conclusions

The current research provides valuable insights into the ethical impacts, risks, and challenges of artificial intelligence technologies in business consulting. Our results indicate a partially supported connection between the field of consulting activity, defined by previous professional experiences, and AI disadvantages or future perspectives of implementing AI technologies. These findings reveal that the consultants' professional characteristics and the companies' dimensional aspects have a modest influence on how AI technologies can be implemented, generating opportunities or, on the contrary, disadvantages and risks. On the other hand, the results highlight statistically significant links between the perceived disadvantages, ethical challenges, and future implementation perspectives, with the ethical concerns acting as a mediating factor. If the perceived liabilities of using AI are more significant, ethical challenges are more relevant, and future implementation perspectives are negatively influenced. The discussions below focus on how the perceived disadvantages and underlying ethical challenges impact the prospects for the future implementation of these technologies.

Based on our findings, the perception of AI disadvantages strongly influences the ethical challenges of using AI. According to the business consultants' perspective, our results show that the lack of human interaction, the possibility of replacing jobs, high implementation costs, and the lack of creativity of AI systems can lead to discrimination, denial of individual autonomy, privacy threats, unexplainable results, or disintegration of social connection in the business consulting industry.

These ethical concerns also determine the inhibition of the future implementation trend of AI. Business consultants are more willing to transfer their administrative tasks to AI and invest in new technologies if they perceive it to have lower risks with regard to their professional activity. The outcomes of these technologies also affect their perception of the competitive advantage gained by the consulting firms that use AI and the recruitment advantage some candidates possess because of their AI general knowledge.

6.1. Empirical and Managerial Implications

Overall, the implications of our study for researchers, practitioners, and consulting firms are associated with the managers' and consultants' understanding of the outcomes generated by introducing AI technologies in business consulting. Based on the results of the present study, it is recommended that organizations active in the consulting sector, as well as independent professionals, consider all relevant aspects determined by AI implementation in professional activities, including the ethical risks. These are determined by the perceived disadvantages of using AI, and they determine, in turn, a tendency for a more difficult acceptance of these technologies in professional processes and procedures. It can even represent resistance to change. To modify this tendency, it is necessary to adjust the perceptions regarding the reduction of human interaction, the risks of losing human relevance in consulting jobs, and the reduced creativity of AI. Adjusting the perception of the disadvantages of AI can also determine a reduction of perceived ethical risks related to possible discrimination, violations of private space and confidentiality, or professional autonomy. This process is also conditioned by exogenous causes, primarily determined by strict legal regulations regarding data protection or technological developments that avoid using discriminatory criteria in various professional practices.

6.2. Theoretical Implications

Digital transformation and emerging digital technology significantly impact numerous aspects of social and professional life in both technical and socio-economic fields (psychology, management, and accounting) and medical and educational areas. The literature analysis on the impact of AI usage reveals relatively divergent results regarding its advantages and disadvantages in various fields of activity. The theoretical implications of this research are represented by the continuity of study regarding the impact of AI in business and the effects of the employees' perspective regarding ethical concerns on the future acceptance and usage of AI in work-related assignments/professional activities. The paper's originality consists in developing and testing using SEM, a conceptual model that reveals a cause-and-effect relationship between the perceived weaknesses and ethical risks and limits of the perspectives of using AI in professional business consulting.

6.3. Limitations and Further Research

Subsequent studies and future research should concentrate on determining the factors that can reduce the perception of the disadvantages and ethical risks of using AI in this field or related areas (i.e., human resource management or project management) so that emerging technologies represent sources of competitive advantage rather than professional anxiety. The current research has some limitations induced mainly by a relatively reduced sample of respondents that are less dispersed geographically. Therefore, future research aims to capture the perceptions of business consultants from various European countries, in a comparative approach.

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Appendix A

Table A1. Goodness-of-fit tests.

Specifications	SEM Model
Likelihood ratio	
Chi2_ms (115)	168.891
$p > \text{chi2}$	0.001
chi2_bs (136)	620.415
$p > \text{chi2}$	0.000
Information criteria	
AIC	4881.493
BIC	5024.225
Baseline comparison	
CFI	0.889
TLI	0.868
Size of the residuals	
SRMR	0.075
CD	0.549

Source: Own contribution in Stata 13.

Table A2. Cronbach's alpha test.

Item	Item-Test Correlation	Item-Rest Correlation	Average Inter-Item Correlation	Alpha
Domain	0.1310	0.0093	0.2095	0.8092
Experience	0.3329	0.2184	0.1957	0.7956
Clients	0.2697	0.1518	0.2000	0.8000
Interaction	0.6602	0.5826	0.1733	0.7703
Jobs	0.6260	0.5429	0.1756	0.7732
Costs	0.3634	0.2510	0.1936	0.7934
Creativity	0.6533	0.5746	0.1737	0.7709
Discrimination	0.6814	0.6074	0.1718	0.7685
Responsibility	0.6286	0.5459	0.1754	0.7729
Privacy	0.6930	0.6210	0.1710	0.7675
Results	0.6733	0.5979	0.1724	0.7692
Connection	0.7259	0.6599	0.1688	0.7646
Tasks	0.2390	0.1198	0.2021	0.8021
Transfer	0.3813	0.2703	0.1924	0.7921
Investment	0.4000	0.2904	0.1911	0.7908
Competitive	0.3435	0.2298	0.1949	0.7949
Recruitment	0.4092	0.3004	0.1905	0.7901
Test scale			0.1854	0.7946

Source: Own contribution in Stata 13.

Table A3. Wald test.

Variables	Chi ²	df	p-Value
AIP	5.98	2	0.0503
DSG	0.67	1	0.4143
ECLG	31.87	1	0.0000

Source: Own contribution in Stata 13.

Table A4. SEM detailed results.

	Estimates, <i>p</i> -Value, and Standard Errors
AIP CLG PCFA	−0.279 * (0.115) 0.270 (0.177)
DSG PCFA	0.233 (0.285)
CLG DSG	0.622 *** (0.110)
Domain PCFA _cons	1 (.) 5.040 *** (0.165)
Experience PCFA _cons	−0.414 (0.264) 2.364 *** (0.134)
Clients PCFA _cons	0.179 (0.190) 2.970 *** (0.0942)
Tasks PCFA _cons	0.201 (0.176) 3.374 *** (0.0840)
Transfer AIP _cons	1 (.) 3.010 *** (0.0976)
Investment AIP _cons	1.065 *** (0.206) 2.939 *** (0.0979)
Competitive AIP _cons	1.051 *** (0.246) 2.929 *** (0.0963)
Recruitment AIP _cons	0.773 *** (0.211) 2.909 *** (0.0960)
Interaction DSG _cons	1 (.) 3.424 *** (0.133)
Jobs DSG _cons	0.843 *** (0.0985) 3.535 *** (0.114)
Costs DSG _cons	0.354 *** (0.0959) 2.707 *** (0.100)
Creativity DSG _cons	0.924 *** (0.127) 3.384 *** (0.137)
Discrimination CLG _cons	1 (.) 3.071 *** (0.124)
Responsability CLG _cons	0.985 *** (0.139) 3.071 *** (0.123)

Table A4. Cont.

	Estimates, <i>p</i> -Value, and Standard Errors
Privacy CLG _cons	1.091 *** (0.156) 3.141 *** (0.134)
Results CLG _cons	0.899 *** (0.147) 3.030 *** (0.122)
Connection CLG _cons	0.934 *** (0.161) 3.263 *** (0.132)
var(e.Domain) _cons	1.629 * (0.806)
var(e.Experience) _cons	1.582 *** (0.257)
var(e.Clients) _cons	0.843 *** (0.128)
var(e.Tasks) _cons	0.655 *** (0.103)
var(e.Transfer) _cons	0.542 *** (0.109)
var(e.Investment) _cons	0.495 *** (0.107)
var(e.Competitive) _cons	0.475 *** (0.107)
var(e.Recruitment) _cons	0.674 *** (0.112)
var(e.Interaction) _cons	0.558 *** (0.125)
var(e.Jobs) _cons	0.440 *** (0.0923)
var(e.Costs) _cons	0.847 *** (0.124)
var(e.Creativity) _cons	0.845 *** (0.154)
var(e.Discrimination) _cons	0.681 *** (0.124)
var(e.Responsability) _cons	0.685 *** (0.123)
var(e.Privacy) _cons	0.779 *** (0.140)
var(e.Results) _cons	0.786 *** (0.132)
var(e.Connection) _cons	0.996 *** (0.165)
var(e.AIP) _cons	0.279 * (0.110)
var(e.DSG) _cons	1.123 *** (0.257)

Table A4. Cont.

Estimates, <i>p</i> -Value, and Standard Errors	
var(e.CLG) _cons	0.383 *** (0.115)
var(PCFA) _cons	1.076 (0.831)
<i>N</i>	98

Note: “Standard errors in parentheses, * $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$ ”. Source: Own contribution in Stata 13.

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