RECONFIGURING HUMAN CAPITAL UNDER ARTIFICIAL INTELLIGENCE: A CONCEPTUAL ANALYSIS OF WORKFORCE RECONVERSION

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ABSTRACT: *Artificial intelligence has* now *radically transformed both the structure of work and the requirements for skills, prompting organisations to reconfigure their human resource management strategies. Although the literature mainly analyses the effects of automation and digitisation on the labour market, human resource reconversion remains insufficiently conceptualised, often being treated as an extension of upskilling or reskilling processes. This article develops an integrated conceptual approach to human resource reconversion under the influence of artificial intelligence, positioning it as an essential strategic response to the digital transformation process that organisations are undergoing. Through a critical analysis of the existing literature, the article clarifies the conceptual boundaries between reconversion and other forms of skills development and highlights the mechanisms through which AI determines the reconfiguration of human capital.*

KEY WORDS: *artificial intelligence; human resource reconversion; human capital; digital transformation; strategic human resource management*.

JEL CLASSIFICATIONS: *J24*, *O15, O33.*

1. INTRODUCTION

Rapid advances in artificial intelligence (AI) have generated profound transformations and continue to impact how work is organised, performed and evaluated within organisations. Advanced automation, intelligent decision support systems and algorithms capable of taking on complex cognitive tasks have changed not only operational processes, but also the very structure of the skills currently required of human resources. In this context, organisations are facing increasing pressure to adapt their human capital to new technological requirements in order to remain competitive in an economic environment characterised by dynamism and uncertainty.

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Recent specialist studies widely recognise the impact of artificial intelligence on the labour market, focusing mainly on the risks of job substitution, skill polarisation and the emergence of new professional roles. At the same time, existing research often treats human resource reconversion either as a one-off retraining process or as an extension of the concepts of *upskilling* and *reskilling*, without integrating it into a coherent conceptual framework that reflects the complexity of the changes brought about by AI. Thus, a significant part of the literature adopts a predominantly technological or macroeconomic perspective, paying limited attention to the organisational and strategic dimension of human resource reconversion. There is therefore a theoretical gap in understanding professional retraining as a systemic process, simultaneously influenced by technological capabilities, organisational culture, human resource management strategies and organisational learning mechanisms.

Recent specialist publications demonstrate that artificial intelligence (AI) is fundamentally reshaping the organisation of work and human capital management across all sectors of activity, not only by automating routine tasks, but also by transforming core human resource functions such as recruitment, training and performance evaluation, thereby prompting organisations to rethink their human resource development strategies in the digital age (Alsaif & Aksoy, 2023). Systematic analyses highlight that the rise of AI has produced persistent gaps between the skills required and those available, making upskilling and reskilling essential adaptive responses to technological disruption, but also revealing that current education and training systems are still insufficiently developed to meet these emerging requirements (Cramarenco et al., 2023). Empirical evidence also indicates that AI is increasing demand for complementary skills — such as digital literacy, teamwork and resilience — while reducing demand for substitutable skills, suggesting that human resource strategies need to go beyond incremental learning and aim for the reconversion of professional roles (Mäkelä & Stephany, 2024). Bodea et al. (2024) also confirm that AI adoption affects not only outcomes and performance, but also the nature of professional knowledge and development requirements, highlighting the importance of integrated upskilling/reskilling strategies within talent management systems. Taken together, these findings point to the role of reskilling as a strategic necessity for organisations navigating the complex interaction between technological change and human capital dynamics.

Recent studies show that AI is increasingly reducing the demand for easily codifiable skills, while significantly increasing the importance of technology-complementary skills such as critical thinking, creativity, complex problem-solving and socio-emotional intelligence (Autor, Levy & Murnane, 2003; Acemoglu & Restrepo, 2020; WEF, 2024). In this context, the retraining of human resources becomes a strategic process and not just a one-off reaction to these technological changes, being oriented, as mentioned by Frey & Osborne (2017), towards the reconfiguration of human capital for emerging roles and human-AI collaboration. Recent reports emphasise that successful organisations have adopted models of continuous learning and internal skills mobility, thus integrating professional retraining into human resource management strategies in order to respond to the dynamism of the labour market and sustain long-term competitive advantage (World Economic Forum, 2025; Bodea et al., 2024).

2. THE IMPACT OF ARTIFICIAL INTELLIGENCE ON THE LABOUR MARKET – PRESENT AND FUTURE PERSPECTIVES

At a time when artificial intelligence is evolving rapidly and profoundly transforming the labour market, we observe that it is often perceived either as a direct threat to jobs or as a tool that can support and streamline human activity (Csiminga, 2024, Mäkelä & Stephany, 2024; Lane & Saint-Martin, 2021). Data from the Ipsos study conducted in 2023 in 31 countries indicates that artificial intelligence is perceived globally as a major factor in the transformation of work. Most of the employees interviewed anticipate changes in the way they carry out their current activities, while a smaller but significant proportion expect some jobs to be completely replaced. The latest global report by Deloitte shows that six out of ten employees consider artificial intelligence to be a work colleague. (Deloitte, 2025)

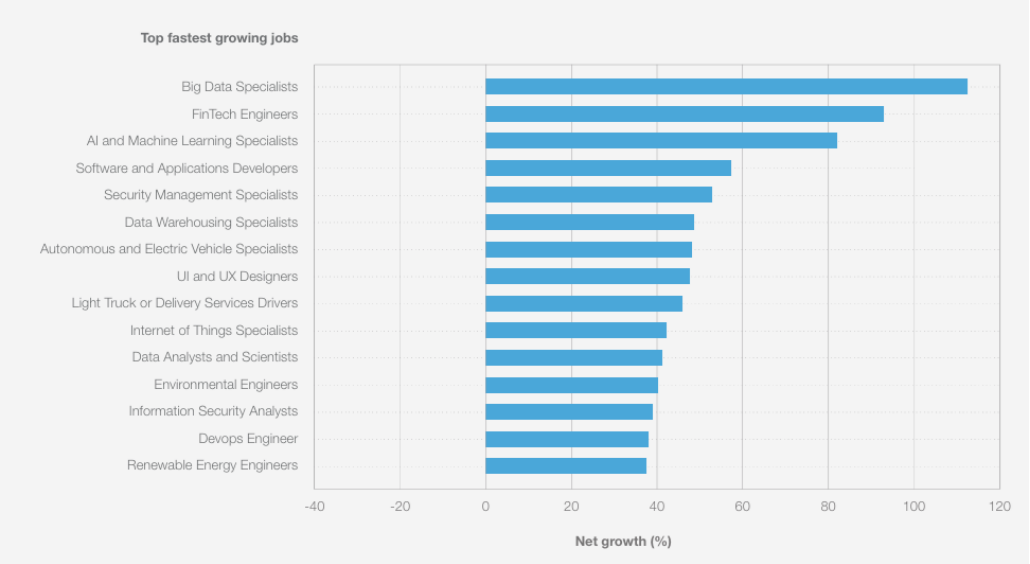
The perceptions of employees in Romania regarding the impact of artificial intelligence on work over the next five years show that more than half of respondents consider it likely that AI will change the way current activities are carried out, while around 40% believe that such a change is quite unlikely. The same study shows that only a third of Romanian respondents are concerned that AI could completely replace their current job, with the vast majority considering this scenario unlikely in the next five years (Ipsos, 2023). This differentiation suggests that AI is predominantly seen as a catalyst for work reorganisation rather than an immediate substitute for human labour. The same study highlighted that perceptions of artificial intelligence indicate a difference between emerging markets and high-income countries, between generations and education levels, suggesting that the adoption and acceptance of AI are deeply conditioned by the economic and demographic context. In this context, young people and those with higher incomes or education are more likely to accept AI in their activities, but it should not be ignored that one of the most common fears today is related to job losses (Ipsos, 2023).

However, not all professions are equally vulnerable. To understand what types of jobs cannot be 'stolen' by AI, it is essential to ask ourselves what truly makes us human. Among the fundamental traits specific to human intelligence, we find empathy, creativity, critical thinking, and the ability to make complex decisions in ambiguous contexts, aspects that technology cannot fully replicate (Lane & Saint-Martin, 2021).

In fact, the impact of AI on jobs depends largely on the nature of the activities, the degree of complementarity that can be established between technology and human skills, and the ability of employees, organisations or industries to adapt to new requirements (Kergroach & Héritier, 2025). On the one hand, we have occupations with a high degree of exposure to AI and a low level of task complementarity, where the risk of substitution is significant. These are repetitive, standardised and easily automated activities such as data entry, certain production operations or routine administrative processes that can be efficiently replaced by intelligent systems. In these cases, AI has profound implications, potentially leading to a reduction in the demand for human labour, lower wages and the need for retraining. For those affected, the transition can be difficult, especially in the absence of clear human resource strategies and adequate training programmes (Iloiu & Iloiu, 2024). A paradoxical aspect of the development of

artificial intelligence is precisely the fact that its impact extends to its own developers. Thus, the programmers and specialists involved in creating these systems may, in turn, be professionally influenced by the evolution and widespread integration of the technologies they have designed.

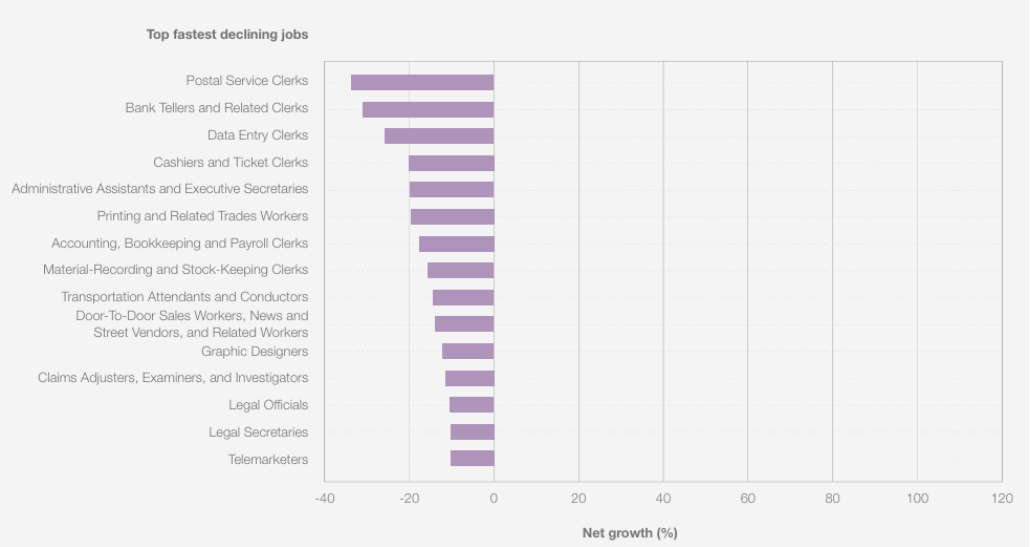
From the latest survey conducted by the World Economic Forum, we can see in Figures 1 and 2 the respondents' predictions regarding the categories of jobs that are more exposed or less affected by changes and the influence of AI. This indicates a decline in demand for certain jobs, particularly those involving administrative tasks, such as cashiers, ticket sellers, typists, administrative assistants, including accountants and auditors. The main factors behind this decline are directly linked to the expansion and implementation of AI technologies, while the same factors contribute to the growth of occupations in the field of security or those related to the transition to a green economy.



Source: World Economic Forum (2025 p.19)

Figure 1. Estimated categories of jobs with the fastest net growth

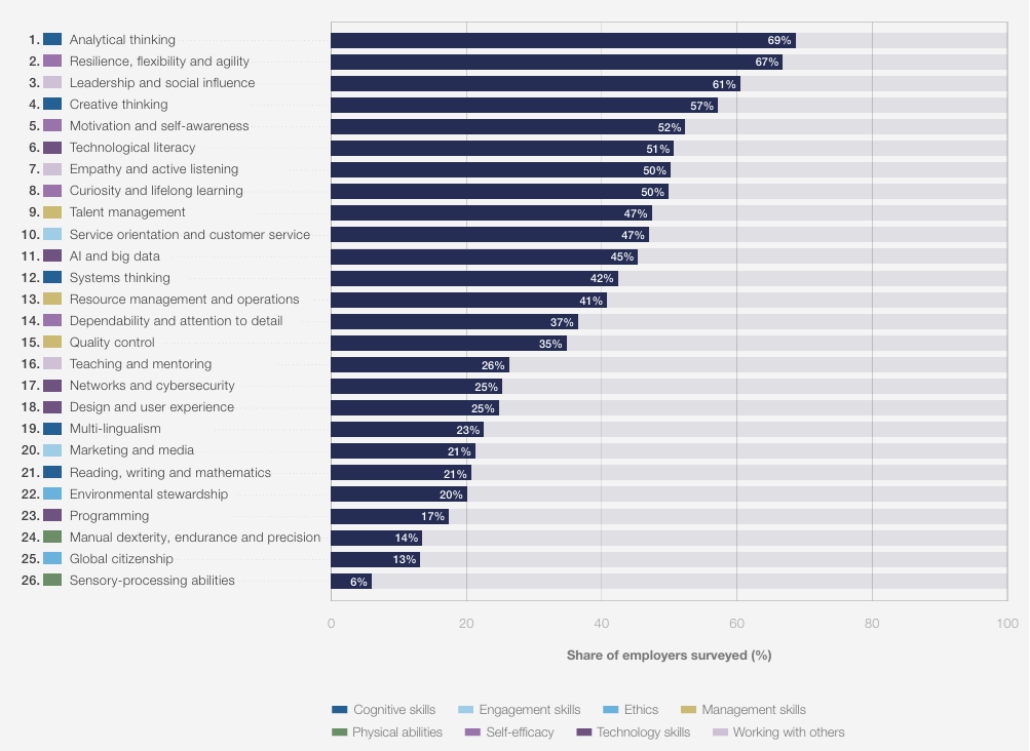
However, we must not ignore the fact that there are many areas where AI acts more as a facilitator, such as occupations that involve a higher degree of exposure but also a high degree of task complementarity, in which case technology can lead to increased productivity and quality of work.



Source: World Economic Forum (2025 p.19)

Figure 2. Estimated job categories with the lowest net growth

If we refer to professions such as those in the medical, legal, educational or managerial fields, i.e. those involving complex decision-making, high responsibilities and more subtle human interactions, we see that there are aspects that AI cannot fully reproduce. In these contexts, AI is seen as a "work colleague" that can provide analytical support, process large volumes of data or automate certain auxiliary tasks, thus leaving employees more time for specific creative, strategic or relational activities. But as mentioned above, AI is a double-edged sword. As an argument, I bring back the example of programmers, who need several hours to write a few lines of code, something that artificial intelligence can do in a few minutes. Furthermore, even a high degree of complementarity between humans and AI does not automatically guarantee job security. Employees who do not have the necessary skills to use and collaborate effectively with new technologies risk being marginalised even in areas considered to be seemingly protected. Thus, differences in digital skills and adaptability can lead to wage inequalities and reduced employment opportunities for certain categories of employees. In short, AI does not necessarily eliminate jobs, but it can profoundly change the profile of the skills required (Lane & Saint-Martin, 2021). As shown in the Annual Labour Trends Index Report for 2024 from Microsoft and LinkedIn, the new imperative for employment is employee skills in AI, as a central focus in all occupations and industries (Microsoft and LinkedIn, 2024).



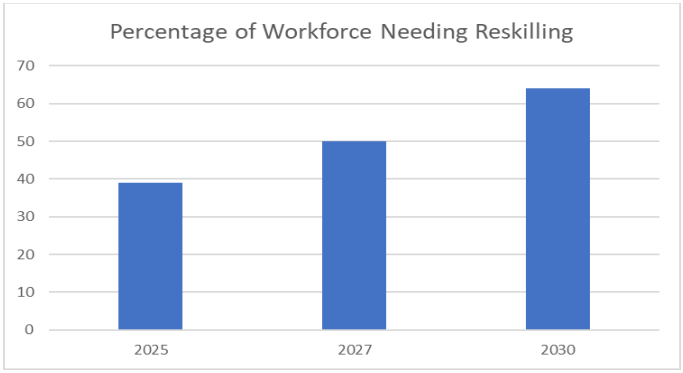
Source World Economic Forum (2025 p.35)

Figure 3. Percentage of employers and the skills they currently consider essential for their employees

The data shown in Figure 3 highlights a clear reconfiguration of the skills required in the labour market, where analytical thinking remains the dominant core skill, complemented by socio-emotional skills such as resilience, flexibility, agility and leadership. This combination underscores the importance of adaptive human resources capable of collaborating effectively and managing the complexity of today's tasks. Looking ahead, technological skills, particularly artificial intelligence, big data and cybersecurity, are expected to see the fastest growth in importance in the near future, alongside creative thinking and a focus on lifelong learning. At the same time, there is a decline in the relevance of physical and traditional basic skills, which clearly indicates a structural transition towards an occupational profile with a greater emphasis on cognitive, digital and socio-emotional skills, taking into account, of course, the significant variations that exist between different sectors of activity.

However, although the transition brought about by the adoption of AI and new technologies will certainly involve a significant restructuring of employment, forecasts indicate a net positive potential for job creation globally. According to the latest study published by the World Economic Forum (2025), it is estimated that around 170 million jobs will be created in the next 5 years, while 92 million of them will be replaced (WEF, 2025).

Although the global outlook indicates a net increase in employment by 2030, structural transitions in the labour market risk exacerbating the skills gaps between growing and declining roles. In this case, what will make the difference between jobs that are resilient or growing and those in decline is the emphasis on skills that include: adaptability (resilience, flexibility and agility), resource and operational process management skills, quality assurance and control skills, as well as programming and digital literacy skills.(WEF, 2025). Nastase et al. (2025) argue that harnessing such potential is, however, conditional on strategic investments in reskilling, the development of inclusive talent management systems, and the existence of governance frameworks that harmonise technological adoption with social objectives.



Source: Adapted from Singh&Singh (2025, p.559)

Figure 4. Projected Global Workforce Reskilling Needs (2025-2030)

The bar chart in Figure 4 highlights not only the growing need for reskilling initiatives across various industries, but also signals a major strategic pressure on organisations. In the context of accelerating technological disruption, projections indicate that over 65% of employees will need to develop new skills by 2030 (WEF, 2025). This trend requires organisations to adopt proactive workforce planning strategies, integrate upskilling and reskilling programmes into human resource policies, and rethink role architecture in order to maintain their competitiveness and performance in the long term.

3. HUMAN RESOURCE RECONVERSION AS A STRATEGIC RESPONSE TO THE INFLUENCE OF ARTIFICIAL INTELLIGENCE

3.1. Professional reconversion vs. upskilling and reskilling

The accelerated transformations generated by artificial intelligence and the digitisation process have brought concepts such as professional reconversion, training and workforce reskilling back to the forefront. Although these concepts are often used interchangeably in public discourse, I believe they refer to distinct processes with different implications for human capital and employment policies. To reduce conceptual ambiguity, I begin this analysis by clarifying them.

Conceptually, professional reconversion, upskilling, and reskilling are three terms that essentially represent distinct mechanisms through which organisations currently respond to changes in employee skills brought about by technological developments. If we were to define these terms, we could say that upskilling refers to improving existing skills within a role, while reskilling involves acquiring completely new skills for a different role when traditional tasks become obsolete, as in the case discussed, due to digital technologies and AI.

Consequently, upskilling does not involve changing professions, but rather aims at an incremental improvement of skills within an existing job, essentially representing an evolution within the same career path. According to the World Economic Forum, upskilling is essential in the context of AI because "technology changes the content of work, not necessarily the occupation itself" (WEF, 2025). This process allows employees to remain relevant and competitive in the labour market as the productivity and added value of their work increases.

Unlike retraining, reskilling is often more targeted and faster, aiming at less radical occupational transitions. The OECD defines reskilling as "the process by which employees acquire the skills necessary to move to another role as a result of technological or organisational changes" (OECD, *Skills Outlook*, 2025).

Both in written literature and in practice, reskilling overlaps with professional retraining/reconversion, as they are related terms, but not always identical. I consider reskilling to be an educational process focused on acquiring new skills, necessary for adapting to changes in the labour market or for changing roles. In contrast, professional retraining/reconversion is a broader approach to career change, in which reskilling can be one of the essential steps. As such, in this case, professional retraining is a strategic, systemic process aimed at reorganising human capital to respond to major structural changes affecting the work and skills of employees. We are thus talking about three mechanisms that can be viewed as part and whole: upskilling and reskilling are the practical tools within a professional retraining process, all subject to the imperative of lifelong learning in a context increasingly dominated by artificial intelligence.

3.2. Conceptual model for integrating the human resources retraining process into organisational strategies under the impact of artificial intelligence

Organisations that adopt AI on a large scale develop certain retraining strategies that include, among other things, assessing the current skills of employees, identifying gaps and designing integrated training programmes, internal mobility and restructuring roles to ensure adaptation to new labour market requirements. While *upskilling* and *reskilling* are essential for bridging the gap between existing and emerging skills, essential reskilling strategies go beyond simple training, making HR a strategic partner in workforce planning. (Li, 2024)

In the same vein, Singh and Singh (2025) emphasise that the digital transformation generated by AI does not eliminate work, but transforms the structure of skill requirements, which requires a coherent approach to human resource management geared towards continuous learning and adaptability.

To support and reinforce the arguments presented above, we have proposed a theoretical model that conceptualises the process of professional retraining/reconversion as a mechanism for mediating between the adoption of artificial intelligence and organisational performance. The proposed conceptual model supports the vision of the role of human capital in the digital age by highlighting retraining as a critical mediating variable that determines whether the adoption of and adaptation to artificial intelligence translates into real organisational performance. This approach complements traditional views that consider technological adoption to be self-sufficient in ensuring organisational progress, emphasising once again the importance of investing in human skills.

Thus, according to Figure 5, artificial intelligence is conceptualised as a disruptive force that changes the structure and content of work. All these transformations lead to changes in the demand for skills, often generating mismatches between existing and required skills, which creates certain organisational pressures related to employability, productivity, and competitiveness. In this whole picture, human resource reconversion is positioned as a strategic organisational response, mediating the relationship between AI adoption and organisational performance. It is a process that ensures and consolidates the complementarity between employees and artificial intelligence, seen as a support tool that strengthens technological absorption capacity. The end result of this approach is an improvement in organisational performance in the medium and long term.

4. CONCLUSIONS

Recent advances in artificial intelligence have amplified fears about the loss of traditional jobs or the real value associated with old skills. However, theoretical and empirical evidence indicates that the impact of AI on employment is predominantly transformative rather than substitutive.

The effects of AI on an organisation's performance depend on several variables, including the mode of implementation, the institutional context, and the ability of employees to use artificial intelligence and technology in a complementary manner. Thus, AI can be seen as having the potential to increase productivity and work quality, but only under the conditions of appropriate strategies for adoption and skills development that limit risks (Lane & Saint-Martin, 2021).

In other words, the success of AI adoption does not derive solely from the implementation of new technologies, but above all from the ability of organisations to develop the relevant skills at individual and collective level. As such, we can say, based on recent developments, that artificial intelligence acts as a catalyst for professional reconversion, prompting organisations to rethink their human capital development strategies, prioritise continuous learning and institutionalise systematic upskilling and reskilling processes to ensure the adaptability of human resources to the new reality.

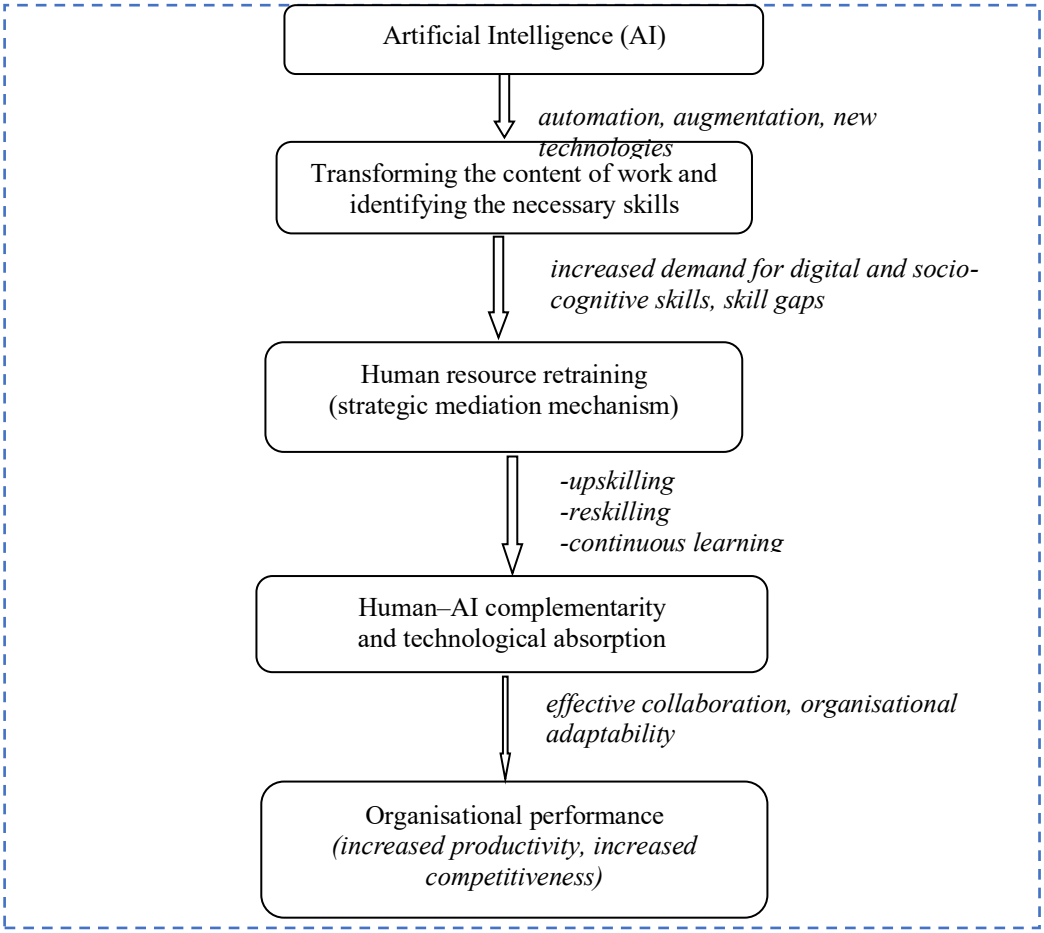


Figure 5. The mediating role of the human resources reconversion process – conceptual model

In this context, the role of the human resources function becomes essential, as through professional reconversion it has the capacity to facilitate the effective integration of people and technology and to support the development of skill portfolios that adapt to the future requirements of the labour market, with benefits for both organisations and society as a whole. The proposed theoretical model emphasises precisely this strategic role of retraining in mitigating the skills gaps generated by the 5.0 industrial revolution and facilitating the alignment of new technological requirements with existing human capital. Thus, reconversion is not treated only as an operational adaptation tool, but as an essential intermediate variable in the relationship between AI implementation and organisational outcomes.

Consequently, artificial intelligence is not inherently a factor contributing to job destruction, nor is it a guaranteed ally of employees, but depending on the context, it can be associated with both situations. Therefore, the future of the labour market will depend on how people, organisations and state institutions manage to develop complementarity

between human skills and AI through investment in education, retraining and inclusion policies. Only in this way can AI become a true "work colleague" and not a social threat.

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