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Article

The impact of artificial intelligence on intellectual capital development: Shifting requirements for professions and processes in the non-profit sector

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Abstract: The use of artificial intelligence (AI) is related to the dynamic development of digital skills. This article focuses on the impact of AI on the work of non-profit organizations that aim to help those around them. Based on 10 semi-structured interviews, it is presented here how it is possible to work with AI and in which areas it can be used—in social marketing, project management, routine bureaucracy. At the same time, workers and volunteers need to be educated in critical and logical thinking more than ever before. These days, AI is becoming more and more present in almost all the activities, bringing several benefits to those making use of it. On the one hand, by using AI in the day-to-day activities, the entities are able to substantially decrease their costs and have the advantage of being able to have, in most cases, a better and faster job done. On the other hand, those individuals that are more creative and more innovative in their line of work should not feel threatened by those situations in which organizations decide to use more AI technologies rather than human beings for the routine activities, since they will get the opportunity to perform tasks that truly require their intellectual capital and decision making abilities.

Keywords: artificial intelligence; digital technologies; intellectual capital; sustainable development; non-profit

1. Introduction

Nowadays, digital technologies are responsible for irreversibly transforming both the nature and the scope of human beings activities (Adamides, 2023; Krstić et al., 2023). Hence, among the specific features that characterize the digitization processes these days the capacity to automate activities that are based on significant human effort and input can be encountered (Ali et al., 2023; World Economic Forum, 2023). Under these circumstances, the most recent developments in artificial intelligence domain offer machines the possibility to process large unstructured data sets based on different and complex algorithms that are cable to constantly adapt to the environment in which they operate, in order to be able to perform those tasks that would normally require human intelligence (Aslam and Nisar, 2023; Organisation for Economic Co-Operation and Development (OECD), 2024g).

This article focuses on a very important and up-to-date topic represented by the impact of artificial intelligence on intellectual capital development, while aiming to tackle the shifting requirements for professions and education in the non-profit sector.

On the one hand, the study offers interesting insights into the increasing importance and role of artificial intelligence being concerned to what extent the implementation of artificial intelligence tools in organizations will affect the development and evolution of intellectual capital. On the other hand, the article offers a practical perspective which aims to emphasize the shifting requirements for professions and education in the non-profit sector, in this manner providing a better understanding of the way in which artificial intelligence and intellectual capital can join forces and bring together a substantial contribution to organizational performance. In this general context, it ought to be highlighted that this article will bring original and valuable insights of the theme chosen for analysis, since it will stress unique characteristics in terms of theoretical, managerial, and policy implications, while the interviews displayed will pain a concrete image into how implementing artificial intelligence in organizations will affect human resource, human resource management, human resource processes, and the entities performance. In line with the aspects emphasized so far, it out to be noted that the article advances an in-depth research analysis that draws attention not only towards the constructive and positive side of the relationship between artificial intelligence and intellectual capital development, with the accent placed on the non-profit sector, but, also, towards the negative economic and social of artificial intelligence, especially for more traditional or smaller entities which are at risk in an artificial intelligence economy.

According to a valuable definition provided by the Council of Europe, artificial intelligence represents “a set of sciences, theories and techniques whose purpose is to reproduce by a machine the cognitive abilities of a human being” (Council of Europe, 2022). Hence, reputed specialists believe that current developments in the area of artificial intelligence regarding different profession and education target, for example, “to be able to entrust a machine with complex tasks previously delegated to a human” (Council of Europe, 2022).

Another major definition states that artificial intelligence refers to “machine-based systems that can, given a set of human-defined objectives, make predictions, recommendations or decisions that influence real or virtual environments” (United Nations Children’s Fund (UNICEF), 2021). In continuation to the aforementioned ideas, researchers point out that artificial intelligence systems have the capacity to interact with individuals and act on the environment of people, “either directly or indirectly”, often seeming “to operate autonomously”, since they “can adapt their behaviour by learning about the context” (United Nations Children’s Fund (UNICEF), 2021).

What is more, artificial intelligence is present these days in almost all activities that human beings perform, which raises numerous concerns regarding the influence and major changes that this new and daring approach has brought already or will bring in the near future in terms of intellectual capital development (Popescu, 2023; Srivastava, 2023; Organisation for Economic Co-Operation and Development (OECD), 2024d).

Furthermore, artificial intelligence (AI) is nowadays an important part of the human resource practices as well as organizational performance which implicates that it has the tremendous capacity and power to change and influence all the ecosystems that are part of people’s lives, based on the fact that the adoption of

artificial intelligence techniques adds value in human resources management (Šebestová and Popescu, 2022; Organisation for Economic Co-Operation and Development (OECD), 2024e).

Going even further with the current analysis, it needs to be mentioned that technology, in general, and artificial intelligence tools, in particular, may impact the processes, the practices, and the outcomes of all entities worldwide, but, in particular, the ones that belong to the non-profit sector (European Commission, 2021; White House, 2022). It is the specialists' strong belief that the impact of artificial intelligence on intellectual capital development is of substantial importance, since these new technologies will have the power to augment and replace tasks and steps dedicated not long ago to human beings and which are already in the care of artificial intelligence tools, leaving more place and more time to individuals to focus on other activities that require creativity, innovation, and research (European Parliament, 2023; Pars et al., 2023; Organisation for Economic Co-Operation and Development (OECD), 2023e).

In other words, scholars dedicated to the study of artificial intelligence had the chance to reflect on influence and role of artificial intelligence on intellectual capital development, reaching the following key ideas: (a) these new technologies may represent, on the one hand, a valuable method of saving costs and achieving benefits and productivity and, on the other hand, a fundamental innovation tool (Ashraf et al., 2023; Lasisi et al., 2023); and (b) although these new technologies may lead, initially, to a seismic shift in terms of the massive changes occurring in the social, economic, financial, technological, and political landscapes, they will ultimately determine people to continuously focus on improving their skills and innovative capacities (Bhatia et al., 2023; United Nations Educational, Scientific and Cultural Organization and UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training UN, 2021).

However, there are numerous concerns with regard to the implications of the use of artificial intelligence on intellectual capital development and on the manner in which these new forms of technology will affect human resources (Management Association, 2017; Jaber, 2024). For instance, popular concerns abound that the implementation of artificial intelligence technologies at a large scale will lead to unemployment and will enhance inequalities, since these new tools threaten the low-skilled service-based work (for example, the call centres) as well as professional work (for example, financial services, legal work, or medical care facilities) (Popescu, 2020; Skhvediani et al., 2023).

That is the reason why the implementation of artificial intelligence tools and technologies must be done in responsible manner, showing a great concern towards the needs of individuals and the sustainable development of the environment (Popescu, 2021; Saxena, 2022). In this matter, there are numerous categories of individuals and of activities that would substantially benefit from the implementation of artificial intelligence, as shown in the lines below: (a) when focusing on self-efficacy, the education sector could focus on the large skill-gap and labour shortage in the key job roles that require, for instance, the use of specific knowledge for the implementation of complex artificial intelligence systems in entities (Bugarčić and Slavković, 2023; Hama and Cavusoglu, 2023); and (b) when focusing on

performance, the decision systems and the decision making processes should benefit from the valuable implication of human resources who should be trained accordingly so that a hybrid model could be generated under the form of hybrid artificial intelligence-human model or human-artificial intelligence model for the benefit of the entities (Chowdhary, 2023; Del Baldo and Palazzi, 2023).

The authors strongly believe that there are very powerful connections between key concepts such as "sustainable development" and "digital technologies" and the impact of artificial intelligence on intellectual capital development, which implicates the utmost necessity to closely analyse and to better understand the shifting requirements for professions and education in the non-profit sector. In this matter, recent studies highlighted the fact that the implications of artificial intelligence on productivity, distribution, and growth are unprecedented (Filippucci et al., 2024; Organisation for Economic Co-operation and Development (OECD), 2024a). Hence, it ought to be mentioned that economic productivity and societal well-being are directly depending on the economics of artificial intelligence and the way in which artificial intelligence shapes the management of human resources and digital technologies centring on accelerating creativity and innovation in various industries (Ugale & Hall, 2024; Organisation for Economic Co-operation and Development (OECD), 2024b). There are also various advantages that need to be highlighted when closely analysing and better understanding the shifting requirements for professions and education in the non-profit sector, such as: (a) first of all, based on the most recent discoveries in the field, artificial intelligence significantly influences autonomy and self-improvement, having the immense capacity to revive sluggish productivity growth to such an extent that industries will become more resilient and robust (Georgieff, 2024; Lau et al., 2023); (b) second of all, although there might be a level of uncertainty in terms of the artificial intelligence's long-term impact on productivity, according to most recent researches in the area of sustainability and sustainable development artificial intelligence is pivotal to ensuring beneficial development, promoting competition derived from better implementing knowledge and intellectual capital, enhancing accessibility, and addressing the matters related to job creating, job displacement, and inequalities in today's society (Green, 2024; Borgonovi et al., 2023); and (c) third of all, artificial intelligence is utilized in the context of the development of future skills, which encompass not only digital skill and competence but also collaboration, communication, and fostering a culture of lifelong learning, which makes education processes pivotal in any society (Organisation for Economic Co-operation and Development (OECD), 2024c; United Nations Educational, Scientific and Cultural Organization (UNESCO), 2021).

In continuation to the aspects mentioned, artificial intelligence plays a major role and has a profound impact across all systems, no matter if these systems are education systems, health systems, industry systems, or non-profit sector systems (Anderson and Sutherland, 2024). There are several motivations in this regard that require very close consideration, as follows: on the one hand, the debate might lead to transforming all these systems, namely the education systems, health systems, industry systems, or non-profit sector systems, based on the fact that it is artificial intelligence responsibility to accelerate individuals and entities the efforts to become more secure, resilient, equitable, sustainable, and human-centred or person-centred

(Organisation for Economic Co-operation and Development (OECD), 2023a); nevertheless, on the other hand, the discussion could lead to focusing on better outcomes for all when referring to all these systems, taking into consideration the capacity to adapt to change, the desire to show respect towards individuals, and the aims of implementing trust while collaborating and cooperating at the highest levels possible (Touzet, 2023; Organisation for Economic Co-operation and Development (OECD), 2023d).

What is more, reputed specialists believe that these days at the very core of the most recent advances in terms of artificial intelligence may be encountered the nexus between "sustainable development" and "digital technologies" (Calvino et al., 2023). In this regard, there are several ideas that ought to be emphasized, as follows: (a) firstly, in terms of education and lifelong learning programs, artificial intelligence offers individuals, communities, and entities the possibility to become more and more original and creative, hence leading to the creating of artificial intelligence patents which are responsible for broader technological scope relying on sustainability features (Organisation for Economic Co-operation and Development (OECD), 2023b); and (b) secondly, in terms of education and lifelong learning programs, artificial intelligence fosters new technologies that are related to robotics, computer-image vision, recognition-detection programs, autonomous driving, and deep learning (Organisation for Economic Co-operation and Development (OECD), 2023c; Lorenz et al., 2023).

2. Materials and methods

This pilot study, focused on AI use in non-profit organizations was conducted following the Consolidated Criteria for Reporting Qualitative Research (COREQ) guidelines published by Tong, Sainsbury and Craig (2007), using grounded theory approach (Chun Tie et al., 2019). Within the non-profit organizational context, this approach recognizes groups within different settings, such as people who share common settings (shared values, to help people, community, environment) or groups of people who share a similar issue (profession in non-profit sector). NGOs were selected as a target group for this initiative because they are open to the use of digital solutions that can save them time and money, provided that these solutions are made accessible through an open platform or at a minimal cost.

Participants. The inclusion criteria were following: The study involved 12 respondents to be interviewed face to face during November to December 2023. Each interview was 30 to 40 minutes. The inclusion criteria into that pilot study consisted of the following: (a) people, whose workplace was within non-profit organization at the time of the study, (b) with at least two year of experience in teamwork leadership, human resource development or other type of personal work within the organization (d) willingness to communicate, (e) has previous experience with AI and (e), who had signed the informed consent. In the end, because three of the 12 participants had no experience with AI, 9 of them completed the interview (R9, R10, R12). All reported participants had to meet the previously defined criteria, when snowball sampling strategy was used to make a contact with other participants. Semi-structured interviews were used to collect the data for this study. The

interviews were guided by a set of open-ended questions based on the benefits of AI to the organisation (Chowdhary, 2023). **Table 1** shows the main themes and the related questions used to explore the theme.

Table 1. Question scenario.

Main theme	Scenario questions
Personal experience with AI	Do you have your own experience with AI tools? How do you feel with this powerful tool? What is your opinion about the result you got from AI powered tool?
Opportunities for organization with AI use	Do you see any areas to use AI to help you? Could AI save your time?
Threats for organization with AI use	Do you see any risks to involve AI into non-profit process? Do you feel some connection with persons, who use AI results?
Challenges for personal work with AI component	What would change in your organization AI presence? Do you plan any seminars, workshops? Do you think that your workers/volunteers needs more skills to use AI tools?

Source: Own research design.

The interviews were all accompanied by notes taken by the researcher. The researcher took notes throughout the 12 semi-structured interviews, which lasted a total of 420 minutes. This resulted in 12 sets of notes. The recruitment of the participants was stopped when there was a repetition in the information that was obtained from the interviews (Chun Tie et al., 2019, Shenton, 2004). This occurred during the interview with participant number 12. The texts underwent thematic analysis based on Guba and Lincoln's (1985) criteria: credibility, transferability, dependability, and confirmability. To ensure credibility, all notes and materials were checked. Transferability was achieved by providing detailed descriptions of all procedures and data collection. Dependability was established by having another researcher externally check the results. Finally, confirmability was ensured by conducting a final reflection on the activities. (Miles et al., 2014).

Study limitations: This is a pilot study and a starting point for more extensive qualitative research and the results are not generalisable. The basic themes of the research can be found here, so that mixed research can be used in parallel sequences of both qualitative and quantitative types of research. NGOs differ in preferring which tools to use, particularly those which are easily accessible and free to use.

3. Results and discussion

In total, nine women and three men, with a mean age of 37.42 years (SD ± 4.76), participated in this study. The mean work experience in non-profit organization was 15 years (SD ± 4.69) and mean of direct personal work experience was 8.67 years (SD ± 3.95). The themes representing the participants' perspective were extracted from the non-participant observations, in-depth interviews, and researcher notes. Four themes came from the material analysed: (1) Personal experience with AI; (2) Opportunities for organization with AI use; (3) Threats for organization with AI use,

(4) Challenges for personal work with AI components. As seeing below, 75% of respondents have an active experience with AI technologies (**Table 2**).

Table 2. Respondent's structure.

Respondent (R)	Gender Male (M)/ Female (F)	Age	Work experience (years in total/years in team work, personal work)	Organization type	AI personal use
R1	F	30	10/8	Counselling	Yes
R2	F	35	12/9	Environment	Yes
R3	F	40	18/10	Community projects	Yes
R4	M	42	20/15	Youth work	Yes
R5	M	35	15/8	Community projects	Yes
R6	M	34	10/4	Community projects	Yes
R7	F	32	12/6	culture	Yes
R8	F	48	25/15	Culture	Yes
R9	F	33	10/4	Social work	No
R10	F	42	20/15	Social work	No
R11	F	40	18/6	Youth work	Yes
R12	F	38	10/4	Social work	No

Source: Own research.

3.1. Theme 1: Personal experience with AI

Most respondents reported having personal experience with AI tools, as shown in **Table 2**. The majority of them used free versions of chatbots, such as the Open AI software, Chat GPT, or support that was installed on their mobile phones or web browsers. They explained that they wanted to try out the tools before their colleagues did ("I want to try it before my colleagues did", R1), or that they had seen their children using the tools and wanted to explore the possibilities they offered ("I saw, how my children use this tool, so I want to see what is possible to generate or not" R8).

Three respondents who had no personal experience stated that they wanted to try it but did not have enough time for learning or experimentation.

Others responded that they needed personal experience to be prepared for comments from their team members or colleagues who were going to experiment in their work to make it easier (R5).

Finally, in small organisations such as non-profits, personal experience serves as a starting point for promoting or educating people on how to properly use AI or establish rules.

3.2. Theme 2: Opportunities for organization with AI use

Participants, involved, in this case have various ideas, how to see opportunities, generated by AI tools. Main ideas are presented in **Table 3**.

Table 3. Opportunities seen by AI use.

Respondent (R)	Comment
With previous experience	
R1	They can formulate English sentences more effectively and efficiently.
R2	This is particularly useful when creating support campaigns.
R3	Simplifying administrative work
R4	Generating ideas for creative activities, evaluating data, and preparing reports.
R5	Although we lack experience, we intend to utilise it for social media content creation.
R6	We utilise chat GPT chat when drafting grant applications, as it is typically beneficial.
R7	It is a valuable tool for comprehending unclear meanings, saving time, producing visually appealing outputs, and generating interesting texts. It is an essential tool that should not be overlooked.
R8	Saves time, graphically beautiful outputs, quick information, interesting texts. The benefits of implementing this tool in our organization's activities would be minimal.
R11	It can save a significant amount of time in research, copywriting, and writing project applications. However, it should be used as an assistant and checked for accuracy.

Source: Own research.

The responses were split between those that had personal experience of Theme 1 and those that had no personal experience. In the group of those who have no personal experience, the predominant opinion is negative, i.e. they cannot imagine how they could use AI resources for the organisation (R9-10). The exception is R12, who thinks about the possibility of using it for copywriting or administrative work if they learn how to use it (R12).

On the other hand, in the second group we can already see concrete benefits—both in terms of using it for translation into a foreign language, for copywriting or for routine searches for the basis of analysis needed for project applications.

It is clear from their opinions that there is a particular benefit for copywriting, creative headlines or supporting documents for marketing purposes. This is especially true when NGOs have limited resources for these activities. In addition, the writing of project proposals—the drafting of texts based on the documents provided—is seen as a time saver. Here AI tools are seen as a helper, translator, search engine, proof-reader of texts.

3.3. Theme 3: Threats for organization with AI use

With the advent of new technology, there are also potential threats, which may result from lack of experience and non-existent behavioural patterns in the use of the new AI technology (**Table 4**).

Table 4. Threats seen by AI use.

Respondent (R)	Comment
With Previous experience	
R1	People will be willing to work more if AI does the work for them.
R2	I think the work of some members of the organisation is at risk of being replaced by AI.
R3	I would hate to see AI replace human potential.

Table 4. (*Continued*).

Respondent (R)	Comment
With Previous experience	
R4	Putting sensitive data into AI tools and then abusing/detecting it, using AI outputs indiscriminately.
R5	The security aspect of someone using AI to steal our identity, for example.
R6	Too much technology—lack of personal insight, added value—even the text of the challenge formulated by chatGPT is often changed to better reflect the views of the group.
R7	It is necessary to select the information, some of which is distorted and not entirely accurate.
R8	I'm afraid people will rely on it and become somewhat "stunted".
R11	I don't see a threat. It's important to know how to work with it and look for opportunities. It only threatens those who stop learning new things.

Source: Own research.

This table shows that the inexperienced respondents do not see this as an opportunity or a threat, with the exception of respondent R11, who reflects on the fact that the technology will actually make people appreciate not using the technology when working with it, which is also a challenge for organisations—to ensure that the services they provide to the community do not become a routine matter that could simply be replaced by AI technology.

On the other hand, the experienced group consistently raises the issue of security, identity theft, and reduced human development if we don't learn to use technology as a facilitating tool. They therefore argue that we need to keep learning and keep learning (R11).

To summarise the threat, in non-profit organisations that are set up to serve the public good, the threat tends to be in stunting the potential of the press. According to the interviewees, AI is not able to assess and respond to their needs with empathy. AI tool can do situation assessment, which they have to do in order to create projects. The danger is seen in relying too much on AI's search results, as opposed to their own input and critical thinking, which could lead to poor judgement or misinterpretation.

3.4. Theme 4: Challenges for personal work with AI components

In this topic, the respondents thought about working with new workers or volunteers within the organization. What competencies, including digital ones, will be needed for AI-enabled tools to be used properly (**Table 5**).

Table 5. Challenges for human resources.

Respondent (R)	Comment
With previous experience	
R1	They will tend to leave the work to AI.
R2	Above all, it will change the way we think about solving problems. The fundamental angle will not be how to solve the problem, but what question to ask the AI to solve it.
R3	I think we are in danger of dulling our minds: we can always use AI when we want an answer to a question.
R4	There may be a loss of some administrative work and more use of data in the organisation. However, employees will need to be able to use the technology with care—they will need to be trained. Such training could also provide them with tips on how to use AI appropriately.

Table 5. (*Continued)*.

Respondent (R)	Comment
With previous experience	
R5	It will certainly help to track down important information, which can save a lot of time. I am not yet in a position to say whether this tool will also help education.
R6	Yes, we would like to inspire the AI team, and we can also see it being used in the field of psychohygiene, for example (e.g., Calmio, suitable for aviation workers).
R7	At the moment probably not, but in the future it could force people to think less and be creative.
R8	You should learn to use it wisely. But don't just rely on AI.
R11	Yes, it can help them to work across disciplines. But to do this, workers need to have excellent critical thinking skills.

Source: Own research.

In this study, it was revealed that attention must be paid to the development of critical thinking, work on information and content analysis. You can't simply use an automated tool without checking its reliability. The results of qualitative research gave the idea of these four areas where artificial intelligence will intervene.

Intellectual capital and knowledge are highly important these days, especially in these times in which entities have decided to rely more and more on technology, digitalization, and AI. According to all these new trends, entities worldwide have become to rely more on individuals in terms of research, innovation, creativity, and decision making processes.

Social marketing. Non-profit organizations have limited resources for marketing communication. AI is used as a tool for creating advertising texts, placing them on social networks, creating copyrights, or translating them into other languages. (Theme 2). These powerful AI tools help enhance the opportunities that marketing communication can offer in terms of social marketing in the case of non-profit organizations, which due to limited resources are constantly under a great pressure to survive and develop on the marketplace, especially in developing countries. This supports and extends works of Bowen and Ozuem (2015), Ozuem and Bowen (2016), Management Association (2018a), Chiweshe and Ellis (2019), Chowdhary (2023).

Project management. As part of project management, AI become a good support for searching for information, creating reports for a specific section, compiling reports from sources supplied, and conducting research within everyday life. (Theme 2), what is continuing in works of Management Association (2016, 2018b), Popescu (2020), Naidoo and Verma (2022), Al-Dalain and Alnsour (2022), Baporikar (2022), Alzoubi and Snider (2022), Miao et al. (2021), and Bugarčić and Slavković (2023). It ought to be highlighted that project management and productivity assessment are of extreme importance for non-profit organizations, especially in turbulent times such as the ones the economy and the society currently face. Since non-profit organizations have limited resources and are extremely sensible to all the changes and challenges that occur these days in the society, these organizations rely in most cases on substantial investments in implementing an adequate project management as well as the right resource planning systems.

Routine bureaucracy. General processes will be increasingly automated and digitized, using artificial intelligence to save time and allowing organizations to

focus on their core community mission rather than bureaucracy. (Theme 2). These days, according to specialists bureaucracy represents, in most cases, an area in which non-profit organizations dedicate a lot of time, which means that the use of AI tools might offer the opportunity to perform the same tasks at a faster pace which confer an advantage to those entities relying in their activities on AI technologies and techniques. This supports and extends works of Badru (2019), Pinterič (2017, 2020), Ramanathan and Ramnath (2009) and Maimone (2020).

New skills for non-profit organization employees. For existing or new employees, AI is primarily a challenge due to security and data management as well as identity protection, which have to learn and discuss. On the other hand, workers must learn to work with the information they have obtained, to verify or change it to match reality (Theme 3 and 4). AI substantial use implicates the fact that non-profit organizations will have to rely more and more on these types of resources which have the advantage that they will offer the change to individuals to enhance their skills in order to cope with the changes and challenges derived from the use of Information Technologies. This area is a real reaction on Csillag et al. (2017, 2018), Santos et al. (2021), and Bhatia et al. (2023).

4. Conclusion

The results obtained raise awareness regarding the importance of AI played by the non-profit organizations. In this given context, the non-profit organizations see this tool as a challenge for their work, especially in administrative area, to reduce the time spending by paperwork. In the same line with the aspects mentioned above, it ought to be stressed that AI tools use in the non-profit organizations might be used in the ethical way and they cannot replace direct social work or support for youth creativity development. This preliminary study has highlighted the limitations of the research, namely to number of respondents and their structure.

A content analysis of the text was created from all interviews using the free word cloud generator tool (Free Word Cloud Generator, 2024). This involved entering transcripts of all interviews and creating word clusters.

This analytical process enables the generation of themes that may be further developed in subsequent qualitative research. Alternatively, these themes may be employed in conjunction with a quantitative approach within mixed research methodologies.

Figure 1. Word map of main topic.
Source: Generated using Free Word Cloud Generator (2024).

During the first phase, 68 key words were identified in five distinct colour clusters: purple (the primary theme), turquoise and green (subthemes), red and yellow (features and options). **Figure 1** illustrates a reduction in the number of words when they were encountered at least five times in the interview transcripts.

For clarity, the word count has been reduced to 22, with the main theme clearly and subtly linked to the use of AI (purple cluster), outputs (green cluster), and ways of working (turquoise cluster, **Figure 2**).

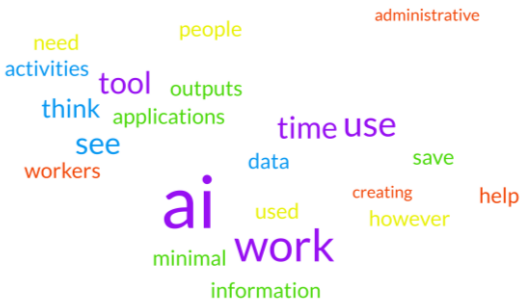

Figure 2. Word map of main topic-reduced.
Source: Generated using Free Word Cloud Generator (2024).

The purple cluster represents a connection between AI, tools, work, and time; it represents a tool for saving time. The green cluster considers outputs in terms of accomplishing them with minimum input information (hence saving time). The turquoise cluster illustrates the manner in which AI can be employed to facilitate the acquisition of data and the subsequent analysis thereof. The red clusters represent potential avenues for further investigation, including the utilisation of AI by workers and the provision of assistance. This clustered analysis serves to guide the research process, offering insights that emerged from the pilot qualitative research.

The current paper successfully explored how artificial intelligence (AI) has become, over the last years, incorporated into the limitless facets of the modern life. As it was acknowledge in this current scientific work, AI tools are slowly but most certainly transforming, on the one hand, the way in which business professionals operate and, on the other hand, the manner in which the non-profit professionals come to depend on, in terms of data research that is so complex that is no longer accessible to human intelligence, fundraising campaigns, capital campaign consulting activities, and many other activities that are part of non-profit entities routine.

In particular, the impact of AI on intellectual capital development is unprecedented, being clearly seen by specialists referred to in this current study as a tool capable to shift the requirements for professions and education in the non-profit sector, with a particular focus on the following pivotal aspects: (a) first of all, non-profit organizations can use AI applications and complex machine learning instruments and tools in order to streamline and improve the way in which the marketplace can be viewed, hence improving the manner in which it can be better and more reliable segmented, thus becoming more clear how efficiency can be increased, to whom the fundraising campaigns (with the aid of donor management) should be addressed, and in what manner the errors usually occurring due to “human

error" can be avoided; (b) second of all, taking into consideration that AI systems are set up in an optimum manner, non-profit organizations can successfully come to rely over time on AI systems in order to enhance their employees productivity and increase their operational efficiency making decisions based on the results from cognitive technologies; and (c) third of all, in the education system AI tools have become more and more used on a day-to-day basis by individuals and professionals, in particular, given the novelty of these instruments and the possibilities that these instruments offer to their users.

Besides all the aforementioned key ideas, non-profit organizations like the rest of the entities on the marketplace could become more and more interested in the insights that AI dedicated instruments, powerful tools, and complex systems offer them, so that, on the one hand, they are able to see which are their customers' preferences and, on the other hand, they are able to predict their customers' preferences on the medium and long term.

What is more, the success of the non-profit sector highly depends on finding solutions aimed at offering the customers a better and a personalized experience, hence creating the required atmosphere capable to make people feel special and part of a process capable to fulfill the void left behind by other entities on the marketplace.

Furthermore, another very interesting use of AI systems for the non-profit sector could be to create and to apply those writing tools that may successfully and responsibly act in preparing the fundraising materials, bid writing, "speech to text" tools for the meeting minutes, or even drafting speeches or policies, as long as the entire process is closely monitored and constantly verified by humans so that no errors will appear on the way.

All in all, it can be concluded that the AI algorithms and systems can drive impact to any type of organization, including the non-profit organizations, as long as the AI algorithms and systems are provided with accurate historical data and reliable real-time information, so that the final outcomes (such as the predictions or suggestions) will be unbiased (Organisation for Economic Co-Operation and Development (OECD), 2024f).

In most cases, the advantages of using AI systems in today's society seem to overcome the disadvantages when taking into consideration the fact that AI-driven automation in the non-profit sector can streamline operations, cut down on manual errors, and reduce labour costs–since essentially the activities that are taking place mostly rely on volunteering and individuals willing to make a change in terms of sustainability and sustainable development (Organisation for Economic Co-Operation and Development (OECD), 2023f. In a complex business environment, for example, in the case of Customer Relationship Management (CRM)—with all the four pillars involved represented by people, strategy, processes, and technology, artificial intelligence and artificial intelligence tools are of great importance since they successfully encourage the combination of practices, strategies, and technologies that the entities are using in order to analyze and to manage the consumer interaction as well as the data flux involved in the consumer lifecycle (Organisation for Economic Co-Operation and Development (OECD), 2023g). The importance and the role of artificial intelligence and artificial intelligence tools are of

utmost prominence, having in mind that the goal is, on the one hand, to improve the customer service relationships and, on the other hand, to drive sales growth in the competitive business environment and on the marketplace.

Nevertheless, even though non-profit professionals might choose to rely in the next decades to come on the current AI advancements, this could be a very important step in the complex process of analyzing and delivering information, which will ultimately result in the fact that non-profit organizations will dedicate much more of their time to interacting with individuals and communities—hence, with prospects (Organisation for Economic Co-Operation and Development (OECD), 2023h).

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