

# People Analytics and Human Resource Management: How the Use of Smart Data Can Improve the Training Processes

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## Abstract

People Analytics (PA), which applies big data in human resources management (HRM), is becoming increasingly important in the current globalised and digitalised era. Despite several issues due to PA, such as high costs and privacy legislation, PA improves employees' well-being and helps organisations create value on the market to become more competitive, achieving sustainable development, as defined in the 17 Sustainable Development Goals proposed by the United Nations. Based on the existing literature, the paper analyses the positive and negative aspects of the use of data for the design, monitoring and evaluation of the training process, especially in consideration of the recent technological changes and the impact on organisations' processes triggered by the Sars-Cov-2 pandemic. Using data-based analysis, organisations can create a personalised training program for each employee to achieve the expected results. Therefore, to assess whether the training has been effective and whether the investment has been profitable, organisations should use specific and innovative tools and competencies. In conclusion, this investigation seeks to demonstrate that using PA in the training process is becoming increasingly relevant in organisations and, despite risks and costs, the benefits are considerable.

## 1. Introduction

Data are an important resource for organisations and people in the current digital age, and knowing how to collect and interpret data is fundamental. Using big data for decision processes means storing, managing and analysing large amounts of data. As with innovations such as the Internet, data centres or mobile phones, big data is also a step towards managing business and society (Lynn *et al.*, 2020). According to the 2010 "How Much Information" report (Bohn and Short, 2010), each person generates a daily average of 12 gigabytes of data; this number is constantly growing since it is possible to collect an innumerable amount of data due to the spread of applications that connect to the Internet. As an example, it is possible to consider all the posts created every day on Facebook, representing an incredible amount of user-generated data, which are stored and analysed (Bohn, 2012).

Through the disclosure of data, a study conducted by the Polytechnic of Milan (Figure 1.1) has addressed how the use of big data is continuously increasing:

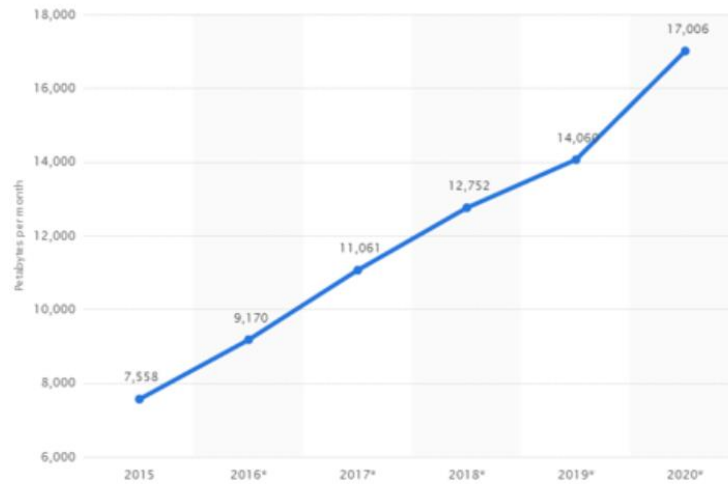


Figure 1.1. The disclosure of data in our era. Source: Polytechnic of Milan, Observatory of Big Data Analytics and Business Intelligence, School Management, 2018.

The importance of big data does not concern the data quantity but their use. Big data is key to developing competitive, innovative and constantly growing and improving business models. Using big data generates a series of advantages: it allows companies to collect valuable information on business performance, adopted strategies' results, all the implemented operations, and the possible future forecasts. In addition, the data provide information on customer buying behaviours, habits, tastes and reactions to certain events.

Analysing these data allows targeted business decisions to trace new potential customers, increase sales, make customer loyalty strategies more effective and implement effective cross-selling strategies. Such analyses can identify the psychological and motivational factors that convince people to buy a product or service and create predictive simulations to understand how the market and the company's sector will evolve (Khuong and Phuong, 2020).

Moreover, people represent the key element to have success in organisations, thanks to their creative spirit, skills and ability to transform strategies into actions. Therefore, organisations need to pay attention to the data produced by their employees and obtain information that will help them to make the best strategic and operational decisions. The use of employees' data, known as People Analytics (PA), allows organisations to better understand the state of the art and dynamics of the workforce, as individuals, departments or work teams, through the collection, analysis and interpretation of accessible and workable data on employee attributes, behaviour and performance (Pape, 2016). Therefore, information systems, visualisation tools and predictive analytics should be used, supported by employee profiling data and performance (Tursunbayeva *et al.*, 2018). PA allows organisations to recruit more intelligently, retain the best talent, create personalised training strategies and boost employees' performance. In the past, these processes were based on managers' instincts. PA can attract new people, evaluate employees' performance, predict possible future behaviours or problems and take effective actions to solve them should they arise. These processes require an initial investment for the selection, collection and analysis of data but allow an organisation to see the complete picture of the workforce in all its main characteristics and forecast scenarios that can help in designing new management policies.

However, the adoption of PA in organisations is still very slow. According to the CIPD (2018) report “PA: Driving Business Performance with People Data”, it confirms that:

- only 54% of respondents can apply PA strategies;
- only 39% exploit people’s data to support decision-making processes;
- only 25% of HR departments said that PA processes support business decisions.

Conversely, the same research confirmed that the effects of PA are tangible and real:

- 75% of the HR departments that exploit PA have claimed to exploit the data obtained to increase productivity and optimise workforce management;
- 65% of those who work in an organisation with a strong PA propensity stated that their performance is higher than competitors;
- 70% of HR departments believe that PA is one of the most effective tools to predict the effectiveness of organisational changes.

The present paper aims to analyse how using PA tools impacts and benefits one of the main functions of Human Resources Management (HRM): the training process. In the current dynamic and globalised world, PA is a fundamental tool to obtain efficient results for training employees and the organisation itself to assess the effectiveness of the implemented investments. Furthermore, for this reason, it is necessary also to analyse in detail which technological tools and software are used to measure and evaluate training programs and the impact that all these changes have on organisations’ success in the market. The spread of Sars-Cov-2 has exacerbated this situation even more. During the last two years, most training courses have taken place remotely; therefore, collecting and analysing PA data to measure training effectiveness is becoming crucial.

The paper firstly advocates the importance of implementing People Analytics in the entire HRM process. Subsequently, the study focuses on the use of PA for the design and evaluation of training and analyses the benefits and costs. Additionally, this investigation shows how PA has transformed the training processes due to digitalisation, as well as Sars-Cov-2 and remote working. Finally, the concluding remarks discuss the managerial implications, considering possible future research.

## **2. People Analytics (PA): the innovative importance of big data in HRM processes**

Using big data to improve decision-making in an organisation allows people to efficiently manage, transform and interpret data sets, increasing the volume and variety for digital transformation. Each process phase changes the state and content, helping to transform raw data into value and enrich the analytical data model. The life cycle of big data (see Figure 2.1) takes place through two macro-areas (Evans and Lindner, 2012):

- big data management, which includes the processes and technologies for big data acquisition and storage, preparation and recovery;
- big data analytics, which comprises the processes used to analyse and acquire useful information from large datasets to interpret and describe the past (descriptive analytics), predict the future (predictive analytics) or recommend actions (prescriptive analytics).

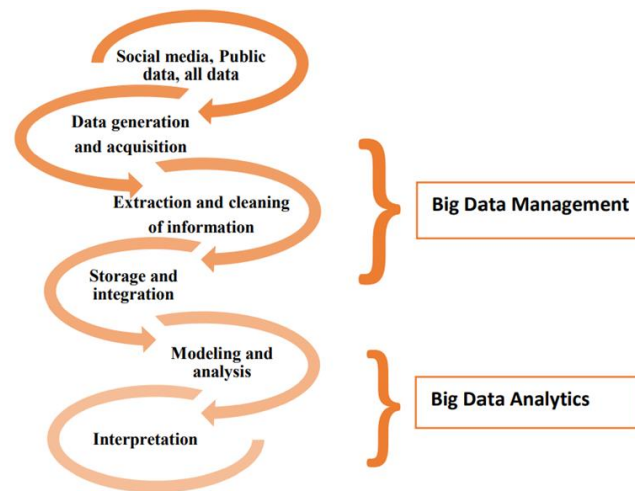


Figure 2.1. Big data life cycle. Source: Author’s elaboration.

The analysis model (Figure 2.1) is based on automated analytics, which uses IT systems and processes to perform analytical activities with little or no human intervention.

Globalisation and increasing national and international competition have led organisations to exploit all available resources to emerge and maintain their competitive position in the market. True business competitiveness, or rather, achieving a sustainable competitive advantage, derives from the presence of rare, unique and inimitable resources, attributes that fully connote human resources. This is the main reason why HR management is increasingly becoming one of the most relevant functions in organisations.

The application of PA to selection processes, people training and evaluation allows the integration of HR managers’ skills and competencies with the information provided by scientific data, creating an efficient evaluation system. The growing importance of these parameters, data science and machine learning generates an automatised of all processes, providing an even more accurate picture.

In particular, in order to understand what PA is and how to use it to gain an advantage in an organisation, it is crucial to analyse the model of “Nine Dimensions for Excellence in People Analytics” proposed by David Green and Jonathan Ferrar in 2018. The model is based on three themes: (1) impact, (2) value, and (3) focus. The questions to answer are: (1) *How can a person improve his/her impact on the organisation?* (2) *How does s/he create more value?* (3) *What does s/he need to focus on?* The answers to these three questions vary depending upon the situation, level of experience of the person, business challenges and industry. The two scholars summarised the answers to these questions in nine dimensions grouped in three categories (Figure 2.2): fundamental aspects, necessary resources and acquired value.

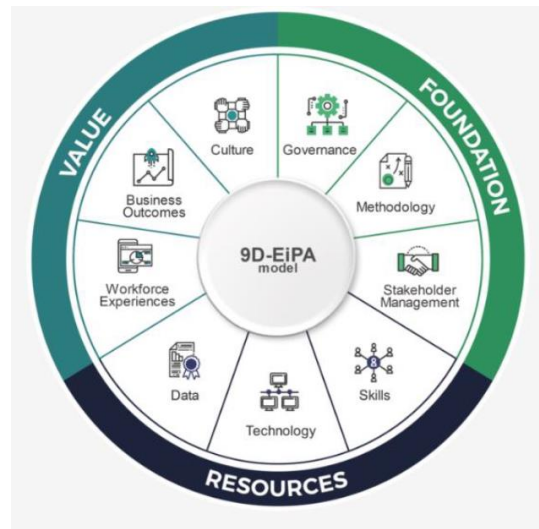


Figure 2.2. Nine dimensions for excellence in PA. Source: Green and Ferrar (2018).

Knowing how to manage people in an organisation means considering *ex ante* a series of elements and characteristics that must be developed to achieve future success. They are:

- Governance: having the right structures in place to help with data standards, ethics and privacy, and the selection of projects and analytics work, thus ensuring a greater chance of success;
- Methodologies: starting with the business challenges that are most important and then managing work and projects. This dimension focuses on the most important methodologies to simplify and avoid confusion;
- Stakeholders: understanding the people, functions and groups that are most important, and communicating regularly, appropriately and with clarity, thus ensuring greater impact and value.

The resources needed to develop solutions and deliver impact from PA skills, technology and data are:

- Skills: understanding the people an organisation needs to deliver credible results means ensuring access to skills in several areas;
- Technology: it includes visualisation, business intelligence, statistics, machine learning and artificial intelligence (AI). It consists of both hardware, software and be delivered on-premises, ‘as a service’ or as a hybrid. The approach here is to recommend those technological categories to focus on by understanding the organisations’ needs;
- Data: knowing, using, integrating, managing and securing people and business data is essential if anything else is going to be done at all. This dimension is important to understand standards, security, data options and determine what is necessary to answer the most pressing challenges. It also covers the need to focus on internal and external data sources, analyse a situation and decide what additional data to gather to improve analysis.

Finally, PA activities value will be determined by interactions with someone or something. This includes:

- Workforce Experiences: deploying analytics solutions with the ultimate benefit of the workforce is the most satisfying part of PA. This dimension focuses on understanding the ability to focus analytics on those that benefit the most – the employees/workers and managers – through personalisation, recommendation algorithms, the consumerisation of HR and democratisation of data to managers;
- Business Outcomes: delivering insights through effective PA will ensure executives and leaders are informed when making decisions. These insights can be about productivity, cost optimisation or revenue enhancement. Whatever they are, this dimension ensures that the business will gain future organisational benefits from PA;
- Culture: deploying analytics is easier and more impactful when the culture of HR and the organisation is receptive to analytical insights. Understanding how to strive for a strong analytics culture is essential and most often requested. *How can a team be more quantitative?* and *How can an HR manager train HR business partners?* are two of the most frequent questions.

### 3. People Analytics in the training process

Training is a link between the organisation and the workforce; it is an instrument aimed at employees' personal and professional growth. As defined by Costa and Giannecchini (2019: 283), training represents “a process of learning knowledge, behaviours, and skills that allow the worker to shape his role and seize opportunities for development and solve problems in situations of uncertainty”.

Training is necessary to motivate employees, and motivation, which is the desire and propensity to achieve a goal, is a key element to having successful and ambitious performance. Therefore, all public or private organisations need to motivate employees to be effective and efficient. For an organisation, getting motivated and skilled employees means creating loyalty and increasing cooperation and, therefore, strengthening the relationships between workers, fostering their creativity and diligence (Sureephong and Dahlan, 2020). In organisations, investing in human capital is necessary to differentiate and gain a competitive advantage. Ensuring the well-being and professional and personal growth through well-organised and *ad hoc* training processes also means encouraging the inclusion and adaptation of staff and, therefore, winning and establishing a relationship of lasting trust (Nadeak and Naibaho, 2020). Furthermore, organisations play an essential role: guaranteeing the employees' well-being means promoting economic growth and working towards sustainable development, which is the main element for the development of the economy in general (Zang and Ye, 2015).

Therefore, HR managers must develop, motivate and stimulate employees' skills. The key to developing skills among existing workers is to provide learning opportunities (through in-presence training or massive open online courses [MOOCs])<sup>1</sup> involving workers at all levels of competence.

The training process requires four salient phases (Fontana and Caroli, 2013):

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<sup>1</sup> The most popular and used courses are the massive open online courses (MOOCs) (Razmerita *et al.*, 2020). These are free or paid online modules open to anyone and organised by universities or private companies. There is the possibility of attending a MOOC from anywhere, globally, with an Internet connection and an email address.



1. analysis of training needs identifies the training needs from evaluating organisational positions, highlighting the gap between the tasks and the performances achieved and those desired;
2. defining objectives and planning the training process by analysing elements concerning the learning environment (individual motivation and organisational situation);
3. administration of the training program, through defining learning models (learning by doing, learning by absorbing, and learning by interacting with others) and teaching methods to be used (lectures, exercises, simulations, training on the job, e-learning, net-learning, MOOCs, experiential methods and relational methods, gamification);
4. monitoring and evaluation. The training process must be continuously monitored and evaluated, which, according to the definition given by Dishman *et al.* (1987), represents the systematic collection of data and information on training programs to clarify, reduce uncertainty and provide a basis for making decisions about the activities carried out within the training programs themselves.

The training process generates a transformation of people that can be described as strong or weak: strong transformation occurs when the learned knowledge and skills are not directly linked to employment or an organisational context; weak (or specific) transformation occurs when the skills learned are specific to the organisational context and, therefore, usable only within the companies that provided them.

Furthermore, due to digitalisation and remote working, sometimes enforced, the training process is changing. Traditional training tools such as lectures and exercises are increasingly being replaced by online training or innovative tools such as experiential methods, net-learning, and gamification (Hamari *et al.*, 2014).

Moreover, considering online training, it is necessary to emphasise the difference between training simultaneously or not. Simultaneous training means that the trainer and trainee have set days and times for the training development; therefore, the process is dynamic, participative and interactive. Non-simultaneous training means offering pre-recorded training for the trainee to receive at any time. In particular, considering non-simultaneous online training with the possibility to use the training service at any time, it might be interesting to analyse how many times a given course is recorded and how long it takes to watch each lesson. Many interesting elements could emerge from this information regarding issues requiring corrections and strengths to be improved.

The analysis of the most recent literature shows a broadly homogeneous picture of the prevailing ideas about evaluating training results. It is essential to define what to evaluate, how to evaluate, when to carry out the evaluation process, who to evaluate, and which evaluation method to use (Costa and Giannecchini, 2019). Based on the chronological dimension, it is also possible to distinguish training evaluation into three stages: *ex-ante evaluation*, that is, before the training process takes place to analyse the situation; *evaluation in progress*, that is, an evaluation carried out during the implementation of the training process; *ex-post evaluation*, that is, to evaluate the effects of the training process.

The use of big data in the training evaluation process generates various benefits in organisations. Surely, in online training, the use of PA guarantees more control: it is possible to collect data during the delivery of the training, measuring how many breaks are carried out by the worker, how many times a person has reviewed classes, or a definition, and so on. Thus, in this way, the satisfaction of each part of the training process is measured. The PA is also

used in face-to-face training to collect training evaluation data. It is more difficult to measure the whole training process, but the final result is evaluated. However, organisations that create and offer training courses show some risks. The results of such training processes are not certified and may become obsolete, as they may occur before costs are recovered. Additionally, the knowledge developed is not an asset belonging to the organisation but to the person. Finally, such investments can generate positive feedback only because of the workers' active behaviour.

The evaluation process and training process are closely related because the first one is essential to identify and analyse trends and whether there is consistency between training plans and business strategy to make changes. It is necessary to analyse people, processes and roles according to the goal set in an increasingly data-based world. PA allows the measurement of the value of the workforce and the understanding of how it helps to generate positive results for the business, acquiring a unique and inimitable competitive advantage.

Due to the technological evolution, HR is becoming more digital and analytical regarding their activities and skills and selecting and training employees. The digital dimension is becoming increasingly important because it allows skills improvement activities throughout the organisation and promotes cultural change to 360 degrees. The use of PA in the organisation and training evaluation is a remarkable innovation that has spread rapidly in recent years. This is how a company can build an *ad hoc* training program and evaluate it.

PA plays a fundamental role so that each training course can be personalised according to each employee, with their own characters, ways of being, thinking and expressing themselves. Therefore, personalised training courses must be designed (Thakur and Han, 2021). Personalisation is a process that requires considerable efforts. In this regard, personalisation can be defined as the act of personalising an experience or communication based on information that an organisation has learned about an individual (Wirth and Sweet, 2020). Personalisation is different from customisation, but the concepts are closely related. In personalisation, a company modifies an experience without the customer (or employee), while in customisation the customer (or employee) can customise the experience alone. However, more recently, the concept of hyper-personalisation has been used. Todd Lebo (2019) defines it as the process that leverages artificial intelligence (AI) and real-time data to deliver relevant content, product and service information to each user.

Individuals start from basic common needs that represent the first point on which there is a recognition of differences and creation of customised processes. In this regard, based on Maslow's hierarchy of needs (1943), Richards (2016) proposes 'the six human needs' model, based on the process of personalisation. These needs are:

- certainty: the need for safety, protection, comfort, order, consistency and control;
- variety: the need for uncertainty, diversity, challenge, change, surprise, adventure;
- meaning: the need for meaning, validation, feeling necessary, honoured, sought, special;
- love and connection: the need for connection, communication, intimacy and love shared with others;
- growth: the need for physical, emotional, intellectual and spiritual development;
- contribution: the need to give, care for, protect beyond ourselves and to serve others and the good of all.



Thus, employees' training assumes an increasingly hyper-personalised connotation using PA tools alongside the more traditional ones. Among the traditional tools, the most used concerns the return on investment (ROI) of the training process. Other quantitative training assessment tools are calculated based on the time taken to perform a given activity<sup>2</sup> or by comparing various activities.<sup>3</sup> The ROI is determined by the relationship between benefits (business climate, satisfaction of the staff, confidence of the collaborators, reduction of waste) and costs (consultants and teachers, logistics, teaching materials or e-learning platform, lack of productivity of participants, overhead costs) in percentage.

Using PA's tools, these processes become much faster and more precise; anyone can easily search for the information they want to learn through the network at any time or anywhere (Costa and Giannecchini, 2019). PA implementation has deeply modified training evaluation tools, making communication necessary between employees, organisation and leaders. Creating unique methods to collect internal and external data is necessary for an effective evaluation. In this regard, Henke *et al.* (2020) presented their idea based on a primary assumption: it is necessary to establish common protocols, repeatable methodologies and enabling technologies to carry out analyses using artificial intelligence. Establishing clear protocols and repeatable methodologies for analysis and artificial intelligence (AI) institutionalises knowledge to ensure coherence and greater efficiency in evaluating and developing new tools.

Moreover, due to PA and digital transformation, companies can build a substantial employee data system and use modern information technology to accurately calculate the difference between the goal set in the training process and those achieved by the employees or between the training needs employees require and meet.

In addition, through *ad hoc* software, it may be useful to collect data regarding the number of participants in each course or lesson, or the number of times that participants perform the final test before successfully passing the training. Furthermore, organisations have started developing professional online training courses, using software that can record the study behaviours of each employee. Employees can then use the online system to analyse their own training needs and choose their preferred form of teaching. The employee can then conduct tests or publish feedback online, ensuring a positive learning effect. Finally, managers or training supervisors can monitor the learning situation of employees in the background (Zang and Ye, 2015).

The main advantage of using PA over traditional training measurement and evaluation is to provide predictive control tools to solve business problems and make decisions based on human data, relationships and behaviours. Traditional workforce reporting tools are descriptive and are exclusively process-based. The main purpose of such instruments is to measure metrics and key performance indicators (KPIs) instantaneously. Indeed, it is a data dashboard where some phenomena (turnover, absenteeism, etc.) are observed and analysed in each period. However, considering only an exact time and a selected part of the data, these traditional tools are not exhaustive (Cascio and Montealegre, 2016). PA allows for more detailed analysis; in this way, it is possible to find solutions and insights based on objective

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<sup>2</sup>  $\frac{\text{total training hours}}{\text{n.participants}}$  OR  $\frac{\text{n.presences for days}}{\text{n.participants for days}}$

<sup>3</sup>  $\frac{\text{total costs training intervention}}{\text{hours for training}}$  OR  $\frac{\text{total costs training intervention}}{\text{n.participant X hours for training}}$

data and, subsequently, measure the success of a particular initiative and continuously optimise training and evaluation processes.

In conclusion, many organisations should understand that exploiting the enormous amount of data available maximises the commitment and effectiveness of the training initiatives undertaken. The main factors that characterise the use of PA are:

- targeted and motivating training courses can be offered to employees;
- the organisation optimises its resources;
- the impact of training actions is expressed through individual workers' performances and team performances.

In addition, the collection and analysis of huge amounts of training data also facilitate the evaluation of training:

- at an individual and personal level, by assessing whether the well-being of the worker has increased;
- at the organisational level (e.g., professionally), by measuring performance after training.

Moreover, the data are also important for assessing the quality and adequacy of training courses offered by companies to ensure, above all, the wellbeing of employees.

### 3.1. Opportunities, costs and risks

It is often difficult to define the impact of using PA on HRM processes, particularly for design and evaluation training processes. Still, some opportunities, risks and costs must be considered (Baig *et al.*, 2019). Opportunities include cost reduction because big data technologies, such as cloud-based analytics, offer significant cost advantages when storing large amounts of data. Therefore, it is possible to have faster and more efficient decision-making. Thanks to the speed of in-memory analysis combined with the ability to analyse new data sources, organisations can immediately obtain and analyse information and make decisions based on what they have learned. Therefore, this process is greatly simplified using PA and the amount of information and data available. In this way, as stated previously, it is possible to guarantee employees' fastest and most efficient integration and, therefore, their loyalty. By using PA, organisations offer each employee a personalised training program and can effortlessly evaluate training results. Moreover, PA makes it possible to be more careful about the results, continually improving the design and evaluation training processes.

On the other hand, the most critical risk is human resources turnover. After organisations' investments in personalised training programs, an employee represents an inimitable added value in the organisation itself. In a survey conducted in 2020, Glickon, an Italian consultancy company that deals with people experience and HR analytics, analysed the different reasons that push the junior and senior workers to leave their company. It reported that the main factors included the absence of a career perspective (32.7% of seniors and the 41.3% of juniors). Moreover, non-stimulating work (23.3% of seniors and 32.7% of juniors) and negative business climate (21.3% of juniors and 28% of seniors) were detected as important. Finally, other reasons include contract expiration proximity, the need to work more in teams and the lack of autonomy and flexibility (less than 6% in the priorities of those who decide to change jobs, regardless of seniority). In addition, the decision to leave a position also depends on the

prospects of workers, which may change. For juniors with less than five years of experience, the keys to choosing an organisation include the investment in training (14.4%), the feeling that the job is challenging (13.9%) and career opportunities (13%). The priorities change for the seniors, who after the organisational culture, look for a good balance between work and private life (13.6%), the possibility of playing more strategic roles for the business results (12.3%) and new employment challenges (11%).

Furthermore, these innovative training and evaluation processes may present problems due to the perception of 'distance' between employees and the organisation. The opportunity to collect data on employees in such an effective way could pose a threat to their freedom and privacy. Digital transformation has made it possible to shorten distances and facilitate, through software and AI, most of the processes of HRM. Conversely, the employees risk feeling inappropriate, violated by freedoms, or forced to mediate between the individual dimension and global challenges given the effectiveness of the technology (Scherer and Palazzo, 2007). This shows how much society lives in the digital era; technology is predominant, and people must learn to live with and exploit it to improve organisational processes.

Instead, costs are due more to digital learning, innovative technologies and software to develop PA and are used in HRM processes, especially for design and evaluation training.

#### 4. Training process during Sars-Cov-2

The Sars-Cov-2 crisis required a new European framework of a political and financial initiative to enable all citizens, as individuals and as workers, to benefit from digital transformation. Consequently, it is necessary to implement profound transformations from the perspectives of organisations and society (Bonati, 2020). The most significant changes concern the acceleration of digital transformation. The digital transformation must be guided by some fundamental principles outlined in the United Nations (UN) Agenda 2030 and its 17 Sustainable Development Goals (SDGs), and it cannot represent an independent variable, nor can it assume an autonomous leading role but must be integrated into the framework of other instruments to respond to the social and environmental challenges (Weerakkody *et al.*, 2021). Remote working, which is partly a consequence of digital transformation, is a work process that allows employees to work remotely, from home, from public parks, and any place with a wi-fi network. In this regard, the European Commission has established a legislative plan in which each action aims to achieve the Agenda 2030 goals. There are two primary actions promoted in terms of digital transformation: on the one hand, the promotion of a new digital education and training system (infrastructure, connectivity, digital devices, development of digital organisational capacities, improvement of human resources digital skills involved in training and education, high-quality learning content with accessible tools, and secure platforms); on the other, digital skills development is needed for digital transformation (Pedone, 2021).

Due to digitalisation, organisations must redefine their organisational designs. The reorganisation of work, production systems, people and marketing processes have opened new windows of development in organisations, based on technological progress, employee fidelity and greater control from managers. In this direction, many digital tools have been developed, including the recent modern digital workplace intranets and the processes of

distance training through digital learning. By using these tools, organisations can continue to ensure and improve labour productivity and the quality of the employees' experience, as people change habits in their private life and in the workplace (Saxena *et al.*, 2021).

Therefore, digital transformation plays an essential role in organisations and HRM. Companies have organised themselves through online training courses, video calls, Skype and interactive online training processes. Of course, this requires a greater commitment from business leaders and trainers who must manage the innovative training processes themselves. The analysis by the Boston Consulting Group (BCG) "Decoding Global Trends in Upskilling and Reskilling" (Sordilli, 2020) revealed that 62% of Italian workers devote time to upskilling (i.e., upskilling programs aim to develop employees' skills in a given field of work through innovative upgrades). Additionally, 70% of workers in Italy devoted themselves to reskilling (i.e., retraining the person and skills, in which the acquired skills can allow the employee to play a different role). Therefore, training must be continuous, and it is useful to achieving results on two levels: (1) by increasing the quality of internal skills in the organisation; and (2) by creating new professional figures that do not exist on the market and can be formed exclusively in the field.

Undoubtedly, organisations must adapt to significant changes. In the digital transformation era, PA takes a predominant role (Donnelly and Johns, 2021), and surely the possibility of attending online training courses simultaneously or not represents a great opportunity for employees and organisations. These new training methods have played an important role during Sars-Cov-2. Employees can attend courses and classes offered by the organisation itself or by other training organisations. The goal is to grow workers professionally and personally, ensuring improvements to increase their motivation and ambition.

## 5. Concluding remarks and future research

This investigation has analysed the positive and negative aspects of using PA in design and evaluation training processes, especially in the current era of digital transformation. The digital transition has characterised the current state of affairs and has been exacerbated by the conditions generated by the Sars-Cov-2 pandemic. This transition is generating profound transformations at the economic, social and cultural levels, and primarily in organisations, which must innovatively manage all activities and resources in line with ethical and sustainable local and global development. It is possible to manage HRM using innovative methods, such as PA (Tursunbayeva *et al.*, 2021), above all regarding the training functions that need the implementation of employees' personalised training processes and efficient evaluation methodologies.

The main problem with data analytics in HRM is that PA algorithms are objective and do not consider the subjective aspects on which human resources management is based. This represents another relevant problem of PA, in that training programs and the personalisation process could threaten everyone's privacy, representing a further erosion of worker rights (Zheng, 2021). According to this consideration, Amazon has set up a Global HR Operations and Analytics (HROA) team, which provides solutions to ensure employee satisfaction. The aim is to create a frustration-free experience for all employees by providing high-quality

human resources services throughout employment.<sup>4</sup> As a result, through PA, HR functions guarantee a successful transition from the recruitment and selection process to the training and evaluation processes (Dastin, 2018). In addition, PA, connected to digital transformation, creates a peaceful interaction between the individual as a worker and situations and social implications coming from the external environment (Guenole and Feinzig, 2018).

In this regard, the use of PA in the functions of the HRM and, in particular, of training processes engenders some important managerial implications. Due to digitisation, many HR functions have become simpler and more digitalised, as well as the collection of data to evaluate the flow or results of a training program or to check that the training is done correctly. At the same time, however, PA requires managers to have specific digital competencies.

Considering the existing literature, the impact of PA and digital transformation on training programs is considerable. PA and technological progress are becoming increasingly important, primarily in large companies (Green, 2020). The dissemination of data and the possibility of obtaining useful information from its analysis represents an unmissable opportunity for organisations to offer appropriate training programs for employees, gain a competitive advantage in the market, and manage and make the most out of the organisation's human resources.

Undoubtedly, Sars-Cov-2 has accelerated the use of these new tools in organisations since work organisational processes are mostly virtualising. Data integration and sharing tools, such as extraction, ingestion, coding and data detection capabilities, are essential at the outset to bring together data sources and external data, helping business and analytics users find the data they need. In this context, training and evaluation become univocal, reliable, and certainly represent a useful tool to obtaining a competitive advantage. Proper training and evaluation improve employees' well-being as individuals and as team members that manage to develop some fundamental competencies of cooperation, problem-solving, help-seeking and, therefore, better performance. In addition, the employees' awareness of being an important part of the organisation pushes for greater collaboration and cohesion with managers and leaders.

By providing an academic and grey literature review, this qualitative explanatory paper has analysed the use of PA in design and evaluation training processes. For this reason, future research could focus on a more quantitative analysis to measure the impact of PA on designing and evaluating training, and it might also be interesting to analyse and measure the impact of personalised training on the career and motivation of employees.

**Keywords:**

people analytics, training process, human resource management

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