



What is the future of work? A science mapping analysis

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ABSTRACT

This article aims to systematise and provide a structure for research into the Future of Work (FoW). We used SciMAT to conduct a science mapping analysis based on co-word bibliographic networks. The Web of Science (WoS) database was used for article retrieval, and a total of 2,286 documents were identified from 1959 to 2019. Our results are counterintuitive, as concerns over *satisfaction*, *leadership values* or *corporate social responsibility* (CSR) appear alongside traditional human resource management (HRM) themes, such as *organisational commitment* or *careers*, as well as more current FoW themes, such as the impact of technological change on *employment*, *wage inequality*, *vulnerable workers*, *telework* or *talent management*. In addition, we offer a classification of the most prolific FoW research themes and challenges into technological, social, economic and political categories.

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1. Introduction

Technological, economic and socio-demographic shifts create new demands for organisations (Stone & Deadrick, 2015). The impact of technological factors on organisations have led to the publication of a wide variety of studies. Allen (2017) offers an interesting approach about different periods in history and lessons for the Future of Work (FoW) field. Manyika (2017) explains that new technology is now capable of learning and discovering patterns with important implications for jobs. Researchers and practitioners have focussed in particular on the impact of automation on organisations, although this is a narrow view and companies are now considering how jobs should be organised and developed to face future challenges (Stoepfgeshoff, 2018). Despite the increasing number of academic articles and information reports on the topic of the FoW (Deloitte, 2017; Spencer, 2018; Stoepfgeshoff, 2018; World Economic Forum, 2016), there is still a scope for development in this research field, as there is no clear understanding of the term 'Future of Work' (Bhattacharyya & Nair, 2019; Stoepfgeshoff, 2018). We aim to systematise and structure the wide variety of research areas within this field. Thus, our research questions are: What is FoW? What are the main tendencies and challenges of FoW?

In this sense, our study introduces a novel approach to mapping

the FoW literature directly from the interaction of key terms. The objective was to analyse the thematic evolution of FoW research. To achieve this, we combined performance analysis and science mapping to detect and visualise conceptual subdomains, using a data science methodology and the SciMAT software (Cobo, López-Herrera, Herrera-Viedma, & Herrera, 2011a; 2011b, 2012). Science mapping applies a new perspective to reveal scientific limits and dynamic structures, using visualisation tools (Cobo et al., 2011a), thus we carried out a co-word analysis that constructs strategic diagrams to classify the detected themes. Our findings present a graphical vision of the FoW field, identifying the most important themes: *wage inequality*, *telework*, *talent management*, *satisfaction*, *careers*, *employment* and *innovation*. We also present the major FoW outcomes classified into technological, social, economic and political categories. This classification and outcomes will help to obtain a systematic comprehension of what FoW is. To date, no studies in this field have used science mapping and performance analysis.

In the following sections, we present an overview of the current state of FoW and a review of the literature on bibliometrics and science mapping. This is followed by an explanation of the methodological approach to our analysis. In the final sections, the findings and conclusions are presented.

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2. Theoretical framework

Regarding the research field of FoW, there is a lack of studies available in the literature (Bhattacharyya & Nair, 2019). Allen (2017) acknowledges three crucial moments that provide important lessons for FoW research: the Industrial Revolution (1750–1830); the Western ascent to wealth (1830–1970) and the uncertain present (1970 onwards). However, Allen (2017) highlights the need to consider the impact of technological change across the world (in developed and developing countries), adding that, in developed countries during the Industrial Revolution, typical labour relations saw increased productivity, constant average wages and female unemployment, which then shifted towards more equal wages and more educated workers in the period of affluence in the West. The difference of the ‘uncertain present’ compared with other points in history is that artificial intelligence, robotics and autonomous systems have undergone spectacular developments; machines are now capable of learning and discovering patterns themselves, provoking significant concerns for human beings (Manyika, 2017). Spencer (2018), however, argues that work is likely to continue, despite and, indeed, because of the broader utilisation of new technology. In this sense, Autor (2015) also states that automation creates a higher demand for labour and thus complements labour.

The term FoW is in current usage in the management, organisational, leadership, political and economic literature (Allen, 2017; Spencer, 2018; Stone & Deadrick, 2015). Balliester and Elsheikhi (2018) assign five dimensions to FoW: the future of jobs (job creation, job destruction or the future workforce structure); job quality (future working conditions, sustainable social protection systems); wage and income inequality (average growth and distribution); social protection systems and industrial relations (how labour institutions evolve in this context). In addition, Anner, Pons-Vignon, and Rani (2019) highlight five dimensions to foster workers well-being and social cohesion, which are inequality, jobs, labour regulations, trade unions and social protection. However, there is no common understanding of the concept (Stoepfgeshoff, 2018), the classifications offered by Balliester and Elsheikhi (2018) and Anner et al. (2019) bring inspiring insights, as their five dimensions allude to the influence of technological changes and also to socio-economic and political factors involved in the FoW.

With the emergence of new technologies, such as artificial intelligence, machine learning, robotics, data analytics, virtual reality and Internet of Things, individuals would lose their jobs, causing unemployment and leading to public disturbance (Bhattacharyya & Nair, 2019). In this sense, Autor and Salomons (2018) explained that automation has not impacted labour-displacing, but it has decreased labour's participation in added value. In addition, Acemoglu and Restrepo (2017) predict a negative impact of robots on labour and wages. According to the World Economic Forum, approximately 1.4 million people will lose their job by 2026, and termination of the job type will be the cause behind 70% of the cases (World Economic Forum, 2018). Hawksworth, Berriman, and Goel (2018) state that 30% of jobs (across 29 studied countries) will be at risk of automation by 2030, with the financial and insurance industry being at the highest potential risk of positions being replaced by technologies. Conversely, Arntz, Gregory, and Zierahn (2016) are less pessimistic and they estimate that around 10% of jobs are at risk of automation. They consider that this job automation's predictions should observe the particular tasks in each position rather than the entire occupation. Indeed, variations in job composition within industries and differences in how tasks are organised within the same jobs will determine how a particular occupation is more susceptible to automation in some countries than in others (Gonzalez-Vazquez et al., 2019; Nedelkoska & Quintini, 2018). In 2013, Frey and Osborne predicted that 47% of

US occupations were at risk of computerisation within 30 years; however, they emphasised that this scenario would depend on other variables, such as cost, regulatory issues, or political and social pressure. More recently, they added that this study was misunderstood, and that it has to be interpreted from a contextual and historical perspective (Frey, 2019). In fact, Frey (2019) considers that artificial intelligence will benefit employment, but that the positive effects of artificial intelligence may take longer than expected, leading governments to adopt mistaken decisions in the meantime. Spencer (2018) interestingly conveys that jobs will persist and that the problem will be linked to the deterioration of job quality, rather than to the loss of jobs; this author calls for wider changes in ownership to address the FoW. Thus, the FoW field is very piecemeal, with different subtopics (i.e. technological, economic, social and political). Understanding the diverse nature of this field of study from a systematic perspective, highlighting its major themes and evolution, represents the contribution we aim to bring to this debate.

In summary, the impact of technological improvements on jobs has been the focus of the FoW literature; however, other socio-economic and political factors might also have a significant influence on this field. Analysing the challenges that the FoW is facing will improve our knowledge of it.

3. Methodology

The bibliometric methodology measures information and texts (Norton, 2001) and offers a robust statistical method to reach conclusions (Rosenthal, 1979). Bibliometric methods have explored the impact of authors, affiliations, conceptual maps, cluster and factor analysis, citation and co-citation (Daim, Rueda, Martin, & Gerdri, 2006). This article uses science mapping analysis to reflect the dynamic and structural characteristics of scientific research and to show the cognitive architecture of an academic field (Cobo, López-Herrera, Herrera-Viedma, & Herrera, 2011b; Mura, Longo, Micheli, & Bolzani, 2018).

Science mapping is a graphic representation of how knowledge areas, documents or authors are interrelated (Small, 1999) and there are various software techniques for obtaining bibliometric mapping analysis (Cobo et al., 2011b). SciMAT (Cobo, López-Herrera, Herrera-Viedma, & Herrera, 2012) combines science mapping and performance analysis techniques to study a research field and visualise and identify specific topics/themes or general thematic areas and their evolution. We used SciMAT to analyse a conceptual science mapping analysis based on co-word bibliographic networks (Batagelj & Cerinšek, 2013). To offer a rigorous analysis, we describe each step in the process. A science mapping analysis follows these stages: data search, data refinement, standardisation and creation of the network, map creation, analysis and visualisation and performance analysis (Fig. 1; Börner, Chen, & Boyack, 2005; Cobo et al., 2011b).

In the first stage (data search), we retrieved documents from the Web of Science (WoS) database (www.webofknowledge.com), which offers exhaustive coverage of the social sciences literature (Norris & Oppenheim, 2007). This study includes all the articles and reviews published on WoS in the fields of management, business and industrial labour relations. The keywords incorporated into the WoS search were obtained with the assistance of four full professors in the FoW field, following the insightful recommendations of this manuscript's reviewers and observing keywords from the most relevant articles (see Table 1). The periods were selected dividing the last 10 years into two periods (2009–2014 and 2015–2019), as most FoW manuscripts were focussed on these periods. Then, we considered the previous 10-year period, i.e. 1998–2008, and we added publications on the FoW to the first

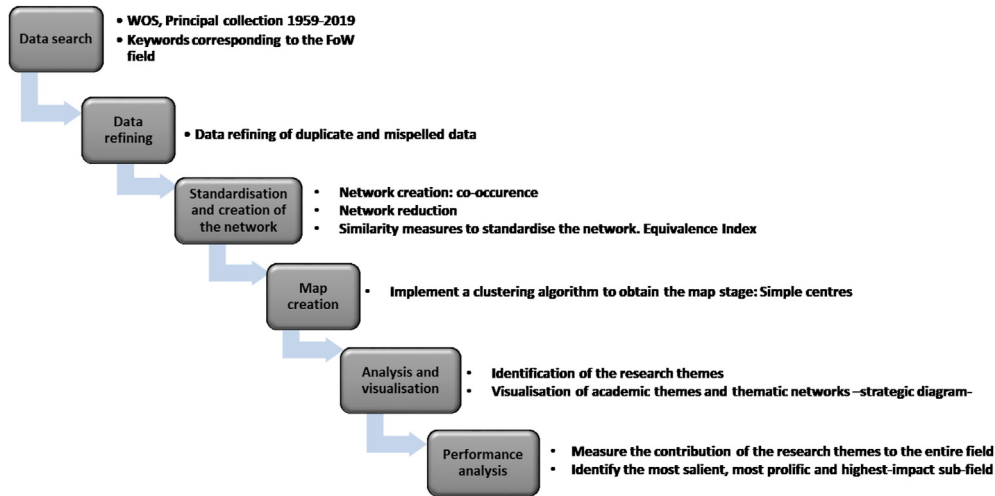


Fig. 1. Science mapping steps.

period, 1959–1997, prior to which there is no strong connection between the thematic networks.

In the data refinement and reduction stage, we scanned data to identify incorrect, duplicate or misspelled items. In the standardisation and creation stage, we used a co-occurrence network, which was then filtered to delete non-representative items. The network was standardised using the equivalence index. Then, we used simple centre algorithms to obtain the science map and its clusters (Coulter, Monarch, & Konda, 1998). In the analysis and visualisation stage, we obtained rich findings and connections from our research data, networks and maps, adopting the following stages for our study (Cobo et al., 2011a):

1. Representation of themes and thematic networks. At this stage, the detected themes are visualised using two distinct graphic tools: strategic diagrams and thematic networks (Cobo et al., 2011a). Each theme can be characterised by two dimensions (Callon, Courtial, & Laville, 1991): centrality and density. Centrality measures the degree of interaction of a network with other networks and can be seen as a measure of the importance of a theme in the development of a particular research field. Density observes the internal strength of the network and represents a measure of the theme's development. Given both measures, a research field can be visualised as a set of research themes, mapped in a two-dimensional strategic diagram and classified into four groups (see Fig. 2): motor themes (well developed and important for the

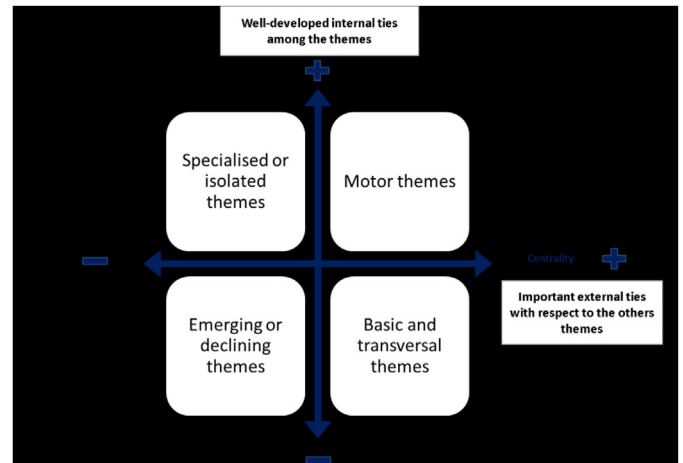


Fig. 2. Strategic diagram.

structure of the research field); specialised or peripheral themes (well-developed internal ties and unimportant external ties); emerging or disappearing themes (both weakly developed and marginal) and basic or transversal themes (important for a research field, although not developed). The evolution of these themes over

Table 1
FoW's Keywords Used to Search in the WoS.

TS = ('future of work*' or 'future of job*' or 'future of employment' or 'future of labour' or 'future of labor' or 'smart work*' or 'smart job*' or 'job polarization' or 'job polarisation' or 'digital workforce' or 'future workforce' or 'future of skill demand' or 'digital competenc*' or 'future job competenc*' or 'automation of job*' or 'job automation' or 'future working relation*' or 'future of labour market*' or 'future of labor market*' or 'electronic human resource management' or 'e-HRM' or 'eHRM' or 'e-recruitment' or 'e-training' or 'human resource analytics' or 'HR analytics' or 'virtual HR' or 'virtual human resource*' or 'digital work' or 'digitalization of job*' or 'digitalisation of job*' or 'digitalisation and job*' or 'digitalisation and work' or 'digitalization and work' or 'digitalization and job*' or 'digitization of job*' or 'digitisation of job*' or 'digitisation and work' or 'digitization and work' or 'automatization of job*' or 'automatisation of job*' or 'robotization of job*' or 'robotisation of job*' or 'robot* and job*' or 'vulnerable worker*' or 'decent work' or 'job automatization' or 'job automation' or 'automation and job*' or 'job automatisaion' or 'job robotization' or 'job robotisation' or 'telework*' or 'job inequality' or 'older worker' or 'wage inequality' or 'aging population' or 'occupational change' or 'digital labor' or 'digital labour' or 'future of the workforce' or 'digital capital' or 'substitutable job*' or 'digital Taylorism' or 'spirituality and work' or 'spirituality and job*' or 'spirituality and future of work' or 'spirituality and future of job*' or 'spirituality and future of labour' or 'leadership and spirituality' or 'managing by value*' or 'future workplace' or 'workplace of the future' or 'digital transformation and work' or 'digital transformation and future of work' or 'digital transformation and job*' or 'digital transformation and human resource management' or 'digital transformation and HR*' or 'talent management' or 'knowledge management and future of work' or 'knowledge management and future of job*' or 'knowledge management and digital transformation' or 'employ* engagement and digital transformation' or 'employ* engagement and future of work' or 'employ* engagement and future of job*' or 'new organizational forms' or 'new job*' or 'digital HR' or 'workforce analytic*' or 'sustainable HRM' or 'gig work' or 'gig job*' or 'crowdsourcing and work' or 'on-demand work*' or 'crowdwork*' or 'digital labour platform' or 'labour platform' or 'labor platform' or 'platform work' or 'non-standard employ*' or 'artificial intelligence and human resource management' or 'artificial intelligence and HRM')

time shows tendencies, such as whether they are emerging or disappearing.

2. Classification of thematic areas. The development of the research themes over time is detected and then analysed in order to identify the main general areas of evolution in the research field, their origins and their interrelationships. This enables us to recognise the conceptual, intellectual or social evolution of the field, using SciMAT to build an evolution map (Cobo et al., 2011a).

3. Performance analysis. The contribution of the research topics to the knowledge area is measured (quantitatively and qualitatively) and used to identify the most prolific and highest impact sub-fields. The number of published documents, the number of citations and the different types of h-index are some of the bibliometric indicators used.

4. Analysis of the results

Researchers have become more interested in the FoW in recent years, as reflected in the growing number of studies published in international journals (see Fig. 3). Some 2,286 articles on the FoW were published between 1959 and mid-2019. The number of publications between 2015 and 2019 (1,094 articles) was almost double that of the period 2009–2014 (see Fig. 3).

4.1. Visualising Future of Work themes and performance analysis

Four strategic diagrams representing the periods 1959–1997, 1998–2008, 2009–2014 and 2015–2019 illustrate the most important themes of the FoW (see Figs. 4–7). Sphere size is proportional to the number of published documents linked to each research theme.

In the sub-period 1959–1997, the FoW motor research theme (well developed and important for discipline) was *employment*, associated with *organisational change* and *employees experiences* (see Figs. 4 and 8), such as reemployment and the effects of layoffs on survivors (Brockner, 1992; Leana & Feldman, 1995). Biberman and Whitty (1997) aimed to offer a more compassionate and responsible model for the FoW and they proposed spiritual directions for the 21st century workplaces. In this sense, these authors state that 21st century leaders appreciate diversity and pluralism, and offer global servant leadership.

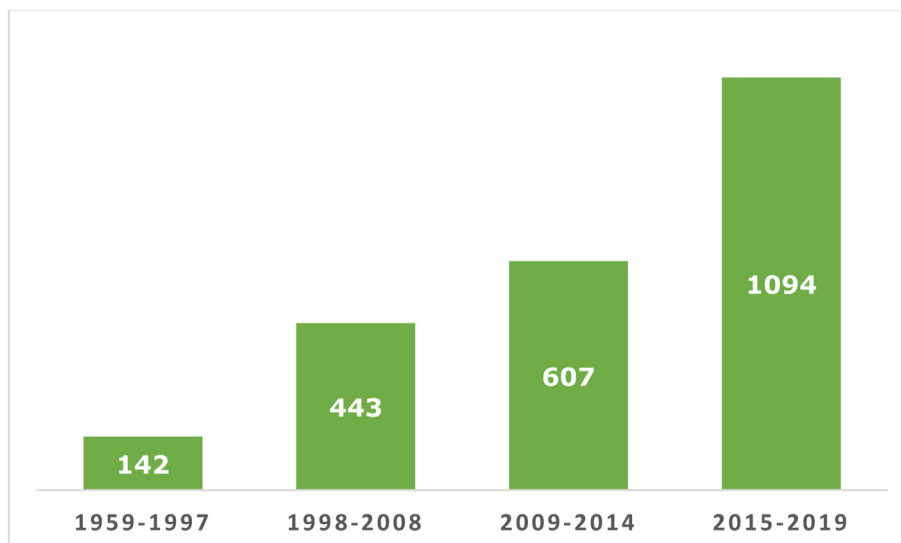


Fig. 3. International WoS publications in the FoW field of study from the period 1959–1997, 1998–2008, 2009–2014 and 2015–2019.

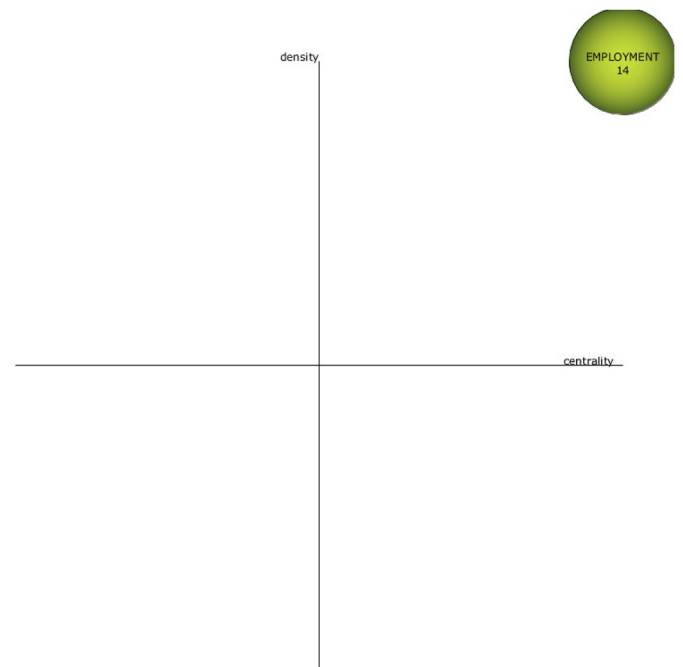


Fig. 4. Strategic diagram of FoW themes from 1959 to 1997 (number of union documents).

From 1998 to 2008, *telework* and *new organisational forms* were motor themes, and *wage inequality* was an emerging theme in the FoW field (see Fig. 5). Digital technologies have enabled the appearance of new organisational forms; in this sense, the identification of the pros and cons of these new forms are being gradually studied (Gajendran & Harrison, 2007; Hornung, Rousseau, & Glaser, 2008). In 1998–2008, another research theme of the FoW field was *wage inequality*, which covers subthemes such as *discrimination*, *technological change* and *skills*. Card and DiNardo (2002, p.733) stated that the skill-biased technical change cannot explain 'the closing of the gender gap, the stability of the racial wage gap, and the dramatic rise in education-related wage gaps for younger versus older workers' in the 90s; consequently, further research on wage

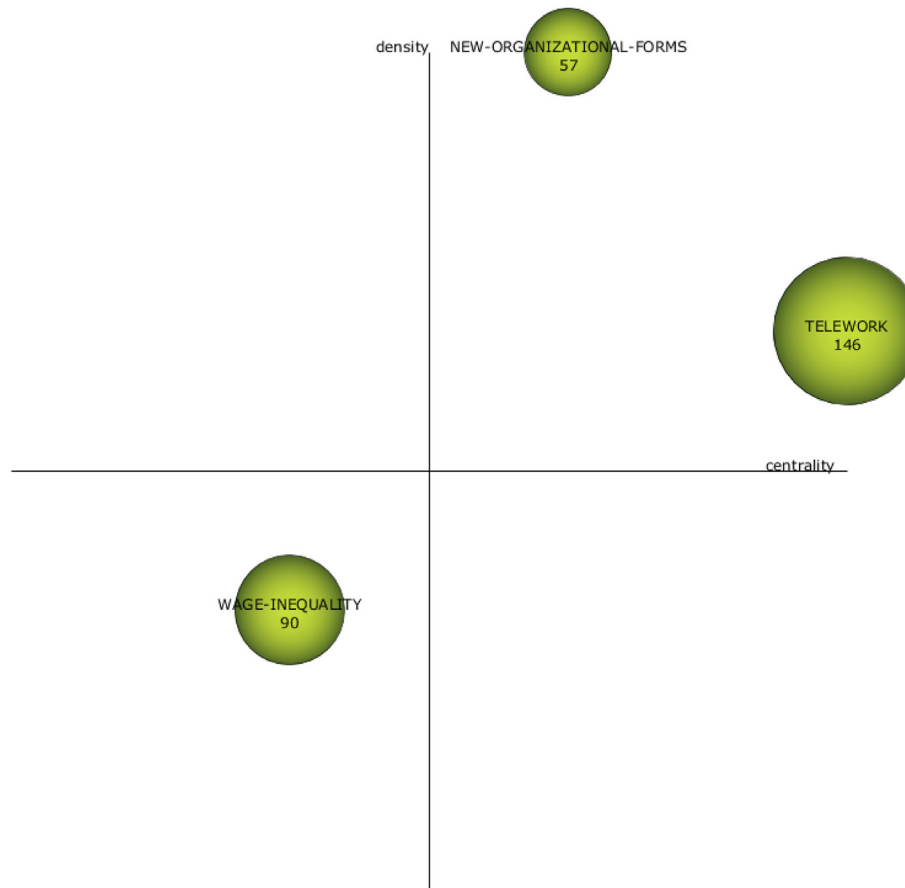


Fig. 5. Strategic diagram of FoW themes from 1998 to 2008 (number of union documents).

inequality is needed.

In the sub-period 2009–2014, *telework*, *electronic human resource management (e-HRM)* and *wage inequality* were motor themes, *migrant* and *older workers* were specialised themes, *talent management* was a basic or transversal theme, and *job satisfaction* and *innovation* were emerging themes in the FoW field (see Fig. 6). e-HRM notably burst in this period. These studies focus on the development of information and communication technology and human resource management (HRM) systems and the strategic value of these developments for HRM (Bondarouk & Ruël, 2010), but rarely examine their effect on HRM (Stone, Deadrick, Lukaszewski, & Johnson, 2015). In this sense, user acceptance and adoption of HR technology (Bondarouk, Schilling, & Ruël, 2016; Huang & Martin-Taylor, 2013), as well as the implementation of individual HR practices, such as web-based recruitment (Wiblen, 2016), are important concerns for e-HRM. Indeed, the role of e-HRM in collecting, allocating and studying data in order to select employees, predict employee turnover and ascertain employee competencies, to map out career plans and HR costs, or predict and evaluate employee performance, becomes crucial for the FoW, as does the importance of considering the legal and ethical aspects of these new tools (Strohmeier & Piazza, 2013).

In the period 2015–2019, *wage inequality*, *telework*, *satisfaction* and *talent management* represent the motor themes in the FoW field, which are well developed and important for this area. *Employment*, *career* and *innovation* are basic themes (important for the research field, but not entirely developed). *Organisational commitment*, *older workers* and *corporate social responsibility (CSR)* constitute specialised themes, which are well developed, but

marginal for the structure of the research field. *Automation*, *leadership* and *vulnerable workers* are emerging themes (weakly developed and marginal to the FoW research field; see Fig. 7). As most of the FoW's publications belongs to this last sub-period (see Fig. 3), we focussed on the profound analysis of the sub-period running from 2015 to 2019, to obtain rich and insightful results about the FoW themes and tendencies. Moreover, the performance measures analysis (Table 2) shows the number of documents, citations and h-index per theme from 2015 to 2019.

4.2. Motor themes

Talent management is a motor research theme in the FoW field (see Fig. 7), with a significant number of documents (300) and citations (1,345) referring to this theme (see Table 2). In the *talent management* theme, there is a growing interest in research sub-themes, such as *emerging economies*, *multinational corporations* and *HRM* (see Fig. 9).

As globalisation increases, the need for talent becomes increasingly important, since organisational success relies more and more on people (Glaister, Karacay, Demirbag, & Tatoglu, 2018). In this process, HRM is needed to respond to the new challenges in the employment context. Marchington (2015) claims that HRM should try to engage and develop talent among all employees. In this sense, the identification, attraction, engagement, development and retention of talented employees are necessary to obtain strategic sustainable corporate success (Collings & Mellahi, 2009).

Talent management practices are universal but more relevant in emerging economies where talent scarcity emphasises the need for

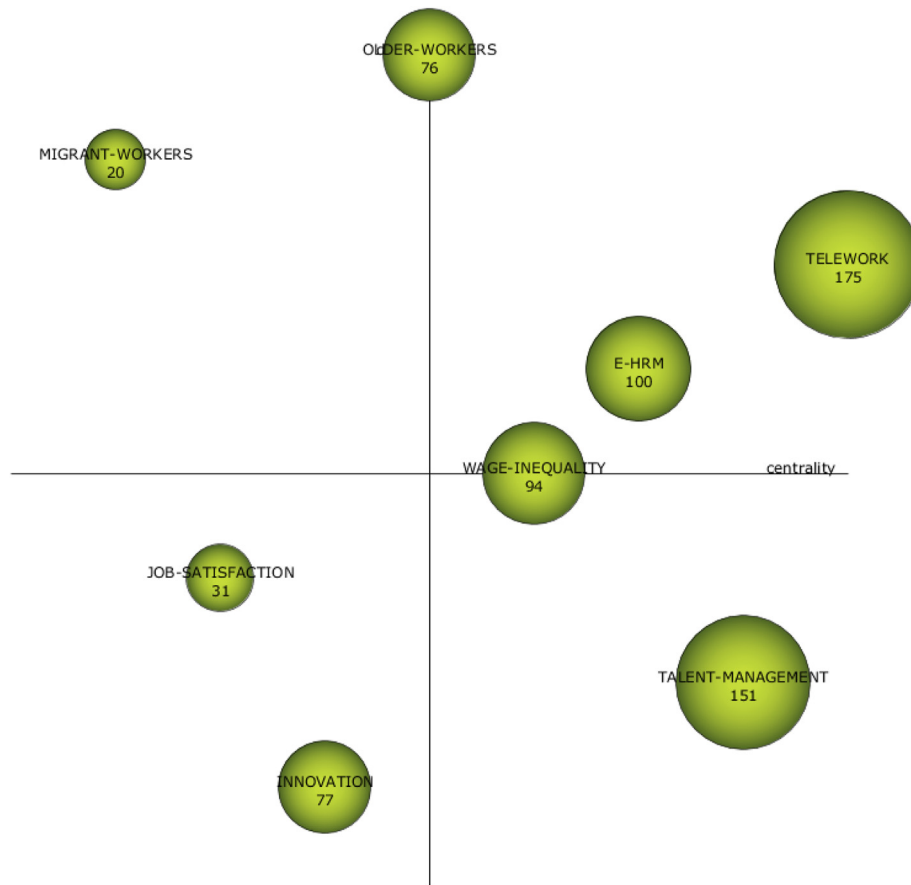


Fig. 6. Strategic diagram of FoW themes from 2009 to 2014 (number of union documents).

organisations to incorporate strategic perspectives to talent management (Glaister et al., 2018). The key challenge of HRM in emerging economies is to attract, develop and retain talented and experienced people who can head international activities and understand the main obstacles in these emerging markets, for instance, managing culturally and geographically various teams and engaging with different partners and stakeholders in each foreign country (Meyer & Xin, 2018). Academic interest in talent management is increasing (Glaister et al., 2018; Thunnissen & Gallardo-Gallardo, 2019).

Another motor research theme in the FoW field is *telework* (see Fig. 7), with 167 documents and 677 citations from 2015 to 2019 (see Table 2). The *telework* theme includes research subthemes, such as *well-being*, *professional isolation*, *work–family conflict* and *flexible work arrangements* (see Fig. 10). ‘Telecommuting’, ‘remote work’ or ‘distance work’ are alternatives to the term *telework* (Gupta, Karimi, & Somers, 1995). According to these authors, *telework* consists in performing work in a location distant from central or production buildings, where workers have no personal interaction with co-workers, but communicate with them electronically. Although *telework* is not a new term (it was coined by Jack Nilles in 1975), it is a popular and increasing alternative (Ruiller, Van Der Heijden, Chedotel, & Dumas, 2019) to the traditional work style.

The expansion of the increasing adoption of telework is explained by the development of new technologies and elements related to managers’ control and trust, job and task characteristics in knowledge intensive industries, and work–life balance (WLB) issues (Vilhelmson & Thulin, 2016). Felstead and Henseke (2017) concluded that teleworking implies high levels of organisational

commitment, job satisfaction and well-being; however, these positive outcomes come at the expense of work intensification and an increasing inability to disconnect. Conversely, Sarker, Sarker, Xiao, and Ahuja (2012) focussed on how telework creates work–life conflict and work reduction, and they proposed four strategies (compensation, negotiations, integrations and protection) for addressing these issues. Powell and Craig (2015) concluded that telework may ease women to balance or juggle work and family, although telework does not offer more time for recreational labour. Golden, Eddleston, and Powell (2017) found variations between teleworkers and non-teleworkers in terms of salary growth, but not promotions. Furthermore, Lembrechts, Zanoni, and Verbruggen (2018) found a negative correlation between task interdependence and supervisors’ supportive attitude towards telework. Ruiller et al. (2019) analysed how managers can promote the perception of proximity among dispersed team members, and they referred to two managerial styles (‘e-communication’ and ‘control’) and the key role of the e-leader. Besides, few researchers have studied the impact of telework on promotions and salary growth (Golden et al., 2017), or on the employee–supervisor relationship (Lembrechts et al., 2018; Ruiller et al., 2019). Despite this variety of studies, results across *telework* research are paradoxical and require further studies with explanations for contradictory findings (Boell, Cecez-Kecmanovic, & Campbell, 2016).

Wage inequality is a motor theme in the FoW field in the period 2015–2019 (see Fig. 7) and a significant number of documents (160) and citations (902) correspond to this term (see Table 2). This theme includes research concepts such as *job polarisation*, *technological change*, *education* and *labour market* (see Fig. 11). Kwon

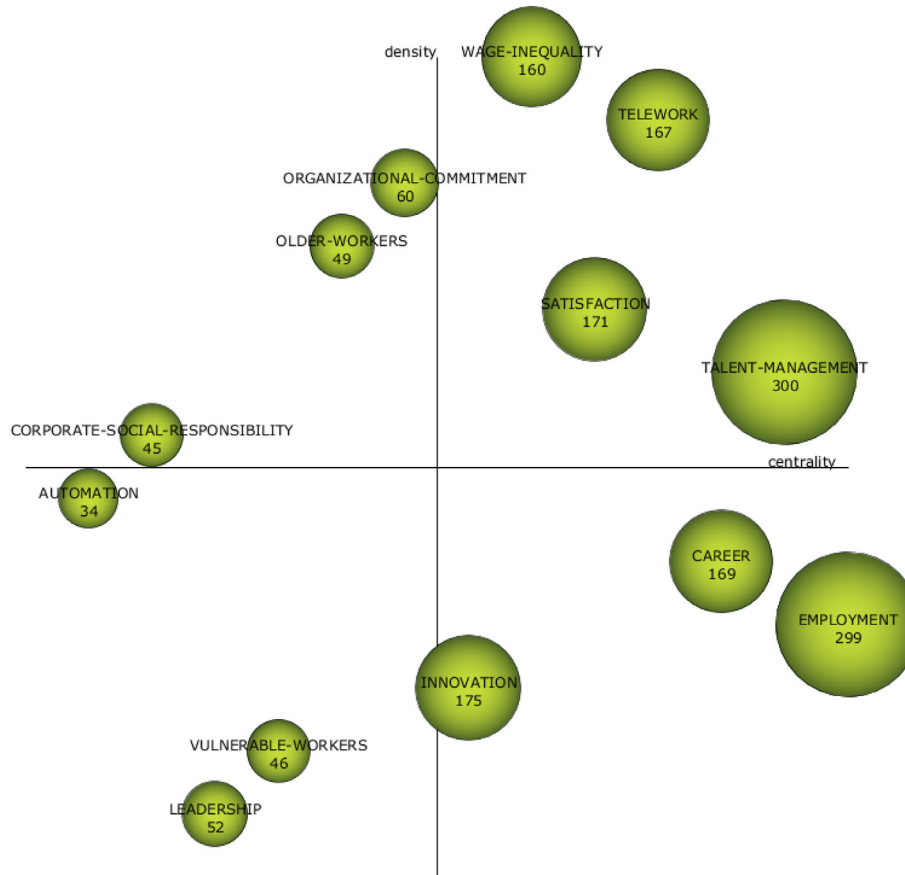


Fig. 7. Strategic diagram of FoW themes from 2015 to 2019 (number of union documents).

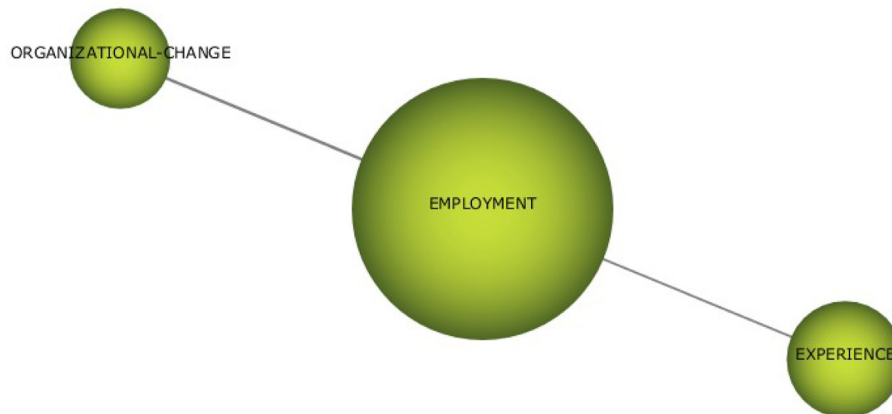


Fig. 8. Cluster's network of FoW's themes (employment) for the period 1959–1997.

(2014) used an interesting employment transition index to state that the shift to knowledge-based jobs is influencing wage inequality. Job polarisation is the progressive loss of jobs in sectors with average wages (Autor & Dorn, 2013). Job polarisation implies that the proportion of high- and low-skilled jobs evolves at the expense of medium-skilled jobs; these tendencies are linked to the decreased demand for codifiable or routine tasks, including both manual and intellectual assignments (Goos, Manning, & Salomons, 2014). In addition, studies of education are increasingly relevant in the FoW theme as education determines the level of technology

adoption within firms (Riddell & Song, 2017). An analysis of the number of jobs at risk and the relationship between a job's probability of computerisation, wages and educational achievement (Frey & Osborne, 2013) reveals a major concern in this field.

Satisfaction is a significant theme in FoW research (see Fig. 7), with 171 related documents and 690 citations (see Table 2). Satisfaction covers research subthemes such as *work engagement*, *burnout*, *WLB*, *organisational justice*, *perceptions* or *attitudes* (see Fig. 12). Human attributes, positive emotions and well-being in the workplace are important to address the challenges created by the

Table 2
Performance of the FoW Themes for the Period 2015–2019

Name	Number of documents	Number of citations	h-Index
Talent management	300	1,345	18
Telework	167	677	13
Wage inequality	160	902	13
Employment	299	1,432	15
Satisfaction	171	690	12
Career	169	863	15
Innovation	175	939	16
Organisational commitment	60	206	8
Corporate social responsibility	45	266	8
Older workers	49	181	8
Automation	34	51	5
Vulnerable workers	46	191	7
Leadership	52	192	7



Fig. 9. Cluster's network of FoW's themes (talent management) for the period 2015–2019.

changing nature of jobs (Cascio & Aguinis, 2008; Gonzalez-Vazquez et al., 2019; Kohli, 2018). Organisations, and leaders in particular, can create an affectively committed and happier workforce. Job satisfaction has been studied as a potential source of relevant work-related behaviours, such as job performance (Judge, Thoresen, Bono, & Patton, 2001), turnover intentions (Chen, Ployhart, Thomas, Anderson, & Bliese, 2011), organisational commitment (Dirani & Kuchinke, 2011) and talented employees (Arocas & Morley, 2015). For example, Rego, Ribeiro, Cunha, and Jesuino (2011) stated that employees' satisfaction and happiness at work and affective commitment positively affect their commitment and performance and, therefore, organisational productivity. On the other side of the coin, burnout (depersonalisation and emotional exhaustion) is a psychological syndrome, involving persistent interpersonal and emotional stressors experienced by employees at work, which define their responses (Simha, Elloy, & Huang, 2014).

Burnout is a significant problem for organisations (Fernet, Gagné, & Austin, 2010), and has been connected with negative consequences (Simha et al., 2014), such as depression, absenteeism, reduced well-being, poor performance and low future work engagement (Hakanen, Schaufeli, & Ahola, 2008). Lastly, WLB strategies represent a significant antecedent of job satisfaction (Cegarra-Leiva, Sánchez-Vidal, & Cegarra-Navarro, 2012); in this sense, managers need to implement appropriate tools for monitoring levels of WLB problems.

4.3. Basic themes

Employment is a basic or transversal theme in the FoW field in the period 2015–2019 (see Fig. 7) and a significant number of documents (299) and citations (1,432) correspond to this term (see Table 2). This theme includes research concepts such as *gig*



Fig. 10. Cluster's network of FoW's themes (telework) for the period 2015–2019.

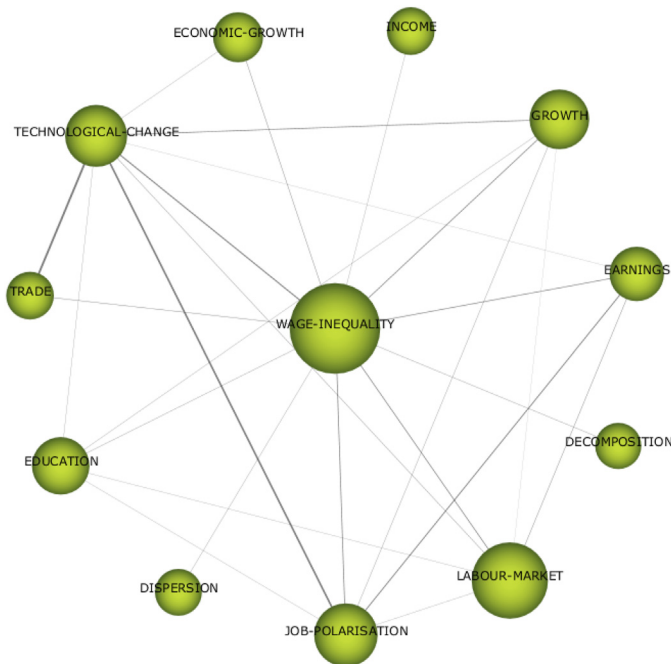


Fig. 11. Cluster's network of FoW's themes (wage inequality) for the period 2015–2019.

economy, precarious work, gender, industrial relations, skills and inequality (see Fig. 13). The future of employment and the threat of computerisation of many occupations have arisen an intense debate (Acemoglu & Restrepo, 2017; Frey, 2019; Frey & Osborne, 2013). The impact of *gig economy* on *employment* is also an important subtheme in the employment research theme. Gig economy refers to an economic system that employs digital platforms to link single service providers or workers with customers (Duggan, Sherman, Carbery, & McDonnell, 2019; Harris, 2017). This can be classified into remote (e.g. Fiverr, Upwork, Amazon Mechanical Turk) and local (e.g. food delivery, transport, manual labour) gig work (Huws, Spencer, & Joyce, 2016; Wood, Graham, Lehdonvirta, & Hjorth, 2019), which is offered and provided via platforms. However, according to Fernandez-Macias (2017), remote gig work is often labelled as crowdwork, while the local delivery of labour services via digital platform is labelled as gig work. Duggan et al. (2019) offer an interesting classification of gig work based upon technological characteristics: app-work, crowdwork and capital platform work. Gig economy offers autonomy and flexibility to workers, but conversely it could represent a trend towards precarious working (Friedman, 2014; Stewart & Stanford, 2017). Finally, organisations need to clearly identify the skills or competences required to adapt to the digital age (Murawski & Bick, 2017).

Career is a basic research theme in the FoW field (see Fig. 7), with 169 associated documents and 863 citations (see Table 2). This theme includes concepts such as *international assignments*, *expatriation*, *global talent management (GTM)*, *psychological contract*, *career development* and *diversity* (Fig. 14). As stated by Inkson (2006), stable employment and related organisational careers are disappearing. The conception of careers has to be dynamic and

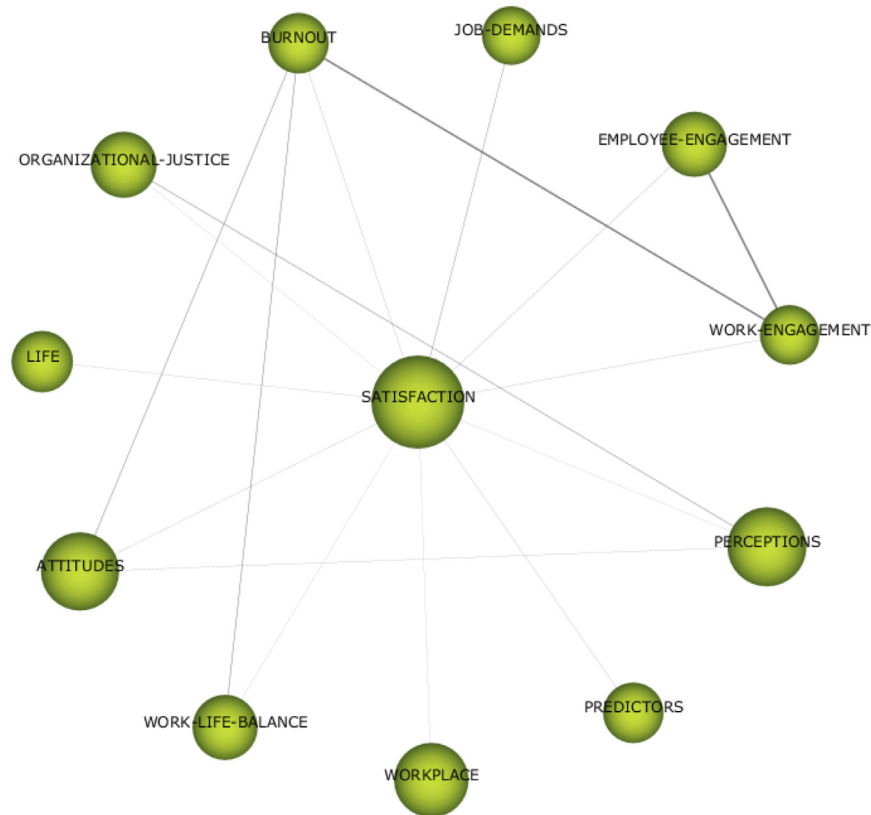


Fig. 12. Cluster's network of FoW's themes (satisfaction) for the period 2015–2019.

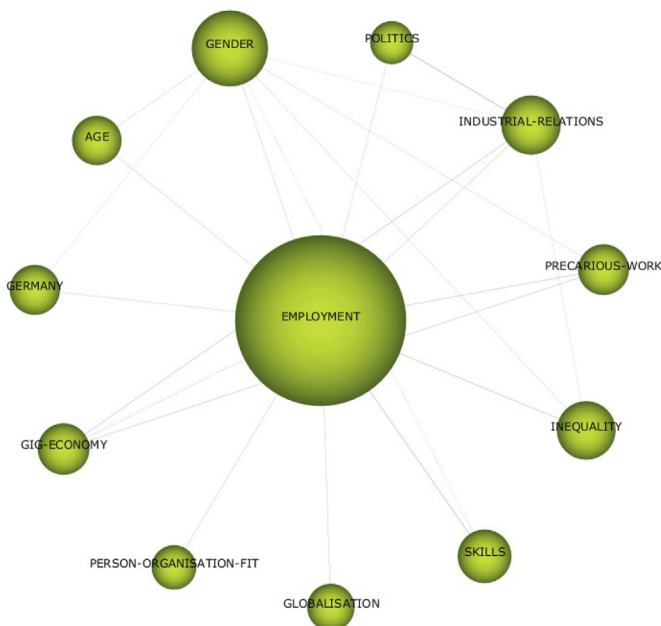


Fig. 13. Cluster's network of FoW's themes (employment) for the period 2015–2019.

unpredictable (Brougham & Haar, 2018), but this changing nature of careers could offer opportunities (Krumboltz, 2009). The employees' awareness of the impact of smart technology, artificial intelligence, robotics and algorithm developments has been 'negatively related to organisational commitment and career

satisfaction, and positively related to turnover intentions, cynicism, and depression' (Brougham & Haar, 2018, p. 239). The impact of technological changes on employment will alter the nature of career planning in terms of talent, workplace opportunities or work–family choices, and will foster the importance of boundaryless careers (Brougham & Haar, 2018). In this sense, Hirschi (2018) stated that career professionals have a key role in managing employees' labour changes, offering face-to-face or virtual services, such as learning and education (Hirschi, 2018). In this sense, international companies face significant challenges in incorporating their GTM strategies (McDonnell, Lamare, Gunnigle, & Lavelle, 2010). Dickmann et al. (2018) analysed the impact of working abroad on people career capital, and they observed that organisation-appointed expatriates learned more than self-initiated ones. Dickmann and Watson (2017) studied the reasons to accept international assignments in a hostile environment, and they presented five ideas about decision factors and career capital consequences related to assignments in hostile environments. Interestingly, Bolino, Klotz, and Turnley (2017) studied the consequences of refusing to accept an international assignment that breaches the psychological contract. Indeed, the management of careers is an important research theme in the FoW.

Innovation has been a basic theme in the study of FoW in the period from 2015 to 2019 (see Fig. 7), since a significant number of documents (175) and citations (939) correspond to this term. The innovation theme includes research subthemes such as *information technology (IT)*, *virtual HR*, *knowledge*, *dynamic capabilities* and *entrepreneurship*. Economic, technological and competitive changes have increased the complexity and mobility of jobs and have boosted interest in creativity (Joo, McLean, & Yang, 2013). Innovation and employees knowledge can bolster a firm's competitive advantage (Lin, 2011), as the entire organisation is in charge of



Fig. 14. Cluster's network of FoW's themes (career) for the period 2015–2019.

creating innovation by implementing innovation-fostering HR practices, such as the selection of qualified and creative employees, or the provision of continuous training (Lin, 2011; Ulrich, 1997). Felin and Powell (2016) analysed how organisational design can develop dynamic capabilities for continuous innovation in dynamic contexts. In this sense, HRM uses information technologies to achieve HR objectives (Bondarouk, Parry, & Furtmueller, 2017). The intersection of HRM and IT has been coined as e-HRM, which consists in a set of IT applications that include 'all possible integration mechanisms and contents between HRM and ITs aiming at creating value within and across organisations for targeted employees and management' (Bondarouk & Ruël, 2009, p. 507). Lin (2011) demonstrated that information technologies and virtual HR positively influence firm innovation, and that, therefore, information technologies play an important role in organisational innovation. In the era of uncertainty and technological change, the management of innovation within organisations is crucial.

4.4. Emerging themes

Leadership is an emerging research theme in the FoW field (see Fig. 7), with 52 related documents and 192 citations (see Table 2). These studies focus on concepts such as *value* and *context*. According to Dolan & Altman (2012), in today's dynamic context, leaders' main target is to implement an organisational culture grounded on shared values, and they present a model of values with these four axes: economic–pragmatic, ethical–social, emotional–developmental and spiritual dimensions. Spirituality at work implies that employees have spiritual needs, and seek a sense of meaning in their jobs and a connection with other people,

colleagues and their work community (Ashmos & Duchon, 2000). Workplace spirituality contributes not only to individual benefits (satisfaction and commitment), but also to organisational benefits, which is reflected in the reduced absenteeism and turnover and increased productivity. It is the responsibility of leaders in the 21st century to communicate the message of their vision and values in order to enhance performance (Carton, Murphy, & Clark, 2014).

The emerging theme of *vulnerable workers* covers areas such as *migrant workers* and *trade unions*. According to the British Trades Union Congress, vulnerable employment refers to 'precarious work that places people at risk of continuing poverty and injustice resulting from an imbalance of power in the employer–worker relationship' (TUC, 2013, p. 3). Vulnerable workers experience particular circumstances such as being ethnic minorities, migrant, older or female workers, unskilled, or long-term unemployed and disabled (Burgess, Connell, & Winterton, 2013; Le Fevre, Boxall, & Macky, 2015; van Berkel, Ingold, McGurk, Boselie, & Bredgaard, 2017). In this sense, employees can feel vulnerable in their workplace due to technological or economic changes (Thompson, 2011), and there is an increasing need for academic research to identify these vulnerable employees in danger of work intensification, and its consequences for stress, WLB, fatigue and satisfaction (Le Fevre et al., 2015).

Automation is an emerging research theme in the FoW field (see Fig. 7), with 34 related documents and 51 citations (see Table 2) referring to the impact of *automation* and *digitalisation* in organisations. According to Fernandez-Macias (2017, p.4), work automation describes 'the replacement of (human) labour input by machine input for some types of tasks within production and distribution processes'. Brougham and Haar (2018) explained how

employees scan the impact of automation on their jobs. Digitalisation explains how many areas of social life are reorganised around digital media and communication facilities (Brennen & Kreiss, 2016). Eichhorst, Hinte, Rinne, and Tobsch (2017) analysed the impact of digitalisation in the labour market, which is undergoing a huge transformation (i.e. the impact of platform economy and platform workers). Work automation, digitalisation and artificial intelligence are important organisational resources, but they need to be properly studied, measured and incorporated in organisations with the support of institutions and policies.

4.5. Specialised themes

Older worker is a specialised theme in the FoW field (see Fig. 7), with 49 documents and 181 citations relating to *retirement, health and discrimination*. Improvements in health and increased life expectancy are allowing older people to continue working in their later years (Pleau & Shauman, 2013). Graebner (1980) stated that older workers learn more slowly and are forced into retirement by technological developments. This has led to the coexistence of opposing trends: the possibility of extending older employees' life expectancy, and the impact of technology on age-earnings profiles and the intention to force retirement. The rise in the number of older workers in the labour market has increased academics' and practitioners' interest in the management of these workforces (OECD, 2011; Van Der Heijden, De Lange, Demerouti, & Van Der Heijde, 2009). In this sense, Perera, Sardeshmukh, and Kulik (2015) highlighted the need to adopt practices that engage and retain mature employees through the emphasis on flexibility, job redesign and supportive work practices in order to retain older talent and avoid intensification of their work and job dissatisfaction. Therefore, the management of age disparities within the workforce requires attention in the FoW field.

Another specialised research theme in the FoW field is *organisational commitment*, with 60 documents and 260 citations from 2015 to 2019. This theme includes research subthemes, such as *turnover intentions, retention and trust*. Organisational commitment enables talent attraction as well as powerful impacts on turnover intentions and retentions (Kontoghiorghes, 2016). The new generations, who are joining the market labour, have witnessed the appearance of the Internet, social media and environmental awareness (Naim & Lenka, 2018). According to these authors, these generations of employees need continuous competency development through mentoring, strategic leadership, social media and knowledge exchange to foster employee commitment and retention. Deng (2018) reported on how family firms can increase organisational commitment of new generations of migrant workers in China by developing family business practices, such as decent working conditions, career development and 'familiness' corporate culture. Thus, organisational commitment is a significant variable to consider retaining a talented workforce in order to cope with future challenges.

CSR is a specialised research theme within the FoW field (see Fig. 7), with 45 documents and 266 citations corresponding to this term (Table 2). This theme includes research subthemes, such as *corporate governance, sustainability and sustainable HRM*. The 2008 global crisis and persistent organisational misconduct has led to renewed attention being paid to corporate governance (Aguilera, Desender, Bednar, & Lee, 2015), a term that refers to a system of protecting ownership against behaviours that reduce its value (Huyghebaert & Wang, 2012). Belloc (2012) analysed the relationship between corporate governance and innovation, and stated that understanding the way in which human resources are incorporated into organisations and the coordination between team members are important for organisational innovation dynamics. Another

subtheme of the CSR theme is sustainable HRM. Ehnert, Parsa, Roper, Wagner, and Muller-Camen (2016) analysed the extent to which sustainability reports may reveal prevailing models of corporate governance in the country in which an organisation is headquartered. Consequently, the study of CSR for the future of organisations is relevant and will determine organisations' survival and sustainable development. Technological development such as artificial intelligence requires attention on social responsibility in business issues, as well as observation of legal systems to preserve privacy, transparency and security (Keenan, Kemp, & Owen, 2019). In this sense, Medros (2019) stated that companies have an important responsibility in the future of the workforce; he added that, by acknowledging training and development and flexible arrangements as CSR actions, employers can enhance their talent pools and, concurrently, invest in their communities by providing educated workforce.

4.6. Analysis of the evolution detected throughout the different sub-periods

The keywords differ in number and lexicography in the four sub-periods: 1959–1997, 1998–2008, 2009–2014 and 2015–2019 (Fig. 15). The FoW terminology has evolved using a number of different keywords to describe the content of the documents. New topics and their associated keywords emerge in the field in the sub-period 2015–2019 (e.g. *automation, CSR, vulnerable workers, leadership, international career*), while other research themes are incorporated into new related themes (e.g. *migrant workers, e-HRM*). On the other hand, keywords such as *wage inequality* and *telework* have remained unchanged over the last three consecutive sub-periods (1998–2008, 2009–2014 and 2015–2019), highlighting the importance of technological change and its impact on employment and wages (Acemoglu & Autor, 2011). In the period 1998–2008, the term *telework* derived from the *employment* theme (see Fig. 15). Indeed, the impact of the spatial and temporal limits between work and home on the employment relationship, together with the study of the ways in which teleworking can be matched to surveillance in employment, are important challenges in this period (Fairweather, 1999; Harris, 2003). The *employment* theme has always underlied, being a motor theme for the periods 1959–1997 and 2015–2019, highlighting that the concern over automation and joblessness has developed into more realistic views, that is, many of the middle-skilled jobs of the future will combine routine technical tasks with non-routine tasks, in which employees hold comparative advantages, such as interpersonal interaction, flexibility, adaptability and problem-solving (Autor, 2015). *Satisfaction, talent management, innovation and older workers* have appeared over two periods (2009–2014 and 2015–2019), demonstrating the increasing importance of managing employee satisfaction, creativity and learning in this field. In the sub-periods 2009–2014 and 2015–2019, there is an increasing interest in employee well-being and HR leaders aim to manage issues such as vulnerability (e.g. older or migrant workers), talent, corporate social responsibility, teleworking and employee commitment based on the fact that companies operate in an increasingly global context. Therefore, according to this evolution analysis, the HRM discipline is needed to respond to these new challenges in the FoW context.

5. Categorising the future of work

What is FoW about? FoW looks far beyond the single notion of robots replacing individual jobs. According to Balliester and Elsheikhi (2018) and Anner et al. (2019), the FoW concept refers to the influence of technological changes, although socio-economic or political

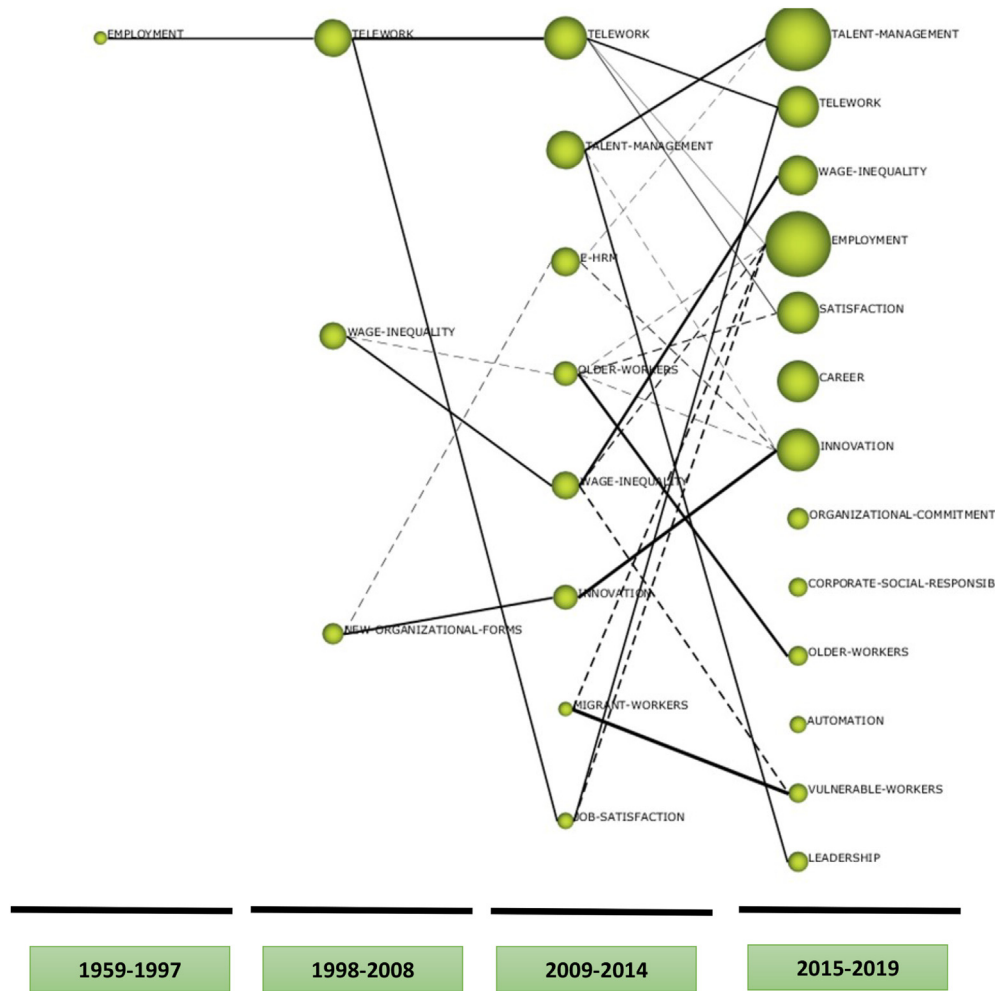


Fig. 15. Evolution map of FoW's themes for periods 1959–1997, 1998–2008, 2009–2014 and 2015–2019.

factors also underlie this concept. In this sense, the FoW refers to the technological, social/demographic (well-being), economic and political/institutional dimensions. Based on the findings of our bibliometric analysis, where we obtained systematic knowledge of the most prolific FoW research themes and tendencies, we can categorise all these themes into their technological, social/demographic, economic and political categories (see Fig. 16).

5.1. The technological essence of work

The technological nature of work alludes to all the changes that work is undergoing; for instance, the irruption of *new forms of work* (e.g. gig work, crowdwork, on-demand work, platform work) and *flexible work arrangements*. Automation, digitalisation and artificial intelligence are important organisational resources that are changing the working ways, roles and businesses. The emergence of new forms of work has led to a lack of conceptual clarity on the subject. The Eurofound classifies these new forms of jobs into three groups: employee-oriented, such as job sharing, casual work and interim management; self-employment-oriented, such as crowdwork, portfolio work, collaborative job, which coordinates customers with providers through virtual platforms; and mixed jobs, such as ICT-based mobile work and voucher-based work (for an overview see Mandl, Curtarelli, Riso, Vargas-Llave, and Georgiannis' (2015) report). The concept of gig work is particularly important. Although Pesole, Urzi Brancati, Fernandez-Macias, Biagi, and

Gonzalez-Vazquez (2018, p.7) consider that the term gig work has a 'negatively loaded' meaning, and they prefer to use the neutral term of platform worker, the popularity of the gig work's concept is increasing. *Telework* is also a relevant outcome of the influence of technology on the nature of work.

To adapt to this challenges of the new nature of work, organisations require competences, such as resilience, problem solving, creativity, information processing communication, making use of big data, flexibility, readiness to learn and willingness to adopt responsibility or sociability (Cascio & Aguinis, 2008; Gonzalez-Vazquez et al., 2019; Goos et al., 2014; Murawski & Bick, 2017). These attributes will foster innovation and entrepreneurial behaviour among employees (Ratten & Ferreira, 2016) to face these technological challenges and reduce skill mismatch.

5.2. The social essence of future of work

Technological changes have a tremendous social impact on individuals and communities. The FoW deals with topics, such as job satisfaction, burnout, vulnerable workers (older workers, migrant workers, gender discrimination), work–life conflicts, talent (attraction, retention, GTM), careers (with a focus on international careers), leader's values, CSR and organisational commitment. Indeed, the welfare state's development together with new technologies have set individuals well-being related needs at the top of their demands. For instance, we reviewed in this manuscript how

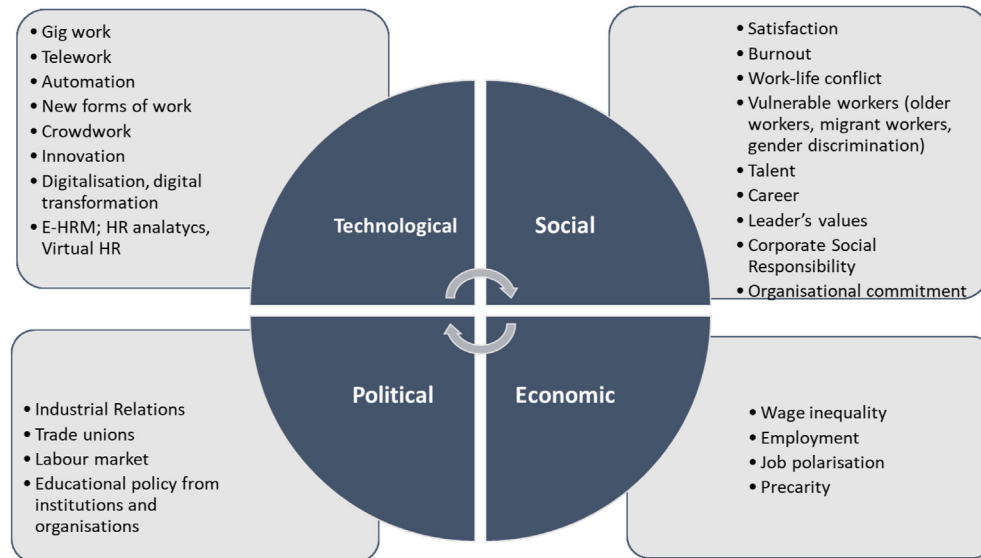


Fig. 16. Classification of FoW's themes.

job satisfaction has been proved as a potential source of relevant work-related behaviours. In addition, the irruption of new technology directly impacts on older workers, who often hardly adapt to these new developments. Besides, employees may experience high levels of stress or work–life conflicts as they cope with technological changes, which involves working extra hours. It is important to highlight the study of CSR and sustainable HRM for the future of organisations as a source that will determine organisations' economic, environmental and social development. Twenty-first century leaders are responsible for communicating messages about their vision and values (Carton et al., 2014) and have to be ready for managing diversity. HRM plays an important role in managing current challenges.

5.3. The economic essence of the Future of Work

From the economic perspective, this changing nature of work is impacting *employment* and *wage inequality* and creating the *job polarisation* phenomenon. Many of the manuscripts related to FoW are focussed on these specific economic outcomes (Table 2). As has been previously mentioned, there exists an ongoing debate about the amount of jobs created or lost due to technological development (Arntz et al., 2016; Frey & Osborne, 2013; Hawksworth et al., 2018; World Economic Forum, 2018). In line with the employment concern, job polarisation is the progressive loss of jobs in sectors with average wages (Autor & Dorn, 2013). This phenomenon stems from the new technologies that have reduced the demand for workers performing easily mechanised routine tasks (mostly low-paid occupations), while increasing the relative demand for jobs that maintain a certain advantage over technology, either because they require greater creativity or manual or interpersonal skills (in the upper and lower wage bands, respectively; Goos et al., 2014). Interestingly, Spencer (2018) highlights that jobs will persist and that the problem will be linked to a decrease in the quality of jobs rather than to a loss of jobs. Similarly, there exists much debate aiming to explain the increase in wage inequality grounded, for instance, on alterations in supply and demand for low- and high-skilled employees (Acemoglu & Restrepo, 2017), but many other explanations appear around the rise in wage inequality (Ohlert, 2016). Undoubtedly, employment and wage inequality represent core FoW themes, where researchers could offer significant contributions.

5.4. The crucial political/institutional essence in the Future of Work

The adoption of new technology within organisations will require public institutions, policymakers and organisations to develop tailored regulations and decisions to address all these new challenges posed by the new forms of work (e.g. gig work, crowdwork), flexible work arrangements (e.g. telework), wage inequality, vulnerable workers and skill mismatch. Frey (2019) suggests some decisions, such as making greater use of wage insurance, to compensate forced employee mobility; modifying education systems to support early childhood education and lifelong learning; broadening income tax credit to enhance incentives to work and diminish inequality; or offering 'mobility vouchers' to support relocation in the face of the changing distribution of jobs. Indeed, all the new forms of work can offer autonomy and flexibility to workers, but conversely it could pave the road for precarious work (Friedman, 2014; Stewart & Stanford, 2017). For instance, it is necessary to clarify the real status of gig workers (Todolí-Signes, 2017), as well as fostering workers engagement (Crush, 2018). In 2017, the European Parliament approved recommendations that would guarantee basic rights for workers, regardless of the form of employment and contract, and specifically including work intermediated by digital platforms (European Parliament, 2017).

Consideration of the education and skills of employees is important. To this end, David Gruen (2017) showed how some public policy responses are coordinated with organisations, such as increased funding for schools and the teaching of skills and capabilities to enable the next generation to adapt to technological changes, and designing supportive programmes to keep vulnerable workers in the labour market (e.g. unemployed, older and younger workers and individuals from disadvantaged backgrounds or regions). These responsible interventions will improve the prospective benefits for the organisation and for the whole community. Frey (2019) appeals to decision makers to adopt decisions before it is too late.

6. Conclusions, future research and limitations

This bibliometric analysis allows us to obtain deep knowledge of the most prolific FoW research themes. Observing the last studied period, 2015–2019, themes can be ordered as motor (wage inequality, telework, satisfaction, talent management), basic

(employment, career, innovation), specialised (organisational commitment, older workers, CSR) and emerging (automation, vulnerable workers, leadership), and also FoW themes can be classified according to their technological, social, economic or political aftermath. In conclusion, although the relevant FoW literature has focussed on the technological and changing nature of work, it is also pertinent to address social, economic and political concerns, which are interrelated and complex to tackle, since FoW needs urgent organisational and political measures now, for an uncertain present and future.

The FoW has a number of theoretical implications. Studies related to the new forms of work, flexible work arrangements, telework, skills and intersection of HRM and IT (e-HRM, virtual HR, HR analytics) will provide relevant contributions to the changing nature of work. In this sense, recent studies have provided different classifications of the term gig work. However, the appearance of this new term requires more studies about the nature and consequences of the gig economy phenomenon to determine how HRM can manage these new gig employees, who usually work more independently. Research is also needed to understand telework in terms of promotions, compensation and the employee–supervisor relationship. In addition to this, determining the competences needed to respond to the changing nature of jobs and how the HRM function can enhance these competences in the digital age represents a promising future research line. Furthermore, understanding how new technological developments are affecting the happiness, stress, work–life balance, careers and talent of employees and how HRM can improve this relationship is a relevant contribution of the FoW field. For instance, more studies on the relationship between HRM, talent management and firm performance are needed. Also, further studies should focus on how HRM can contribute to the development of vulnerable workers, and what HRM practices can bolster the employer engagement towards these groups.

Regarding the practical implications, there is an urgent need to consider how digital developments are affecting strategic human resource (SHR) management (e.g. will SHR positions survive or will they also be replaced? Can the e-recruitment tools replace the HR employees?) In this sense, humans will always contribute with their competences (e.g. emotional, problem solving, creative, information processing communication, making use of big data, etc.), although an important challenge for management (in their selection and training programmes) will be to determine which competences will better fit certain current and future tasks. As we have analysed, HRM plays an important role in managing current challenges (careers, GTM, inequalities, teleworking, gig working).

We expect that the systematisation and representation of the FoW field set out in this paper will foster new research, particularly into the motor and basic themes. FoW is concerned with the management of people and not merely about robot replacements, and, most importantly, the foundation of FoW management is already underway. The main limitation of this paper is that all the papers refer to management, business and industrial labour relations. Furthermore, only WoS articles and reviews in English were analysed.

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References

- Acemoglu, D., & Autor, D. (2011). Skills, tasks and technologies: Implications for employment and earnings. *Handbook of Labor Economics*, 4, 1043–1171. [https://doi.org/10.1016/S0169-7218\(11\)02410-5](https://doi.org/10.1016/S0169-7218(11)02410-5).
- Acemoglu, D., & Restrepo, P. (2017). Robots and jobs: Evidence from US labor markets. Cambridge, MA <https://doi.org/10.3386/w23285>.
- Aguilera, R. V., Desender, K., Bednar, M. K., & Lee, J. H. (2015). Connecting the dots: Bringing external corporate governance into the corporate governance puzzle. *The Academy of Management Annals*, 9(1), 483–573. <https://doi.org/10.1080/19416520.2015.1024503>.
- Allen, R. C. (2017). Lessons from history for the future of work. *Nature*, 550(7676), 321–324. <https://doi.org/10.1038/550321a>.
- Anner, M., Pons-Vignon, N., & Rani, U. (2019). For a future of work with dignity: A critique of the world bank development report, the changing nature of work. *Global Labour Journal*, 10(1). <https://doi.org/10.15173/glj.v10i1.3796>.
- Arntz, M., Gregory, T., & Zierahn, U. (2016). The risk of automation for jobs in OECD countries: A comparative analysis. <https://doi.org/10.1787/5jlz9h56dvq7-en>.
- Arocas, R. L., & Morley, M. J. (2015). Talent management, talent mindset competency and job performance: The mediating role of job satisfaction. *European Journal of International Management*, 9(1), 28. <https://doi.org/10.1504/EJIM.2015.066670>.
- Ashmos, D. P., & Duchon, D. (2000). Spirituality at work. *Journal of Management Inquiry*, 9(2), 134–145. <https://doi.org/10.1177/105649260092008>.
- Autor, D. H. (2015). Why are there still so many jobs? The history and future of workplace automation. *The Journal of Economic Perspectives*, 29(3), 3–30. <https://doi.org/10.1257/jep.29.3.3>.
- Autor, D. H., & Dorn, D. (2013). The growth of low-skill service jobs and the polarization of the US labor market. *The American Economic Review*, 103(5), 1553–1597. <https://doi.org/10.1257/aer.103.5.1553>.
- Autor, D., & Salomons, A. (2018). Is automation labor share-displacing? *Productivity growth, employment, and the labor share. Brookings papers on economic activity*, 2018. <https://doi.org/10.1353/eca.2018.0000>.
- Baliester, T., & Elsheikhi, A. (2018). The Future of work: A literature review (No. 29). Retrieved from https://www.ilo.org/global/research/publications/working-papers/WCMS_625866/lang-en/index.htm.
- Batagelj, V., & Cerinšek, M. (2013). On bibliographic networks. *Scientometrics*, 96(3), 845–864. <https://doi.org/10.1007/s11192-012-0940-1>.
- Belloc, F. (2012). Corporate governance and innovation: A survey. *Journal of Economic Surveys*, 26(5), 835–864. <https://doi.org/10.1111/j.1467-6419.2011.00681.x>.
- van Berkel, R., Ingold, J., McGurk, P., Boselie, P., & Bredgaard, T. (2017). Editorial introduction: An introduction to employer engagement in the field of HRM. Blending social policy and HRM research in promoting vulnerable groups' labour market participation. *Human Resource Management Journal*, 27(4), 503–513. <https://doi.org/10.1111/1748-8583.12169>.
- Bhattacharyya, S. S., & Nair, S. (2019). Explicating the future of work: Perspectives from India. *The Journal of Management Development*, 38(3), 175–194. <https://doi.org/10.1108/JMD-01-2019-0032>.
- Biberman, J., & Whitty, M. (1997). A postmodern spiritual future for work. *Journal of Organizational Change Management*, 10(2), 130–138. <https://doi.org/10.1108/09534819710160790>.
- Boell, S. K., Cecez-Kecmanovic, D., & Campbell, J. (2016). Telework paradoxes and practices: The importance of the nature of work. *New Technology, Work and Employment*, 31(2), 114–131. <https://doi.org/10.1111/ntwe.12063>.
- Bolino, M. C., Klotz, A. C., & Turnley, W. H. (2017). The implications of turning down an international assignment: A psychological contracts perspective. *International Journal of Human Resource Management*, 28(13), 1816–1841. <https://doi.org/10.1080/09585192.2015.1130735>.
- Bondarouk, T., Parry, E., & Furtmueller, E. (2017). Electronic HRM: Four decades of research on adoption and consequences. *International Journal of Human Resource Management*, 28(1), 98–131. <https://doi.org/10.1080/09585192.2016.1245672>.
- Bondarouk, T. V., & Ruël, H. J. M. (2009). Electronic human resource management: Challenges in the digital era. *International Journal of Human Resource Management*, 20(3), 505–514. <https://doi.org/10.1080/09585190802707235>.
- Bondarouk, T., & Ruël, H. (2010). The strategic value of e-HRM: Results from an exploratory study in a governmental organization. In *CEUR workshop proceedings* (Vol. 570, pp. 15–32). <https://doi.org/10.1080/09585192.2012.675142>. Taylor & Francis Group.
- Bondarouk, T., Schilling, D., & Ruël, H. (2016). eHRM adoption in emerging economies: The case of subsidiaries of multinational corporations in Indonesia. *Canadian Journal of Administrative Sciences- Revue Canadienne des Sciences de l'Administration*, 33(2), 124–137. <https://doi.org/10.1002/cjas.1376>.
- Börner, K., Chen, C., & Boyack, K. W. (2005). Visualizing knowledge domains. *Annual Review of Information Science & Technology*, 37(1), 179–255. <https://doi.org/10.1002/aris.1440370106>.
- Brennen, J. S., & Kreiss, D. (2016). Digitalization. In *The international encyclopedia of communication theory and philosophy* (pp. 1–11). Hoboken, NJ, USA: John Wiley & Sons, Inc. <https://doi.org/10.1002/9781118766804.wbiect111>.
- Brockner, J. (1992). Managing the effects of layoffs on survivors. *California Management Review*, 34(2), 9–28. Retrieved from <https://cmr.berkeley.edu/search/articleDetail.aspx?article=4608>.
- Brougham, D., & Haar, J. (2018). Smart technology, artificial intelligence, robotics, and algorithms (STARA): Employees' perceptions of our future workplace. *Journal of Management and Organization*, 24(2), 239–257. <https://doi.org/10.1017/jmo.2016.55>.
- Burgess, J., Connell, J., & Winterton, J. (2013). Vulnerable workers, precarious work and the role of trade unions and HRM. *International Journal of Human Resource Management*, 24(22), 4083–4093. <https://doi.org/10.1080/09585192.2013.845420>.

- Callon, M., Courtial, J. P., & Laville, F. (1991). Co-word analysis as a tool for describing the network of interactions between basic and technological research: The case of polymer chemistry. *Scientometrics*, 22(1), 155–205. <https://doi.org/10.1007/BF02019280>.
- Card, D., & DiNardo, J. (2002). Skill biased technological change and rising wage inequality: Some problems and puzzles. *Journal of Labor Economics*, 20(4), 733–783. <https://doi.org/10.3386/w8769>.
- Carton, A. M., Murphy, C., & Clark, J. R. (2014). A (blurry) vision of the future: How leader rhetoric about ultimate goals influences performance. *Academy of Management Journal*, 57(6), 1544–1570. <https://doi.org/10.5465/amj.2012.0101>.
- Cascio, W. F., & Aguinis, H. (2008). Staffing twenty-first-century organizations. *The Academy of Management Annals*, 2(1), 133–165. <https://doi.org/10.5465/19416520802211461>.
- Cegarra-Leiva, D., Sánchez-Vidal, M. E., & Cegarra-Navarro, J. G. (2012). Work life balance and the retention of managers in Spanish SMEs. *International Journal of Human Resource Management*, 23(1), 91–108. <https://doi.org/10.1080/09585192.2011.610955>.
- Chen, G., Ployhart, R. E., Thomas, H. C., Anderson, N., & Bliese, P. D. (2011). The power of momentum: A new model of dynamic relationships between job satisfaction change and turnover intentions. *Academy of Management Journal*, 54(1), 159–181. <https://doi.org/10.5465/amj.2011.59215089>.
- Cobo, M. J., López-Herrera, A. G., Herrera-Viedma, E., & Herrera, F. (2011a). An approach for detecting, quantifying, and visualizing the evolution of a research field: A practical application to the fuzzy sets theory field. *Journal of Informetrics*, 5(1), 146–166. <https://doi.org/10.1016/j.joi.2010.10.002>.
- Cobo, M. J., López-Herrera, A. G., Herrera-Viedma, E., & Herrera, F. (2011b). Science mapping software tools: Review, analysis, and cooperative study among tools. *Journal of the American Society for Information Science and Technology*, 62(7), 1382–1402. <https://doi.org/10.1002/asi.21525>.
- Cobo, M. J., López-Herrera, A. G., Herrera-Viedma, E., & Herrera, F. (2012). SciMAT: A new science mapping analysis software tool. *Journal of the American Society for Information Science and Technology*, 63(8), 1609–1630. <https://doi.org/10.1002/asi.22688>.
- Collings, D. G., & Mellahi, K. (2009). Strategic talent management: A review and research agenda. *Human Resource Management Review*, 19(4), 304–313. <https://doi.org/10.1016/j.hrmr.2009.04.001>.
- Coulter, N., Monarch, I., & Konda, S. (1998). Software engineering as seen through its research literature: A study in co-word analysis. *Journal of the American Society for Information Science*, 49(13), 1206–1223. [https://doi.org/10.1002/\(SICI\)1097-4571\(1998\)49:13<1206::AID-ASIF>3.0.CO;2-F](https://doi.org/10.1002/(SICI)1097-4571(1998)49:13<1206::AID-ASIF>3.0.CO;2-F).
- Crush, P. (2018). Engaging your gig workers. Retrieved February 12, 2019, from <http://www.hrmagazine.co.uk/article-details/engaging-your-gig-workers>.
- Daim, T. U., Rueda, G., Martin, H., & Gerdri, P. (2006). Forecasting emerging technologies: Use of bibliometrics and patent analysis. *Technological Forecasting and Social Change*, 73, 981–1012. <https://doi.org/10.1016/j.techfore.2006.04.004>.
- Deloitte. (2017). Rewriting the rules for the digital age 2017 deloitte global human capital trends. Retrieved from <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/HumanCapital/hc-2017-global-human-capital-trends-gx.pdf>.
- Deng, X. (2018). Embedding 'familiness' in HRM practices to retain a new generation of migrant workers in China. *Asia Pacific Business Review*, 24(4), 561–577. <https://doi.org/10.1080/13602381.2018.1451124>.
- Dickmann, M., Suutari, V., Brewster, C., Mäkelä, L., Tanskanen, J., & Tornikoski, C. (2018). The career competencies of self-initiated and assigned expatriates: Assessing the development of career capital over time. *International Journal of Human Resource Management*, 29(16), 2353–2371. <https://doi.org/10.1080/09585192.2016.1172657>.
- Dickmann, M., & Watson, A. H. (2017). "I might be shot at!" exploring the drivers to work in hostile environments using an intelligent careers perspective. *Journal of Global Mobility: The Home of Expatriate Management Research*, 5(4), 348–373. <https://doi.org/10.1108/JGM-12-2016-0066>.
- Dirani, K. M., & Kuchinke, K. P. (2011). Job satisfaction and organizational commitment: Validating the Arabic satisfaction and commitment questionnaire (ASCQ), testing the correlations, and investigating the effects of demographic variables in the Lebanese banking sector. *International Journal of Human Resource Management*, 22(5), 1180–1202. <https://doi.org/10.1080/09585192.2011.556801>.
- Dolan, S., & Altman, Y. (2012). Managing by values: The leadership spirituality connection. *People & Strategy*, 35(4), 20–26.
- Duggan, J., Sherman, U., Carbery, R., & McDonnell, A. (2019). Algorithmic management and app-work in the gig economy: A research agenda for employment relations and HRM. *Human Resource Management Journal*, 1–19. <https://doi.org/10.1111/1748-8583.12258>.
- Ehnert, I., Parsa, S., Roper, I., Wagner, M., & Müller-Camen, M. (2016). Reporting on sustainability and HRM: A comparative study of sustainability reporting practices by the world's largest companies. *International Journal of Human Resource Management*, 27. <https://doi.org/10.1080/09585192.2015.1024157>.
- Eichhorst, W., Hinte, H., Rinne, U., & Tobsch, V. (2017). How big is the gig? Assessing the preliminary evidence on the effects of digitalization on the labor market. *Management Review*, 28(3), 298–318. <https://doi.org/10.5771/0935-9915-2017-3-298>.
- European Parliament. (2017). European social rights: Workers' protection needs to be extended to new jobs | news | European parliament. Retrieved February 12, 2019, from <http://www.europarl.europa.eu/news/en/press-room/20170113PIR58040/european-social-rights-workers-protection-needs-to-be-extended-to-new-jobs>.
- Fairweather, N. B. (1999). Surveillance in employment: The case of teleworking. *Journal of Business Ethics*, 22(1), 39–49. <https://doi.org/10.1023/A:1006104017646>.
- Felin, T., & Powell, T. C. (2016). Designing organizations for dynamic capabilities. *California Management Review*, 58(4), 78–96. <https://doi.org/10.1525/cmr.2016.58.4.78>.
- Felstead, A., & Henseke, G. (2017). Assessing the growth of remote working and its consequences for effort, well-being and work-life balance. *New Technology, Work and Employment*, 32(3), 195–212. <https://doi.org/10.1111/ntwe.12097>.
- Fernandez-Macias, E. (2017). Automation, digitisation and platforms: Implications for work and employment. In *Eurofound working paper*. Retrieved from www.eurofound.europa.eu.
- Fernet, C., Gagné, M., & Austin, S. (2010). When does quality of relationships with coworkers predict burnout over time? The moderating role of work motivation. *Journal of Organizational Behavior*, 31(8), 1163–1180. <https://doi.org/10.1002/job.673>.
- Frey, C. B. (2019). *The technology trap: Capital, labor, and power in the age of automation*. Princeton, New Jersey: Princeton University Press. Retrieved from <https://press.princeton.edu/titles/13489.html>.
- Frey, C. B., Osborne, M., ... (2013). The future of employment: How susceptible are. *Oxford Martin School (Oxford Martin Programme on Technology and Employment)*. Retrieved from <https://www.oxfordmartin.ox.ac.uk/publications/the-future-of-employment/>.
- Friedman, G. (2014). Workers without employers: Shadow corporations and the rise of the gig economy. *Review of Keynesian Economics*, 2(2), 171–188. Retrieved from https://econpapers.repec.org/article/elgrokejn/v_3a2_3ay_3a2014_3ai_3a2_3ap171-188.htm.
- Gajendran, R. S., & Harrison, D. A. (2007). The good, the bad, and the unknown about telecommuting: Meta-analysis of psychological mediators and individual consequences. *Journal of Applied Psychology*, 92(6), 1524–1541. <https://doi.org/10.1037/0021-9010.92.6.1524>.
- Glaister, A. J., Karacay, G., Demirbag, M., & Tatoglu, E. (2018). HRM and performance-The role of talent management as a transmission mechanism in an emerging market context. *Human Resource Management Journal*, 28(1), 148–166. <https://doi.org/10.1111/1748-8583.12170>.
- Golden, T., Eddleston, K. A., & Powell, G. N. (2017). The impact of teleworking on career success: A signaling-based view. *Academy of Management Proceedings*, 2017(1), 14757. <https://doi.org/10.5465/AMBPP.2017.14757abstract>.
- Gonzalez-Vazquez, I., Milasi, S., Carretero-Gomez, S., Napierala, J., Robledo-Botcher, N., Jonkers, K., et al. (2019). The changing nature of work and skills in the digital age. EU Science Hub, Luxembourg. <https://doi.org/10.2760/679150>.
- Goos, M., Manning, A., & Salomons, A. (2014). Explaining job polarization: Routine-biased technological change and offshoring. *The American Economic Review*, 104(8), 2509–2526. <https://doi.org/10.1257/aer.104.8.2509>.
- Graebner, W. (1980). *A history of retirement: The meaning and function of an American institution, 1885-1978*. New Haven: Yale University Press.
- Gruen, D. (2017). The future of work. *Policy*, 33(3). Retrieved from <https://www.cis.org.au/app/uploads/2017/09/33-3-gruen-david.pdf>.
- Gupta, Y. P., Karimi, J., & Somers, T. M. (1995). Telecommuting: Problems associated with communications technologies and their capabilities. *IEEE Transactions on Engineering Management*, 42(4), 305–318. <https://doi.org/10.1109/17.482081>.
- Hakanen, J. J., Schaufeli, W. B., & Ahola, K. (2008). The job demands-resources model: A three-year cross-lagged study of burnout, depression, commitment, and work engagement. *Work & Stress*, 22(3), 224–241. <https://doi.org/10.1080/02678370802379432>.
- Harris, L. (2003). Home-based teleworking and the employment relationship. *Personnel Review*, 32(4), 422–437. <https://doi.org/10.1108/00483480310477515>.
- Harris, B. (2017). Uber, Lyft, and regulating the sharing economy. *Seattle university law review*, 41(1). Retrieved from <https://digitalcommons.law.seattleu.edu/sulr/vol41/iss1/8>.
- Hawksworth, J., Berriman, R., & Goel, S. (2018). *Will robots really steal our jobs?* United Kingdom. Retrieved from <https://www.pwc.co.uk/economic-services/assets/international-impact-of-automation-feb-2018.pdf>.
- Hirschi, A. (2018). The fourth industrial revolution: Issues and implications for career research and practice. *The Career Development Quarterly*, 66(3), 192–204. <https://doi.org/10.1002/cdq.12142>.
- Hornung, S., Rousseau, D. M., & Glaser, J. (2008). Creating flexible work arrangements through idiosyncratic deals. *Journal of Applied Psychology*, 93(3), 655–664. <https://doi.org/10.1037/0021-9010.93.3.655>.
- Huang, J., & Martin-Taylor, M. (2013). Turnaround user acceptance in the context of HR self-service technology adoption: An action research approach. *International Journal of Human Resource Management*, 24(3), 621–642. <https://doi.org/10.1080/09585192.2012.677460>.
- Huws, U., Spencer, N. H., & Joyce, S. (2016). Crowd work in Europe: Preliminary results from a survey in the UK, Sweden, Germany, Austria and the Netherlands. Retrieved from http://researchprofiles.herts.ac.uk/portal/files/10749125/crowd_work_in_europe_draft_report_last_version.pdf.
- Huyghebaert, N., & Wang, L. (2012). Expropriation of minority investors in Chinese listed firms: The role of internal and external corporate governance mechanisms. *Corporate Governance: An International Review*, 20(3), 308–332. <https://doi.org/10.1111/j.1467-8683.2012.00909.x>.
- Inkson, K. (2006). Protean and boundaryless careers as metaphors. *Journal of Vocational Behavior*, 69(1), 48–63. <https://doi.org/10.1016/j.jvb.2005.09.004>.
- Joo, B.-K.(B.), McLean, G. N., & Yang, B. (2013). Creativity and human resource

- development. *Human Resource Development Review*, 12(4), 390–421. <https://doi.org/10.1177/1534484313481462>.
- Judge, T. A., Thoresen, C. J., Bono, J. E., & Patton, G. K. (2001). The job satisfaction–job performance relationship: A qualitative and quantitative review. *Psychological Bulletin*, 127(3), 376–407. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/11393302>.
- Keenan, J., Kemp, D., & Owen, J. (2019). Corporate responsibility and the social risk of new mining technologies. *Corporate Social Responsibility and Environmental Management*, 26(4), 752–760. <https://doi.org/10.1002/csr.1717>.
- Kohll, A. (2018). What employees really want at work. *Forbes*. Retrieved from <https://www.forbes.com/sites/alankohll/2018/07/10/what-employees-really-want-at-work/#164151825ad3>.
- Kontoghiorghes, C. (2016). Linking high performance organizational culture and talent management: Satisfaction/motivation and organizational commitment as mediators. *International Journal of Human Resource Management*, 27(16), 1833–1853. <https://doi.org/10.1080/09585192.2015.1075572>.
- Krumboltz, J. D. (2009). The happenstance learning theory. *Journal of Career Assessment*, 17(2), 135–154. <https://doi.org/10.1177/1069072708328861>.
- Kwon, R. (2014). Employment transitions and the cycle of income inequality in postindustrial societies. *International Journal of Comparative Sociology*, 55(5), 404–428. <https://doi.org/10.1177/0020715214561133>.
- Le Fevre, M., Boxall, P., & Macky, K. (2015). Which workers are more vulnerable to work intensification? An analysis of two national surveys. *International Journal of Manpower*, 36(6), 966–983. <https://doi.org/10.1108/IJM-01-2014-0035>.
- Leana, C. R., & Feldman, D. C. (1995). Finding new jobs after a plant closing: Antecedents and outcomes of the occurrence and quality of reemployment. *Human Relations*, 48(12), 1381–1401. <https://doi.org/10.1177/001872679504801201>.
- Lembrechts, L., Zanon, P., & Verbruggen, M. (2018). The impact of team characteristics on the supervisor's attitude towards telework: A mixed-method study. *International Journal of Human Resource Management*, 29(21), 3118–3146. <https://doi.org/10.1080/09585192.2016.1255984>.
- Lin, L.-H. (2011). Electronic human resource management and organizational innovation: The roles of information technology and virtual organizational structure. *International Journal of Human Resource Management*, 22(2), 235–257. <https://doi.org/10.1080/09585192.2011.540149>.
- Mandl, I., Curtarelli, M., Riso, S., Vargas-Llave, O., & Georgiannis, E. (2015). New forms of employment. *Eurofound*. Retrieved from <https://www.eurofound.europa.eu/publications/report/2015/working-conditions-labour-market/new-forms-of-employment>.
- Manyika, J. (2017). What is the future of work?. Retrieved February 21, 2019, from <https://www.mckinsey.com/featured-insights/future-of-work/what-is-the-future-of-work>.
- Marchington, M. (2015). Human resource management (HRM): Too busy looking up to see where it is going longer term? *Human Resource Management Review*, 25(2), 176–187. <https://doi.org/10.1016/j.hrmr.2015.01.007>.
- McDonnell, A., Lamare, R., Gunnigle, P., & Lavelle, J. (2010). Developing tomorrow's leaders—evidence of global talent management in multinational enterprises. *Journal of World Business*, 45(2), 150–160. <https://doi.org/10.1016/j.jwb.2009.09.015>.
- Medros, A. (2019). Reskilling workers is a central part of corporate social responsibility. Retrieved October 11, 2019, from <https://hbr.org/2019/10/reskilling-workers-is-a-central-part-of-corporate-social-responsibility>.
- Meyer, K. E., & Xin, K. R. (2018). Managing talent in emerging economy multinationals: Integrating strategic management and human resource management. *International Journal of Human Resource Management*, 29(11), 1827–1855. <https://doi.org/10.1080/09585192.2017.1336362>.
- Mura, M., Longo, M., Micheli, P., & Bolzani, D. (2018). The evolution of sustainability measurement research. *International Journal of Management Reviews*, 20(3), 661–695. <https://doi.org/10.1111/ijmr.12179>.
- Murawski, M., & Bick, M. (2017). Digital competences of the workforce – a research topic? *Business Process Management Journal*, 23(3), 721–734. <https://doi.org/10.1108/BPMJ-06-2016-0126>.
- Naim, M. F., & Lenka, U. (2018). Development and retention of generation Y employees: A conceptual framework. *Employee Relations*, 40(2), 433–455. <https://doi.org/10.1108/ER-09-2016-0172>.
- Nedelkoska, L., & Quintini, G. (2018). Automation, skills use and training. *OECD Social, Employment and Migration Working Papers*. <https://doi.org/10.1787/2e2f4eea-en>. No. 202. Paris.
- Nilles, J. (1975). Telecommunications and organizational decentralization. *IEEE Transactions on Communications*, 23(10), 1142–1147. <https://doi.org/10.1109/TCOM.1975.1092687>.
- Norris, M., & Oppenheim, C. (2007). Comparing alternatives to the Web of Science for coverage of the social sciences' literature. *Journal of Informetrics*, 1(2), 161–169. <https://doi.org/10.1016/j.joi.2006.12.001>.
- Norton, M. J. (2001). Introductory concepts in information science. New Jersey. Retrieved from https://books.google.es/books/about/Introductory_Concepts_in_Information_Sci.html?id=6NVN6UdRbtwC&redir_esc=y.
- OECD. (2011). *Pensions at a glance 2011: Retirement-income systems in OECD and G20 countries*. Paris: OECD.
- Ohlert, C. (2016). Establishment heterogeneity, rent sharing and the rise of wage inequality in Germany. *International Journal of Manpower*, 37(2), 210–228. <https://doi.org/10.1108/IJM-01-2015-0005>.
- Perera, S., Sardeshmukh, S. R., & Kulik, C. T. (2015). In or out: Job exits of older workers. *Asia Pacific Journal of Human Resources*, 53(1), 4–21. <https://doi.org/10.1111/1744-7941.12051>.
- Pesole, A., Urzi Brancati, M. C., Fernandez-Macias, E., Biagi, F., & Gonzalez-Vazquez, I. (2018). *Platform Workers in Europe Evidence from the COLLEEM survey*. Luxembourg. <https://doi.org/10.2760/742789>.
- Pleau, R., & Shauman, K. (2013). Trends and correlates of post-retirement employment, 1977–2009. *Human Relations*, 66(1), 113–141. <https://doi.org/10.1177/0018726712447003>.
- Powell, A., & Craig, L. (2015). Gender differences in working at home and time use patterns: Evidence from Australia. *Work, Employment & Society*, 29(4), 571–589. <https://doi.org/10.1177/0950017014568140>.
- Ratten, V., & Ferreira, J. (2016). Global talent management and corporate entrepreneurship strategy. In *Global talent management and staffing in MNEs* (pp. 151–165). Emerald Group Publishing Limited. <https://doi.org/10.1108/S1876-066X20160000032006>.
- Rego, A., Ribeiro, N., Cunha, M. P. e, & Jesuino, J. C. (2011). How happiness mediates the organizational virtuousness and affective commitment relationship. *Journal of Business Research*, 64(5), 524–532. <https://doi.org/10.1016/j.jbusres.2010.04.009>.
- Riddell, W. C., & Song, X. (2017). The role of education in technology use and adoption: Evidence from the Canadian workplace and employee survey. *ILR Review*, 70(5), 1219–1253. <https://doi.org/10.1177/0019793916687719>.
- Rosenthal, R. (1979). The file drawer problem and tolerance for null results. *Psychological Bulletin*, 86(3), 638–641. <https://doi.org/10.1037/0033-2909.86.3.638>.
- Ruiller, C., Van Der Heijden, B., Chedotel, F., & Dumas, M. (2019). “You have got a friend”: The value of perceived proximity for teleworking success in dispersed teams. *Team Performance Management: International Journal*, 25(1/2), 2–29. <https://doi.org/10.1108/TPM-11-2017-0069>.
- Sarker, S., Sarker, S., Xiao, X., & Ahuja, M. (2012). Managing employees' use of mobile technologies to minimize work-life balance impacts. *MIS Quarterly Executive*, 11(4). Retrieved from <https://ir.library.louisville.edu/faculty/359>.
- Simha, A., Elloy, F. D., & Huang, H.-C. (2014). The moderated relationship between job burnout and organizational cynicism. *Management Decision*, 52(3), 482–504. <https://doi.org/10.1108/MD-08-2013-0422>.
- Small, H. (1999). Visualizing science by citation mapping. *Journal of the American Society for Information Science*, 50(9), 799–813. [https://doi.org/10.1002/\(SICI\)1097-4571\(1999\)50:9<799::AID-ASIS9>3.0.CO;2-G](https://doi.org/10.1002/(SICI)1097-4571(1999)50:9<799::AID-ASIS9>3.0.CO;2-G).
- Spencer, D. A. (2018). Fear and hope in an age of mass automation: Debating the future of work. *New Technology, Work and Employment*, 33(1), 1–12. <https://doi.org/10.1111/ntwe.12105>.
- Stewart, A., & Stanford, J. (2017). Regulating work in the gig economy: What are the options? *Economic and Labour Relations Review*, 28(3), 420–437. <https://doi.org/10.1177/1035304617722461>.
- Stoepfgeshoff, S. (2018). The future of work: Work for the future. *The ISM Journal of International Business*, 2(2), 25–28. Retrieved from www.ism.edu/images/ismdocs/ism-journal/ism-journal-2018.pdf.
- Stone, D. L., & Deadrick, D. L. (2015). Challenges and opportunities affecting the future of human resource management. *Human Resource Management Review*, 25(2), 139–145. <https://doi.org/10.1016/j.hrmr.2015.01.003>.
- Stone, D. L., Deadrick, D. L., Lukaszewski, K. M., & Johnson, R. (2015). The influence of technology on the future of human resource management. *Human Resource Management Review*, 25(2), 216–231. <https://doi.org/10.1016/j.hrmr.2015.01.002>.
- Strohmeier, S., & Piazza, F. (2013). Domain driven data mining in human resource management: A review of current research. *Expert Systems with Applications*, 40(7), 2410–2420. <https://doi.org/10.1016/j.eswa.2012.10.059>.
- Thompson, P. (2011). The trouble with HRM. *Human Resource Management Journal*, 21(4), 355–367. <https://doi.org/10.1111/j.1748-8583.2011.00180.x>.
- Thunnissen, M., & Gallardo-Gallardo, E. (2019). Rigor and relevance in empirical TM research: Key issues and challenges. *BRQ Business Research Quarterly*, 22(3), 171–180. <https://doi.org/10.1016/j.brq.2019.04.003>.
- Todolí-Signes, A. (2017). The ‘gig economy’: Employee, self-employed or the need for a special employment regulation? *Transfer: European Review of Labour and Research*, 23(2), 193–205. <https://doi.org/10.1177/1024258917701381>.
- TUC. (2013). The Decent Jobs Deficit. Retrieved from https://www.tuc.org.uk/sites/default/files/DecentJobsDeficitReport_0.pdf.
- Ulrich, D. (1997). Measuring human resources: An overview of practice and a prescription for results. *Human Resource Management*, 36(3), 303–320. [https://doi.org/10.1002/\(SICI\)1099-050X\(199723\)36:3<303::AID-HRM3>3.0.CO;2](https://doi.org/10.1002/(SICI)1099-050X(199723)36:3<303::AID-HRM3>3.0.CO;2).
- Van Der Heijden, B. I. J. M., De Lange, A. H., Demerouti, E., & Van Der Heijde, C. M. (2009). Age effects on the employability-career success relationship. *Journal of Vocational Behavior*, 74(2), 156–164. <https://doi.org/10.1016/j.jvb.2008.12.009>.
- Vilhelmson, B., & Thulin, E. (2016). Who and where are the flexible workers? Exploring the current diffusion of telework in Sweden. *New Technology, Work and Employment*, 31(1), 77–96. <https://doi.org/10.1111/ntwe.12060>.
- Wiblen, S. (2016). Framing the usefulness of eHRM in talent management: A case study of talent identification in a professional services firm. *Canadian Journal of Administrative Sciences- Revue Canadienne des Sciences de l'Administration*, 33(2), 95–107. <https://doi.org/10.1002/cjas.1378>.
- Wood, A. J., Graham, M., Lehdonvirta, V., & Hjorth, I. (2019). Good gig, bad gig: Autonomy and algorithmic control in the global gig economy. *Work, Employment & Society*, 33(1), 56–75. <https://doi.org/10.1177/0950017018785616>.
- World Economic Forum. (2016). The future of jobs. (January), 1–157. Retrieved from http://www3.weforum.org/docs/WEF_Future_of_Jobs.pdf.
- World Economic Forum. (2018). Towards a reskilling revolution. Retrieved from http://www3.weforum.org/docs/WEF_FOW_Reskilling_Revolution.pdf.