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Leading Indicators of Workplace Well-being - A systematic literature review

Gazierem Onwuegbuchulam

The University of Manchester

Clara Cheung

University of Manchester

Patrick Manu

University of the West of England

Jillian Yeow

The University of Manchester

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Author: Gazierem Sixtus Onwuegbuchulam, The University of Manchester
Dr. Clara Cheung, The University of Manchester
Prof. Patrick Manu, University of the West of England
Dr. Jill Yeow, The University of Manchester

Contact: Engineering Building A, The University of Manchester, Oxford Road,
Manchester M13 9PL
gazierem.onwuegbuchulam@postgrad.manchester.ac.uk

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Abstract

The effects of employee well-being on job performance are increasingly evident. Meanwhile, the leading indicators of well-being could assist employers in identifying the employees' well-being level and taking related actions to prevent adverse effects on job performance. The objective of this research is to identify the leading indicators of employee well-being, how they are measured and applied, their impact on employee well-being and the relationships between these leading indicators. A systematic literature review was conducted using the preferred reporting items for systematic reviews and meta-analysis (PRISMA) method to achieve the research objectives. The review identifies organisational leadership as an important leading indicator in the work environment and personal traits such as self-efficacy and resilience as important leading indicators of employee well-being required for coping with the demands of the work environment.

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1.0 Introduction

Employers recognise the merits of establishing health and well-being policies in the workplace (Baptiste 2008; Tehrani et al. 2007) because research have verified the existence of a significant relationship between well-being and work performance (Ledford 1999). For instance, Fisher (2003) asserts that 92% of Australasian employees presume that “a happy worker is likely to be a productive worker”. In the United Kingdom (UK), it was estimated that forty million working days are lost annually due to ill health and absence due to ill health costs around £12 billion each year (Department for Works and Pension (DWP) 2022).

While there is no standard definition of well-being, several authors have attempted to define well-being. Well-being could be defined as feelings of positive emotions, experience, and satisfaction with life. Researchers also adopt existing well-being constructs to define well-being although these constructs are also used as leading indicators or outcomes. For instance, job satisfaction has been used to define well-being (Kaplan et al. 2020; Wang et al. 2021), as a leading indicator of well-being (Caycho et al. 2020), and as an outcome of the actors in the work environment (Franke and Nadler 2021). Figure 1.1 displays some of the well-being constructs used in existing research.

Existing research on well-being provides profound measures that can raise employee well-being and positively transform business results however, not all these measures have been effective, and many factors affect their success. Researchers and industry experts have ventured to manage these constraints by outlining evidence-based practices used to facilitate and assess such measures. Some of these measures include the Workplace Health Achievement Index (WHA) (Calitz and Pham 2020), the Centers for Disease Control and Prevention (CDC) Worksite Scorecard (CDC 2017) and the Health Enhancement Research Organization (HERO) Health and well-being Best Practices Scorecard (Rosenbaum et al. 2020).

Employers also attest to an increase in productivity and profitability if the workplace is designed to meet the interests of the employer and the employee, financially and psychologically. Brough et al. (2009) suggest that employee well-being is enhanced if certain constraints are fulfilled. First, employees feel recognised and appreciated for the work they do. Second, employees believe they can have a mutually beneficial relationship with their employer if they take home a decent salary and personal well-being remains intact after performing their work. Third, they can acquire skills that keep them employable during their career journey. These constraints constitute the factors within an organisation that can affect and consequently indicate the well-being of employees. Failure to fulfil these constraints provokes reduced levels of engagement at work, loss of satisfaction, feelings of anxiety, stress, exhaustion, and burnout (Summers et al. 2020; Czakert et al. 2021; Topa and Pozo 2018), and staff turnover (Chen et al. 2020) thus indicating well-being might have been negatively impacted.

Recent theoretical developments in psychology reveal the need to focus on the challenges individuals face and the psychological strengths (that is a person's built-in capacities for particular ways of thinking, feeling, and behaving (Linley 2008)) and activities that result in improved well-being leading to the emergence of positive psychology (Seligman and Csikszentmihalyi 2000). According to this paradigm, a vital objective of psychology should be to identify the measures that promote workplace well-being leading to the identification of indicators of well-being attributed to the employees such as age, work experience, marital status, and personality.

Sheehan et al. (2016) categorise the indicators which can predict both the positive and negative outcomes of well-being as leading indicators while lagging indicators are those which capture patterns in occupational health and well-being outcomes and are essential for understanding well-being issues and risks, monitoring progress over time, and evaluating the need for

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interventions (Spyropoulos et al. 2021). Leading indicators have been shown to effectively predict well-being and avert adverse outcomes such as work-related stress (Bergh et al. 2018), exhaustion (Framke et al. 2019), diminishing performance and productivity (Bilau et al. 2015), and staff turnover (Zhang et al. 2020) and have also been found valuable for evaluating the effectiveness of organisational policies and practices. It is therefore imperative to identify the leading indicators of well-being.



Figure 1.1: Employee well-being constructs found in existing literature which have been used as definitions, indicators, and outcomes of well-being.

Several researchers have studied the leading indicators of well-being individually or as clusters and a few have conducted systematic literature reviews (SLRs) on the leading indicators of well-being. For instance, Jarden et al. (2021) equated employee well-being with job satisfaction and identified structural empowerment, career satisfaction, supervisor and co-worker incivility, and emotional exhaustion as predictors of well-being. Gerhardt et al. (2021) investigated the relationship between workplace well-being and social stressors while Daniels et al. (2017) investigated the impact of the social environment of work on the well-being of employees. Despite the availability of studies that identified the leading indicators of well-being systematically, it was found that only a few of the existing SLRs considered a holistic approach

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to the leading indicators of well-being providing some robustness however these studies placed a disproportionate focus on one of the well-being constructs, for example, job satisfaction (Jarden et al. 2021). This SLR takes a holistic approach to identify the leading indicators of well-being providing robustness and balance to the existing literature by considering the impact and implication of the work environment and personal characteristics on employee well-being.

2.0 Methodology

Figure 2.1 displays a flowchart depicting the different phases of the SLR process. The initial search of the SLR process was conducted for articles between 2018 and 2022 and was limited to journal articles and review papers in the English language only and had a turnover of 975 articles. The reason for using journal articles and review papers is that these papers are scrutinised by experts in other fields, encouraging authors to deliver high-quality research (Kelly et al. 2014). The total output after applying the inclusion and exclusion criteria was 244 publications. These publications were assessed using their titles and abstracts to determine their relevance to the study and a further 731 articles were eliminated with 244 articles still being considered for the review. The content of each article was then investigated. A further 86 articles were eliminated and a total output of 158 articles was used to conduct the SLR. The SLR showed that previous works have attempted to seek the factors that influence the well-being of workers and ways of measuring these factors. These studies have used approaches such as surveys (Gazi et al. 2022), structured interviews (Spigarelli et al. 2021), narrative review (Kearns et al. 2021), systematic review (Guest et al. 2020), experiments (Franke and Nadler 2021), and multiple methods (Greenier et al. 2021). However, these studies do not provide balance or robustness in addressing the leading indicators of well-being in the workplace with many overlaps between the leading indicators and outcomes (Shoman et al. 2021; Franke and Nadler 2021). Furthermore, most of these studies focus on the indicators of well-being such as stress and burnout which are negative indicators or outcomes. This study will provide a holistic view of the leading indicators and outcomes of well-being in the workplace. The systematic nature of this review will provide robustness through justification for the inclusion of articles, keywords, and timelines.

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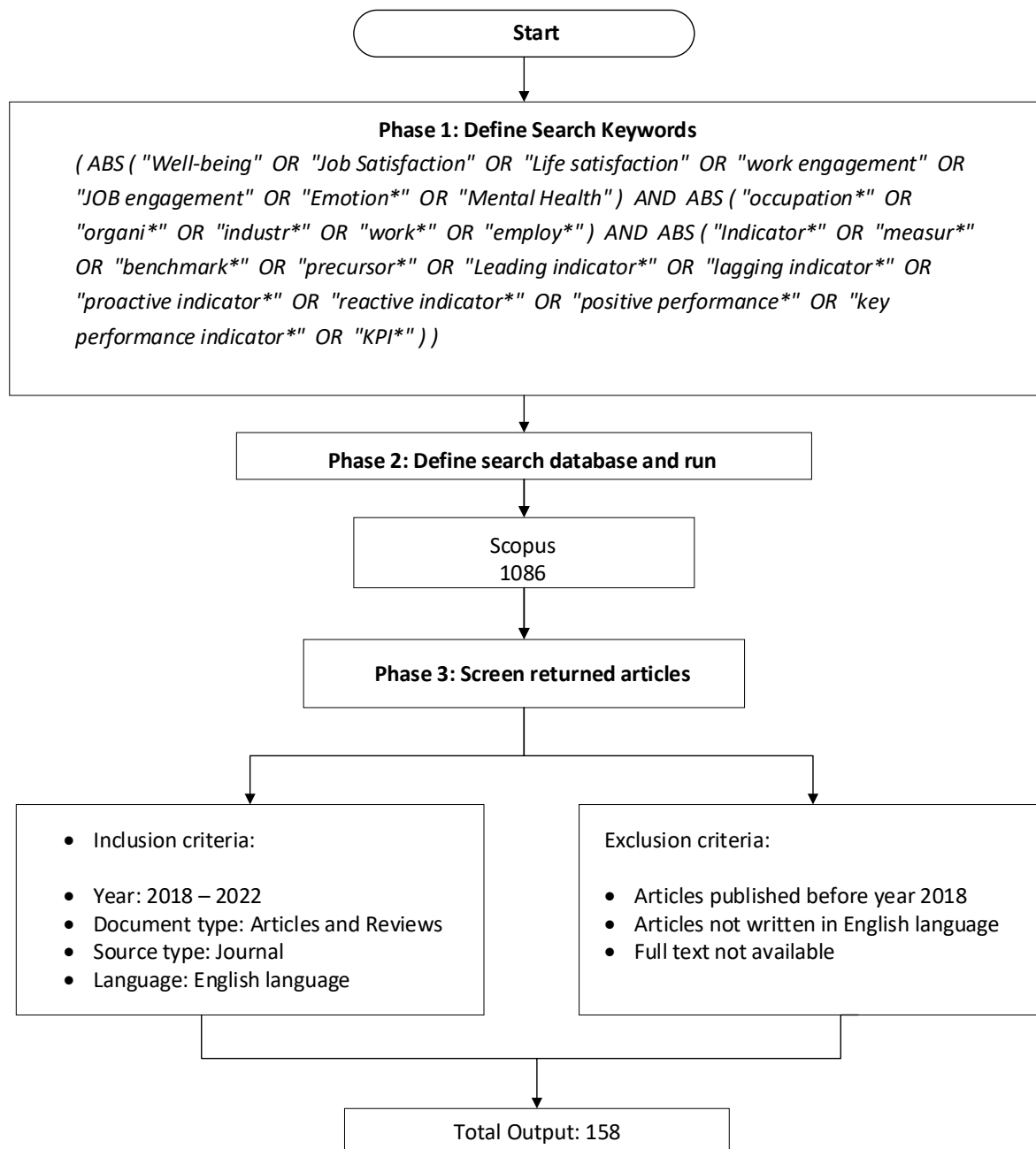


Figure 2.1: PRISMA flowchart diagram displaying the inclusion criteria for articles in the SLR. Journal articles and review papers in English Language published from 2018 to 2022 were included. 158 articles were used to conduct the SLR.

2.1 Analysis

The bibliometric data obtained from the review was examined at the initial stage of the analysis by analysing the frequency of the publication year, journal title, study location, and research methods of the included articles. The statistical analysis was done using an analytical framework that facilitated data annotation from the included articles hence enabling the extraction of information considered relevant to achieving the research objectives.

To effectively analyse articles that met the inclusion criteria, the SLR captured the aims and objectives of the relevant articles, the research question and hypotheses formed in these articles, the study design, the research method, the study population, sector, country, the main findings

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of the articles, as well as the definition of well-being, the leading indicators of well-being and their measures, and the outcomes of well-being. The SLR also highlighted the areas of future research concerning the leading indicators of well-being in the workplace.

3.0 Results and Discussions

3.1 Bibliographic Analysis

Bibliometric analysis applies mathematical and statistical methods to analyse pieces of literature and their scientific content including authorships, document type, timeline, and countries where a study is conducted. Bibliometric analysis of articles assists in identifying the impact of articles, authors, and publications. It is useful in assessing core journal titles and interrelationships between authors and articles. The articles included in this SLR were analysed using VOSviewer (version 1.6.18), a software for constructing and visualizing bibliometric networks of journals, authors, or publications.

Table 3.1: Analytical Framework

Aims and Objectives
Research Questions
Hypotheses
Study Design
Research Methods
Study Population
Findings
Recommendations for future research
Location of study (Country/Region)
Definitions of well-being
Leading indicators of well-being
Measures of leading indicators of well-being
Lagging indicators (Outcomes) of well-being

3.2 Mapping of Co-occurrence of Keywords

The mapping of the co-occurrence of keywords is done to visualise and understand the relationships, patterns, and intellectual organisations of research themes (van Eck and Waltman 2014; Martín-del- Río et al., 2021). There are no standard guidelines for setting the frequency of the occurrence of the keywords (Jarden et al., 2019; Wang et al., 2020). This study, however, adopted best practices recommended by Martín-del-Río et al. (2021), Subramony et al. (2018) and Qasim (2017) to actualise the co-occurrence mapping of keywords. Figure 3.1 displays 605 keywords which were extracted while figure 3.2 displays four clusters of keywords which frequently co-occurred. The red cluster highlights articles focused on measures health, well-being, and psychometric properties at work (Dinesh et al. 2022; Shoman et al. 2021) while the yellow cluster highlights articles focused on the development and validation of measurement scales for leading indicators, for example, job satisfaction (Gupta et al. 2018). The blue cluster highlights articles focused on the impact of COVID-19 pandemic in countries (Kucera et al. 2021; Ruiz-Frutos et al. 2021) while the green cluster highlight articles focused on relationships between employee well-being concepts (Rodríguez-Nogueira et al. 2022; Shaheen and Krishnankutty 2018) and the role of leading indicators in employee well-being (Vincent-Hoper and Stein 2019; Cao et al. 2022).

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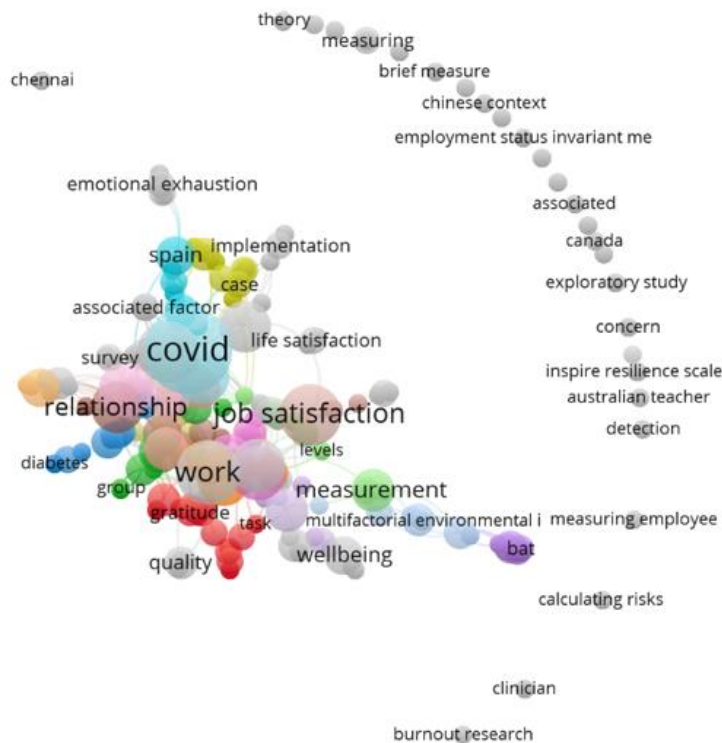


Figure 3.1: Mapping of co-occurrence of keywords using VOSviewer version 1.6.18. Using full counting, a total of 605 were extracted. The grey nodes represent keywords that did not co-occur in the SLR.

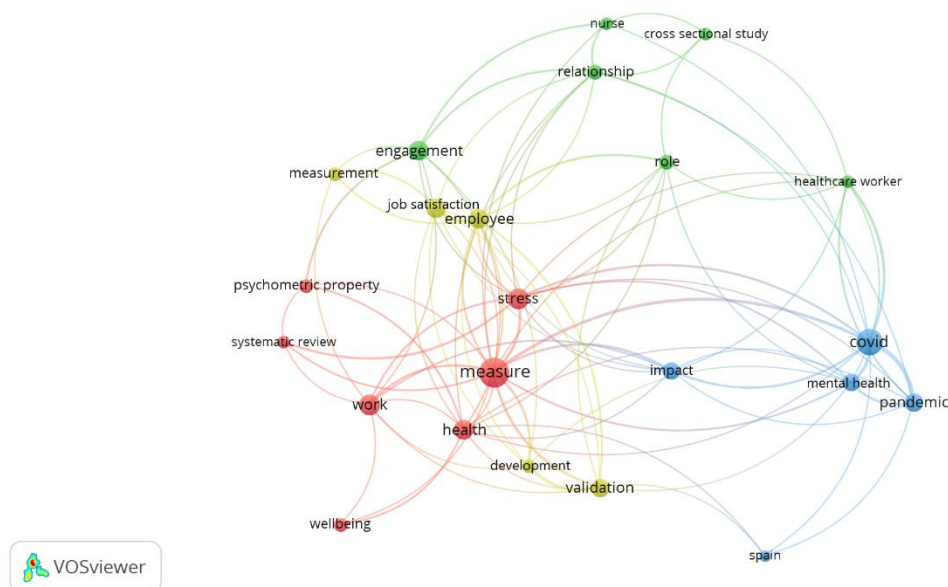


Figure 3.2: A visualisation map of the co-occurrence of keywords. This mapping was done using VOSviewer version 1.6.18 and highlighted four clusters showing different well-being concepts studied in existing research. Setting the minimum number of co-occurrence of keywords to 4, 23 keywords co-occurred with 93 links.

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3.3 Mapping of co-authorship

The collaboration of researchers and institutions can facilitate knowledge exchange, innovations, and joint funding applications (Wang et al., 2020). It is therefore necessary to visualise the network analysis of all the authors of articles which assists in the identification of key collaboration in the research on the leading indicators of well-being in the workplace which is presented in this section. Similarly, VOSviewer was used to conduct a network visualisation to determine authors that had undertaken collaborative research on the leading well-being indicators and found 714 authors with 16 co-authorships as displayed in figure 3.3. Figure 3.4 reveal two clusters. The red cluster show that Schaufeli, W.B., Shimazu, A., Hakanen, J. and De Witte, H. collaborated on studies in organisational psychology within Europe (Schaufeli et al. 2019; De Beer et al. 2020) while the green cluster shows that Watanabe, K., Kawakami, N. and Imamura, K. collaborated on studies in organisational psychology in Japan (Kobayashi et al. 2020; Komase et al. 2020) and with Shimazu, A. in one article (Watanabe et al. 2018).

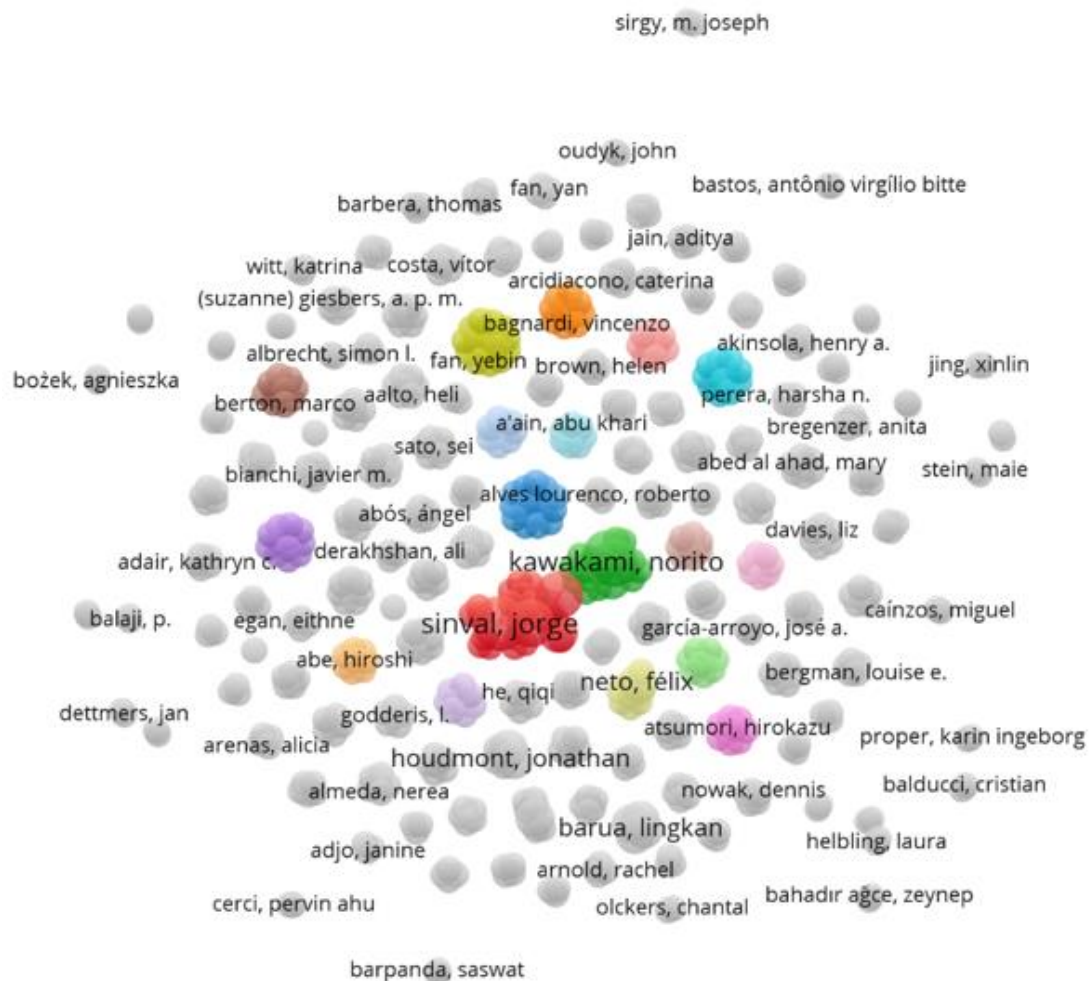


Figure 3.3: Mapping of co-authorship using VOSviewer version 1.6.18. The type of analysis was set to “co-authorship” and the unit of analysis was set to “authors” while the counting method selected was “fractional counting”. The minimum number of documents per author was set to 2 to filter authors that met the threshold. This generated 714 authors, including the lead and co-authors, with 16 meeting the set thresholds.

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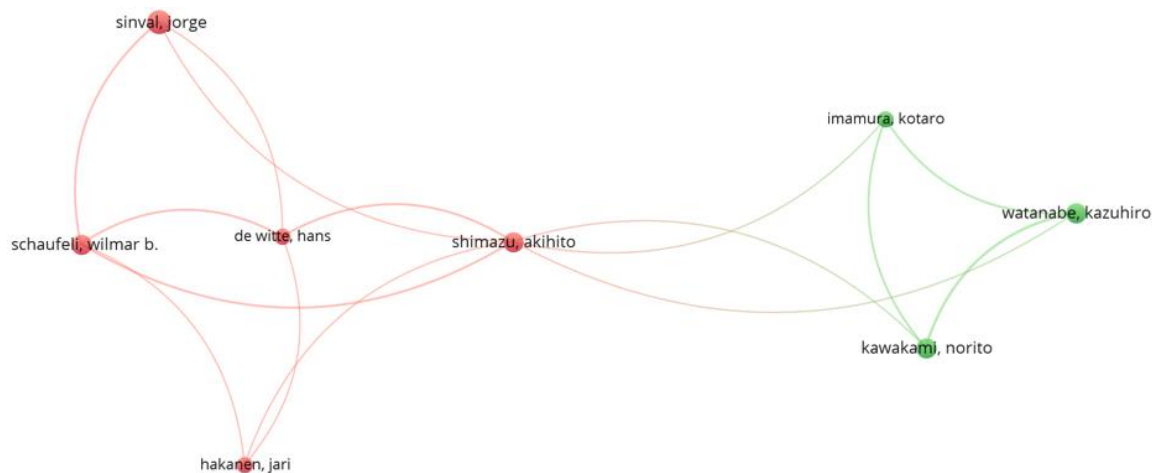


Figure 3.4: Mapping of co-occurrence of keywords showing the most recurring collaborations between authors. This mapping was done using VOSviewer version 1.6.18. The largest set of connected items was 8 items with 2 clusters, 15 links and a total link strength of 23.

3.4 Distribution of publication per year

Figure 3.5 shows the number of publications for every year a paper related to the scope of study of this review was published between 2018 and 2022. This SLR was conducted for articles between 2018 and 2022 because an important article in this study titled “New graduate nurse wellbeing, work wellbeing and mental health: A quantitative systematic review” (Jarden et al. 2021) was published in 2021 which covers most of the research work done between 2000 and 2020. Jarden et al. (2021) investigated the predictors, barriers and enablers of graduate registered nurse well-being, work ill-being and mental health exploring satisfaction with job and career or work environment as major dimensions of well-being. This SLR further proceeds to determine well-being leading indicators during and after the COVID-19 pandemic. The chart in Figure 3.5 shows a significant increase in the number of relevant papers in 2021 which could be attributed to the effect of the coronavirus disease (COVID-19) pandemic on the health and well-being of individuals at home and in the workplace in 2020 (Hoang et al. 2021) with 6 articles on COVID-19 published in 2021. In 2022, one relevant paper identified was “A multicriteria approach for measuring employee well-being” (Dong and Yan 2022) which attempted to address the measurement of employee well-being as a fuzzy problem, use multicriteria decision-making to develop a measure model and establish the preference relationship between indicators through fuzzy measure and Choquet integral. Joshanloo (2021) developed an integrative framework for distinguishing and classifying well-being variables using rigorous data-descriptive methods to assess the centrality of well-being variables and explore the fundamental dimensions along which these variables differ.

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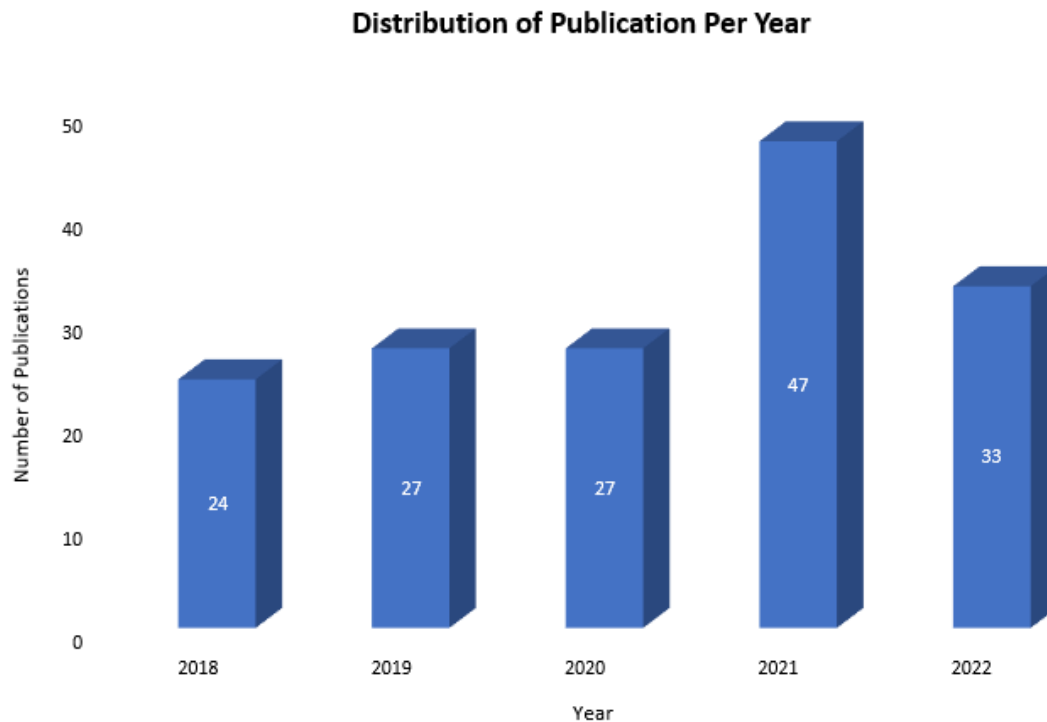


Figure 3.5: Graph showing the number of articles published on employee well-being between 2018 to 2022.

3.5 Distribution of study by journal

Table 3.2 reveals that 92 journals have published research and review articles with significant contributions to the leading indicators of workplace well-being. For instance, The *International Journal of Environmental Research and Public Health* published an article titled “*The quality of work index and the quality of employment index: A multidimensional approach of job quality and its links to well-being at work*” (Steffgen et al. 2020) which proposed a new job quality approach that is compared with the European Working Conditions Survey framework and structured with the help of the Job Demands-Resources model while the article titled “*A Multicriteria Approach for Measuring Employee Well-Being*” (Dong and Yan 2022) was retrieved from the *Frontiers in Psychology* journal which treated the measurement of employee well-being as a fuzzy problem and constructed a measurement model from the perspective of multi-criteria decision-making.

Table 3.2: Distribution of study by journal title

Journal Title	Frequency
International journal of environmental research and public health	31
Frontiers in Psychology	9
Social indicators research	8
Unknown Source	6
Safety science	3
Applied Ergonomics; BMJ Open; European journal of mental health; European journal of psychological assessment : official organ of the European Association of Psychological Assessment; Health and	2

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Quality of Life Outcomes; International journal of environment, workplace and employment; Journal of medical Internet research; Journal of occupational and environmental medicine; Journal of occupational health; Journal of psychosomatic research; Scandinavian journal of work, environment & health; Sustainability (Basel, Switzerland)	
Academic medicine; Advanced Engineering Informatics; Annals of medicine (Helsinki); Annals of tourism research; Applied research in quality of life; Arquivos Brasileiros de Psicologia; Behavior research methods; BJPsych open; BMC Nursing; Building research and information: the international journal of research, development and demonstration; Business research quarterly; Ciência & saúde coletiva; Clinical psychology and psychotherapy; Computers in human behavior; Construction management and economics; Curationis (Pretoria); Cyberpsychology, behavior and social networking; EClinicalMedicine; Environment international; Epidemiology and psychiatric sciences; European journal of investigation in health, psychology and education; Evaluation & the health professions; Frontiers in education (Lausanne); Frontiers in public health; Frontiers in veterinary science; Health Science Reports; Healthcare technology letters; IEEE transactions on software engineering; Industrial Health; Inquiry (Chicago); International Archives of Occupational and Environmental Health; International journal of engineering and advanced technology; International journal of human resource management; International journal of human resources development and management; International journal of knowledge management; International journal of nursing studies; International Journal of Occupational Medicine and Environmental Health; International journal of productivity and performance management; International journal of qualitative methods; International journal of urology; International journal of workplace health management; International nursing review; Irish Journal of Occupational Therapy; JMIR mental health; Journal of applied psychology; Journal of Clinical Medicine; Journal of general internal medicine: JGIM; Journal of management in engineering; Journal of occupational health psychology; Journal of sports sciences; Journal of the American College of Radiology; Journal of vocational behavior; Medycyna praca; Military behavioral health; Military psychology; Nursing administration quarterly; Occupational medicine (Oxford); Pediatrics (Evanston); PloS one; Prabandhan: Indian Journal of Management; Preventive veterinary medicine; Psychiatry research; Psychological studies; Psychological trauma; Psychology & health; Psychosomatic medicine; Public Administration and Policy; Quality & quantity; Radiotherapy and oncology; Scandinavian journal of public health; Stress and health; System (Linköping); Systematic Reviews; The American surgeon; The European journal of health economics; The health care manager; Work and stress	1
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3.6 Distribution of Publication by Location of Study

Figure 3.6 shows that the United States, Spain, Italy, and China are the biggest contributors to studies on workplace well-being which could be due to the COVID-19 pandemic with these countries being the most impacted (Ruiz-Frutos et al. 2021; Marinaci et al. 2020; Kokubun et al. 2022).

One of the significant studies titled *“The role of organizational citizenship behavior and gender between job satisfaction and task performance”* (Casu et al. 2021) which was conducted in Italy investigated whether employees’ occupational citizenship behaviour (OCB) mediates the relationship of job satisfaction with task performance, taking into consideration gender as a potential moderator, and other sociodemographic and work-related characteristics as confounding variables and found a partial mediation of OCB in the job satisfaction/task performance relationship which was invariant across gender which could be of beneficial to the well-being of male and female employees and the organisations’ productivity.

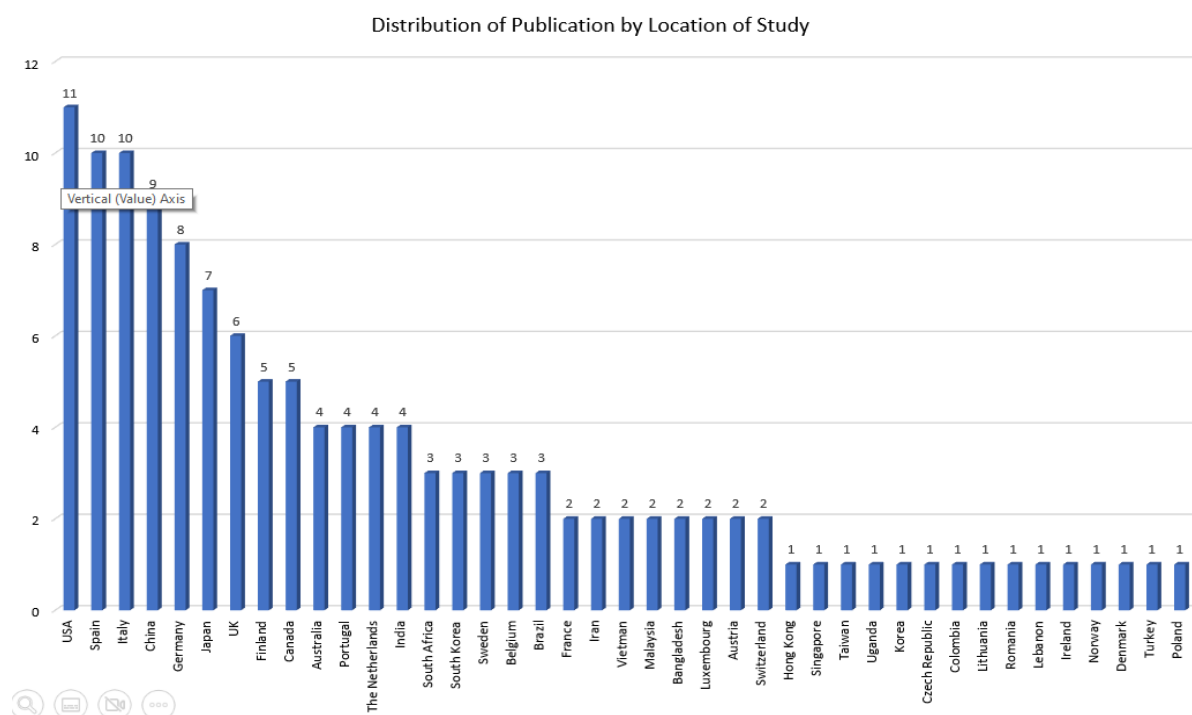


Figure 3.6: Graph showing the distribution of publications by location of study.

3.7 Distribution of Publications by Industrial Sector

It was found that most studies on workplace well-being were conducted in the healthcare sector. This could be because health (both physical and mental health) which is the focus of the healthcare sector is an important dimension of employee well-being (Summers et al. 2020).

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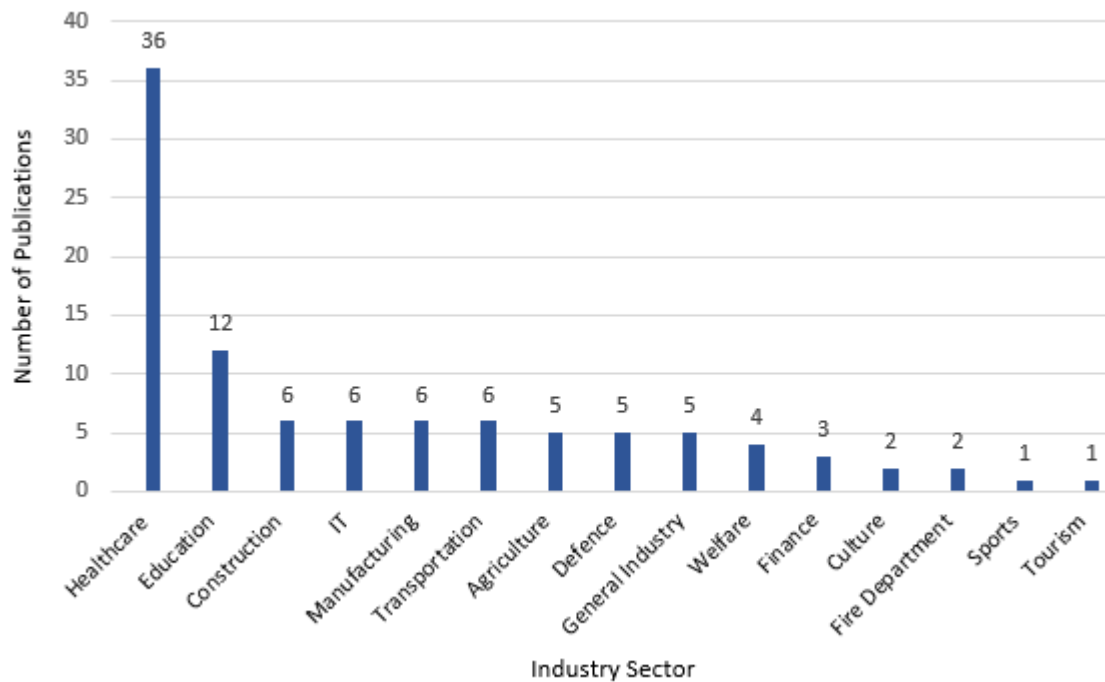


Figure 3.7: Graph showing the distribution of publications by industrial sectors.

3.8 Distribution of Articles by Research Methods

Figure 3.8 reveals surveys as the most widely used method of data collection for articles on employee well-being. Giesbers et al. (2021) and Greenier et al. (2021) adopted a mixed method of data collection using survey and interview while Peters et al. (2021) adopted workshop, interview, and review to conceptualise and develop a measure of thriving from work.

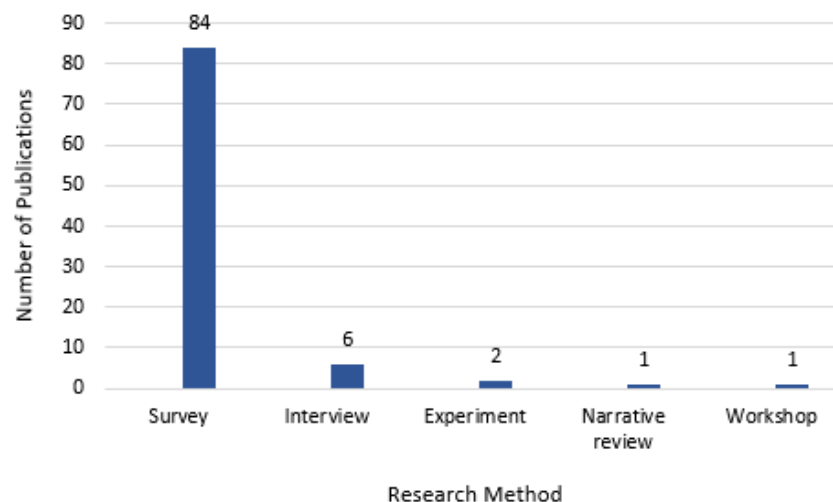


Figure 3.8: Graph showing the distribution of publications by research methods.

3.9 Sample Population

Figure 3.9 shows that most researchers adopted a sample size ranging from 1 to 500 participants to conduct their research. Research conducted using interviews (Mulaudzi et al. 2020; Houdmont et al. 2019) had 18 and 55 participants respectively while experimental research conducted by Balconi et al. (2019) had 22 participants. Furthermore, research conducted using

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multi-organisational (Wood et al. 2019) and multi-national (Schaufeli et al. 2019) samples had 66,188 and 77,465 participants respectively. Moreso, in research which adopted mixed methods of data collection, the sample sizes for the qualitative method were found to be fewer than those for the quantitative method (Giesbers et al. 2021; Greenier et al. 2021).

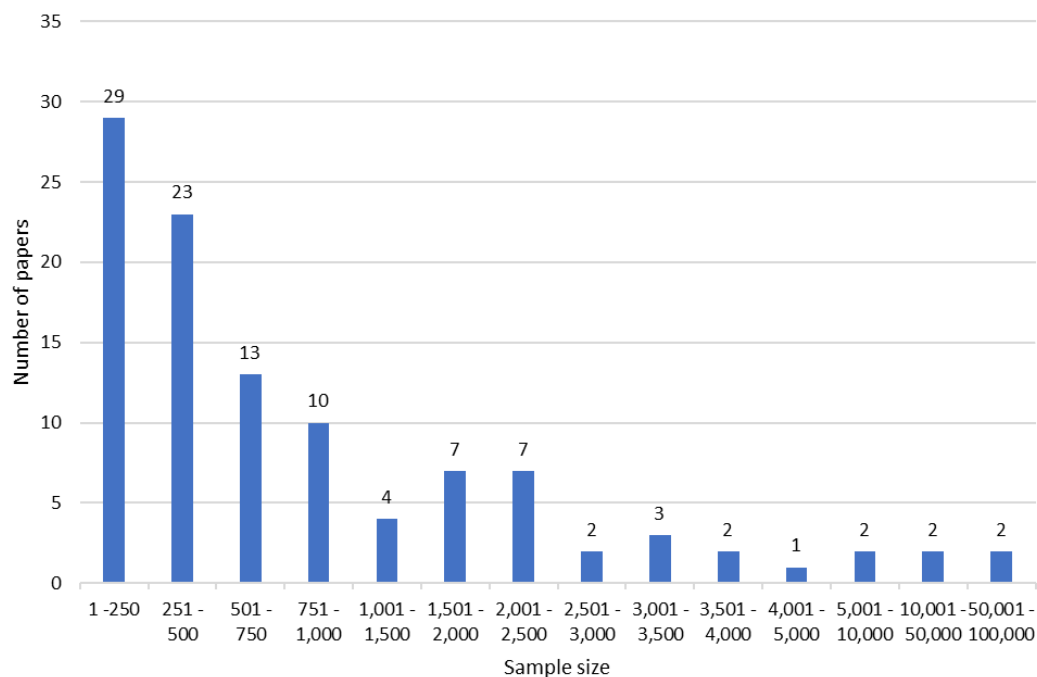


Figure 3.9: Graph showing the distribution of publication by sample size.

3.10 The Indicators of Well-being in the Workplace

The leading indicators of well-being can be categorised into job-related factors and personal factors. The job-related factors can further be classified as job demands and resources and thus reflect the significance of job demands and resources on employee well-being and its outcomes. Table 3.3 displays the well-being leading indicators identified in this SLR. Leadership has been argued to be the most important indicator of the well-being of employees within the work environment that yielded positive outcomes of well-being (Kobayashi et al. 2020) while marital status seemed to be insignificant in predicting the well-being of employees (Gazi et al. 2022).

Table 3.3: The leading indicators of well-being in the workplace

Leading Indicator	Articles	Frequency
Leadership	Gazi et al. (2022), Jang et al. (2022); Kaltiainen and Hakanen (2022); Dettmers and Stempel (2021); Gomes et al. (2021); Smith and Oudyk (2021); Zwetsloot et al. (2020); Kobayashi et al. (2020); Kruskal et al. (2019); Vincent-Hoper and Stein (2019); Balconi et al. (2019); Bailey and Cardin (2018);	12
Workload	Dettmers and Stempel (2021); Menghini and Baducci (2021); Smith and Oudyk	11

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	(2021); Steffgen et al. (2020); Elbejjani et al. (2020); Cassar et al. (2020); Mulaudzi et al. (2020); Summers et al. (2020); Carson et al. (2019); Houdmont et al. (2019); Vincent-Hoper and Stein (2019)	
Relationships	Gazi et al. (2022); Dettmers and Stempel (2021); Menghini and Baducci (2021); Gomes et al. (2021); Cassar et al. (2020); Kaplan et al. (2020); Carneiro and Bastos (2020); Summers et al. (2020); Isa et al. (2019); Landells and Albrecht (2019)	10
Support (Peer and Managerial)	Menghini and Baducci (2021); Gomes et al. (2021); Smith and Oudyk (2021); Steffgen et al. (2020); Cassar et al. (2020); Kobayashi et al. (2020); Summers et al. (2020); Isa et al. (2019); Shaheen and Krishnankutty (2018)	9
Number of hours worked	Menghini and Baducci (2021); Niedhammer et al. (2021); Uronen et al. (2020); Kaplan et al. (2020); Clark et al. (2020); Summers et al. (2020); Houdmont et al. (2019); Vincent-Hoper and Stein (2019)	8
Training and Skill development	Gomes et al. (2021); Barua et al. (2021); Simms et al. (2021); Zwetsloot et al. (2020); Kaplan et al. (2020); Isa et al. (2019)	6
Working Conditions	Gazi et al. (2022), Uronen et al. (2020); Mulaudzi et al. (2020); Cerci and Dumludag (2019); Isa et al. (2019); Houdmont et al. (2019)	6
Age	Ciccarelli et al. (2022); Hoang et al. (2021); Ruiz-Frutos et al. (2021); Kobayashi et al. (2020); Carson et al. (2019); Low and McCraty (2018)	6
Job Control	Gritzka et al. (2022); Uronen et al. (2020); Magnavita et al. (2020); Carneiro et al. (2020); Summers et al. (2020); Carson et al. (2019)	6
Self-Efficacy	Becker et al. (2022); Pereira et al (2021); Gomes et al. (2021); Oprins et al. (2021); Jones-Bitton et al (2019)	5
Autonomy	Gazi et al. (2022); Kaplan et al. (2020); Carneiro and Bastos (2020); Balconi et al. (2019); Bailey and Cardin (2018)	5
Income	Gazi et al. (2022); Kaplan et al. (2020); Hansen and Østerås (2019); Cerci and Dumludag (2019)	4

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Reward and Recognition (Promotion)	Storey et al. (2021); Smith and Oudyk (2021); Zwetsloot et al. (2020); Hansen and Østerås (2019)	4
Role clarity	Menghini and Baducci (2021), Czakert et al. (2021); Cassar et al. (2020); Summers et al. (2020)	4
Gender	Hoang et al. (2021); Frutos et al. (2021); Kobayashi et al. (2020); Carson et al. (2019)	4
Career growth and development	Smith and Oudyk (2021); Carneiro et al. (2020); Bailey and Cardin (2018)	3
Resilience	Becker et al. (2022); Gomes et al. (2021); Oprins et al. (2021)	3
Job security/insecurity	Gazi et al. (2022); Stankevičiūtė et al. (2021); Wang et al. (2021)	3
Coping	Becker et al. (2022); Sierk et al. (2022); Oprins et al. (2021)	3
Diversity and Inclusion	Gasnier et al (2022); Adjo et al. (2021)	2
Task identity	Gomes et al. (2021); Kaplan et al. (2020)	2
Marital status	Gazi et al. (2022)	1

This SLR further identifies in table 3.4 and figure 3.10 some of the tools used for measuring the leading indicators of well-being in the workplace. The MSIT which has been adopted by the Health and Safety Executive (HSE) in the UK is used to measure job demands and resources (Summers et al. 2020) while the NWI-PES measures the quality of the work environment including leading indicators such as organisational leadership, support, and workplace relationships.

Table 3.4: The measurement tools used for measuring the leading of well-being as found in the SLR.

Measurement Tools	Articles	Frequency
Management Standards Indicator Tool (MSIT)	Cassar et al. (2020); Summers et al. (2020)	2
The Nurse Work Index-Practice Environment Scale (NWI-PES)	Schlak et al. (2021); Chen et al. (2020)	2
Workplace Well-being Questionnaire (WWQ)	Casu et al. (2021)	1
NASA Task Load Index (NASA-TLX)	Elbejjani et al. (2020)	1
The Diversity Engagement Survey (DES)	Adjo et al. (2021)	1
Job Insecurity Measure (JIM)	Wang et al. 2021	1
INSPIRE Resilience Scale (IRS)	Oprins et al. 2021	1
Improved Self-Efficacy Scale	Yada et al. (2022)	1

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Decreased Self-Efficacy Scale	Yada et al. (2022)	1
Occupational Self-Efficacy Scale	Pereira et al. (2021)	1

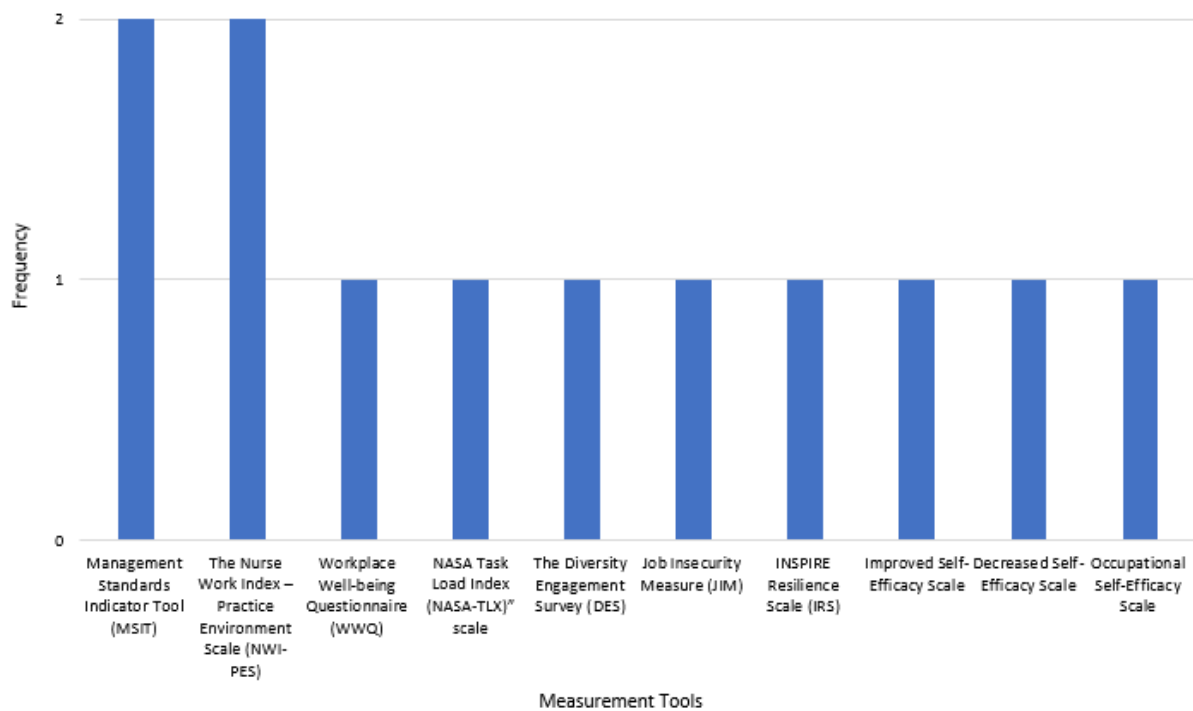


Figure 3.10: Graph showing the measurement tools used for measuring the leading indicators of employee well-being as found in the SLR.

Table 3.5 shows work engagement and burnout are the well-being outcomes mostly studied. Although Maslach and Leiter (1997) asserts they are “two ends of a continuum” on which employees move depending on their involvement and satisfaction with the job, this SLR does not seek to prove the assertion correct. Job satisfaction, stress, depression, health and anxiety are also frequently studied in well-being literature while less focus has been placed on happiness and job strain.

Table 3.5: The outcomes of well-being in the workplace

Outcome	Articles	Frequency
Work engagement	Wijngaards et al. (2022); Kaltiainen and Hakanen (2022); Neumann et al. (2021); Pereira et al (2021); Wang et al. (2021); Bravo et al. (2021); Giesbers et al. (2021); Greenier et al. (2021); Wang et al. (2021); Smith and Oudyk (2021); Bălăceanu et al. (2021); Shoman et al. (2021); Kobayashi et al. (2020); Komase et al. (2020); Božek and Malinowska (2020); Clark et al. (2020); Kruskal et al. (2019); Landells and	24

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	Albrecht (2019); Ababneh et al. (2019); Shaheen and Krishnankutty (2018); Perera et al. (2018); Bailey and Cardin (2018); Sinval et al. (2018); Schaufeli et al. (2018)	
Burnout	Sowden et al. (2022); Cao et al. (2022); Becker et al. (2022); Hidaka et al. (2022); Sinval et al. (2020); Czakert et al. (2021); Pereira et al (2021); Bravo et al. (2021); Giesbers et al. (2021); Kerr et al. (2021); Schlak et al. (2021); Bălăceanu et al. (2021); Andrukonis et al. (2020); Marinaci et al. (2020); Steffgen et al. (2020); Diotaiuti et al. (2020); Chen et al. (2020); Clark et al. (2020); Jones-Bitton et al (2019); Abós et al. (2019); Garcia-Arroyo et al. (2019); Kruskal et al. (2019); Eckleberry-Hunt et al. (2018); Knox et al. (2018)	24
Job satisfaction	Czakert et al. (2021); Spyropoulos et al. (2021); Spigarelli et al. (2021); Storey et al. (2021); Casu et al. (2021); Bravo et al. (2021); Wang et al. (2021); Bălăceanu et al. (2021); Shoman et al. (2021); Kobayashi et al. (2020); Chen et al. (2020); Caycho-Rodríguez et al. (2020); Komase et al. (2020); Clark et al. (2020); Hansen and Østerås (2019); Abós et al. (2019); Framke et al. (2019); Cerci and Dumludag (2019); Barpanda and Bhagya (2019); Neto and Fonseca (2018); Wang and Jing (2018);	21
Stress	Sowden et al. (2022); Rosales et al. (2022); Becker et al. (2022); Hidaka et al. (2022); Czakert et al. (2021); Subhas et al (2021); Kiguchi et al. (2021); Valenti et al. (2020); Simms et al. (2021); Magnavita et al. (2020); Guest et al. (2020); Diotaiuti et al. (2020); Zhu et al. (2020); Abós et al. (2019); Wood et al. (2019); Landells and Albrecht (2019); Vincent-Hoper and Stein (2019); Low and McCraty (2018);	18
Depression	Rosales et al. (2022); Becker et al. (2022); Czakert et al. (2021); Pereira et al (2021); Kiguchi et al. (2021); Kerr et al. (2021); Barua et al. (2021); Simms et al. (2021); Steffgen et al. (2020); Guest et al. (2020); Pan et al. (2020); Zhu et al. (2020); Barua et al. (2020); Clark et al. (2020); Abós et al. (2019); Miller et al. (2019);	16

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Health	Cicarelli et al. (2022); Hidaka et al. (2022); Pereira et al. (2021); Sierk et al. (2022); Zhang et al. (2022); Spyropoulos et al. (2021); Neumann et al. (2021); Pereira et al. (2021); Wang et al. (2021); Bravo et al. (2021); Steffgen et al. (2020); Guest et al. (2020); Elbejjani et al. (220);	13
Anxiety	Kokubun et al. (2022); Rosales et al. (2022); Becker et al. (2022); Pereira et al. (2021); Kiguchi et al. (2021); Barua et al. (2021); Simms et al. (2021); Steffgen et al. (2020); Guest et al. (2020); Pan et al. (2020); Zhu et al. (2020); Barua et al. (2020); Abós et al. (2019);	13
Exhaustion	Becker et al. (2022); Ghislieri et al. (2022); Dettmers and Stempel (2021); Bergman et al. (2021); Marinaci et al. (2020); Steffgen et al. (2020); Adair et al. (2020); Clark et al. (2020); Jones-Bitton et al. (2019); Framke et al. (2019); Topa and Pozo (2018);	11
Mental Health	Fuhrmann et al. (2022); Pereira et al. (2021); Kučera et al. (2021); Kerr et al. (2021); Guest et al. (2020); Pan et al. (2020); Barua et al. (2020); Summers et al. (2020);	8
Well-being	Wijngaards et al. (2022); Spyropoulos et al. (2021); Joshanloo (2021); Kiguchi et al. (2021); Greenier et al. (2021); Steffgen et al. (2020); Cassar et al. (2020);	7
Life satisfaction	Bălăceanu et al. (2021); Caycho-Rodríguez et al. (2020); Komase et al. (2020); Cerci and Dumludag (2019); Maccagnan et al. (2019); Helbling and Kanji (2018);	6
Happiness	Sierk et al. (2022); Sender et al. (2021); Adair et al. (2020);	3
Job strain	Kerr et al. (2021); Niedhammer et al. (2021); Bowen et al. (2021);	3

3.11 The Impact of Well-Being Leading Indicators on Well-being

Having identified the leading indicators of well-being in the workplace, the SLR investigates the impact of these leading indicators on well-being. The influence of each leading indicator on well-being will be discussed in this section.

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Impact of leadership

The impact of leadership and organization on well-being in the workplace was established in this SLR. Organizational commitment to enhancing job quality and well-being stemmed from the establishment of good leadership within the organization (Steffgen et al. 2020; Kaltiainen and Hakanen 2022). Transformational and servant leadership were found to enhance work engagement, job satisfaction and performance by creating a favourable work environment where employees can thrive (Kaltiainen and Hakanen 2022; Kobayashi et al. 2020).

Impact of workload

Steffgen et al. (2020) identified a positive association between workload and burnout. Vincent-Hoper also found a positive association between workload and stress.

Impact of relationships

It was found that employees who believed they had better interpersonal relationships with co-workers and supervisors reported higher levels of job satisfaction and psychological well-being (Haleem et al. 2018; Carneiro and Bastos 2020).

Impact of support

Cassar et al. (2020) found a positive association between support from co-workers and supervisors and employee well-being. Support from supervisors and co-workers, perceived fairness, and opportunities for training have been found to have a positive effect on psychological well-being, job satisfaction and engagement (Wolter et al. 2019; Cassar et al. 2020; Clark et al. 2020).

Impact of the number of hours worked.

The number of hours worked was found to have a negative association with employee health and well-being and a positive association with burnout and stress (Uronen et al. (2020; Houdmont et al. 2019).

Impact of training and skill development

Training and skill development were found to positively impact job engagement (Barua et al. 2021) while a lack of initial and subsequent training on the job was found to trigger stress and depression in employees (Simms et al. 2021).

Impact of working conditions

It was found that when employees were provided with the necessary tools and good working conditions to perform tasks, stress and emotional exhaustion decreased leading to higher levels of well-being and better job performance (Adair et al. 2020, Mulaudzi et al. 2020).

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Table 3.6: The impact of well-being leading indicators (job factors) on the well-being of employees

Leading Indicator (Job factors)	Impact of leading indicators														
	Job satisfaction	Work Engagement	Well-being	Psychological well-being	Mental well-being	Health	Mental Health	Happiness	Life satisfaction	Burnout	Anxiety	Depression	Stress	Job strain	Exhaustion
Leadership	+++	+++++	+							--			--		
Workload			-	-	-		-			+				+	+++
Relationships	++			++			+				-	-			
Support (Peer and Managerial)	+			+			+				-	-			
Number of hours worked	-									+			+	+	
Training and Skill development	+		+								-	-			
Poor Working Conditions		-					-						+		
Job Control					+		+								
Autonomy	++			+											
Income	+++														
Reward and Recognition (Promotion)	+			+									-		
Role clarity							+								
Career growth and development	+			+											
Job security	+							+							
Diversity and Inclusion		+													
Task identity	+														

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Table 3.7: The impact of well-being leading indicators (personal factors) on the well-being of employees

Leading Indicator (Personal factors)	Impact of leading indicators														
	Job satisfaction	Work Engagement	Well-being	Psychological well-being	Mental well-being	Health	Mental Health	Happiness	Life satisfaction	Burnout	Anxiety	Depression	Stress	Job strain	Exhaustion
Age							++								
Self-Efficacy		+-				+				-					
Gender							--+								
Resilience							+								
Coping					+		+								
Marital status															

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Impact of age

A positive association was found between age and mental health, that is, older employees tended to experience better mental health while younger employees were found to experience more mental health issues (Hoang et al. 2021, Ruiz-Frutos et al. 2021, Carson et al. 2019). This could be because older employees have more experience in dealing with issues of mental health (Carson et al. 2019).

Impact of job control

Job control was found to have an association with work performance and mental well-being. Uronen et al. (2020) found a positive association between a lack of job control and a loss of ability to do work while Carson et al. (2019) found a positive association between job control and increased mental well-being.

Impact of self-efficacy

Jones-Bitton et al. (2019) and Gomes et al. (2021) found that self-efficacy had a positive impact on employee well-being while Pereira et al. (2021) found a negative association between self-efficacy and employee well-being. Further research could be conducted to investigate the factors that could be responsible for the likely positive or negative impact of self-efficacy on well-being.

Impact of autonomy

Gazi et al. (2022) and Kaplan et al. (2020) identified a positive association between autonomy and increased levels of job satisfaction at work. Meanwhile, Bailey and Cardin (2018) found a positive association between autonomy and work engagement.

Impact of income

Gazi et al. (2022) found a significant positive association between income and job satisfaction while Kaplan et al. (2020) found an indirect positive association between productivity at work and income. Cerci and Dumludag found that upward self-income evaluation had a positive impact on life satisfaction however, attaching importance to income comparison could have a negative impact on life satisfaction.

Impact of rewards and recognition

A positive association was found between rewards and recognition and well-being (Hansen and Østerås 2019; Smyth and Oudyk 2021). Storey et al. (2021) found that reward and recognition had a positive impact on developer satisfaction and productivity in the workplace. Houdmont et al. (2019) found a positive association between effort-reward imbalance (high efforts and low rewards) and psychological distress. This means that the well-being of employees suffers when they feel their efforts on the job are not adequately rewarded.

Impact of role clarity

Menghini et al. (2021) investigated the impact of role clarity on employee well-being. They found that role clarity had a positive impact on the mental health of employees.

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Impact of gender

The systematic review found articles investigating the impact of the male and female gender on employee well-being. Hoang et al. (2021) and Ruiz-Frutos et al. (2021) found that the female gender in the workplace reported poorer mental health and well-being levels. Meanwhile, Carson et al. (2019) found poorer mental well-being among male sports coaches at work. The reason why poorer well-being could be experienced by either the male or female gender could be a result of their occupation.

Impact of career growth and development

From the SLR, it was found that career growth and development had a positive impact on job satisfaction (Smith and Oudyk 2021). Carneiro and Bastos (2020) also found that career growth and development had a positive impact on psychological well-being in the workplace.

Impact of resilience

Oprins et al. (2021) attempted to predict future resilience and the performance of employees in a training programme and found that employees who dropped out of the training had lower levels of resilience than those who continued. They also suggested that resilience may contribute to success at work and a reduction in health issues.

Impact of job security

Job security was found to have a positive impact on job satisfaction at work (Gazi et al. 2022) while job insecurity was found to have a negative impact on job satisfaction and happiness in the workplace (Stankevičiūtė et al. 2021; Wang et al. 2021).

Impact of coping

Becker et al. (2022) investigated the association between coping and the physiological stress response to dual or multitasking or work interruptions and found that coping could be useful in managing stress levels at work which could further lead to improvement in the mental well-being and health of employees (Sierk et al. 2022).

Impact of diversity and inclusion

Gasnier et al. (2022) aimed to provide a benchmark of diversity, engagement, and inclusion (DEI) and work engagement and found that improving DEI would also improve workforce engagement and potentially enhance employee well-being.

Impact of task identity

Kaplan et al. (2020) investigated the impact of task identity on job satisfaction. They found that changes in feelings of task identity corresponded to proportional changes in feelings of job satisfaction such that employees experienced more significant levels of job satisfaction when they performed all tasks needed to complete a job and lesser levels of job satisfaction when they performed only certain tasks on a job.

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Impact of marital status on the well-being of employees

Marital status was highlighted as a potential leading indicator of well-being (Gazi et al. 2022) however, it was found to have an insignificant impact on job satisfaction and the overall well-being of employees in the workplace.

3.12 The Relationships between the Leading Indicators of Well-Being

This SLR provides evidence of the inter-relationships between the leading indicators of well-being in the workplace. First, it was found that organisational leadership had an influence on job-related factors. For instance, Gazi et al. (2022) highlighted the influence of leadership on working conditions, relationships with co-workers and supervisors, autonomy, and income. Smith and Oudyk (2021) further highlighted the influence of organisational leadership on the workload assigned to employees, support received from co-workers and supervisors, reward and recognition schemes, and career growth and development. Organisational leadership was also found to be responsible for determining the degree of autonomy and task identity availed in the workplace (Kaplan et al. 2020) and the provision of training and opportunities for recognition and rewards (Zweetsloot et al. 2020). Gomes et al. (2021) discussed the relationship between leadership and personal factors such as self-efficacy and resilience. They discussed the role of leadership in providing training programmes aimed at the development of self-efficacy and resilience in employees. Training coupled with support from co-workers and supervisors was identified as a requirement for job control (Carson et al. 2019).

Relationships between personal factors such as age and gender were identified in this SLR. Hoang et al. (2021) and Ruiz-Frutos et al. (2021) found that employees who were either younger or female tend to experience more mental health issues at work than their older or male counterparts hence suggesting that younger females could potentially be more vulnerable to mental health issues arising from job demands. However, Carson et al. (2019) found that employees who are either younger or male tend to experience more mental health issues suggesting that younger males could be more vulnerable to mental health issues arising from job demands. Therefore, it could be stated that younger employees are likely to experience issues of mental health and poor well-being which could possibly be related to their ability to self-manage the workload associated with their job role however the gender likely to be most affected could depend on reasons such as the industry employees find themselves in (Carson et al. 2019; Ruiz-Frutos et al. 2021).

The existence of a relationship between self-efficacy, resilience and coping was also identified. Pereira et al. (2021) identified coping as a measure of self-efficacy while coping and self-efficacy were also identified as measures of resilience (Oprins et al. 2021; Gomes et al. 2021). The existence of inter-relationships between job-related and personal factors was also identified. Gomes et al. (2021) highlighted the importance of workplace relationships, training, and skill development in enhancing resilience and coping in employees while Oprins et al. (2021) posited that resilience and self-efficacy in employees could be essential traits required for coping with working conditions, workload, and the number of hours worked. Meanwhile, Pereira et al. (2021) posit that irregular working hours could be detrimental to perceptions of self-efficacy in the workplace.

3.13 Comparison of Findings with Existing Literature

It was earlier stated that Jarden et al. (2021) conducted a systematic review using articles from 2000 to 2020 which investigated the leading indicators of work well-being. Some similarities and different between this paper and Jarden et al. (2021) were identified. This systematic review revealed that most studies on workplace well-being focused on work engagement, burnout and job satisfaction with organisational leadership, workload, and workplace

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relationships as key leading indicators of well-being in the workplace. In comparison, Jarden et al. (2021) found that most studies on well-being focused on job, career or work environment satisfaction, organisational commitment, and intent to leave with structural empowerment, mental health symptoms and work stress as key leading indicators. While this study found that role clarity positively impacted mental health, Jarden et al. found that role clarity and resilience positively impacted job satisfaction, happiness, and organisational commitment. However, both studies found that role clarity and resilience reduced health and well-being issues in the workplace. Both studies also found that much focus has been placed on burnout with high workload identified as an indicator of burnout.

3.14 Limitations of the Study

The papers used to conduct this SLR were obtained solely from the Scopus database. Some articles were also left out because of the inclusion and exclusion criteria which limited the output to articles with full texts and in the English Language only. The exclusion of articles not published in English could lead to selection bias. Moreover, the articles eventually used were articles from 2018 to 2022 which could result in minimised generalised conclusions.

3.15 Recommendations for Future Research

First, as this SLR was limited to articles retrieved from the Scopus database, future research could consider using other databases to conduct a SLR on the leading indicators of well-being. Future research should also consider reviewing studies within a broader timeline. From the results obtained in this SLR, there appears to be a significant knowledge gap in research focused on investigating the impact of well-being leading indicators on life satisfaction. Future research could also investigate the impact of well-being leading indicators on life satisfaction. Furthermore, leadership and its impact are studied in a positive context. Future research could focus on the dark side of leadership and its impact on workplace well-being. In addition, future research should focus on the personal factors that affect employee well-being. The impact of personal factors on mental health was evident in this SLR however, there was insufficient evidence of the impact of personal factors on the overall and psychological well-being of employees. Future research could therefore investigate the impact of personal factors on the psychological well-being and the overall well-being of employees. Leading indicators such as self-efficacy and resilience which can be developed through training (Gomes et al. 2021) could be further studied as well as their impact on psychological well-being of employees. Finally, while this SLR revealed the inter-relationships between job-related factors and personal factors are scarcely discussed, these inter-relationships could be further examined in future studies and more so, with an outcome of well-being.

4.0 Conclusion

The systematic review of the literature revealed that organisational leadership, workload, and relationships are key leading indicators of well-being in the workplace. It also revealed the impact of the leading indicators on well-being. Burnout, work engagement and job satisfaction were found to be significant outcomes of employee well-being.

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