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Deep Review of Existing Literature on Quality of Life in Morocco: Bibliometric Analysis, Investigated Sectors, Limits, and Recommendations for Future Research

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Abstract

The objective of this study was to assess the quality of life (QoL) in Morocco, mainly the quality of life indices and evolution of scientific research. A comprehensive bibliography of existing research on the topic was compiled through electronic survey databases and search engines, including Scopus, PubMed, ScienceDirect, the Public Library of Science, JSTOR, Web of Science, and Google Scholar, and the WSU online database (PubChem). The literature search was conducted for publications between 2000 and 2025, emphasizing English-language sources. The bibliometric research showed that 323 documents were published on the quality of life in Morocco. The most dominant documents were scientific articles (92.6%), followed by review papers with 4.4%, and letters with 1.7%. In contrast, conference papers and chapters presented only 0.9 and 0.4%. In total, 80 documents were selected and analysed in this study. Morocco ranked third with a score of 110.8, behind South Africa, which finished first with 152.4, and Tunisia with 117.3. The field surveys in Morocco were concentrated in industry, education, and medicine. These investigations have addressed the employees, staff, and persons with illnesses and disabilities. However, the existing data were significantly variable depending on the topic and studied populations. Despite the classification of Morocco in third place concerning the quality of life, investigations addressing this topic are very limited. Equally, the investigated topics, targeted populations, geographical areas, and temporal features in studies addressing life quality were fragmented and limited. Therefore, we oriented future investigations to address the quality of work life and organizational involvement of administrative staff in different Moroccan sectors, such as the hospital sector.

Keywords: Bibliography; quality of life; sectors; investigations; limits; recommendations; Morocco.

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1.Introduction

Quality of Life (QoL) is defined as "the extent to which a person's life involvement satisfies that individual's requirements and requests (both psychological and physical)" [1]. The World Health Organization defines quality of life (QoL) as an individual's view of their place in life in regard to their objectives, expectations, standards, and concerns, as well as the culture and value system in which they live [2]. Some descriptions of QoL in this volume take into account the broader scale of urban and cultural surroundings (References), while others focus on the natural environment [3]. These meanings, however, vary depending on a variety of characteristics and authors.

Work quality life is a dynamic, multifaceted concept that centers on the welfare of employees [4]. In addition to addressing employees' emotional need to be content with their work experience, it is focused on their productivity. But quality of work life (QWL) and job satisfaction are not the same thing [5]. QWL is a philosophy or set of values founded on the idea that workers are the organization's most valuable and significant resource and should be treated with respect and decency [6]. QWL integrates intangibles like general life satisfaction and feelings of well-being with aspects of the job itself, like job happiness, pay, and connections with coworkers [7]. Fair benefit, health and security, growth, self-development, safety, social integration, life space, constitutionalism, and social significance are the eight elements that influence workers' quality of life (QWL) [8]. Job constraints, supervisory behavior, work circumstances, supplementary series, and organizational responsibility are all included in a model of demands in the work sphere [9]. Assets, performances, and results from involvement in the workplace can satisfy work domain demands [10]. Later, QWL was expanded to include the physical workspace as a factor influencing job satisfaction and productivity [11].

Morocco, as a developing country, is not excluded from this wave of change [12]. Human resources procedures have changed significantly in the last several years [13]. A national survey on well-being was carried out in 2012 with the theme "Measuring Well-being in Morocco" by the High Commission for Planning, which gathers and examines information about the economic and social realities of the nation [14]. The Moroccan Happiness Observatory (OMB) carried out a more recent study on workplace well-being in 2016, which signaled the start of awareness of its effects on social, professional, and human levels [15].

The first step in bringing attention to the topic of well-being at work is the High Commission for Planning's 2012 national survey on general well-being, which has as its theme "Measuring Well-being in Morocco" [16]. 2,080 of the 3,200 respondents who were 15 years of age or older lived in metropolitan areas. It draws attention to the absence of a universally accepted definition of well-being [17]. According to the findings, housing comes in first. The second most important aspect in well-being, according to almost 90% of Moroccans, is income. Employment comes third, with equal access to work and decent working conditions being the primary determinants of well-being in the workplace [18].Like in other nations, women in Morocco, particularly those who work, have both professional and household duties, which might affect their quality of life [19,20]. The investigation of quality of life in Morocco has addressed different sectors, including the industry, education, and medical fields [21,22,23]. Women who have children face significant challenges in their academic pursuits in medical schools [24]. Women have lower career satisfaction, slower self-perceived career advancement, and fewer publications than males with children [22]. However, these investigations are very rare and limited to some topics. Therefore, more research is

needed to cover the mean gaps in topic, populations, and geographical areas.

Due to the fragmented data and limited studies on the quality of life in Morocco, this study aimed to compile the existing literature on the topic from 2000 to 2025. In detail, we conducted bibliometric research on the existing documents and discussed to case studies in different sectors, including education, industry, and medicine. Furthermore, we discovered limits and gaps among the analyzed studies, and we recommended future axes that need urgent investigations. These data are suggested to present new insight into quality of life in Morocco, scientific research in this field, and areas that need more research. Equally, this study is suggested to be a reference for future research in this field in Morocco and other countries characterized by similar conditions of life.

2.Literature review

2.1. Quality of life

According to [1], the idea of quality of life (QoL) originated with cancer therapies. Patients, their caregivers, and medical professionals were left uncertain about whether to choose "quantity of life" or "quality of life" due to the severe toxicity of anticancer chemotherapy, the negative effects of radiation therapy, and mutilating surgery to prolong life and increase survival [25]. Lower living standards were the price paid for longer survival. Since that time, attempts have been undertaken to identify safer and more effective cancer treatment methods, drugs, and procedures [26].

Similar to this, in the 1960s, when deinstitutionalization became more prevalent, it was believed that living with family greatly enhanced the quality of life (QoL) of psychiatric patients [27]. The hardship of family members or caretakers then surfaced. Both factual and subjective measures of the burden were used. The type of symptoms, the patients' social or physical limits, social support, interpersonal interactions, and coping techniques are just a few of the many aspects that have been linked to the caregivers' experience of burden [28]. Additionally, there was some relationship between burden and quality of life.

A globally recognized concept of quality of life does not exist [29]. According to [30], there are definite similarities between contentment and quality of life. They are not interchangeable, though. There is also a connection between the concepts of quality of life and level of living. Lastly, many civilizations consider quality of life to be comparable to functional status [31]. Quality of life is not a single idea. QOL is a complex, multifaceted concept with multiple meanings that has yet to be defined in a way that is widely agreed upon.

Most patients in poor countries have financial, home, social, and professional difficulties in addition to the distressing symptoms of the condition [32]. It must also be acknowledged that the cost of therapy often has a greater negative effect on post-treatment quality of life than any potential advantages. Patient satisfaction will increase if a routine clinical assessment of quality of life is incorporated into routine clinical practice [33]. It has been observed that QOL assessments improve quality of life in some ways. According to [29], meaning seems to be more significant for life quality.

2.2. Quality of life at work

For a long time, employees had little respect for the working conditions and considered their occupations as a means of earning a livelihood [34]. People today desire to be joyful at work because they see it as a means of achieving self-actualization and fulfillment. Businesses want models that guarantee output performance because they are rational economic agents [35]. Investing in employee well-being and, more broadly, their consideration in organizational decisions are only justified when performance is likely to be impacted by the quality of life at work, according to these models, which prioritize performance in all decisions [36]. An indicator of character and work environment is what is meant by quality of work. Workplace well-being factors are crucial elements of work quality [37].Adopting a more comprehensive definition of well-being that includes the assessment of workers' psychological functioning was suggested by [38]. Health, self-actualization, and other aspects are all components of well-being [39].

One of the primary indicators of an employee's well-being is their quality of life at work [1]. Numerous factors, including as physical and mental health, stress at work, sleep quality, psychological risk factors, and environmental factors, might have an impact on both of these [40]. Many of these can be accurately quantified by using self-reported assessment instruments to gauge the person's impressions of the condition.

Prior research has also examined quality of life at work in populations of people who are actively employed [41], but the majority of these studies have focused on a particular occupational category or employees with a particular medical condition. To the best of our knowledge, there is a lack of data regarding the variables linked to both work capacity and quality of life that are examined concurrently in seemingly healthy public sector workers [42]. In Scandinavia, the public sector employs a significant number of people, so it's critical to identify the elements that affect workers' well-being in municipal workplaces [43].

3.Materials and Methods

3.1. Research approach

This study focused on the quality of life in Morocco. A comprehensive bibliography of existing research on Quality of life was compiled through electronic survey databases and search engines, including Scopus, PubMed, JSTOR, ScienceDirect, the Public Library of Science, Google Scholar, Web of Science, and the WSU online database (PubChem) (**Figure 1**). To achieve this objective, we employed a strategic arrangement of keywords associated to quality of life in Morocco.

Relevant keywords search for quality of life included: quality of life, well-being, quality of life at work, performance, challenges, barriers, and factors impacting quality of life. On the other hand, keywords about Morocco encompassed the education sector, industrial sector, medical field, regions, urban, and rural areas. These keywords were used separately in various combinations to meet the study's objectives. The literature search was conducted for publications between 2000 and 2025, emphasizing English and French language sources.

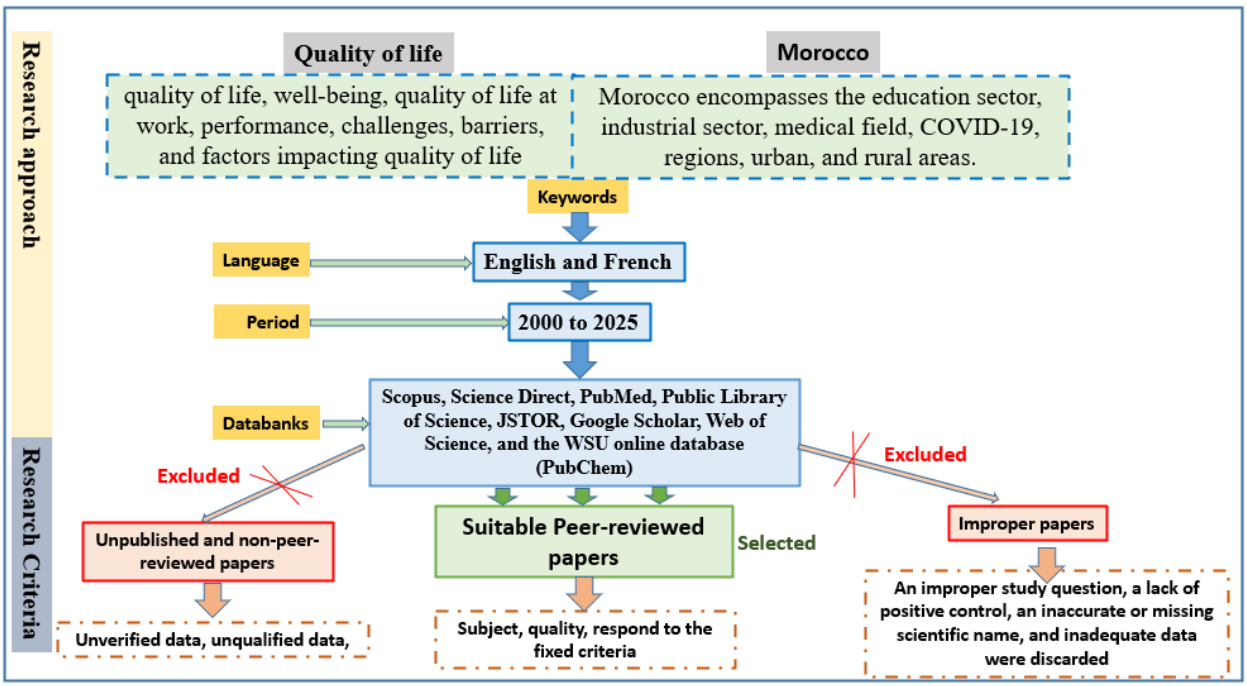

Figure 1: Research method followed for the bibliographic data amassed on the quality of life in Morocco

3.2. Selection criteria

Topics of quality of life in Morocco were found in the titles, conclusions, abstracts, results, and introductions of the research papers that were gathered. Furthermore, materials were then precisely arranged according to several characteristics, such as language, publication year, and country of origin. Key considerations in selecting the included papers were the peer-review status, content validity, source quality, and relevance. Publications outside the years 2000–2025, as well as those lacking sufficient content, verification, or peer review, were excluded from the final selection. Firstly, 521 documents were recorded based on the used keywords, then 442 papers were selected based on the research period between 2000 and 2025 (Figure 2). Further, 442 documents were selected, limited to the study countries. Similar documents were recorded in the form of articles, chapters, reviews, conferences, and letters. Moreover, research was limited to English, and 36 documents were selected. Ultimately, a total of 36 papers were identified through this research approach due to inappropriate content.

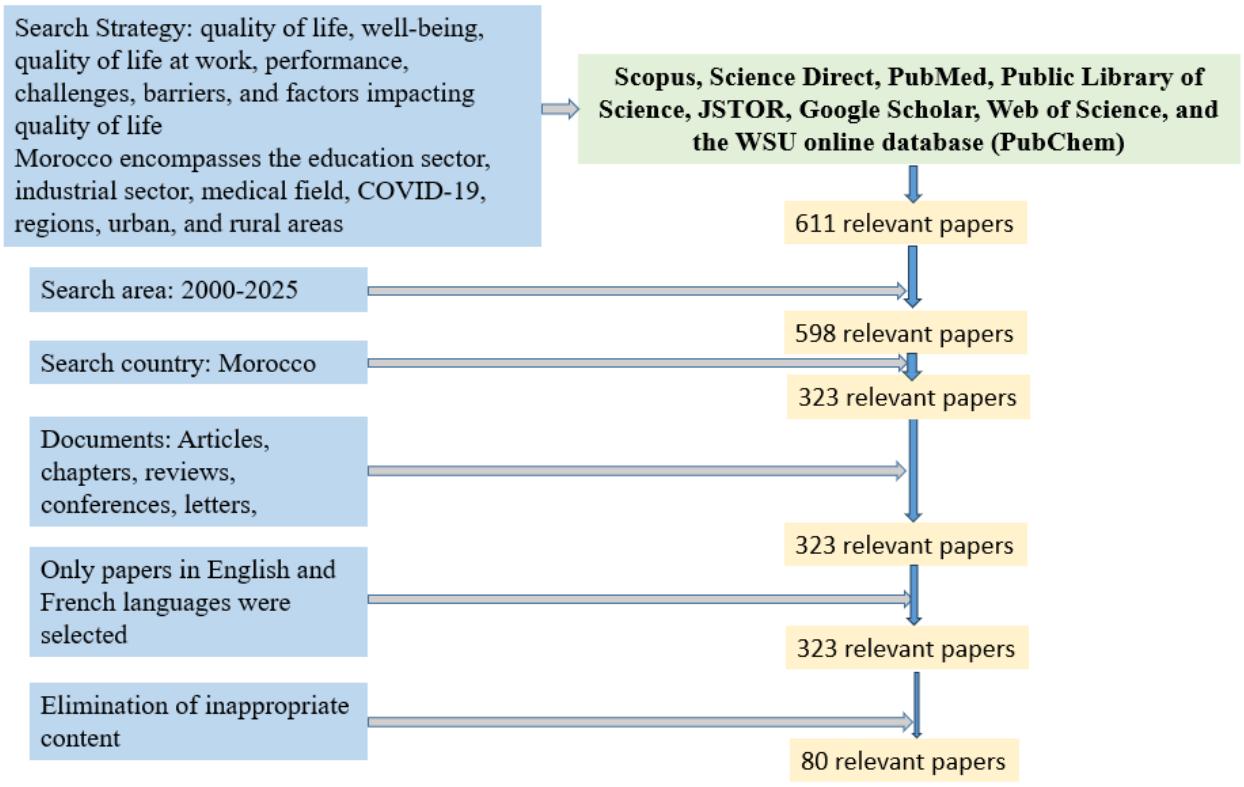

Figure 2: Selection criteria of papers related to quality of life in Morocco

4.Results and discussion

4.1. Bibliometric data

4.1.1Number of documents (2000-2025)

In total, 323 papers addressing flavonoids were published from 2000 to 2025 and results are presented in Figure 3. the number of published documents vary depending on the year. From 2000 to 2012, published papers varied from 0 in 2000 to 15 in 2012. Between 2013 and 2025, the number of published papers increased strongly to surpass 35 documents per year. The highest number of papers was recorded in 2024, with 35 papers.

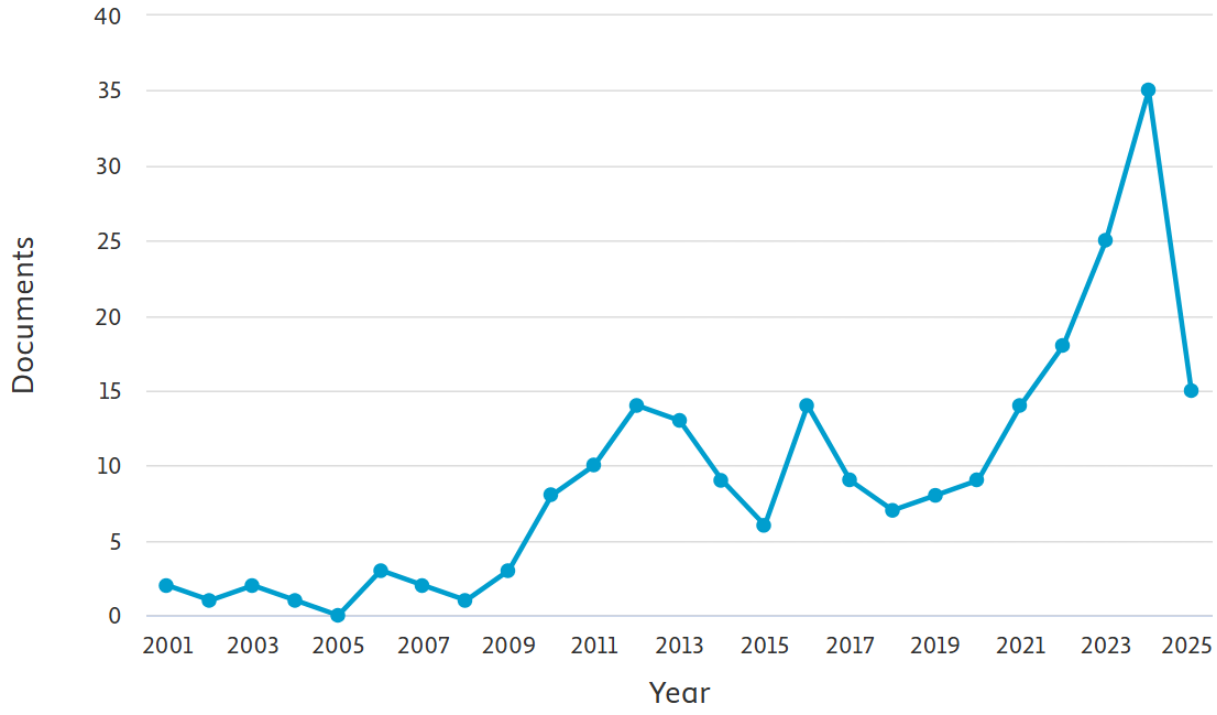

Figure 3: Number of documents from 2000 to 2025

The number of documents based on sources and years is presented in Figure 4. In total, 323 papers were published in five sources with variation depending on years from 2009 to 2025. In 2009, all papers were from Rheumatology International. From 2010 to 2016, papers were published in three sources, mainly Rheumatology International, followed by Clinical Rheumatology, and Transplantation Proceedings. Similarly, three sources were recorded for papers published from 2017 to 2025, with dominance of Pan African Medical Journal, followed by the Asian Pacific Journal, and Transplantation Proceedings.

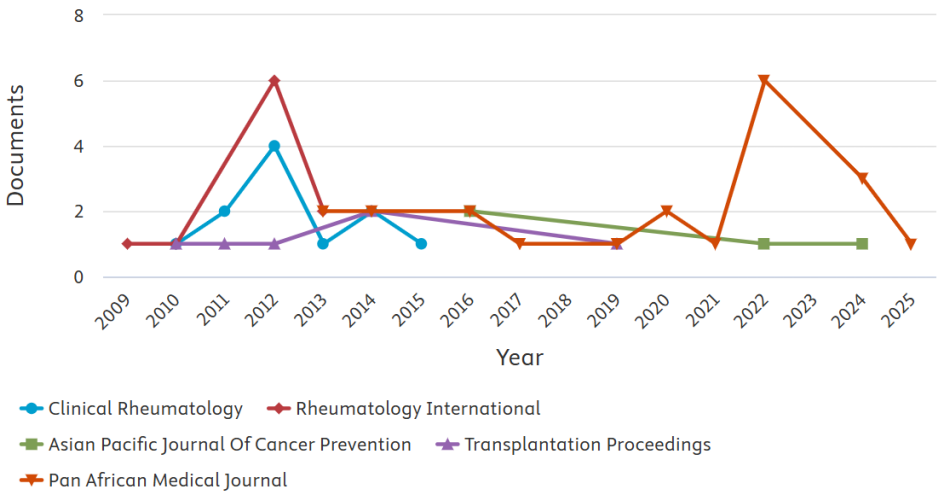

Figure 4: Number of documents based on sources and years

4.2. Type of documents

Figure 5 presents the types of documents published on quality of life from 2000 to 2025 in Morocco. In total, five types of documents were recorded with different percentages. The most dominant documents were scientific articles (92.6%), followed by review papers with 4.4%, and letters with 1.7%. In contrast, conference papers and chapters presented only 0.9 and 0.4%.

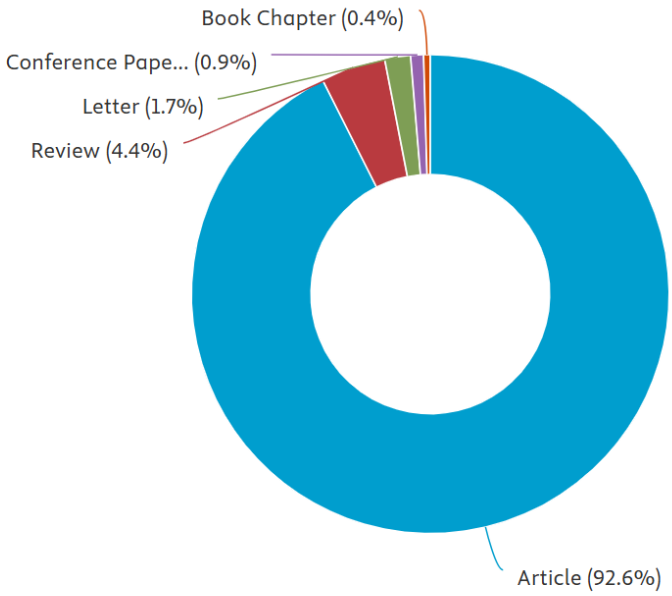

Figure 5: Type of documents from 2000 to 2025

4.3. Documents by subject area

The number of papers per subject area is presented in Figure 6. In total, 323 papers were published with different percentages for each subject area. Further, 10 subject areas were recorded. Medicine was the most cited area with 62.2%, followed by Biochemistry with 6.3%, and both immunology and social sciences with 6% each. The least cited areas were psychology and health professions with 1.7 and 1.4%, respectively. On the other hand, 6.3% of papers were not identified.

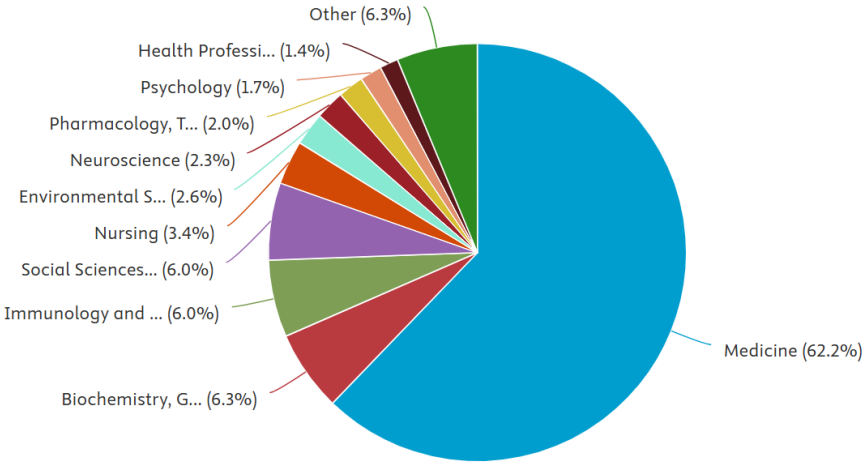

Figure 6: Number of documents per subject area

4.4. Documents by authors and affiliations

The results of the documents by authors are presented in Figure 7. In total, 10 authors were mentioned for the published papers on quality of life in Morocco. Hajjaj-Hassouni was the most cited with a total of 26 documents, followed by Abouqal with 26 documents, and Amine with 15 documents. In contrast, Belayachi was mentioned in 6 documents only.

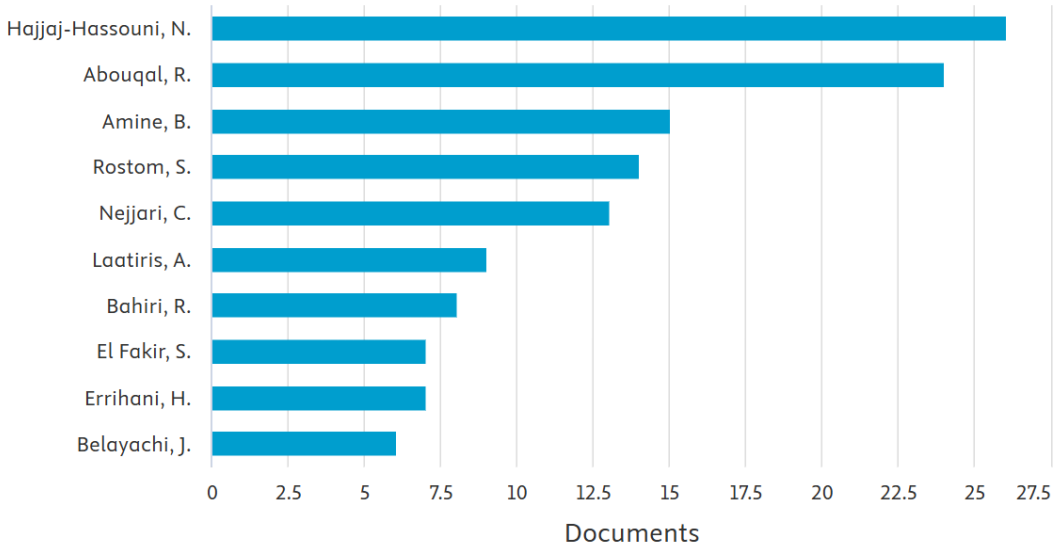

Figure 7: Documents addressing quality of life by authors

The results of the affiliations of recorded papers are presented in Figure 8. In total, 10 affiliations were mentioned for the published papers on quality of life in Morocco. Mohammed V university in Rabat was the most cited in papers with 46.5 documents, followed by Faculty of medicine and Pharmaceutic with 39 documents, and University center of Hospital Ibn Cina with 30 documents. In contrast, CHU Mohammed-VI and Hassan II University of Casablanca were the least mentioned affiliations with 17 and 15 documents, respectively.

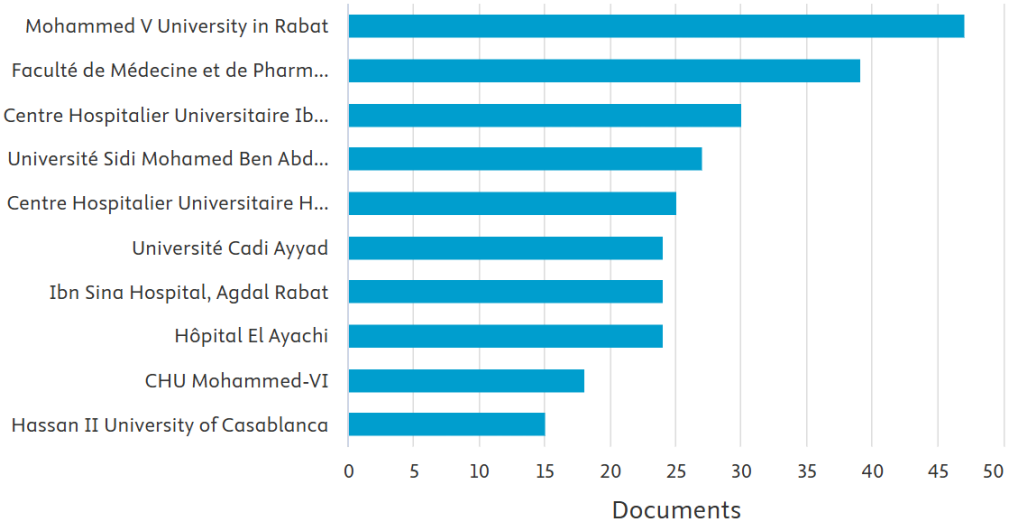

Figure 8: Number of documents by affiliations

4.5. Quality of Life in Morocco

Morocco is one of the top three African nations in terms of quality of life, according to the Number of Foundation's 2025 Quality of Life Index [44] (Figure 9). Considering elements like purchasing power, pollution levels, affordability, safety, medical standards, cost of living, and commuting times, the Quality of Life Index evaluates and quantifies the overall living conditions of a nation or city [3].

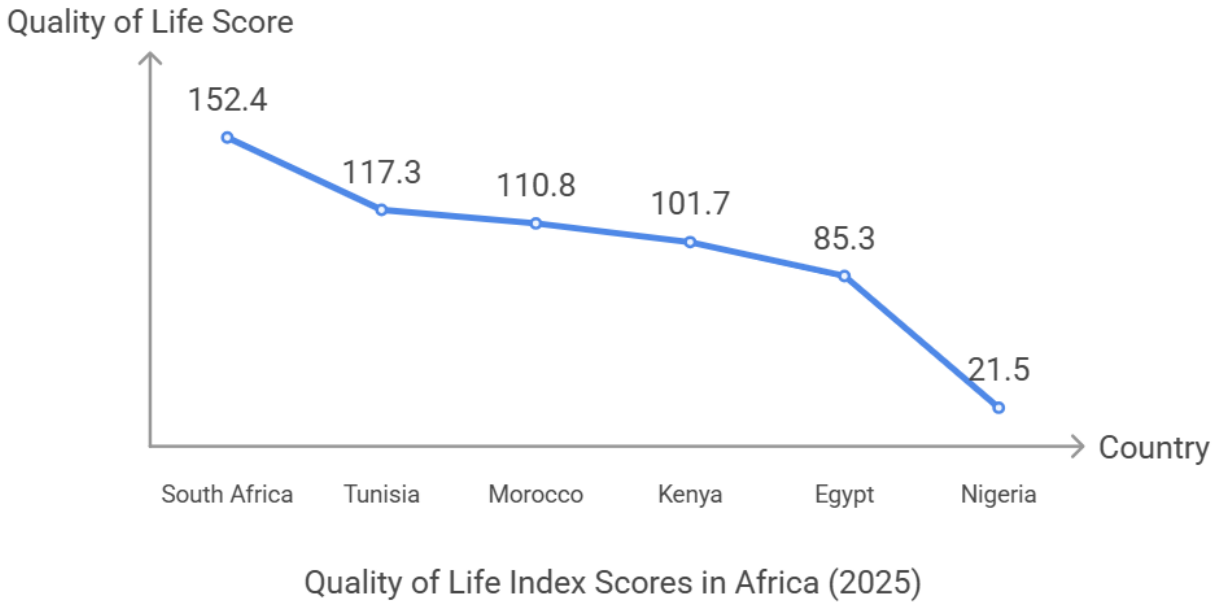

Figure 9: Top 6 countries according to the Number of Foundation's 2025 Quality of Life Index

Morocco's score of 110.8 placed it third, behind Tunisia's 117.3 and South Africa's 152.4, which took first place. Additionally, Morocco did better than Egypt, which came in fifth place with a score of 85.3, and Kenya, which came in fourth place with a score of 101.7.

Nigeria, on the other hand, witnessed a significant decline in its total score and fell out of the top five African nations. The report claims that because of the worsening living conditions in the nation, the West African giant's score would have dropped significantly, from 49.5 in 2023 to 21.5 now.

Remember that higher scores in this index indicate a higher quality of life and enable comparison and analysis of various living standards around the globe. But recent years have seen a number of shifts in international evaluations brought on by political stability, public health concerns, economic shifts, and climate change, as in the case of Nigeria.

4.6. Case studies

The initial step in bringing attention to the subject of well-being at work was the High Commission for Planning's 2012 national survey on general well-being, which had as its theme "Measuring Well-being in Morocco" [45]. There were 3,200 participants in the study who were at least 15 years old, 2,080 of them lived in cities. It draws attention to the fact that well-being has no clear meaning. Housing comes in first, according to the results. With almost 90% of Moroccans citing a good wage as the primary determinant of well-being, income comes in second. Employment comes in at number three, and the key determinants of well-being in the workplace are favorable working conditions and equitable access to employment [46]. In addition, over one in two working adults' express discontent with their position. Additionally, there is a U-shaped correlation between job satisfaction and age [46]. By socio-professional category, senior managers have the highest degree of satisfaction, while manual laborers and unskilled laborers continue to have the lowest levels [47]. Healthcare is ranked fourth, with a focus on local,

free, and high-quality services.

As a developing nation, Morocco is not exempt from this trend of transformation [48]. Human resources procedures have changed significantly in the last several years. A national survey on well-being was carried out in 2012 with the theme "Measuring Well-being in Morocco" by the High Commission for Planning, which gathers and examines information about the social and economic realities of the nation. The Moroccan Happiness Observatory (OMB) carried out a more recent study on workplace well-being in 2016, which signaled the start of awareness of its effects on social, professional, and human levels.

4.7. Initiatives

The Moroccan Happiness Observatory (OMB) carried out the first nationwide survey on occupational well-being in 2017 [15]. 1.200 workers between the ages of 25 and 60 from all industries in both rural and urban areas were surveyed to gauge the degree of well-being among Moroccans at work and determine the elements that influence it. Among this survey's primary conclusions, we cite:

- Employees who perceive a positive team environment, a rise in pay, and employment in forestry, fishing, or agriculture are the ones who most frequently report loving their jobs.
- For men, work is a greater source of wellbeing than for women.
- For almost one-third of respondents (30%), work is a cause of stress. These individuals believe that stress is caused by a lack of acknowledgment, a lack of resources to accomplish goals, and a sense of overburden.
- Employees who report feeling "discomfort at work" are overrepresented in rural areas (50%) and in the agricultural and fishery industries (50%) as well as in the private sector (44%).

Reference [18] looked into Morocco's barriers to children's well-being. The purpose of this contribution is to investigate the barriers to a high level of wellbeing for Moroccan children under five. These variables are numerous and pertain to different levels: the traits of the mother and child, the traits of the home, and the traits of the community. Based on the most recent data available (the General Census of Population and Housing (RGPH-2014) and the Demographic Health Survey (ENPS-2011), we emphasize in this study the connection between fertility and children's well-being. The well-being of Moroccan children under five is also greatly impacted by the living environment, the household characteristics (density per room kept for sleeping and density per room), the mother's characteristics (marital status, age, education, age at first marriage, parity, employment, number of live births throughout the last five years), and the commune characteristics (illiteracy rate, parity of women aged 45 to 50, unemployment rate, change between the male and female age at first marriage; change between the illiteracy rates). A multilevel analysis was used to determine these factors (Figure 10). Multiple correspondence analysis (MCA) was one of the statistical techniques used to create the composite indicator of child well-being (ICBEER). In the multilevel models, the latter is added as a dependent variable. If the national information system gathers data on the other aspects of children's well-being, the ICBEER could be enhanced in the future.

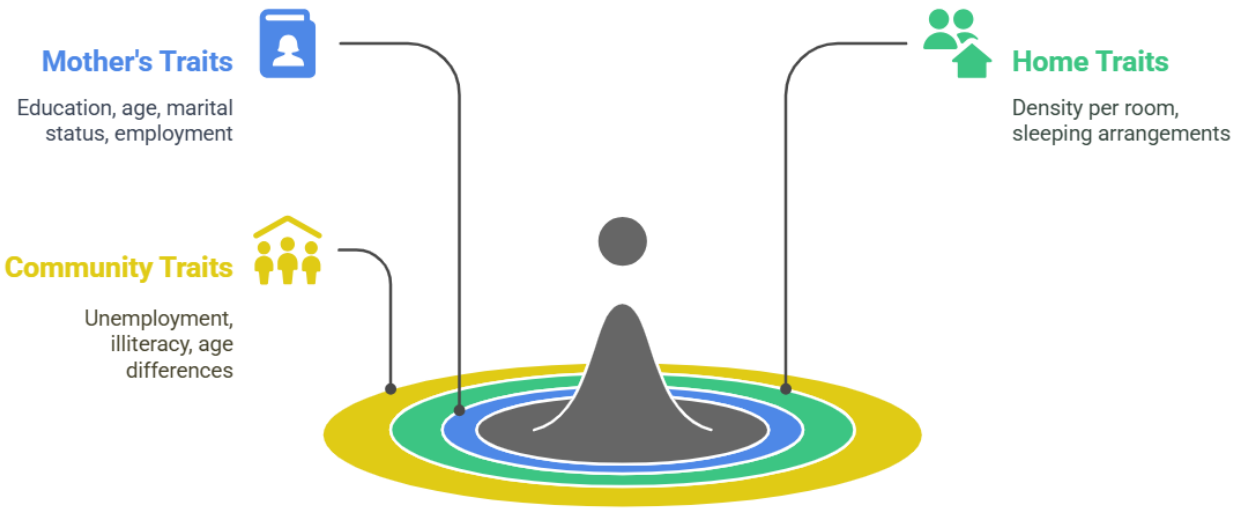

Figure 10: Factors Affecting Child Well-being in Morocco

4.8. Education sector

Higher education service quality, which is defined as the congruence of student expectations with service delivery and outcomes, includes teaching quality, administrative support, and the entire experience [49]. It blends transformative quality, which prioritizes learning outcomes and individual development, with functional quality, which stresses service dependability [50].

In countries like Morocco, where educational reforms are being undertaken to fulfill the objectives of sustainable development goals and a globalized labor market, the significance of high-quality higher education extends beyond individual outcomes to national growth [51]. Problems still exist despite continuous attempts to improve quality, particularly when it comes to matching student expectations with labor market demands [52]. Higher education's definition of "quality" is intrinsically multifaceted and intricate, encompassing elements like student satisfaction, institutional governance, and the efficacy of instruction all of which are critical to maintaining the relevance and influence of higher education [53].

Students' quality of life is becoming a major topic in conversations on raising academic achievement since it is increasingly recognized as a critical component of their educational performance [54]. The fundamental understanding of this notion includes students' general well-being in addition to their academic performance. Research has shown that one of the main causes of academic stress is anxiety and depression, which lowers students' quality of life and has a detrimental impact on both academic and social performance [55].[56] looked into the quality of education and how stress affected college students' health. The authors used a quantitative approach to poll students from different higher education institutions in Morocco in order to evaluate important factors such as academic stress, financial stress, and the quality of higher education services.

According to descriptive data, there were 222 male respondents (52.11%) and 204 female respondents (47.89%) in the sample. According to the respondents' educational attainment, 94 (22.06%) had earned a BAC + 1 degree,

40 (9.39%) had earned a BAC + 2 degree, 146 (34.27%) had earned a BAC + 3 degree, 60 (14.08%) had earned a BAC + 4 degree, 50 (11.74%) had earned a BAC + 5 degree, and 36 (8.45%) were enrolled in a PhD program (Table 1).

Table 1: Summary and properties of the respondents (n = 426)

Characteristics	Traits	Frequency	Proportion (%)
Gender	Male	222	52.11
	Female	204	47.89
Level of studies	BAC + 5	50	11.74
	BAC + 4	60	14.08
	BAC + 3	146	34.27
	BAC + 2	40	9.39
	BAC + 1	94	22.06
	PhD student	36	8.45

According to Table 2 [57], the composite reliability (CR) and Cronbach's alpha (CA) for each construct, surpassing the recommended cutoff of 0.7, validated the structures' reliability. Examples of categories that demonstrated good dependability were administrative services (CR = 0.895, CA = 0.877) and higher education service quality (CR = 0.921, CA = 0.897). Although the majority of indicators met the required loading threshold of 0.7, some, such as AS4 in the administrative services construct (0.663), came barely short of it. However, as the average variance extracted (AVE) values for every construct were above the 0.5 cutoff, showing convergent validity, these small variations were deemed acceptable. For instance, student quality of life recorded an AVE of 0.603, and the activities constructed achieved an AVE of 0.698.

Table 2: Convergent validity (n = 426)

Constructs	Loadings	CR	CA	AVE	Constructs	Loadings	CR	CA	AVE
Administrative services		0.895	0.877	0.634	Financial stress		0.914	0.891	0.605
AS5	0.836				FS5	0.751			
AS4	0.663				FS4	0.822			
AS3	0.89				FS3	0.8			
AS2	0.864				FS2	0.807			
AS1	0.703				FS1	0.753			
Activities		0.92	0.892	0.698	FS6	0.755			
Ac5	0.859				HEQ3	0.804			
Ac4	0.833				HEQ2	0.795			
Ac3	0.821				HEQ1	0.805			
Ac2	0.824				Quality of higher education service		0.921	0.897	0.66
Ac1	0.84				FS7	0.75			
Academic stress		0.914	0.893	0.572	HEQ4	0.802			
AcS8	0.737				KS5	0.79			
AcS7	0.739				KS4	0.773			
AcS6	0.769				KS3	0.779			
AcS5	0.736				KS2	0.762			
AcS4	0.751				KS1	0.754			
AcS3	0.732				Knowledge services		0.881	0.83	0.596
AcS1	0.798				HEQ5	0.882			
AcS2	0.783				HEQ6	0.783			
CI4	0.856				LQ4	0.709			
CI3	0.777				LQ3	0.82			
CI2	0.824				LQ2	0.84			
CI1	0.824				LQ1	0.718			
Continuous improvement		0.892	0.84	0.674	Leadership quality		0.856	0.777	0.599
Student quality of life		0.932	0.918	0.603	Teacher quality		0.905	0.869	0.658
SQL9	0.744								
SQL8	0.708								
SQL7	0.756								
SQL6	0.751								
SQL5	0.812				TQ5	0.7			
SQL4	0.805				TQ4	0.841			
SQL3	0.811				TQ3	0.912			
SQL2	0.832				TQ2	0.845			
SQL1	0.762				TQ1	0.738			

CA: Cronbach's alphas, CR: composite reliability, AVE: average variance extracted.

The immediate effects of the structural equation modeling (SEM) findings are shown in Table 3 within the context of the higher education system in Morocco. As anticipated, student quality of life was positively impacted by higher education service quality ($\beta = 0.504$; $p < 0.01$), confirming H6. The results show that one of the most important factors in raising students' general quality of life in Morocco is the caliber of services offered by higher education institutions. Furthermore, both academic and financial stress had a substantial detrimental impact on students' quality of life, with $\beta = -0.370$ and $\beta = -0.120$, respectively, at $p < 0.01$ for both, supporting H3 and H5. These results highlight the negative relationship between students' quality of life and their level of academic and financial stress. Students frequently experience significant financial and academic constraints, especially in the Moroccan educational system.

Table 3: Direct effects

Hypotheses	Relations	Results	Significances
H1	Managerial services → HEQ	Non-substantial influence ($\beta = -0.008$; $p > 0.05$)	Not supported
H2	Actions → HEQ	Significant and positive ($\beta = 0.068$; $p < 0.05$)	Supported
H3	Academic tension → SQL	Significant and negative ($\beta = -0.370$; $p < 0.01$)	Reinforced
H4	Permanent enhancement → HEQ	Positive and significant ($\beta = 0.302$; $p < 0.01$)	Supported
H5	Financial fear → SQL	Negative and significant ($\beta = -0.120$; $p < 0.01$)	Reinforced
H6	Quality of higher education service → (SQL)	Notably positive ($\beta = 0.504$; $p < 0.01$)	Reinforced
H7	Expertise services → HEQ	Significant and positive ($\beta = 0.148$; $p < 0.01$)	Supported
H8	Management quality → HEQ	Significant and positive ($\beta = 0.196$; $p < 0.01$)	Supported
H9	Teacher quality → HEQ	Significant and positive ($\beta = 0.316$; $p < 0.01$)	Supported

However, with $\beta = 0.316$; $p < 0.01$, teacher quality significantly and favorably impacted the quality of higher education services, supporting H9. This illustrates how the perceived service quality of higher education in Morocco is significantly influenced by the caliber of instruction. The quality of higher education services was also positively and significantly impacted by leadership quality (LQ) ($\beta = 0.196$; $p < 0.01$), knowledge services (KS) ($\beta = 0.148$; $p < 0.01$), and continuous improvement (CI) ($\beta = 0.302$; $p < 0.01$), supporting H4, H8, and H7, respectively. These findings imply that improving the remarked quality of higher education facilities in Morocco requires a number of institutional quality components, such as knowledge management, effective leadership, and a dedication to ongoing development.[58] looked into the factors that affect middle school pupils' well-being in both urban and rural Morocco. 1444 middle school students (755 girls and 689 boys) make up the sample for this quantitative study. A questionnaire of 15 questions about coeducation, relationships with teachers, student relationships, violence encountered, and school well-being served as the research tool for this study. According to the data analysis, students in rural areas appear to be particularly sensitive to the "emotional" components of the teacher-student connection. In middle school, the girls are happier than the boys. This characteristic appears to be crucial for both retaining them and lowering their dropout rate. As anticipated, both student groups emphasize academic achievement as a sign of well-being. However, students' lack of knowledge about which orientation to pick is a contributing reason to their poor health, particularly for girls. Additionally, the findings indicate that neither urban nor rural contexts prioritize well-being. The findings of Moroccan students' assessments by the Program for the Monitoring of Student Achievement will be explained by this.

The same reasoning that governs transformation in general also governs educational reform, requiring an active process of change. Because it refocuses theory and practice on key areas that require improvement, the change element in educational reform is crucial. The quality of education under reforms of the Moroccan education system from 1999 to 2019 was examined by [59]. The purpose of this study is to evaluate Morocco's significant educational reforms from 1999 to 2019. This paper specifically starts with a broad overview of the Moroccan educational discourse. It documents Morocco's significant educational improvements since 1999. Next, four reform initiatives in Morocco are estimated using a framework for conceptualizing quality education: The Education Action Plan referred EAP, the Strategic Sight for Moroccan School Restructuring (SVMSR), the

Nationwide Emergency Plan of Education (NEEP), and the National Charter for Education and Training (NETC). Morocco uses a theoretical model that incorporates seven aim areas to estimate educational reforms: the democratization of basic education for adults and children, as well as efficient, effective, equitable, relevant, and sustainable. The study's conclusions support Morocco's efforts to meet the requirements for high-quality education. Primary education access is completely democratic, and the gender parity indices demonstrate how effectively equality and equity are accommodated in education. However, adult basic literacy remains an area that needs improvement.

4.9. Industry sector

Numerous studies have examined well-being and quality of life in the industry [46,60]. Different specialties, populations, and geographical areas have been the focus of these investigations [46,61]). Depending on the study criteria, industry sector characteristics, the study's goal, etc., the research's findings varied (Table 4).

Table 4: Most important studies that addressed the quality of life in industry of Morocco

Industry sector	Area	Objective	Results	References
Aerospace		Examine how staff members perceive their level of quality of worklife (QWL) and occupational stress.	QWL seems to be affected by Gender and education level	[62]
Food and metallurgy	Larache	Work performance as a response variable and people's well-being as an explanatory variable are positively correlated	Highlights the link between work performance and employees' well-being	[61]
Information technology		Assess the work-life balance (WLB) of Moroccan women in information technology (IT) and learn how they view the roles they play in their personal	Respecting the respondents' companies' culture and the cultural presumption of being the head of the household appears to be a crucial component	[19]

		and professional lives	of employee WLB	
Pharmaceutical sector	Morocco	Understand the concept of well-being at work	Good interpersonal skills, HR arrangements, comfort and ergonomics of the premises, remuneration and social benefits, health, atmosphere and the nature of the work	[15]

Reference [61] looked at the productivity and well-being of workers in the food and metallurgical sectors in companies from the Larache region in Northern Morocco. This study clarifies the positive correlation between work performance (considered a response variable) and people's well-being (treated as a descriptive variable). As part of an interpretivist epistemological stance, we used a quantitative approach to analyze and process data pertaining to eight organizations in order to determine how enhancing well-being could boost productivity at work. Data for the poll was gathered from eight businesses with more than 300 employees, seven of which are in the food sector and one in the metallurgical sector. As part of an interpretivist epistemological movement, the gathered data were quantitatively processed and analyzed. According to the empirical findings, a high level of well-being is crucial for effective work performance. On the other hand, the social context has the greatest impact on well-being; therefore, fostering better relationships among coworkers promotes well-being. Even though people are aware of how important well-being is for productivity at work, businesses are still lagging when it comes to utilizing well-being metrics and indicators. This study emphasizes how work effectiveness and employees' well-being are related. Researchers can conquer a new fertile zone by commanding that study downward to the terrain in Larache, Morocco.

In a recent study, [62] evaluated how employees of a Moroccan aerospace firm perceived their quality of worklife (QWL) and the degree of occupational stress. The employees are given a genuine questionnaire to complete on their own, anonymously. Additionally, 74 people responded to the survey. Most participants (45.9%) are in the 30- to 40-year age group, with those in the 20- to 30-year age category coming in second (35.1%). The percentage of men is slightly larger than that of women, at 54% compared to 45.9%. With a prevalence of 58.1%, married respondents with children make up the bulk of the sample. (39.2%) had completed three years or more of school, (48.6%) had completed less than three years, and 12.2% had not completed high school. Eighty-one percent of the responders have been with the organization for three years or longer. Gender appears to have an impact on how QWL is perceived in this study; in fact, men are more likely than women to have a satisfactory QWL. schooling level also has an impact on QWL; 72% of respondents report having a better perspective of QWL after three years of schooling or more. The respondents reported strong support from coworkers, high job demand scores, and great decision latitude. This positive design puts the person in an "active" rather than a "high strain"

position, according to Karasek. According to the Siegrist model, however, respondents believe that financial acknowledgment is inadequate, which leads to an imbalance in the (effort/reward) balance and the potential for stress. elements that affect the work's content. It's significant how many respondents said there was a high demand for jobs: 68.9% of respondents think they have a lot of work to complete, and 75.2% of respondents think their professions need prolonged periods of focus. Nonetheless, 70.3% of people have decisional latitude. However, 81% of respondents think they are qualified to do their jobs, and 78.3% say they have the chance to learn new things all the time. Further, 87.8% believe their job is beneficial. However, only 35.2% believe they are aware of the significant changes occurring within the organization.

4.10. Medical sector

The state and private sectors, which include both for-profit and non-profit providers, make up the Moroccan healthcare system [63]. At the local, provincial, regional, and tertiary levels, the public sector comprises 144 hospitals and 2,689 primary healthcare facilities. There are 22,146 hospital beds in all. There are 439 clinics and 6,763 private practices in the private sector, most of which are located in cities and along the northern Atlantic coast.

Human resources, in particular, are severely lacking in the healthcare system [64,65]; the density was estimated at 0.68 for doctors compared to 0.84 for nurses, and accoucheuses per thousand people. Additionally, even if the budget for healthcare has increased, household out-of-pocket spending (about 54%) and investing in the healthcare segment remain down (fewer than 6% of GDP). Twelve additional regions have been institutionalized as part of the advanced regionalization reforms being implemented in the Moroccan healthcare system [66]. An additional 8.5 million people now have access to free healthcare services in the public sector thanks to the broad implementation of health insurance for poor and vulnerable populations (RAMED) in 2012 [67]. The Mandatory Health Insurance (AMO) covers workers in both the public and commercial sectors [68]. Since self-employed people make up one-third of the population, the government is trying to provide them with health insurance. Nonetheless, Moroccans have voiced their displeasure with the healthcare system, citing a notable disparity between metropolitan and countryside spaces and the quality of care and unequal access to services [69].

In Morocco, different studies have addressed the quality of life and well-being in different areas of the medical system. These investigations have addressed the employees, staff, and persons with illnesses and disabilities. Recorded results were significantly different, as mentioned in Table 5.

Table 5: Topics and investigations that addressed the quality of life in the medical sector of Morocco

Medical area	Region	Objective	Results	References
Burnout syndrome	Northwest	Burnout syndrome's effects on Moroccan training residents quality of life	The quality of life of a sensitively spent resident who stays at a distant hospital was adversely influenced by the high level of burnout	[70]
Diabetic patients	Casablanca	Find out how common oral diseases are among diabetic people, what their risk factors are, and how their oral health affects their quality of life	These conditions have a detrimental effect on these diabetes patients' oral health	[71]
Hospital staff	at Hassan II Hospital in Agadir (Morocco)	The COVID-19 pandemic's effects on healthcare workers' conduct and standard of living	The negative impact of the COVID-19 pandemic on social life and relationships with others was noted in 79%, and on the quality of sleep in 40.3%.	[72]
		Children with cerebral palsy's quality of life: the effect of spasticity	Impaired QOL in spastic patients with CP may be explained by functional discomfort and pain caused by spasticity.	[73]

In 2024, [23] investigated the predictors of quality of life among Moroccan populations with epilepsy. The questionnaire of Quality-of-Life Inventory of Epilepsy (QOLIE-31) was exploited to gather statistics from epilepsy patients who stayed the diagnosis center at Hassan II University Hospital Center in Fez, Morocco, between May 2021 and June 2022. The study was cross-sectional. The patients' average age (standard deviation (SD)12.2) was 35.70 years. The average QOLIE-31 score was 43.6±10.2. The subscale measuring pharmaceutical effects had the greatest score (with an average of 52.3±12.1), while the subscale measuring overall quality of life had the lowest (39.2±13.2). The standard complete score of QOLIE-31 was higher for patients who had no seizure episode in the previous month (47.6±10.5 as mean) than for study participants who had a seizure in the previous month (with a mean of 40.6±8.9 and $p \leq 0.001$). These findings confirmed that the following factors were linked to QOL: employment (IC 95 %, β= −4.291, −7.976; −0.605), lowly monthly earnings (<2000MAD (194.94$): IC 95 % β= −9.937, −18.536; −1.338), memory maladies (IC 95 %, β=10.025, 2.811; 17.239), and factors of seizure trigger such as not remember to take antiepileptic medications (AEDs) (IC 95 % 0.604, β=5.205; 9.311). Patients with epilepsy have a poor quality of life overall. This study shows that QOL predictions for epileptic patients included the presence of memory problems, seizures, trigger features, monthly income, and employment status.

Reference [70] looked into how burnout affected Moroccan training residents' quality of life. 198 residents participated in an observational cross-sectional examine, which was conducted at the Ibn Sina Teaching Hospital in Morocco between April and October 2010. Residents in several specialties were given anonymous self-administered questionnaires by hand. In the initial phase, a greater detachment between home and work was a weighty interpreter of the lowermost quality of life for both the EQ-5d VAS and the EQ-5d index (95% CI − 0.002 to −0.006, β −0.004; P<0.001), and it elucidated 21 and 22% of the variance in the quality of life, correspondingly. In the following step, the lowermost quality of life was associated with the following factors (EQ-5d VAS and EQ-5d index, correspondingly): EE (95% CI from −0.01 to − 0.004; β −0,007, P<0.001), an extended travel from home to place of work (95% CI −0.005 to −0.002; β −0.003, P<0.001), and β −0.3, 95% CI −0.43 to − 0.16; P<0.001), and (β −0,56 95% CI −0.9 to − 0.14; P=0.009). Further, EE clarified 37 percent of de variation in the quality of life consistently.

The quality of life of a warmly spent resident who stays at a distant hospital was adversely influenced by the high level of burnout. Healthcare providers are therefore burdened by their work environment, which also has an impact on their well-being and health. Programs for inhabitant help should be put in place to enhance working and learning environments, as this will help medical residents develop their professional abilities and enhance their personal quality of life.

In 2023, [74] examined Morocco's health-related quality of life throughout the first pregnancy three trimesters. From August to December 2019, a cross-sectional experimental study was conducted to evaluate HRQoL and related characteristics among pregnant women in Morocco who established prenatal treatment at Settat's health clinics at various gestational ages. Every woman who consented later answered the survey (100 percent response rate). The findings showed that all of the EQ-5D-5L health characteristics displayed a significant variance ($p < 0.0001$) between non-pregnant and pregnant women. In actuality, pregnant women reported more issues with self-care (18%), mobility (37%), and routine tasks (53%), respectively, than non-pregnant women (28, 12, and 26.2 percent). Furthermore, compared to non-pregnant women (31%), pregnant women reported higher levels of pain

and discomfort (57%). Pregnancy also had an impact on the anxiety/depression dimension. Compared to 46% of participants who were not pregnant, 52% of pregnant women reported having anxiety or depression.

The response pattern "11111" indicates that 16.2% of the 270 pregnant women who responded said they were in good health, meaning they had no issues in any of the five categories. 34 (12.59%) of the individuals had the best possible health state (100) on the EQ-VAS. The findings of the EQ-VAS and EQ-5D index comparison revealed that pregnant women's EQ-VAS scores were 72 ± 23 and 80.2 ± 16.89, respectively ($p < 0.0001$), and their EQ-5D index was lower than that of non-pregnant women, at 0.71 ± 0.24 and 0.79 ± 0.29, respectively.

EQ-5D scores were substantially correlated with parity, place of residency, and gestational age ($p < 0.0001$ for all factors). In comparison to their urban counterparts (score of EQ-5D index was 0.77), pregnant women in rural areas had the lowest HRQoL (score of EQ-5D index was 0.57); similarly, women in the third trimester and those who were nulliparous had the lowest HRQoL (scores of EQ-5D index were 0.64 and 0.84). Furthermore, only gestational age is linked to the EQ-5D VAS. The HRQoL was lowest among women in the third trimester (EQ-VAS = 69.42, $p = 0.035$).

The oral quality of life and oral health of diabetic individuals were examined by [71]. Between January and May 2018, 200 diabetes patients participated in a prospective observational and analytical study carried out by the authors at the Endocrinology and Department of Metabolic Diseases in the Ibn Rochd University Hospital in Casablanca, Morocco. The General Oral Health Assessment Index (GHHAI) score was utilized to measure oral quality of life (QoL). The findings discovered that 21% of patients had braces, 61% had previously seen a dentist for oral health issues, and 36% did not brush their teeth regularly. 91.5% of patients had an oral issue when they were admitted, according to an oral health evaluation. The most prevalent conditions were decaying teeth, dry mouth, candidiasis, gingivitis with or without bleeding, and localized or widespread tartar plaque. Seventy-six percent of these patients had low oral health-connected quality of life.

Besides disrupting the everyday social, familial, and professional life of the general public and healthcare professionals, especially those on the front lines, the COVID-19 epidemic has caused a swift shift in the way care is organized. The effect of this pandemic on the conduct and standard of living of medical staff at Hassan II Hospital was evaluated by [72]. This extensive cross-sectional study was carried out among Hassan II Hospital employees with both descriptive and analytical goals. A web questionnaire was formed by means of the Google Forms platform to collect data. Of the 124 participants, 58.1% were female, and their average age was 29.3 ± 2 years. Comorbidities were present in 39.2% of the patients, with anxiety (17.7%), sleep problems (16.3%), and depression (9.7%) predominating. The professional category with the highest representation was resident physicians (40.3%). 32.3% of caregivers reported doing at least eight on-call shifts per month, 42% reported working between 35 and 48 hours per week, and 58.1% of resident physicians performed on-call duty in COVID-19 departments. 79% reported that the COVID-19 pandemic had a detrimental effect on their social lives and interactions with others, and 40.3% reported that it had a bad effect on their sleep quality. Of the participants, 51.6% got more irritated, and 75.8% indicated concern of contracting the illness or spreading it to others. In 24.2% of the cases, appetite was reduced. The percentage of respondents who smoked increased by 1.6%. However, in 93.5% of cases, alcohol use was absent, and in 3.2% of cases, it was reduced.

Children with cerebral palsy (CP) had their quality of life (QOL) assessed by [73]. Spasticity linked to a motor impairment may make this more difficult. Children with cerebral palsy who were referred to the Department of Rehabilitation and Physical Medicine for rehabilitation care are the subject of this retrospective descriptive study. The Cerebral Palsy Quality of Life Child questionnaire (CP-QOL-Child) and the MIF-MÔMES functional independence measure were used to assess QOL. The modified Ashworth scale was used to measure spasticity. Thirty-two children in all were gathered. 8.2 years was the usual age. Further, a total of 62.5% of patients were paraparetic. The mean modified Ashworth score for all patients was 2, indicating spasticity. Twenty patients in all were injected with botulinum toxin. A pain VAS was used to measure pain, and the mean score was 48 out of 100. The patients' MIF-MÔMES was 72/126, and their mean autonomy was 50%. In 67.2% of cases, these outcomes were linked to a reduction in quality of life. Moreover, the functional pain and discomfort brought on by spasticity can be used to explain why spastic persons with CP have a lower quality of life. This makes the patient more reliant on family members and exacerbates their pre-existing motor impairment.

4.11. Limits

Despite the classification of Morocco in third place concerning the quality of life, investigations addressing this topic are very limited (Figure 11). Equally, the investigated topics, targeted populations, geographical areas, and temporal features in studies addressing life quality were fragmented and limited.

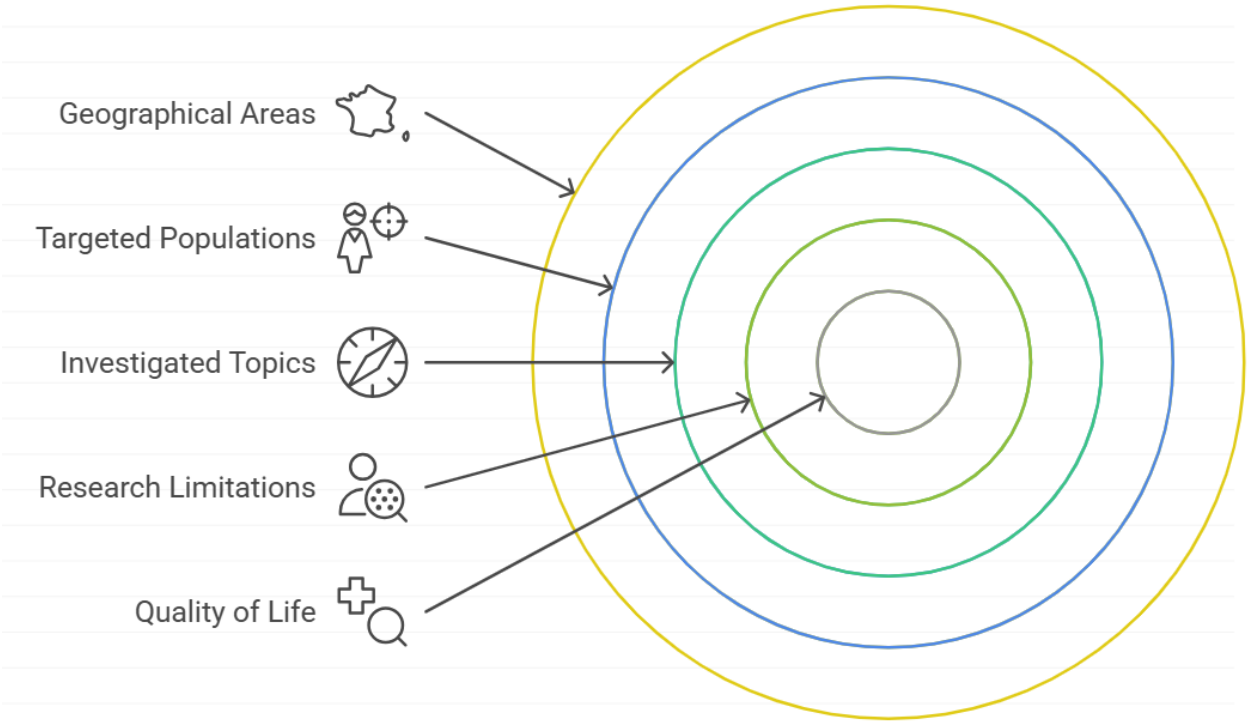

Figure 11: Factors limiting investigations on quality of life topics in Morocco

In terms of studies, research on life quality in Morocco is rare and fragmentary compared to other countries. For example, 9,100 documents were found in Spain, 7,837 documents were found in France, and 4,511 documents were found in South Africa. In North Africa, characterized by similar climate, life, and economic conditions, 421

documents were found in Tunisia, while only 258 documents were found in Algeria.

The investigated topics related to life quality and well-being in Morocco are very scarce. The majority of research concentrated on the quality of life among staff and employees of industrial units based on gender and diseases, while the factors impacting the topic, such as sociodemographic, economic, and climatic conditions. Similarly, the effects of residential quality, salaries, inflation, and poverty on quality of life were neglected in all analyzed studies. On the other hand, no study has addressed the quality of life before, during, and after the COVID-19 pandemic.

In terms of geographical limits, most investigations in Morocco were concentrated on the Northern regions. The investigations were recorded in Casablanca, Fez, Rabat, and Tanger. In contrast, the eastern and southern provinces, characterized by harsh conditions and low economic incomes, were neglected. Further, the majority of studies were conducted in urban areas compared to the rural and peri-urban zones. These risks impact the quality and representativeness of results.

In the medical sector, research was concentrated on populations affected by diseases, while the hospital staff and employees were neglected. For example, the effect of the COVID-19 work conditions on the quality of life of staff and employees has not yet been addressed. Similarly, the variation of life quality indices was not compared between regions, as different hospitals with dissimilar dimensions. Moreover, the effect of digital technologies, such as Artificial Intelligence, needs to be considered among the features of well-being.

4.12. Recommendation for future research

Based on the analysed documents and data, the researchers in Morocco neglected a wide range of topics and fields related to the quality of life. The most lacking points in the previous documents were in investigated topics, targeted populations, geographical areas, and temporal features. Therefore, in this section, we oriented efforts to fill all discovered gaps (Figure 12).

In terms of sectors, the investigations were limited to industry, education, and healthcare. Other fields such as agriculture, fishery, mining, and artisanal activities should be investigated. Agriculture employs about 40% of the nation's workforce in Morocco, while more than 660.000 Moroccan artisans have been identified by the Ministry of Tourism, Crafts, and Social Economy. Therefore, the investigation of life quality in these sectors is suggested to add new data for the life quality in the entire Morocco.

In terms of subject areas, the investigations were concentrated on the employees, while the staff of companies, services, and systems were neglected. At this point, future investigations should address the quality of staff, mainly the factors impacting life conditions and the performance of the personnel. This research is suggested to fill the gap in this field. Moreover, future investigations should address the spatial and temporal compartments of the Moroccan sectors. For example, the research should address the evolution of life quality in Morocco during the last decades, as well as before and after the COVID-19 pandemic, mainly in the health care sector. Equally, field surveys should cover other regions in Morocco, such as the Southern and Eastern provinces.

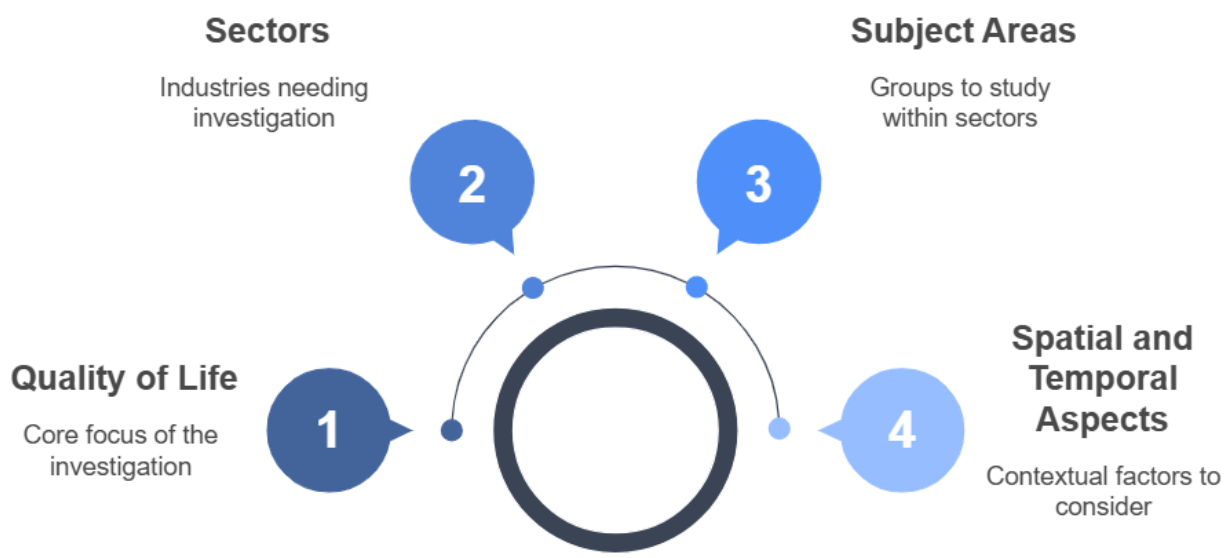

Figure 12: Features that need more research in Morocco

5.Conclusion

This study compiled the existing literature on the quality of life in Morocco during the last two decades. In detail, we conducted bibliometric research on the existing documents and discussed to case studies in different sectors, including education, industry, and medicine. Furthermore, we discovered limits and gaps among the analyzed studies, and we recommended future axes that need urgent investigations. A comprehensive bibliography of existing research on the topic was compiled through electronic survey databases and search engines. The literature search was conducted for publications between 2000 and 2025, emphasizing English-language sources. The bibliometric research showed that 323 documents were published on quality of life in Morocco. The most dominant documents were scientific articles, followed by review papers and letters. Based on the data, Morocco ranked third, behind South Africa, which finished first, and Tunisia in terms of quality of life in Africa. The field surveys in Morocco were concentrated in the sectors of industry, education, and medicine. These investigations have addressed the employees, staff, and persons with illnesses and disabilities. However, the existing data were significantly variable depending on the topic and studied populations. Despite the classification of Morocco in third place concerning the quality of life, investigations addressing this topic are very limited. Equally, the investigated topics, targeted populations, geographical areas, and temporal features in studies addressing life quality were fragmented and limited. Therefore, we oriented future investigations to address other fields such as agriculture, fishery, mining, and artisanal activities should be investigated. Similarly, staff of each sector should be addressed and compared with other employees. These data are suggested to present new insight into quality of life in Morocco, scientific research in this field, and areas that need more research. Equally, this finding are suggested to be a source for future research in this field in Morocco and other countries characterized by similar conditions of life.

6.Ethics Declaration

6.1. Conflict of interest

the authors have no relevant financial or non-financial interests to disclose

6.2. Funding

No finding

6.3. Data Availability

no Data was used in this article

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