

TOWARDS A MORE COMPREHENSIVE UNDERSTANDING OF UNIVERSITY STUDENTS' QUALITY OF LIFE: A SYSTEMATIC ANALYSIS OF QUALITY-OF-LIFE FRAMEWORKS

نحو فهم أكثر شمولاً لجودة حياة طلاب الجامعة: تحليل منهجي لأطر جودة الحياة

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ABSTRACT

Quality of life (QOL) is a complex concept encompassing various aspects of an individual, group, or society's wellbeing. Students, who are considered an integral pillar of society, often struggle balancing their academic and social lives, leading to stress and anxiety. This paper aims to improve university students' QOL by understanding and exploring its assessment methods. The research uses literature to discuss QOL's definition, its indicators, evolution, and its relation to the built environment and university students. Using SCOPUS-indexed databases, a systematic approach is applied to select relevant studies to research's scope. A comparative analysis is used to review 17 studies, providing suitable criteria for assessing university students' QOL. It was found that during assessing university students' QOL, the psychological and social domains are essential, followed by physical Health and environmental domains. Research recommends adopting WHOQOL-BREF for assessing students' QOL as it is more sensitive to the social and psychological yet including physical health and environmental domains.

KEYWORDS

Quality of life; University Students; World Health Organization; wellbeing; whoqol-bref

المخلص

تعتبر جودة الحياة (QOL) مفهومًا مركبًا يشمل جوانب مختلفة من رفاهية وصحة الأفراد، المجموعات أو المجتمع. يُعد طلاب الجامعة لبنة بناء المجتمع، ومحاولتهم تحقيق التوازن بين الحياة الأكاديمية والاجتماعية تعرضهم للتوتر والقلق. تهدف الورقة البحثية لتحسين جودة حياة طلاب الجامعات من خلال استكشاف طرق تقييمها. يستخدم البحث مدخل نظري لمناقشة تعريف جودة الحياة، مؤشرات، تطورها وعلاقتها بكل من البيئة المبنية وطلاب الجامعة. باستخدام قواعد بيانات (SCOPUS) المفهرسة، تم تطبيق أسلوب منهجي لاختيار الدراسات المتعلقة بنطاق البحث. يتبنى البحث التحليل المقارن لمراجعة الـ 17 دراسة المختارة، لتوفير معايير مناسبة لتقييم جودة حياة الطلاب في الجامعات. وتبين أنه في سياق الجامعات، كان العاملان النفسي والاجتماعي هما الأكثر شيوعًا للاستخدام لتقييم جودة الحياة، يتبعهما العامل البيئي والصحة الجسدية. أخيرًا، يستنتج البحث أنه حيث أن استبيان جودة الحياة لمنظمة الصحة العالمية (WHOQOL-BREF) أكثر حساسية للعوامل الاجتماعية والنفسية، ويتضمن العاملين البيئي والصحة الجسدية، يوصي البحث باعتماده عند تقييم جودة الحياة للطلاب من أجل تحسينها.

الكلمات المفتاحية

جودة الحياة؛ طلاب الجامعة؛ منظمة الصحة العالمية؛ الرفاهية؛ استبيان جودة الحياة لمنظمة الصحة العالمية

1. INTRODUCTION

Quality of life (QOL) is considered one of the main elements that help assess human health and overall wellbeing, covering physical health, mental, and social health beside functional performance of individuals (Wong et al., 2018). It is worth mentioning that the definition and measurement of QOL are neither easy to resolve nor possible to ignore (Baldwin et al., 1990). Researchers have not agreed on one single definition of that concept.

Additionally, the concept of QOL becomes ambiguous when it is not clearly defined within a specific discipline (Wolfensberger, 1994). Due to its complexity and multiple definitions, QOL is considered multidisciplinary as there is no singular metric that can fully encompass all aspects of QOL. However, by examining the various methods of measurement, we can gain a deeper/better understanding of its meaning and identify strategies for enhancement/improvement.

The quality of nature and the built environment affect human perception of wellbeing, general health, and quality of life, especially among the young and elderly. For instance, Access to green space and safe parks is considered to have a positive impact on mental health and reduce stress levels (Parra DC, 2010).

At the same time, studies linked the conditions of the built environment to both psychological and physical wellbeing. The creation of built environments plays a crucial role in fostering peace, fulfillment, and freedom (Sharr, 2007). As concerns grow about the influence of the environment and greening on QOL and overall health, they call for a deeper understanding of QOL and the factors affecting it.

In general, university students face many challenges, seeking to achieve satisfying grades while maintaining their social relationships. This paper tackles the problem of students' poor QOL which is known to lead to stress and anxiety among other psychological and physical disorders. Starting with understanding the concept of QOL, its evolution, and exploring different methods for its assessment. Finally, the main objective of the research is to identify a suitable framework to measure the QOL of students on university campuses. The research scope excludes the Economic domain from investigation as it is not considered a controllable variable, as well as due to the big difference between educational institutions in that point.

The research discusses through literature the concept of Quality in our daily lives. Moreover, the research explores different approaches to QOL, its indicators, and different ways to measure it. Finally, a comparative analysis of 17 studies is conducted to provide the most comprehensive and suitable framework for assessing students' QOL within the context of universities to better understand our society and how to improve it for future generations.

2. METHODOLOGY

This research uses a theoretical descriptive approach to identify the quality-of-life concept, its evolution, and dynamics, as well as describe the relation between QOL and both the built environment and university students.

Using the Scopus scientific databases, the research adopts a systematic approach to extract relevant studies within the research scope. Initially, the search includes the terms 'Quality of Life' AND 'Assessment' OR 'Measurement' AND 'WHOQOL-BREF' AND 'Architecture' AND 'University' OR 'Students' covering scholarly journal articles and reviews written in English only within the publication period of the years 2000 to 2023 identifying 42 articles.

Alternative spellings, synonyms, or related terms were incorporated, to broaden the search scope like Urban quality of life, Quality of College Life, Life Satisfaction, etc. To refine the results, the research applies different filters starting by excluding articles that are not available in (Open access) full-length for free download limiting the results to 20 articles. Finally, titles and abstracts are screened to exclude irrelevant studies, resulting in a final selection of 17 studies (figure 1). Subsequently, the studies are reviewed to identify an adequate framework to provide a suitable tool to assess QOL in the university context. This is accomplished through conducting a comparative analysis between the different QOL domains used in each study.

Total studies through search strategy	Studies after the exclusion of non-journal articles or reviews	Studies Published between (2000: 2023) and written in English Only	Studies available in full length for free download (Open access)	Studies after title and abstract screening
n=49	n=43	n=42	n=20	n=17

Figure 1, Data search strategy (Authors, 2023).

3. EVOLUTION OF QUALITY-OF-LIFE CONCEPT

There is no precise definition for "quality," it is a word that is used often to describe how good or excellent something is. The definition of quality can be interpreted as "the totality of features and characteristics of a product or service that bears on its ability to meet a stated or implied need" (ISO, 1994). Quality is important because it ensures that the people's requirements are met and that they are satisfied with the product or service. However, the meaning of the word can vary depending on the context (Westerheijden et al., 2007). Human satisfaction is the key factor in all definitions, including aspects of life such as the physical environment, services, etc.

QOL is an important concept that has gained a lot of attention recently. However, its history has been developing from one era to the other. It dates to philosophers like Aristotle, who wrote about the good life and how public policy can help promote it (Din et al., 2013). Many terms were used such as "level of living," "socioeconomic status," and "social status". The term "quality of life" wasn't used until much later, when Seth (1889) mentioned that "we must not only look at the quantity but also the QOL which forms the moral end." (Seth, 1889).

As shown in Figure 2, in the 1950s, QOL was defined as a good standard of living in the new consumer society: having modern appliances, cars, and homes. While traditional economic theory defines QOL in terms of "objective variables" such as household income, Gross National Product, employment, etc. (Zhao et al., 2005).

In 1960, the concept of QOL became more problematic to define and measure, because it started to cover other domains of life that are hard to quantify. As post-industrial society becomes more complex, more variables are needed to get an accurate representation of QOL. The scope of the QOL concept expanded to include areas such as health, education, and economic growth. Meanwhile, during the social indicator movement, the term "social indicators" was first introduced in the field of social science. This movement aimed to measure societal development by considering various social aspects of human living, such as community life, family relationships, and environmental quality. All these factors broadened the definition of the way the term is used today (Zhao et al., 2005).

In the 1970s, the concept of QOL was introduced in political science. QOL studies at that time only used economic measures of social welfare. Later in the 1980s, the QOL concept was expanded to medical fields with a focus on health and wellbeing, and it was termed Health-Related Quality of Life (**HRQOL**). From 1990 onwards, (QOL) research has evolved across social sciences, marketing, city planning, and design (Çakiroğlu, 2007). To conclude, the evolution of quality of life (QOL) has undergone numerous changes and has been influenced by different factors.

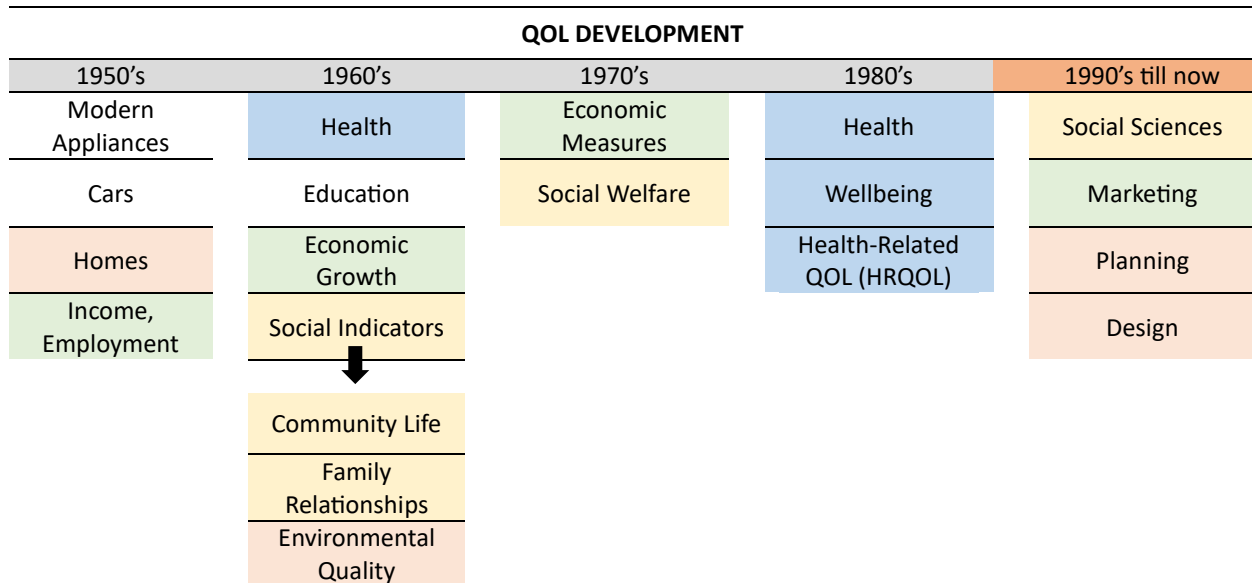


Figure 2, QOL concept development, Source: authors, 2023 based on (Zhao et al., 2005; Çakiroğlu, 2007).

4. UNDERSTANDING QUALITY OF LIFE

“The concept of quality of life (QoL) refers to people's satisfaction with their lives and how well their needs and values are being met” (Diener & Lucas, 1999).

Some common themes often come up when discussing QOL, such as happiness, health, and satisfaction with life (Cummins, 2005). QOL can also be defined as the extent to which humans experience and enjoy different opportunities in life, this includes the interaction between personal and environmental factors based on the opportunities and limitations of the person's life (Raphel et al., 2001). Ventegodt et al. (2003) define it as the depth of one's life, which is composed of both subjective and objective dimensions.

Mostafa (2012) mentioned that the term 'QOL' is generally used to refer to wellbeing, life satisfaction, or happiness. He went on and suggest that it is a broad term that can encompass many different areas, including urban development, human wellbeing, health care, education, built environment, leisure, recreation, social science, and political science. On the other hand, Cella & Nowinski (2002) defined QOL as including physical, functional, social, and emotional wellbeing, but excludes external factors such as environmental quality.

“Quality is a multidimensional concept that embarks diverse meanings and includes aspects of social, spatial, economic, psychological and physical wellbeing and experts of different disciplines handle QOL issues in different contexts” (Gülersoy et al. 2009). QOL is often determined by factors such as access to healthy food, clean air, and water, opportunities to enjoy nature, and

feeling safe. However, within any given society, there are usually some general agreements about what constitutes a good QOL. In other words, people’s needs, and the fulfillment of their aspirations can be defined relatively precisely within a specific cultural context (Alnsour, 2020). See Figure 3.

Quality of Life Domains						
Raphel et al., 2001	Cella & Nowinski's, 2002	Cummins, 2005	Gülersoy et al. 2009	WHO, 2014	Alnsour, 2020	Mostafa, 2012
Personal	Physical Health	Health	Social	Physical Health	Healthy Food	Health
Environmental	Social	Happiness	Spatial	Psychological	Clean Air and Water	Satisfaction
	Emotional	Satisfaction	Economic	Environment	Opportunity to Enjoy Nature	Happiness
	Functional		Psychological	Social Relationships	Safety	Wellbeing
			Physical Health			Education
						Urban & Built Environment
						Leisure
						Social
						Political

Figure 3, Quality of Life Domains in Research (Authors, 2023)

According to the World Health Organization “WHO”, quality of life is the personal reflections of life circumstances in specific surrounding cultures and values, compared to their aims, beliefs, and fears (WHO, 1994). It's a complex concept that's influenced by factors like physical and mental health, environment, social relationships, and more (WHO, 2012).

It is widely observed that most QOL definitions focus on people's wellbeing, development, or satisfaction. In other words, 'people and their lives' are the primary concern of researchers. This means that QOL tends to be case-specific or location-specific (Diener & Suh, 1997).

5. UNIVERSITY STUDENTS’ QUALITY OF LIFE

The university period is a crucial transition between adolescence and adulthood, characterized by significant changes and developments. It is a time when students learn to adjust to a new environment and adapt to new social patterns (Kaçay et al., 2020). Emotional changes, new social environments, and loneliness can impact self-esteem and life satisfaction levels (WHO, 2020). Moreover, there’s the pressure of adjusting to a new academic workload and in some cases, changes in living conditions. Biological and social-psychological factors during this transition affect students and their behavior, leaving them vulnerable and at risk. Students’ QOL, in turn, is affected in both short and long term, figure 4 (Ramón-Arbués et al., 2022).

Pilcher (1998) illustrated that daily events play a crucial role in life satisfaction among college students. It is emphasized that individuals with high self-esteem and self-awareness have strong communication, and sound psychology, and are open to learning and teaching, hardworking, more

willing to achieve their goals, and have higher life satisfaction. Moreover, researchers generally associated self-esteem with life satisfaction (Diener & Diener, 1995).

Studies showed different variables that affect students' educational performance including psychological, institutional, social, and university background. It has also been indicated that people who experience anxiety, depression, stress, or psychological disorders have a low QOL (Unalan et al., 2008). Toghiani et al. (2011) stated that QOL can improve wellbeing in adolescent boys. Pilcher (1998) identified the relationship between university students' QOL and factors like health, identity, and environment.

Learning at the university can have a conflicting experience of stress, satisfaction, happiness, and enjoyment (Posadzki et al., 2009). Researchers emphasized that several factors such as the academic overload in addition to the students' non-academic activities contributed to lower QOL among university students' general population (Paro, et al., 2010).

There are various definitions and assessments for students' QOL. It was assumed by Tran et al. (2018) that students often worry about their career plans and financial status, believing that obtaining a university degree would enhance their QOL in the long run. However, Ushakov and Sokolova (2007) advised that QOL in the educational field needs more exploration to identify the essential effective components.

Additionally, Norouzi (2012) and other researchers linked students' academic performance to different factors including, socio-demographic attributes, psychological status, stressors, mental and physical health. Improved QOL has been linked to increased motivation and success, as well as reduced depressive symptoms (Frisch, 1992), figure 5.

Other research mentioned that psychological distress is negatively correlated with QOL (McAlinden & Oei, 2006) and may decrease mental capacity (Sukharev and Mikhaïlova, 2004). Thus, the findings show that wellbeing is positively and directly related to better QOL. Therefore, enhancing QOL among students should be emphasized with great importance (Posadzki et al., 2009).

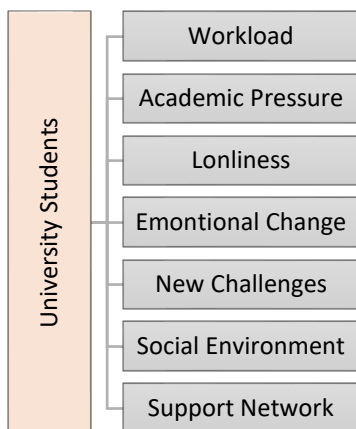


Figure 4, Student challenges, source: Authors, 2023 based on (Ramón-Arbués et al., 2022)

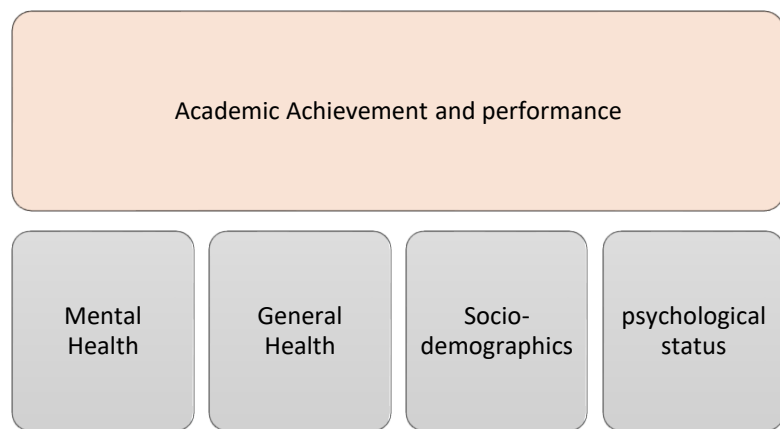


Figure 5, Factors Affecting Academic Achievement and Performance, Source: Authors, 2023 based on (Norouzi, 2012)

6. BUILT ENVIRONMENT AND QUALITY OF LIFE

As urbanization continues to grow, it is increasingly important to incorporate the concept of quality of life (QOL) into studies of the natural and built environment. However, there is not enough research related to QOL in areas such as urban planning, environmental planning, architecture, and landscape architecture (Jyoti, 2021). Built environment refers to where people live, work, and spend time. Thus, it is considered an important factor when investigating these aspects. Moreover, built environments are critical in creating inner peace, fulfillment, and freedom (Sharr, 2007).

The quality of places/spaces influences and is affected by housing conditions, urban spaces, and our use of technology, while the experience of places supports our physical and mental health and wellbeing (Adams & Tiesdell 2013).

The relationship between the built environment and QOL has attracted the attention of many researchers. The framework established by Campbell et al. (1976) provides information on how the physical characteristics of the environment affect a person's satisfaction with their physical environment and contribute to their QOL.

McIntyre (2006) analyzed 198 documents to explore how architecture and design affected human life in England and Scotland. It classifies impact into three categories, namely social, economic, and environmental. It shows how design and architectural features at different scales, from individual classrooms to complex spaces in high-rise buildings, affect human life. In addition, according to several studies, the quality of the built environment is associated with two types of QOL: physical and non-physical QOL.

Quality of life is related to physical health and the environment (energy, air pollution, climate, biodiversity, etc.). Nonmaterial QOL is associated with social and psychological experiences, such as social relationships, feelings of security, and relaxation, and has effects on stress recovery (Zahrah et al., 2021).

Well-designed/maintained spaces promote social inclusion and socially cohesive behavior (Gallacher, 2005), while poor urban spatial quality can lead to antisocial behavior (Brook, 2004), in addition to the claims about the positive impact of a high-quality built environment on specific social activities and behaviors (CABE and Association of Home Builders, 2005).

For example, walkable neighborhoods with pedestrian-friendly spaces, access to green open spaces, and mixed landuse could increase users' physical activity and social interaction, in addition to the sense of community, which enhances general health and overall life satisfaction (Frank et al., 2019). Buildings with sufficient natural light, natural views, and access to outdoor spaces are believed to increase users' satisfaction and productivity (Kellert, Heerwagen, & Mador, 2008).

On the other hand, poorly planned urban environments with excessive traffic congestion, limited access to services, and a lack of green spaces have been linked to increased stress, inactive lifestyles, and social isolation (Giles-Corti et al., 2016).

Boubekri et al. (2014) compared two different architectural spaces and their impact on users' quality of life in a research project to examine the influence of office settings with and without windows on office workers' light exposure, sleep, physical activity, and overall quality of life. The study found that office workers in workplaces with windows have more light exposure, better sleep quality, more physical activity, and higher quality of life ratings than office workers in workplaces without windows, Figure 6.

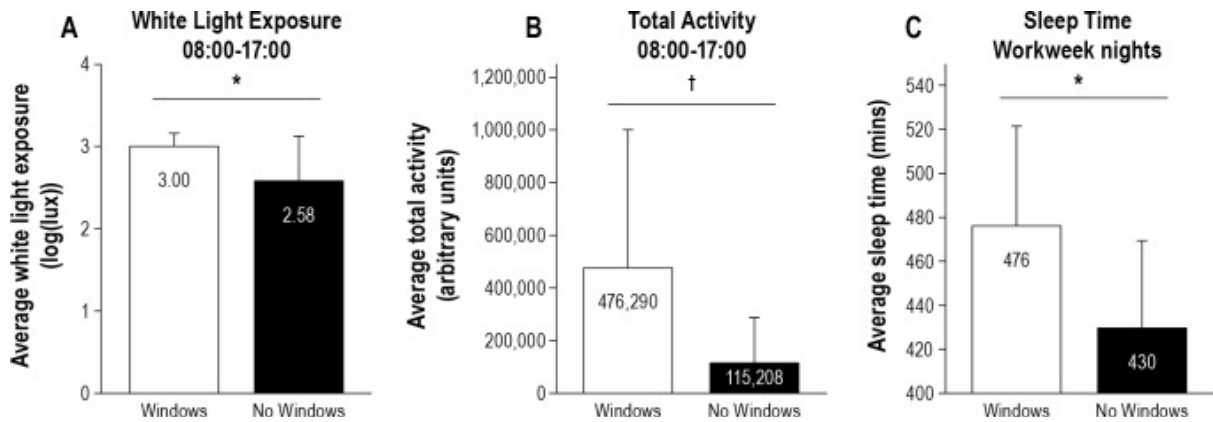


Figure 6, Actigraphy measures of light exposure, total activity, and sleep time between workers in workplaces with windows and without windows, Source: (Boubekri et al., 2014)

Similarly, universities’ different spaces including plazas, cafeterias, classrooms, lecture halls, and Studios, could impact students’ QOL, students meet, learn, interact, and relax in these spaces, supporting their academic performance, and mental health if they are well designed.

Studies reveal that classrooms, lecture halls, and design studios that incorporate different attributes including flexible seating arrangements (Stoltzfus & Libarkin, 2016), proper ventilation, temperature control (Lyons, 2001), sound-absorbing materials, good daylighting, windows towards natural scenery, using natural materials, and incorporating more plants indoors could enhance the environment's healing properties, allowing students to feel less stressed and better focus on their studies enhancing their physiological and psychological health and their QOL.

Moreover, plazas, cafeterias, and student lounges with flexible usage and accessibility (Hill-Briggs et al., 2020), comfortable seating options, interesting paths, areas that offer personal space like individual study pods, quiet corners, small meeting rooms, more green spaces, natural light, better air quality (earthman, 2004), were found used more frequently by students and leading to better health and overall QOL.

7. QUALITY OF LIFE ASSESSMENT

Throughout history, different trials to visualize, analyze, and assess QOL were mainly divided into two approaches, one focusing on the social indicators while the other focusing on psychological indicators. There are two types of social indicators: objective and subjective. External factors that include the living environment conditions, social welfare, education, health, safety, social relationships, and entertainment, are usually identified as Objective social indicators. These objective indicators are usually defined as standardized statistics that help build a detailed and balanced evaluation of the society's major attributes’ conditions (Andrews & Whitney, 1976). In contrast, subjective social indicators focus on a person’s psychological reactions to life experiences (Mailick et al., 2008).

There are several examples of Quality-of-Life indicators available. However, there is no single indicator that is universally accepted. The European Conference in Rio de Janeiro (1992), classified QOL indicators into four main groups: environmental, social, economic, and political. The Statistical Office of the European Union (2017) report identified nine QOL indicators that

include financial status, productivity, education, health, social relationships, and leisure activities (Eurostat, 2017). Henderson and Lickerman (2000) also found that the QOL can be extensive, and can be divided into different indicators including environment, education, income, health, recreation, infrastructure, employment, energy, human rights, shelter, and other indicators (Diener & Suh, 1997).

8. DISCUSSIONS AND ANALYSIS

To improve the overall wellbeing of individuals and society, it is essential to assess and measure QOL. Over the past two decades, several principles have emerged regarding the conceptualization, measurement, and application of QoL. One common consensus is that a high QOL allows individuals to lead healthy and productive lives. However, there is no single correct approach to measuring QoL. Various assessment tools have been developed to consider different factors and conditions. (Alnsour, 2016).

To assess an individual's overall wellbeing, researchers have developed frameworks that measure various parameters of their life. These parameters are organized into multiple domains and dimensions with specific indicators. Typically, QOL is evaluated through the examination of key indicators within main categories such as Physical, Psychological, Environmental, Economic, and Social Factors (Das, 2008). In this paper, to provide a suitable tool to assess QOL in the university context, 17 studies were reviewed and compared to identify an adequate framework. The selected studies are divided into 4 categories, which are General QOL, Psychology/ Environmental Psychology, Urban Planning/Built Environment, and University/Students.

Figure 7 shows the 28 domains identified by the selected studies. It is noticed that five domains are used in around 50% of the studies, which are Social, Psychological, Physical Health, Economic, and Environment. Other domains were used including Education, Safety, Political, level of independence, arts and leisure, services, work, and overall QOL among others. To understand the importance of each domain, the next part analyzes the domains used in each category.

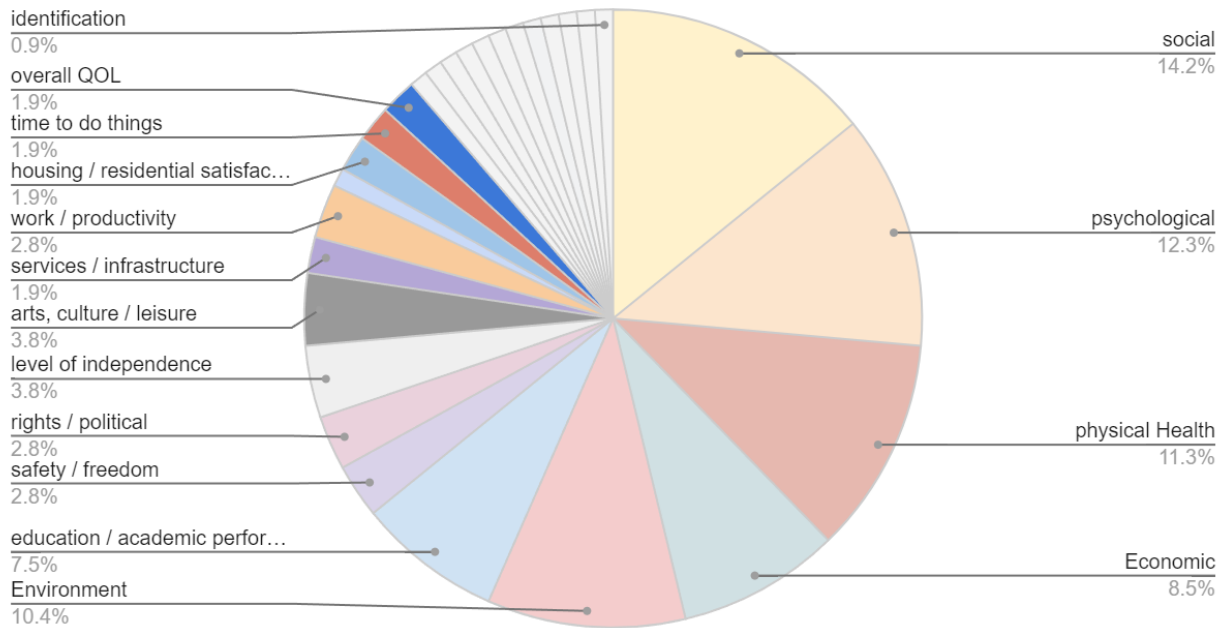


Figure 7, Domains' distribution in selected studies (Authors, 2023)

8.1 QOL and General Research

General QOL selected studies considered Social and physical health domains followed by psychological and environmental domains are the main QOL components, in addition to other domains like education, safety, rights, independence, arts, and transportation (WHO, 2012; Schalock, 2004; Morrison institute for public policy, 1997).

Morrison Institute for Public Policy (1997) agreed that QOL is concerned with four main domains which are Environment, social, health, and economic domains also mentioned safety, arts, culture, and leisure and transportation. Schalock (2004) had a broader perspective focusing on subjective areas such as psychological wellbeing, interpersonal relations, and social inclusion.

In 1996 WHO designed a set of measurement instruments to evaluate the individual's wellbeing and named it the WHOQOL-BREF questionnaire which kept developing till 2012. WHO proposed 6 different QoL domains: personal beliefs/spirituality/religion, level of independence, environment, social relationships, physical health, and psychological, however, the questionnaire only included 4 of those QOL domains which include social relationships, environment, physical health, and psychological health (WHO, 1999; WHO, 2012).

The WHOQOL-BREF questionnaire is a short, 26-item questionnaire used to measure quality of life (QOL) in a variety of settings, including university students. It is designed to be easy to administer and score and is reliable and valid in a variety of populations. WHO (2012) illustrates QOL domains as follows:

First, the **Physical health** domain measures the concern of people with horrible feelings that might not only cause harm but also interfere with the everyday routines in the lives of people together with their energy levels, like mobility, everyday activities, functional ability, energy, discomfort, and sleep.

Secondly, the **Psychological** domain measures the extent to which a person feels content, balanced as well, and happy about their self-image, views, thinking ability, good attitudes, self-esteem, mentality, learning ability, memory focus, mental status, and experience of negative feelings.

The **Social relationships** domain measures the degree to which a person feels loved, supported, and accompanied. This domain explores the quality of different relationships, including marriages and deep friendships.

Lastly, the **Environmental** domain refers to the level of satisfaction with the surrounding environment and fulfillment of the requirements of individuals and communities. The surrounding environment includes both the natural environment and the built environment which is presented in the physical surroundings constructed by humans like homes, infrastructure, and public areas. In addition to access to social and health services, accommodation, transportation, and sufficient finance to fulfill their needs as well (WHO, 1999; WHO, 2012; Hadi, 2018).

8.2 QOL and Psychology

Taking a deeper look into this category, it was noted that the focus is on Psychological, Social, and Physical Health followed by Environment and Economic domains, in addition to mentioning other domains like education, safety, rights, arts, services, work, transportation, time to do things, lifestyle and intimacy (Cummins et al., 2014; Gatersleben, 2001; Ravens-Sieberer et al., 2022).

Ravens-Sieberer et al. (2022) used (KIDSCREEN-10) to measure the impact of the COVID-19 pandemic on students' QOL, a method that divides QOL into Physical, Psychological, Social (Family & Peer Relationships), Leisure, Self-esteem, and others, believing that both the Psychological aspects and social support have a major reflection on children and adolescents QOL. Cummins et al., (2014) listed the domains including Social, psychological, Physical Health, and Economic, and highlighted the relevance of Arts and Civilization, Demography, and Intimacy.

On the other hand, Gatersleben (2001) measured QOL with a more complex framework where he divided QOL into 16 indicators, including Social Relations, Education & Development, Comfort, Pleasure, Material Beauty, Work, Health, Privacy, Income, Social Recognition, Safety, Nature, Environmental Resources, Freedom, Leisure Time & Social Justice, which is believed to provide more comprehensive results but requires both time and effort.

8.3 QOL and Urban Planning

Studies measuring the QOL in the field of Urban Planning focused on the interaction between Users and the Built Environment. Most of them used the Environmental and Social domains followed by the Psychological, Physical Health, and Economic domains to measure QOL. Moreover, Studies mentioned other Aspects like, Residential Satisfaction, Place Attachment, Rights, Level of Independence, and Spirituality (Lee, Y. 2008; Al-Qawasmi, 2021; Din, Hamam & Farouh, Hend & Elariane, Sarah, 2013; Qawasmeh, 2014).

It was noted that Al Qawasmi (2021), while developing criteria for assessing QOL, used three main domains: 1) Social, which refers to the social and community environments, 2) Economic, which targets the economic and financial state including salaries and savings; and 3) Environmental, referring to the connection with the surrounding physical environment.

On the other hand, Qawasmeh (2014) had a more Built Environment-focused method as he divided the QOL domains into two main categories: Urban QOL and Residential satisfaction, focusing on both sides of the Social and Environmental domains.

Meanwhile, Researchers like Lee (2008) and Din, Hamam & Farouh, Hend & Elariane, Sarah (2013) agreed on classifying QOL into the main four broad domains: Physical health,

Psychological, Social Relationships, and Environment. While Din added economic, mobility, and political aspects.

8.4 QOL and University Students

On the other hand, while reviewing research concerned with QOL of students in educational institutions, it is found that the majority of the researchers are mainly concerned with the Psychological and the Social domains, followed by Physical Health, then Economic and Environment domains, followed by Education and Academic performance, while only a few of them included other domains like; Level of Independence, Arts and Leisure, Services and Infrastructure, Work and Productivity, Time to do things and more (ware et al., 2000, Disch et al., 2000; Ramon et al., 2022; Pekmezovic et al., 2011; Paro et al., 2010; Arslan & Ozlem, 2014; Xiao et al., 2008).

Pekmezovic et al. (2010) created a framework to measure students' QOL, by using Psychological, Social, Education Services, and Behavior Domains.

While Paro et al. (2010) focused on the Psychological domain magnifying its impact on university students' QOL. Meanwhile, due to the increased anxiety and depression rates during the lockdown of the COVID-19 Pandemic, Aliriza et al. (2020) focused on the Psychological, Physical health, and Demographic domains believing that these are the main factors affecting students' QOL. In addition, Nur et al. (2017) used the Short Form-36 (**SF-36**) Health Survey to measure QOL, which is mainly concerned with domains related to Physical Health, Psychological Wellbeing, and Social Functioning.

Moreover, Disch et al. (2000) and Ramon et al. (2022) had similar criteria, each using the Psychological, Social, Physical Health, Economic, and Environment domains. Ramon et al. (2022) added Personal Development. Disch et al. (2000) he had a broader perspective, studying student functioning, concerns, and socio-personal wellbeing, he added Education, Arts, Work and Productivity, Time to do things, Drug and Alcohol consumption, and Crime and Violence aspects. Arslan & Ozlem (2014) believed that social Domain and Identification are the keys to Students' QOL, in addition to Education, Services, and Overall QOL.

On the other hand, Xiao et al. (2009) had another financial perspective, they used Economic, Education, and academic performance and Overall QOL domains to study the relationship between students' financial behavior and life satisfaction.

9. RESULTS

There is some overlap between QOL frameworks in different research fields. For example, all the frameworks in the 4 fields include domains related to Social Relationships, Psychological, Physical Health, Environment, And Economics. At the same time, other individual studies mentioned other factors like education, transportation, arts, leisure, and more. Figure 8 shows the distribution of the highest five domains in each category reviewed.

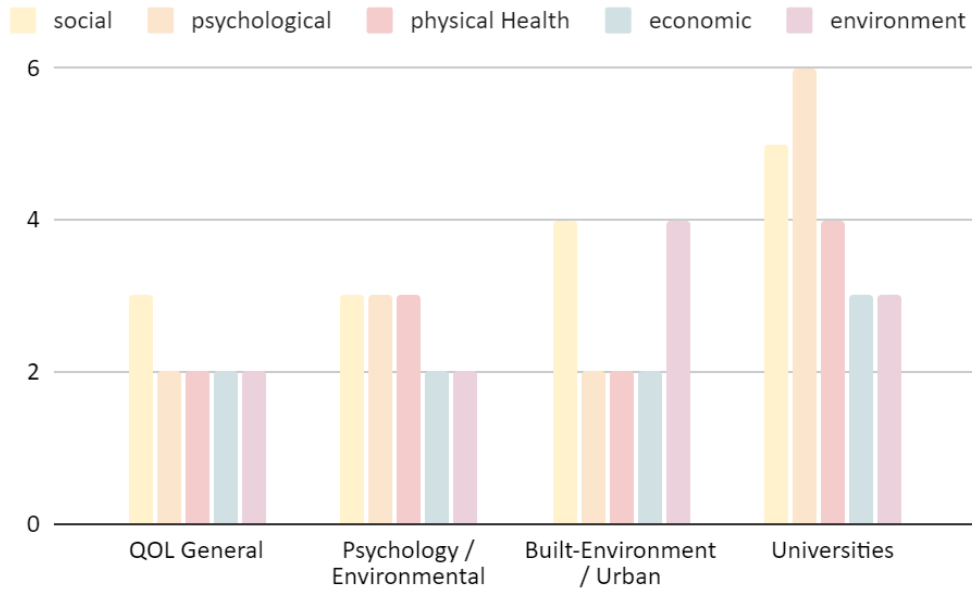


Figure 8, Selected Categories Domain Analysis (Authors, 2023)

From investigating the selected 17 studies, it was noted that the most common domain used to measure QOL is **Social**, as 15 papers mentioned it, followed by the **Psychological** domain in 13 papers and **Physical Health** in 12 papers. These 3 domains are then followed in terms of frequency by the **Environment**, and **Economic** domains, in that order. Overall, these were the most common 5 domains agreed upon as factors used to measure QOL, as shown in Figure 9.

When taking a deeper look into a subset of 8 studies that specifically focus on universities/students, the results showed that most of these 5 domains were also the highest in terms of frequency, where the Psychological domain was mentioned in 6 out of 8 studies, Social was mentioned in 5 studies, followed by Physical Health, Environment, and Economic domains.

Another domain, however, that was common in these 8-university related research was education, which is investigated in 4 of them in relation to QOL. In brief, it is concluded that the following domains are the most agreed upon domains to use when measuring QOL for university students: Psychological, Social, Physical health, Environment, Economics & Education.

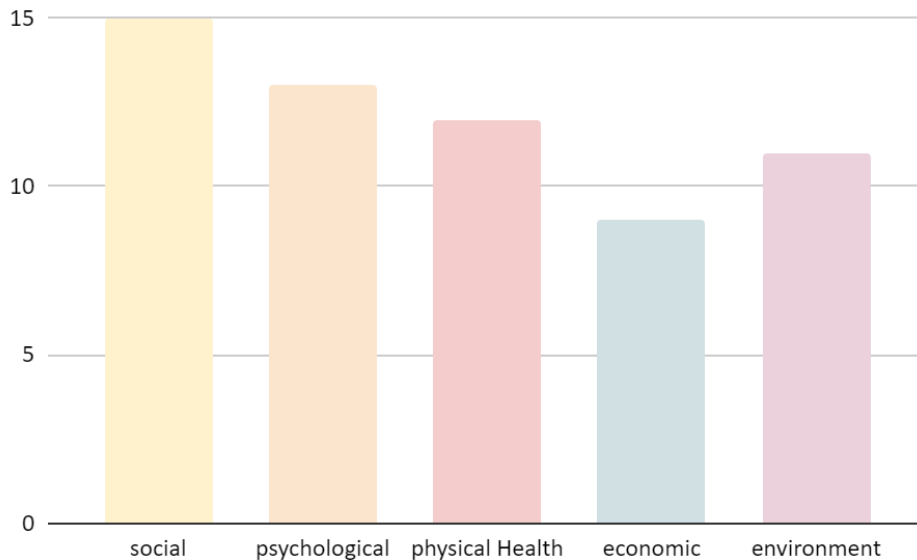


Figure 9, Frequently used domains in selected studies (Authors, 2023)

10. CONCLUSION AND RECOMMENDATIONS

After reviewing the literature, the research acknowledged that Quality of Life (QOL) is a complex concept, with various definitions and assessment methods, and it was concluded that, in brief, QOL refers to the overall wellbeing of an individual or population. Moreover, literature proved that the journey of QOL evolution has undergone numerous changes, influenced by various factors. These factors were then divided by researchers of QOL into domains with a set of indicators to be measured. The domains mainly come as follows: Psychological Health, Physical Health, Social, Environmental, and Economic domains, in terms of the domain most researched and used in measuring QOL.

The Economic domain was not considered despite it being common in some of the investigated research as it is not considered a controllable variable, as well as due to the remarkable variance between educational institutions in that scope. It is recommended that this domain be studied separately and in a more in-depth manner to come up with suitable solutions that can be generalized for universities of different economic backgrounds.

On the other hand, students' QOL is affected by the different factors that they face during their daily campus life, like stress, workload, etc. One of the main factors influencing Students' QOL is the built environment which affects users' physical health, mental health, and wellbeing, thus quality of life.

After investigating 17 studies about QOL in different settings and its methods of measurement, it was found that more than 50% focus on **Social, Psychological, Environment, Physical Health, and Economic** domains respectively, after that comes the **educational** domain, as shown in Figure 10. This indicates the importance of these factors, especially the Social and Psychological parts without neglecting, Physical Health, Environment, and Economic.

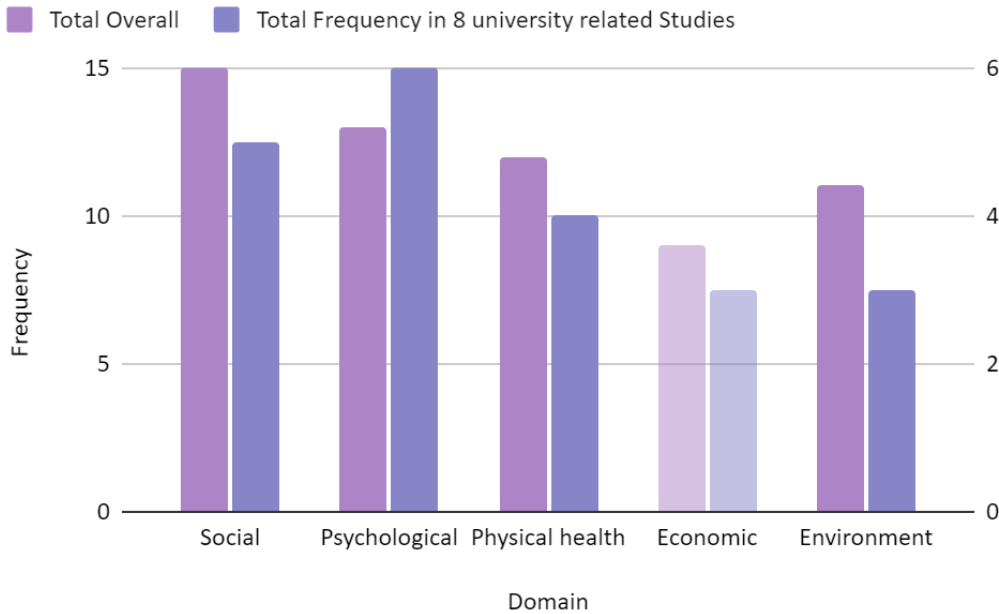


Figure 10, Domains' analysis in universities and in overall studies (Authors, 2023)

Contrary to this, while reviewing studies concerning students' quality of life in educational institutions, around 70% of the researchers agreed on the **Psychological** and **Social** domains, followed by the Physical Health domain with 50% of the studies, after that came the Education, and economic/ material wellbeing around 35%. This highlights the importance of the Psychological and Social aspects as well as Physical health, Environment, and Education / Academic performance aspects for the students in the context of universities.

Finally, it is concluded that the main domains that effectively impact university students' Quality of life are **Psychological, Social, Physical Health, and Environment** domains. Since the **WHO Bref-questionnaire** is divided into four domains which are the previously mentioned (Psychological, Social, Physical Health and Environment), and is sensitive to the Psychological and Social domains as it focuses on the subjective perception of QOL, the research recommends adopting it while measuring students' QOL as it is more relevant and suitable in addition to the following reasons:

- **Short and easy to administer:** The questionnaire is only 26 items long, making it quick and easy to complete. This is important for university students, who are often busy and have limited time.
- **Reliable and valid:** The WHOQOL-BREF questionnaire has been shown to be reliable and valid in a variety of populations, including university students. This means that the results of the questionnaire are consistent and accurate.
- **Sensitive to change:** The WHOQOL-BREF questionnaire is sensitive to change, it can be used to measure changes in QOL over time. This is important for university students, who may experience changes in QOL during their time at university.

The research also recommends:

- Incorporating different design elements that are found to enhance wellbeing and QOL, especially in the university context as follows: in studying spaces, proper ventilation, daylighting, views towards natural scenery, and bringing nature inside as natural materials and plants, moreover, in plazas, and communal spaces, having access to green spaces, flexible seating arrangements and personal spaces.
- Studying the context of QOL's research is essential to be able to select a suitable framework to measure it as its domains vary according to different perspectives and contexts.
- This paper recommends the WHOQOL-BREF questionnaire to tackle the overall QOL in universities and provides key indicators for QOL assessment. However, further studies on quality of life's specific domains are believed to be more informative to get more specific results to be able to improve QOL.
- Add time limits and limited scope as limitations as well.

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