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(Editorial)

The Progress, Impact, and Recognition of the ERU Research Journal: A Review of Volume 3 (2024)

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The ERU Research Journal (ERURJ) has made remarkable progress in 2024, publishing a growing number of high-quality, multidisciplinary research articles. Volume 3 (2024) saw a significant expansion in article volume, subject diversity, and interdisciplinary research, establishing the journal as a key academic platform. Notably, ERURJ achieved official recognition from the Supreme Council of Egyptian Universities (SCU), further strengthening its credibility.

The four issues of Volume 3 (2024) witnessed a significant rise in the number of published articles, covering an expanded range of scientific, engineering, medical, and humanities fields. In this sense, Figure 1 shows the number of published articles in Volume 3.

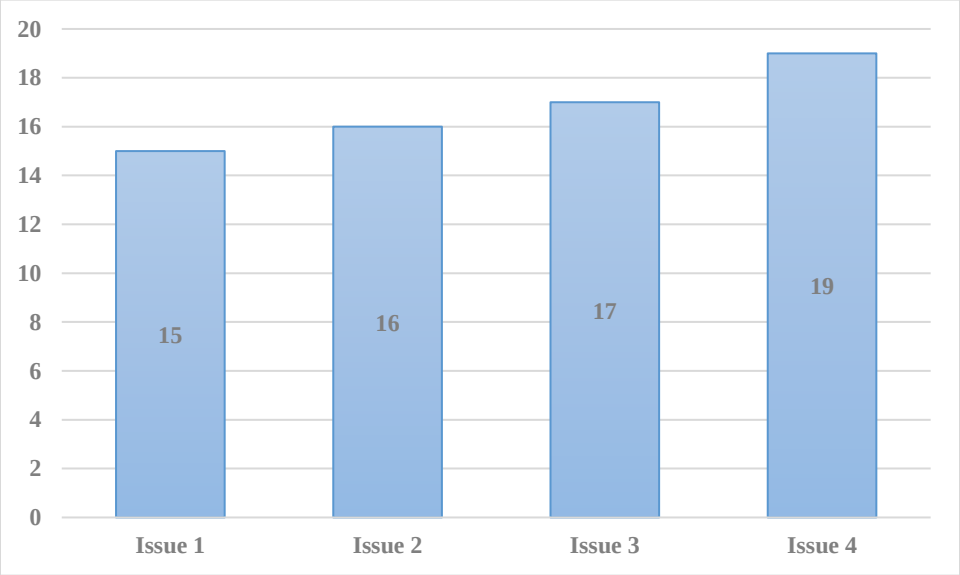


Figure 1: Number of Articles Published in ERURJ Volume 3 Issues

As a matter of fact, the journal receives contributions from a variety of disciplines. The articles published in the third volume were categorized into editorials, research articles, review articles, mini-reviews, and short communications. Additionally, the published articles were in accordance with the journal's scope and are categorized under the fields of engineering, pharmacy, dentistry, computer science, business, languages and arts and humanities. In this context, Figure 2 provides a summary of the various article types that were published in Volume 3. In contrast,

Figure 3 illustrates the diversity of the published articles in relation to each discipline.

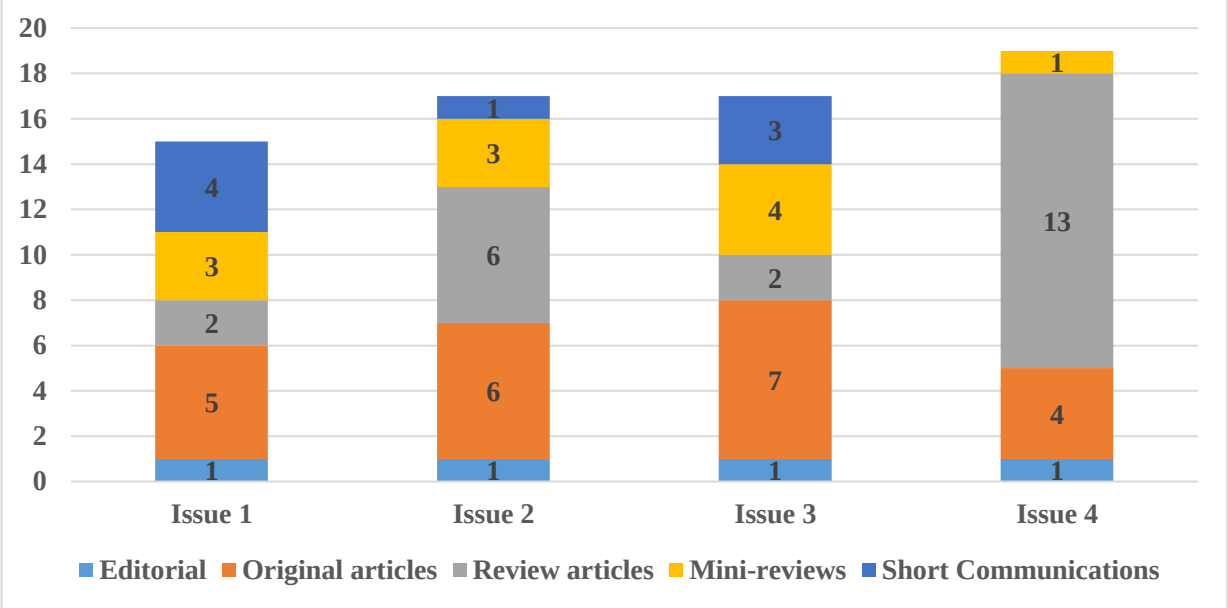


Figure 2: Distribution of Types Published Articles in ERURJ Volume 3

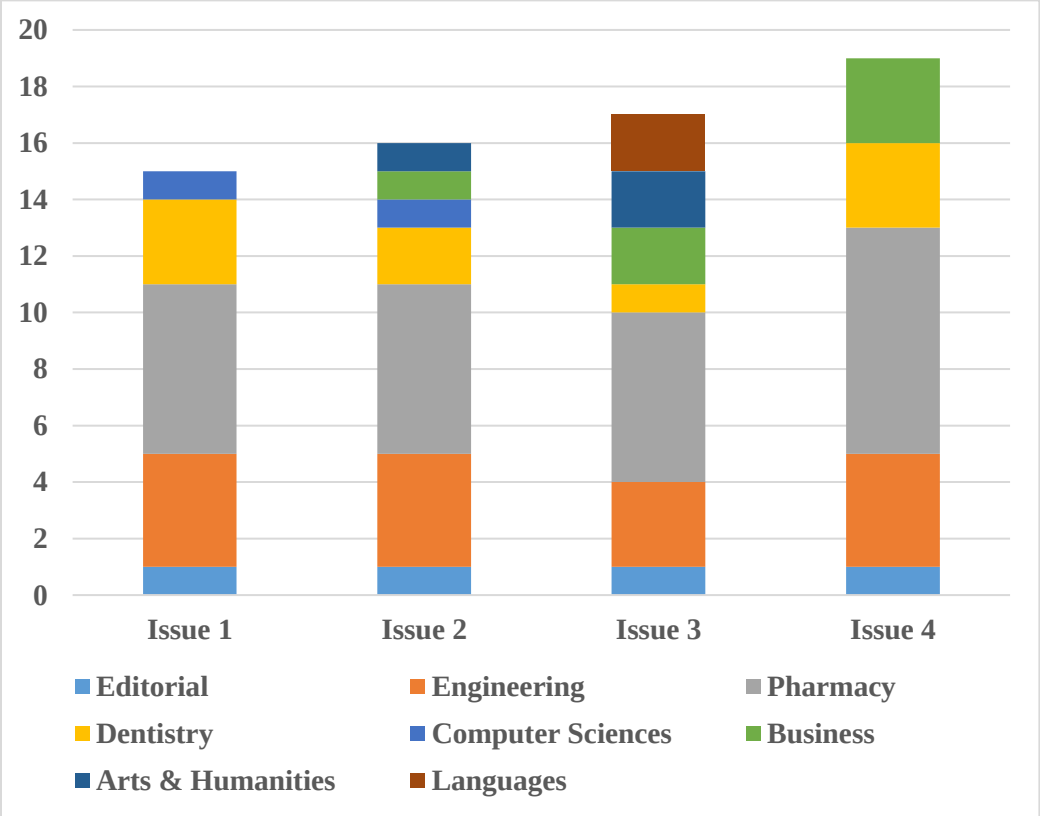


Figure 3: Distribution of Disciplines of Published Articles in ERURJ Volume 3 2024

Additionally, the subjects in each discipline were diverse. In this sense, Figures 3-9 exhibit the different discipline with diverse sections for the published articles in Volume 3 2024.

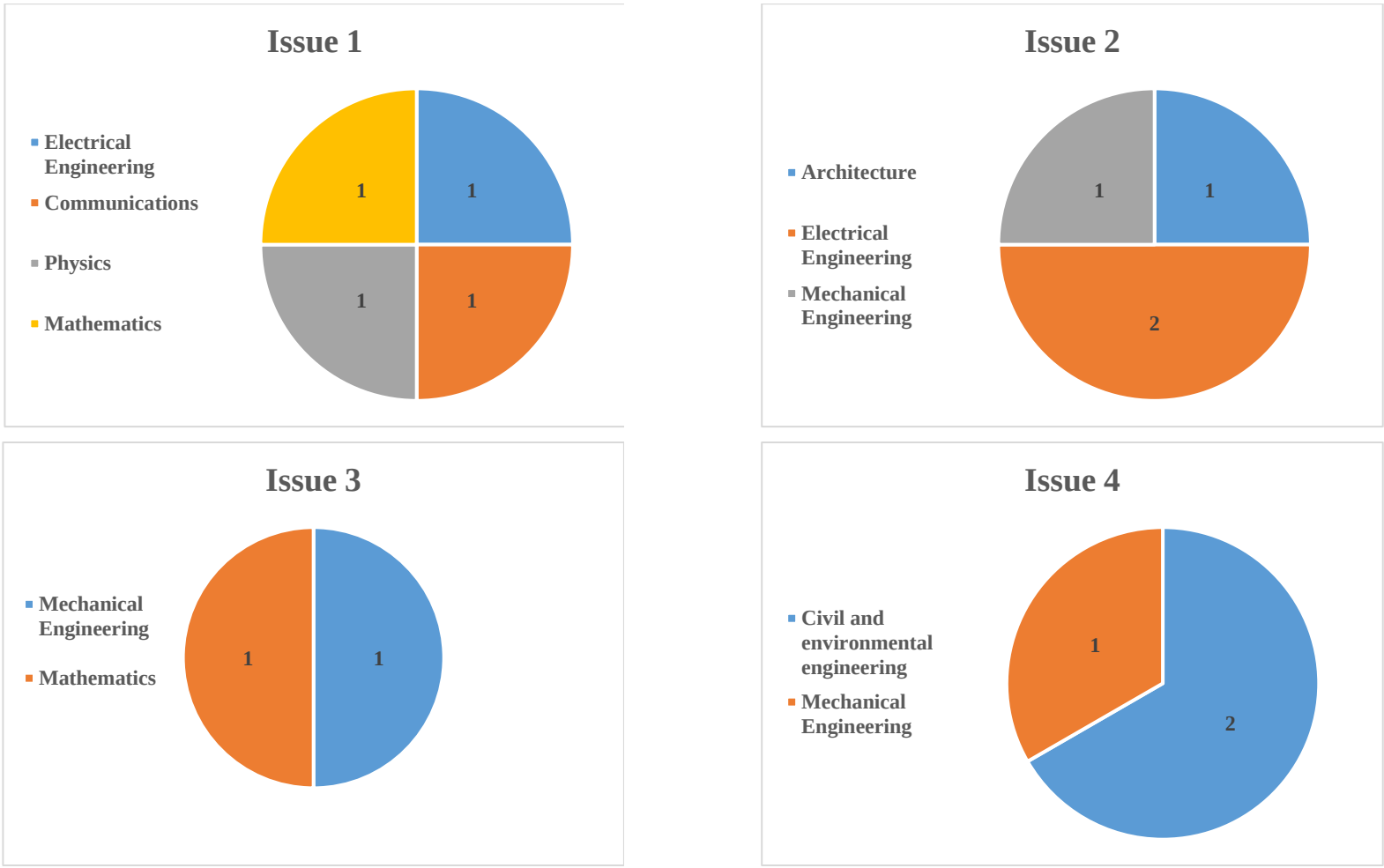
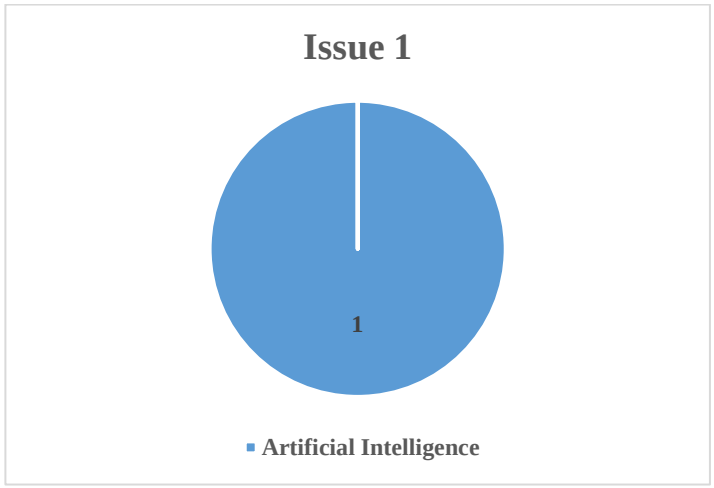


Figure 4: Number Engineering Discipline Published Articles in ERURJ Volume 3 2024.

Figure 5: Number of Dentistry Discipline Published Articles in ERURJ Volume 3 2024.

Figure 6: Number of Pharmacy Discipline Published Articles in ERURJ Volume 3 2024 .



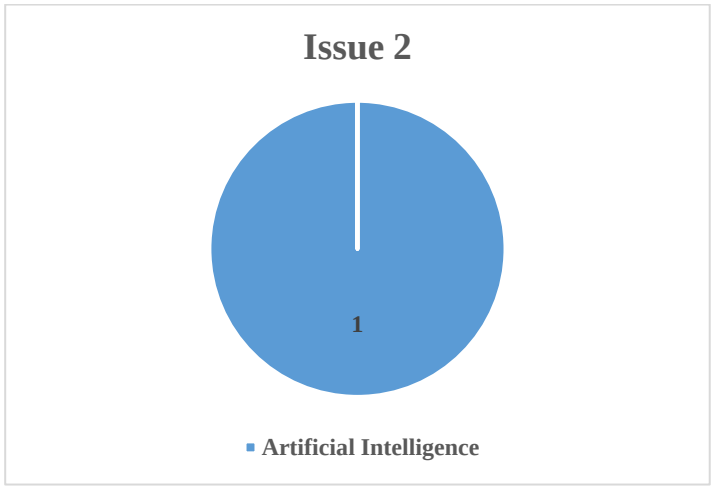


Figure 7: Number of Computer Science Discipline Published Articles in ERURJ Volume 3 2024.

Figure 8: Number of Arts and Humanities Discipline Published Articles in ERURJ Volume 3 2024.

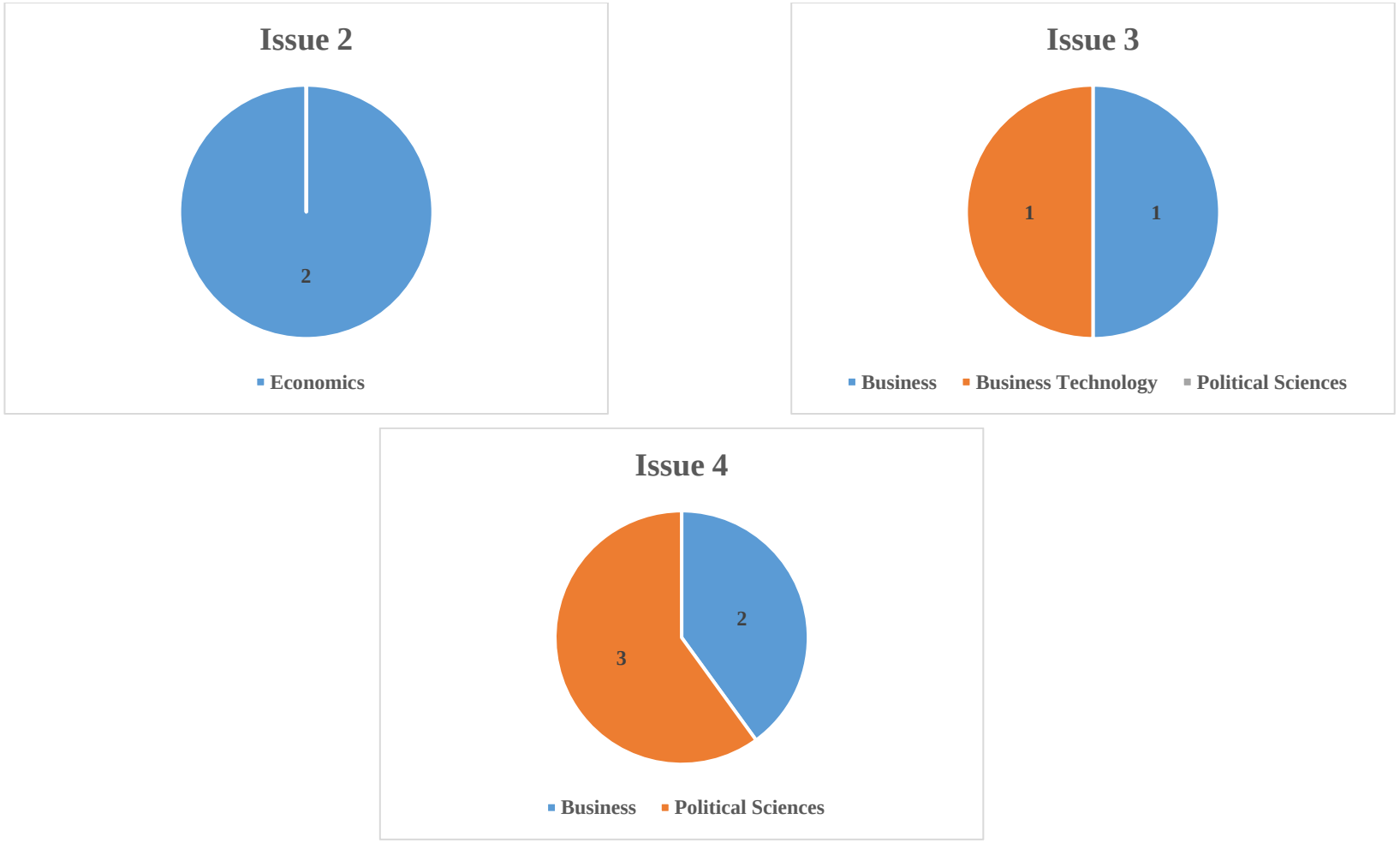


Figure 9: Number of Business Discipline Published Articles in ERURJ Volume 3 2024.

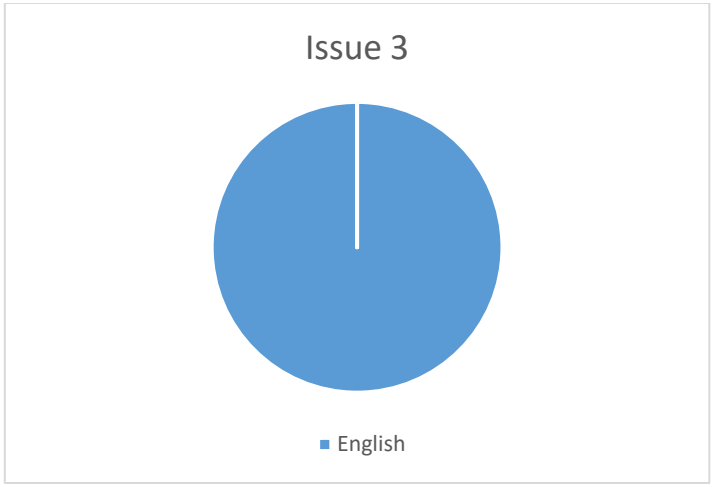


Figure 10: Number of Languages Discipline Published Articles in ERURJ Volume 3 2024.

Upon analyzing the papers published in the October 2024 issue of ERURJ, it is noticed that the 18 published articles were linked to the different sustainable goals (SDGs) of the United Nation's 2030 Agenda, as shown in Figure 11.

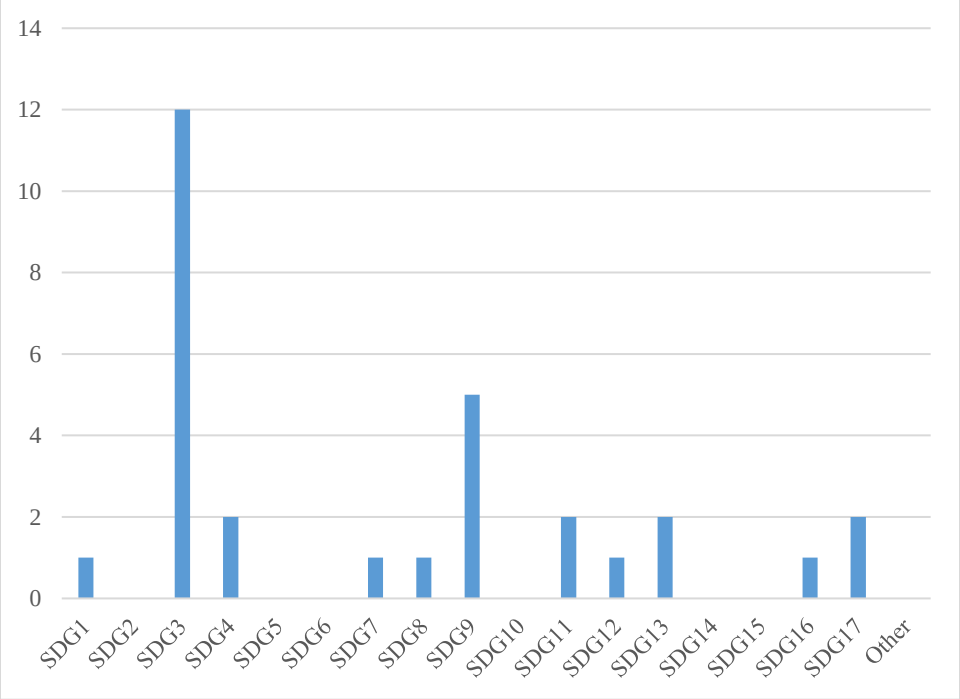


Figure 11: Articles Published In ERURJ October2024 Issue and Their Relation to SDGs

The review by Abubakr et al. [1] emphasized that radioisotopes are crucial in modern medicine for both diagnosing and treating diseases through techniques like PET, SPECT, and targeted radionuclide therapy. These applications revolutionize imaging and treatment, improving patient outcomes. Continued research and innovation are needed to overcome challenges and maximize the potential of radioisotopes in healthcare, contributing to SDG 3 (Good Health and Well-being).

The review by Ahmed et al. [2] discussed hepatocellular carcinoma (HCC), a prevalent and aggressive liver cancer, posessing a significant health challenge, especially in Egypt due to high HCV prevalence. Treatment options range from curative liver resection/transplantation for early stages to locoregional and systemic therapies for intermediate and advanced HCC, with ongoing research exploring novel approaches. Early diagnosis, multidisciplinary care, and understanding staging/prognostic factors are crucial for improved patient outcomes, aligning with SDG 3 (Good Health and Well-being).

Moreover, the review by Alkabbani et al. [3] focused on chemotherapy-induced liver injury involving complex mechanisms varying across different chemotherapeutic agents, including alkylating agents, methotrexate, cisplatin, anthracyclines, and targeted therapies. Understanding these mechanisms, such as oxidative stress, inflammation, and gut-liver axis disruption, is crucial for developing mitigation strategies using agents like fucoidan, curcumin, and others. This research aims to improve patient safety and outcomes during chemotherapy, contributing to SDG 3 (Good Health and Well-being).

As for the review by El-Khatib and Basyony [4] addressing multidrug-resistant Gram-negative bacteria poses a major global health crisis, exacerbated by declining new antibiotic development and the resurgence of colistin, an older, toxic drug now facing resistance. This review examines colistin's history, mechanisms of action and resistance (including the MCR gene), clinical uses, and potential combination therapies. Addressing this antimicrobial resistance crisis is crucial for SDG 3 (Good Health and Well-being).

The original article by Elkotamy et al. [5] discussed cancer as the leading cause of death globally, and CDK2 is a promising therapeutic target. This study used virtual screening of the ZINC database to identify potential CDK2 inhibitors, finding two promising hits (ZINC89856030 and ZINC89867375) with favourable binding energies and ADMET properties. These compounds warrant further in vitro investigation as potential anticancer agents, contributing to SDG 3 (Good Health and Well-being).

The mini-review by Fakhry and Mattar [6] emphasized thiazole and pyrazoline heterocycles being important in medicinal chemistry due to their diverse pharmacological activities. Hybridizing these two moieties creates novel compounds with enhanced therapeutic potential, exhibiting antimicrobial, antitumor, anti-inflammatory, and antioxidant properties. These thiazolyl-pyrazolines offer promising avenues for drug development by interacting with specific biological targets, contributing to SDG 3 (Good Health and Well-being).

The review by Ismail and Shahat [7] revealed colorectal cancer (CRC) as a leading cause of cancer death worldwide, with both hereditary and environmental risk factors, including inflammatory bowel disease, smoking, and age. Critically, modifiable nutritional factors like high-fat diets, red/processed meat consumption, and low fiber/vitamin D intake significantly increase CRC risk. This review focuses on these environmental and nutritional risks to offer preventative strategies for minimizing CRC occurrence, contributing to SDG 3 (Good Health and Well-being).

The review by Mohamed et al. [8]discussed breast cancer as a major health challenge requiring ongoing advances in biomarkers and management. This review covers established biomarkers like hormone receptors and HER2, as well as emerging ones like circulating tumor cells and breast cancer stem cells, for improved diagnosis, prognosis, and personalized treatment. It emphasizes multidisciplinary collaboration and biomarker integration for optimized clinical decision-making and improved patient outcomes, aligning with SDG 3 (Good Health and Well-being).

The review by Zaakria et al. [9] unraveled diabetes, being a global epidemic, necessitates improved drug delivery systems to address its significant morbidity and mortality. This review focuses on advancements in T2DM management via nano, chitosan, implantable, microparticulate, and microneedle-based drug delivery systems, including intranasal insulin delivery. These innovative approaches aim to enhance drug effectiveness, adherence, and personalized treatment, potentially transforming diabetes care and aligning with SDG 3 (Good Health and Well-being).

The original article by Fadaly et al. [10] evaluated apical crack incidence after root canal obturation using lateral and warm vertical compaction techniques in mandibular premolars. While both techniques showed similar crack incidence after instrumentation, warm vertical compaction showed a higher incidence after obturation, though not statistically significant. The study suggests root canal instrumentation is more associated with apical cracks than the obturation technique itself, contributing to SDG 3 (Good Health and Well-being) by informing dental practice.

The review by Somaie et al. [11] focused on mineral trioxide aggregate (MTA) having revolutionized dentistry, particularly endodontics, due to its biocompatibility, sealing ability, and antibacterial properties stemming from calcium hydroxide release. While considered a gold standard for various procedures like pulp capping and root-end filling, MTA has limitations, including prolonged setting time and challenges to handling. This review covers MTA's history,

composition, properties, limitations, and clinical applications, contributing to SDG 3 (Good Health and Well-being) by improving dental materials and practices.

The review by Yehya et al. [12] dealt with pulpectomy as the preferred root canal therapy for primary teeth with irreversible pulpitis or necrosis, aiming to eliminate microorganisms through chemo-mechanical cleaning and shaping. Rotary Ni-Ti files offer advantages over manual files, but specialized designs are necessary for pediatric patients with limited mouth opening due to the length of standard files. Effective pulpectomy contributes to children's oral health, aligning with SDG 3 (Good Health and Well-being).

The review by Eldemary [13] dealt with expansive soils found in Egypt's new desert cities, which pose a significant challenge to urban development due to their swelling behavior when absorbing water, leading to infrastructure damage and economic losses. This study examines the factors affecting the swelling potential of these clays—such as soil composition, moisture content, and compaction methods—to help geotechnical engineers implement effective treatment strategies. By improving soil stability, this research contributes to SDG 9 (Industry, Innovation, and Infrastructure) through safer construction, SDG 11 (Sustainable Cities and Communities) by enabling urban expansion, and SDG 13 (Climate Action) by addressing soil-related environmental risks.

Also, the review by Elshahat and Shafik [14] focused on the increasing demand for road networks and urban expansion, which consume significant natural resources, with bitumen and cement production causing environmental harm. This research explores the reuse of Reclaimed Asphalt Pavement (RAP) as a sustainable alternative in road and concrete applications, reducing reliance on virgin materials. RAP enhances pavement durability while affecting mechanical properties in concrete, requiring optimization through rejuvenating agents. This study aligns with SDG 9 (Industry, Innovation, and Infrastructure) by promoting sustainable construction, SDG 11 (Sustainable Cities and Communities) by reducing environmental impact, and SDG 12 (Responsible Consumption and Production) by advancing recycling in engineering.

The original article by Mousa and El-Khatib [15] explored the optimization of horizontal-axis wind turbines using MATLAB-Simulink to enhance their efficiency in real-world applications. By adjusting wind speed and pitch angle, the research identifies optimal conditions for maximizing turbine power output. The findings contribute to the advancement of wind energy technology,

promoting sustainable and clean power generation. This aligns with SDG 7 (Affordable and Clean Energy) by improving renewable energy efficiency, SDG 9 (Industry, Innovation, and Infrastructure) through technological advancements in wind power, and SDG 13 (Climate Action) by reducing reliance on fossil fuels and lowering carbon emissions.

The review by Al-Agry [16] examined the impact of rapid changes in the work environment, driven by digital transformation, economic shifts, and skill gaps, on employee reskilling in Egypt. The research highlights the role of governments and private organizations in addressing skill mismatches through education, retraining, and workforce development. By fostering a resilient and adaptable labor market, the study contributes to SDG 4 (Quality Education) by promoting lifelong learning, SDG 8 (Decent Work and Economic Growth) by enhancing employability, and SDG 9 (Industry, Innovation, and Infrastructure) by supporting digital and technological advancements in the job market.

The review by Amer et al [17] explored linear regression models and the impact of outliers on the accuracy of parameter estimation. While Ordinary Least Squares (OLS) is widely used, it becomes unreliable in the presence of outliers. The research evaluates robust estimation techniques, concluding that the MM estimate performs best in handling outliers, ensuring more accurate model fitting. This aligns with SDG 9 (Industry, Innovation, and Infrastructure) by improving data-driven decision-making, SDG 4 (Quality Education) by advancing statistical methodologies, and SDG 17 (Partnerships for the Goals) by promoting reliable research tools for informed policy and business strategies.

The original article by Elbassoussy and Khaled [18] examined the US-Russia geopolitical rivalry in the Syrian crisis, which has prolonged conflict, intensified violence, and hindered diplomatic solutions. The US supports opposition groups, while Russia backs the Assad regime, leading to military interventions that complicate peace efforts. External actors like Iran and Turkey further escalate tensions, affecting regional stability, counterterrorism, and global diplomacy. The research emphasizes the need for diplomatic engagement and humanitarian aid to resolve the crisis. This aligns with SDG 16 (Peace, Justice, and Strong Institutions) by advocating for conflict resolution, SDG 17 (Partnerships for the Goals) through international cooperation, and SDG 1 (No Poverty) by addressing humanitarian needs.

Accordingly, this issue exhibited articles representing eleven SDGs out of the seventeen goals. The editors are soliciting multiple contributions to enhance the representation of SDG-related articles in ERURJ.

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