

PROCEEDING OF INTERNATIONAL CONFERENCE 2024

HYBRID EVENT

INTERNATIONAL CONFERENCE 2024
02nd – 03rd August 2024

Organized By



Co-organized by



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Editorial

We are delighted to extend a warm welcome to all participants attending the International Conference 2024 on 02nd – 03rd August 2024. This conference provides a vital platform for researchers, students, academicians, and industry professionals from all over the world to share their latest research results and development activities in multidisciplinary fields. It offers delegates an opportunity to exchange new ideas and experiences, establish business or research relationships, and explore global collaborations.

The proceedings for International Conference 2024 contain the most up-to-date, comprehensive, and globally relevant knowledge across various disciplines. All submitted papers underwent rigorous peer-reviewing by 2-4 expert referees, and the papers included in these proceedings were selected for their quality and relevance to the conference. We are confident that these proceedings will not only provide readers with a broad overview of the latest research results but also serve as a valuable summary and reference for further studies.

We are grateful for the support of many universities and research institutes, whose contributions were vital to the success of this conference. We extend our sincerest gratitude and highest respect to the professors who played an important role in the review process, providing valuable feedback and suggestions to authors to improve their work. We also appreciate the efforts of the technical program committee, reviewers, and authors for their dedication.

Since June 2024, the Organizing Committee has received more than 85 manuscript papers, covering various aspects of multidisciplinary research. After review, approximately 59 papers were selected for inclusion in the proceedings of International Conference 2024.

We thank all participants for their significant contribution to the success of the conference. Our gratitude extends to the keynote speakers, individual speakers, technical program committee, reviewers, and the organizing committee for their efforts in making this conference a reality.

Acknowledgement

The International Conference 2024, was successfully held in 02nd – 03rd August 2024. We extend our heartfelt gratitude to our colleagues, staff, professors, reviewers, and members of the organizing committee for their unwavering support in making this conference a success.

We would also like to thank all the participants who traveled far and wide to attend this conference and those who attended the event virtually, making it a truly global event. This conference provided a platform for students, professionals, researchers, and scientists to share their latest research and developments in various disciplines.

The aim of the conference was to promote research and development activities and to encourage scientific information exchange between researchers, developers, professionals, students, and practitioners from all around the world. Once again, we thank everyone who contributed to making this conference a resounding success.



Dr. Patrick Reid

Director

International Institute for Research in Science and Technology (IIRST)

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Healthcare Academics and Professional Development: The Yin-Yang of Higher Education

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Abstract:

The Educational milieu has changed vastly compared to the traditional antique schooling systems. The dependency on technology is everywhere, and new learners rely significantly on these devices. We have moved towards e-books, electronic\interactive boards, online libraries, and iPads from books, whiteboards, libraries, libraries, and notepads. Academics are expected to adapt, develop, and adopt these changes to incorporate them into their teaching practices. Contemporary teachers face various psychological and educational challenges they endure daily. It is no longer possible to remain concrete in such a vast enterprise of technology that is turning our learners into digital learners. Siddiqui, Z. (2006) stated that "higher education, worldwide is facing several challenges with increasing societal, organizational and student demands. This issue directly affects the academics continuously striving to find ways to improve the effectiveness of their teaching". Hence, several motivation theorists believe that there are several factors influencing professional development; for example, Maslow's theory of motivation states that self-actualization is a pivotal factor that intrinsically motivates individuals to achieve higher self-esteem. Fulfilling individual potentialities is an additional significant factor that impacts teachers and their engagement in professional development. Therefore, this paper elucidates various factors that reveal the yin and the yang of professional development amongst academics in a medical university.

Keywords:

Higher education, professional development, motivation, yin and yang.

Characterization of Simple Sequence Repeat (SSRs) in *Spathoglottis Aurea* Lindl. (Orchidaceae), a Species of Terrestrial ORCHIDS

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Abstract:

The genus *Spathoglottis* Blume is the terrestrial geophyte orchid belongs to the family of Orchidaceae. It is a well-known genus with a total of 49 species widely distributed in tropical and subtropical Asia and the Pacific Islands. Eight species and three infraspecific taxa of *Spathoglottis* are recognized as native to Peninsular Malaysia and Borneo. Despite being popular in horticulture, *Spathoglottis* is a taxonomically confused genus in Orchidaceae. Revisions on the morphology and molecular phylogeny of *Spathoglottis* from Peninsular Malaysia and Borneo have been addressed recently, but no genomic examination has ever been attempted before. Thus, the objective of the study is to develop and characterize simple sequence repeats (SSR) from a complete chloroplast genome of *Spathoglottis aurea* then identify the best primer design. Six *Spathoglottis* species were used in this study to determine the cross-species amplification ability of newly developed SSR markers among other *Spathoglottis* species. DNA of six *Spathoglottis* species was extracted using modified CTAB method. Then, 13 pairs of SSR primers were developed using microsatellite finder (MicroSATellite identification tool) and amplified by PCR to test the efficiency of designed primer. A total of 12 primer pairs were successfully amplified PCR products in six *Spathoglottis* species and the resulting products were of the expected size. This result indicates a high level of transferability between the *Spathoglottis* species. Among the designed SSR primers, p2e demonstrated the best performance, displaying bright and clear bands for cross-species amplification. SSR marker developed in this study will contribute to the genetic population and genetic diversity study of the related species in the futures.

Prevalence of Dermatologic Disorders and Associated Factors among Elderly Population Attending at Primary Healthcare Centers in Saudi Arabia: A Cross-Sectional Study

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Abstract:

Background: Dermatologic disorders among the elderly population pose significant healthcare challenges globally. This study aimed to assess the prevalence of dermatologic disorders and associated factors among elderly individuals attending primary healthcare centers in Saudi Arabia.

Methods: A cross-sectional study was conducted at primary healthcare centers within the National Guard Health Affairs in Jeddah. Data were collected using a web-based questionnaire and interviews. Sociodemographic characteristics, comorbidities, and dermatologic conditions were assessed. Statistical analysis included descriptive statistics and regression models.

Results: A total of 132 elderly participants were included, with a mean age of 68.25 years. The majority were females (62.9%) and married (73.5%). Over one-fifth were smokers (20.5%), and comorbid conditions such as diabetes and hypertension were prevalent. More than one-third (42.4%) suffered from dermatologic disorders, including eczema and skin infections. Most dermatologic conditions were localized to specific body regions, with some influenced by weather conditions. Participants sought healthcare primarily for follow-up or complaint reporting. However, no significant associations were found between sociodemographic factors and dermatologic disorders.

Conclusion: This study provides insights into the prevalence and characteristics of dermatologic disorders among the elderly in Saudi Arabia. The findings underscore the importance of addressing dermatologic health needs in primary care settings, particularly considering the aging population. Further research is warranted to explore additional factors influencing dermatologic disorders and to develop tailored interventions for this vulnerable population.

Dipeptide is a Prominent in Treatment of Various Diseases

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Abstract:

Peptides and proteins are still being used in pharmaceuticals due to their prospective use in both the market for protein drugs and current pharmacological therapy. Peptide-based medications function as antibacterial agents. The majority of synthetic compounds are designed to inhibit microbial cell multiplication. When peptides bind to heterocyclic compounds, they exhibit a variety of activities, including antibacterial, antifungal, and antiemetics properties. Over the past 20 years, a vast array of biopeptides has been identified. condensation of heterocyclic moiety with peptides that contain amino acids, such as Strong biological activity are shown by nicotinic acid, thiazole, coumarin, quinoline, furan, and imidazole, are other peptide-containing amino acids.

Keywords:

Comparing, Furan, Imidazole, Nicotinic Acid, Thiazide.

The Magic of Marketing: Exploring the Effectiveness of Relationship Marketing and Global Marketing Strategy

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Abstract:

This study focuses on analyzing the relationships among relationship marketing, global marketing strategy, experiential value, and customer satisfaction. Specifically, the research begins by exploring the impact effects of relationship marketing and global marketing strategy on experiential value and customer satisfaction. Furthermore, it examines the influence of experiential value on customer satisfaction. Additionally, the study employs an asymmetric data analysis approach to identify conditions that ensure high customer satisfaction. Empirical data are collected through a questionnaire survey targeting consumers, utilizing Google Forms. Multivariate analysis tools such as descriptive statistical analysis, factor analysis, reliability analysis, SEM (Structural equation modeling), and fsQCA (Fuzzy set qualitative comparative analysis) are employed. Results of SEM indicates that relationship marketing, global marketing strategy can enhance experiential value and customer satisfaction, and experiential value can further improve customer satisfaction. Results of fsQCA identify there are two combinations that ensures high customer satisfaction. For example, one combination represents that when customer has high evaluations of relationship marketing and global marketing strategy at the same time, it is to ensure that he can obtain a high degree of customer satisfaction.

Keywords:

Relationship marketing, global marketing strategy, experiential value, customer satisfaction, SEM, fsQCA.

Cashless Policy and Economic Growth in Nigeria

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Abstract:

This study carefully investigated the effect of cashless policy on economic growth in Nigeria. It employed quarterly time series data from 2009 to 2022 on Real Gross Domestic Product, the values of Automated Teller Machine transactions, Point-of-Sale payment, web Payments and Mobile Payment from the statistical bulletin of Nigeria's apex bank. In addition, an Error Correction Mechanism (ECM) technique was used as the main analytical tool. The regression result revealed that Automated Teller Machine has a positive and insignificant relationship with economic growth in Nigeria. Mobile Payment has positive and significant relationship with economic growth in Nigeria. Point-of-Sale has negative and insignificant relationship with economic growth in Nigeria. Web Payment has negative and significant relationship with economic growth in Nigeria during the period of study. This means that the relationship between channels of cashless policy and economic growth in Nigeria varies, as it could be positive (Automated Teller Machine and Mobile Payment) or negative (Point-of-Sale and Web Payment). It also means that there is no clear cut prediction on the relationship between channels of cashless policy and economic growth in Nigeria. The study therefore, concluded that cashless policy has been a veritable tool in influencing economic growth in Nigeria, especially as it relates to Automated Teller Machine transactions and mobile payment patterns. Based on the findings, the study suggested that the Central Bank of Nigeria (CBN) should encourage deposit money banks to offer quality e-payment channels services to their customers. At the same time, the CBN should enlighten the populace more on the essentials of the cashless system. This is because a raise in the level of public enlightenment will reduce possible resistance by the banking public so that the economy will enjoy the benefits of cashless policy which include the enhancement of banks' revenue and achievement of adequate economic growth in Nigeria.

Keywords:

Cashless Policy, Economic Growth, ATM, PoS, ECM and Nigeria.

Students' Attitudes Towards GenAI Use in Higher Education – An International Comparison

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Abstract:

Our research explores students' opinions on AI technologies and their use in university studies. We compared the attitudes of 920 students from universities in the Czech Republic (CZ), Türkiye (TR) and Slovakia (SK) regarding their familiarity and ethical understanding with the topic, and its perceived benefits and challenges. A questionnaire was developed and employed as data collection tool. The data was analyzed by using descriptive analysis. The results reveal the majority of the participants has at least once used AI technologies, either sometimes or more, while the ratio is higher in CZ and SK compared to TR. The use of ChatGPT is more prevalent compared to other GenAI tools. The most common purpose of using AI is to have a general idea on a topic. Students in all three countries think the most prevalent pro of using AI is "It is easy to access, 24/7 available". The most prevalent con is "There is bias in its algorithms" for students in CZ, and "It has potential for misuses" in TR and SK. The majority of participants think students have low level consideration of ethical issues while using GenAI in their university studies, and universities should set ethical behaviors for AI use.

Teaching Entrepreneurship and Innovation on Higher Education: Conclusions from HEICE Project

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Abstract:

Europe faces significant challenges in maintaining its technological power due to lower R&D spending and entrepreneurial activities compared to global competitors. In 2018, China spent 2.14% of its GDP on R&D, the US 2.83%, while the EU spent only 2.03%. Despite leading countries like Sweden, Austria, and Finland in R&D investments, there is a pressing need to enhance academia-industry connections and entrepreneurial skills across the continent. European entrepreneurs are generally more risk-averse, impacting access to capital and competitiveness in the digital industry.

The HEICE - High Tech Entrepreneurship and Innovation Competences project, funded by the European Institute of Innovation and Technology (EIT), aims to address these challenges by providing comprehensive entrepreneurial education for deep tech talents in health and manufacturing fields. The primary goal of the HEICE project is to strengthen Europe's technological innovation and entrepreneurship by unlocking the entrepreneurial potential of Deep Tech Talents in Austria, Portugal, and Serbia. This initiative focuses on bridging the gap between academia and industry, fostering interdisciplinary collaboration, and enhancing the entrepreneurial ecosystem within higher education institutions (HEIs).

This paper discusses the project's objectives, methodology, and anticipated outcomes, emphasizing its role in building capacity in HEIs to support student and academic entrepreneurship. The HEICE project employs a multifaceted approach, integrating structured educational programs with practical training, mentorship, and industry engagement to cultivate entrepreneurial skills among deep tech talents. By providing resources such as workshops, incubators, accelerators, and networking events, HEICE aims to create a robust support system for emerging entrepreneurs.

Additionally, the paper reviews scientific literature on entrepreneurship, entrepreneurship education, and their economic impacts, highlighting the significance of entrepreneurial ecosystems in driving economic growth and innovation. It compares the HEICE project with similar initiatives, such as the MIT Regional Entrepreneurship Acceleration Program (REAP) and the Erasmus for Young Entrepreneurs (EYE) program, to underscore the unique contributions and advantages of HEICE. The comparative analysis reveals how HEICE's focus on deep tech and regional specialization strategies offers a distinctive approach to fostering entrepreneurship within the European context.

The findings of this paper provide valuable insights for policymakers, educators, and practitioners seeking to enhance entrepreneurial capacities within HEIs and beyond. By leveraging the experiences and lessons from the HEICE project, stakeholders can develop more effective strategies to support entrepreneurial activities and drive technological advancement across Europe.

Keywords:

Academic Startups, Entrepreneurial Mindset, Entrepreneurship Education, Capacity Building, Deep Tech Talents, Spin-offs.

Identity Politics, Anocracy, and the Ethiopian Civil War (2020-2022)

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Abstract:

In her influential work (How Civil Wars Start and How to Stop Them [Crown, Reprint Edition, 2023]), Barbara F. Walters identified two critical factors that propel civil wars. They include anocracy and identity politics. Anocracy is a halfway political house between autocracy and democracy. As a democratic political order degenerates, an emergent autocratic order takes hold, undermining the political mechanisms preventing a civil war's onset. Additionally, establishing political organizations along identity rather than ideology lines paves the way for civil conflict. In this study, an attempt is made to critically assess the importance of the two factors identified by Walter in the explanation of the Ethiopian civil war, a social conflict identified as one of the most devastating civil wars of the twenty-first century. Data for the study is based on historical studies, varied articles published in reputable journals and news outlets, commentaries written by parties that framed conflicting vantage points, and videos dealing with news and statements from those interested in interpreting the causes and nature of the civil war.

The Dual Labor Market Shift: Understanding the Great Resignation and Quiet Quitting Phenomena

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Abstract:

The COVID-19 pandemic has precipitated unprecedented changes in the global labor market, giving rise to two significant phenomena: the Great Resignation and Quiet Quitting. This paper examines these trends, their underlying causes, and their implications for employers and employees. The Great Resignation, characterized by mass employee departures, highlights a fundamental shift in the employer-employee relationship. Workers, reevaluating their job satisfaction and work-life balance during the pandemic, have increasingly sought more fulfilling and flexible work opportunities. Conversely, Quiet Quitting represents a subtle yet pervasive trend where employees meet only the minimum job requirements without additional engagement or effort, often as a response to burnout and dissatisfaction. Through a comprehensive analysis of labor market data and contemporary research, this study identifies the key drivers of these trends, including the desire for better work-life balance, increased remote work opportunities, and changing employee expectations. Furthermore, the paper explores the historical context of labor market shifts, drawing parallels with previous economic upheavals, and offers strategic recommendations for managers to address these challenges effectively. By understanding the motivations behind the Great Resignation and Quiet Quitting, organizations can develop targeted strategies to enhance employee engagement, satisfaction, and retention. This paper aims to provide valuable insights for policymakers, business leaders, and HR professionals navigating the evolving landscape of the modern labor market.

Keywords:

Great Resignation, Quiet Quitting, employee engagement, workplace.

The Effect of Centralised Treasury Management on Business Operational Effectiveness and Corporate Innovation

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Abstract:

This study examines how centralized treasury management affects operational effectiveness and innovation in Multinational Enterprises (MNEs) based in the European Union (EU). It employs a mixed-method approach and uses fixed effect regression models with panel data to analyze financial metrics like the Debt-to-Equity Ratio, Cash Ratio, and Interest Coverage Ratio's impact on Return on Assets. The findings indicate that while the Debt-to-Equity ratio negatively affects operational effectiveness, both Cash and Interest Coverage ratios have a positive impact. Additionally, foreign exchange risk management positively influences operational effectiveness, although it doesn't directly affect the statistics.

A notable case illustrating how centralized treasury management fosters innovation is Currys PC World, which utilizes API and Robotic Process Automation technologies to enhance real-time data access and reduce transaction costs and interest rate risks. However, significant challenges identified include high software costs, integration complexities with legacy systems, and the need for extensive staff training. Consequently, while centralized treasury management holds potential for enhancing operational efficiency, its effective implementation requires a strategic approach to maximize innovative benefits and overcome potential barriers.

A Novel Contraction for G-Metric Spaces with Applications to the Fredholm Integral Equation

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Abstract:

In this paper, we introduce a new concept referred to as " $f\varphi$ -contraction" in relation to simulation functions in order to extend the results of Manoj. Through simulation functions, it is thrilling to investigate the potential applications of common and coincidence fixed points in symmetrical G-metric spaces. In the context of G-metric space, the results are also used to deduce diverse common and coincidence fixed point theory for right monotone simulation functions. In addition, we present a practical implementation of the integral equation of Fredholm type.

Keywords:

H G-metric spaces, Fixed points, Right monotone function, Coincident point, Fredholm- type integral equation.

MSC 2010: 55M20, 54H25, 47H10.

Challenges in Pronunciation Skills among Libyan Secondary Students

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Abstract:

Mastering precise English pronunciation proves challenging for EFL learners. This research focuses on English pronunciation development among Libyan students, examining factors that enhance this skill. Despite its significance, pronunciation receives insufficient attention in Libyan instructional practices, leading to deficiencies among secondary school students. Through an in-depth analysis of teaching methodologies, classroom practices, and prevailing attitudes toward pronunciation in the Libyan educational system, this research aims to identify the factors contributing to the existing gap in pronunciation instruction. Recognizing these challenges is essential for effective pronunciation learning. The study's objective is to investigate methods to improve the pronunciation skills of Libyan learners in secondary schools. The results of the current study revealed that the existing Phonetic Ability, Listening Skills, Reading Skills, Native English Speakers, Teaching Methods, and First Language are considered challenges to Libyan learners in acquiring accurate English pronunciation skills. By identifying and addressing common pronunciation problems, this research contributes to the second language acquisition literature, offering practical recommendations for English language instructors in Libya.

Towards Local Descriptors Combination to Iris Health Verification

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Abstract:

This paper summarizes the proposal submitted by the joint team conformed by researchers from UPV and ULPGC to the Mobile Iris Challenge Evaluation II. The approach makes use of a state-of-the-art iris segmentation technique, to later extract features making use of local descriptors. Those suitable to the problem are selected after evaluating a collection of 15 local descriptors, covering a range of different grid configuration setups. A Machine Learning approach is used, learning a supervised classifier to deal with the descriptors data. A classifier is obtained for each descriptor, and the best ones are combined in a multi-classifier system. The final step fuses the classifier outputs obtained for 5 different local descriptors, to compute the dissimilarity measure for a pair of iris images.

All-in-One Charging and Discharging Processes for an Ice Tank used in a CO₂ Refrigeration System

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Abstract:

CO₂, as a future-proof natural refrigerant, has been widely used in supermarket refrigeration systems. An ice tank located downstream of the gas cooler can further cool down the CO₂ temperature for system performance enhancement. Based on the existing studies, there is limited research focusing on the dynamic behaviour of the CO₂ system integrated with the self-charging ice tank. To fill up this gap, this article investigates the dynamic performance among the CO₂ system without the ice tank, the system with the ice tank charged by the R290 chiller or charged by the CO₂ refrigeration system itself. The energy consumption and cost analysis are then compared among three configurations by considering the ambient temperatures on the hottest day in Chicago and Phoenix (USA), respectively. The case study on the hottest day revealed that using the R290 chiller-charging or self-charging ice tank could save the energy consumption up to 7.5% and 5.6%, respectively, compared to those without using the ice tank. Due to the various electricity prices during peak and off-peak periods throughout the hottest day, the system using the R290 chiller-charging or self-charging ice tank can reduce the electricity cost by up to 13.8% and 12.9%, respectively, compared to that of the solo CO₂ refrigeration system.

Keywords:

Charging mode, cold thermal energy storage, R744, supermarket, transcritical refrigeration system.

Self-selection, Human Capital Inputs, and Regional Unobserved Human Capital

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Abstract:

Identification of unobserved human capital has important implications for understanding key issues in regional inequality and economic development. In this study, we develop a general framework for estimating unobserved human capital. Unobserved human capital refers to a composite concept of human capital attributes that are not conventionally measured. Using multiple-year data on temporary rural-to-urban migrants from China, we estimate unobserved human capital across various regions at different economic development stages. Our findings indicate that, among workers with similar observed human capital traits, the unobserved human capital varies significantly across regions. Estimating unobserved labor quality using data on migrants is sensitive to migrants' self-selection but not to the potential discrimination against them. The quality instead of quantity of human capital inputs contributes more to the formation of unobserved human capital. Results also show that unobserved labor quality contributes more to regional income inequality than conventionally measured human capital, and its inclusion drastically reduces the contribution of TFP to economic growth.

Keywords:

Unobserved Human Capital; Regional Inequality; Human Capital Contribution.

JEL Classification: O15 I20 J24

Computational Screening of Repurposed Drugs for HMG-CoA Synthase 2 in Alzheimer's Disease

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Abstract:

Aim: HMGCS2 (mitochondrial 3-hydroxy-3-methylglutaryl-CoA synthase 2) plays a pivotal role as a control enzyme in ketogenesis, and its association with the β -amyloid precursor protein (APP) in mitochondria implicates a potential involvement in Alzheimer's disease (AD) pathophysiology. Our study aimed at identifying repurposed drugs using the DrugBank database capable of inhibiting HMGCS2 activity.

Materials and Methods: Exploiting the power of drug repurposing in conjunction with virtual screening and molecular dynamic (MD) simulations against predefined targets, we present new *in-silico* insight into structure-based drug repurposing.

Results: The initial molecules were screened for their binding affinity to HMGCS2. Subsequent interaction analyses and extensive 300 ns MD simulations were conducted to explore the conformational dynamics and stability of HMGCS2 in complex with the screened molecules, particularly Penfluridol and Lurasidone.

Conclusions: The study revealed that HMGCS2 forms stable protein-ligand complexes with Penfluridol and Lurasidone. Our findings indicate that Penfluridol and Lurasidone competitively bind to HMGCS2 and warrant their further exploration as potential repurposed molecules for anti-Alzheimer's drug development.

Correlation between Financial Performance of Companies and the Extent of Digitalization in Hrm

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Abstract:

The study presented in this article expands the knowledge base on the implementation of digital innovations in businesses across Central and Eastern Europe and their potential positive impact on management efficiency. Additionally, it highlights the relationship between positive economic outcomes and the tendency to invest more in innovative strategies, as their effective implementation may require certain financial and human resources. The findings and conclusions detailed in this paper are based on the examination of a research sample (n = 1112 in 2020 and n = 1109 in 2021) that includes feedback from managers of businesses operating in the economic sector of Central and Eastern Europe. Based on the survey results, it can be asserted that companies with positive economic performance score higher in both the utilization of and the perceived importance of implementing innovative tools in the near future.

The Impact of Developing Managerial Competencies on the Development of Other Employees in the Company

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Abstract:

The study presented in this article expands the knowledge base concerning the development of managerial competencies in the context of enhancing other human resources within businesses in Central and Eastern Europe. It underscores the fact that by investing in the education and skill enhancement of managers, companies can foster a culture of continuous improvement and capability building that permeates the entire organization. The findings of this paper are based on an examination of a research sample comprising 2,221 respondents in 2020 and 2021, including feedback from managers of businesses operating in the economic sector of Central and Eastern Europe. Based on the survey results, it can be asserted that companies with a positive approach to developing managerial competencies also achieve higher scores in the development of employee competencies and in the perceived importance of implementing future-oriented strategies.

Organisational Cultures of Digital “Born Globals” – Culture as a Success Factor

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Abstract:

The phenomenon of digitalisation can be described as one of the defining megatrends of the modern era. Its impact has been far-reaching, affecting not only markets, products and communication, but also corporate behaviours and entire societies. Consequently, organisations must develop a suitable organisational culture, commonly referred to as the digital culture. Nevertheless, a significant proportion of these organisations are encountering difficulties in implementing the requisite changes. For instance, the mere establishment of a so-called “digital innovation unit” is unlikely to yield the desired results if a suitable cultural environment is lacking.

In light of the aforementioned circumstances, it is appropriate to examine the organisational cultures of digital companies that have successfully internationalised their business with digital business models shortly after their foundation. What characterises the organisational cultures of so-called digital “born globals”?

The case study of Netflix exemplifies the pivotal role of subcultures, ambidexterity and inclusion. The strategic utilisation of subcultures may be a viable approach to addressing the cultural requirements of the digital age. This may also assist the organisation in achieving an optimal balance between exploitation and exploration. However, a symbiotic relationship among its subcultures can only be realised through the integration of these subcultures with the organisation’s overall culture.

Transdisciplinarity- A Creative Teaching Method in Biology

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Abstract:

Nowadays, a child has to learn about sciences, all together: mathematics, physics, chemistry, biology, but it is more interesting to study and understand how all of these may interact. All theoretical concepts are more valuable when they become practice. The aim of this paper is to prove that biology, which is a multidisciplinary field, including biology and biological processes of living beings, biochemistry and biophysics, can be taught, using integrative universal principles of natural science, by transdisciplinarity. This is sustained by the STEAM education, which will help our students to learn concepts, to think creatively and use innovation in solving their problems. STEAM education is important for our students because it removes limitations and stimulates their creativity, innovation, leadership, self-confidence, wonder and critical thinking. Having the multidisciplinary field status, biology as a key part of STEAM education, teaches students to integrate individual components in complex systems, to test theories and principles, to have an overview on different tasks and evaluate and implement their results. All of these skills are transferable into their life actions.

Modular Integrated Construction (MIC) to Address the Affordable Housing Crisis in Hong Kong

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Abstract:

The affordable housing crisis in Hong Kong necessitates innovative solutions to address the challenges posed by limited land availability and a rapidly growing population. This research abstract explores the potential of Modular Integrated Construction (MIC) as a transformative alternative to traditional construction methods. Drawing upon research and case studies from Hong Kong, the research examines the core principles, advantages, and challenges associated with MIC technology, highlighting its ability to provide cost-effective materials for a sustainable housing solution. The research finding indicates that MIC offers significant cost efficiency by leveraging economies of scale, streamlined production processes, and reduced material waste in selected housing estates. This enables lower construction costs, making housing more affordable for a broader range of income groups. Additionally, MIC enhances construction speed and efficiency through parallel work processes, allowing for concurrent site preparation and module manufacturing. On-site assembly of modules is faster than traditional on-site construction, facilitating rapid project completion and addressing the urgent demand for housing. The benefit of using MIC in Architecture, Materials and Construction is the quality control as the factory-controlled environment ensures higher precision, quality, and consistency in the manufacturing process. Stringent quality control measures implemented during MIC construction result in buildings that meet or exceed industry standards. The choice of building materials enhances the overall quality of housing and also reduces long-term maintenance and repair costs, thus contributing to sustainable and affordable housing solutions. Other the other hand, MIC also promotes sustainability through its ability to minimize material waste and optimize resource usage. The controlled factory environment allows for efficient management of energy consumption, waste reduction, and recycling. Moreover, the disassembly and reuse of modules extend the lifespan and adaptability of buildings, reducing the need for new construction and minimizing environmental impact. The research also highlights some challenges on the MIC implementation. Design flexibility is a consideration, as standardized module sizes may limit architectural options and customization. Nevertheless, innovative design approaches and modular configurations can strike a balance between standardization and design aesthetics, enabling unique and visually appealing structures. Furthermore, the existing regulatory framework may require adjustments to accommodate the unique characteristics of MIC. Collaborative efforts among policymakers, industry professionals, and stakeholders are crucial to establish appropriate standards and guidelines that facilitate MIC implementation while ensuring safety and quality. Overall, the research demonstrates the potential of MIC to address the affordable housing crisis in Hong Kong. The cost efficiency, construction speed, quality control measures, and sustainability aspects of MIC make it an attractive alternative to traditional construction methods. By addressing challenges related to design flexibility, logistics, and regulatory frameworks, MIC can revolutionize the construction industry in Hong Kong and provide cost-effective, efficient, and sustainable housing solutions to alleviate the affordable housing crisis.

How Does Diabetes Impact the Complications and Outcomes of Patients Having Surgery for Cervical Stenosis with Myelopathy?

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Abstract:

Objective: Diabetes mellitus (DM) is a known risk factor for complications after spinal surgery. The authors aimed to compare short and long term complications and outcomes in patients with and without diabetes undergoing surgery for cervical spondylotic myelopathy.

Methods: The SpineCORE study group (14 hospitals in USA) collected prospective data from the Quality Outcomes Database for surgical patients with cervical spondylotic myelopathy. Patients were dichotomized into DM and non-DM cohorts and optimally matched in a 1:2 ratio on 17 baseline variables, including the surgical procedure, approach, and number of operated levels. Outcomes of interest were readmissions and reoperations at 30- and 90-days after surgery in addition to improvement in the neck disability index (NDI), neck and arm pain scores and quality-adjusted life-years (EQ5D) at 90-days and two-years after surgery.

Results: Out of 1,141 patients, 245 (21.5%) had a pre-operative diagnosis of DM. The matched DM cohort had 216 patients [95 (44%) females] with a mean age of 63.4 ± 9.8 years. The matched non-DM cohort had 432 patients [188 (43.5%) females] with a mean age of 63.3 ± 11.6 years. There were no significant differences in length of stay (2.4 ± 3.0 vs. 2.2 ± 2.2), non-routine discharge (19.0% vs. 15.8%), 30-day readmission rates (1.1% vs. 2.9%), or 30-day reoperation rates (0.5% vs. 2.1%) between the DM and non-DM groups. 90-day readmission (6.5% vs. 5.1%) and reoperation rates (0.9% vs. 3.0%) were similar between the two cohorts. Patient-reported outcomes (NDI, neck pain, arm pain, and EQ5D) did not differ between the DM and non-DM cohorts at 90-days and two-years post-operatively. Rates of post-operative satisfaction at 90-days (87.5% vs. 86.3%) and two-years (83.5% vs. 83.2%) were comparable between the DM and non-DM cohorts.

Conclusions: Patients with and without DM undergoing surgery for cervical spondylotic myelopathy have comparable readmission and reoperation rates, and similar long-term patient reported outcomes. Surgeons should continue to target optimal DM control preoperatively, particularly for patients undergoing elective surgery to treat cervical spondylotic myelopathy.

Prospective Evaluation of Nutritional Risk Indicators and the Risk of Uterine Fibroids

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Abstract:

Background: Uterine fibroid are common benign tumors in women of reproductive age that significantly impact their quality of life and fertility. They arise from the smooth muscle tissue of the uterus and can cause various symptoms such as heavy menstrual bleeding, pelvic pain, and reproductive dysfunction. Age, hormonal imbalance, and genetic predisposition, etc have been identified as risk factors of uterine fibroid, but the exact etiology remains unclear. In recent years, emerging evidence suggests that nutritional factors may play a role in the development of uterine fibroid. However, the impact of overall nutritional status and the presence of nutritional risk on the occurrence of uterine fibroid remains less explored. Nutritional risk indicators, such as the Simplified Nutritional Appetite Questionnaire (SNAQ) score, provide a comprehensive assessment of an individual's nutritional status, considering factors such as appetite, dietary intake, and weight loss. Evaluating the relationship between nutritional risk indicators and uterine fibroid can provide valuable insights into the preventive strategies and management of this prevalent condition. The objective of this study was to prospectively evaluate the relationship between nutritional risk indicators and the occurrence of uterine fibroid, aiming to investigate the influence of nutritional status on the risk of developing uterine fibroids.

Methods: A total of 500 female patients who met the inclusion and exclusion criteria admitted to our hospital from January 2017 to December 2019 were enrolled in the study as the uterine fibroid group. Baseline information including age, height, weight, and lifestyle habits was collected upon admission. The Simplified Nutritional Appetite Questionnaire (SNAQ) was used to assess the nutritional risk of the patients, and blood biochemical indicators including hemoglobin, albumin, and total cholesterol levels were measured. Patients were followed up for 5 years, and the occurrence of uterine fibroid was recorded. According to the SNAQ scores, the patients were divided into high risk group and low risk group. SPSS 26.0 was used to complete the data analysis.

Results: The proportion of uterine fibroid in the high risk group was significantly lower than that in the low risk group ($P<0.05$). The SNAQ scores were negatively correlated with hemoglobin levels (-0.245), albumin levels (-0.124) and total cholesterol levels (-0.314). Hemoglobin levels, albumin levels, and total cholesterol levels were significantly lower in the uterine fibroid patients than in the patients without uterine fibroid ($P<0.05$). Multivariate logistic regression analysis revealed a significant correlation between the SNAQ scores and the occurrence of uterine fibroids in high risk group (OR=2.360, 95% CI: 1.421-3.925) and low risk group (OR=1.960, 95% CI: 1.237-2.784).

Conclusion: This study provides evidence of a correlation between nutritional risk indicators and the occurrence of uterine fibroid, suggesting malnutrition as a potential risk factor. In clinical practice, it is important to strengthen nutritional assessment and intervention in female patients to improve nutritional status and reduce the risk of developing uterine fibroids.

Keywords:

Uterine fibroids, Nutritional risk indicators, SNAQ score, Hemoglobin, Albumin, Total cholesterol, Risk factors, Prevention, Treatment.

Marketability Analysis of Green Hydrogen Production in Türkiye

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Abstract:

Green hydrogen has a great importance not only for its potential to reduce carbon emissions but also for its role in sustainable energy production. Among the remarkable factors that will take Türkiye one step ahead in preparation for green hydrogen are its rich renewable energy resources such as wind, solar and geothermal. The marketability of green hydrogen in Türkiye is a very important factor for integration and long-term use. Marketability depends on the development and integration of renewable energy systems, advances in electrolyzer technologies, and the evaluation of both operating expenses (OPEX) and capital expenditures (CAPEX) for different electrolyzer systems. The most significant technology in green hydrogen production is the electrolyzer which has types of Anion Exchange Membrane (AEM), Polymer Exchange Membrane (PEM), and Solid Oxide Electrolysis Cell (SOEC). Evaluation of all these technologies, in terms of CAPEX and OPEX, has great importance in determining the economic feasibility of green hydrogen production in Türkiye. When looking at Türkiye from a green hydrogen perspective, high potential can be seen due to the diversity and abundance of renewable energy sources and strategic initiatives. Successful integration of advanced electrolyzer technologies into existing/planned renewable energy systems and CAPEX and OPEX minimization targets will be vital in realizing this potential. Increasing governmental support, developing international relations and constitute infrastructure will further strengthen Türkiye's position in the green hydrogen market.

Keywords:

Green hydrogen, CAPEX, OPEX, electrolyzer, market analysis, sustainability, Türkiye.

Hydrogen Production by Seawater-Electrolyzer with Low-Cost Materials

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Abstract:

A sustainable way to produce clean hydrogen is the water-splitting process. Hydrogen production by water splitting produces no CO₂ emissions if the electricity is generated from a renewable source (e.g. wind, solar). However, it must be efficient and cost-effective enough to compete with hydrogen production from steam reforming of fossil fuel sources. The overpotential losses associated with driving the oxygen evolution reaction (OER) at the anode and the hydrogen evolution reaction (HER) at the cathode in both acidic and basic environments limit the efficiency of a water electrolysis system. In this context, the electrode materials play a key role in influencing the performance of the electrolyzers. In particular, seawater splitting requires a highly selective electrode on the anode side, where the evolution of molecular chlorine or the formation of other active chlorine compounds can compete with the oxygen evolution reaction. Considerable efforts have been made in recent years to obtain highly efficient and inexpensive catalytic materials. In this work, it was found that the alkaline seawater-electrolyzers with nanowire electrodes have good performance and are stable even at room temperature. In particular, nickel-based alloys were chosen as the electrode material because they are widely used in current technology for the production of hydrogen from alkaline aqueous solutions. NiFe alloy nanowires with very high surface area and high electrocatalytic activity were prepared by template electrosynthesis. Electrochemical and electrocatalytic tests were carried out to determine the performance of the electrolyzer. In addition, an alkaline electrolyzer based on the use of nanostructured electrodes is assembled to simulate real operation conditions. The laboratory-scale electrochemical cell was fabricated using a 3D printer. The results were compared with those of nickel foam and nickel sheet

single electrodes tested under identical conditions. The results obtained in this work evidence how the nanostructures significantly improve cell performances and are very encouraging as no difference on the performance was observed when a simulated seawater was used in the test. The solution used for the test was analyzed to confirm the absence of chlorine compounds. These findings indicate that under the experimental conditions, there is a selective oxygen evolution reaction on the anodic side. Therefore, these electrodes hold the potential for electrolysis in seawater.

Keywords:

Green Hydrogen, seawater-electrolyzer, nanostructured materials.

Acknowledgments:

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Classification of Spam URLs Using Machine Learning Approaches

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Abstract:

The Internet is used by billions of users every day because it offers fast and free communication tools and platforms. However, with this significant increase in usage, huge amounts of spam are generated every second, which wastes internet resources and, more importantly, users' time. This study investigates the use of machine learning models to classify URLs as spam or non-spam. We first extract the features from the URL as it has only one feature, and then we compare the performance of several models, including k-nearest neighbors, bagging, random forest, logistic regression, and others. Experimental results demonstrate that bagging outperformed other models, achieving the highest accuracy of 98.64%. In addition, bagging outperformed the current state-of-the-art approaches which emphasize its effectiveness in addressing spam-related challenges on the Internet. This suggests that bagging is a promising approach for URL spam classification.

Keywords:

Spam, URL, dataset, machine learning, model, KNeighbors, bagging, random forest, logistic regression, classifier.

Revitalizing Traditional Indian Knowledge Systems in Modern Education

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Abstract:

Education is universally recognized as the fundamental basis of a nation, exerting a crucial influence on shaping the course of a country's future. Given the rapidly changing global environment, it is crucial to regularly update the education system to match current trends and meet the requirements of the current situation. Within the Indian setting, despite several alterations made to the education system throughout the years, there remains an ongoing difficulty in providing education of exceptional quality to all individuals. The Indian education system is a multifaceted and heterogeneous system that has undergone significant transformations over history, including many influences from multiple civilizations, religions, and cultures. The Indian education system has demonstrated notable advancements in terms of enhancing educational accessibility and elevating educational standards. However, it continues to encounter many obstacles. The objective of this study is to examine the possibility of rejuvenating the Indian education system by incorporating indigenous Indian knowledge systems. This research aims to conduct an in-depth examination of traditional knowledge systems, with a focus on their potential integration within the current educational framework. Furthermore, this study will examine the necessary modifications in the curriculum to incorporate these components and evaluate the potential benefits that might be obtained from their integration.

Keywords:

Indian education system. Traditional knowledge system, curriculum, potential benefits.

Navigating Educational Transformation: The Change of Engineering Pedagogy in the Wake of COVID-19

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Abstract:

In response to the COVID-19 pandemic in 2020, the University of Applied Sciences Technikum Wien faced significant challenges in swiftly transitioning its traditionally technical-oriented academic programs to online teaching. With course materials that were not designed for e-learning and both, faculty staff and students, were unfamiliar with remote instruction and collaboration tools, a hybrid approach of self-study and guided teaching became imperative, necessitating innovative didactic strategies. Initially, faculty implemented ad hoc online teaching methods, resulting in a wide spectrum of outcomes. Subsequent surveys conducted in December 2020 and June 2021 provided crucial feedback for ongoing evaluation and adjustment of these approaches. The findings illuminated the constraints of traditional teaching in an online environment, except notably in computer science-related disciplines where pre-existing familiarity with online tools mitigated challenges. This paper describes the methodology and findings of the evaluation process, emphasizing the imperative for adaptable pedagogical approaches in navigating unforeseen disruptions like the COVID-19 pandemic, particularly within the technical education landscape.

Keywords:

Corona Situation, Academic Education, Engineering Education, Teaching Methods.

Overseas Investment and Country Risk in the Post-Epidemic Era

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Abstract:

Country risks in most countries/economies have increased rapidly since the COVID-19 epidemic has dealt a historically rare blow to the global economy. What's worse is that it is accompanied by a deterioration in international geopolitics. Overseas investors face new challenges: the country risk in the same host country is different for foreign investors of different nationalities. The traditional country risk evaluation model assumes the investor is the representative from all over the world, without nationality. We introduce in this paper an augmented country risk assessment framework with incorporation of nationality-specific risk. Based on the classical indexes, we define an indicator of bilateral relation risk between home and host countries, and an indicator of one-way cultural perceived distance as well following a survey. For the overall risk index, it is proposed to aggregate the indicators by a neural network algorithm. This theoretical framework is suitable for the assessment of the country risk in any host country/economy whatever the nationality of the investor is.

Keywords:

Overseas investment, Country risk, COVID, Cultural distance.

The Influence of Social Media to Stock Market during Presidential Election in Indonesia

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Abstract:

Social media has now evolved and seeped into every aspect of human life. From business, culture, social, to politics, it plays significant roles in each field. One notable event when talking about politics is the presidential election. The event creates interesting outcomes for both social media activity and stock market performance of a country. Especially in Indonesia, where the right to be express oneself is protected and the president is directly elected by the people, there is always a spike in social media activity. Moreover, the uncertainty of the election tends to make the investors delay their decisions, creating market volatility. Studies have proven the role of social media in predicting the stock market volatility through several approach, such as sentiment or collective movement. Therefore, the objective of this study is to find a thread that connects social media, the stock market, and the presidential election. The infrastructure sector was chosen because of its significant roles in facilitating people's lives in a country. The study will use X as a micro-blogging platform as the social media and a total of 93 days of observation from November 14, 2023 to February 14, 2024. This period covers from the announcement of candidate numbers to the day the presidential election was conducted. Using STATA 17.0 to analyse the panel data, with 5 companies in the infrastructure sector, the study analyse stock return and trading volume as the indicator of stock market performance. The results show that social media does not significantly impact the stock return of infrastructure sector, but give minimum impact to the trading volume in the industry. Although the current impact is still small, there is potential where social media amplifies its effect on the stock market performance years ahead. Therefore, stakeholders can make informed decision regarding the event.

Keywords:

Social Media, Stock Return, Trading Volume, Presidential Election.

Analysis the Effect of Green Bonds Issuance on the Company Profitability Ratio and Activity Ratio in Indonesia

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Abstract:

The green bonds are widely utilized in the green finance practice to address the climate change issue by providing the financing or refinancing for environmental projects. Indonesian governments are encouraged to issuance green bonds by corporation as a response to the disruptive impact of climate change with the first green bonds issued in 2018. An Indonesian-listed company that issued green bonds in 2018 is used as a sample in this research to examine the impact on the financial performance. The financial performance of company that issued the green bonds are assess through the profitability and activity ratio because it reflects the profitability and efficiency level of the company. The difference-in-difference approach are used to obtain the findings. The results indicate that issuance of green bonds by Indonesian company has significantly positive on the profitability ratios and activity ratios. Therefore, Indonesian companies are able to contribute to combat the climate change by issuing the green bonds, while the company potentially to have a beneficial impact on their internal company in terms of increased profitability and activity ratio.

Keywords:

Green Bonds, Profitability Ratio, Activity Ratio, Difference-in-Difference.

An Economic Analysis of Climate Change Mitigation – Bamboo Forests

Dr. Jean-Marc Gandonou

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Abstract:

With the rapid disappearance forests resulting from the negative impact of climate change, there is an urgent need to find resilient and sustainable substitutes to meet the need of the local populations across the African continent.

The bamboo plant is native to five continents but is mostly cultivated and utilized on the Asian continent. It is a fast-growth, versatile plant that has been proven to be a profitable agricultural venture in Asia. Touted as the industry of the future, its popularity in Africa remains timid. There is an urgent need to demonstrate the viability of vibrant and profitable value bamboo chain for diverse localities across the continent. objective of this study is to estimate the profitability and viability of an integrated bamboo forest in local agricultural practices in Benin. It models a typical mid-size producer cultivating commercial crops to evaluate the benefits of bamboo farming as a climate risk mitigation tool.

Keywords:

Climate change, value chain, profitability, bamboo, agricultural risk mitigation, commercial crop, Africa.

Topical Film Forming *Kalanchoe pinnata* Spray for Anti-Inflammatory Activity

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Abstract:

The present study aimed to formulate the topical film forming wound healing spray from ethanolic extract of *Kalanchoe pinnata* obtained from the leaves. There exist a large number of studies which supports the wound healing activity of traditional herbal medicines. This work involves the identification of chemical constituent of the plant promoting wound healing. Plants have several health benefits because of the abundance of phytochemicals found in plants, including glycosides, alkaloids, flavonoids, peptides, and tannins they possess biological qualities including anticancer, antifungal, antioxidant, anti-inflammatory, antibacterial, and antihypertensive properties. This will also facilitate the development of new therapeutic methods and drug discovery.

Keywords:

Film forming spray, *Kalanchoe pinnata*, antibacterial, anti-inflammatory.

Synthesis Characterization and Biological Evaluation of Novel N- Containing Heterocyclic Compounds from Chalcones Derivatives

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Abstract:

Chalcones and their analogues have become a popular destination in the recent years. Researchers have discovered new chalcones which produce a series of medicinal and biological effects. This exist chalcone is shown essential antimicrobial, Anthelmintic, anti-mycobacterial, antimalarial, antiviral, anti-inflammatory, antioxidant, antileishmanial, anti-tumor, and anti-cancer properties. This research highlights the synthesis and pharmacological properties of N-Containing Heterocyclic compounds from chalcone derivatives. A large number of heterocycles compounds are essential to life. Developing a new drug from a specific drug is always attracting a researcher working in the field of medicinal chemistry. In most cases, it reduces adverse effects or toxicity associated with the parent drug.

Keywords:

Chalcone, synthesis, pharmacological properties, pyrazole.

Formulation Development and Evaluations of Multi Particulate HOT Melt Pallet Technology

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Abstract:

Background: Oral drug delivery systems are very well accepted by patients due to self-medication and their stability over other dosage forms. Tablets or capsules being the conventional dosage forms can be modified for providing the desired therapeutic effect to the patients. The network of the matrix in the tablet or coated matrix pellets into capsules allows the drug release to be slowed down considerably. The formulation of sustained release product is always a challenging task and when it is employed from highly water-soluble drugs; its complexity is greatly increased. Nowadays, multi-unit particulate systems (MUPS) are gaining interest in delivering water-soluble drugs at a controlled rate.

Objective: The prime objective of the study was to formulate sustained-release Glibenclamide matrix tablets by compressing pellets prepared using wax material and a pore-forming agent. Another objective was to formulate sustained release Milnacipran HCl capsule using coated pellets prepared by extrusion and pelletization.

Methodology: To prepare Glibenclamide matrix tablet, pellets were prepared using hot melt extrusion method and optimized by 3^2 factorial design. The independent variables were the amount of wax material (cetostearyl alcohol) (X1) and pore-forming agent (HPMC K 100M) (X2), while the dependent variables selected were entrapment efficiency, aspect ratio, Q2, Q12 and Q20. Prepared optimized pellets were mixed with suitable excipients and compressed into matrix tablet and characterized for QC parameters and drug release kinetics. In another study, coated pellets were designed for the water-soluble Milnacipran HCl (MIL). The drug was quantified by UV spectrophotometer at 223 λ_{max} . The core matrix pellets were prepared by extrusion-spheronization techniques using MCC and HPMC K100M. The core pellets were further coated by Eudragit®NE and PEG 6000-based coating solution using a pan coater. The coating was optimized by Box Behenken Design keeping concentration of matrix polymer (HPMCK100M) (X1), concentration of coating solution (Eudragit®NE) (X2) and % weight gain (X3) as independent variables while, Q2 (Y1), Q12 (Y2), Q20 (Y3) and Aspect ratio (Y4) were taken as dependent variables. The developed pellets were characterized for various physicochemical parameters. The drug release from pellets formulation was fitted for various drug release kinetics models. Optimized formulation was filled in HGC and evaluated for weight variation, drug content and in vitro release, etc. Both optimized formulation was subjected to an accelerated stability study as per ICH guidelines.

Results: For Glibenclamide, pellets showed retarded drug release as the concentration of the polymer was increased. The results of release kinetics studies suggested that optimized batch F2 of tablet formulation followed Korsmeyer-Peppas release model while all the other quality parameters were in accordance with pharmacopeial limits for matrix tablets.

Form MIL pellets, selected independent variables had a strong impact on the response which was confirmed by contour and response surface plots. SEM analysis indicated proximal spherical shape of

pellets. Drug release from optimized pellets was found to fit first order. Optimized pellets (Batch 12) were filled in HGC and exhibited acceptable capsule QC parameters (within pharmacopeial limits). Accelerated stability study of final formulation indicated its stable characteristics upto 3 months. ANOVA analysis indicated that the studied variables affected the response variables significantly.

Conclusion: It was concluded that the Glibenclamide sustained release matrix tablet containing optimized pellets were successfully formulated using DOE principals. Developed Eudragit®NE coated pellets can be promising technology for delivering highly water-soluble drugs like MIL at a controlled rate.

Keywords:

Multi-unit particulate systems (MUPS), Pellets, Glibenclamide, Milnacipran HCl, Hot melt extrusion.

Sustainable Agricultural Technologies and Sustainable Livelihoods for Dairy Farmers in Githunguri Sub County, Kiambu County Kenya

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Ibrahim Tirimba Ondabu

KCA University, Nairobi, Kenya

Abstract:

The study sought to establish the effect of sustainable agricultural technologies on sustainable livelihoods of dairy farmers operating in Kenya. A descriptive research design was adopted in the study. The target population comprised of 22,644 farmers distributed in the 5 Wards of Githunguri Sub County in Kiambu County, Kenya. Yamane Sampling formula was utilized in deriving a sample of 398 respondents where stratified random sampling technique was adopted to randomly select the sample in the 5 wards. Quantitative data was utilized in the study and was collected through a structured questionnaire. Both descriptive and inferential statistics were employed in analyzing the gathered data. The analysis results established that sustainable agricultural technologies bear a positive and significant effect on sustainable livelihoods of dairy farmers operating in Githunguri Sub County, Kiambu County.

Keywords:

Sustainable Agricultural Technologies, Sustainable Livelihoods, Dairy Farmers.

ESG Risks and Corporate Survival

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Abstract:

This research is the first attempt to examine the impact of corporate sustainability risks factors on its financial stability. By using S&P500 stocks data from 2019 to 2021 and calculating Altman's Z-score, we examined the influence of ESG (Environmental, Social, and Corporate Governance) risks score on the company survival chances. We documented diminishing total ESG scores of S&P500 stocks in recent years pointing out that companies pay attention to sustainability issues and invest resources to reduce them. We documented that Altman's Z-score is negatively influenced by E and S and not by G. These findings are very important since they prove for the first time that high environmental and social risks may reduce corporates' financial stability and rise their default risks incurring default costs. Moreover, high sensitivity of Altman's Z-score changes to S changes was found especially for relatively smaller firms. The result of this study emphasizes the importance of sustainability risk and especially social risk to a firm's survival chances and therefore mitigating those risks can dramatically improve corporates' financial stability.

Keywords:

Sustainability, Environmental, Social, Corporate governance, Corporate survival, Altman Z.

Do Risk Preferences Drive Momentum in Cryptocurrencies?

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Abstract:

The cryptocurrency market's continuous operation, with 24/7 trading, results in constant price fluctuations and information flow, posing challenges for investors to keep up with market changes and causing delays in their reactions to news, a phenomenon known as investor's limited attention. Amidst factors like leveraged positions and the network effect, momentum strategies appear promising. However, existing research yields mixed outcomes. To refine our understanding, we analyze momentum effects using a dataset free from survivorship bias, while also considering cryptocurrency variations in market capitalization and trading volume. This differentiation is crucial due to retail investors' preference for smaller capitalized cryptocurrencies, driven by their higher risk tolerance and limited attention, in contrast to institutional investors who focus on the top seven cryptocurrencies. Consequently, we anticipate uncovering more successful momentum strategies among smaller capitalized cryptocurrencies, shedding light on this complex interplay between market dynamics, investor behavior, and trading strategies.

Keywords:

Crypto-Assets, Momentum, Investing, Trading Strategy.

JEL Classification: G10, G11, G15, G29, G40.

Acknowledgments:

We are grateful to the conference organizers Jonathan Batten, Gady Jacoby, and Zhenyu Wu of the Eighth (2023) Cross Country Perspectives in Finance (CCPF) Conference as well as our discussant Dimitris Margaritis as well as participants for many helpful comments and suggestions. Juliane Proelss and Denis Schweizer gratefully acknowledge the financial support provided through the Jacques Ménard – BMO Centre for Capital Markets, and the Desjardins Centre for Innovation and Financing at Concordia University.

An Empirical Examination of Multiple Dimensions of the Gender Gap

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Abstract:

In today's societies and digital age, the gender gap still exists worldwide, since no country has fully closed it yet. The gender gap is multi-dimensional, illustrating gender inequality in various aspects, such as education, employment, pay and leadership. The presentation aims to examine the gender gap from different perspectives and also using empirical data.

The focus is on three main dimensions of the gender gap. First, the gender gap in education is presented, focusing on areas of under- and over-representation of women and the gender differences in conventional and online learning.

Second, the gender pay gap is discussed. Despite the legislations on equal pay, women are still paid less than men, worldwide, even after adjusting for education and qualifications. Related indexes and statistics from various regions are presented.

Third, special emphasis is given to the gender gap in leadership. Although the number of women in managerial positions has increased significantly over the last few years, the rate of progress is slow and uneven. Evidence from international indexes as well as from empirical data obtained from research is provided. The results indicate the difficulty of women to break the glass ceiling, the barriers that they face in attaining managerial positions and the challenges that they confront if they are in higher ranks in their organizations.

The Suicidal Thyroid: A Case of Grave Importance

Jennifer Lehman

Whakatane Hospital New Zealand

Abstract:

Thyrotoxicosis is a life threatening diagnosis that requires both subjective and objective expertise that, at times, can be vague and mimic other etiologies. It can have huge ramifications on a person's quality of life, morbidity and mortality. The case below is of a young female who presented with a multicausal modality highlighting this very difficulty and shows how in even the worst of diseases there can sometimes still be a happy ending.

Multilevel Governance and International Migration in Brazil: An Analysis of the Municipalities of Paraná

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Abstract:

The article addresses the issue of multi-level governance applied to international migration in Brazil, focusing on the five municipalities in the state of Paraná that registered the highest number of international migrants after the enactment of the 2017 Migration Law. To this end, the general objective is to examine the dynamics of multilevel governance in relation to international migrants, considering the coordination between governmental and nongovernmental spheres in the reception of these populations, with an emphasis on local governments. In this sense, multilevel governance is proposed as an analytical model for understanding and addressing the complexity of international migration, emphasizing the interconnection between different levels of government and civil society actors. The study's methodology includes qualitative research based on the analysis of primary and secondary sources, such as migration policy documents, migration data, and documentary research and direct observation in selected municipalities in Paraná. In the state of Paraná, the municipalities have different intensities of multi-level governance, with Maringá standing out as having municipal policies and greater social participation. However, in general, the participation of local governments in migration governance is limited, with an uneven network of connections and a lack of institutional structure.

Keywords:

Multilevel governance; International migration; Migration policies.

More Evidence about DETOUR System and How It Works

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Abstract:

There's more evidence that the DETOUR™ percutaneous transfemoral arterial bypass (PTAB) system — which received FDA approval in June 2023 — is a viable alternative to open surgical bypass for long-segment, complex superficial femoral artery (SFA) disease.

Detour system is indicated for use for percutaneous revascularization in patients with symptomatic femoropopliteal lesion. PTAB with the Detour system offers a novel approach to treating complex PAD, enabling physicians to bypass lesions in the superficial femoral artery by using its Torus stents routed through the femoral vein to restore blood flow to the leg.

The DETOUR System is indicated for use for percutaneous revascularization in patients with symptomatic femoropopliteal lesions from 200mm to 460mm in length with chronic total occlusions (100mm to 425mm) or diffuse stenosis >70% who may be considered suboptimal candidates for surgical or alternative endovascular treatment.

This approach is particularly effective for patients with long lesions, patients who have already undergone failed endovascular procedures, or patients who may be suboptimal candidates for open surgical bypass.

In the setting of prior SFA stenting with thrombosis or heavy calcification, this system provides a good alternative.”

Bypassing lesions with the DETOUR System may allow physicians to treat challenging lesions in the femoral artery through small punctures, thereby avoiding the risks of more invasive procedures such as surgical bypass and possibly help in reducing the risk of complications that may require additional treatment.

The Value and Advancements of Echocardiography in Monitoring Fetal Ventricular Septal Defect Pre- and Post-Minimally Invasive Surgical Treatment

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Abstract:

Objective: To explore the value of echocardiography in patients undergoing minimally invasive surgery for fetal ventricular septal defect (VSD), including preoperative diagnosis and assessment, as well as postoperative monitoring and evaluation of outcomes.

Methods and Materials: Select 100 VSD patients meeting the research criteria for a study and perform systematic echocardiographic examinations. Use echocardiography to diagnose VSD, including accurately measuring its location, size, morphological characteristics, and hemodynamic impact. Treat VSD patients with minimally invasive surgery and conduct postoperative echocardiographic monitoring. Perform echocardiographic assessments on postoperative patients to evaluate VSD repair, surgical outcomes, and postoperative changes, including closure status, hemodynamic conditions, and potential complications. Collect and analyze echocardiographic data to compare differences pre- and post-surgery, assessing treatment efficacy and prognosis.

Results: Of the 100 VSD patients, 84 were in the medial and perimembranous parts, 12 were in the intra-ridge type, and 4 were in the subdry type. The success rate of the perimembranous and intraridge type was higher (92.12% and 95.23%, respectively), while the success rate of the subdry type was slightly lower (68.72%), which was related to the absence of stump of the VSD distal valve. The average size of VSD measured by echocardiography before VSD was 0.36 ± 0.15 cm, the average size of VSD measured by echocardiography during VSD was 0.39 ± 0.13 cm, and the average size of occluder was 6.12 ± 1.87 mm. There was a better correlation between the size of VSD measured during surgery and the size of occluder selected. The left atrial and left indoor diameters were significantly reduced after 1 week, 1 month and 6 months ($P < 0.05$). During follow-up, 5 patients developed pericardial effusion, 3 patients showed incomplete right bundle branch block on electrocardiogram, 3 patients had a small residual shunt, and no other complications occurred.

Conclusion: Echocardiography demonstrates significant clinical utility in the treatment of VSD. Its accurate preoperative diagnostic ability guides surgical decision-making and predicts surgical outcomes. Postoperative echocardiographic monitoring is crucial for patient recovery, enabling timely identification and management of potential complications. However, further large-scale studies are required to validate the clinical value of echocardiography in evaluating treatment outcomes and predicting long-term prognosis. While echocardiography serves as a pivotal tool in VSD treatment, further research is warranted to delve into its precision and reliability during the treatment process.

Figure 1 The common locations of ASDs and VSDs. The largest blue area is the oval fossa, where true ASDs occur. The other, smaller blue areas are locations of other possible interatrial communications. The yellow area is the location of perimembranous VSDs. The orange area shows the location of subpulmonic VSDs. The green areas are possible locations for muscular VSDs in the inlet, apical, and outlet portions of the septum.

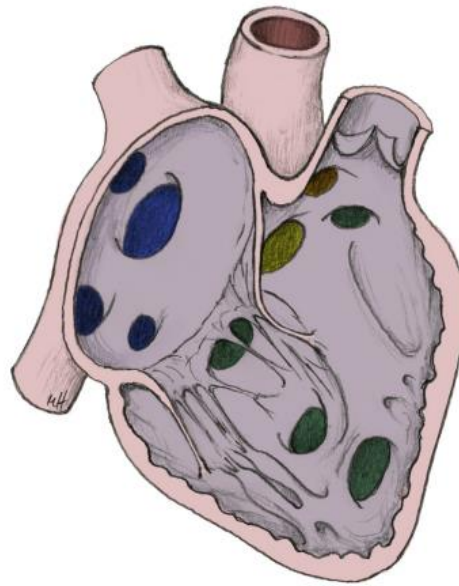


Figure 1

Table 1 Incidence of patients with muscular ventricular septal defect using color Doppler screening

Country	Number of newborn infants	Gestational age	Patients with VSD, <i>n</i> (%)	Patients with m-VSD, <i>n</i> (%)	m-VSD with heart murmur, <i>n</i> (%)	Closed at 12 months, %
Japan	1179	Term	–	15 (1.3)	9 (60)	89
Japan	1028	Term	–	21 (2.0)	12 (57)	76
Japan	2625	Term	45 (1.8)	30 (1.1)	22 (73)	96
Japan	502	Preterm 21.1%	10 (2.0)	8 (1.6)	–	86
Israel	1053	Term	–	56 (5.3)	6 (11)	89
Israel	159	Preterm	–	9 (5.7)	2 (22)	88
Israel	7696	Preterm 11.3%	103 (1.3)	97 (1.3)	36 (37)	80
Northern Ireland	3971	Not described	173 (4.4)	163 (4.1)	–	–
Taiwan	3472	Term	74 (2.1)	48 (1.4)	22 (46)	83
Turkey	125	Preterm	7 (5.6)	46 (4.3)	14 (27)	88
	950	Term	44 (4.6)			
Taiwan	2891	Term	–	66 (2.3)	–	82
China	5192	Preterm 4.2%	90 (1.7)	55 (1.1)	–	–

Incidence of Malaria in Pregnancy as a Medical and Health Issue: Knowledge of risks and its contributing variables in Owerri, Imo State

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Abstract:

Background: The worldwide pandemic of malaria in pregnancy is a serious threat to global health. It is recognized as a severe, debilitating, and chronic condition with numerous complications. If left untreated, this ultimately results in an early death of mother and unborn baby. It can also lead to multi-system morbidities, significantly lower life expectancy, and higher healthcare costs. Regardless of awareness, Plasmodium falciparum bites are the cause of malaria during pregnancy.

Aim: This study examined the knowledge impact of pregnancy-related malaria dangers with a focus on Imo State in Southeast Nigeria.

Materials and method: In this investigation, both descriptive and analytical study designs were used. Target, stratified, and random sampling were all used as data collection methods. The sample size included 2570 individuals from different parts of the state. Data collection for the study was done using questionnaires. With the generated data, tables and charts were made. In terms of statistics, Chi-square analysis was used to determine the difference between patient and individual knowledge of risk factors.

Results: Out of 2200 persons that responded to the question on whether they know about risks of Malaria in pregnancy, 65% of them representing 1336 said "Yes", while 35% representing 864 said "No"; a chi-square contingency analysis on the respondents' knowledge of risks of malaria in pregnancy yielded a value of 72.192 ($p < 0.05$). On whether they know if they are living with risks of malaria in pregnancy, 792 out of 2200 respondents which represent (13.81%) of the responses said "Yes", while 1408 which accounted for (86.19%) of the responses said "No". This puts the prevalence rate at 13.81%.

Conclusion: Pregnant women in Owerri, Imo state are not well informed about the risk of plasmodium falciparum in pregnancy. Higher education is a key element that promotes adequate knowledge.

Keywords:

Impacts, Owerri, Imo State, Malaria in pregnancy, Risks, knowledge.

Globalized Multidisciplinary Approach to Treat International Patients with Obesity and Diabetes

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Abstract:

More and more people travel for medical tourism, and South Korea has been one of the most popular destinations for the past two decades. Most of these patients have underlying chronic medical conditions such as obesity or diabetes. Unfortunately, they had no opportunities to encounter the multidisciplinary treatment program, although it is an essential way to manage such conditions. However, providing international patients with nutritional counseling and exercise education is difficult because cultural differences should be considered for each country. After piling up education and experience for almost two decades, our designated team members set up tailored nutritional counseling and exercise education per the physician's request for each cultural group. The differences before and after these interventions were analyzed using SPSS. We included all patients who visited and performed nutritional counseling or exercise education for 18 months in a tertiary teaching hospital in Seoul, Korea. We had 79 cases of nutritional counseling, 45 cases of exercise education, and 22 cases of both interventions. Before and after these interventions (Total=102), body weight, BMI, and fasting sugar improved significantly. Systolic/Diastolic blood pressure and LDL cholesterol were also significantly improved after the intervention. This change was consistently observed when it was analyzed by each nutritional (N=79) and exercise group (N=45).

Keywords:

Medical Tourism, Multidisciplinary treatment, Nutritional counseling, exercise education.

Digital Twins Applications in Healthcare

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Abstract:

This talk explores Satellite data analytics and Digital twins applications in health resource requirements forecasting and management. Digital twins using predictive and prescriptive analytics can help understand healthcare process dynamics, characterise various environmental, socio-economical, cultural, and behavioural factors and their interactions, and improve healthcare services. We can ensure optimum care delivery, quality, and service requirements by analysing available data. Digital twins can help improve healthcare outcomes and population health by analysing information on the weather, pollution, vegetation, and other geospatial features collected from satellites.

On Some Eigenvalue Properties Related to Fractional Sturm-Liouville Problems

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Abstract:

In this paper, we consider two variant types of fractional Sturm-Liouville problems (FSLP). For a regular FSLP, we represent some elementary properties of eigenvalues and eigenfunctions. We also use a fixed point theorem to give a sufficient condition on eigenvalues for the existence and uniqueness of the associated eigenfunctions. Next, we consider a non-self-adjoint two-term FSLP. Employing a recent and significant result by Dehghan and Mingarelli (2023-2024), we investigate the existence and asymptotic behaviour of the real eigenvalues for this problem.

Keywords:

Fractional Sturm-Liouville problem, real eigenvalue distribution, α Wronskian.

Mathematics Subject Classification: MSC2020: 26A33, 34A08, 33E12.

Wounds Treated by Platelet Rich Plasma Injection

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Abstract:

Introduction: The socioeconomic burden on society grows as the incidences of chronic age-related degenerative diseases increase which demand extensive wound care as well. To speed up the healing of cutaneous wounds, new wound healing treatments must be researched, trialed and developed. Since regeneration therapies are gaining popularity since they are less invasive than other treatments, more studies should be conducted.

Study Aim: To re-assess the efficacy of PRP in the management of non-healing wounds due to traumatic factors.

Research Target:

1. To study the reason and risk factors affecting the non-healing wounds
2. To study the treatment results after 7, 14, 21, 30 days treating ulcers by platelet rich plasma injection
3. To compare the results of platelet rich plasma treatment and conventional treatment

Methodology: Case control study will be enrolled 40 patients who clinically presented with chronic traumatic ulcers in Darkhan General Hospital, Mongolia. Twenty patients will be allocated randomly for the treatment with autologous platelet-rich plasma (PRP). Injection or application of platelet rich plasma and membrane, in edges and in the granular floor of the ulcer for 4 sessions. Another 20 patients will be managed by conventional treatment by compression and dressing for the same period. Objective assessment will be achieved by the percentage of reduction of the size of the ulcer area, rate of healing will be reported.

Expected Results: Investigation of advantages and disadvantages in platelet rich plasma compared by conventional treatment, finding evidence to confirm platelet rich plasma is an effective method.

Keywords:

PRP, non-healing wound, platelet derived growth factor (PDGF), wound healing process, Darkhan General hospital.

General Situation in Industrial Solid Waste Management in Two Governorates of Jenin and Tulkarm in West Bank in Palestine

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Abstract:

The study aims to shed light on the industrial solid waste management process in the Jenin and Tulkarm governorates in the West Bank of Palestine, and the stages that follow from collection, storage, and final disposal. Online interviews were conducted with people working in different institutions, and some details were covered, such as the number of employees, location, reliance on technology, source of raw materials, and other information. The percentage of industrial waste storage is about 85.7%, which is completely disposed of daily approximately 39.4%. Most industries arise randomly without good planning. 43% of them are located in homes, while 57% of them are located in industrial areas. The highest percentage of industrial waste collected daily is in food, beverage, and paper manufacturing. The final disposal of industrial waste is considered one of the most problematic processes because the waste is disposed of inefficiently. Industrial waste management in the study area is inefficient and poses a health risk to the public and the environment. Therefore, some important steps must be taken to improve the current situation. The Palestinian Federation of Industries and local authorities must cooperate in coordination with relevant institutions to find appropriate solutions for managing industrial solid waste.

Compensated Dating: Seeing through the Lens of Young Females Providers in Hong Kong

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Abstract:

Compensated Dating (CD), a practice that generally refers to a school girl or a young girl in her 20s dating an adult man for financial gain, is an underground, yet burgeoning phenomenon in east Asia. Existing literature and the general public have largely considered CD as a moral panic and a social problem that needs to be tackled, especially when it involves adolescents or even underage girls selling their intimacies and sexualities. Based on 19 semi-structured, in-depth interviews, this study divulges the subjective experiences of young women who practiced CD in Hong Kong, focusing on their reasons of engaging in CD and the authenticity of their emotions when practising CD. I found that participants engaged in CD for three major reasons: the need for money, the desire for sexual exploration and pleasure, and the desire for self-affirmation. While some participants reported that they enjoyed the sexual intimacies with their clients, I argue that not all of their emotions are genuine. I claim that some of the participants have developed “authentic-fake delusion of enjoyment” which may help them to experience CD more positively.

Study of Synergies between Behavioral and Organizational Factors Impacting Operational Excellence in the Context of Industry 5.0

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Abstract:

The technological acceleration linked to the transition to Industry 5.0 imposes increasing challenges on companies particularly in sustainable operational excellence and competitiveness. The Human centric approach of industry 5.0 raises the issue of contextualizing the key behavioral factors that impact operational excellence in smart manufacturing environments.

This main objective of this study is to understand the interactions between various behavioral and organizational factors to determine their impact on the operational excellence of companies integrating emerging Industry 5.0 technologies. Using a quantitative approach, this study examined how operational strategy (OS), organizational agility (OA), leadership (L), organizational culture (OC), human resource management practices (HRMP), knowledge sharing (KC), communication (C), employee engagement (EE), and middle management engagement (MME) interact and contribute to operational excellence.

Data was collected from 100 companies from various industrial sectors. Correlation analysis was used to identify significant links between these variables. Results highlight the importance of an integrated approach, where the synergy between these factors can be optimized to improve overall performance. This study offers a holistic model where operational strategy, organizational agility, innovation, leadership, organizational culture, HR practices, communication, and engagement at different levels of the organization interact in a synergistic way.

Effectiveness of Virtual Reality in Local Anesthesia Practice among a Dental Student's Aspect

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Abstract:

This study aimed to develop VR teaching materials to enhance visualization skills in preclinical dental education, specifically for the inferior alveolar nerve block technique. Using the Oculus Quest II, a VR simulation program was created and tested on 3rd and 4th-year dental students at Suranaree University of Technology. Participants first received 30 minutes of instruction followed by a pre-test, then engaged with the VR program, and completed a post-test. A questionnaire measured program satisfaction, which was validated by experts and had a reliability score of 0.69. The average satisfaction score was 4.3, and post-test scores significantly improved over pre-test scores ($p < 0.05$). These results suggest that the VR program enhances learning experiences and procedural skills, indicating its potential benefit for dental education.

Keywords:

Local anesthesia, Simulation, Virtual reality, Dental student.

Influence of Transcription-Coupled Repair on the Immune Microenvironment and Its Mechanism in Sensitizing Chemotherapy in NSCLC Treatment

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Abstract:

Objective: This review delves into the intricate interplay between transcription-coupled DNA repair (TCR) and the immune microenvironment in the context of non-small cell lung cancer (NSCLC) treatment. It aims to elucidate the impact of TCR on immune responses and explore its role in augmenting chemotherapy sensitivity, providing a theoretical foundation for advancing NSCLC therapeutic strategies.

Methods and Materials: TCR, a complex cellular process encompassing DNA damage repair and gene expression regulation, is central to our investigation. Our methodology involves a systematic analysis of patient samples and relevant literature, allowing for a comprehensive understanding of the mechanisms underlying the interaction between TCR and tumor immunity.

Results:

Relationship between TCR and the Immune Microenvironment:

Aberrant TCR activity may lead to excessive repair of DNA damage, suppressing the normal expression of tumor antigens. TCR's impact on the infiltration and activation of immune cells may impede the immune system's ability to recognize and attack tumors effectively.

Impact of TCR on Chemotherapy Sensitivity:

TCR abnormalities can contribute to reduced efficacy of chemotherapy drugs, exacerbating issues of chemoresistance. Modulating TCR activity has the potential to enhance sensitivity to chemotherapy drugs, thereby strengthening treatment outcomes.

Conclusion: In NSCLC treatment, the abnormal activity of TCR directly influences the immune microenvironment, hindering the effective immune response against tumors. Furthermore, excessive repair activity contributes to tumor resistance to chemotherapy drugs. Regulating TCR activity emerges as a pivotal factor in improving treatment outcomes. Future research directions may include exploring molecular targeted therapies to inhibit aberrant repair and combining immunotherapy to optimize treatment strategies. This approach holds promise for providing more personalized and effective treatment options for NSCLC patients, ushering in innovative advancements in lung cancer therapeutics.

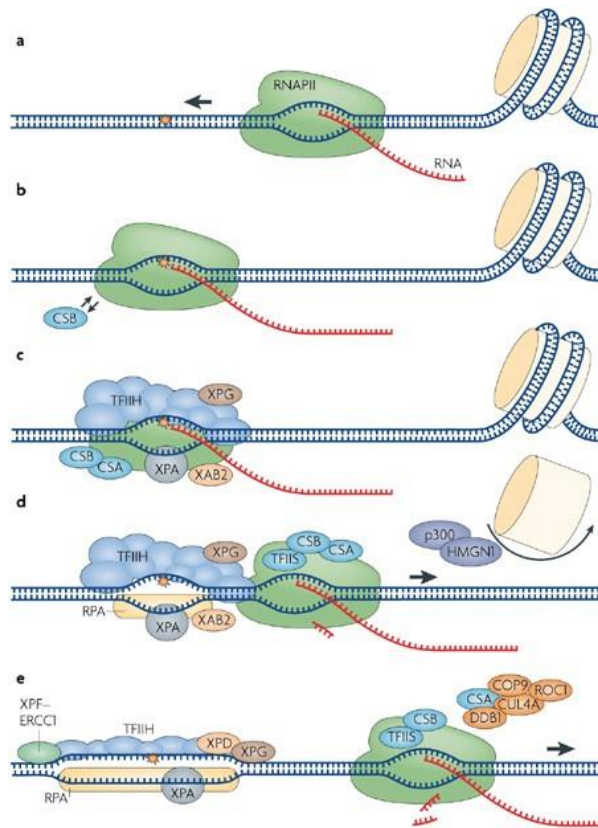


Figure1. Transcription-coupled DNA repair.

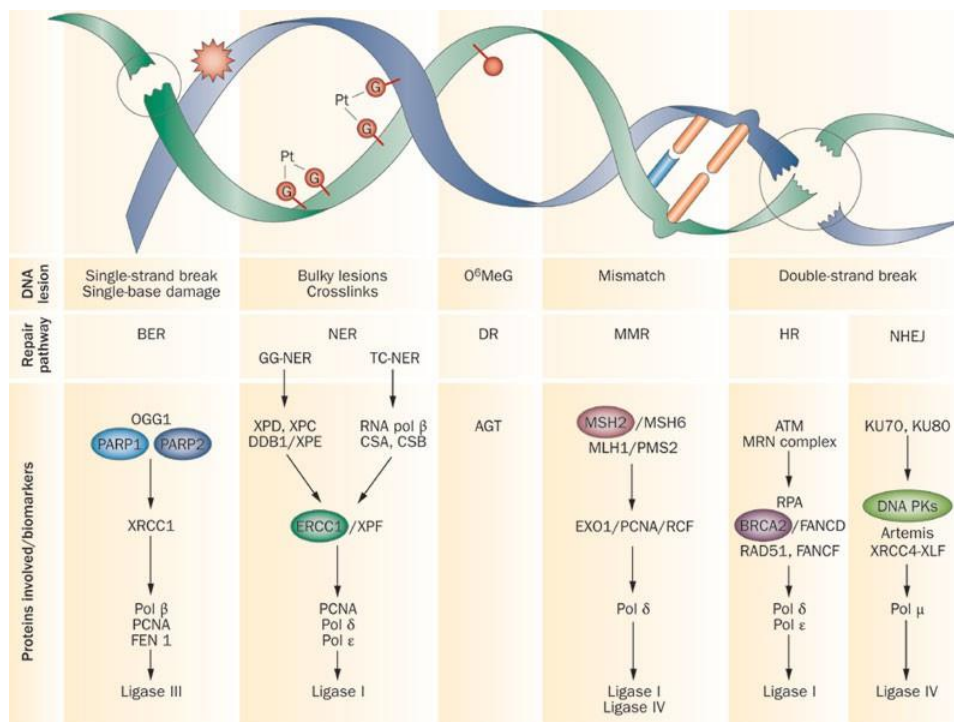


Figure2. The potential of exploiting DNA-repair defects for optimizing lung cancer treatment.

An Empirical Study to Investigate the Relationship of Remote Work and the Employee Job Engagement, Skill Enhancement, Productivity and Happiness Levels in UAE Based Private and Public Sector Employees

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Abstract:

This research paper aims at exploring the impact of the of Remote Work on Employee Engagement, skill enhancement, Productivity and happiness in UAE based private and public sector employees. Remote work has been seen as a new way of working in the modern business after the Covid 19 Pandemic. This work arrangement is gaining popularity in many industries around the world specially middle east. This research will investigate the assumption that remote work has a wider impact on the employee's engagement, skills, productivity and happiness level. The research concluded that all the 4 hypothesis were supported by the findings which indicate a positive relationship between the remote work arrangement and the Employee Engagement, skill enhancement, Productivity and happiness of the employees. The researcher has used quantitate as well as qualitative and quantitative measurements for testing the hypothesis including the surveys, interviews and Descriptive statistics including ANOVA, linear regression, and other techniques to obtain the results.

Keywords:

Virtual Work, Remote Work, Employee Engagement, Skill enhancement, Productivity and Happiness.

Development of a New Platform for Standard Tests on 3-Phase PV Inverter System in Egypt

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Abstract:

Renewable energy development and applications are booming in Egypt now in many different tracks including PV systems, Wind energy, Green hydrogen, and Biomass. This paper matches the national strategy very well in the fields of renewable energy. It aims to develop a new platform for the first time in the country to perform the necessary standard tests of the well known IEC and IEE international accredit standards on 3phase PV inverter system adopted in the residential sector. The inverter system under tests is also developed by HU team including designing, modeling, simulation, analysis and locally manufacturing. The system includes HW, embedded knowhow algorithms, SW controllers, interfacing, and protection to provide eventually the target inverter for the experimental work. The established platform technology will provides about 26 interactive IEEE and IEC standard tests physically and virtually on the 3phase PV inverter under tests used on or off grid connection including test reports of results/analysis determining the failure or passing the conditions. This proposed testing platform is intended to reduce the risk on solar PV inverter systems and optimize the performance over the lifetime with emphasis on demonstrating long-term quality and reliability of PV and inverters components manufactured locally in the country.

Keywords:

PV inverter, IEEE Standards, Platform technology, Modeling / Simulation.

Acknowledgement:

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Cultural Adjustment on Dignity Modelling for Indonesian Elderly Population

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Abstract:

Background: Dignity provides a deep sense of peace, and the percentage of elderly in Indonesia has increased by at least 4 percent over more than a decade (2010-2022). The elderly with life-limiting conditions and their families face complex challenges that threaten their psychological, existential, and well-being. Dignity modelling aims to reduce suffering, improve quality of life, and strengthen a sense of meaning, and dignity.

Objective: To determine the cultural aspect of dignity modelling for Indonesian elderly population.

Method: This literature review uses PubMed for article search with several keywords resulted in a study of a publicized article and an analysis is made deductively.

Result: Indonesian have distinct view on construct of participation, identity, and relationship. Children are obligated to care for their parents: males must provide financial support, while females handle domestic practical care for in-laws. The elderly exercise higher authority towards their children through a locale contractual belief of reciprocal law called 'karma'. As they age, dependency shifts to their children. This creates three key areas for adjustment in dignity modelling: gender roles, power distribution, and determination.

Conclusion: There are three main point need adjustment for dignity modelling for elderly population in Indonesia.

Keywords:

Indonesian, elderly, dignity, culture, ageing.

Advancements in Wastewater Treatment and Management Systems: Engineering Solutions for a Sustainable Future

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Abstract:

Wastewater treatment and management play a crucial role in preserving environmental quality and public health. In recent years, significant advancements in engineering solutions have revolutionized the way we approach wastewater treatment, making it more efficient, cost-effective, and environmentally friendly. This article explores the latest innovations and technologies in wastewater treatment systems, highlighting their potential to create a sustainable future for our planet.

Introduction: As global populations continue to grow, the demand for clean water is increasing at an unprecedented rate. Wastewater, generated from various sources such as households, industries, and agriculture, poses a significant challenge to environmental sustainability. Traditional wastewater treatment methods are often energy-intensive and can have negative impacts on ecosystems. In response to these challenges, engineers and researchers are developing cutting-edge solutions to improve wastewater treatment and management systems.

Advancements in Biological Treatment: One of the most significant advancements in wastewater treatment is the development of biological treatment processes. Biological treatment harnesses the power of microorganisms to break down organic pollutants in wastewater. Technologies such as activated sludge systems, sequencing batch reactors, and membrane bioreactors have significantly improved the efficiency and effectiveness of biological treatment processes. These systems not only remove pollutants from wastewater but also produce valuable byproducts such as biogas and fertilizers.

Innovations in Membrane Technology: Membrane technology has also played a key role in advancing wastewater treatment systems. Membrane filtration processes, including reverse osmosis and ultrafiltration, have enabled the removal of contaminants at the molecular level, producing high-quality treated water. Membrane bioreactors combine biological treatment with membrane filtration, offering a compact and efficient solution for wastewater treatment plants. These innovations have improved the overall quality of treated wastewater and reduced the environmental impact of discharge.

Integration of Smart Technologies: The integration of smart technologies, such as automation, sensors, and data analytics, is transforming wastewater treatment and management systems. Real-time monitoring and control systems optimize treatment processes, reduce energy consumption, and minimize operational costs. Smart sensors can detect changes in water quality and flow rates, enabling plant operators to respond quickly to fluctuations and ensure consistent treatment performance. Data analytics help optimize plant operations, predict maintenance needs, and enhance overall system efficiency.

Conclusion: Advancements in wastewater treatment and management systems are essential for achieving a sustainable future. By embracing innovative engineering solutions, we can improve the efficiency, effectiveness, and environmental sustainability of wastewater treatment processes. Collaboration between researchers, engineers, policymakers, and industry stakeholders is crucial to driving further advancements in this field. With continued investment in research and development, we can create a future where clean water is accessible to all while protecting our environment for generations to come.

Strategic Competition Model on Gas Market in a Context of Russia-Ukraine Conflict

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Abstract:

This paper explores the strategic competition in the gas market amidst the Russia-Ukraine conflict using Cournot models with production constraints and game theory. It delves into the geopolitical and economic repercussions of the conflict on Europe's energy security, detailing strategies of Russia, Europe, and other countries regarding gas imports and sanctions. Through numerical simulations and analysis, the study examines market dynamics, production capacities, and strategic behaviors. This research contributes to understanding the complex interplay between economic models and geopolitical strategies in the energy sector, aiming to offer insights into potential resolutions and strategic decision-making in the context of international energy politics.

Keywords:

Gas market, Cournot model, game theory, Ukraine-Russia conflict.

