PROCEEDING OF

INTERNATIONAL CONFERENCE 2024

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Editorial

We are delighted to extend a warm welcome to all participants attending the International Conference 2024 on 17th - 18th December 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 October 2024, the Organizing Committee has received more than 55 manuscript papers, covering various aspects of multidisciplinary research. After review, approximately 34 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 17th - 18th December 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. Jennilrani Mithra
Director
World Academics (WA)

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What Factors Determine the Destination Sauna Facility of Sauna Trips: A Survey of Japanese Sauna Enthusiasts

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Abstract:

Sauna use has been booming in Japan for several years and continues to do so. Consequently, many new sauna facilities are being built. Many sauna enthusiasts visit saunas near their homes or workplaces, and some even frequent them on a daily basis.

Many sauna enthusiasts also travel to sauna facilities far away from home. Japan is not a large country. However, it is a long and narrow country, stretching approximately 3,000 km from east to west and north to south. Some sauna enthusiasts travel from one end of the country to another to use the saunas. This study focused on the determinants of sauna destinations on sauna trips. I will identify the factors that influence enthusiasts' decisions regarding sauna travel destinations. This point was discussed through an analysis of a questionnaire survey conducted by the author.

The results showed that sauna facilities that have cold water baths, sauna facilities that they have always wanted to visit, and sauna facilities that they had visited before would like to visit again. These are the factors that sauna facilities should emphasize to be selected to the destination of sauna tourism.

Keywords:

Sauna tourism, Cold-water bath, Consumers’ behaviour, Repeat purchases.

Reference and Anaphora in Spanish and Italian: From Adult Monolinguals to Bilingual Children

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Abstract:

Reference interpretation and production are intricate processes that require both linguistic and cognitive skills, such as managing discourse referents, adhering to language-specific rules for referring expressions, and updating discourse information. Sorace (2011) highlights that while Spanish and Italian, both null-subject languages, share similar pronominal forms, they differ in the pragmatic scope of overt pronouns. Her research also shows that Spanish/Italian bilinguals often accept certain contexts as pragmatically appropriate, which monolingual speakers reject.

Recent research on anaphora interpretation in monolinguals by Leonetti & Torregrossa (2024) found that Italian relies heavily on syntactic constraints, whereas Spanish does not. In a follow-up sentence continuation experiment on Spanish anaphora production, implicit causality and coherence relations (as per Kehler & Rohde, 2013) emerged as influential factors.

To explore how these differences manifest in bilingual interpretation and production, Spanish/Italian bilingual children (aged 8–12) were tested on their syntactic competence, narrative coherence (Leonetti 2024), and interpretation of referential expressions. Following a cloze test to measure proficiency and dominance, participants completed a narrative retelling task and a sentence continuation task. Results from the narrative task revealed no influence of dominance or language, aligning with prior findings: Italian shows stronger reliance on syntactic constraints and clearer distinctions between null and overt pronouns, whereas these distinctions are less defined in Spanish. The sentence continuation task demonstrated significant effects of implicit causality and coherence relations but no influence of dominance or language. These findings suggest that Spanish/Italian bilingual children maintain distinct linguistic systems and adjust their behavior to align with the norms of each language.

Critical Perspectives on Quality Assurance: The Role of Quality Enhancement Cells in Private HEIs in Sindh

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Abstract:

This study offers a critical perspective on the role of Quality Enhancement Cells (QECs) in quality assurance within private Higher Education Institutions (HEIs) in Sindh, Pakistan. Established to promote continuous improvement in educational standards, QECs are integral to maintaining academic quality, enhancing faculty development, and improving student outcomes. Despite their significance, there is limited research on how these cells are perceived by the students they aim to serve. This study addresses this gap by analyzing student perspectives on the effectiveness of QECs in Sindh's private HEIs.

A descriptive quantitative research design was employed, utilizing a structured survey to gather data from a sample of 300 university students from private HEIs in Karachi. Stratified random sampling was used to select participants. Five-point Likert scale questionnaire, validated with a reliability score of $\alpha = .764$, measured the perceptions of students. Data were analyzed using SPSS, incorporating descriptive and inferential statistics.

Findings reveal that while students generally acknowledge the role of QECs in safeguarding academic standards, there are significant concerns about their transparency, inclusivity, and effectiveness. Students expressed a need for greater involvement in QEC activities and decisionmaking processes to enhance their perceived impact. The study concludes that fostering a more inclusive approach in QEC operations could improve student engagement and trust in quality assurance processes. These insights are crucial for HEI administrators and policymakers seeking to enhance the effectiveness of QECs in Sindh.

Keywords:

Quality Enhancement Cells, Quality Assurance, Higher Education, Student Perception, Private Universities, Sindh.

Improvement Analysis of Local Soil Conditions in Eskisehir Province with Deepmix Applications After the February 6, 2023 Kahramanmaras Turkiye Earthquake

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Abstract:

The earthquakes that occurred in Kahramanmaras province of Turkey on February 6, 2023 and affected 10 provinces in total, caused the death and injury of dozens of people and significant damage to buildings and infrastructure systems. The approach to earthquakes in our country is subject to radical changes. In order to minimize the damages of earthquakes, inspection during project planning and building construction must be carried out properly. Earthquake damage to buildings in Turkey is largely attributed to reasons such as "wrong site selection" and "lack of soil investigation". When a soil investigation is carried out, situations arise where the soil needs to be improved and its bearing capacity. In the selection of soil improvement methods, local soil conditions and earthquake characteristics should be taken into consideration, and the behavior of the improvement methods under the influence of earthquakes should be examined. The Deep mix method discussed in the study is a soil improvement application in the field with a certain equipment. This deep soil mixing method, which is one of the soil improvement methods, is one of the soil improvement methods based on on-site blending of the soil with cement and/or other materials. In this study, the effect of the soil columns obtained as a result of the Deep mix soil improvement method, which is applied within the borders of Eskisehir province and recommended by the Municipality, on the increase in the bearing capacity of the soil will be examined. In addition, compressive strength tests will be carried out on samples taken from the columns created in the building application area and compared with the literature.

Keywords:

Earthquake, Soil improvement, Deep mix method, Bearing capacity.

Artificial Intelligence: A Transformative Domain in Computer Science

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Abstract:

Artificial intelligence (AI), a pivotal subfield of computer science, is transforming industries by augmenting and automating processes. Over recent decades, AI has driven advancements in manufacturing, education, healthcare, and business, enhancing efficiency, quality, and decision-making.

Expert systems, a notable innovation, solve complex problems across fields such as engineering, medicine, and weather forecasting. In education, AI fosters personalized learning and automation, while in business and healthcare, it improves analytics, diagnostics, and operational strategies.

This paper examines the scope and applications of AI, emphasizing its impact on education. It explores AI's fundamentals, search algorithms, and future advancements, highlighting its role as a cornerstone of modern technology.

An Assessment of the Therapeutic Knowledge of Final Year Students of the Faculty of Pharmacy, Obafemi Awolowo University Ile-Ife, Osun State of Southwestern Nigeria

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Abstract:

A solid understanding of therapeutics and its outcomes is essential for every pharmacist. Therefore, individuals interacting with patients must receive comprehensive training in pharmacy schools worldwide. This study evaluated the therapeutic knowledge of graduating pharmacy students through the “Clinical Pharmacy Clerkship and Externship” course (PCA 503).

To assess the students' therapeutic knowledge, a 250-question multiple-choice test was administered. Students were first evaluated at the beginning of the session, before starting the externship (which included visits to hospitals and accredited pharmacies) clerkship activities (such as ward rounds), seminars, classroom lectures, and rotations in five different clinical pharmacy laboratories. At the end of the session, coinciding with the conclusion of the second semester, the same test was administered again, and the results were compared.

The results indicated that of a total of a hundred students, eighty-eight had a strong grasp of the course content. Additionally, eighty-three students were satisfied with the course material and teaching methods. Before the course, 59% of students passed with a score of 50 or above, which rose to 84% after completion, showing a statistically significant improvement. In conclusion, the course was impactful and effectively enhanced the students' therapeutic knowledge.

Keywords:

Clinical Pharmacy, Clerkship, Externship. Therapeutics knowledge, Pharmacy Students.

Effectuation and Causation in Small and Medium Enterprises

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Abstract:

This article explores the application of causation and effectuation within an organizational context, with a particular focus on the middle management level. Drawing upon insights from various academic disciplines, the authors investigate how individual dimensions of effectuation (such as experimentation, affordable loss, flexibility, and pre-commitment) and causation influence middle managers' participation in decision-making. Based on the data from 131 firms and 536 associated middle managers in small and medium enterprises in China, the findings indicate that experimentation, affordable loss, and precommitment exhibit unique patterns in their interactions with collective organizational engagement climate. When collective organizational engagement becomes stronger, the impact of experimentation on middle managers' participation in decision-making switches from positive to negative. However, collective organizational engagement weakens the positive impact of affordable loss and lessens the negative impact of precommitment. This study underscores the application of effectuation and distinct attributes of each dimension of effectuation.

insecticidal Activity of an Essential Oil, Geranium, and its Effects on *Drosophila melanogaster* (Diptera)

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Abstract:

Essential oils derived from plants may be used as effective alternatives/adjuvants in pharmaceuticals, biomedical, cosmetic, food, veterinary and agriculture applications. These oils have also gained popularity and interest for prevention and treatment of various disorders. However, several reports on adverse effects are available for synthetic repellent in the literature. The commercialized essential oil of Geranium rosat was tested by fumigation on adults of Drosophila melanogaster in the laboratory to evaluate the insecticidal activity of this oil by assessing its toxicity. Different doses were tested, and the doses were determined from a dose-response curve. The determined doses were used in experiments to evaluate the effect of the commercialized essential oil of geranium on reproduction in D. melanogaster. Indeed, the results demonstrated a decrease in the number of eggs laid, with a significant percentage decrease for the high doses. These trials allowed us to assess the effectiveness of commercial geranium essential oil under real conditions using the non-target biological model D. melanogaster, aiming to provide an environmentally friendly alternative biopesticide to traditional chemical pesticides. Results suggest a potential use of Geranium as biopesticide in integrated pest management programs as an alternative to synthetic pesticides.

Keywords:

Essential oil, Geranium rosat, *D. melanogaster*, Reproduction, Toxicity.

Terms of Address in Megrelian and Laz: Linguistic Context and Sociocultural Identity

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Abstract:

Address denotes a speaker's linguistic reference to his/ her collocutor (s), it is a means of initiating contact (Broun, 1998). Terms of address are a rich and fascinating topic in linguistics, encompassing the ways in which people use language to refer to one another in social interaction and contributing to broader discussions in the humanities about the interplay between language, society, and identity. They also function as key indicators of societal structures and cultural identities, revealing layers of social hierarchies, cultural heritage, and community norms. This study examines how terms of address reflect social relations and identity construction, emphasizing their role as ethnocultural markers.

In today's globalized world, norms and values unique to specific cultures and societies are gradually fading away. These changes are reflected in language as a mirror of cultural and societal shifts. We aim to present an analysis of forms of address in Kartvelian languages, more specifically in unwritten, under-resourced Megrelian and Laz. These are endangered languages, and this issue implies the problem of not only linguistic but also cultural transmission.

The talk includes an analysis of such issues as: (1) *kinship terms of address*, intergenerational and cross-generational terms of address. In terms of F. Broun, we analyze the interrelation between ego generation, parent generation, grandparent generation, and child generation; (2) *linguistic means* related to them such as address inversion and avoidance strategies. Our analysis draws on data gathered from linguistic fieldwork.

The mentioned issues are part of the common Kartvelian identity and linguistic worldview. Therefore, this topic is not only important for understanding the mechanics of language but also offers insights into social interactions, cultural norms and identities. Hence, this topic bridges linguistics, sociology, anthropology, and even political science, offering a broad and interdisciplinary perspective.

Keywords:

Terms of Address, Kinship Terms of Address, Sociolinguistics, Megrelian, Laz.

Acknowledgement:

The present paper is part of the project Address Systems in Megrelian and Laz, being implemented by the financial support from Shota Rustaveli National Science Foundation (Grant №FR-23-5495). Any idea in this text is possessed by the authors and may not represent the opinion of the Shota Rustaveli National Science Foundation.

The Factors Affecting Behavioral Intention to Use Financial Technology Services in Jordan

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Abstract:

This study aimed to identify the factors that influence individuals' behavioral intention toward the use of Fintech services in Jordan, based on the elements The Unified Theory of Acceptance and Use of Technology (UTAUT2) and the covid-19 pandemic as independent variables, while introducing the trust variable as a mediating factor to understand and analyze the factors affecting individuals' behavioral intention and their decisions regarding the use of financial technology, In this study a descriptive and correlational approach was used to measure the relationship between variables. The primary data was collected through distributing an electronic questionnaire, relying on a random sample of 420 clients of local banks in the Jordanian community. The study hypotheses were tested using the Statistical Package for the Social Sciences (SPSS version 25).

This study showed that there is a statistically significant positive affecting between the elements of the (UTAUT2) theory and individuals' behavioral intention towards using financial technology services.

It also showed a statistically significant positive affecting between the COVID-19 pandemic and individuals' behavioral intention towards using financial technology services, It turns out that there is a statistically significant affecting between the elements of the (UTAUT2) theory and individuals' behavioral intention towards using financial technology services, With the trust variable as a mediating factor, The study concluded with several recommendations, including the necessity to raise social awareness of the use of Fintech in all financial transactions while promoting customer confidence in Fintech services.

Keywords:

Behavioral Intention; Technology Acceptance Model; Fintech Service; UTAUT2; Internet Banking; Electronic payment; Digital Payment; Covid-19.

Development and Evaluation of a Medication Administration Education Program Based on Augmented Reality

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Abstract:

Background: Due to recent technological developments, augmented reality (AR) content that can provide opportunities to visualize complex concepts. Since AR has limitations of high costs and lack of facilities, when used with students' own smartphones can be more effective. Thus, it may be clinically beneficial to develop and examine the utility of an AR-based medication administration education program using smartphones.

Objectives: This study developed an educational augmented reality medication administration program for undergraduate nursing students and examined its effects on drug dosage calculation competency, and self-confidence in drug dosage calculation and infusion pump use.

Setting: Two universities in Republic of Korea.

Design: This study had two research phases for developing an AR-based medication administration educational program for undergraduate nursing students in the first phase and to examine the effectiveness of an AR-based medication administration education program using a pretest–posttest randomized control group design in the second phase.

Participants: Forty-seven sophomore nursing students who received education in medication administration as part of their fundamentals of nursing course were divided into the experimental and control groups.

Methods: An online questionnaire was used to collect data on participant characteristics, drug dosage calculation competency, and self-confidence in drug dosage calculations and infusion pump use. The collected data were analyzed using repeated-measures analysis of variance and independent t-tests.

Results: A significant interaction was observed between the group and time for self-confidence in drug dosage calculations and infusion pump use.

Conclusions: This study was the first attempt at developing and evaluating an augmented reality-based medication administration educational program using smartphone. Our findings suggest that such programs can be a useful learning tool and help effectively integrate medication administration into nursing education.

Interactional Justice and Citizenship Behavior: A Social Information Processing Perspective

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Abstract:

Drawing from research on interactional justice, self-concept, organizational citizenship behavior, and social information processing theory, this study investigated the mediating effect of relational self-concept in the connection between interactional justice and organizational citizenship behavior. Time-lagged data collected at two measurement points from full time employees, working in service sector organizations, showed that both dimensions of interactional justice (i.e., interpersonal and informational justice) had a positive impact on organizational citizenship behavior, yet only interpersonal justice had an indirect effect through relational self-concept. This provided evidence of mediation but also the need for treating informational and interpersonal justices as separate dimensions of interactional justice. A discussion of the limitations, upcoming research and suggestions for theory-building and practice wrap up the article.

Keywords:

Interactional justice, relational self-concept, OCB-I; social information processing theory; Pakistan.

Palynological Characterization of Four Varieties of *Vigna uniguiculata* (L. WALP) and its Taxonomic Significance

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Abstract:

This study examined the pollen morphology of four varieties of *Vigna unguiculata* (cowpea), an important staple legume for food security in Nigeria and Africa. Knowledge of pollen characteristics can inform efforts to conserve crop genetic variation, crucial for developing resilient food production systems. The main objective was to differentiate these *Vigna* varieties based on their pollen morphology. Pollen samples were collected from four cowpea varieties (BBT Brown, IFE BPC, BBT White, and IFE Brown) grown in a screen house. Pollen characters analyzed included size, shape, colpi, exine thickness and pattern, and apertural status. The results showed statistically significant differences in all quantitative pollen characters among the four varieties ($p \geq 0.5$). Key distinguishing features included reticulation pattern, pollen size, lumina size, presence of small columellate structures within lumina, and rounded features surrounding the pores. Although the pollen grains were similar in being three-porate and coarsely reticulate, they differed in specific dimensions. IFE BPC had the largest pollen size, while BBT Brown had the smallest. BBT Brown also had the second-greatest pore length. Reticulation patterns varied, with BBT Brown having thicker muri compared to the other varieties. In conclusion, the pollen morphology of the four *Vigna unguiculata* varieties examined was quite distinct, allowing for their separation and identification. This knowledge can contribute to conservation efforts targeting the genetic variation and taxonomic classification of this important food crop, supporting sustainable development and food security.

Keywords:

Cowpea, Palynology, Characterization, Varieties.

Sustainable Development Evaluation in V4 Countries via a Multi-Objective Optimization Method

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Abstract:

Achieving sustainable development remains an issue of critical importance throughout the world for the last decade, especially for developing countries and countries with relatively lower levels of well-being. It has become even more crucial under the COVID-19 impact on development around the world. This requires a transparent, objective, and robust method to measure a country's sustainability, assess its progress/regress, and compare it with a benchmark or the performance of other countries. The purpose of the article is to propose the practice of sustainable development and all its dimensions' evaluation, progress assessment and comparison in different countries via robust and objective method's application.

For the research, the indicator system of four dimensions of sustainable development, consisting of 26 corresponding indicators, has been defined. These 26 indicators imply relevant multidimensional goals of sustainable development. Therefore, the method of multi-objective optimization, MULTIMOORA, was used to assess and compare sustainable development in the Czech Republic, Hungary, Poland and Slovakia. The special interest in these countries stems from the fact that in the last two decades they have undergone the process of integration into the EU and formed the most influential regional group in Europe - Visegrad 4 (V4). The research results have shown that the Czech Republic and Slovakia had the highest level of sustainable development within the V4 and were closer to the level of the EU (28 countries) than Hungary and Poland, whose level of sustainable development was on a lower level.

Artificial Intelligence for Real-Time Identification of Rail Cars

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Abstract:

The real-time identification of railway carriage numbers is a pivotal innovation in enhancing railway logistics and operations, enabling automated tracking, monitoring, and maintenance. This study proposes an artificial intelligence (AI) system powered by a convolutional neural network (CNN) optimized using the steepest descent method, a widely recognized optimization technique. The framework is designed to address the challenges inherent in dynamic environments, including variations in lighting, motion blur, dirt accumulation, and other environmental interferences.

The proposed methodology integrates advanced image recognition capabilities with adaptive optimization strategies, ensuring robust and reliable performance. The CNN model is fine-tuned to minimize classification errors through iterative parameter adjustments, while preprocessing techniques such as noise reduction and normalization are employed to improve input quality. Adaptive learning rates and step-size adjustments further enhance the training process, reducing oscillations and improving convergence even under experimental errors.

Field testing of the system demonstrated remarkable performance, achieving a 97% accuracy rate in ideal conditions and maintaining 89% accuracy under challenging scenarios such as low lighting and rapid movement. The system's real-time deployment pipeline, which includes high-resolution image capture, preprocessing, and rapid inference, ensures a mean latency of just 0.25 seconds per image.

This AI-powered approach delivers significant operational improvements by overcoming the limitations of traditional manual and semi-automated identification methods. The results highlight the potential of AI in transforming railway logistics, offering a scalable and efficient solution for modern transportation networks. Future research will focus on integrating edge computing and advanced deep learning models to further enhance robustness and speed.

Keywords:

Artificial Intelligence, CNN, Steepest Descent Method, Railcar Recognition.

Adaptation of the Experience of Experience of Parasocial Interaction Scale into Turkish: A Confirmatory Factor Analysis Study

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Abstract:

Parasocial Interaction (PSI) reflects the one-sided emotional bonds users form with media figures, creating a sense of familiarity. In distance education, PSI enables students to feel connected with teachers on screens, enhancing motivation and engagement despite the lack of face-to-face interaction. Teachers' personal stories and interactive educational materials can strengthen these bonds on PSI without balanced pedagogy, which may lead to distraction. This study adapted the Experience of Parasocial Interaction (EPSI) scale by Hartmann & Goldhoorn (2011) to Turkish, measuring PSI in distance education. Four experts reviewed the adaptation, and 150 university students rated items on a 5-point Likert scale. Confirmatory factor analysis (CFA) results showed a strong model fit: $\chi^2/df = 1.146$, SRMR = 0.005, GFI = 0.997, AGFI = 0.984, NFI = 0.999, TLI = 0.98, CFI = 0.99, and RMSEA = 0.018. Cronbach's alpha was 0.69, indicating reliability. These indices confirm the adapted scale's validity, making it a reliable tool for assessing PSI in Turkish online education.

Keywords:

Parasocial Interaction, Video-based Courses, Scale Adaptation, Higher Education.

Development of a Numerical Correlation Model to Predict the Mechanical Properties of High-Performance Concrete Using an Indentation Test

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Abstract:

The aim of this work is to develop a numerical correlation model for predicting the mechanical properties of concrete using indentation test, based on the durability parameters of a high-performance concrete (HPC). The model to be proposed will be deduced on the basis of the characterization of three families of concretes: HPC 60, HPC 70, and HPC 80. The expected result will make it possible to predict the mechanical behavior of the concretes, knowing only the durability parameters (porosity or density). The advantage of this approach is to enhance the value of the indentation technique approach in the field of Civil Engineering.

Estimation of the Mechanical Behavior and Durability of Old Concrete by Numerical Calculation

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Abstract:

Estimating the mechanical behavior of aged concrete correlated with potential durability is an important topic in the field of rehabilitation of civil engineering structures. The aim of this research is to propose numerical correlation models to estimate the mechanical behavior and durability of aged concrete compared to the results of new concrete. The study begins with the design of several types of new concrete and of concretes with accelerated artificial degradation, the class of the concretes varying from 25 to 35 MPa, in two aggregate variants, continuous and discontinuous granularity. On the basis of several samples characterized in the laboratory and in-situ by non-destructive tests, a numerical correlation is proposed for the direct estimation of the mechanical behavior of old concretes linked to durability class. The results obtained show the reliability of the proposed models, and provide a more realistic approach to knowledge of the overall condition of old concrete.

Keywords:

Durability, mechanical behavior, numerical model, Old concrete.

The Impact of Online Learning on Human Capital Investment and Attainment: Evidence from a Large Community College System

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Amazon

Abstract:

A growing body of research has explored the impact of online course delivery on student performance, but little is known about its effect on reducing the opportunity cost of college attendance and the implications for human capital investment and attainment. Using over a decade of administrative data from approximately half a million students at Virginia's 23 community colleges, we examine the effects of online course-taking on students' college enrollment patterns and degree outcomes. Through an interacted instrumental variables approach that exploits idiosyncratic variations in online course offerings, we find that while online course-taking during the initial term in college results in lower grades, it concurrently reduces the opportunity cost of attending college by enabling students to earn higher income while pursuing their education. These short-run effects lead to higher college persistence and increased preference for online learning in subsequent terms, eventually resulting in greater credit accumulation and higher likelihood of receiving a bachelor's degree. Our results suggest that welfare analyses of online learning must carefully weigh adverse short-run academic effects against reductions in the opportunity cost of education. (JEL I23, I26)

Acknowledgement:

This work is supported by NSF through grant 1750386. We thank the Virginia Community College System for providing high-quality data and expert guidance on the state contexts for this research. The views contained in this paper are those of the authors, and not of their institutions or the National Science Foundation.

Phenolic Content and Gastroprotecive Activity of *Curcuma longa* L. Aqueous Extract

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Abstract:

Curcuma longa L. is a perennial shrub which belongs to the Zingberaceae family. It's a medicinal plant largely used in traditional indian medicine for a long time and is currently known by several countries by their multiple therapeutic virtues. The aim of the present study was to determine the phenolic content and to evaluate the gastroprotective activity of *Curcuma longa* L. aqueous extract. The ground rhizome of the curcuma was subjected to a decoction to obtain an aqueous extract, whose yield was 11.54%. The quantitative estimation of polyphenols and flavonoids showed that the extract contains these compounds; the total polyphenol content determined using the Folin-Ciocalteu reagent was 178 ± 0.001 mg gallic acid equivalent/g of dry extract. While that of flavonoids evaluated by the aluminum trichloride method was 24 ± 0.001 mg quercetin equivalent/g of dry extract. The gastroprotective effect of curcuma aqueous extract was studied using 100% ethanol as an ulcerogenic agent. The dose of 200 mg/kg causes a low protection (59.06 ± 9.67%) compared to the high dose (400 mg/kg) which gives a more powerful protection (89.27 ± 3.38%). In conclusion, the biological activities of this extract may be due to the presence of polyphenols sach as flavonoids.

Effect of Quercetin on Spontaneous Contraction and Peroxyl Radicals-Induced Alterations of Spontaneous Contraction of Longitudinal Strips of Rabbit Ileum

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Abstract:

The aim of the present study is to evaluate the effect of quercetin on the spontaneous contraction and free radicals-induced alteration of the rythmic contraction of longitudinal strips of rabbit ileum in vitro. The contractile activity of these longitudinal strips was characterized by a mean tension of 0.84 ± 0.02 g and a frequency of 10.47 ± 0.37 cpm. 30 and 100 µM quercetin decreased the maximal tension of spontaneous contractions by 34.8% and 46.0%, respectively. Peroxyl radicals derived from 2,2`-Azobis (2-methylpropionamidine) (ABAP) decomposition led during the first two minutes to an abrupt arrest of the spontaneous contractile contractions of longitudinal strips and a decrease of the basal tone. An increase of 16.5% of the mean tension and a reduction of the frequency of the contractions (from 11.47 ± 0.43 cpm to 6.36 ± 0.39 cpm) was observed after 30 minutes of incubation. Quercetin (100 µM) prevented the disappearance of the spontaneous contractions during the first minutes after the addition of ABAP, and lowered the ABAP-induced tension increase by 30.7%. These results provide a pharmacological basis for the traditional use of quercetin-rich herbal medicines for the relief and treatment of gastrointestinal disorders.

Keywords:

Longitudinal strips, Ileum, Quercetin, Contractile activity, peroxyl radicals.

Constructing Soft Masculinity: The Practices of Urban Young Men in Mediating the “Little Fresh Meat” Image in China

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Abstract:

This study examines how urban young men construct their soft masculinity through the circulation and popularization of the "Little Fresh Meat" image in the Chinese media. In recent years, the "Little Fresh Meat" archetype, represented by young male celebrities with effeminate appearances, formed a distinct aesthetic—and has gained significant popularity among the younger generation. This phenomenon has set an example of soft masculinity for Chinese men. Through interviews with 20 young urban men in Chengdu, China, who adopt the "Little Fresh Meat" identity, this study explores how urban men construct and practice soft masculinity through their interactions with the circulating soft masculinity image in the media. This study found that urban men borrow the qualities of "Little Fresh Meat" in the media to shape their ideal masculinity. However, conflicting messages in the media make the 'ideal' model for masculinity ambiguous. This study highlights the fluidity and complexity of gender practices among a younger generation of Chinese urban men.

The Development of the Property Concept in a Democratic South Africa

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Abstract:

Before the introduction of the *Constitution* of the Republic of South Africa, property was mainly classified according to the common law Roman-Dutch principles of corporeality, independence, subject to juridical control, being external to humans, and its value to a human. However, some of these principles have developed over the years. With the inception of the South African *Constitution* in 1996, property became a constitutionally protected right. Its introduction marked a significant shift in how property rights were viewed and protected. The interpretation of property has evolved from a narrow conception of traditional ownership to a broader understanding of property that includes intangible rights, interests, and expectations. This approach has been supported by several court decisions allowing recognition to broader property rights that extend beyond the traditional.

The property clause in section 25 is interpreted and applied within the wide context of our historical background as opposed to the narrower context afforded by specific provisions in the Bill of Rights, particularly socio-economic rights. In addition, recent case law indicate that the Constitutional Court is moving towards a contextualised and reform-sensitive interpretation setup in which property-related matters are considered and determined substantively. The recognition of property as a constitutional right meant that the scope of the property clause had to be carefully defined, with consideration given to what could be considered property under section 25. Over the years, the concept of property has undergone significant developments, reflecting changing social, economic, and political contexts. In this paper, I will explore the evolution of the property concept since the adoption of the *Constitution* and analyse how courts have interpreted the concept in various legal cases.

South Africa has celebrated 30 years of democracy in 2024. Considering this landmark, the property clause must be analysed to determine what should be considered as property under section 25. The landmark case of *First National Bank of SA Ltd t/a Wesbank v Commissioner, South African Revenue Services* 2002 (4) 768 (CC) which held that property rights extend beyond physical possession and that intangible property such as intellectual property also enjoys constitutional protection, is but one example of the extension of the property concept. This paper will trace this development as seen specifically in the interpretation of case law.

Keywords:

Property concept, constitutional property law, transformative constitutionalism, property law.

Socially and Culturally Committed Practice

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Abstract:

Professional practice is a framework for social and cultural commitment with far-reaching effects, especially in multi-ethnic conflicted zones, where economic and political differences are accentuated. Its goal is to a mediate between ethno-national communities and their sociopolitical environments. This goal is achieved by community-engaged design process which requires attention to vernacular architectural, local heritage, cultural values, lifestyles, construction methods and materials. Working with communities on-site brings up dilemmas of marginalized communities, who may be torn between their eroding local identities and their desire to adapt to spatial norms of the majority. This dilemma is especially stark in an ethno-nationally contested environment, where the notion of nationhood and national identity is highly charged.

This paper considers examples of design processes undertaken in an academic course titled *Planning with the Community*. As its name indicates, this course engages with local communities and is offered to architecture and planning students. It focuses on theories and practices that link architecture/planning with community participation. The issues that arise from this educational process are used to re-think and re-assess vernacular theories and practices and the role of the vernacular in the development of socially and culturally committed practice.

Hydrodynamic Model for Planning Nature Based Solution to Prevent River-Bank Erosion

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Abstract:

River bank erosion is becoming a major problem for the agricultural community living by the river side. With the impact of climate change precipitation pattern is changing and our study in the Brahmaputra Basin of India has revealed that high intensity rainfall will increase further in near and far future to increase devastating flood and erosion. To combat climate change collectively, it is also important to promote nature based solution with vegetative measures wherever possible. A quasi 3-D hydrodynamic model BRAHMA (Braided River Aid: Hydro-Morphological Analyser) is developed along with a vegetation module to simulate impact of different pattern of bank vegetation on the flow field. Out of several patterns tried, hexagonal pattern was found to be more effective in reducing velocity and hence was chosen for implementation to control river bank erosion in an erosion effected reach of Brahmaputra River at Majuli Island, world's largest habitat river island. Based on the study, field implementation of the bio-engineering measures was done during 2022-23 and it has successfully protected the river bank from erosion during last two monsoon seasons and thus has established the great potential of nature Based Solution in erosion control.

Assessment of Influenza Virus and Co-Infection with SARS-CoV-2 or Respiratory Syncytial Virus among SARI Patients at Oromia, Ethiopia

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Abstract:

Background: Acute respiratory disease (ARD) accounts large proportion of all acute morbidities and mortalities worldwide, among which acute viral respiratory tract infection is leading cause (appropriate 80%). Major Viral pathogens include influenza virus, respiratory syncytial virus (RSV), coronavirus, adenovirus, and rhinovirus. Influenza, SARS-COV-2 and RSV were individually contributed to under five children morbidity where combined global mortality of influenza and RSV reaches 300 000 deaths each year.

Objectives: This study aims Assessment of influenza virus and co-infection with SARS-CoV-2 or Respiratory syncytial virus among SARI patients at Oromia Region, Ethiopia.

Methods: A Facility based cross sectional study was conducted during study period from July 1, 2022 through April 30, 2023 on all patients enrolled to SARI sentinel surveillance based on WHO SARI case definitions on patients attending the ACSHMC during the study period. The throat-swab specimens collected in viral transport media were transported to APHRRLC within 72 hours using a cold chain system. We extracted viral RNA and subjected to CDC Multiplex RT-PCR to determine the positive cases. We further subtyped Influenza A positive specimens.

Result: 302 throat-swab specimens collected and tested, 39 (12.9%) were Influenza positive where 25 (89.3%) influenza A (H3N2), 3 (10.7%) Influenza A (H1N1) pdm2009 and 11 (28.2%) Influenza B. Influenza positivity rate among age category were 58.9%, 26.6%, 5.1%, 5.1%, and 5.1% among age categories of under 5 years, 5-14 years, 15-49 years, 50-64 years and age greater or equal 65 years respectively. 22 (7.3%) and 11 (3.6%) found to be positive for SARS-CoV-2 and RSV viruses respectively. Among positive SARS-CoV-2 cases 73.2%, 13.6% and 9% attributed to age under 5 years, 15-49 years and greater 65 years respectively. Among positive RSV viruses 91% attributed to

less than 5 years. Finally co-infection with SARS-COV-2 and RSV found on 5(12.8%) and 3(7.7%) children respectively during December, January and February.

Conclusion: Finding showed influenza co-circulation and co-infection mostly in under five children: not vaccinated, highlights economic burden implying less monitoring of vaccine uptake. Therefore, healthcare system and public should implement vaccination, holistic approach IPC measures, surveillance scaling up to include all age, never over look co-infection, strengthen multiplex (rt-PCR), conducting research well addressing the co-infection using large sample and case control study.

Keywords:

SARI, Influenza, SARS-CoV-2, RSV, co-circulation, co-infection.

Radiographic Evaluation of Differenr Patterns of Bone Loss Around Dental Implants: A 6 Month Follow-Up Study

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Abstract:

Introduction: The success of dental implants is dependent on meticulous preoperative treatment planning as well as carefull follow-up during the healing phase to evaluate the success of osseointegration.

Objective: To evaluate the different types of bone loss around dental implants according to Spiekermann's classification in the first 6 months of successful implant placement.

Results: At baseline, subjects showed no bone loss; Patelliform bone loss was commonly observed at 6 months, Patelliform and Funnel form bone changes were commonly seen. Significant to highly significant differences were seen between all time frames in presence of bone defects around implants.

Conclusion: The study concluded that bone changes occur from baseline to 3 and 6 months. The effect of the bone loss on the overall implant stability seems to be negligible.

Social Media as a Communication Tool in the Football Industry: A Case of the KZN Football Industry

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Abstract:

The football industry has over the years revolutionised into a modernised game through social media platforms (Wang, Cheng, and Sun 2021: 102). Social media platforms such as Facebook and X (formerly known as Twitter) have been used globally among soccer stars, fans, and footballing clubs to communicate (Weimar, Holthoff, and Biscacia 2020: 335). Football clubs are exposed to advanced technology opportunities, transformations, and integration opportunities because of the development of social media platforms such as Facebook, X, Instagram, YouTube, etc. (Nairaine 2019: 223). It is evident that communication plays an integral role in the sporting industry.

This paper aimed to establish how social media is used as a communication tool in the KwaZulu-Natal football industry by three selected teams in building and maintaining relationships with their stakeholders. A mixed research approach was applied consisting of a combination of qualitative and netnography techniques.

The findings indicated that social media has become an integral part everyday life. Social media platforms such as Facebook, X, and Instagram have revolutionised communication, thereby making it easier for the teams to engage with their stakeholders. Football clubs adopted social media as a tool to communicate and disseminate information to their fans. Although possible barriers may exist when using social media, research has shown that it serves as a powerful tool when addressing social issues and fostering communication with soccer fans.

The study suggests that soccer teams should be consistent with their posts on their social media platforms and a communication strategy should also be developed and managed by the soccer teams.

Assessing Farmers' Perception and Adoption of Drone Technology in Sustainable Rice Cultivation in Eastcoast Malaysia: A Review

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Abstract:

Roughly 50% of the global population is dependent on rice. The growth of the rice industry has been continuously evolving over time to increase its production and meet rising demand. The improvement of rice cultivation has been astounding since the use of drone technology in rice farming. They have revolutionized rice farming by providing farmers with significant cost savings, improved operational efficiency, and higher profitability. Despite the fact that drones have demonstrated their effectiveness in rice farming, very few farmers actually use them. This paper attempts to carry out a comprehensive review study to see how farmers perceive drone technology and their adoption. There were 11 articles that have been evaluated here. The study found that the use of drones in rice farming is influenced by a few important elements such as handling skills, drone roles, initial cost investment and training programs. Drone technology used in rice cultivation also supportsthe Sustainable Development Goals (SDGs), which aim to reduce poverty and promote economic equality, sustainability, and food security and safety.

Keywords:

Technology adoption, farmers, rice cultivation, technology perception, Malaysia.

Comparative Study for Some Operators Between Real and Binary Genetic Algorithms Applied on SARIMA Model

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Abstract:

This paper presents a comparative analysis between two genetic algorithm methodologies: Real Coding Genetic Algorithms (RCGA) and Binary Coding Genetic Algorithms (BCGA) for the purpose of determining the order and estimating parameters of the SARIMA model. The primary focus is on minimizing the Akaike Information Criterion (AIC, BIC). The study highlights that the key distinction between RCGA and BCGA lies in their recombination operators, namely crossover and mutation operators. By applying these methodologies to monthly average hotel room data in Kuwait, our goal is to identify the optimal model among these methods. The study has been implemented in the RStudio-package and Matlab.

Keywords:

Genetics algorithms GA; Akaike information criterion; SARIMA model, RCGA; BCGA.

2000 Mathematics Subject Classification: 62H12. **JEL Classification System:** C22.

Evaluation of the Larvicidal Activity of Essential Oils from Some Plants on Culicidae Larvae (Diptera; Nematocera)

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Abstract:

The fourth instar larvae of *Culiseta longeareolata* were the subject of a toxicological study using the essential oils of Eucalyptus globulus and *Ocimum basilicum*. Different doses of 10%, 5%, 2.5%, 1.25% have been conducted in the laboratory on the L4 larval stages. These preliminary tests carried out according to a methodology inspired by the standard World Health Organization protocol revealed the significant evolution of mortality as a function of time and of the doses used for the two bio-pesticides. *Eucalyptus globulus* essential oil has remarkable larvicidal properties; it induces 90% mortality after 72 hours of treatment at a concentration of 10%. The DL50 and DL90 values against fourth instar larvae were 120 and 260 g/l for *Cs. longiareolata*. The results proved the potential use of this natural product as an alternative to synthetic insecticides for controlling mosquitoes.

Keywords:

Culisita longeareolata, formulated essential oils, *Eucalyptus globulus*, *Ocimum basilicum*, larva, mortality, toxicity test.

Anti-Allergic Properties of Kabilian Goat Milk

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Abstract:

Goat's milk is gaining popularity due to its unique nutritional and functional properties. Research has shown that goat's milk has several health benefits, including immunomodulatory effects, allergy management, anti-inflammatory, and antioxidant effects, as well as antimicrobial and anticancer properties. To further understand its potential anti-allergic effects, a study was conducted in a rat model of allergic rhinitis. We hypothesized that consumption of this goat's milk early during development, could reduce the occurrence of allergy in adulthood. Rats were fed goat's milk from weaning to adulthood and then exposed to an allergen. The results indicated that the rats tolerated goat's milk well and exhibited normal growth. Moreover, the consumption of goat's milk resulted in a decrease in white blood cells, particularly in granulocytes, and myeloperoxidase levels. These findings support the claim that goat's milk has anti-allergic properties. Overall, this study highlights the potential of goat's milk as a natural remedy for allergic conditions.

Keywords:

Goat milk, allergy, kabylian goat milk, allergic rhinitis.

Parkinson's Disease Dementia, An Under Recognized Concern for Patient Safety and Quality of Life

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Abstract:

Background: Life expectancy is improving in medium to low to medium income countries like Nigeria with a population of over 220 million. The prevalence of degenerative disorders like Parkinson's Disease (PD) is common and management modalities are limited by financial and technical reasons. Dementia is often under recognized and under addressed in such patients with adverse effects on QOL, safety and low interventions in such patients.

Objectives: To determine the prevalence and predictors of dementia in PD in Northern Nigeria and ensure the data are incorporated in the continuum of care of PD patients and improve safety and QOL and improve coping strategies with PD as a chronic progressive disease.

Methods: A tertiary hospital based cross sectional study utilizing the Montreal Cognitive Assessment Score. The MM-PD and severity index and QOL and management of patients and care givers questionnaires were all conducted. IRB approval was obtained as well as signed informed consent. PD-CI/dementia and depression and Anxiety (the Hospital anxiety and depression scale HADS were also utilized. The Hamilton or Becks/DSM V screening tools were also applied. Depression and anxiety screenings were also completed. PD-MCI/H & Y stage and score on PDQ-39 item (for QoL in PD were determined as well as the domain specific impairments scores.

Results: PD dementia/cognitive impairment wad identified to have a prevalence of 25%, p value of 0.001, adjusted OR of 6.8. This was independently associated with less than 12 years of formal education in multiple regression analyses after analyses of potential positive correlates on bivariate analyses. Domain specific impairments and dichotomization of the data based on treatment status into PD-on- treatment and treatment naive and the prevalence of PD-MCI for both category was found to be 60% vs 40% and was not statistically significance. A low QOL score was identified and a high anxiety and depression scores were identified in PD patients with dementia.

Discussion: This is the index study of PD related dementia in Northern Nigeria. A high prevalence was noted at 25% across the spectrum of the PD patients natural history and it is unrelated nor modified by all therapeutic modalities. Patients, family and care givers were hitherto unaware of the early dementia in the PD patients.

Conclusion: Screening for dementia/cognitive impairments in PD should be routinely incorporated in the initial and subsequent assessments and management of PD patients. Patients and family members should be counseled effectively to improve patient safety and well being and allay anxiety and decrease the rates of super imposed depression due to a lack of full understanding of the natural history if the disease.

Nano Gold-Enhanced Bioglass: Unveiling In vitro and In vivo Bioactivity Characteristics for Advanced Medical Applications

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Abstract:

Incorporated gold ions Au into glass with composition 30P2O5-20Ca(OH)2-20ZnO8.0KF-5B2O3-2.0TiO2 in mol% with 400ppm (Gold III Chloride trihydrate HAuCl4-3H2O) and 600ppm (Gold III Chloride trihydrate HAuCl4-3H2O) by using terdiurnal method quenching method. The present glass's Vicker microhardness, Hv, was determined together with X-ray diffraction (XRD) and differential thermal analysis (DTA). Utilizing a transmission electron microscope (TEM) and a scanning electron microscope (SEM), the gold nanoparticle and microstructure of these glasses were examined. According to the SEM photographs the heat treatment method significantly changed the form of the crystals phase of produced glass-ceramic. The glass-doped Au was verified by TEM to be nanocrystalline, with a spherical form and varying sizes between 14.7 and 16.2 nm. Investigations have been carried out into the bioactivity of the produced glass, including its antibacterial, anti-proliferative/cytotoxic properties against both normal and activated splenic cells in vitro, and anticancer effects. These findings demonstrated the strongest antibacterial activity against both Gram positive and Gram negative bacteria as well as fungi in the glass doped with 600 parts per millions of Au ions. It also demonstrated antiproliferative/cytotoxicity against normal splenic cells, but had the maximum level of neither cytotoxicity nor proliferative effects on activated splenic cells. According to the data, these produced glasses show promise as possibilities for many medical applications.