

SAUDI RESEARCH IDOL 2021



MINUTE THESIS COMPETITION

PRESENT YOUR GRADUATE RESEARCH IN JUST 3 MINUTES

WHY ARE YOU DOING IT ?

MY SUPERVISOR TOLD ME TO DO IT ! DOES NOT COUNT

HOW ARE YOU DOING IT ?

ASSUMING YOU KNOW

HOW DOES IT RELATES TO THE REAL WORLD?

UMM..PAUSE!



\$3000



\$1500



\$500

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Chapter 1

Saudi Research Idol 2021

1.1 Vision

Saudi Arabian Cultural Mission (SACM) in Australia is organizing this competition to provide an opportunity for Saudi students to showcase their thesis, enhance their presentation skills and gain experience to participate in future similar competitions.

1.2 Target

A 3-minute competition where PhD candidates and research Master students shall professionally present a snapshot about their thesis in front of referees and non-specialist audience aiming at winning the competition.

Chapter 2

Medicine and Medical Science

2.1 Sami Khaloufah Alahmari

PhD Student, Queensland University of Technology

Effects Of Three Different Neuromuscular Electrical Stimulation Methods On Training Volume And Neuromuscular Function

The PhD project aims to identify which NMES method (stimulation with narrow pulse duration or stimulation with wide pulse duration or stimulation with wide pulse duration plus tendon vibration) is the most effective to increase training volume (i.e. evoke the largest increase in muscular strength responses and lowest responses to fatigue) of Triceps surae muscles that can be performed during a session. This investigation will evaluate the loss of voluntary muscle strength of plantar flexion muscles after each NMES method. To achieve this, twelve healthy participants (age: 18 – 35 y), without a history of ankle injury or neurological conditions, will each be exposed to three different methods of NMES in

a random order. The experimental protocols will be introduced to each participant in three different sessions. All participants will be tested immediately before (PRE), and immediately after (POST) each condition. At the commencement of every session, four to six submaximal isometric contractions of ankle plantar flexion will be as a warm-up for the maximal voluntary isometric contractions (MVICs) (i.e., Triceps surae muscles are firing/ or activating with a maximal force and tension, but there is no movement at the ankle joint). Participants will be instructed to possibly generate a force against the dynamometer arm by quickly and rigidly extending the ankle for three seconds in order to quantify rate of torque development (RTD) and peak isometric ankle plantar flexion torque (i.e., moment of a force) during MVICs before and after each condition. The area under the curve of the torque signal obtained during each NMES condition will be quantified as a measure of training volume. Triceps surae muscle excitation will be measured with high density electromyography (EMG).

[Participant's Video Click Here](#)

2.2 *Samaher Mohammed Alowaydhah*

PhD Student, The University of Newcastle

Exercise Evaluation, Prescription and Delivery in the Elderly

There is an extensive body of research investigating the effects of PE across the lifespan. However, this research is disparate regarding types of exercise, including independent, supervised and group therapy, dosage of exercise including frequency and intensity, and specific recommendations for different disease conditions. Therefore, in this systematic

review we aim to collate available evidence to formulate exercise recommendations for healthy elderly and those with diseases like neurological , cognitive , depression and musculoskeletal conditions . Also, in this study we will aim to evaluate the current activity levels in retirement villages using accelerometers. This study will provide objective and reliable information about the amount of time spent engaged in various levels of activity compared to sedentary behavior. This will be complimented with qualitative information obtained from residents regarding their perceptions of their activity levels. Finally, We will use our findings from study 1 to develop an evidence-based exercise program for residents of retirement villages . We will deliver this program via a telehealth platform to ensure viability and feasibility due to the recent COVID-19 personal contact restrictions. The importance and relevance of this model of service delivery has become increasingly apparent during the lock down of aged care homes.

[Participant's Video Click Here](#)

2.3 *Mosa Ali Shubayr*

PhD Student, The University of Western Australia

Factors Associated With The Infection Control Behaviour Of The Dental Health Care Workers In Saudi Arabia During The COVID-19 Pandemic: Application Of The Theory Of Planned Behaviour

Objective. Dental settings could be a potential source of cross-infection. The objective of this study was to identify the important predictors of the dental health care workers (DHCW's) intention towards COVID-19 Infection Prevention and Control (IPC) in Saudi Arabia.

Methods. An online cross-sectional questionnaire was sent to DHCW's in Saudi Arabia using convenience sampling technique. The questionnaire collected data on demographic characteristics and the 43 items from TPB construct. One-way ANOVA and t-test were used to establish factors associated with TPB construct scores. Multiple regression analyses with adjusted effects to identify the significant predictors for the intention, from the attitude, subjective norm, and perceived behavioural control variables. The significance level was set at 0.05.

Results. 324 study participants had completed the questionnaire with a response rate of 40.5%. Majority of respondents were male (59.8%), aged 25 -30 years (32.7%), followed by 31-35 years (31.2%). Only 28.4% had reported to have participated in infection control activities. With the mean of 41.60 (SD = 6.26) it was evident that the study participants had a favourable attitude towards COVID-19 IPC. The subjective norm and perceived behavioural control subscales scores were low with the mean values of 28.95 (SD=5.44) and 34.89 (SD = 6.49), respectively. The constructs of attitude towards behaviour ($p < 0.001$), and subjective norm ($p < 0.001$) significantly predicted the DHCW's intention to COVID-19 IPC behaviour and they accounted for 44.3

Conclusion. The current study suggests that the attitudes and subjective norms of DHCW's significantly predicted their intentions of COVID-19 IPC behaviour. Hence, it is recommended that comprehensive educational and training programs on infection control pertaining to COVID-19 be implemented among the DHCW's in Saudi Arabia so that their attitude and behaviour towards infection prevention be amplified.

[Participant's Video Click Here](#)

2.4 *Ibrahim Hussian Khormi*

PhD Student, University of Newcastle

Using Amide Proton Transfer To Investigate And Characterize Lesions And Normal-Appearing White Matter In Multiple Sclerosis

Conventional MRI evaluates and monitors multiple sclerosis (MS) disease that include progression, lesion load and brain atrophy. The standard MRI protocols use gadolinium contrast to differentiate between active and non-active MS lesions. Also, T2-FLAIR hyper-intensities are non-specific and might miss areas of disease activity. However, there is a safety concern with the use of gadolinium due to accumulation in the patient's brain. Amide proton transfer (APT) is a novel MRI technique capable of detecting metabolites in the brain in vivo. APT contrast relies on the exchange of mobile hydrogen of protein amide with the hydrogen contained in water. Our aim is to establish a novel MRI protocol to effectively and safely study of the MS brain.

[Participant's Video Click Here](#)

2.5 *Sumaiah Alasmari*

PhD Student, Monash University

An Investigation Of The Engagement Of Cgas-STING Signaling Upon DNA Damage In Cancer Cells

There is mounting evidence that the cGAS-STING pathway plays a critical role in the detection of DNA damage. While initially presented as an anti-tumor response, recent reports indicate that DNA damage can

lead to intrinsic STING-dependent NF- κ B activation and IL-6 production, rather driving survival of the cancer cells. What differentiates these distinct STING programs and their relative occurrence across cancer cells is however poorly defined. Here, we show that DNA-damage driven by low-dose Camptothecin (CPT) results in potent STING-dependent IL-6 induction in half the cGAS-STING responsive cell lines tested, aligning with *in silico* analyses of the NCI-60 cell line panel. Mechanistically, we observed two distinct STING-dependent IL-6 responses to CPT. The first response was cGAS-dependent (d-cGAS), and was concurrent with limited type-I IFN response, contrasting to the response observed with transfected DNA. The second response was independent of cGAS (i-cGAS), but also associated with limited type-I IFN response. Importantly, while reducing STING-dependent IL-6 responses to CPT in both models, concurrent p38 inhibition selectively restored type-I IFN induction in cells relying on i-cGAS responses. Finally, pharmacological inhibition of STING during CPT treatment reduced colony formation in soft agar assays. Collectively, our findings demonstrate that STING plays an essential role in IL-6 production driven by mild DNA damage in STING-positive cancer cells, but that cGAS can be dispensable in some cells. Aligning with the known pro-tumorigenic effects of IL-6, our results support that STING signaling can promote survival of cancer cells exposed to DNA damage. Relying on our *in vitro* and *in silico* analyses, our findings suggest that pharmacological inhibition of STING could provide a significant therapeutic advantage when used concurrently with DNA damage therapies in up to 30% of tumors

[Participant's Video Click Here](#)

2.6 *Arwaf Alharbi*

PhD Student, Monash University

Defining The Immune-Modulatory Effects Of Therapeutic Oligonucleotides

Oligonucleotide-based therapeutics have become a reality, and are set to transform management of many diseases. Nevertheless, the modulatory activities of these molecules on immune responses remain incompletely defined. Here, we show that gene targeting 2-O-methyl (2OMe) gapmer antisense oligonucleotides (ASOs) can have opposing activities on Toll-Like Receptors 7 and 8 (TLR7/8), leading to divergent suppression of TLR7 and activation of TLR8, in a sequence-dependent manner. Through a screen of 192 2OMe ASOs and sequence mutants, we characterized the structural and sequence determinants of these activities. Importantly, we identified core motifs preventing the immunosuppressive activities of 2OMe ASOs on TLR7. Based on these observations, we designed oligonucleotides strongly potentiating TLR8 sensing of Resiquimod, which preserve TLR7 function, and promote strong activation of phagocytes and immune cells. We also provide proof-of-principle data that gene-targeting ASOs can be selected to synergize with TLR8 agonists currently under investigation as immunotherapies, and show that rational ASO selection can be used to prevent unintended immune suppression of TLR7. Accordingly, we propose that rational selection of TLR8-potentiating ASOs could present new opportunities in the therapeutic development of bi-functional ASOs with gene-targeting and immunostimulatory activities. Taken together, our work characterizes the immunomodulatory effects of ASOs to advance their therapeutic development. doi: 10.1093/nar/gkaa523

[Participant's Video Click Here](#)

2.7 *Abrar Arbaeen*

PhD Student, The University of Sydney

Opioid Exposures In Children Under 5 Years Of Age (2004–2019): A Retrospective Study Of Calls To Australia’s Largest Poisons

Aim: To describe time trends in opioid exposures in children under 5 years, and to describe patient demographics, the medicines involved, the reasons for exposure and disposition.

Methods: A retrospective analysis of paediatric (<5 years of age) opioid exposure calls to the New South Wales Poisons Information Centre (NSWPIC, Australia’s largest poison centre), 2004–2019. Join point regression analysis was used to examine temporal trends.

Results: There were 4807 cases of paediatric opioid exposure during the 16 year study period, with an average of 300 exposures per year. Exposures increased, 2004–2007, with an annual percentage change (APC) of 14.6% (95% CI = 4.3 to 26.0%), then decreased, 2007–2016, APC 3.4% (95% CI = 5.3 to 1.3%). A steeper decrease was observed after 2016, APC 14.1% (95% CI = 21.8 to 5.6%). The overall APC was 2.3% (95% CI = 4.7 to 0.2%), 2004–2019. Accidental exposures accounted for 86% of calls (4137). The majority of calls were from family members regarding exposures that happened at home, highlighting the need for safety initiatives. The preparations most frequently involved were paracetamol/opioid combination products (primarily codeine), 53% (2566) and ibuprofen/opioid combinations 14% (650). Twenty-two percent of cases were referred to a hospital (1062), and a further 15% (719) of calls originated from hospital staff.

Conclusion: Opioid exposures in young Australian children continue to occur; however, the rate has declined since 2007. Safe storage and

parent education initiatives could further reduce the burden of paediatric opioid poisoning in Australia.

[Participant's Video Click Here](#)

2.8 *Alanoud Mohammed Aldossary*

PhD Student, University of Newcastle

Facilitators and Barriers for Breastfeeding among Working Women in Saudi Arabia

Aims: This research aims to explore the facilitators and barriers of breastfeeding as perceived by Saudi women in paid employment. To contextualise Saudi women's experiences, current workplace policies related to breastfeeding and their operationalisation in the local workplace environment will be examined. Also, the experiences of co-workers, line managers and employers will be sought to position women's understandings concerning their workplace culture. Finally, the views of health care professionals who work with childbearing women will be sought to increase understanding around the role the health care worker and health care services play in supporting women to initiate and continue breastfeeding after returning to paid employment. **Methods:** A mixed-methods design will be conducted using triangulation, where the researcher uses a single-phase design to apply quantitative and qualitative methods to gain a more detailed understanding of the area of interest. The qualitative strand of this study will explore the facilitators and barriers towards breastfeeding as perceived by women in paid employment, their co-workers, and line managers or employers. The quantitative strand has two arms. The first arm consists of an online survey with health care professionals working with pregnant

and postpartum women to explore their knowledge of the health benefits of breastfeeding and current practices related to supporting women to initiate and maintain breastfeeding. The second arm consists of researcher observations, examining resources and spaces available in the workplace that support breastfeeding practices. Significance of research: The findings from this research have the potential to increase knowledge regarding the factors that facilitate or hinder Saudi women's decision to initiate and continue breastfeeding on return to paid employment. Additionally, understanding of Saudi health care workers' current skills and knowledge base related to breastfeeding may be increased. It is conceivable, therefore, that results from this research can support the development of policies and practices that will facilitate breastfeeding initiation and duration rates amongst Saudi working women.

[Participant's Video Click Here](#)

2.9 *Sultan Ayyadah Alanazi*

PhD Student, The University of Queensland

Improving the Management of Ankle Osteoarthritis through the development of Core Domain Set

Osteoarthritis (OA) is well-recognized as a global health burden, and a leading cause of disability worldwide. Ankle OA, a long term consequence of ankle fracture and sprains, affects over 70 million individuals globally. In light of its post-traumatic nature and common onsets earlier in the life, individuals with ankle OA live with the consequences of the condition for a considerable period of time. Individuals with end-stage ankle OA have poor quality of life and experiencing similar physical and mental disabilities to those with end-stage hip OA, radiculopathy,

renal failure, and congestive heart failure. There is inconsistency and lack of guidelines in reporting outcome measures in ankle OA research which has impeded the ability to synthesise data in meta-analysis in existing ankle OA reviews. This is problematic as it restricts the ability to advance ankle OA management, may result in investigation of outcomes that are not relevant to stakeholders (i.e. patients), and increases risk of reporting bias. Studies with similar and relevant outcome measures will allow researchers to conduct meta-analyses of primary study data; therefore, progressing evidence for the management of ankle OA. The Core Outcome Set (COS) which is "an agreed-upon set of outcomes that should be measured and reported in clinical trials of a particular health condition" has the potential to overcome the variation of reported outcome measures in ankle OA research. Outcome Measures in Rheumatology (OMERACT), an international leading research initiative, has established an inventory approach to develop ultimate core outcomes. There are a number of pre-requisite steps to developing core outcomes, which include establishing health-related domains (i.e. Core Domain Set) that are agreed-upon by patients and healthcare professionals and determining agreed-upon outcome measures to capture the domains.

Mixed methods approach used to develop the COS of ankle OA as follow: 1) Systematic review of outcome measures used in ankle OA research. This will enable us to record a list of potential core domains from published articles.

2) Systematic review to critique the literature to determine the reliability and validity of outcome instruments used in ankle OA research.

3) Semi-structure interviews with ankle OA patients to include their perspectives on the development process.

4) Qualitative study with healthcare professionals (e.g. clinicians and researchers) to gain their insights and experiences on managing and researching ankle OA.

5) International Delphi Survey to reach consensus on the most important domains that need to be included in the final core domain set of ankle OA.

The overarching aim of this project is to provide a rationale for development of COS and generate an evidence-based international COS for ankle OA management research.

[Participant's Video Click Here](#)

2.10 *Lena Yaslam Babaeer*

PhD Student, The University of Queensland

Health Behaviours and Educational Outcomes in University Students: A Mixed-Method Study

The relationship between health behaviours (HB) and educational outcomes (EO) in university populations has received little attention in the research literature. The transition to higher education is a significant challenge for young adults and is accompanied by emotional, psychological, and financial challenges. These challenges have the potential to result in adverse outcomes in terms of HB and EO. This thesis has identified gaps in the literature that when addressed, will help to provide a better understanding of how to support Australian university students and develop tailored intervention and policies. These key gaps are summarised below: Although available evidence has examined the relationship between dietary behaviour and EO in university students, the relationship between physical activity (PA), sedentary behaviour (SB), and EO is still not clearly understood. This gap will be addressed by undertaking a systematic review evaluating the evidence about the

relationship between PA, SB, and EO among university students. The relationship between HB and EO among university students is still unclear. This is because of a number of pertinent limitations and methodological issues in the evidence that is currently available. To address these gaps, and guided by the WHO framework, study 2 will use a longitudinal study to comprehensively examine these relationships among students. Given the potential relationships between HB and EO, there is a need to support students to engage in positive HB to promote learning and academic performance. An electronic resource (the Stacks App) has been designed and developed by a UQ team to support positive students' health and study behaviours, to support learning and enhance well-being during the transition to the university environment. Study 3 will evaluate the implementation of the Stacks App using the RE-AIM framework. The association between HB and EO can be influenced by a range of factors from different level as has highlighted by the WHO framework. However, the literature has explored factors influences signal health behaviour and focused on individual-level factors. To address these gaps, study 4 will be guided by the WHO framework and use a qualitative study to obtain an in-depth understanding of these factors and association with EO among students.

[Participant's Video Click Here](#)

2.11 *Abdullah Alzhrani*

PhD Student, The University of Queensland

Exploring Use Of Touchscreen Mobile Devices Among Working Adults In Relation To Musculoskeletal Disorder Risk Factors: A University Case Study

The use of Touchscreen Mobile Devices (TSMD), i.e. smartphone and tablet, is common among the general public. Many of the previous studies focused on the relationship between TSMD use and musculoskeletal discomfort and poor posture, especially among young student. However, the exposure to TSMD use with respect to the musculoskeletal disorders risk factors has been rarely documented through objective measurement in real life previously. This cross-sectional study, targeted adults. the aim was to investigate whether the use of TSMD in different arrangements (posture and location) is related to the musculoskeletal discomfort in the neck, shoulder and upper extremities based on objective data. A mobile app was used to monitor TSMD use, an activity monitor was used to monitor gross body posture and daily log was used to monitor location. Fifty-four (54) individuals participated in the study. The average age of participants was 38 ± 10 years, with 29 female. The average time spent using TSMD was 152 ± 91 minutes per day, with an average of 52 pick-ups per day. The findings shows that most of TSMD use occurred at home and less amount of use occurred at work and other locations. most of TSMD use occurred while sitting followed by lying, standing and walking. Younger participants spent longer time on their TSMD compared to older age groups. There was no difference between the participant by sex. TSMD use while lying down was significant predictor of musculoskeletal discomfort in the neck and shoulders. Those who reported discomfort in the neck and right shoulder spent significantly more time using their

TSMD while lying compared to those who did not report discomfort. Giving the shorter duration of use at work and location other than home, TSMD use at work and other locations may not impose significant health risk. However, TSMD use at home was characterised by longer sessions of use and use while lying down. This study recommend the avoidance of TSMD use while lying as it compromise the neck and the shoulders posture due to the lack of appropriate head and hand support, and lack of proper body alignment, compared to TSMD use while sitting.

[Participant's Video Click Here](#)

2.12 Rooa Abdullah Yousef Sindi

PhD Student, Curtin University

Quantitative Measurement of Breast Density Using Personalized 3D-Printed Breast Model for Magnetic Resonance Imaging

Despite the development and implementation of several MRI techniques for breast density assessments, there is no consensus on the optimal protocol in this regard. This study aimed to determine the most appropriate MRI protocols for the quantitative assessment of breast density using a personalized 3D-printed breast model. The breast model was developed using silicone and peanut oils to simulate the MRI related-characteristics of fibroglandular and adipose breast tissues, and then scanned on a 3T MRI system using non-fat-suppressed and fat-suppressed sequences. Breast volume, fibroglandular tissue volume, and percentage of breast density from these imaging sequences were objectively assessed using Analyze 14.0 software. Finally, the repeated-measures analysis of variance (ANOVA) was performed to examine the

differences between the quantitative measurements of breast volume, fibroglandular tissue volume, and percentage of breast density with respect to the corresponding sequences. The volume of fibroglandular tissue and the percentage of breast density were significantly higher in the fat-suppressed sequences than in the non-fat-suppressed sequences ($p < 0.05$); however, the difference in breast volume was not statistically significant ($p = 0.529$). Further, a fat-suppressed T₂-weighted with turbo inversion recovery magnitude (TIRM) imaging sequence was superior to the non-fat- and fat-suppressed T₁- and T₂-weighted sequences for the quantitative measurement of breast density due to its ability to represent the exact breast tissue compositions. This study shows that the fat-suppressed sequences tended to be more useful than the non-fat-suppressed sequences for the quantitative measurements of the volume of fibroglandular tissue and the percentage of breast density. Keywords: MRI; fibroglandular tissue; breast density; 3D-printed model; fat suppression; TIRM

[Participant's Video Click Here](#)

2.13 *Zakaria Ahmed Mani*

PhD Student, Monash University

An Exploration of Competence Among Hospital Emergency Nurses In Armed Conflict Areas: A Mixed Methods Study

This study is expected to provide evidence of emergency nurses' competence in armed conflict areas for the first time. The findings are expected to provide insights into core competencies of healthcare providers working in teams in hospitals in areas of armed conflict, define core competence of nurses in hospitals in areas of armed conflict, and analyse

both stakeholder and emergency nurses perceptions of competence of nurses in hospitals in areas of armed conflict. The outcomes of the study are likely to inform the standard of care, educational, physical and psychological preparation of nurses and related disciplines for their roles and enhance quality and safe care in these regions.

[Participant's Video Click Here](#)

2.14 *Mohammed Abuwarwar*

PhD Student, Monash University

Novel Strategies For Targeting Cancer-Associated Fibroblasts

The tumour micro-environment (TME) contains a heterogeneous and diverse population of cells. Activated fibroblasts, referred to as cancer-associated fibroblasts (CAFs), are one of the dominant cell types found in solid tumours, and their abundance is often associated with poor prognosis, through regulation of tumour survival, angiogenesis, tissue invasion and metastasis. Moreover, despite the clinical success of immunotherapies in treating circulating hematologic cancers, they have failed to be as effective in solid tumours. A key difference between these tumour types is the presence of CAFs in TME. CAFs have also been shown to play essential roles in promoting immunosuppression and evasion from immune surveillance, by secreting cytokines and chemokines that modulate the function of immune cells in tumours. Here, we hypothesise that targeting CAFs will reverse local immune suppression and improve tumour immunotherapy. In order to test the immunosuppressive role of CAFs, we first created novel immortalised CAFs lines (iCAFs) using the PiggyBac Transposon system to introduce the simian virus 40 large antigen (SV40 LT) and a fluorescent selection marker into CAFs. We have

shown that iCAFs share a similar phenotype to the primary CAFs. Using primary and immortalised CAFs from breast carcinoma, colorectal carcinoma and pancreatic ductal adenocarcinoma, we report that CAFs across major tumor types are able to potently suppress T cell proliferation in vitro. Next, we aim to knockout key targets using CRISPR technology from iCAFs to further test their involvement in T cell suppression.

[Participant's Video Click Here](#)

2.15 *Nader Eqaab D Alotaibi*

PhD Student, University of Adelaide

Nursing Care for Mechanically Ventilated Patients in Intensive Care Units in Saudi Arabia

Patients who are in Intensive Care Units (ICUs) and require mechanical ventilation device are at increased risk of developing Ventilator Associated Pneumonia (VAP), a serious life-threatening condition. Clinical Practice Guidelines (CPGs) have been produced which summarise recommendations to minimize the risk of developing VAP. Within those guidelines, there are a number of strategies that fall within the specific remit of nurses. This research study is investigating the adherence of ICU nurses working in Saudi Arabia to these evidence-based recommendations and what factors, if any, influence adherence.

[Participant's Video Click Here](#)

Chapter 3

Engineering and Computer Science

3.1 Ali Siddiq

PhD Student, University of Technology Sydney

Modeling the Transmission of Dengue Fever

Dengue fever (DF) is widely considered to be the second most serious vector-borne disease (VBD) and is caused by two types of mosquitoes: *Aedes Aegypti* and *Aedes Albopictus*. Dengue fever is a mosquito-borne viral disease with the fastest transmission rate on the planet. The annual global estimations of cases of DF infection exceeds 96 million. DF is influenced by environmental factors as the life cycles of these mosquitoes are well-adapted to the human environment. Ecological changes caused by social activities such as human movement and urbanisation have a significant influence on the transmission of vectors. Moreover, these mosquitos respond differently to the transmission factors in various

spatial distributions. DF is a considerable problem for the Ministry of Health in Saudi Arabia. In 2004, the second-largest number of DF cases was found in the western part, and since then this region has been considered a dengue fever epidemic area. Dengue viruses primarily circulate between humans and vector mosquitoes, and the existence of vector viruses is a restricting transmission factor. Therefore, there is susceptibility for the disease to be transmitted at the religious mass gathering during “Hajj” and “Umrah” times. Hence, this research investigates the principal factors responsible for DF transmission in Saudi Arabia based on three comprehensive stages after collecting the data; first, inserting the missing values for collected data by applying the self-organised map (SOM) that leads to sufficient result. Second, using the Spatial-Temporal Density-Based Spatial Clustering of Applications with Noise (ST-DBSCAN) to cluster and categorise the data based on feature similarities for efficient analysis. In the last stage, data derived from the previous stages will be used for modelling dengue fever transmission according to the main factors that influence the transmission of the disease by applying the geographically weighted regression (GWR). It’s projected that, the outcomes of this research will assist the decision-makers to make accurate decisions and implement the right procedures to control disease transmission.

[Participant’s Video Click Here](#)

3.2 *Raed Yahya AlBanna*

PhD Student, The University of Melbourne

The Influence of The Learning Environment on Students' Embodied Learning Experiences: International Primary School Case Studies

A growing body of research shows that the design of school learning environments can influence students' learning experiences and contribute to their academic achievement. Learning environments are increasingly using digital technology to enhance students' learning experiences in a way that can prepare them with 21st-century skills. However, little is known about how and why the relationship between architecture, digital technology and people manifests experience in the first place and, as such, questions are raised regarding how to articulate these relationships. This research explores how the design of learning spaces, digital technologies, peers and teachers influence students' experiences of learning with their bodies in primary schools.

This thesis is dedicated to understanding how designed environments can influence, and potentially enhance, students' embodied learning experiences. To do this, the research draws on theoretical ideas of embodiment: embodied cognition, embodied interaction, and embodied learning: using concepts from different disciplines including psychology, philosophy, human-computer interaction, art and science.

Data will be collected through multiple qualitative methods, and an exploratory case study methodology will be adopted as the primary approach for data collection, with the objective of gaining in-depth understandings of students' embodied learning experiences. Due to the complex nature of embodiment, as mediated through different forms of communication and collaboration, this study will deploy a multi-modal

analytical approach to video analysis to examine the complex patterns of bodily-based interactions in students' learning experiences in science and art classrooms.

Finally, the findings and discussion will be communicated by drawing together key variables through the conceptual framework of embodiment, with the aim of outlining deep insights into the ways in which students experience learning with their bodies. The findings may inform policy making, school architecture and pedagogical design and technology integration. Architectural designers, including furniture and digital technology designers, researchers from interdisciplinary fields, school teachers, principals and parents are most likely to benefit from this study.

[Participant's Video Click Here](#)

3.3 *Haifa Mohammed Almutairi*

PhD Student, The University of Western Australia

Classification of Obstructive Sleep Apnoea from Single-Lead ECG Signals

Sleep Apnoea is a prevalent sleep disease that has three types: Obstructive Sleep Apnoea (OSA), Central Sleep Apnoea and Mixed Sleep Apnoea. OSA is a common sleep disorder characterized by repeated episodes during sleep. It occurs when the upper airway is obstructed despite attempts to breathe. When the upper airflow is partially closed, the amount of air entering into the lungs is reduced, this is called Hypopnea. The typical symptom of a person suffering from OSA after a full night of sleep as a result of these episodes is that they experience excessive daytime sleepiness. Other typical symptoms include a headache in the morning,

exhaustion and fatigue throughout their day. Snoring is considered a sign of OSA. Detection of OSA can protect patients from other disease such as: cardiovascular diseases, recurrent heart attacks, diabetes, stroke and neurocognitive deficits. Conventionally, polysomnography (PSG) is a clinical procedure used for the diagnosis of OSA which uses different physiological signals including Electrocardiography (ECG), Electroencephalogram (EEG) and Electromyogram (EMG) in a sleep laboratory. It is an expensive as well as inconvenient clinical procedure. The alternative solution is wearable sensors that can be used at home to record the physiological signals like Electrocardiography (ECG), Electromyogram (EMG) and Electroencephalogram (EEG). Therefore, automatic detection of OSA from ECG signals plays an important role in early OSA diagnosis and will help the physicians to make better decisions. In this research, we propose deep learning based models for OSA detection.

[Participant's Video Click Here](#)

3.4 *Hussain Ali Alsadiq*

PhD Student, University of Queensland

Acoustofluidic Manipulation Of Microbubbles For Drug Delivery Applications

The use of microbubbles in theronostic applications has been proposed by several studies after they have been proven to be effective in diagnostic applications as ultrasonic contrast agents. One of the theronostic applications of microbubbles is to encapsulate medication and manipulate them through body fluids using ultrasonics and then burst them for drug release. This research uses low cost widely available medication that is capable of treating Age Macular Degeneration AMD if

positioned at the retina. The method suggested by this thesis investigates an efficient delivery method of ELIPs loaded with hydrophilic medicine and injected inside the sclera. After injection, they are moved towards the back of the eye using acoustofluidic concepts and traced through their echogenic properties. Once at the macula, they are left to degrade, and the drug is released.

[Participant's Video Click Here](#)

3.5 *Afrah Alanazi*

PhD Student, Latrobe University

MoLeCaP: Mobile Learning of Computer Programming by Female Students in Saudi Arabia

Programming courses require both theoretical and practical teaching and learning approaches to effectively foster the appreciation and application of concepts learned in class. However, students usually face cultural restraints in accessing some learning tools that would otherwise be important in fostering a better understanding of the course. In particular, the Saudi Arabia culture denies female programming students the opportunity for interaction and active participation in programming lectures; instead, they rely on passive listening of lectures. Mobile-based learning approaches (m-learning) provide an opportunity of delivering theoretical and practical programming lessons through visualization software. To date, there have been a lack of studies about using mobile learning approach to teach female programming students in the Saudi context. The overarching aim of this proposed study is to investigate the effectiveness of Mobile-based learning approaches that rely on mobile technology in delivering both theoretical and practical components of

programming courses through the use of mobile-based visualization applications. This study proposes four study phases for data collection and analysis. The first two phases aim to investigate Computer Science students and lecturers' perceptions toward the mobile-based learning and teaching approach in programming lectures. The next two phases will use both quantitative and qualitative methods to assess the attitudes of students and lecturers towards Mobile-based learning approach. All phases will focus on understanding the cultural implications of mobile-based learning, especially in delivering programming courses. Knowledge obtained from this proposed study will form the basis of developing an effective evaluation framework that will be called MoLeCoP (Mobile Learning for Computer Programming), upon which mobile-based approaches for preliminary programming courses will be assessed.

[Participant's Video Click Here](#)

3.6 *Hamad Zogan*

PhD Student, University of Technology Sydney

Detecting Depression Through Social Media

Social networks enable people to interact with one another by sharing information, sending messages, making friends, and having discussions, which generates massive amounts of data every day, popularly called as the user-generated content. This data is present in various forms such as images, text, videos, links, and others and reflects user behaviours including their mental states. It is challenging yet promising to automatically detect mental health problems from such data which is short, sparse and sometimes poorly phrased. However, there are efforts to

automatically learn patterns using computational models on such user-generated content. While many previous works have largely studied the problem on a small-scale by assuming uni-modality of data which may not give us faithful results, we propose a novel scalable hybrid model that combines Bidirectional Gated Recurrent Units (BiGRUs) and Convolutional Neural Networks to detect depressed users on social media such as Twitter-based on multi-modal features.

[Participant's Video Click Here](#)

3.7 *Abdulahman Hassan Alhazmi*

PhD Student, LaTrobe University

Developing an Awareness Framework for Software Developers to Implement Privacy into Software Systems

Do you know why despite the claims of having the most secure internet, we still become the victims of data breaches? The use of software applications is inevitable as they provide different services to users. The software applications collect, store users' data, and sometimes share with the third party, even without the user consent. The Internet has also grown, and this has significantly increased data breaches in software systems. One of the reasons for this might be that software developers who are responsible for ensuring that software systems are embedded with the appropriate privacy guided by laws such as GDPR fail to implement the laws. GDPR law has guidelines that can be followed by software developers to implement privacy into software systems. Nevertheless, many data breaches occurring might be due to the failure of putting the guidelines into practice. Developers might be lacking enough motivation to implement the GDPR law. Therefore, to equip developers with

the motivation to implement their skills to mitigate such breaches, this paper proposes a GDPR game-based teaching framework. Gamification, widely described as "the use of game design elements in non-game contexts" has previously shown potential in the development of exciting and efficient learning experiences, both in the sense of education and business. Some researchers have concentrated on the connection between software privacy and gamification, but they only focus on a few data privacy elements. The proposed framework will focus on improving developers' security coding behaviour by way of their motivation. This framework will incorporate all GDPR principles which have not been done before. The proposed framework will ensure that software developers can put GDPR into practice resulting in software systems embedded with privacy.

[Participant's Video Click Here](#)

3.8 *Tawfeeq Reda M Alsanoosy*

PhD Student, RMIT University

The Influence Of Culture On Requirements Engineering Activities

Requirements Engineering (RE) plays a significant role in ensuring software quality. It involves the critical activities that are required to capture clients' requirements accurately, completely and in line with users' needs. RE is a human-centric activity, and therefore, requires intense communication with software stakeholders. As culture plays a major role in the way individuals communicate and perform tasks, RE activities might be strongly influenced by individuals' cultures. However, few studies have been conducted to explore the influence of culture on

RE activities. Thus, cultural influences need to be explored, as better understanding them might result in better RE quality and outcome. The goal is to explore the influence of culture on RE activities. We employed Hofstede's model and a mixed-methods design within two different cultural contexts. We adopted Hofstede's model because it is a comprehensive model of culture. We adopted the mixed-methods design to systematically examine the issue by considering the strength of qualitative and quantitative approaches. The mixed-methods design comprises two phases. In Phase 1, we conducted 41 face-to-face interviews with RE practitioners. In Phase 2, we conducted 30 follow-up interviews to consolidate the collected data. The interviews were conducted with practitioners from two cultures: Saudi Arabia and Australia. We selected Saudi Arabia and Australia because: 1) the significant differences between and 2) the cultural profiles of both cultures have similarities to many other cultures, which make the results applicable to them. We identified 25 cultural factors that can influence RE activities. We investigated the implication of these cultural influence on RE activities, mapped them into Hofstede's cultural dimensions, and examined how these cultural influences might hinder or facilitate RE practices. We also developed a framework that maps between Hofstede's model and the identified cultural influences. This mapping allows for increasing the generality of our framework to identify cultural influences in many other cultures. The framework provided 89% accuracy for the Thai culture and 75% accuracy for the Chinese culture. Thus, the framework will not only assist RE practitioners to communicate with software stakeholders more effectively but also improve the implementation of RE activities and their outcomes.

[Participant's Video Click Here](#)

3.9 *Ebtesam Almansor*

PhD Student, University of Sydney Technology

Measuring The Quality Of Chatbot Using Intelligent Machine Learning Approaches

Developing an intelligent chatbot has evolved in the last few years to become a trending topic in the area of computer science. However, a chatbot often fails to understand the user's intent, which can lead to the generation of inappropriate responses that cause dialogue breakdown and user dissatisfaction. Detecting the dialogue breakdown is essential to improve the performance of the chatbot and increase user satisfaction. Recent approaches have focused on modeling conversation breakdown using several approaches, including supervised and unsupervised approaches. Unsupervised approach relay heavy datasets, which make it challenging to apply it to the breakdown task. Another challenge facing predicting breakdown in conversation is the bias of human annotation for the data-set and the handling process for the breakdown. To tackle this challenge, we have developed a supervised ensemble automated approach that measures Chatbot Quality of Service (CQoS) based on dialogue breakdown. The proposed approach is able to label the data-sets based on sentiment considering the context of the conversion to predict the breakdown. In this paper we aim to detect the effect of sentiment change of each speaker in a conversation. Furthermore, we use the supervised ensemble model to measure the CQoS based on breakdown. Then we handle this problem by using a hand-over mechanism that transfers the user to a live agent. Based on this idea, we perform several experiments across several data-sets and state-of-the-art models, and we find that using sentiment as a trigger for breakdown outperforms human annotation. Overall, we infer that knowledge acquired from the

supervised ensemble model can indeed help to measure CQoS based on detecting the breakdown in conversation.

[Participant's Video Click Here](#)

3.10 *Ahmed Alkenani*

PhD Student, Queensland University of Technology

Home-Based Prediction of Prodromal Dementia Using Linguistic Patterns and Deficits

Quality of life has led to an increasing aging population. Dementia is one of the most persistent issues facing an aging population due to its nature of being incurable. Without medical breakthrough, early diagnosis is the only hope for people with, or likely to develop, dementia given its evident possibilities in decelerating the disease's progression and alleviating its symptoms. The importance of automating the diagnosis of dementia towards facilitating its early prediction has long been emphasized, hampered in part by lack of empirical support. Consequently, many recent studies have attempted to employ the language deficiency caused by cognitive decline in automating the diagnostic task via training machine learning (ML) algorithms with linguistic patterns and deficits. However, the initial diagnosis remains clinical based. There, therefore, is a high necessity for developing a fully automatic longitudinal diagnosis system appropriate for home-based monitoring of cognitive decline. Consequently, this research project aims to investigate and develop a conversational agent for a fully automatic longitudinal diagnosis based on the analysis of daily conversations in home-based settings. Using natural language processing and ML, this research project has already established state of the art diagnostic performance and been investigating

a further improvement by exploring additional linguistic patterns and developing ML algorithms then integrate the highest resulted models with a chatbot that can be used in home-based environments.

[Participant's Video Click Here](#)



Chapter 4

Humanities, Management, and Applied Science

4.1 *Reem Dheya Alothmany*

PhD Student, Flinders University

Investigating the Impact of High-Performance Work Systems on Employee Outcomes in Saudi Arabia's Healthcare

Healthcare workers have been taking care of everyone during the Covid-19 pandemic, but who has been taking care of them? The importance of healthcare workers significantly increases during difficult times and they are usually required to perform at a high level. What is high performance? Who implements it? And what can it do for healthcare workers? Let us find out.

[Participant's Video Click Here](#)

4.2 *Mai Abualsamh*

PhD Student, Western Sydney University

Caught between two Cultures: Advice-Giving Realizations by Saudi students in Australia

This study investigated the advice-giving strategies used by English learners when offering advice in English and whether the learners' strategies were influenced by their first language (L1) cultural norms and conventions. Data were collected from 44 native speakers of Australian English (AEs), 60 native speakers of Saudi Arabic (SAs), and 60 Saudi students in Australia (SEs) using Arabic and English versions of the same questionnaire. First, cross-cultural differences in performing advice-giving strategies between native speakers of Saudi Arabic and Australian English were explored. Then, the performance of Saudi students studying in Australia was compared with those of Saudi and Australian counterparts in their home countries to investigate whether they transferred their L1 advice-giving patterns into the L2. Results showed that the AEs preferred to avoid offering advice more frequently than the SAs. When they chose to offer advice, the AEs showed a clear preference to use an indirect style with the use of a wide range of internal modifiers to mitigate the force of offering advice. On the contrary, the SAs preferred the use of direct advice and aggravated the force of advice by using internal upgraders. Results also revealed that Saudi students in Australia followed the L2 pattern in the frequency of offering advice; that is, they preferred to avoid offering advice. When choosing to offer advice, however, they seemed to be influenced by their L1 norms in using direct advice-giving strategies. These results emphasize the need for better understanding cross-cultural differences between the different language speakers and that sufficient socio-cultural competence is signif-

icant to avoid cross-cultural misunderstandings and promote successful intercultural communication.

[Participant's Video Click Here](#)

4.3 *Rayed Obaid Alobaid*

PhD Student, University of New England

The Association Between Intellectual Capital And Financial Performance In The GCC Banking Sector: A Comparative Analysis Between Islamic And Conventional Banks

Intellectual capital (IC) is recognised as the primary sources of competitive advantage of a firm as well as the driving force of modern business success in today's complex business environment. However, IC has previously been ignored due to conventional accounting standards such as financial reporting, which restrict the disclosure of intangible assets, such as IC resources. This study attempts to address the association between IC and financial performance in the GCC countries listed banks. It aims to examine the impact of value created by IC on financial performance of GCC Islamic and Conventional banks from a comparative perspective, between the period from 2009 and 2016. Arguably, this study is of particular importance to the region as it aims to shed light on the significant role of IC in improving the performance of the GCC banks and enhancing their awareness of IC as the main source of creating a sustainable competitive advantage. The GCC Islamic and Conventional banking sectors have been selected for this study because of their significant positive contribution in the development of the GCC economies as well as their critical role in the national diversification plans. In addition,

this study further examines the impact of corporate governance mechanisms, bank specific and country-level specific variables on Islamic and Conventional banks. This study will achieve its aim by employing both value added intellectual coefficient (VAIC) and the modified value added intellectual coefficient (M-VAIC) models as measurement tools for IC. Advanced econometric method (System GMM) is used to analyse the data. The System GMM findings confirm that IC is a vital contributor to the financial performance of both Islamic and Conventional banks. However, based on the results, Islamic banks appear to be outperforming compared to Conventional banks. This study adds further contribution to the existing literature on the relationship between IC and firm performance by extending evidence from the GCC countries. Furthermore, this study provide insights into the important role of IC as a key driver of knowledge-based firms' sustained competitive advantage. The findings of this study can benefit policy makers, executives, investors, other stakeholders and academics with further empirical evidence.

[Participant's Video Click Here](#)

4.4 *Rola Adel Kutby*

PhD Student, Curtin University

Honey Bee (*Apis Mellifera*) Health Monitoring And The Fungal Pathogen *Nosema* Spp.

A number of factors have been identified to contribute to honey bee losses such as parasites, pesticides, environmental change or bad beekeeping practices. To safeguard honeybees and their pollination services into the future, we therefore need to develop better tools to monitor bee health on the colony level and to identify early indicators

of stress leading to collapses. Key to a sustainable availability of insect pollinators is to 1. Identify the performance of healthy colonies by monitoring key variables of interest such as temperature, humidity, flight activity, parasite intensities, volatile organic compounds etc. 2. Induce environmental stressors the fungal pathogen *Nosema* spp experimentally to see how the above measures change and therefore provide bio-markers of unhealthy bees and early onsets of collapses, when bees can still recover if managed properly.

[Participant's Video Click Here](#)

4.5 *Nedaa Abdulrahman Alshehri*

PhD Student, Western Sydney University

Using Digital Storytelling To Enhance English Foreign Language Learning: A Case Study of Saudi EFL Female College students

This study aims to gain a deeper understanding of the potential of digital storytelling, a short narrated personal story interwoven with image, audio and text affordances, in learning English for Saudi English Foreign Language college students where the English is accustomed to copy what they have been memorized. It explores how students demonstrate their English discourse competence, agentic learning and 21st century skills through implementing digital storytelling in their English writing classroom. One tutorial class for the period of one semester of an average of 15 students was allocated for the researcher to implement the digital storytelling for teaching English writing. The project uses the qualitative case study as a methodology for the research inquiry with data collected from interviews, lessons observations and artefacts

analyses. It uses Gee discourse analysis framework to analyse the data obtained from students' interviews and observations and Halliday's Systemic Functional Linguistics framework to analyse students' artefacts (story maps, storyboards and digital stories). The results showed that while this class focused on learning English writing, students also activated their others' potentialities. It showed that digital storytelling provided students with space to discover their own EFL competence and shift from viewing themselves as recipients of knowledge toward seeing themselves as active agents with distinctive skills in their English learning process. By integrating digital storytelling, students gained the opportunity to develop not only their English competence but also to take up positions as digitally competent students with distinctive creativity and unique thinking skills. Through observations and the story maps and storyboards, students demonstrated their discourse competence and their thinking skills in solving the challenges they faced while creating their digital stories. Also, through their digital stories and interviews' responses, they expressed how this experience conveyed not only a meaningful spoken/written English text but also reflected their digital skills and creativity to represent who they are. In so doing, this research will provide the stake holders and policy makers at the Saudi Ministry of Education with the importance of integrating a rich learning environment in form of digital storytelling in the Saudi college curricular. Furthermore, it will add a valuable knowledge in the field of digital storytelling as the first, to the best of my knowledge, to conduct a qualitative case study about the role of digital storytelling in enhancing English Foreign Language Learning in the Saudi context.

[Participant's Video Click Here](#)

4.6 *Mona Ali Alzahrani*

PhD Student, RMIT University

Designing A Virtual Reality Game For Language Education

The aim of my research revolves how to design and use virtual reality in an educational setting. By understanding the role of virtual reality technology in the education field and understand the methods and techniques to use VR in the classrooms as well as focus on human-computer interaction, user experience, user interface and game design which all of these help me to create my VR game (Kona Keda). We still need more study about the educational games and performance of learning in Saudi Arabia Picard, 2018; Zafar et al., 2014. At the same time Saudi Vision2030, 2017 asserts the importance to involve our culture and values. Also, Aldera, 2017, p. 222 emphasizes to integrate the Saudi culture in the English language learning he said: "most EFL/ESL textbooks usually include foreign culture, and local culture is rarely represented". The vast majority of elementary school students in Saudi Arabia lack the chance to be immersed in an English-speaking environment. Virtual reality game could offer the chance to integrate the learners on interaction environment and enhance their learning.

[Participant's Video Click Here](#)

4.7 *Rabee Ayed M Alqahtani*

PhD Student, University of Wollongong

A Comparative Study Of Three Different Approaches To Gifted Education In KSA

Increasing attention is being dedicated to the needs of gifted students in Saudi Arabia due to the nation's national agenda to realize its 2030 vision. Over 80,000 Saudi gifted students receive gifted education in one of three forms: the Integrated Approach, the Gifted School Approach, and the Dedicated Classroom Approach. As key stakeholders in the gifted education arena, students and parents have a vested interest in the quality and effectiveness of gifted provisions. The proposed research is designed with the intent to compare and contrast the three approaches to gifted education employed by the Saudi Ministry of Education and identify the factors affecting quality from the student/parent perspective. The central questions the research seeks to answer are: what are the parent and student views regarding the gifted education provision they have experienced, and what factors significantly influence the effectiveness of each approach? The researcher assumes that specialized needs of gifted students can be met when students are enrolled in appropriate provisions, and that using the appropriate approach to gifted education increases quality and effectiveness. Likert-scale surveys will be administered to three-hundred students and parents to elicit perceptions about their learning experiences within defined educational settings. This research could potentially inform school administrators and teachers responsible for planning and implementing future gifted education provisions in Saudi Arabia and internationally.

[Participant's Video Click Here](#)

4.8 *Maryam Salman Aldossary*

PhD Student, Curtin University

The Effectiveness of Art-based Instrumental Mentoring in Enhancing Metacognitive Awareness Among First Year University Students

The purpose of this study is to determine how art-based intervention (ABI) could influence students' meta-cognitive awareness through involvement in an instrumental mentoring program. As a supporting program offered in the university, the study would target first-year students as they may face challenges in their transition from high school to university, which might affect their academic success and sense of belongingness. The students will be involved in ABI and will be mentored by their peers. A mixed-method approach will be utilised to achieve the research goals. The data will be collected by the use of the Metacognitive Awareness Inventory (Schraw & Dennison, 1994) and the Institutional Integration Scale (Pascarella & Terenzini, 1980). The qualitative data will be collected from written reflections and focus group interviews. The result of this study may provide a better understanding of how ABI and instrumental mentoring could help students to gain new knowledge and social skills by enhancing meta-cognition and help to design further programs to support those students.

[Participant's Video Click Here](#)

4.9 *Yazeed Alanazi*

PhD Student, University of Wollongong

Associations Between 24-Hour Movement Behaviours (Physical Activity, Sedentary Behaviour, And Sleep) And Health And Development Among Children In The Kingdom Of Saudi Arabia

Few studies have explored the combined associations between 24-hour movement behaviours (physical activity, sedentary behaviour, and sleep) and health among children. In Arabic countries, such as Saudi Arabia, no known studies have examined these associations nor how changes in the daily composition of 24-hour movement behaviours may be associated with health and development among school-aged children. Most published studies assess the relationship of each of these movement behaviours in isolation or partially adjusted for time spent in other behaviours (Tremblay et al., 2016). Due to the compositional nature of daily time spent in physical behaviours (i.e. time spent in one behaviour will displace time spent in other behaviours) (Tremblay et al., 2016, Chastin et al., 2015), and their potential interactive health effects (Chaput et al., 2014), it is important to conduct studies that examine this new paradigm that integrates all components of movement/non-movement behaviours and evaluates its combined influence on health and development. The purpose of this doctoral research is to investigate whether the 24-hour composition of movement behaviours (sleep, physical activity, sedentary behaviour) is associated with Saudi school-aged children's health and development.

[Participant's Video Click Here](#)

4.10 *Elham Mohammad M Qawariri*

PhD Student, University of Wollongong

Corporate Social Responsibility under Saudi Company Law: Comparative Study with Australia

Corporate social responsibility (CSR) has assumed strategic significance in the industrial world for companies and governments alike. CSR and national development are fundamentally intertwined. Corporations which are socially responsible promote sustainable development, meet social and environmental needs, motivate individual employees, create a wealth of goods, and stimulate economic progress. For these reasons, CSR practices are becoming increasingly popular among corporations and business entities around the world.

In recent years, many organisations and companies have re-organised their strategies and standards in order to implement national regulations on CSR, with the aim of ensuring the success of their businesses, especially in terms of improving economic profits. CSR has been implemented in many countries, including Malaysia, China, India, Indonesia, and Australia. Corporations in Australia and other developed countries focus on CSR practice in different ways. However, in Saudi Arabia, the implementation of CSR is still in its nascent stages.

This study will analyse company law in the Kingdom of Saudi Arabia and Australia using comparative analytical methods. It will also examine and evaluate how CSR has been implemented in Saudi Arabia in particular, specifically with regard to its social, economic, environmental, and ethical contexts. This research addresses a gap in legislation and academic scholarship. In Saudi Arabia, there are no existing legal and regulatory frameworks or reliable systematic studies which have

effectively clarified how corporations can implement CSR in a socially responsible manner. This is the lacuna which this study aims to fill.

The research will investigate the implementation of CSR in selected Saudi Arabian companies by evaluating their social effectiveness, monitor shareholders' performance, and enhance the economic performance of the company among the Saudi community. This project combines comparative and empirical approaches to examine whether CSR in Saudi Arabia should be self-regulated or is it necessary to enact a regulatory framework in order to enforce CSR in the nation's business practices.

[Participant's Video Click Here](#)

4.11 *Budur Alamrani*

PhD Student, University of South Australia

Exploring the Perspectives of Primary School Students with Autism about their Inclusion and Educational Experiences in Saudi Arabia Mainstream Schools

"Human rights and inclusive education policy discourse (United Nations, 2016) has intensified global and specifically Saudi Arabia mainstream schooling responsibility to expand access and participation of students with disabilities, inclusive of those with autism. Given increasing enrolments of students with autism in mainstream schools, global concerns address translation of inclusive educational policies into practice (Roberts Simpson, 2016) and varied student experiences (Goodall, 2018; Humphrey Symes, 2010), with many students with autism experiencing social and emotional exclusion (Williams, Gleeson, Jones, 2019). Thereby, this study explores the field of inclusive education through the lived educational experiences of students with autism within Saudi

Arabia mainstream schools. To date, limited research examines the inclusive educational experiences from the perspectives of students with autism in mainstream schools (Goodall, 2020), particularly primary-aged children (Cunningham, 2020). Limited studies exist in the emerging in the field of inclusive education research within Saudi Arabia, with few studies specifically exploring the inclusion of students with autism and these predominantly examine teacher attitudes and perceptions towards the inclusion of students with autism (Alhudaithi, 2015; Alzaidi, 2017). Thus, the significance of this study lies in empowering school-aged students with autism to voice their views about their inclusive educational experiences within mainstream schools in Saudi Arabia. This qualitative multi-case study in Saudi Arabia cities of Dammam, Riyadh, Jeddah and Al-Asā, employs visual research methodologies, and semi-structured interviews, to explore eight primary school-aged students' (aged 6-12 years) educational experiences within Saudi Arabia mainstream schools. The two-phased research design invites participants to draw Me at the School to explore their current lived educational experiences, followed by My Ideal School to capture their vision of their future schooling experience. providing narratives through in-depth semi-structured interviews and analysed through constructivist, transformative and Islamic philosophical worldviews. Thereby, in seeking student voice, the United Nation's Rights of the Child (United Nations, 2009) can be promoted to inform the emerging inclusive education policy and practice in Saudi Arabia mainstream schooling, while contributing to global research critiquing the affordances of visual methodologies in capturing the voice of students with autism (Fayette Bond, 2018)."

[Participant's Video Click Here](#)

4.12 *Weam Alghamedi*

PhD Student, La Trobe University

Outdoor Play In Public Green Spaces As Understood By Saudi Mothers Of Young Children In Saudi Arabia

This research aims to examine the understanding of outdoor play in public green spaces amongst mothers of young children between the ages of 3–6 years in Riyadh, Saudi Arabia. Mothers of young children play a central role in managing their children's play. Therefore, understanding mothers' views on the use of public outdoor places can make visible their views on the relationship between outdoor spaces, children, and their experiences. A narrative life history approach documenting experiences and relationships with outdoor spaces will be used and include data collection methods of life history interviews with six Saudi mothers, participant observation (by the researcher) and document review of policies governing outdoor public spaces. The collected data will contribute to building rich and detailed life histories. Analysing the data will be under two steps, writing a story about each participants, and identify common themes of meaning that come up repeatedly. This research will contribute to understand how mothers use public green spaces throughout their lives and with their children and how these experiences influence the current use of public green spaces in Riyadh, Saudi Arabia.

[Participant's Video Click Here](#)

4.13 *Raniah Amir Alsairi*

PhD Student, Queensland University of Technology

Perceptions and Knowledge of Obesity among Saudi Women

The World Obesity Federation recently identified obesity as a chronic and relapsing disease (Bray, Kim, Wilding, Federation, 2017). Several studies in both developed and developing nations have found that obesity has become a significant issue, with escalations in all population groups. Additionally, obesity and its related non-communicable diseases (NCDs) have been described by WHO as an epidemic (Bhurosy Jeewon, 2014; Dinsa, Goryakin, Fumagalli, Suhrcke, 2012; Ellulu, Abed, Rahmat, Ranneh, Ali, 2014; Schmidt, 2015). focusing on the Gulf nations, namely Kuwait, Saudi Arabia, the United Arab Emirates (UAE), Bahrain, Qatar, and Oman, a study by Sultan AL-Nohair (2014) found that these countries, particularly high-income sectors of the countries' populations, are also affected by obesity because of technological advances and physical inactivity. Statistical reports in many Gulf countries indicate an even more significant increase in obesity among women than among men (AL-Nohair, 2014).

This current study is designed to examine factors influencing weight reduction/management behaviours among female adolescents and adults in Saudi Arabia using the HBM as the conceptual framework. To understand these factors, a mixed method program of research is proposed. The first phase of the research will include a pilot study and a qualitative phase, data will collect through FGDs and analyzed by thematic analysis. In phase 2, a quantitative data will collect using a questionnaire, which will be distributed to 385 females across three places in Jeddah city. The questionnaire will comprise of questions related to socio-demographic characteristics, and questions to examine the six key HBM constructs

including perceived benefits, perceived barriers, perceived susceptibility, cue to action, perceived severity and self-efficacy. In phase 3, a qualitative data will collect through semi-structured interviews of phase 2 participants and analyzed by thematic analysis. The aim of this study is informed by the theoretical framework of the Health Belief Model to explore the influence of females' knowledge, attitude, beliefs and perceptions related to weight reduction/management.

[Participant's Video Click Here](#)

4.14 *Badriah Saleh AL-Juaid*

PhD Student, La Trobe University

Classical Algebraic Structures and Representations Certain Relation Algebra

A classical colouring problem asks whether the edges complete graph can be coloured by m colors, so there are no some kinds of triangles forbidden. A natural variant of this question connects it to representations of certain algebraic structure known as relation algebras. Therefore, we investigate edge colouring problem of complete graphs with properties defined by restricting in certain ways the colors of the triangles. We define colouring set be finite, U be set of vertices. Then, the edges of a complete graph can be coloured from colouring set in 8 natural conditions by a subjective map from colourings set to vertices set. So, we get 8 corresponding existence questions. We will consider them all, giving complete answers in all but one case. Indeed, colouring problem are purely combinatorial and can be regarded that way, but they are tightly connected to representability of certain relation algebras.

[Participant's Video Click Here](#)

4.15 *Ahmed Ali Y. Majrashi*

PhD Student, Curtin University

The Impact Of Management Control System On The Relationship Between Organizational Culture, Environmental Strategy And Environmental Performance In Australian And Saudi Arabian Organizations

The aim of this study is to examine the extent to which interactive and diagnostic use of management control systems moderate the relationship on organizational culture, environmental strategy and environmental performance. This study uses contingency theory to propose a framework that might be useful for organizations to deal with the effect of management control system and organizational culture, environmental strategy on environmental performance. Data in this study collect from publicly listed Australian and Saudi Arabian companies in the Materials industry using The Tailored Design Method (TDM) (Dillman, Smyth, Christian, 2014) and self-administered surveys. The surveys will mail to middle-level managers and the questionnaire will include measurement items for organizational culture, environmental strategy, management control system and environmental performance. The findings of this study will contribute to a greater understanding of the drivers of environmental performance, to enhance the environmental sustainability, and the organizational strategy which will have significance impacts on managers.

[Participant's Video Click Here](#)

THE END...

