

Abstracts

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8th Asian Conference on Environment-Behaviour Studies

Holiday Villa Resorts & Spa, Langkawi Island, Malaysia

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Editor

Mohamed Yusoff Abbas

Acknowledgement

Our 29th international conference, the 8th Asian Conference on Environment-Behaviour (AcE-Bs2019LangkawilIsland) was made possible by many

Many thanks to the more than 60 International Scientific Committee (ISC) / Editorial Board Members, represented from 16 countries worldwide, for their continuous commitment and dedication for reviewing the conference papers.

Last but not least, our gratitude to the Distinguished Keynote Speaker, Abstract Contributors and Paper Presenters for disseminating their works and findings at this most memorable international conference. Their continuous support in participation endorses the relevance and sustenance of more successful forthcoming conferences.

Thank you all !

Foreword

This 8th AcE-Bs2019Langkawililand, managed to attract an overall total of 77 numbers of approved abstracts, from four countries (based on first authors' affiliations).

Majority of the abstracts (74 numbers or 96%) were contributed by Malaysia. This was followed by one each from Hong Kong, China, Japan (withdrew) and Turkey.

The abstracts approved were simply grouped generally under 21 sub-categories, although quite a number could have been easily placed under more than one category. The top four categories in order of popularity involved the following environments: -

Educational / Learning Environment, ELE (15 numbers or 20%); Residential Environment, RE (8); Health / Healing Environment, HE (7); and 5 numbers each for Children / Youth Environment (CYE) and Sustainable Environment (SuE)

The Association of Malaysian Environment-Behaviour Researchers (AMER), the main organiser, with the co-organisers, ABRA and cE-Bs, FSPU, UiTM, congratulate all contributors for making the conference a tremendous success!

Hopefully this conference will inspire and encourage more researchers to participate in our forthcoming serial conferences.

Thanks again for your continuous support as always, and hope for an enlightening conference!

Prof. Dr. Mohamed Yusoff Abbas

Editor

8th AcE-Bs2019Langkawililand

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18 Dec 2019

About the Conference

Background

The success of the 1st National Conference on Environment-Behaviour Studies, InCEBS2009 held at UiTM Shah Alam, Malaysia, from 14-15 Nov 2009, inspired the organiser to organise future conferences beyond the nation. The **AcE-Bs**, an initial acronym for ASEAN Conference on Environment-Behaviour Studies, which targeted venues at ASEAN countries, was later extended to be held in Asian countries, thus the current acronym for the **Asian Conference on Environment-Behaviour Studies**.

AcE-Bs conferences main theme address Environment-Behaviour (E-B) issues affecting the Asian communities living in both Asian and non-Asian countries. E-B issues affecting non-Asian communities are also most welcome.

Prior to 2014, AcE-Bs was organized by cE-Bs (Centre for Environment-Behaviour Studies, FSPU, UiTM, Malaysia, supported by AMER (Association of Malaysian Environment-Behaviour Researchers) and ABRA (Association of Behavioural Researchers on Asians). Post-2014, with AMER and ABRA being formalised, cE-Bs took the supporting role. AMER's Event Management & Services (emAs), a private entity, manages all of AMER's events, under EmAs EmAs Resources.

Thus far, the AcE-Bs were organised as follows:-

- 7th AcE-Bs2016Taipei, Taiwan, 09-10 Apr 2016
- 6th AcE-Bs2015Tehran, Iran, 21 – 23 Feb 2015
- 5th AcE-Bs2014Seoul, South Korea, 25-27 Aug 2014
- 4th AcE-Bs2013Hanoi, Vietnam, 19-22 Mar 2013
- 3rd AcE-Bs2012Bangkok, Thailand, 16-18 Jul 2012
- 2nd AcE-Bs2011Bandung, Indonesia, 15-17 Jun 2011
- 1st AcE-Bs2010Kuching, Malaysia, 07-08 Jul 2010

Theme Synopsis: 8th AcE-Bs2019Langkawilsland

Commencing with our 25th silver international conference - the AicE-Bs2018Sheffield, there shall be no specific conference theme. Paper contributors are expected to focus specifically on Environment- Behaviour issues pertaining to the following environments (though not exhaustive):-

Children's Environment; Commercial/Retail/Services Environment; Communication Environment; Community Environment / Social Psychology; Construction Environment; Disabled / Inclusive Environment; Educational / Learning Environment; Elderly Environment; General Psychology; Healing / Healthcare Environment; Hospitality / Tourism Environment; Landscaping Environment; Legal Matters; Leisure / Recreational / Sports Environment; Local Cultural / Heritage Environment (Food included); Natural Environment; Residential Environment; Rural Environment / Rural Psychology; Technology- related Environment; Transportation / Travelling Environment; Urban Environment / Urban Psychology; Workplace Environment; etc.

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The Influence of Job Demand, Respect and Rapport on Work Engagement of Employees in the Food Service Sector.

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A 01 CYE 001

Children's Playground in Mosque

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Abstract

Play is the nature of children. It is a crucial part of children's development. Playing together is also a way for children to socialize among themselves. Children can find anything or any place as their play space. Even in mosques - which are known as a religious place, children can afford to play. However, there are people in Malaysia who could not accept children playing in the mosque. Contrary to the Prophet Muhammad's action towards children, some adults would reprimand children or their parents harshly when children play in mosque areas. However, mosques should be children-friendly and afford children to socialize with peers within the community while being in the mosque. Being at the mosque could heighten sense of belonging towards the mosque in children. This issue should be addressed by making clear to the community which spaces in mosque design are suitable for children to play. This study aims to make mosque design more children-friendly. The objectives of this paper are (i) to explore types of play in mosques by children and (ii) to investigate spaces and places in mosques which could afford children to play. The study is applying a qualitative approach by using behaviour mapping and observation methods. The data is being gathered from three communal mosques in Johor Bahru that have different space configurations. The observations are being done on Friday night as it is the time when the attendees are more in numbers. The selection of time is also due to longer duration

of stay by attendees due to Quran recitation and religious talk that are usually held on Friday nights. The findings show that children can afford to play without a formal playground and that they use spacious places such as covered square and verandah as their playgrounds. Courtyard without a roof is found to be less popular as a play space for children. Designer and planner of mosque should design more open yet covered spaces outside the prayer hall to allow higher affordance of play by children. The merrier the mosque with attendance of children is a sign of a bright future of the next Muslim generation.

Keywords: Play, Children-friendly Mosque, Mosque Architecture, Design

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A 02 CYE 004

Development and Validation of the Beverages and Snacks Questionnaire for Schoolchildren (BSQ-C).

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Abstract

The intake of sugar-sweetened beverages (SSBs) and snacks have changed over the past few decades and has associated with weight gain in children. Apart from that, overconsumption has proven that lead to cardiovascular diseases, diabetes, and dental caries among children. However, it is challenging to measure the consumption of SSBs and snacks due to the limitation of existing tools. This study aimed to develop and validate the beverages and snacks questionnaire (BSQ-C) to assess the pattern and behavior of SSBs and snack among schoolchildren. The BSQ-C consisted of ten questions with 57 items asking about the frequency intake during the previous week of SSBs and snacks. For each item, the schoolchildren's answer the frequency, quantity, and location intake. The BSQ-C was pretested with 99 schoolchildren randomly. In testing for internal consistency, Cronbach's alpha for frequency intake of fruit drink; milk and cultured milk; carbonated drink; malt chocolate, tea and coffee; home-made drink; vendor-made drink; biscuit; cake and bread; chocolate; and confectionery were 0.71, 0.74, 0.71, 0.44, 0.46, 0.77, 0.74, 0.43, 0.68 and 0.53 respectively. The value of

Cronbach's alpha indicated more than 0.70 is considered an acceptable internal consistency. However, for the Cronbach's alpha below 0.70, validity was checked using KMO and Bartlett's test of sphericity among the items to ensure the item is in the correct group. Despite malt chocolate, tea and coffee; home-made drink; cake and bread; and confectionery produced KMO value less than 0.70; this BSQ-C finally used in the actual survey due to intentionally to reduce the burden of numbers of items to be answered by the children, which did not violate the ethical issues for vulnerable group namely children. Furthermore, based on the expert opinions, the BSQ-C was easy to be comprehended by the children with less item of questions. Numbers of question remained as time-consuming and practical during assessment within the reasonable time given by school authorities for data collection during schooling hours. However, the internal consistency for the overall item in this BSQ-C obtained was very high, with Cronbach's alpha of 0.94. In conclusion, the BSQ-C developed is valid and reliable to measure pattern and behavior of SSBs and snacks intake among schoolchildren.

Keywords: Beverages and snacks questionnaire (BSQ-C); Sugar-sweetened beverages (SSBs); Snacks

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A 03
CYE 003

**Factors Influencing Active Travel Mode to School
for Primary School Children. Case Study: Shah
Alam City, Malaysia**

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Abstract

Walking and biking are categorized under active travel mode, which is a healthy way for children to explore their environment and enable them to be more independent. Walking to school is one of the active physical activities for children. However, nowadays, children prefer passive mode of transport to commute to school. Hence, it is essential to know the factors that influence children to choose walking as a mode of traveling to school. This research aims to identify the factors that influence children to walk to school. It also evaluates the safety level within school areas and their surroundings. To achieve this, the study identifies and evaluates the factors that contribute towards children's preference, as well as measuring the safety level for primary school children when walking to school. Besides, this research will propose a conducive environment for children to walk to school. This study, therefore, investigates children's preference through their parents to understand their perceptions on the choice to walk to school. Through a case study method and a stratified random sampling approach, 384 parents of primary school children in the city of Shah Alam were selected as respondents. The survey included inquiries on children's physical activity, mode of transport, parental physical activity and health-conscious, as well as socio-demographic background. Also, a Focus Group Discussion (FGD) was conducted to identify the implementation strategies at the national and municipal level as an effort to encourage active transportation among primary school children. Results

indicated that parents send their children using private vehicles to school due to lack of safe home-school path provisions. Hence, the result from this study will assist town planners when planning for pedestrian specifically for primary school children and will contribute to the academic field. Other than that, it will put forward the theory of walking-to-school mode. Inevitably, recommendations from this study may help to reduce obesity and injury cases among primary school children.

Keywords: Active Travel Mode; Transport; Walking; Primary School Children

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A 04 CYE 002

The Coping Mechanism And Life Satisfaction Among Caregivers Having Children With Learning Disabilities

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Abstract

The caregivers have to face many challenges and unexpected demands when having children with Learning disabilities (LD). The coping strategy used by the caregiver to cope with the challenges in raising their LD children is important to investigate as it may influence life satisfaction, which later affects the child's future adjustment. The objective of this study was to identify the correlation between the coping mechanisms used by caregivers who have children with learning disabilities and their life satisfaction. The study was conducted in three Community Based Rehabilitation (CBR) centers. There was sixty-four main primary caregiver who met the inclusion and exclusion criteria were recruited as participants for this study. The participants consist of a caregiver who is having children with LD: 42 (65.6%) were female, and 22 (34.4%) were male. Caregiver's coping mechanism was assessed by using Family Crisis Oriented Personal Evaluation Scale (F-COPES), and the life satisfaction was measured by using Satisfaction With Life Scale (SWLS) which both of these instruments are self-answered questionnaires. The study found that the reframing ($r(62) = .186, p = .018$), acquiring social support ($r(62) = .339, p = .006$) and seeking spiritual support ($r(62) = .257, p = .041$) have positive correlation in a meanwhile a passive appraisal ($r(62) = -.288, p = .021$), has negative correlation with the life satisfaction. From the results, it can be revealed a strong influence from the coping mechanism used on life satisfaction. Thus,

the health practitioner such as Occupational Therapist may suggest these mechanisms to other caregivers with children with LD in managing their challenges. Subsequently, the caregiver will have a good life satisfaction and give a positive propensity upbringing childhood for children with LD. It is highly recommended further study to run on larger population with different socioeconomic status.

Keywords: Caregiver, Learning Disability, Coping mechanism, Life Satisfaction

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Commercial / Retail / Services Environment

A 05 CRSE 002

An Assessment on the Auction Market in Selangor

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Abstract

The first auction law was enacted in the states of Penang and Malacca in 1906. The real estate market was an effective way of selling real estate (Chyi, 2015). This is one way of selling real estate, as the community knows the seller is committed to making an immediate sale. However, there are advantages and disadvantages to buying real estate. Pro of buying auctioned-property is that the house price is affordable by the purchaser. For example, during the bidding process, each potential buyer has a set limit on the maximum house price they can afford. Therefore, the housing price considers the buying power of the purchaser to buy an auctioned-house. Also, buyers can get the ideal property at a lower price than the free market. The downside to buying an auction property is that the buyer is not allowed to visit and access the premises for inspection before making a purchase. Buyers only have access to the premises once they are purchased. In other words, buyers should conduct research first if they have the intention to buy-auction-the property. According to Shawn (2018), there are various considerations for buying auction properties in terms of type, location, and more. It is important to identify the location of a property to make a good investment. It is important to note that this is the purpose of this study. First, to determine the selected location of

real estate for sale by respondents in Selangor. The analysis shows that the most preferred location of auction properties is in Gombak. Next, to identify the factors that influence the acquisition of auctioned properties which will be explained according to respondents' priorities in Selangor. Finally, to identify issues and problems in real estate-buying, listed by all respondents during the study. The major issues and problems identified in this study were the unreasonable times taken in the process of bank lending to buyers.

Keywords: Auction, Purchaser, Property, Selangor

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A 06 CRSE 004

Sale and Leaseback Investment Concepts in Malaysia REIT Companies

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Abstract

Background: Recently, the numbers of Real Estate Investment Trust (REIT) Companies in Malaysia were involved in sale and leaseback investment is increasing. Consequently, there has been a growing trend among these REITs to acquire property that belongs to establish cooperation companies that wish to split their ownership and core business activity. This voluntary investment by cooperation companies is to free up their equities for other uses while maintaining the use of the facility. While it is a market opportunity for the REIT companies to take in charge of the property owner and enjoying the long term lease of the property.

Objective: The purpose of this paper is to determine the concepts of the sale and leaseback transaction in common practice by REIT companies in Malaysia.

Aim: This research examines the recent trends since it started to involve in sale and leaseback within the Malaysia REITs.

Methodology: The research is using interviews with the expert practitioners that adopting sale and leaseback investment transactions and identifying differences motives from different REIT companies. The data were recorded, transcribed and analysed using thematic analyses for multiple interviews. A qualitative method was being used due to the number of REITs involved in sale and leaseback investment in Malaysia were limited.

Findings: This research identifies the motive and concept behind this investment transaction. Sale and leaseback are one of the alternative ways for REITs companies to expand and increase the number of their property portfolio. Besides, the rental income for the REITs are more secure and guarantee.

Implications: The result of the study would be a useful guide to Real Estate managers in developing countries towards using sale and leaseback as one of the alternative ways in property investment. Further research may indicate if a similar concept can be built for other types of investment property.

Keywords: Sale and Leaseback, REITs, Real Estate, Property Investment

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A 07 CRSE 003

The Implementation of Performance Measurement in Facilities Management for Public Buildings

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Abstract

The practice of facilities management for public buildings began to get attention after the National Asset and Facility Management Convention 2017 (NAFAM). The convention aims to ensure that public buildings are functioning at maximum efficiency and are well maintained. As such, the end-user will be satisfied with the service provided as it improves the quality of life, especially when the service provided can meet end-user requirements in terms of time, cost, quality and service. Therefore, it requires a monitoring method that assesses the actual performance of the service providers. The facility manager can take action to the service providers if they fail to meet the required service performance agreed by both parties. This paper aims to investigate the practice of performance measurement in facilities management for public buildings. The objectives of the research are to identify the scope of facilities management services and to assess the criteria of service provider performance measurement methods practice by the public sector. Data were obtained through a pilot study conducted examining two facilities management contract documents. From the pilot study results, it reveals that the scope of facilities management is divided into two (2) main, namely the management and operational. The scope of management involved mobilization and demobilization, transition, financial, utilities, quality, risk, health, safety and environmental, human resources, customer care, incident respond and disaster recovery, procurement, inventory, operation and maintenance, information

system, management review and reporting, warranty, energy and conservation, waste and redundant materials, technical library, security, event and asset condition appraisal. Meanwhile, the operational scope involved operation and maintenance services and custodial services. For performance measurement, they are three (3) set of Key Performance Indicators (KPI) have been established, namely, performance-based KPI, service availability KPI and Asset Availability KPI. Concerning the various scope of facilities, management services need to be assessed. This study aims to propose a framework to evaluate service provider performance to enhance service delivery. The proposed framework could be used as a tool to reflect the level of performance.

Keywords: performance measurement, facilities management, key performance indicator, public

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A 08 CRSE 005

Tracking a Usable Shopping Centre through User Journey

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Abstract

This paper portrays the tracking of Malaysian shopping centre's usability through the journey of customer's experience. With the competitive landscape of our retails industry, the usability evaluation is critical in delivering the quality design through the usability key factors; effective, efficient and satisfying. The shopping centre is perceived as a holistic building through the experience of the user – virtual, technical and social, which either hinder or support their activities. The perceptions that attributed to those experiences evoke the thoughts, attitude and emotions. The only logical way to understand this user's experience is through the usability approach. Generally, ISO 9241-11 (1998) defines usability as a specified set of tasks in a particular environment which can be achieved by users through effectiveness, efficiency and satisfaction. The evaluation of usability in this paper is done through the qualitative method known as 'voice out loud' walkthrough, which extricated from the user's experience. A focus group of eight respondents were recorded by voice recorder during their journey in one large shopping centre in Malaysia, which is known as Mid Valley Megamall. Mid Valley Megamall is recognized as one of the largest shopping centres in the world, and thus, it is the best place to extract the usability criteria due to its complexity. The focus group was asked to voice freely of their feelings along with their journey. Their journey then

was mapped according to the phase process perspective. This study revealed how the customer reacts to the shopping centre environment and design along the route. The aim is to highlight the usability dimensions that critical in Malaysian shopping centre design and presented following the phase of customer's experience journey. The findings revealed that functionality, accessibility, visual design, memorability, learnability, comfortable, business mix and atmosphere are significant in creating the framework of Malaysian Usable Shopping Centre.

Keywords: Usability 1; Shopping Centre 2; Journey3; Satisfaction4

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Community Environment

A 09 ComE 001

Postnatal Confinement among Malay Women: Comparing practices between two different generations

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Abstract

Background: The tradition of postnatal confinement is still universally practised by the majority of Asian women. Understanding the changes in the confinement practice is essential to allow effective postnatal care in consideration of the women's cultural belief.

Aim: To determine the difference in postnatal confinement practice between two different generations.

Methodology: This was an unmatched cross-sectional study in a rural area of about 500 living quarters, conducted via face-to-face interview using a structured questionnaire. The sample size was calculated using StatCalc in Epi Info software. The sample size calculation for unmatched cross-sectional study design with 80% power and 95% two-sided confidence level was used, with the prevalence of 96% of women practise confinement routines and to detect 15% difference, and additional 10% for possible non-responders, hence the required sample size was 100 respondents per group. A random number generator was used to select the living quarters, and any female occupant resided in the selected living quarters that fulfilled our inclusion criteria

were offered to participate. The inclusion criteria were Malay women who had a history of at least one birth and no previous history of mental illness. Women aged less than 50, and 50 years old or more, were grouped as the younger and older generation, respectively.

Findings: Two hundred women participated in this study. The mean age of the younger generation (n=99) and the older generation (n=101) were 28.4 and 66.1 years old, respectively. There were significantly more of the younger generation who had their confinement period at their mother's house ($p < 0.001$) compared to the older generation. They also significantly have less restriction in their intake of green vegetables ($p = 0.004$), eggs ($p = 0.006$) and milk ($p = 0.023$) compared to the older generation. The older generation significantly consumes more tonic from medicinal plants ($p = 0.005$), 'Morinda citrifolia' ($p < 0.001$) and tend to restrict their water intake ($p < 0.001$). In comparison with the younger generation, they also significantly practise more sexual abstinence ($p = 0.001$), hot compression ($p = 0.005$), herbal bath (0.016) and tend to avoid social outing ($p = 0.001$) during their confinement period.

Implications: There are changes in postnatal confinement practice, including the pattern of food restriction and some traditional postnatal care practices, among women from younger generations. Healthcare provider should allow women to continue practising postnatal confinement guided by evidence-based medicine. Clinically proven intervention should be recommended, and harmful practices should be discouraged. A tactful approach is required to ensure a safe confinement practice for the mother and the newborn baby.

Keywords: post-partum; puerperium; traditional; era

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A 10
ComE 002

Study on Respondents' Awareness and Preparedness when Disaster Strikes: Case Study of Local Community in Cameron Highland, Pahang.

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Abstract

Disaster disrupted human health, building, economic and environmental losses. While large catastrophes rarely occur, small disaster occurrence associated with natural hazards such as landslide, flood, drought and earthquake is reported to arise. Disaster risk management has consistently been a focus of Malaysia's development policy. As a result, various initiatives and programs are undertaken by local agencies in reducing disaster risk. However, many studies show that catastrophic events due to disaster could worsen without the awareness and preparedness of the local community. Review of the literature identified that the definitions of a community do not only confine to people of a certain location but also referring to the local authority, professional bodies, related stakeholders and non-government organizations. Thus, this paper intends to study the level of respondents' awareness and assess their level of preparedness in facing the disaster. Primary data was collected using the semi-structured questionnaire survey form. For sampling selection, the cluster sampling method is adopted where all the survey forms are distributed to 847 samples from 11 selected villages.

Software namely the Statistical Package for the Social Sciences (SPSS) is used to compute the feedback from respondents. Data analysis reveals that respondents' awareness is correlated with their experience with disaster and socio-economic background. The study also found out that majority of respondents were taken a significant action namely move to higher ground, save valuable belongings and warn others in the event of a disaster, however, some of them chose to do nothing and wait for a rescue team. Thus, the continuous engagement between the community and authorities, agencies and community leaders are recommended to strengthen the local community knowledge and awareness towards the disaster risk in their area. Community is at the main concern in the decision-making process and any implementation of disaster risk management activities. Therefore, their involvement is considered as paramount in this process, while the support from all stakeholders and government agencies are necessary to ensure the successful disaster risk management outcome.

Keywords: Disaster; Awareness; Preparedness; Local community

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A 11

ComE 003

The Key Determinant Factors for Social Sustainability in Traditional Settlement

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Abstract

Successful traditional settlements refer to a settlement environment that spontaneously built by residents who consider their existing site integrates with excellent physical infrastructure, safeguarding of social culture, providing space for people and area to evolve and maintaining settlements' form and patterns as part of elements in social sustainability. Generally, social sustainability encompasses environmental, economic, and social balance in planning development to improve quality of life. It emphasizes on the inclusive communities, social cohesion, quality housing as well as social equity. However, the criteria and assessment of the determinants factor of social sustainability in the context of the physical characteristics of traditional settlements have not been yet systematically defined. Therefore, this study aims to determine the critical factors of physical character for social sustainability. Among the objectives is to identify the types of physical aspect preferred by the locals in their daily communicative interactions. For this purpose, this study adopts the quantitative methodology, where a bulk of data from survey questionnaire gathered from 400 randomly chosen by residents in two historic settlements named Pulau Duyong and Losong located at Kuala Terengganu, Malaysia. Both sites are selected due to good conservation practices observed concerning the physical landscape. The results of the study use descriptive statistics analyzed by Statistical Package for the Social Sciences Software (SPSS). Hence, the results generated from the Exploratory Factor Analysis (EFA) then revealed

eleven factors (11) related to social sustainability. Such factors are then categorized into six latent factors, which are the preservation of local identity, safety, provision of infrastructure, natural qualities, accessibility, and availability of public spaces. Therefore, this paper provides insights into the importance of social sustainability determinants in traditional settlements as a step toward improvement in historic site preservation efforts. In conclusion, this finding is hope in improving the quality of life, social interaction and social cohesion contribute as the government aspiration in making the cities and human settlements, inclusive, safe, resilient and sustainable as stipulated in no — 11th of Sustainable Development Goals (SDGs).

Keywords: Social sustainability; Traditional settlement; Factor analysis; Kuala Terengganu

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Construction Environment

A 12 CoE 001

The Quality Adaptation Measures for Construction Organization

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Abstract

Over the past decade, quality has been an object of research, especially in the construction industry. Previous research has emphasized the need for Quality Management System for a better project quality delivery. More recent attention has focused on the enforcements and systems such as ISO Certification, Six Sigma, QCLASSIC and many more. Quality Management System (QMS) for the construction industry believed to holds essential elements which could lead to project success. On the other hand, the ability to adapt to modifications of task or projects is essential in a group of different people with different discipline who is working towards one goal. However, the issue of the unsuccessful adoption of QMS has received considerable critical attention. This is caused by the refusal of construction players to take part in this undertaking for some reasons. The main weakness of this area of study was the failure in addressing how adaptation to the quality itself should be carried out. Adaptation is recognized as its importance in today's rapid changes in technology and by the multi-discipline players in the industry. This study is part of ongoing PhD research, which aims to develop a new framework that integrates factors affecting the project quality delivery. The objectives of this paper are to review the current implementation of quality in the construction organization and to identify the measures related to poor quality adaptation. The methodology applied in this research was a quantitative research approach where semi-structured interviews were conducted

among industry players to define the factors influencing the adaptation of the quality. Finally, the results revealed that this study would provide guidelines to the industry player to achieve better project delivery; thus results in higher client satisfaction. The implication of this study is that the construction players may benefit quality adaptation to a more profound perspective by identifying the measures to maintain in their daily professional environment.

Keywords: Quality; Adaptation; Readiness; Change

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Design & Creative Environment

A 13 DCE 001

Implications of Building Design on Building Maintenance Operation of Mosques

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Abstract

Mosques serve not only as a place for worship and religious activities but also as a landmark of those particular areas. As the symbol of religious, mosques are often designed with remarkable features symbolized the past and present Islamic architecture. Mosques in urban areas particularly in a high population of Muslims are often built huge with an elegant and sophisticated Islamic architectural design. Furthermore, the invention of construction technology and building materials have enabled designers to produce sophisticated building design that can be realized by the builders. However, despite the prominence design of the buildings, past researches have shown the problems encountered during the post-occupancy stage. There is a significant relationship between building design and maintenance. The maintenance team was ascertained to face difficulty in executing maintenance works for such buildings. Maintenance-friendly buildings are vital to ensure the buildings remain in good condition and soundly functioning throughout their lifespan. Unfortunately, low priority has been given to maintenance operation consideration at an early design stage of the building. This lacking has led to difficulties in carrying out maintenance works and often contributes to high maintenance operation costs. Therefore, this research aimed to investigate the implications of mosque design on maintenance operations. This research employed a qualitative method as a mean of data collection which comprised of on-site observation and interview survey. Three mosques have been

selected and observed. The three mosques are the Malacca Straits Mosque, Melaka, Tuanku Mizan Zainal Abidin Mosque, Putrajaya and Sultan Salahuddin Abdul Aziz Mosque, Shah Alam. As for the interview sessions, the respondents were the representatives from the facilities/maintenance departments of these three selected mosques. Based on the systematic literature review, three variables have been examined namely building design, building material, and maintenance operation. The results of this research shown that some parts of the mosques were inaccessible for maintenance operation especially on the building facade. Meanwhile, the identified building defects are due to inappropriate selection of building materials especially on the exterior of the buildings. This research proposes factors that should be taken into consideration by the design team to better understand the building maintenance needs so that the optimum building lifespan can be achieved at an effective cost.

Keywords: Design, Maintenance, Access, Mosque

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Elderly Environment

A 14
EE 001

Elderly Welfare and Quality of Life: A qualitative inquiry

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Abstract

As reported by the World Health Organization 2017, the elderly population in Asia is projected to grow by more than 35% as the baby boomers become senior citizens. In tandem with this situation, the pertinent stakeholders focusing on elderly welfare and care have increased significantly. For Malaysia, the life expectancy of the population has averaged 73-75 years taking the nation's elderly segment at a respectable percentage. In Asian culture, it is the norm to care for elderly parents and other close relatives. Therefore, the quality of life experienced at home is considered ideal. On the contrary, those sent to the old-folks home have shown mixed perceptions. Thus, the objective of this paper is to provide evidence of elderly welfare using qualitative and descriptive approaches. Data collection for this study took two years to complete, as repeated interviews with respondents required more time. Also, proper clearance from the university's ethics committee was acquired before the interview sessions. The analyses of findings indicated that 70% of families caring for their elderly relatives showed a higher quality of life than those at the care centers. The reasons for the elderly home caring were because of religion, tradition, and culture. On the other hand, the number of families sending their elderly relatives for geriatric care at private centers have indicated mixed reasons for doing so. Sons and daughters with their own families and career have evidenced the need for sending their parents to elderly welfare centers

because of time constraint and the inability to provide adequate, professional geriatric care. There have been instances of neglect among the elderly as family members needed to focus on their nuclear families. Hence, it is recommended that relevant stakeholders and policymakers ensure that more attention is given to the elderly. They can contribute to society even though age numbers is the main impediment.

Keywords: Elderly; Welfare; Neglect; Quality of Life

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A 15
EE 004

"H.O.P.E." Hold On Pain Ends: Effects of reminiscence therapy on depression for elderly with Alzheimer's disease

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Abstract

Background: Alzheimer Disease was explicitly recognized as a global health priority by G20 leaders in the declaration of the Osaka Summit, June 2019. Elderly with Alzheimer Disease may have various adverse effects on physical and psychological functions, especially change in mood, behavior and increase depression level. Effective intervention may reduce depressive symptoms and minor symptoms, for instance, pain, and increase the level of function and quality of life among the elderly, especially with Alzheimer's disease. That means depression among the elderly may be delivered through well community-based approaches or individualized therapy to identify and reduce depression. Surprisingly, reminiscence therapy is commonly used to reduce the depression levels among them. Regretfully, it is still rare to be practicing in Malaysia. *Objectives:* Therefore, the current study objectively to investigate the effect of individualized reminiscence therapy on depression levels among the elderly with Alzheimer's disease. *Methodology:* This present study used a quasi-experimental with the pre-post test. A total of 32 participants, (age \geq 60 years) were recruited at an institution, with a reminiscence group (n=16) and control group (n=16). A qualified physiotherapist has conducted an individualized reminiscence therapy for 1 hour. A total of six weeks with different themes have been delivered to the reminiscence group. Data on socio-demographic characteristics, depression levels, and cognition functions

were collected. *Findings:* Analysis showed that individualized-remembrance therapy significantly affects the elderly with Alzheimer's depression level, which is ($p < 0.005$) in the remembrance group compare to control group. Those elderly who suffered mild-to-moderate depression showed a decrease in their symptoms toward depression. A majority believed that a reminiscent therapy sparks their imagination and creativity. Most importantly, this kind of treatment helped them to feel engaged and enjoy a definite purpose in life. This present study revealed that a remembrance was beneficial through stressful life changes, give hopes and strong emotions as well as changed their negative thinking patterns by developing better-coping skills. *Implications:* Depression is not a regular part of aging. The elderly may experience to live alone, loss of function, or reduce independency, persistent grief, or severe depression, and it should be tackle. Addition of reminiscing an event in daily routine intervention might be cost-effective in reducing depressive symptoms, improves life satisfaction and better quality of life among elderly with Alzheimer's.

Keywords: Alzheimer's; Depression; Elderly; Remembrance

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A 16
EE 002

Quality of Life Among the Elderly in Rumah Seri Kenangan, Cheras, Malaysia

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Abstract

While the trends of increasing lifespan are a remarkable success in the advancement in healthcare, living longer does not equate to a high quality of life. Therefore, the objectives of this study were to determine the relationships between age, education level, previous employment, and marital status towards the quality of life among the elderly in Rumah Seri Kenangan, Cheras. The objectives of the paper were to determine the relationships between age, education level, previous employment, and marital status towards the quality of life among the elderly in Rumah Seri Kenangan, Cheras. This study was undertaken based on a quantitative research approach through the adoption of the Ferrans conceptual model for quality of life. The primary data were gathered responses from a sample population of 145 (n=145) — this comprised 100% of the population at the Rumah Seri Kenangan, Cheras. The analyses obtained from this study revealed that there was no significant relationship between age, education level, and prior employment of the elderly's quality of life.

Meanwhile, only one independent variable out of four, marital status showed a strong relationship with the quality of life among the elderly in Rumah Seri Kenangan, Cheras. The findings revealed that there was a significant difference between gender among the elderly. The findings suggested that a holistic strategic approach is needed to create a high-level quality of life among the old folks. As such, the study on quality of life among the old folks in Malaysia can assist the policymakers to take into

consideration the socio-demographic determinants so that they can construct a proper healthcare and policy planning towards the elderly population. The study can contribute to the improvement of the elderly wellbeing in Malaysia..

Keywords: Quality of Life; Elderly; Geriatrics; Socio-demography;

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A 17
EE 003

The Contribution of the Built Environment towards the Elderlies' Quality of Life and Risk of Falling

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Abstract

Many studies focusing on the needs of the elderly have been published, in tandem with the growing elderly population. Since profound upsurge in the elderly population, the awareness of the built environment raised some concerns in many studies. The trends in recent studies range from improving the quality of life to reducing the risk of falling among elderly residents. This paper investigates the current concerns on the increasing elderly populations and preventing any untoward fall or injury among the elderlies that could otherwise lead to an increase in hospitalisation cost and physical challenges. This study aims to analyse published literature with a focus on mitigating the risk of falling and improving the quality of life amongst the elderly building occupants. The subsequent parts of this paper discuss both issues about safety during an emergency. The research method applied is through content analysis of the literature to determine the trend of research in the areas mentioned. Results show that although a good environment could increase the quality life of the elderly population, low satisfaction levels are perceived amongst the elderlies, especially the physically challenged. As for the risk of falling, most studies revealed that emphasis on the strategic planning of the

built environment was able to reduce the risk of falling. Additionally, the overall challenges and risk factors are also discussed. As for the evacuation safety studies published, most of them focused on the elderly in care facilities and only a few studies highlighted the residential building factor due to the significant number of high-risk occupants who need assistance. The main discussion is on the emphasis of assistance preparedness for the elderly building occupants during emergencies. The values of focusing on the needs of the elderly occupants in a built environment especially during emergencies are mainly the decreased risk of falling, reduced risk of casualties, and increased the quality of life among the elderly.

Keywords: elderly quality of life; fall risk; evacuation safety; elderly building occupants

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Educational / Learning Environment

A 18 ELE 006

An Investigation on the Millennials' Use of Web Technologies in Higher Education

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Abstract

The higher education landscape has seen a growing number of millennials pursuing their education in higher education institutes. Also known as digital natives, much literature has confirmed the millennials as a generation that is web technology-savvy. However, it is worth noted that there is a generation gap between the millennials and their lecturers who generally are the Genexers or Baby Boomers. These millennials have a unique set of characteristics and learning preferences, where there is a potential challenge for the lecturers to meet these learners' learning expectations. This study intends to explore the millennials' use of web technologies in higher education learning. It employs a quantitative research design, where a student survey was administered to 646 undergraduates studying in social sciences faculties. A total of nine Malaysian public universities was involved in the study where the samples were identified through a cluster sampling technique. The data was analysed using SPSS version 20 for descriptive analysis. The respondents confirmed past findings on their use of web technologies. Although the respondents had established that they are the generation that is web technology-savvy, they also signified that their usage of web technologies was more for social and entertainment than for academic purposes. In facilitating their learning in higher education, the millennials seem to indicate a need for training and exposure in using web technologies for their educational goals. They claimed that they could efficiently process the information obtained from web technologies. However, they lacked the skills in accessing and assessing the information collected. In other words, the present study confirmed that the millennials need training on digital literacy to develop an equal strength as users of web technologies for social and entertainment and for academic purposes. Curriculum developers could find the findings helpful, especially in designing a curriculum that integrates the training of relevant web technology and academic

skills. The lecturers, on the other hand, could find the findings as enlightening in attempting appropriate instructional approaches to meet the learning needs of their millennial students.

Keywords: Millennials, web technologies, higher education learning

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A 19 ELE 014

Digital Board Game Using the Theory of Variation to Enhance Grammar Learning

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Abstract

The study is on the use of Throw Back Time (TBT), an interactive digital board game aimed at teaching tenses and aspect of grammar via the Mobile-Assisted Language Learning (MALL). The game exclusively designed according to the Theory of Variation (Marton & Booth, 1997), emphasizes that learners understand, experience and think differently on a specific aspect of the world. The investigation of learners' previous knowledge is necessary before the development of the questions in Throw Back Time (TBT) game. The theory propagates that investigating learners' prior knowledge of the *object of learning* is crucial to see how different it is from the teacher's point of view. The focus of the theory is more on learners' difficulties in education and how teaching can be enhanced to optimize learning. To enhance learning, variations in the learning outcome are necessary. The game provides a variety of combinations and structures of grammar to expose learners to different aspects of learning. Four patterns of variation, including contrast, separation, generalization, fusion were used to enable the students to generalize the various features of the tenses and their connection with other invariants. The study employed a qualitative content analysis in illuminating the principles of the Theory of Variation (ToV) in the design of the grammar exercises in the game for TESL Foundation Students of UiTM. Hence, the study suggests that the elements in the (ToV) governing the tasks in the game delivers positive outcomes as

the learners' performance in the series of tests improved. They considered the game to be an intriguing practice as learning of grammar used to be a daunting experience. The application of a strategy in using the interactive digital game as part of significant research aims at presenting empirical evidence of an innovative way to teach grammar via mobile app.

Keywords: Grammar; The Theory of Variation; Interactive; Digital learners

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A 20
ELE 011

**Effectiveness of Construction Safety Hazards
Identification in Virtual Reality Learning
Environment**

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Abstract

Enactment of Occupational Safety and Health Act (1994) and aggressive efforts have been taken to ensure the safety of workers in the construction industry. Despite these, accident rates are still alarming. One of the primary reasons is due to the ineffectiveness of safety induction training. Weak pedagogy, lack of technology integration and hazardous learning environment at construction site lead towards low performance in learning and practicing of safety procedures during work. To add, hazard identification is essential for safety assessment to ensure the risk control measures. Failure of hazard identification may expose to a higher risk of accidents. While, the current achievements in the technology of virtual reality, it is robustly shifted from laboratory virtual reality to smartphone virtual reality application. With this advantage, the design of the new learning environment could engage learners through the utilization of mobile, immersive and real experience for more impactful learning. This study aims to discover the effectiveness of using a virtual simulation learning environment among safety personnel trainees during the hazard identification training module in the Site Safety Supervisor course. This study employs an experimental study. Three hundred trainees divided into four groups, and data collections involve 2

phases which the first level require training for safety hazards identifications in traditional training classroom while another aspect of study include a virtual reality site visit. Results show that there is a significant difference in trainee's achievements for safety hazard identification assignments and examination between the training of hazard identification in a traditional construction site visit and mobile virtual reality construction site. Findings approve the hypothesis that learning is significantly higher at a virtual construction site rather than a construction site visit and traditional classroom. To conclude, a virtual reality learning environment offers other learning platforms for millennials.

Keywords: safety hazards; occupational safety and health; virtual reality;

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A 21 ELE 015

Exploring Maintenance Management of Waqf-based Educational Buildings: A Case Study

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Abstract

A good maintenance management practices for a waqf-based educational building gives comfort, safety, the effectiveness of teaching, and create a productive learning environment. It also safeguards the primary purpose of waqf which purposely devoted a property for Allah's blessing. School building as a perpetual asset dedicated to a religious use should continuously function as the best place for teaching and learning and benefits the Ummah. However, most of the school's administrators have not to view building maintenance management as the best tools to achieve this objective. Maintenance always is seen as a burden to the organization due to the cost incurred. Indeed preventive and proactive maintenance approaches in the administration of waqf-based educational building are not being seen. Based on the previous researches conducted by various authors, numerous waqf buildings are ill-managed and need imprompt rectification and replacement. With these situations, the main objective of waqf property in education is questionable. This paper explores the current practice and significant issues of maintenance management practices in the administration of waqf-based school buildings in Malaysia. The investigation is using an in-depth

interview and a semi-structured interview among the relevant respondents involved in the administration and management of religious school buildings in Malaysia. The case study reveals that the maintenance management guideline as an essential reference in enhancing the assets is available but not fully implemented. There are also lacking in terms of building inspection and assessment; has no maintenance plan and policy and even lack of resource allocations on preventive and corrective maintenance. This study provides constructive recommendations for school administrators in the initiated and implemented proactive maintenance management. The authorities ought to prioritize these issues to ensure the sustainability of the delivery of the waqf educational system. Success in overcoming this problem is crucial in supporting the Transformation Plan for Waqf Property Development set out by the government.

Keywords: Maintenance management; waqf property; school buildings; case study

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A 22 ELE 003

Eye Movements Behaviour in Reading Different Print Sizes among University Students

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Abstract

Background: Reading efficiency is one of the main concerns among the teachers, publishers, and also eye care practitioners. The size of the text was among factor that might affect the reading. It is because the shape and size determined the text legibility of the text. Therefore, the purpose of this study was to compare the eye movements behaviour among university students when reading passages with different print sizes. **Materials and methods:** Twenty-five normally-sighted university students were enrolled in this study (mean age: 22.28 ± 1.46 years). The university students were asked to read six different reading passages with print sizes of 52pt, 30pt, 20pt, 14pt, 8pt, and 5pt. The legibility of print sizes was equivalent with 1.2 logMAR, 1.0 logMAR, 0.8 logMAR, 0.6 logMAR, 0.4 logMAR and 0.2 logMAR. The reading passages were in the Malay language. It was from Shauqiah-Ai Hong-Halilah Reading Passage Compendium (SAHRPC). The SAHRPC was placed on reading stand 40 cm away from the students. Aloud reading was performed while wearing the eye tracker (Dikablis Eye Tracker). The eye tracker detected and recorded the eye movements behaviour such as the number of saccades, saccadic angles, and the number of fixations during reading. **Findings:** The eye movements behaviour were found significantly different ($p < 0.05$) when reading different print sizes. The eyes made more saccadic eye movements as the print size increased. The saccadic angle became significantly greater when reading larger print size. Fixations or stopping behaviour showed an increment with increasing print sizes. **Conclusion:** Changes in eye movements behaviour occurred when the university students read passages with different print

sizes. This behaviour could be an indication of modification in cognitive processing to allow better comprehension when reading in different reading material. The eye movements behaviour was able to adapt to the changes in pattern, shape, and size of presented reading materials.

Keywords: eye movements; saccadic; fixation; reading

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A 23
ELE 008

**Factors Affecting Stress Among Teachers in
Selangor**

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Abstract

The success and competency of an education system depend on the main driver of the system. They are the teachers. Teaching is not the only profession associated with a high-stress level job. Instead, almost all other professions are. High-stress level imposed an occupational threat to the mental and physical state of a person. Stress is a state of mental or emotional strain which results from adverse or demanding circumstances. It provides both physical and emotional effects leading to positive and negative feelings among teachers. Over the years, researchers examined issues about the stress level in the teaching profession. Researchers contended that teaching preparatory work mainly causes teachers to have a high-stress level. However, there is little evidence from the Malaysian literature concerning the stress level among school teachers. Hence, it is obligatory to explore the factors affecting stress level among teachers in Malaysia. This study may help the researchers to diminish the gap. This study attempts to examine the relationship between variables that affect stress among school teachers in Selangor. This study adopted the quantitative method. Researchers distributed the Questionnaires among 15 secondary schools in Selangor, particularly in Petaling Utama district which totals up to 2259 teachers. The findings reveal that the independent variables are highly significant and positively associated with the dependent variable. Hence, all the hypotheses were accepted. The findings further reveal the teachers' stress awareness. Steps to be taken to keep stress under control

were proposed using various stress management techniques. The measures proposed in this study include widespread stress handling program development for teachers.

Keywords: Stress; depersonalization; workload; working environment

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A 24 ELE 009

The Relevant Competencies of Physical Facilities Management for Higher Education Institution; Case Study of Universiti Teknologi MARA, Malaysia

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Abstract

Higher Education Institution (HEI) is a unique organisation as it holds a full range of physical assets including infrastructure (e.g., drainage system, roads and telecommunication systems) and buildings of various ages, functions, and types such as offices, commercial and leisure facilities. Moreover, each HEI owns multiple properties, manage a large number of assets, consume large amounts of energy, and generate significant waste due to the large population involved. The needs of users are also varying across the asset and facilities, particularly for institutions with multi-location or multi-branches. A competent facilities management is essential in managing HEI diverse operational tasks than those of most other organisations. The facilities management (FM) team must have the relevant competencies in meeting the requirements needed, not just providing and managing the required space but at the same time supporting the strategic vision and mission of the institution. Competency is related to job performance and demonstrates of particular talents such as in practice and application of knowledge essential to accomplish a task. This paper seeks to reveal

the competencies that are relevant for managing the HEI physical FM with Universiti Teknologi MARA (UITM) as the case study. UITM was chosen as it is one of Malaysia's pioneer and the largest organisation. UITM has thirteen (13) state campuses and over twenty (20) state satellite campuses supporting the most significant number of staff and students in Malaysia. A questionnaire survey was administered to 120 executive and non-executive FM staff from selected campuses with a 60% response rate. The campuses involved were Shah Alam as the flagship campus, seven (7) state campuses, and five (5) state satellite campuses. All data were analysed using SPSS 19.0 in obtaining the competencies which are relevant for facilities management in UITM. The finding discloses that the competencies pertinent to UITM differ across campuses depending on the size and complexity of the physical assets it covered. However, some of the competencies of FM were commonly relevant, and the results were verified by facilities managers from the selected campuses in the interview session.

Keywords: Facilities Management; Higher Education Institution; Competencies

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A 25 ELE 001

Identifying Needy Students for University- Industry Snapfeed Program

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Abstract

It has been brought to the university's administration that some students were not eating well because of insufficient funds. The literature reviewed evidenced similar issues in other universities throughout the world. For Malaysia, the media has highlighted that students at public universities do not have enough money to buy food. Some have gone to the extreme to fast daily, while others have relied on friends to share their food. Upon that realization, the Economics Department of the Faculty of Business and Management, Universiti Teknologi MARA, Cawangan Selangor, Puncak Alam Campus has taken the initiative to survey for empirical evidence to this problem. A quantitative design formed the methodology for this project with a questionnaire as the instrument for primary data collection. From a sample size of 1,000 students at the Puncak Alam campus, the response rate was 80%. The questionnaire was designed on a 5-point scale with three open-ended questions at the end.

The findings revealed the dietary patterns of university students at the Puncak Alam campus. In the cross-tabulation between family's income and the number of daily meals per day, the evidence of students coming from the bottom 40 (B40) or with the family income of below 3,000 Malaysian Ringgit (approximately USD\$730 per month) is significant. Although there are data of needy students registered with the Students Affairs Department, the extent of financial disabilities evoked from the findings indicated

a higher number of students in the B40 category. The number of siblings too played an important part in family economics.

The implications from the findings evidenced a higher number of needy students who do not have enough money for proper, daily food intake. These students rely on the kindness of the colleagues and dorm mates to share food. Students who have been listed in the B40 category are given financial assistance, but their spending habits led to less allocation for food. An alternative aid to this problem is in the form of a Snapfeed Program where students are given a personal card loaded with MYR200 per month. Using a customized platform for food purchases, the Snapfeed Program chip in the card will only allow food and drinks purchases at pre-identified vendors on campus. That way, the students will not misspend the fund given to them. This study is significant to ensure that their needy students' academic performance is not jeopardized by malnutrition.

Keywords: Needy students; Poverty; Food Intake; malnutrition

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A 26 ELE 012

Predictors for Depression among Staff in Academic Institution

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Abstract

Background: Depression among staff in an academic institution may reduce the productivity of the institution and hinder excellence in academia. Contributing factors to depression are multifaceted. It is not merely due to academic problems, job stress or job dissatisfaction of academicians, which most local studies have investigated. Various other contributing factors have yet been investigated to understand and treat depression among this group of workers.

Aims: This study aimed to investigate the prevalence of depression among staff in various levels of work positions in the academic institution and its contributing factors including socio-demographic factors, personal factors and job-related factors.

Methodology: Staff of a selected academic institution were conveniently selected to participate in the study. Those who gave written informed consent were assessed using self-report Pro-forma questionnaires to measure their socio-demographic factors (gender, age, marital status, educational level, level of income), personal factors (personal problem, physical illness and family problem and job-related factors (campus site, job category, duration of service, work promotion, work responsibility, problem with clients or students, level of satisfaction with the superior, conflict with the workmate and condition of work facilities). The level of depression was measured using the scores of depression subscale of the Depression, Anxiety, Stress Scale (DASS-21 item). The study was approved by the Institutional Ethics Committee.

Findings: A total of 278 staff (Mean \pm SD age: 38.84 \pm 7.85 years; 44.2% males) participated in the study. Of the total participants, 76 (27.7%) had depression (moderate to very severe depressive feelings) and the remaining did not have depression (normal to mild depressive feelings). Significant differences between those who were depressed and not depressed include level of income ($X^2(1)=4.962$, $p=0.026$), physical illness ($X^2(1)=3.971$, $p=0.046$), campus location ($X^2(1)=13.252$, $p=0.000$), job category ($X^2(1)=8.263$, $p=0.004$), work responsibility ($X^2(1)=8.153$, $p=0.004$), level of satisfaction with the superior ($X^2(1)=6.728$, $p=0.009$) and condition of work facilities ($X^2(1)=7.441$, $p=0.006$). Multiple logistic regressions indicated that campus location, job category, level of income and condition of work facilities were the predictors for depression among the staff of the academic institution.

Conclusion: Depression among staff in the academic institution is prevalent. Addressing factors underpin depression among staff in an academic institution is crucial to ensure appropriate interventions can be offered.

Keywords: Depression, staff, academic, job, satisfaction

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A 27 ELE 005

Mapping Isolated Places: An observation of Bullying Possibility Elements in School

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Abstract

Research into the subject of bullying is unfailingly able to identify general locations in the school locality where bullying incidents tend to occur but unable to identify specific locations. This limitation impedes the ability of academics to take into account the elements involved and how they contribute towards bullying. Observation of students' density in certain areas in two sample schools during recess time has enabled the identification of specific isolated places where bullying tends to occur. The information was analyzed using the Geographic Information System ("GIS"), which makes geographical maps an integral part of crime analysis. The development and use of GIS as an analytical tool in crime analysis are relatively new. Meanwhile, Spline Interpolation analysis is used to identify possible hotspots where bullying incidents are likely to occur. The hotspots area then will be observed thoroughly using CPTED element checklist. The results of the study reveal that the isolated places tend to take place behind the school building, school entrance building and near the school field. The CPTED element which triggers the isolated places mostly cause by maintenance condition on window and wall. Rather than that, shrubs and decorative sculpture that had a height over 0.9 meters could block the sight at isolated places. The study

anticipated that identifying the density of students at certain locations would provide insights on the relationship between specific environments and elements related to bullying in the schools which participated in the study. An analysis of the physical environment, based on CPTED approach, showed that the physical environment would make a poor environment if not properly maintained. In addition, a well-designed layout of school blocks aids in the ability to increase the level of surveillance of students. Ultimately, GIS mapping of student density enhances the research conducted to understand how a student reacts or interacts with his/her physical environment.

Keywords: GIS mapping, bullying, isolated, physical environment CPTED

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A 28 ELE 004

Measuring and Testing Library's Spatial Learning Characteristics using Spatial Setting Matrix

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Abstract

Designing student's learning space such as library, smart classroom, student hub center, etc. at academic institutions has always become a challenge for space designers such as interior designers, architects, facility managers, and space planners. Providing spatial settings that could accommodate a variety of learning behavior of students, task at hands, space preference will require thorough investigation at the programming stage of the design phase. The library is one facility provided by the university or college for students to experience informal learning. Library spatial settings allow students to conduct learning at their intention both at private and public area whether it is for individual or group learning. Previous scholars reveal that learning activities through individual or group study are important behaviour in the process of learning. Scholars found students tend to opt for individual study rather than group study, preferable an isolated space such as silence or quiet room, soundproof room, a space that can put all that needs to be used. Otherwise, there are no clear characteristics of learning behaviour as a preference space with the task at hands. It is quite hard to find the guideline or any models as measuring tools to determine the spatial ranking characteristics in library spatial setting. Thus, the aims of this paper are to measuring and testing the library's spatial learning characteristics using spatial

setting matrix as a tool. Spatial setting matrix for library was developed based on the student's learning behavior, physical settings preference and tools or gadget used to aid the learning. The library spatial learning set up based on the matrix of behavior and spatial settings, spatial settings then visualised in three dimensions (3D) and video. Through immersive virtual reality (VR) one hundred students as respondents in this study involved defining a space based on the task given. This respondent was selected among the public university students in the design-based field. One hundred students experienced, through immersive virtual reality with their real body, choosing their preferred spatial setting to finish a task or assignment given. Spatial settings provided in the VR were previously analyzed based on a survey conducted from the V1 tool. By using this VR tool, space designers will have a better guideline and can provide necessary spatial settings for a variety of learning environments. The research has developed eighteen characteristics as a spatial setting matrix. This research found the 'high open' and 'high formal' is the most preferable characteristics for library's spatial learning

Keywords: Student learning behavior; Spatial setting; Learning environment

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A 29 ELE 002

Reviewing the Silent Enemy of Faculty Mobbing

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Abstract

Workplace happiness depends on collegiality and interpersonal relationship between and among employees. In an academic environment, the thought that mobbing or bullying exists within a higher institution of learning is unheard of. However, the issue exists as provided by literature. Bullying is much like harassing, offending, socially ostracizing another colleague that negatively affects the colleagues' work ambience. One person in a prominent position usually does the bullying as evidenced by literature. Mobbing, on the other hand, is more common in universities. Mobbing is a form of social elimination after singling out one academician who is perceived to be problematic. Mobbing differs from bullying because other academicians are ganging up against the targeted individual. The ultimate intention is to drive the victim out of the school or university. Mobbing is also found to be on a larger scale because of the number of individuals roped into the situation. Faculty mobbing becomes prolonged as more academicians join in, thus making it difficult to resolve. Again, as shown in literature, there are higher incidences of mobbing happening in academia than in any other work setting. Nonetheless, occurrences of faculty mobbing have been brought to light through whistleblowing and complaints from fellow academics; the silent enemy is becoming more glaring. Therefore, the objectives of this review article are to highlight the prevalence of faculty mobbing through literature search and analyses. As previously noted, faculty mobbing is a silent enemy that prevails in an academic setting, and there is a need to ameliorate the situation to preserve the auspices of academia. From various readings, the issue of bullying and mobbing between faculty members in higher

education began in the 1990s. The issue has sparked other spectra of research by looking into this phenomenon. From the literature surveyed, colleagues were identified as bullies from their faculty members, regardless of junior or senior status. The average time that bullying or mobbing has occurred is found to be more than five years. The findings from the review paper are significant in containing the incidences of mobbing. Faculty mobbing is a threat to the university's image. Therefore, it is recommended that the university executive management should be more concerned with the prevalence of faculty mobbing as the silent enemy that will affect workplace happiness.

Keywords: Mobbing; Bullying; Faculty; Work Happiness

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A 30 ELE 007

School Provision in the State of Selangor

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Abstract

Education has a major impact on understanding the contrast between right and wrong. It has the power to improve societies and the world for a better environment. Having an education is essential as good education enables a community to learn from previous mistakes and prevent making the same mistakes. The wealth of knowledge and information provided within the school environment is one of the most important factors to attend school. The school offers a secure place for the spread of concepts or ideas and often gives access to topics and thoughts that home-schooling or friends would not have discovered. Malaysia's educational or school system divides into pre-school, primary, secondary, post-secondary and tertiary education. In this paper, the researcher focuses on primary and secondary education. School allocations in the state of Selangor do not reflect the actual needs of household size. The distribution of the school is unequal; there was a surplus or shortage of schools. This research aims to find problems linked to the amenities of the township, particularly school. Therefore, there is a need for suggestions of strategies or policies is to solve the problems. The study used a simple method of a systematic review of planning standards and guidelines for township facilities in the Selangor school. Among the analysis done were the analysis of demographic, school provision and school location within provided walking distance. The results show that there was a surplus of primary, and secondary school in the districts of Sabak Bernam, Kuala Selangor, Hulu Selangor, Kuala Langat and a shortage in the districts of Gombak, Klang, Hulu Langat, and Petaling. On this basis, this research recommended a need to review the school provision requirement.

In conclusion, the existing school requirement does not reflect the present and future demands of the schools in the state of Selangor.

Keywords: Education; School; Selangor

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A 31
ELE 013

**The Antecedents of Self-Perceived Plagiarism:
An Empirical Evidence of Non-Business
Students**

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Abstract

Plagiarism is among recurring issues present at all levels of education globally. Specifically, higher learning institutions have known to hold responsibility in shaping graduates to become future leaders with a high level of integrity. Due to this fact, identifying the factors that influence a student's decision to engage in plagiarism is imperative to minimize its occurrence. Even so, existing literature on academic misconduct exclusively stresses on students in Western countries. The findings on plagiarism behavior in Asian countries such as Malaysia have been limited, especially among non-business students. Therefore, this study is aimed at determining the plagiarism level as perceived by non-business students. This study will also identify the relationships between internet facilities, negative attitude, pressure, and lack of competency on self-perceived plagiarism. Data were gathered from 368 tertiary students of six non-business faculties in a public university in Malaysia, using a self-administered survey. All responses provided by the respondents were treated with confidentiality. Data were analyzed using IBM SPSS software. The results revealed that the plagiarism level was at a medium level as perceived by the respondents. A linear

multiple regression model was used to determine the relationships between the variables. As for the factors that influence self-perceived plagiarism, internet facilities were found to have the highest influence on self-perceived plagiarism among non-business students. This is followed by a negative attitude and lack of competency. Surprisingly, pressure, on the other hand, was found to have no link with self-perceived plagiarism. The findings of the study are significant to the Ministry of Education and institutions of higher education in particular in understanding the plagiarism behavior among tertiary students in Malaysia. The results of the study shall also be useful in creating awareness among the community and in providing input in designing relevant programs to minimize the occurrence of plagiarism behavior.

Keywords: self-perceived plagiarism; internet facilities; negative attitude; pressure; lack of competencies

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Energy Environment

A 32 EnE 001

A Meta-analysis on Factors influencing Energy Consumption and Saving for Campus Building

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Abstract

A developing country including Malaysia has experienced rapid rates of population growth and urbanization process. Energy consumption demand in Malaysia is expected to increase along with strong economic growth. Campus energy consumption was reported to share for the sum large proportion of total social energy consumption. Highlighted by various authors, the number of occupancies, behavioural pattern and buildings design has proven caused a large impact on space heating, cooling and ventilation demand, energy consumption. While some study focused on energy management and renewable alternative, there is a limited study on benchmarking energy baseline for campus building. This paper discusses the result of testing on factors influencing energy consumption and saving in campus building using the Meta-analysis. Besides, abundant studies highlighted that there are various variables affecting energy consumption, and each variables predicting a different empirical result. Thus, the study intends to identify the factors that influencing energy consumption for campus building. Also, this paper analyses factors affecting energy saving for campus building through meta-analysis statistical procedure by using the results of regression analysis from multiple studies on-campus building. The review of literature focuses on the multi-regression analysis of energy consumption reading tested against operating conditions, building characteristics, population, floor space area and weather conditions. The meta-analysis result of this study will provide more precise estimates

of the effects on the relationship between factors influencing energy consumption and energy-saving than those derived from the individual studies included within a review. The identified significant indicators will then be tested against the available primary data of electrical consumption data collected from a case study approach through a multi-regression analysis method. Referring to the Fain-Safe N result derived from the meta-analysis, 7330,000 articles are needed to reject the study findings, which is impossible. In other words, the identified and tested factors and indicators in this study that affecting energy consumption and energy saving are concluded to be statistically significant.

Keywords: Meta-analysis; energy; consumption, saving, campus

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A 33 EnE 002

Energy Conservation Practices in University Buildings

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Abstract

Energy conservation is one of the significant initiatives towards sustainable campus and should be implemented in university facilities management practices. Globally, the discussion on sustainable universities has been carried out in many areas, including campus operation, but there are still gaps which have been identified in the literature. In facilities management perspectives, a university is required to adopt sustainability into practices since the university own multiple properties, manage a large number of assets and consume large amounts of energy due to the large population involved. Taking this into consideration, universities would involve higher use of resources that may impact on the triple bottom line. Worldwide, the building construction and operation in the asset life cycle and have a massive influence on the environment with consumes 40% of the total energy used and produces 38% of greenhouse gas emissions. This study aims to promote the implementation of energy conservation practices in universities building. This research objective was on the identification of current energy conservation practices by selected universities and to benchmarking the most effective initiatives and strategies for the improvement. Six (6) semi-structured interview was conducted with competent participants in three (3) universities organisation. Seven (7) energy conservation practices were implemented consists of the implementation of energy awareness program, time scheduling management, introducing energy-efficient appliances and equipment, prepaid metering system, delamping method, an audit of equipment's and energy management plan. The study found five (5) most effective

energy conservation practices in selected universities which were energy awareness program in place, adopting energy-efficient appliances and equipment's, managing time scheduling to suit academic calendar, implementing the prepaid metering system and energy management planning. These seven (7) energy conservation initiatives run well in each university selected, but the management needs to increase their capacity to manage effort towards energy conservation at the university especially to those universities that less knowledge on energy education. Overall, a single organisation such as a university on its own cannot be responsible for making all of society sustainable; however, each organisation can examine its inputs, outputs, processes, and effects on the larger system in which it operates. Indeed, the commitments and participation are needed from all universities, both private and public organisations toward achieving a sustainable future.

Keywords: Energy Conservation; Energy Efficiency; Sustainable Facilities Management; Sustainable Universities

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Green Environment

A 34 GE 002

Quantifying Carbon Footprint in University Campus

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Abstract

A carbon footprint is the number of greenhouse gases, released into the atmosphere by particular human activity. A carbon footprint can be a broad measured or be applied to the actions of an individual, a family, an event, an organization, or even an entire nation. Carbon footprint is also the sum of all emissions of carbon dioxide (CO₂), which were induced by activities in a given time frame. Usually, a carbon footprint is calculated for a year. This study will use the GHG Protocol Corporate Standard from the perspective of a business that developing a GHG inventory. It applies equally to other types of organizations with operations that give rise to GHG emissions, such as government agencies, and universities. Firstly, a university has to determine its organizational boundaries in terms of the operations that it owns or controls. These boundaries involve in identifying emissions associated with its services, categorizing them as direct and indirect emissions, and choosing the scope of accounting and reporting for indirect emissions. The greenhouse gas emission in the campus is caused by activities or accumulated over the life stages of the product or services, expressed by CO₂. 6 types of Gases contribute to carbon emission; CO₂, methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). The concept of "scope" is used to help delineate direct and indirect emission sources, improve transparency, and provide utility for different types of organizations and various types of climate policies and business goals. These three "scopes" (scope 1, scope 2, and scope 3) are defined for GHG accounting and reporting

purposes. This paper aims to review approaches in quantifying carbon footprint on campus. The objectives are to identify methods in evaluating carbon footprint in the university, identifying the database of carbon footprint and creating a framework of campus carbon footprint quantification. The primary sources of carbon footprint are from transportation, electricity production, industry, commercial and residential, agriculture, and land use and forestry. The combination of these sources will reflect the total carbon footprint in a year on campus. The significance of this study is the establishment of a carbon footprint framework in a campus environment. This study also will help to delineate direct and indirect emission sources, improve transparency, and provide utility for different types of organizations and different.

Keywords: Campus; Carbon Footprint; Environment; Greenhouse Gases; CO2

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A 35
GE 003

**The Implementation Approach of LCCF Checklist
in Development Control: Challenges for
Policymakers**

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Abstract

Low carbon cities. What, exactly, are we talking about? Are we talking about the stakeholders or local authority? The developer is stakeholders and synonyms with the planning process of the development control procedure in local authorities. In sustainable development goals (SDG), goals number 13 is taking urgent action to combat climate change and its impact. The challenges are affecting lives, costing people, communities, and countries today and tomorrow. Different cities face different challenges and issues. Local authorities will play a significant role in undertaking policy initiatives to combat carbon emissions of the city. Low Carbon Cities (LCC) is to reduce carbon emissions in all human activities in cities. It is also to ensure development based on low carbon performance criteria to assist in mitigating climate change and protecting the environment. This paper aims to review the LCCF checklist implementation in a local authority. The implementation LCCF Checklist was summarised with the conceptual framework. It is also to seek the readiness of local authorities and related stakeholders in implementing the LCCF Checklist in the development control process. The methodology of this research is a mixed-method, namely qualitative and quantitative approach. The survey methods are by interview, questionnaire, and observation. Town planners are the subject matter expert in managing the planning permission submission for the development control of their areas. Descriptive statistical analysis will be used to show the willingness of the stakeholders, namely the developers and planning consultants in implementing of the LCCF. The contribution of this research will gauge readiness at the local authority's level. Surprisingly, that challenges

and issues exist in multifaceted policy implementation the LCCF Checklist in a local authority. Finally based on Subang Jaya Municipal Councils, the existing approach in the application of the LCCF Checklist in the development control process will be useful for development control in a local authority towards sustainable development.

Keywords: Low Carbon Cities Framework (LCCF), LCCF Checklist, Local Authority, Planning Permission, Green Cities, Sustainable Development Goals

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Health / Healing Environment

A 36 HE 006

A Confirmatory Factor Analysis of the Knowledge, Attitude and Practice Questionnaire towards Prevention of Respiratory Tract Infections during Hajj

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Abstract

Background: Respiratory tract infections are one of the common disease associated with Hajj pilgrimage that is of excellent public health and global concern.

Objective: The objective is to determine the factor structure of the knowledge, attitude and practice questionnaire for the prevention of respiratory tract infections during Hajj by confirmatory factor analysis (CFA).

Methods: A cross sectional study was carried out among Malaysian Umrah pilgrims from March to June 2018. A multistage cluster sampling method was applied on Malaysian Umrah pilgrims during the weekly Umrah orientation course. A total of 200 Umrah pilgrims for the 72 items in the KAP questionnaire participated in the study. The KAP questionnaire was distributed to pilgrims at the beginning of the orientation and retrieved immediately at the end of the orientation. All data were entered and checked for missing data using SPSS software version 24 and then transferred to R version 3.5.0 for Confirmatory factor analysis (CFA). Data analysis was done using R version 3.5.0 in the R Studio environment. For the estimation due to the multivariate normality

assumption violation, the robust maximum likelihood was used. A two-factor model was tested for measurement model validity and construct validity for each of the attitude and practice domains.

Findings: The age of the participants from this study ranged from 18 to 80 years old with a mean age of 39.13 (SD 16.03). The females (65.5%) dominated the number of pilgrims. CFA of a 25-item in total, two-factor model yielded adequate goodness-of-fit values. The measurement model also showed an excellent convergent and discriminant validity after model re-specification. A two-factor model was tested for measurement model validity and construct validity for each of the attitude and practice domains.

Implications: The KAP questionnaire was proven to have a valid measurement model and reliable constructs. It was deemed suitable for use to measure the KAP of Hajj and Umrah pilgrims towards the prevention of respiratory tract infections.

Keywords: Confirmatory Factor Analysis; respiratory tract infection; Hajj

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A 37
HE 005

Burnout and Coping Skills amongst Medical Officers: Tertiary hospital in Malaysia

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Abstract

Background: Burnout among doctors is hazardous, leading to stress which results in poor decision making and exposure to medical errors. The doctors could demonstrate inappropriate attitude toward patients and caregivers as well as having difficult relationships with other health professionals. To ensure the highest standard of services and safety of the patients and their family members, having effective coping skills to manage the stress is crucial for this health professional. **Aims:** This study aims to improve the knowledge gap of the issues of burnout and coping skills among medical officers. In Malaysia, previous research on burnout and coping skills have focused mainly on medical students and supporting staff such as nurses. Study on this aspect of wellbeing among clinician is scarce. **Objectives:** The objectives of this study are to determine the prevalence of burnout, type of coping skills and the association between them among medical officers in Hospital Selayang, one of the tertiary hospital in Malaysia. **Methodology:** This is a cross-

sectional study involving 250 medical officers, using universal sampling. Those who fulfilled the selection criteria and gave informed consent were selected. The sociodemographic characteristics, type of coping skills and presence of burnout were measured using pro forma sociodemographic questionnaire, Brief COPE and Maslach Burnout Inventory (MBI-HSS) respectively. **Findings:** Of the total 250 participants, 63 (25.2%) medical officers in Selayang were burnout. The presence of burnout was significantly associated with being single ($X^2 = 4.96$; $p=0.026$) and dysfunctional coping skills ($t=-4.96$; $p < 0.001$). **Implications:** Burnout is prevalent among medical officers. Hence, to tackle this issue, it is vital to take actions that can promote good mental health among medical officers. These programs can be in the form of coping skills and resilience training. Having a support group for medical officers can also be beneficial.

Keywords: burnout; coping skills; doctors; medical officers (maximum 4 keywords)

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A 38
HE 003

Cross-Cultural Adaptation, Validity and Reliability of the Malay Version of Boston Carpal Tunnel Questionnaire

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Abstract

Boston Carpal Tunnel Questionnaire (BCTQ) offers a standardized self-administered outcome measure of symptoms and functional status of clients with Carpal Tunnel Syndrome. Administration of this questionnaire is not limited to screening but also for inclusion in trials of carpal tunnel interventions; to date, no Malay version has been validated. This study aimed to assess the validity and reliability of the translated and validated Malay version of the Boston Carpal Tunnel Questionnaire (M-BCTQ). A cross-sectional study was used for the process of translational and cultural adaptation of the BCTQ to a Malay version. It is to ensure the M-BCTQ is cross-validated and reliable for the Malaysian cultural segments of population and language. This study was initiated with the translation and the language validity using forward and backward translations process. Then the establishment of face validity and content-related validity of the prefinal version by ten expert reviewers was performed before the psychometric testing. The final version of M-BCTQ was administered to 55 clients with recently diagnosed with Carpal Tunnel Syndrome for the establishment of psychometric properties such as the stability reliability, internal consistency reliability,

and construct-related validity. It is used to reach equivalence based on content as in the original version of BCTQ. M-BCTQ had excellent test-retest reliability for both subscales with an intraclass correlation coefficient (ICCs) were 0.837 for the Symptom Severity Scale and 0.913 for the Functional Severity Scale. The Cronbach α coefficient for the internal consistencies was reported at 0.864 for Symptom Severity Scale and 0.893 for the Functional Severity Scale. The M-BCTQ's construct validity had shown a strong correlation with the Malay version of Disability of the Arm, Shoulder, and Hand (M-DASH), as the Spearman correlation was 0.791 for Symptom Severity Scale and 0.831 for Functional Severity Scale. M-BCTQ has demonstrated high reliability and culturally validated in assessing symptoms severity and functional status in patients with Carpal Tunnel Syndrome both in clinical and research practice. The applicability of this M-BCTQ will support the evidence based-practice in the development of the framework for healthcare according to Malaysian context and perspectives.

Keywords: Carpal Tunnel Syndrome; Boston Carpal Tunnel Questionnaire; Reliability; Validity

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A 39
HE 007

**Development and validation of knowledge,
attitude and practice questionnaire for prevention
of respiratory tract infections among Malaysian
Hajj pilgrims**

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Abstract

Background: Hajj pilgrimage faces numerous challenges, including a high prevalence of respiratory tract infection as well as its prevention strategies.

Aim/ Objectives: The objective is to develop and validate a questionnaire to evaluate knowledge, attitude and practice (KAP) towards respiratory tract infections (RTIs) prevention among Malaysian Hajj pilgrims.

Methodology: Study included Malaysian Umrah pilgrims in Malaysia from Kuala Lumpur and Kelantan. The questionnaire then underwent a series of the validation process that included content, face validity and exploratory part. The questionnaire development and factor analysis took place in two stages, the first stage consisted of the questionnaire development stage, and the second stage comprised of psychometric evaluation. The psychometric evaluation comprised Exploratory Factor Analysis (EFA) and Item Response Theory (IRT) analysis. Item response theory (IRT) analysis was

utilized for the validation of the knowledge domain. The attitude and practice were validated using the exploratory factor analysis (EFA).

Findings: The mean age of the respondents was 43.85 (SD = 15.80) years with more than half (62.6%) being females. The validation process resulted in a questionnaire that comprised of four main sections: demography, knowledge, attitude, and practice. Following IRT analysis of the knowledge domain, all items analyzed were within the acceptable range of difficulty and discrimination. The Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) was 0.72 and 0.84 for attitude and practice domain, respectively, and Bartlett's test of Sphericity for both domains were highly significant ($P < 0.001$). The factor analysis resulted in two factors with total of 12 items in attitude domain, and two factors with a total of 13 items in the practice domain with satisfactory factor loading (> 0.3). The Cronbach's alpha for the reliability of the knowledge, attitude and practice domains all showed acceptable values of > 0.6 (0.92, 0.77 and 0.85).

Implications: The findings of this validation and reliability study showed that the developed questionnaire had a satisfactory psychometric property for measuring KAP of Malaysian Hajj pilgrims.

Keywords: Item response theory; Exploratory Factor Analysis; reliability; Hajj

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A 40 HE 004

Patient Experience and Perspective towards Optometry Students during Eye Examination and Consultation in UiTM Vision Care Clinic

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Abstract

Clinical training for optometry students is a gateway to provide exposure and experience in diagnosing and managing eye problems. In providing the training, the university clinic serves as a platform where students meet real patients. Understanding patient experience and satisfaction from being examined by the students is essential to improve the overall setting of clinical education and further enhance student competency. A cross-sectional study was done to determine the patient experience and perspective of optometry student consultations. The study further evaluated whether the patient experience and perception are different among students with a different year of clinical training. A self-administered questionnaire was distributed to a total of 228 adult patients who had undertaken a comprehensive eye examination at UiTM Vision Care clinic. The questionnaires were distributed equally to patients who were examined by the third-year students (114) and fourth year (114) students. Overall, a majority of the patients believed it is vital for students to work with patients (93%), felt their care was better with the involvement of a student (76%), and rated the overall care they received at the clinic as very good or good (96%). However, there was a significant difference in the overall rating of student performance between the third-year and fourth-year students ($p=0.01$).

Patients who were examined by the fourth-year students were more happy to have

student involvement again ($p=0.03$) and were more likely to return to the clinic ($p=0.02$). The main reason for unwillingness to have a student involved in the future was the prolonged testing. The most common reason for accepting student involvement again was the importance of allowing learning for the students. Findings of this study suggest that most patients perceived student involvement in their eye care as essential and that their overall experience and satisfaction regarded as positive. However, concerns arose on the lengthy examinations requires necessary measures.

Keywords: patient experience, optometry, students, clinical education

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A 41
HE 001

Preliminary Validation of Vis-Screen Mobile Application for Easy Vision Test by the General Public

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Abstract

Millions of people worldwide suffered from visual impairment and blindness, resulting in limitation of their daily activities and performances. Early detection of their visual problem is essential to avoid further vision loss and restore normal vision. The determination of the visual level is fundamental to justify the need for immediate eye care or appropriate ophthalmological management. In spite of the government's efforts and strategies to improve eye care provision, yet the utilization remains poor as many people are still unaware of their visual problem. Together with the evolving technology and extensive use of smartphones, this has encouraged us to develop the Vis-Screen app intended for the general public to use it as to perform the vision test. This study aims to validate the Vis-Screen app as a reliable and valid tool to test vision in the community. The objective is to determine the reliability and validity of the Vis-Screen app by testing the visual level of individuals in the community based on the definition of visual impairment and blindness classified by the World Health Organization (WHO). The app provides a simple test algorithm by the ability to identify the direction of a single letter "E" displayed randomly in four different directions. It determines the visual acuity at the level of 3/60, 6/60, 6/18 and 6/12, then the final results are auto-generated

according to the easily understandable WHO classification. We had performed the vision test on 277 study participants within the community in the state of Terengganu. With the use of Krippendorff's alpha statistic, the inter-rater reliability was determined and analyzed by comparing five different users. The validity was determined by comparing the vision test results obtained by the app against the Snellen chart as the gold standard technique. The preliminary results of the reliability and validity of the Vis-Screen app will be presented in terms of its specificity, sensitivity, positive predictive and negative predictive values. The validity of this mobile application is expected to have high enough specificity and sensitivity to justify it as a reliable tool to be used for checking vision in the community. We hope to promote an extensive usage of this app by the public for early detection of visual impairment and blindness among themselves in the community. Therefore, it will minimize the dependence on eye care practitioners at the primary level.

Keywords: visual acuity; mobile application; vision screening; blindness

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A 42
HE 002

Social Support and Self- Care Behaviour among Heart Failure Patients

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Abstract

Background: Heart failure is a chronic progressive syndrome that could cause significant impairments and medical burden on the patient and his or her spouse, family members, and caregivers. Some of the common risk factors of heart failure include hypertension, diabetes, high cholesterol level, obesity, and smoking. Self-care behaviours in heart failure patients include taking suitable actions in supervising the symptoms, recognizing the effectiveness of their action taken, manage, identify, and follow the treatment plan. Social support is defined as the feeling of existing and perception that one gets from family members, friends, and others, the available assistance and supportive encouragement from others. However, in Malaysia, the influences between social support towards self-care behaviour among heart failure patients are not yet determined. Aim and objectives: This study aims to determine the differences between demographic variables, social support, and self-care behaviour and to determine the relationship between social support and self-care behaviour among heart failure patients. Methodology: A total of 30 heart failure patients from a Clinical Training Centre in Selangor, Malaysia, participated in this cross-sectional study. Face to face interviews using paper and pencil questionnaires were conducted on consented participants. Instruments used in the study were the Multidimensional Scale of Perceived Social Support (MSPSS) and The European Heart Failure Self-care

Behaviour Scale (EHFSCBC). Findings: The results showed that there was a significant difference between the educational levels of the participants and their social support ($p < 0.05$). Besides this, there was a moderate positive relationship between social support and self-care behaviour ($r = 0.40$, $p < 0.05$). Implications: In conclusion, social support is associated with better self-care behaviour among heart failure patients. The higher the support, the better the patient can take care of themselves. Thus, awareness and education on the impact of good social support towards self-care behaviour are essential for spouses, family members, and caregivers of heart failure patients.

Keywords: Heart failure, social support, self-care behaviour

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Hospitality / Tourism Environment

A 43 HTE 001

Visual Assessment on Preference for a Historical Town Center: The case study of Antalya, Kaleici

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Abstract

Visual landscape assessments are mainly based on detailed questionnaires to map the perceptions of the visitors for the area. It is extensive use in term of the landscape study literature, and they have usually used to assess for natural or scenic landscape areas. The number of studies on urban landscapes is quite small when to compare with natural landscapes. However, historic town centers are as urgent as the natural or scenic landscapes for tourists and daily visitors. For them, in literature is found limited studies in term of the visual assessment of the cultural landscape uniquely historic town centers by the touristic destinations. Because of them, this study aims to find the preference pattern of the users for a historical town center with mapping the preference topography on the spatial level. To map the preference ratings on a plan can help to solve visual problems of the site on the spatial scale.

Moreover, it helps to figure out the visual site characteristics of the area and the perception of the visitors. For achieving this aim, a detailed questionnaire with 33 photos has used as an evaluation tool for visual historic urban landscape assessment. Antalya Kaleici was selected as a study area because it has many visitors through all seasons from different countries. Also, Antalya Kaleici district is an attractive town center for local inhabitants. All geographic coordinates of the thirty-three photos have indicated. They have applied to a map with the help of the GPS pointer. With using GIS and preference scores of the images, the preference topography map of the site

created on the computer. Three hundred eighty-four questionnaires have completed on the area with face to face interviews. In addition to these, factor analysis has done the preferences. Findings showed that some peculiar regions are low in choice, and opposite on this, some unique areas are high in term of visitor perception. Results would help to get decisions about the management of the Antalya-Kaleici historical town center.

Keywords: Visual Landscape Assesment; Historical Town Center, Preference Map; Antalya Kaleici (maximum four keywords)

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Inclusive Environment

A 44
IE 001

Five Access Challenges Created while Creating Grand Mosque

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Abstract

Grand Mosque is among frequently visited building typology because it is a place for worshipping God for devoted Muslims and its communal qualities. A Mosque is a facility that is often visited by People with Disabilities (PwDs) and elderly Muslims other than the general public, as it is a place of worship for devoted Muslims to perform the five daily prayers in congregational. The lack of access to Mosque creates physical barriers for PwDs and elderly which have discouraged them to go to Mosques for congregational prayers and other related activities. Mosque accessibility has been a prolonged issue and it is a problem that needs to be mitigated between design consultants, the local authorities and the Mosque's facilities management personnel in providing and maintaining mosque facilities for accessibility purposes. Many PwDs Muslims has expressed their frustration and dilemma in visiting Grand Mosque throughout Kuala Lumpur and Malaysia. The aim is to identify the common accessibility obstacles and provide recommendation or innovation design solutions to accommodate access design that complements Islamic views. The common identified access challenges are i) the entrance, ii) the ablution (wudu') area, iii) the toilet, iv) the prayer hall and v) the path of travel. The article revisits these design intentions by the method

of content analysis of available technical documents such as UBBL 34A, MS1184, MS2577 and JAKIM design guidelines. Whilst the method of conducting Access Audit simulation at several case studies of Grand Mosques in Malaysia by challenging it on its accessibility, Universal Design interpretations and facilities management. To conclude, Grand Mosques with grand design philosophies should consider all diversity of users for them to be able to visit, performing congregational prayers and to be socially inclusive for any Mosque's other functions such as a place for meetings, gatherings, educations, celebrations and even for medical services.

Keywords: Mosque Accessibility, Persons with Disability (PwDs), Universal Design, Inclusive Mosque.

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Landscaping Environment

A 45 LaE 002

Benefits and Returns of Adopt-A-Park Programme in Kuala Lumpur

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Abstract

A collaborative partnership between the local authority and corporate agencies in maintaining and managing urban public parks through the Adopt-A-Park Programme has become a common approach throughout the United States. Adopt-A-Park Programme came into the limelight of the Kuala Lumpur City Hall (DBKL) practices via the Greener Kuala Lumpur initiatives. Between 2012 and 2018, 15 corporate agencies have shown their proactive corporate social responsibility (CSR) to beautify and maintain urban green spaces in Kuala Lumpur via the park adoption programme. Due to the limited yearly allocation, DBKL is often struggling to sustain its public parks. Adding to this, a sizeable coverage of urban park that requires a significant number of labourers to keep the park clean, safe and usable is also a challenge. Although the park adoption programme has been practised in Kuala Lumpur since 2011, there is no analysis done so far about this programme in Malaysia, even in Kuala Lumpur itself. Hence, this paper attempts to investigate the benefits and returns of the park adoption programme to DBKL explicitly and to the urban community at large. Laman @ Eco Sky and the Metropolitan Park were selected as case studies out of the 15 public parks adopted by the corporate agencies under the DBKL park adoption programmes. A renowned developer, EcoWorld took the former, while NAZA TTDI the latter. Statistical data of these parks' users satisfaction obtained from DBKL and monetary spent by the adopters were analysed descriptively. The central focus of the analysis was how far DBKL, respective adopters and park users are socially, environmentally and

economically benefits from the park adoption programmes. Findings from this study demonstrate that 94% of the adopted park users were satisfied with the quality of aesthetics, amenities and facilities as well as park maintenance and tree selection. However, only 42% of respondents were aware of the park adoption programme. Result also suggests when NAZA TTDI adopted the Metropolitan Park over 15 years, DBKL saved RM20 million. Meanwhile, EcoWorld bears the cost of RM5 Million over the 3 + 2 years Eco @ Sky park adoption. Incorporating the B40 neighbourhood parks into the programme should be given a priority as an extension of the park adoption programme in the future.

Keywords: Adopt-A-Park-Program, Adoption, Urban Park, Benefits and Returns

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A 46
LaE 003

Greener Kuala Lumpur: Initiatives and emerging challenges

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Abstract

Previous research showed the urban green space per capita in Kuala Lumpur dropped from 13 square meters per inhabitant in 2010 to 8.5 square meters in 2014, which demonstrates the metropolitan green area in Kuala Lumpur is below the minimum standard recommended by the World Health Organization (WHO) to provide a minimum of 9 square metres per inhabitant. In response to the urban green space degradation, the RM3.9 million of the "Greener Kuala Lumpur" project which is one of the Entry Point Projects (EPP) under the National Economic Transformation Programme was initiated in January 2011, targeting to increase the urban green space from 11 meter squares in 2010 to 13.0 square meters in 2020. This paper attempts to provide insight into the initiatives taken by DBKL as well as the emerging challenges in greening the urban spaces of Kuala Lumpur. This study employs both qualitative and quantitative approaches. Four DBKL's key performance indicators (KPI) namely planting 30,000 trees in 8 territorial divisions in Kuala Lumpur, organising the programme to encourage the public park usage, promoting the "trees sponsorship programme", and the usage of a cutting edge apparatus for tree inventory were reviewed. The statistical data of the four KPI provided by DBKL was analysed descriptively. Results from this study suggest four notable outcomes. Firstly, the tree coverage increased by 60% in Kuala Lumpur contributed from the tree planting programme. Secondly, participation from the private sectors in trees sponsor rose by

60% in 2016. Thirdly, the level of public awareness about urban green space increased by 50% and finally, with the aid of 11 tree tagging apparatus, 40% of the total trees contributed to Greener Kuala Lumpur were inventoried. Although the initiatives in greening the urban spaces of Kuala Lumpur taken by DBKL paved a clear path towards greening Greater Kuala Lumpur, the emerging challenges such as lack of suitable areas for tree planting, application of best practice of the tree maintenance that follows a horticultural practices and managing tree vandalism are urgent to take into consideration in future DBKL initiatives.

Keywords: Greener Kuala Lumpur, Urban Green space, Initiatives, Challenges

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A 47
LaE 001

Morphology of Street Vegetation along Pedestrian Walkways in Kuala Lumpur City Centre

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Abstract

Kuala Lumpur has now achieved its target in planting 100,000 trees along the main streets of the city centre to support the National Economic Transformation Programme to make the city more liveable. However, before the project was initiated, the area did not have any street vegetation, which prevented the streets from having shade provision, storm water reduction, and good air quality hence reducing habitat and landscape connectivity for urban green. The streets were lacking social benefits, such as a sense of community and safety as well as reduced rates of crime. They were only paved and far from being perceived as pedestrian-friendly and attractive. The Kuala Lumpur City Hall (DBKL) has then taken the action of planting trees along the pedestrian walkway of the main streets in the city centre with some streets noticeably having the same street vegetation design and layout. However, there were some remaining streets, which are designed distinctively different than the rest with an entirely different set of plant species. There have been very few information available regarding the greening works done by the city hall and how the current street vegetation has affected the street condition. Therefore, this study aims to review the structure and components of the street vegetation along these streets in detail to discover the reasons of its different establishments so to determine its social and physical benefits to the streets and the pedestrian walkways. The study begins with a review of the

reasons for the establishment of street vegetation in both global and local historical context which then reveals its relationship with the surroundings and its impacts on them. The study then investigates its establishment along the pedestrian walkways through systematic observation methods, which consist of photographic observation, field note-taking and drawing analysis archiving. An interview was also carried out with the Landscape Department of DBKL to discover the morphological parameters used. The results reveal that some of the street vegetation morphology implemented have improved the social and physical condition of the pedestrian walkways while some were implemented to respond to an entirely different intention and purposes. However, it is concluded that the street vegetation morphology implemented was to respond mainly to the safety of the pedestrians due to the negative culture of snatching and reckless crossings within the local community as well as to give comfort to pedestrians through a more inviting walking environment.

Keywords: Street Vegetation; City Centre; Main Street; Pedestrian Walkways

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A 48
LaE 004

**The Recognition of Fragrant Plant Characteristic
in Enhancing the Place Identity for Royal Town of
Kuala Kangsar, Perak**

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Abstract

A flower or *Bunga* in Malay expressed about the beauties and aesthetics in Malay art through the motifs and pattern since the early Malay life traditions. The fragrant plant could be a representative of paradise, which is also said to have a pleasant fragrance. Nowadays, industrialization in a city seen as a significant problem in Malaysia. It caused the rapid growth of urbanization within the area of the Royal Town in Malaysia. Consequently, it will continuously affect valuable elements of identity and characteristic of Malay Royal towns and its heritage. Explicitly, for the Royal Town Kuala Kangsar in Perak, the Municipal Council of Kuala Kangsar (MPKK) stated that the Royal Town of Kuala Kangsar almost eroded by the uncontrolled development and modernity due to the lack of uniformity development, no continuity of streetscape elements from the main road to the town and entrance to Iskandariah Palace of Royal Town. This paper aim is to analyze the qualitative response on recognition of plant characteristics to support the reinforcement of place identity on townscape elements. The case study in the Royal Town of Kuala Kangsar, Perak, conducted a semi-structured interview involved for 12 participants based on purposive sampling, including professionals, policymakers, and

skilled practitioners. The data analyzed through qualitative coding by using Atlas ti. The results reveal that the type of fragrant plants is the most significant flower for the royal town of Kuala Kangsar, Perak. It including *Teratai* (Nelumbo), *Melur* (Jasminum) and *Tanjong* (*Mimusops elengi*). The uses can reinforce the character of the Royal Town. The findings show an attractive and legibility of the plant can symbolize the historical and cultural context for place identity. Further research is recommended to assess the details on the plants' character image to assist the city council for preserving the unique and invaluable historical heritage. Also, the fragrant plant can use as a subject matter for visualized the place identity of the Royal Town Kuala Kangsar, Perak.

Keywords: Fragrant plant; Criteria; Enhancing; Identity

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Local Heritage Environment

A 49
LHE 001

**The Impact of Endorsement of Food Heritage
toward Building Food Identity in Expert Point of
View**

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Abstract

Many countries are reporting on experiencing the external pressures on their culture and tradition, including losing their food heritage and identity. With that, Malaysia, as the multi-cultural country, is also giving greater concern in preserving its food heritage and identity. This paper aimed to determine the impact of endorsement of food heritage toward building food identity from food experts' perspective. A qualitative approach has been used to gather information. Specifically, using a semi-structured interview with eight informants from government agencies and food expert is at the age range of 34-40 years and 45-60 years old. Their education backgrounds are Diploma, Degree, Master and PhD holders and experience in food area for more than five years. Their current work profession is in academic and government agencies. The interviewed data had been transcribed and transformed in a three-step process using categorisation, coding and evaluation. Transcribe interviews were categorised using a scheme of emerged categories, allowing the contents to be systemically verified. Results revealed panel of experts correspond to the impact of the endorsement of food heritage towards national food heritage in four themes which are: creating an image; documentation of food heritage; preserving the traditional food; and nation identity. By recognising the

impact of endorsement towards national food heritage, it would help the nation in building food heritage toward country identity. It also established the importance of endorsement on traditional food for preservation as well as safeguarding country heritage. In the long run, it will contribute toward nation food identity or nation food image that is appreciated not only among the Malaysian but also in the international arena. Due to the limited time frame, the researcher only able to secure eight experts for the interview. It is suggested for the future to get more experts to be interviewed from various industry, agency and academician for future references.

Keywords: Impact of endorsement; Food heritage; Food identity; Panel expert

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A 50
LHE 002

**Utilising CPTED Elements in Assessing the
Safety of Heritage Buildings**

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Abstract

Safe environment played an essential role in the selection of property. Crime Prevention through Environmental Design (CPTED) was coined in the early 1970s by C. Ray Jeffery but brought to attention by architect Oscar Newman with his book *Defensible Space: Crime Prevention through Urban Design*. Generally, the crime prevention system is a mechanism or system that can be an approach in building or surrounding to prevent the crime in that area. Natural surveillance, access control, and territoriality are critical factors in CPTED. A good design considered the safety elements are the fundamental approach in ensuring natural surveillance. Although this strategic approach to safety was introduced nearly fifty years, the implementation is only towards new development. This research will look at the possibility of utilizing CPTED elements as assessment tools in assessing the safety of our heritage buildings. The focus of the study is to determine whether the original design or the conservation work carried out to the selected heritage buildings did consider crime prevention aspect in the design. The selected case studies are Galeri Sultan Abdul Aziz, Bangunan Sultan Abdul Samad and the Church of Lady Lourdes. Elements used in CPTED formed an intensive Pro-forma checklist used in evaluating selected heritage building for this study. Assessed criteria are divided into three parts; Environmental Quality/ Condition and Streetscape, Building Quality/ Condition and Safety and Surveillance totaled up to twenty-five assessed elements. The assessment carried out using a scorecard system where the physical appearance of the subject (heritage buildings) is evaluated and

valued with scores between 0-4. Besides that, observation based on the checklist is carried out together with photographic evidence collection. Scores from the assessment formed empirical data that represent the safety performance of the buildings. The result indicates that all the three buildings have taken into consideration of crime prevention elements through the design. Nonetheless, some technical aspects were added post conservation work.

Keywords: CPTED, safe heritage area, building conservation, assessment tool

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A 51 LHE 003

Exploratory Factor Analysis on Food Insecurity Experience Scale (FIES): Latest food insecurity measurement tool by FAO

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Abstract

Background: Food insecurity is a known situation widely occurred among society either from developed or developing countries, including our homeland. There were a lot of researches that were carried out in Malaysia using a similar instrument scale. However, recently, the Food and Agriculture Organization (FAO) releases the latest measurement scale to gauge experiences of food insecurity named as Food Insecurity Experience Scale (FIES). It was dedicatedly designed to have cross-cultural equivalence and validity, which will become an indicator to tell about food insecurity condition worldwide.

Aim: We aimed to translate and validate FIES into the Malay Language.

Objectives: The objectives of this study are to assess the construct validity of FIES by using exploratory factorial analysis (EFA) and its reliability to implement in Malaysia.

Methodology: A cross-sectional community-based survey conducted among the population in Felda Bukit Cherakah, Puncak Alam Selangor (n=124). Before the data collection process, eight items of FIES underwent translation processed by the local translation institute. EFA and Cronbach's alpha coefficient were done to discover the underlying structure or dimension and to assess internal consistency for the items, respectively.

Findings: Principal component factor analysis of FIES items revealed two underlying structures which explained 55.5% of the variance. These two structures were named as 'changes in food quality' and 'inadequate food quantity'. Using Cronbach's alpha coefficient to see the reliability, the value of the scale was 0.76.

Implications: A Validation study of an existing questionnaire is very important as to develop a new questionnaire suit to own culture is a kind of hustle. Hence this study might give an insight about the validity of food insecurity questionnaire which is an issue necessary to be undertaken earlier since many efforts had been conducted to improve the socioeconomic problem among our nation.

Keywords: exploratory factor analysis; food insecurity; FIES; Malaysia

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A 52
LHE 004

**Correlation between Space Syntax Analysis and
Score Mapping for Safety Consideration at
Heritage Area**

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Abstract

Crime is one of a social issue that always has a significant concern in a community, and it has a substantial impact on local urban planning and economy. Maintaining public security and safety have become more challenging with unprecedented growth in urbanization, globalization, and mitigation. In the early years of crime study, most research was carried out on policymaking and justice system by looking for more substantial punishment or penalty to lower crime rate. However, the result was contradicting. After a decade of World War Two, the economy starts booming, and poverty rate became lower, which some refer as Golden Age of Capitalism. Nonetheless, this period also shows a significant increase in violent and property crime throughout the western world. These situations frequently refer as a social paradox, in which theoretically increasing household income was supposed to low crime rate, but crime rate keeps growing. Recently, criminal studies start to introduce the element of spatial design and social aspect toward crime occurrences. From the previous research, there was no doubt spatial build environment, and its layout has an impact on crime occurrence. In the Malaysian context, most old cities have changed their function from the administration area to tourism area. Nonetheless, its spatial environment needs to be preserved to maintains in originality. The purpose of these study was to look into the built environment in the heritage area and how its impact on

crime. This study is executed by referring and combining prominent theories of urban design theory about crime and develops a list of spatial attribution. The attributes then are separated into two-phase of analysis. Phase 1 will focus on the configuration of layout street using space syntax as a tool and look integration, connectivity, choice, depth and intelligibility of the spatial and present it on axial map. Phase 2 will look on elements of safety on the street, score it and showed the result in the form of score mapping. The result from both analyses with is correlated to form safety consideration at heritage area.

Keywords: Crime Prevention, Spatial Configuration, Space syntax

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Leisure / Recreational / Sports Environment

A 53
LRSE 001

**Leisure-time Behaviour of Urbanites and
Preference for Recreational Parks in Kuala
Lumpur City**

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Abstract

This paper explores the leisure-time behaviour of urbanites in Kuala Lumpur and their preference for recreational parks in the city. A survey of 1500 urbanites as samples of the study was conducted in Kuala Lumpur and Putrajaya. The study aims to look at the urbanites' leisure-time behaviour and their preference for outdoor activities, especially in recreational parks. Based on purposive sampling method, a self-administered questionnaire survey was conducted in five main recreational parks in Kuala Lumpur and residential areas located within 1-3 kilometres radius of the recreational park in the zones, (Kuala Lumpur City Center, Wangsa Maju-Maluri, Sentul-Manjalara, Damansara-Penchala, Bukit Jalil-Seputeh, and Bandar Tun Razak-Sungai Besi and Putrajaya). The majority of the sample comes from Wangsa Maju-Maluri and the smallest sample from Putrajaya. They consist mainly of young people who are living in the city. The results of the study use descriptive statistics analysed by Statistical Package for the Social Sciences Software (SPSS). The study identifies: (a) the types of leisure activity of urbanites, (b) indoor versus outdoor activities in leisure time, (c) frequency of activities in recreational parks, (d) the most visited recreational parks in Kuala Lumpur, (e) quality needed in recreational parks, and (f) recommendations on

suitable programme in parks. Agreement scale ('often') on indoor versus outdoor leisure time still favour indoor activities than outdoor, suggesting watching tv (37%), on gadgets (55%) and quiet relaxation at home (55%) as the main activities, as compared to sightseeing in public parks (15%) and outdoor sports in open spaces (16.5%). The urbanites visit three well-known parks in Kuala Lumpur once in a while (at least once in three months), which are Perdana Botanical Garden, Titiwangsa Lake Garden and Kuala Lumpur City Park (KLCC Park). KLCC Park received the highest percentage in terms of use (75%). Natural elements received the highest mean score among several qualities needed for a park (mean=4.4). Environmental programme is the highest mean (3.9) as a recommended activity for a recreational park in a city. It seems that the way recreational parks have integrated into the lives of city residents highlight that they are rather a crucial and essential service delivered by the local government. The city urbanites need recreational parks as fundamental requirements for their physical and psychological wellbeing. The needs for suitable activities and programmes for recreational parks may promote urbanites to favour outdoor leisure time activities, thus reducing sedentary indoor lives.

Keywords: Leisure time; Recreational parks; Urbanites; Preference

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Residential Environment

A 54
RE 001

Identifying Risky Space in Neighbourhood: An analysis of the criminogenic spatio-temporal and visibility on environmental design

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Abstract

Modern crime typically possesses geographical quality. It can occur anywhere with a shown geographical location. The distribution of crime is not uniform across either time or space and believed influenced by environmental design. Meantime, in the residential area, the property crime remains the most violent contributor to the rate. Proper understanding of the typical pattern of spatial-temporal and accurate assessment towards space visibility must discover and how the likely violation has geographically happened. As follows, this study aims to examine the layout and identify the risky space in a residential area. In current practice on visibility assessment, studying using the qualitative method by direct observation and used the questionnaire without critical consideration of environmental features. As follows, this study examines spatially using the spatial analysis of Isovist and integrated with a geographical information system and syntactically analyzed the layout configuration. Three years of burglary data analyzed statistically across three neighbourhoods in Kuala Lumpur, Malaysia. The correlation between the distribution and layout assessment then carry out to identify the relationship. The findings reveal a significant bold pattern temporally. A residential burglary occurs in the middle of the daytime where it typically peaks in the early to mid-afternoon hours. This notable contrast to a non-residential burglary which shows reverse time pattern. The negative patterns have happened based on the local

behaviour in that area like routine activity and opportunity. Besides, using the 'visibility flooding' technique to propagate a cascade from a single origin point to another subject show a significant effect on the burglary distribution. It undoubtedly tends burglary to happen at a specific location with a lesser visible. The consistent finding also reveals some local attribute that significantly affects the visibility degree-based precisely on the environmental design. The contour, space, vegetation, and street configuration are likely among the cause, and indirectly disrupt the pattern of residential burglary. Current findings enrich those of previous work by examining the environmental characteristics of the layout, and also the behaviour that enthusiastically promotes the opportunity of crime.

Keywords: Residential Burglary; Isovist; Visibility Analysis; Crime Prevention

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**A 55
RE 002**

The Key Contribution Factors of Safety in Crime Prevention towards Quality of Life in Neighborhood Residential

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Abstract

The devastated crime incidents in Christchurch that unprecedented atrocity recently, which shocked the whole nation and killed the feeling of safety among community worldwide because even in the most safest place people exposed to criminal risk. Hence, there is a need for a critical and comprehensive review to identify the essential contribution factors in preventing crime occurrence in the neighbourhood area. The neighbourhood is the place where people start to build their family institution, which commonly considers themselves to be living in the most comfortable and safer living environment. Safety is recognised globally as an essential ingredient of development to ensure the safety of the community. The issue that has been highlighted and arises worldwide recently is about the security and safety challenges in the rapidly globalized world. The challenges give a significant negative impact on the lives of millions across the globe. This subject ranked among the most pressing issues in this modern world. The increases in crime activities recently will give a negative impact to the community. It even becomes an epidemic which will become increasingly contagious without a proper and comprehensive solution to deal with the issues. The perceived problem of crime in residential neighbourhood area will not only resolve the issues regarding physical planning of the neighbourhood, but the most importantly will also give the

potential long term social impact to the residents. Hence, this study will focus on the factors that contribute to preventing crime in the residential neighbourhood. This paper reviews the literature focusing on the key contributing factor in crime prevention. The findings will establish through the development of the conceptual framework of crime prevention towards the quality of life. It will also identify the safety of neighbourhood with crime prevention features that promoting the best solution for crime prevention towards community safety and higher quality of life.

Keywords: Crime prevention, Safety Neighbourhood, Quality of Life

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A 56
RE 003

Micro Housing: Typological study and implementation in Malaysia

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Abstract

The introduction of low-cost micro-homes by Kuala Lumpur City Council (DBKL) has ignited cynical rumors amongst working adults within the lower-income group. The initiative was aimed to deliver 200 rooms for rental at RM100 each per month for single people in the B40 community. The fact that it was designed base on the 'capsule hotel concept' resulted only for a 'short stay' accommodation. It is not permanent hence defeating the purpose of housing. This scenario suggested that micro-housing concept might be misinterpreted and simplified beyond the local prototype standard built by Kuala Lumpur Think City in 2018. As such, this paper intends to further investigate the potentiality of ideal micro-housing that is suitable for the Malaysian environment, specifically for the B40 community. The study is conducted based on typological analysis on similar projects implemented in different location and continents, particularly in Europe and Japan. Parameters of research are constructed on two (2) factors; the macro factor that includes regional and cultural study, and micro factor that focuses on design and functionality. By synthesizing these factors, the understanding of micro-housing basic concepts and methods of implementation can be further developed into the local context. The finding shows that 'adaptability' is the critical factor in providing decent micro-housing, which is captured only through dual or multiple mode functions. These have resulted in a non-conventional system of furniture layout and space appropriation that can be arranged in various situations in compliance with its target group. Living in minimal is a top priority in promoting the micro-housing scheme. Study shows that the emerging of minimalist lifestyle has shaped our new

generations, thus making a way in developing micro-living amongst the younger people. As a conclusion, with appropriate design and implementation, the introduction of Micro Housing can revolutionize our local housing industry. Changes are not only for the constructional purpose, but it is also capable of transforming the local mentality in acknowledging micro-living as the next step in urban housing.

Keywords: Micro living, Adaptable housing typology, Minimalist urban lifestyle, Kuala Lumpur B40 Community

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A 57
RE 004

Factors for Effective Repair & Maintenance Services in Housing Industry

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Abstract

Malaysia is going through urban population increment resulting in increasing population density. Due to growing populations as well as the scarcity of land, urban cities cannot expand horizontally. Thus, developers, especially in major urban cities, are concentrating more on supplying high-rise housing. Unlike the free-standing house, high-rise housing is provided with facilities and amenities together with the common areas by the developer. Those facilities and amenities if adequately manage and maintain by the management managing the facilities and amenities, creates and sustains a healthy living environment. However, most residents of high-rise housing do not realize the importance of proper building management until their buildings, and common facilities have deteriorated. It is due to the existence of a management gap when there is a significant difference in the satisfaction levels among residents towards the management managing high-rise housing. This scenario may affect the quality and sustainability of the building's physical structure. Therefore, there is a need for improving the repair and maintenance services for quality and sustainable urban living. The purpose of this paper is to develop a conceptual framework for effective repair and maintenance services, which could improvise the maintenance management of the management managing the high-rise housing. Systematic literature review method and

analyzed through content analysis techniques with peer-reviewed journal articles focusing on repair and maintenance services in high-rise housing are adopted. Results of the study would include a conceptual framework for effective repair and maintenance services in high-rise housing towards the sustainability of urban living. The results are expected to lead towards potential variables to develop factors and theory for the hypothesis testing of factors for effective repair and maintenance services in high-rise housing. This paper also gives valuable reference to the management managing high-rise housing to consider the factors for quality and sustainable urban living in the context of the Malaysian housing industry.

Keywords: Effective repair & maintenance services; High-rise Housing; Housing Industry

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A 58
RE 005

Windstorm Resilient Rural Housing: Lessons learned in Temerloh, Malaysia

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Abstract

Increased frequency of heavy rain and unexpected freak storms due to climate change has caused major and minor destruction to building components in rural Peninsular Malaysia. Peninsular Malaysia is exposed to two monsoon winds seasons every year; the Southwest Monsoon occurs in May to September and the Northeast Monsoon from October to March. Between these periods, inter-monsoon winds blow in bringing with them localized thunderstorms but significantly turbulent winds than those of monsoon winds. In 2019 alone, Temerloh district located in central Peninsular Malaysia has been hit by unpredictable wind storms in localized areas which damaged more than 185 rural homes. In light of the large numbers of rural houses damaged by wind storms in recent years, there is a need to design more resilient housing in rural Malaysia and to educate rural communities to better prepare for future wind hazard. This research set out to assess the structural vulnerabilities of damaged rural houses to severe winds in Temerloh and experience of the communities affected. Preliminary findings indicate house owners were unaware and unprepared for wind hazards. UTAR Centre of Disaster Risk Reduction researchers visited Temerloh and carried out field surveys of damaged homes between March 2019-August 2019 to observe and investigate the failure modes and factors that caused failure of the damaged houses. The fieldwork was supplemented by district-level post-windstorm reconnaissance reports prepared by Malaysia Civil Defense Force (APM) and other information gathered from local

government. Results indicate poor performance of structural and non-structural building components in resisting high wind loads due to inadequate design, under-strength of failed building materials and poor construction details. The results of this study could have important implications for government agencies, NGOs, builders, and engineers in assisting rural communities in reconstructing windproof resistant homes and planning for future windstorm risk management efforts specially catered to homeowners in Temerloh.

Keywords: Rural housing; Windstorm; Resilience; Malaysia

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A 59
RE 007

Landlords' Perception on the Introduction of Residential Tenancy Act in Gombak District, Selangor

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Abstract

Rental housing has given positive impacts on the overall economic development of a city as well as the country. It is an alternative that mutually benefits the landlords and tenants. Landlords earn additional income as house owners while tenants who unable to afford to own a house has another alternative to stay. However, the absence of firm regulations related to the tenancy agreement between landlord and tenant has resulted in recurrent and repeated disputes over a long span of years. Thus, this study aims to analyze the landlord's perception towards the introduction of the Residential Tenancy Act in governing tenancy matters. This study sought to achieve three (3) objectives, which are (1) To analyze landlords' acceptance or refusal towards the introduction of the Residential Tenancy Act, (2) To identify the impacts of new proposed act towards landlords, and (3) To identify rising issues and challenges faced by the government in regulating Residential Tenancy Act in Malaysia. This study undergoes quantitative analysis where descriptive analysis been made from questionnaire survey with landlords in Gombak district. A total of 50 samples were taken from landlords owning houses within Gombak district by using a self-administered questionnaire survey. The main finding of this study indicates that 70% of the respondents agreed on the introduction of the Residential Tenancy Act while the other 30% objected. The factor of refusal includes less awareness about the terminologies in the Residential Tenancy

act, longer experience in managing rental housing and extensive process in solving disputes among landlords and tenants. The term on deposit payment is the main term agreed by most of the landlords to be incorporated in Residential Tenancy Act followed by the rental amount to be paid by tenant (including an increase of rental amount for the next few years). Therefore, this study has recommended strategies to strengthen the introduction of the Residential Tenancy Act to increase the landlord's acceptance.

Keywords: Rental Housing; Landlord; Tenant; Residential Tenancy Act

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**A 60
RE 008**

**An Assessment of Issue and Problems of
Tenants during Tenancy and their Perceptions
towards the Introduction of Residential Tenancy
Act.**

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Abstract

Malaysia's housing industry has been acknowledged as significantly expensive at an average market price of RM372,801 and does not match the average annual household income that occurs to be just RM188,208. Therefore, people are compelled to rent a house as house prices increase. Those who are unable to buy a home must consider renting to prevent 30 years of debt burden as well as the risk of withdrawal of loans and assets to be auctioned out if they fail to pay monthly instalments. However, tenancy disputes tend to occur as a result of the absence of specific tenancy law. Hence, the introduction of the Residential Tenancy Act is crucially needed in Malaysia to solve disputes among the landlord and tenant. This research aimed to accomplish three goals: to identify the problems experienced by tenants during their tenancy; to study current rental laws and legislation in Malaysia; and to evaluate the perceptions of introducing the Residential Tenancy Act from the perspective of tenants. The study highlighted both quantitative and qualitative methods which provide an in-depth understanding of the study. The research used a technique involving a self-administered questionnaire. The survey requires 50 respondents consists of tenants within the district of Gombak. The analysis showed that the main variables affecting

tenants to rent houses are higher housing costs, lower commitment, and to avoid debts. The main tenancy issues during the tenancy identified in this study are landlords raising the rent without noticing tenants and refusing to pay all the rental property charges they needed. Besides, the issues and problems are based on the tenants ' experience, which intends to provide alternatives and solutions that will benefit tenants in the future. Thus, the primary outcome of this study is to provide recommendations to enhance the implementation of the Residential Tenancy Act in Malaysia.

Keywords: Housing Industry, Tenants, Residential Rental Act.

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Sustainable Environment

A 61
SuE 003

Assessing the Thermal Performance of *Negeri Sembilan* Traditional Malay House towards Sustainable Practice

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Abstract

Traditional architecture has high value in terms of construction methods and philosophy which related to the needs of the occupants. It has a common characteristic of passive thermal design that t local environmental condition. The practice of traditional architecture also uses a similar approach, such as the use of local building materials and responsive climate strategies. Currently, the requirement of housing in an urban area is getting critical due to the migration of population from rural expanding over the years. Thus, this causes the rapid urban development. This development has created the Urban Heat Island (UHI) phenomenon in the central city. Due to this heat island, energy utilization has been increasing for the cooling purpose substantially in the residential sector. These indicate that the modern building construction is poor in passive thermal design. Traditional Malay house is one of the best examples of vernacular architecture in Malaysia that practice climatic design strategies. However, the traditional Malay house was experiencing numerous changes and confronted with consistent dangers to its proceeded presence. Proper local building materials and the coherent and holistic design principles of the traditional Malay house forms are being supplanted and crumbled by advanced impacts. This study aims to assess the thermal performance of *Negeri Sembilan* traditional Malay house in tropical environment towards sustainable practice. This study used qualitative and quantitative methods; both are the observation of the

condition of the houses and their surroundings, and thermal data collections. The results show that the indoor air temperature and relative humidity of the house had slightly lower than the outdoor area, which 2°C and 8% respectively. Whereas, the wind flows in the indoor area are lower compared to the outdoor space; however, it is still can provide a comfort level. The findings of the study show that the openings of the house help the cross-ventilation work well, while the strategic orientation of the house towards climate factors also contribute to the cool and comfort in indoor spaces. This study highlights an idea and knowledge in improving the construction technology for modern residential architecture to produce an effective indoor thermal performance in a tropical environment.

Keywords: Malay House; Traditional Architecture; Thermal Performance; Tropical; Environment

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A 62 SuE 001

Collaborative, Capacity Development Efforts: A case of Kampung Hujung Rintis, Perak and UiTM Cawangan Selangor, Malaysia

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Abstract

Public universities have been directed to have more collaborative projects with external entities. One such effort was with a rural community for capacity development towards socio-economic well being. In the case of Universiti Teknologi MARA, Selangor Branch (UCS), the success stories on community engagement and capacity development have been shown with Kampung Hujung Rintis, Perak. The main underpinnings for such collaborative efforts were research-based, particularly with upfront data collection using the various scopes at the events. Demographic profiles of the villagers at Kampung Hujung Rintis were provided by the village chief (Penghulu). These were used to analyze socio-economic profiles. In fulfilling UCS's vision of "Research Benefiting People and Industry," the joint programs between UCS and Kampung Hujung Rintis were achieved through two events in September 2018 and April 2019. Both events allowed for the successful capture of data from the live, research laboratory. The presence of researchers from cross-disciplinary in UCS as well as the communities was considered a success. That said, the feedback from the collaborative efforts toward the capacity development of the villagers at Kampung Hujung Rintis was; micro-financing assistance for rural, small businesses plus well being follow-ups including free glasses (spectacles) and dentures for the senior citizens from B40 (bottom 40% of the median income level below MYR3,000). In other words, the B40 category consists

of communities with weak economic ability. The implications from the case event showed that continuous community engagements would be beneficial for both parties. Cross-disciplinary partnerships were spanning geographical locations allowed for a range of research topics and relevant, significant inputs for the stakeholders. Challenges to these projects include a commitment from both sides, including financial issues because of the distance from UCS to Kampung Hujung Rintis, Perak.

Keywords: Capacity Development; Community Engagement; Well-being; Quality of Life

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A 63 SuE 004

Sustainable Home: Does green matters?

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Abstract

In sustainable development, the green concept plays a significant role to achieve the objective of sustainable. One of the terms used is Green Home, which is the determinations made to reduce the impacts that development caused to the environment. Years back, the introduction of sustainable development developed due to the Brundtland Commission report in 1987, whereas the concept being the formation of the United Nations Conference on Environment and Development in 1992. A green concept in built environment introduced in Malaysia thru a national policy in 2009, namely National Green Technology Policy. Pursuing that, the PAM created Green Building Index (GBI) as one of the pioneer rating tools for green building in Malaysia. Green Home is a house with a pleasant quality environment for living without compromising the elements of energy and water, sanitary and waste for the future generation. The use of solar energy takes place in the year 1970 due to global warming, increasing and applicable nowadays through the building of Green Home. As green building started emerging in 2009, Malaysians start to recognize the importance of sustainable development. The total project certified by GBI as June 2019 is 502 project, slow despite after ten years of the green concept introduced. More efforts and energy to be put in order to conserve and protect the environment in development centuries. Therefore, the research emphasizes on the acceptance and value of green development,

particularly in the residential sector. The objective of this research is to explore the understanding and awareness of green development among real estate market player. A semi-structured interview conducted among private and government real estate expertise. The interviews focused on their experience in the housing market and the prospect of green home. The findings highlight the reluctant of real estate player incorporating green in their valuation practice. The main reason is the market itself do not understand and aware of the benefit of green building to an individual buyer. Further, the scenario makes a green development misunderstood and devalued. Thus, the awareness of green and sustainable among the public, which also the individual home buyer should be surge.

Keywords: sustainable, green home, green development, housing

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A 64 SuE 002

The Trajectory of Sustainable Facilities Management (SFM) in Hotel Industry

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Abstract

Malaysia has reaffirmed in aligning with the United Nations Sustainable Development Summit to support and commitment to implement the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs). United Nation World Tourism Organization (UNWTO) state that, sustainability issues in the hotel industry are now increasingly known as a significant concern. It has been described as a constituent activity that contributes to a great impact on the environment. Furthermore, Malaysia National Ecotourism Plan (MNEP) 2016-2025, on thrust 01 Investment in Ecotourism had mentioned that 'adherence of sustainability principles and practices in existing hotels' need to be adept at all hotels in approaching to become ecotourism by 2025. However, the implementation of Sustainable Facilities Management (SFM) in the hotel industry is still immature in Malaysia. This conceptual paper is to explore the growing understanding of Sustainable Facilities Management (SFM) in the hotel industry. This paper provides valuable information on the concept of Sustainable Facilities Management (SFM) evolution including content analysis on the SFM trends developing in the hotel industry. The findings of this paper are systematically reviewed on the hotel industry efforts in pertaining SFM practice chronological development era and the awareness arouse among hotelier's influences to adapt their new preferences as greater respect for the environment. This significantly focuses on the advancement

of adaptation of SFM practice upkeep engaging within the hotel industry. In addition, the attentive are on the value of SFM practice in the hotel industry contributes betterment sustainability growth in the hotel industry. Hence, this research sheds light on the vision of SFM which to develop a framework for the further purpose of examining and identifying a catalyst to the hotel's SFM.

Keywords: Sustainable hotel; Sustainability Facilities Management (SFM); Hotel management.

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A 65
SuE 005

**Users' Perception and Satisfaction with
Pedestrian System towards Achieving
Sustainable Pedestrian Environment for Green
Campus Walkability**

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Abstract

Sustainable university campus design involves comprehensive planning procedures that consider buildings and its surrounding environment and not segmented from the pedestrian system of view. Providing conducive living and learning environment for university students and staffs are essential towards a livable campus environment. A systematic pedestrian system is like a blood vessel in the body of an institution specifically for catered for campus living. Good pedestrian system significantly relates to linkages of the community and contribute towards green campus walkability and livability for the campus. Creating walkable and human-scaled environments that encourage walking in a campus environment is part of the main criteria of a green campus. This paper identifies the notion of good pedestrian walking environment in a green campus environment. The primary objectives are to identify factors that contribute an effective walkable pedestrian environment and to determine users' satisfaction of the pedestrian environment. This paper employed a mixed methodology approach using a sample case study at Universiti Teknologi MARA Cawangan Perak at Seri Iskandar, Perak. A sample survey was conducted within the pedestrian

community on the campus. The investigation is supported by field observations using scheduled checklists, photos and maps procedures. The findings from the survey indicate that safety and security; as well as comfort and convenience are the most significant factors that contribute towards walkable pedestrian environment on the campus. The findings added that the physical characters of pedestrian environment are the main criteria that motivate users to walk. This paper contributes to the body of knowledge concerning study areas on the most preferred user needs and their perception of the pedestrian walking environment towards achieving an excellent pedestrian system for green campus walkability. The findings also indicate that, in order to achieve sustainable and walkable environment in university campus, the specific needs of users based on localised context should be fulfilled for future campus planning.

Keywords: pedestrian system; walking environment; green campus; walkability

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Technology-related Environment

A 66
TeE 001

Challenges and Opportunities of Facility Managers towards Big Data Analytical Transformation

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Abstract

Today's business landscape perceives data insight as extremely important to determine the success of the business. Most businesses have begun to realize the importance of incorporating strategies that can transform the organization through the application of Big Data Analytics (BDA). The Fourth Industrial Revolutions (IR 4.0) which deals with the cyber-physical system has introduced much-advanced technology and method to collect data. This means that any equipment with the capability of producing data by any means is communicated on an informal basis and kept it in data storage. In Facility Management (FM), BDA is not a new thing. The idea of collecting, storing and analyzing data has been practice for a long time. For instance, is an energy-saving program that collects energy consumption data for obtaining the energy usage trend of any assets or facilities. Subsequently, this data will be used to improve future energy usage. Besides, BDA offers more opportunities to FM such as real-time analysis, cost-saving, and improvement in operational insight that can enhance the efficiency of maintenance management. Despite modern technology dynamics, there are still many facility managers who are struggling to catch-up with the technology progress and development. Therefore, this research aims to provide enhancement and awareness to Facility Manager on BDA transformation. This research has critically analyzed the literature from Big Data Community articles and BDA Service Providers' websites contents including the white papers related to their recent experiences. Based on the content analysis, this research had determined the challenges and opportunities

that could be faced by the facility manager in deciding to implement BDA. The identified challenges and opportunities are categorized based on facility manager core competencies. The findings of this research can enhance the knowledge and awareness of facility managers so that they can action before deciding to implement BDA within their organization. This can add value to the skills of the facility manager needed under the 'technology competency' category. Facility managers needed to be prepared with the skills to use big data analytics effectively, before being 'excited' about BDA and knowing what to do during the transformation. In short, the facility manager must be clear about the outcomes they want to achieve.

Keywords: Big data, Facility Manager, Facilities Management, Competencies

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Travel / Transportaion Environment

A 67
TTE 001

**Examining the Willingness to Park and Ride
among Private Vehicle Users of Kuala Lumpur
Conurbation**

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Abstract

The rapid transformation of Kuala Lumpur and its wider urban region for the last decade has demanded an increase in the overall economic growth of the country as well as the demand for private vehicle ownership among commuters of Kuala Lumpur city. This increase has led to a rise in the use of private vehicles for trips to the city center. Morning and evening peak hours see major bottlenecks on major roads in and out of the city. One of the Transportation Demand Management (TDM) strategy known as the park and ride scheme were introduced towards encouraging commuters to use public transport instead of private vehicles. Although various transportation demand management (TDM) strategies have been implemented, including the park and ride schemes, nevertheless the utilization of the park and ride facilities still do not reach its optimum. Accordingly, this study examined the willingness of private vehicle users in using the facility, based on its relationship with socioeconomic, parking, trip, and technology characteristics. Using a structured questionnaire focusing on 4 major sections, which are socioeconomic, parking, trip, and technology characteristics, the focus is targeting the private vehicle users in private parking area through the convenient sampling technique. A multiple linear regression model was proposed to accomplish the purpose of the study to determine whether every value of the independent variables is associated with a value of the dependent variable and the results on 199 valid respondents were analyzed using this model. The findings revealed

that socioeconomic, trip and technology characteristics have a significant positive relationship with the willingness to park and ride among private vehicle users in the Kuala Lumpur conurbation. Parking characteristics, however, show no significant positive relationship with the willingness to park and ride. The findings can perhaps assist planners and the related stakeholders in providing some input towards better planning for future facilities as well as further understanding the overall concept and implementation of the park and ride schemes.

Keywords: Willingness, Park and ride, Kuala Lumpur conurbation, Multiple regression

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A 68
TTE 003

**Patterns of Stationary Activities in the Elevated
Pedestrian Networks of High-Density Asian
Cities: The case of Mong Kok, Hong Kong**

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Abstract

Grade separation pedestrian systems are commonly proposed both as solutions to congested traffic street networks and as a means to enhance accessibility to shopping precincts. The elevated pedestrian networks of high-density Asian cities – such as Hong Kong, Shanghai, Mumbai, and Bangkok – have experienced continuous development over the past 40 years. Relevant studies demonstrated that elevated walkways significantly improve the mobility and economic activity of the surrounding urban areas. Despite this, a limited amount of research on the impact of elevated walkways on public space provision and stationary activity opportunities has produced more mixed results. Besides, evidence-based analysis of stationary activity patterns of elevated walkways remains mostly unexplored. This research investigates the elevated pedestrian network of Hong Kong by focusing on the case of Mong Kok, which is one of the city's densest and more commercially active districts. Firstly, this study illustrates the network development rationale, the spatial pattern and the accessibility to services provided by the elevated pedestrian network. Secondly, it analyses stationary activities during the daytime peak on weekends when migrant domestic workers gather in this space. For this purpose, this study applies behavioral observations (n= 14,699) and mapping of stationary uses. Qualitative and quantitative data collection involved video recordings and snapshot observations during ten site visits. Data was then reported and analyzed on a GIS platform. The research indicates that although the system was

primarily designed to channel pedestrian flow, there is evidence of stationary uses occurring in the elevated walkways. Besides, these uses coexist with the pedestrian flow. The average of stationary activities reported during each observation period is 1470, and the population density is 0.44 person/m². The typologies of activities are social, individual or production-oriented activities. Repeated behavioral observations highlight common patterns of occupancy correlated with particular external factors. These are the spatial layout, distance to accesses, proximity to public services, and garbage collection systems. Patterns of occupancy are also correlated with internal factors, such as the location of production-oriented activities. Migrant domestic workers create a synergistic relationship with the walkways. The findings suggest the need for a more responsive and inclusive approach to the design of elevated pedestrian networks, which takes into account stationary activities.

Keywords: Elevated pedestrian system; Behavioral mapping; Stationary uses; Hong Kong

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A 69 TTE 002

The Neighborhood Effect on Cycling Behavior in Residential Areas

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Abstract

Cycling activity is one of a mode of transport in urban and residential areas. It has been determined as an active and environmentally friendly mode of travel. With the growth of cycling behavior and interest in cycling mode among people worldwide, many kinds of research have been carried out to strengthen and enhance the cycling mode of transport. Hence, this study aims to determine the neighborhood effect factors associated with cycling behavior among resident in the neighborhood area. The effects factors identified including the built environment factor, socioeconomic characteristics of individual or households factor, environmental effects factor, and the presence of related facilities for the cyclist. Cycling is mainly an activity that enriches with advantages towards society, economic and environment which have been highlighted widely by researchers worldwide. Hence, this paper will strive in determine the neighborhood effects arguments and the influence factors of cycling behavior in a residential neighborhood. Two objectives outlined in this study firstly to provide a comprehensive review from the previous research which focusing on physical (planning and design of residential neighborhood) and secondly to identify the specific factors that can enhance the cycling behavior among communities in a residential area. To enhance the cycling culture among

communities, stakeholders must give attention to the neighborhood area as people spend most of their time within the area especially during the weekend. The findings have shown that the neighborhood effects factors of cycling behavior identified including the socioeconomics factor, the presence of cycling facilities, the demographics of residents, integrated infrastructure and personal characteristics. These factors will develop a comprehensive framework of effecting elements of cycling behavior in residential areas. From the invention of neighborhood effects factors, the researcher has been considered to facilitate the design by providing proper planning cycling facilities in a way of enhancing perceived environmental conditions. The contributory factors were discovered in assisting road designers, planners, and professional in producing better and active cycling facilities and lifestyle within neighborhoods and also affect cycling choice among communities. This paper will provide a comprehensive framework in determining the neighborhood effects arguments and the influence factors of cycling behavior in a residential neighborhood for enjoyable cycling experiences among communities.

Keywords: Neighborhood, Behavior, Cycling, Residential

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A 70 TTE 004

Transportation Facilities Performance Index using Level of Service (LOS) Rating System

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Abstract

Level of Services (LOS) rating systems widely been used to evaluate the quality of operations and transportation facilities by transport users. This rating system manages to track problems and influenced the transport planning decision. The objectives of this study are to identify the service quality criteria of bus rapid transit and secondly is to rank the level of service quality according to its performance. The quantitative and qualitative analysis was applied, which will cover the determination of users' satisfaction towards their journey of using the facilities. Six parameters such as reliability, tangibles, responsiveness, assurance, empathy, safety and security were defined to appear in the structured questionnaire. Supplementary aspect such as accessibility, connectivity, comfort and convenience, service monitoring and cost will be used in the qualitative analysis. This research produced a list of factors that were specifically ranked according to user's perception using servQual model. From the analysis, five factors were identified as most important to user's that are location BRT, convenient pedestrian, safety, walking distant and accessibility. The rank of factors indicate as the most relevant and preferred by the users whenever evaluating the level of performance in transportation services.

Keywords: Level Of Service (LOS), Service Quality, Passenger Perception, Transportation Facilities

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Urban Environment

A 71
UE 001

Civic Ecology Practice: Composting Program in Subang Jaya

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Abstract

Active engagements in urban environmental stewardship are platforms of social and environmental learning, which leads to good ecological behaviour. This study aims to explore urban community stewardship or civic ecology practice of a composting program in a municipality, i.e., Subang Jaya Selangor Malaysia. The local authority in Subang Jaya (Majlis Perbandaran Subang Jaya is one of the first urban Municipality to implement neighbourhood composting programs and set up a Bio Mass centre in its neighbourhood in their attempt at sustainable waste management (SWM), one of the most challenging environmental problems. This study's findings would add to the recent literature on community-based stewardships or civic ecology practices (Maddox and Tidball 2018). The study applies practice theory (Krasny and Tidball 2017). The framework focuses on elements of exercise such as competencies, meanings, and physical resource, to further define the community's composting activities and identify the constraints. These can lead to practical proposals, priorities, and strategies while assisting the Municipality's actions towards the neighbourhood's environmental program effectiveness. At the community's level, communities can make more informed and more financially viable choices in their daily lives and gain overall improvement on

the quality of life. Cross-Sectional survey utilizing questionnaires were distributed to 400 respondents with criteria relevant to the aim of this study. The analysis will highlight the significant elements or variables that support urban stewardship and contribute to the sustainment of the composting program. The study found that meanings and physical resource were positively co-related with competencies and motivations of participation. The technical and financial support from the Municipality played a crucial role in sustaining the program and the motives of the participants. Future research suggests for environmental stewardships evaluation of different neighbourhood profiles or that focuses on various environmental practice to enrich the literature on ecological stewardships that would be useful to communities and municipal authorities.

Keywords: Environmental stewardship; Community of practice; Sustainable Waste Management;

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A 72
UE 002

Discovering Distinctive Street Patterns of Snatch Theft through Crime Prevention through Environmental Design

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Abstract

Snatch theft crime involving acts of engaging rob-and-run tactics or called as a smash-and-snatch tactic. The theft crime rate in Malaysia for 2010 and 2014 is experiencing an increase in the rate of decline and uncertainty. Snatch theft is a type of criminal property crime index is calculated in Malaysia. This high-crime activity depends on an opportunity to commit a crime at the time of the incident. Street design pattern, the chance to escape and the chance to get a reward is the main factor in the snatch theft crime. Scholars find out most of the crime-prone areas tend to have factors of low traffic, less movement of people and poor condition of street lighting, the layout design, access route, safety features, monitoring and management and maintenance. Previous research looking onto the street pattern and snatch theft crime. There are quite hard to find the connectivity between crime prevention through environmental design on snatch theft crime. Thus, this paper is aimed at discovering distinctive street patterns of snatch theft through crime prevention through environmental design. This research is a qualitative approach by field observation to investigate the physical environment of the snatch theft hotspot area. Snatch theft statistical data from Polis Diraja Malaysia

(PDRM) obtained will be sorted out according to the states, districts, city, and the road or street names. The research will be concentrating on the street where the crime incidents happened the most to identify what kind of street pattern and physical environment that contribute to the snatch theft hotspot area. The finding indicates the three main principles of crime prevention through environmental design (CPTED) which are surveillance, access control and territoriality contributed to snatch theft crime incidence. Besides, this output should be taken as consideration and reference to the local authority and communities to ensure a safe living area.

Keywords: Crime; Snatch theft; Street; Environment setting; CPTED

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A 73
UE 003

Environment and Social Impact Analysis of Riverfront Regeneration; The Case Study of River of Life (RoL), Kuala Lumpur City Hall

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Abstract

The River of Life (ROL) is a seven-year project led by the Government of Malaysia to transform the Klang River into a vibrant and liveable waterfront with high economic value. Covering eight rivers with a total length of 110km, this project is divided into three main components i.e. River Cleaning (led by Department of Irrigation & Drainage (DID) Malaysia), River Beautification (led Kuala Lumpur City Hall (DBKL)) and Commercialisation and Tourism (led by Ministry of Federal Territory (KWP)). This project is expected to give impacts towards the social, environmental and economy of the surrounding area. The study aims to define the implications of the RoL program towards the society and environment in the area of Kuala Lumpur City Hall. Hence, the research's objectives are to assess the success of the program, to identify the social and environmental effects and lastly, to make suggestions on the best course of action for future restoration attempts. Both qualitative and quantitative methods were used to produce an outcome for this research. A sample size of 150 local and international visitors was taken within the radius of the site, involving the population in the area who either work or visit but does not own any property. The primary data was collected via site visit, whereas the data was collected from both primaries, via site visit and

secondary data, via scholars and related documents regarding riverfront restoration. The analysis and findings of the research program managed to achieve the objectives, however, there is room for improvement in the aspect of lack of cyclist infrastructure, high level of concretization of the area and the poor river condition. There was an improvement in the recorded WQI of Klang River Basin in the year 2013 up until 2015. Also, findings from the questionnaire shows, 40% of the total respondents were not aware of the program. The respondents reacted favorably to all of RoL's social consequences, but most of the participants agreed that the smell coming from the river would still require treatment. The recommendations were produced based on spatial, management and planning and social aspects for the improvement of future projects. Thus, the research of the impact analysis of social and environment is significant as the potential of the river can be maximized to increase economic growth, enhancing social interaction as well as the environmental preservation especially in the urban areas.

Keywords: Waterfront regeneration; environmental impacts; social impacts; River of Life (RoL)

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Working Environment

A 74
WE 001

The Influence of Job Demand, Respect and Rapport on Work Engagement of Employees in the Foodservice Sector

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Abstract

The food service industry is one of the fastest-growing sectors in Malaysia. The growth is due to the high-income elasticities of demand for food among consumers in Malaysia. The trend in consumers' expenditure on foodservice consumption in Malaysia is expected to continue and grows at a fast rate. Increase in income has the propensity to increase the demand for foodservice and food products. The Malaysian foodservice industry also contributes to the creation of many job opportunities for the citizen of Malaysia. The Malaysian government has provided many incentives to improve and modernise the Malaysian foodservice operation, which includes financial and moral support to the entrepreneurs in this industry. When there is a high volume of foodservice operators in a particular market, it will inevitably increase competition. Due to the fierce competition, many foodservice operators turn into superior services to entice customers to keep visiting their business. Hence, in this article, we focus on the issues and the ability of the food operators to create a positive working environment to develop efficient and competent employees. In this study, the researchers adopted a purposive convenience sampling as the sampling method. Questionnaires were distributed to 303 employees in the foodservice industry in three selected districts in Terengganu, Malaysia. Data gathered from the completed questionnaires were analysed using two inferential analysis. To determine the relationship between the

independent and dependent variables among employee in the foodservice sector, correlation and multiple regression analysis were conducted. Results of the inferential analysis revealed that there are positive relationships between two of the independent variables, respects and rapport with the dependent variable, job engagement. Job demand, however, has no significant influence on Job Engagement. To increase rapport, employers should build a sincere and healthy relationship with their employees. We proposed that trust, efficient communication, mutual respect and the honest relationship has a strong influence on employee's engagement with their job. The researchers also recommend that food business owners provide practical training sessions, regular meetings and feedbacks to share their objectives with their employees. To build high motivation, employers should also create synergy and good working condition for their employees. As a result, customers will experience excellent services, which in turn will create loyal customers.

Keywords: Job Engagement; Job Demand; Rapport, Respect, Foodservice Industry

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