

MMHS

Society of Medical, Medicine and Health Sciences

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Volume 04, Issue 24

January 22-23, 2018
Tokyo Japan



CONFERENCE PROCEEDINGS

BOOK OF ABSTRACTS MMHS-2018

International Conference on
“Medical Medicine and Health Study”
(MMHS-2018), Tokyo Japan

Book of Abstracts Proceeding

International Conference on
“Medical Medicine and Health Study”
(MMHS-2018)

Tokyo Japan

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Proceedings of the International Conference on

**“Medical Medicine and Health Study”
(MMHS-2018)**

ISBN: 978-969-683-924-8

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**International Conference on
“Medical Medicine and Health Study”
Tokyo Japan**

Venue: TKP Tokyo EKIMAE Conference Center

ORGANIZING COMMITTEE

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CONFERENCE CHAIR MESSAGE

Dr. Malika Ait Nasser

International Conference on “Medical Medicine and Health Study” serves as platform that aims to help the scholarly community across nations to explore the critical role of multidisciplinary innovations for sustainability and growth of human societies. This conference provides opportunity to the academicians, practitioners, scientists, and scholars from across various disciplines to discuss avenues for interdisciplinary innovations and identify effective ways to address the challenges faced by our societies globally. The research ideas and studies that we received for this conference are very promising, unique, and impactful. I believe these studies have the potential to address key challenges in various sub-domains of social sciences and applied sciences.

I am really thankful to our honorable scientific and review committee for spending much of their time in reviewing the papers for this event. I am also thankful to all the participants for being here with us to create an environment of knowledge sharing and learning. We the scholars of this world belong to the elite educated class of this society and we owe a lot to return back to this society. Let's break all the discriminating barriers and get free from all minor affiliations. Let's contribute even a little or single step for betterment of society and welfare of humanity to bring prosperity, peace and harmony in this world. Stay blessed.

Thank you.

Dr. Malika Ait Nasser

Conference Chair

Email: chair2018@academicfora.com

MMHS-2018

Conference Schedule

(DAY 01 Monday (January 22, 2018))

Venue: Room 1

09:00 am – 09:10 am	Welcome Reception & Registration
09:10 am – 09:20 am	Opening Ceremony
09:20 am – 09:30 am	Welcome Remarks – Ms Petrel Qiu – Conference Coordinator Academic Fora
09:30 am – 09:40 am	Introduction of Participants
09:40 am – 9:50 am	Group Photo Session
09:50am – 10:00 am	Grand Networking Session and Tea Break

DAY 01 Monday (January 22, 2018)
Session 1 (10:00 am – 12:30 pm)

Venue: Room 1

Session Chair: Mr. Leon Yap

**Track A: Business, Economics, Social Sciences and
Humanities**

ITSBM-018-ANI105	A Study on Social Welfare Countermeasures for Disaster Risk in Community -Focusing on Elderly as a Disaster Victim-	Juhee Kim, Rosa Park, & Byeonggyu Bae
ITETCAS-018 CEAS102	The Optimal Average Information Ratio for The Access Structures Based on Cyclic Cohesion Graphs	Hui-Chuan Lu
BMSS-JAN-104	A Strategic Perspective to Explore Online Poker Gambling Phenomenon	Francesco Ceresia
BMSS-JAN-105	Study of Factors Affecting Strength of Sealing in the Product Packing Process by Utilizing Central Composite Design	Bunsong Khamon
BMSS-JAN-106	Good Customer, Good Services: Using Emperience Sampling Methodology in Employee Affect and Performance	Wan-Jung Hsiao
BMSS-JAN-108	Measurement of Tourism Internship Attributes in the 21st Century	Srisuda Kaewamrat
BMSS-JAN-109	Enhancing Tourism Destination Standard Focusing on Waterfalls	Siyathorn Nakphin
BMSS-JAN-111	Behavior on Selecting Accommodation in Thailand of Suratthani Rajabhat University Students	Penvilai Kaewpetch
BMSS-JAN-112	Travelling Behavior of Revisit European and Non-European Tourists in Samui Island	Thaniwit Buafai
ICOR-105	Effects of Concept Mapping on Korean Efl College Students' Reading Comprehension and Recall	Hyunjeong Lee

Lunch Break (12:30 – 01:30 pm)

DAY 01 Monday (January 22, 2018)
Session II (01:30 pm – 03:30 pm)

Venue: Room 1

Session Chair: Mr. Leon Yap

Track A: Business, Economics, Social Sciences and Humanities

ICOR-107	Feminism: Role in literature	Jyoti yadav
AMPE-JAN18-102	Classifying Texture Images Based On Wavelet Packet Transform and Rough Set Theory Method	Liang-Ying Wei
BMSS-JAN-115	Guidelines for the Tourism Safety Management : A Case Study of Samui Island, Surat Thani Province	Kanokwan Srikhwan
BMSS-JAN-121	Alternative Dispute Resolution Of Intellectual Property As Part Of Investment In The Creative Industry Sector	Ranti Fauza Mayana
BMSS-JAN-122	Sustainability in Japan and Korea: A Comparative Cross-National Text Mining Study with News data	Sungbum Kim
BMSS-JAN-125	Retail Store Image: A Study of the Matahari Department Store (At Bandung Indonesia)	Thomas budhyawan yudha
BMSS-JAN-102	Exploring the Influence of ETF Performance on International Capital Flows - A Case Study of China	Tzu-Yi Yang

Tea Break (03:30 – 03:45 pm)

DAY 01 Monday (January 22, 2018)
Session III (03:45 pm – 05:00 pm)

Venue: Room 1
Session Chair: Mr. Leon Yap

**Track B: Engineering and Technology, Computer, Basics
and Applied Sciences**

TKE-418-101	Software-in-the-Loop Simulation For Hybrid Aircraft Control	Shoaib Mansoor
TKE-418-103	Multi-spot sensing based comfort control model considering occupant density	WooSeung Yun
TKE-418-104	Decision Support Model for HVAC System Selection under the Time-Of-Use Pricing	HyunCheol Seo
TKE-418-105	A Study on Thermal Environment and Satisfaction of Workers in South Korean Commercial Kitchen	Dongrim Lee
TKE-418-106	A Study on Implement of Personal Customized PMV Control with Wearable Device	WonTaek Ryu

Track C: Medical Medicine and Health Study

TKM-418-101	Health condition of intellectual and developmental disability	Mr Ganesh Paudel
TKM-418-103	Effects assessment of Auricular acupuncture and group counseling for smoking cessation in senior high school student	YouJen Tang
TKM-418-104	Improvement of cognitive function in early stage of Vascular Cognitive Impairment (VCI) after treatment with the acetylcholine precursor choline alfoscerate	YoungSoon Yang

Closing Ceremony

List of Conference Attendees

The following Scholars/ practitioners/educationist who don't have any paper presentation, however they will be attending the conference as delegates & observers.

Sr. No	Official ID	Name	Affiliation Details
1	AMPE-JAN18-106A	Hyun-Soo Kang	Chungbuk National University, South Korea
2	BMSS-JAN-116A	Md. Abdul Motaleb	Executive Director Sedad, Bangladesh
3	BMSS-JAN-117A	Md Sarowar Hossen Ripon	Executive Director Sedad, Bangladesh
4	TKM-418-101A	Nirdesh Chokhal	Health coordinator of Special Olympics Nepa
5	TKM-418-105A	Dr. Elizabeth Joy Golez	General Practitioner at Cooma District Hospital, Cooma, NSW, Australia

	DAY 02 Tuesday January 23, 2018)	
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City Tour and Shopping Day

All respective guests are free to conduct their own sightseeing and tour. The second day of the event is reserved for this

TRACK A: MEDICAL, MEDICINE AND HEALTH SCIENCES

Health Condition of Intellectual and Developmental Disability

Ganesh Poudel^{1*}, Nirdesh Chokhal²

Abstract In Nepal, People with intellectual and developmental disability (IDD) have often been neglected by the Health profession, because of a variety of barriers, like insufficient professional knowledge and experience to treat this population, lack of cooperation by the person with IDD, lack of awareness inadequate facilities, lack of financial condition and lack of family care and support and inadequate compensation for treating this population, who takes longer time to approach, assess, and treat. In general, this population has poor health as well as oral hygiene. Data were collected using in-depth interviews with parents and professionals, site visits, observations, document reviews, and direct interaction with people with ID. As per the systemic review of field visit report of 2015/2016 of Special Olympic Nepa, showed this population has poorer health and oral hygiene, higher prevalence and severity periodontal disease and lack of dental health awareness. People with intellectual disabilities disproportionately have more health problems than the general population. Further complicating the matter is that people with more severe disabilities often cannot verbalize health complications they are experiencing, which leads to health problems being undiagnosed and untreated. Data indicate in oral health, that people with IDD have more untreated caries, higher prevalence of gingivitis, and other periodontal diseases affecting their ability to chew, speak, and look unattractive. With increasing age and life expectancy this population is in need of good dental care on a regular basis to prevent disease and improve quality of life. And also Evidence supports the need to develop strategies to increase patient acceptance for routine care, additional training for healthcare personal and dentists to provide this care, and the development of more effective preventive strategies to minimize the need for this care.

Keywords: Disability, VaD, VCI.

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Effects assessment of Auricular acupuncture and group counseling for smoking cessation in senior high school student

Chen-Jei,Tai¹, You-Jen,Tang² *

Abstract Smoking is a serious public health problem since it harms not only the smokers but also other people in touch with the smokers. Many obstinate illness such as cancer, chronic obstructive pulmonary disease, cardiovascular disease are now be proven to be related to smoking itself. To help young smokers, particularly adolescent, quit smoking can prevent more tobacco use. Some studies showed auricular acupuncture (AA) is increasingly used to treat chemical dependency and withdrawal symptoms based as it's safe and effective. Moreover, group counseling can motivate young adults to set a quit date and strengthen their belief in quitting smoking via peer effects. The present study evaluate the effects of a 8-week smoking cessation courses consisting of AA and group counseling once per week on senior high school students aged from 15 to 18. The AA treatment was administrated at both side of ears on a weekly basis for 6 weeks. Clinicians gave an intensive counseling session assessing the readiness to quit, exploring smoking habits and identifying barriers to smoking cessation and relapsing factors. Before each intervention, the 23 participants completed questionnaires and offered levels of carbon monoxide exhalation. The participants showed significant differences in levels of carbon monoxide exhalation, daily tobacco consumptions, reduction in the taste of tobacco and intensity of the desire to smoke after 6-week consecutive sessions. However, the smoking cessation success was only 2 cases (8.7%). Given limited and uncertain efficacy of AA for smoking cessation, though it's non-invasive and safe, it's better to combine AA with other methods not only for synergistic effects but also better smoking cessation success rate.

Keywords: Auricular Acupuncture, Smoking Cessation, Complementary Therapy

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Improvement of Cognitive Function in Early Stage of Vascular Cognitive Impairment (VCI) After Treatment with the Acetylcholine Precursor Choline Alfoscerate

YoungSoon Yang*

Abstract Several studies have reported cholinergic deficits in brain and cerebrospinal fluid of patients with vascular dementia (VaD). In view of this, cholinergic agents were proposed for relieving symptoms of VaD. Preclinical studies, have documented that choline alfoscerate increases the release of acetylcholine in rat hippocampus, facilitates learning and memory, counters cognitive deficit in experimental models of aging brain. This study therefore evaluated whether treatment with the acetylcholine precursor choline alfoscerate improved the cognitive abilities in patients with early stage of VCI. Totally, 60 participants (early stage of VCI) participated in this study. To test the effectiveness of treatment with the acetylcholine precursor choline alfoscerate to cognition, all patients were randomly allocated to either an intervention group (n=30) or a control group (n=30). Two matched groups were compared: intervention group treated with donepezil (10mg/day) plus choline alfoscerate (1200mg/day), and control group treated with donepezil (10mg/day). The intervention group were treated with choline alfoscerate (400-mg capsules), 3 times daily, for 180 days. Efficacy outcome measures that were assessed at the beginning of the investigation and after 180 days of treatment included scores the Mini-Mental State Examination (MMSE), the Global Deterioration Scale (GDS), the Korean-Boston Naming Test (K-BNT), the Rey Complex Figure test (RCFT), the Controlled Oral Word Association Test (COWAT), the Korean-Color Word Stroop Test (K-CWST). After 6 months, the intervention group showed a significant change in language of K-MMSE, compared with the baseline cognitive examinations. Also, there was greater improvement in language, attention, calculation, verbal memory, and frontal function for the intervention group, as compared with controls. The results of this study suggest the clinical usefulness and beneficial effects on the general cognitive functions of acetylcholine precursor choline alfoscerate in the treatment of the cognitive symptoms of early stage of VCI.

Keywords: Acetylcholine Precursor Choline Alfoscerate, Cognition

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**TRACK B: BUSINESS MANAGEMENT SOCIAL
SCIENCE AND HUMANITIES**

A Strategic Perspective to Explore Online Poker Gambling Phenomenon

Francesco Ceresia*

Abstract Online poker is increasingly a mass-market-driven gambling. The modern online poker gambling offer is characterized by three main aspects: large-scale commercial operations across the globe and capable of reaching any user connected to the internet; huge investments made by multinational gambling companies; presence of a transnational network among the multinational gambling companies. The main objective of the study is to present a system dynamics based qualitative model about the online poker phenomenon that allows to grasp the complexity of this new form of gambling, often intercepted by sectorial and specialist approaches only partially able to understand its main determinants and effects. A causal loop diagram (CLD) that describes the main causal relationships among the key-variables of the proposed model has been outlined. These key-variables refer to seven distinct stakeholder categories: gambling companies; gamblers; gamblers' families; companies in which gamblers work; public and private organizations responsible for preventing, care and monitoring of bonus; organizations deputed to repress anti-social behaviors; public organizations aimed at managing and certifying the government national budget. The role of the virtual environment where the gambler plays in encouraging high social interaction between players has been discussed. The direct and indirect financial and social costs of online poker phenomenon have been analyzed. The main feedback loops and the causal link polarities have been also defined to fully describe the structure underling the online poker phenomenon. The relevance of a strategic approach to explore the online poker phenomenon and manage its main harmful effects has been argued and new research and intervention initiatives have been suggested.

Keywords: Addiction; Gambling; System Dynamics; Online Poker; Causal Loop Diagram

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Study of Factors Affecting Strength of sealing in the product packing process by Utilizing Central Composite Design

Bunsong Khamon*

Abstract This research is to study the appropriate factors to increase the strength of the sealed packets containing seasoning sauce to experiments. This study began with the introduction of cause and effect diagram to analyze the factors that affect the strength of seals. From the evaluation of several factors involved and found that the 3 factors may affect the strength of seals which are sealing temperature, speed in film feeding, and degree of shut-off valves. Therefore, an experimental design has been conducted by Central Composite Design to analyze the optimal conditions of the packaging, and using Response Surface Methodology to find the best value and it was found that the temperature sealing at 126 film feeding 18 rpm and degree of shut-off valves at 115 degrees, given the maximum strength of the top and bottom seals. After the application of the experimental result, the strength of the sealing on top increased from 34 N to 56 N or 64.71% more, the standard deviation decreased from 3.14 to 2.92, or a decrease of 7.01% and the strength of seals at the bottom increased from the original 34 N to 55 N, or 61.77% more, the standard deviation decreased from 3.21 to 2.98, or decreased 7.17%. The result of improvement has determined to decrease the waste caused by sealing down from 81.5% to 3.68%, causing the waste of the packaging process reduce from 7.84% to 2.47% or down by 5.37% but the quality of seasoning sauce remain the same. This project has achieved the objective of the study.

Keywords: The Strength of Seals, Central Composite Design, Response Surface Methodology.

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Good Customer, Good Services: Using Emperience Sampling Methodology in Employee Affect and Performance

Wan-Jung Hsiao*

Abstract This study attempted to observe the affective events theory and emotional regulation process. Using experience sampling methodology, we tested these relationships in frontline services workers. The study was conducted among 200 frontline services workers, who filled in a questionnaire after contact a customer for five working days, fourth a day. Empirical data was collected from 200 workers, for a total of 3,719 records. Results indicated that customer interactional justice had a main effect on frontline services positive/negative emotion, and in sequence on their customer orientation behaviour.

Keywords: Customer Interactional Justice, Positive/Negative Emotion, Customer Orientation Behaviors

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Measurement of Tourism Internship Attributes in the 21st Century

Srisuda kaewamrat*

Abstract This research aims to investigate attribute requirement of tourism industry toward student trainees in the southern part of Thailand as well as requirement measurement and the importance of each variable. This study will be based on mixed methods research with both qualitative and quantitative data. Attribute Requirement variables are extracted from previous research papers, criteria of quality assurance of the higher education commission in Thailand as well as in-depth interview of human resources department's managers focusing on hotel advertisement of tour business. The research tools will be self-rated questionnaire via online, Index of Item-Objective Congruence (IOC) with five experts and a pilot test with 30 samples will be applied to increase reliability of the research instrument. The research samples will be 400 human resources managers or relating positions of hotel and tour business in Thailand. Descriptive analysis such as frequency, percentage, mean and standard deviation will be conducted. Structural Equation Model (SEM) will be applied to find out a suitable requirement measurement and the importance of each variable. The results will make contributions to tourism stakeholders, as a guideline to tourism educational institutes for preparing student internship, academics as well as tourism industry.

Keywords: Internship, Tourism, Industry Requirement

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Enhancing Tourism Destination Standard focusing on Waterfalls

Siyathorn Nakphin*

Abstract This research aims to measure the tourism destination standard of a waterfall in Wiengsa district, Surattani province, Thailand, namely the Tantip waterfall leading to enhance the waterfall standard, further. The study is qualitative research applying 5 expert panels to assess the waterfall tourism destination standard and to suggest for its improvement. Content analysis was applied to analysis the data. The study founded the Tantip waterfalls' overall standard was high. The standard of all components consisting of 1) Tourism value and destroyed risk 2) Tourism Potential and Development and 3) Management were also high level. The study suggested that systematic management including setting a community tourism organization, developing local interpreters, developing eco-tourism homestays, as well as boosting tourism networks both public, community and private should be addressed in order to enhance the waterfall standard in the future.

Keywords: Tourism Destination Standard, Waterfall

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Behavior on Selecting Accommodation in Thailand of Suratthani Rajabhat University Students

Penvilai Kaewpetch^{1*}, Chuleewan Praneetham², Prasert Sitthijirapat³

Abstract The purpose of this research was to study behavior on selecting accommodation in Thailand of Suratthani Rajabhat University students. The population was 17,454 students from Suratthani Rajabhat University. The sample for this research was 391 students in Semester II, Academic Year 2015 collected by stratified sampling technique. Questionnaires were used for data collection. Frequency, percentage, mean, standard deviation, and Pearson's product moment correlation were used to analyze the data. The study results showed that most of the sample had the aim to travel for relaxing. They received travel information from the internet, television, and friends telling, respectively. The study revealed that the students traveled with family, girlfriend/boyfriend, and alone, respectively. They preferred to stay in hotel or resort, the time of spending was 2 nights. Most of them reserved an accommodation by telephone booking. The influencing factors on product were condition and size of the room or accommodation. For price, the factor was several levels of room price to choose. For place, the factor was convenient for traveling. And for promotion, the factors were giving of discount for using of service next time and subscribing as members to receive privilege. The factors that affected students' behavior on accommodation selection were personal preference and expectation in choosing the type of accommodation. According to the hypothesis testing, the results showed that marketing mix on place and promotion had the significant correlation with students' behavior on accommodation selection ($p>0.01$).

Keywords: Behavior, selecting, accommodation, Thailand

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**TRACK C: ENGINEERING & TECHNOLOGY,
COMPUTER, BASIC & APPLIED SCIENCES**

Software-in-the-Loop Simulation For Hybrid Aircraft Control

Shoaib Mansoor^{1*}, Mana Saedan²

Abstract In this paper, we present the design of the software-in-the-loop simulation framework for a quad-copter that is incorporated in our hybrid aircraft. The hybrid aircraft comprises of a quad-copter and a fixed wing with one forward thrust rotor. We need to develop a split control system that utilizes a typical quad-copter controller to control four motors/propellers and a supervisor controller to control a forward thrust rotor. The supervisor controller shall take feedback signals from the quad copter and will command the fifth rotor for stabilizing the hybrid aircraft and resolves problems like thrust saturation. The simulation simulates the control algorithm and verifies the quad copter behavior using MATLAB and Simulink together. Achieving these results we come to know that how our hybrid controller will be implemented, what results to expect once the forward thrust rotor is attached to the quad copter. The software-in-the-loop simulation of a quad copter is one of the most effective methods for verifying overall control performance and safety of the hybrid aircraft before actual hardware implementation and flight test.

Keywords: Hybrid Aircraft, thrust saturation, Simulink, Split control, simulation

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Multi-Spot Sensing Based Comfort Control Model Considering Occupant Density

WooSeung Yun^{1*}, HyunCheol Seo², Won-Hwa Hong³

Abstract In this paper, we presented a multi-spot sensing based comfort control model that can consider the number of occupants around the sensor to control a thermal environment. Predicted Mean Vote is a commonly used index that is used to infer occupant's comfort. However, Among the factors considered in the PMV, the value of mean radiant temperature and Air velocity are have great deviation depending on the measurement spot. For example, the location of near the air conditioner outlet and the indoor heat source may cause comfort disturbance (i.e., draft.). So Multi-spot sensing is required to improve the PMV based comfort control accuracy. HVAC control in a building may cause discomfort at some other point in order to meet the comfort of a certain point. To solve this problem, this paper discusses how to control the HVAC system by using a density of occupants as a weight. The model proposed in this paper uses the images taken through the camera module. By application of Tensor-flow Object Detection API, the model can determine the number of occupants around each spot and use it as the weight of each sensor. This allows the model to achieve the maximum satisfaction of the majority of occupants by considering more on the PMV values of a dense area. In this study, a prototype of new PMV Sensors was implemented to confirm the overall mechanism.

Keywords: Multi-Spot Sensing, Occupant Density, Comfort Control

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A Study on Thermal Environment and Satisfaction of Workers in South Korean Commercial Kitchen

Dongrim Lee¹, HyunCheol Seo², JungSeop Ahn³, Won-Hwa Hong⁴

Abstract A commercial kitchen is a space where workers spend most of their work hour. The continuous efforts to keep suitable indoor environment is required for food hygiene and workers health. In the EU, Japan, and the United States, standards and regulations for the commercial kitchen indoor environment are being prepared for workers comfort and food hygiene management. However, in Korea, there is only a regulation for the thermal environment of indoor space, and there is no management regulation for the commercial kitchen. Because of this situation, many of the commercial kitchens in Korea are not equipped with adequate HVAC system, that greatly affects the worker's thermal environment and satisfaction. In this paper, we present the results of the thermal environment measurement and the survey on the thermal environment of 46 subjects from 10 workplaces in the top 5 type of restaurant business in Korea such as Korean, Chinese, Western, Snack food and chicken. Thermal environment measurement was analyzed by using PMV calculation method that commonly used for indoor comfort evaluation, and the questionnaire was surveyed by the Likert 7 point scale method. As a result, the Korean commercial kitchen's thermal environment was found to be significantly inferior to the regulations provided by international standards.

Keywords: Commercial Kitchen, Ventilation, Predicted Mean Vote, Thermal Comfort Sensation

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A Study on Implement of Personal Customized PMV Control with Wearable Device

WonTaek Ryu¹, HyunCheol Seo², Won-Hwa Hong³

Abstract In this paper, introduce the feasibility of wearable device application to a personalized PMV based HVAC control system. The PMV is the most commonly used indicator to probabilistically infer the occupant's comfort statement. In order to predict PMV accurately, four indoor environmental factors and two personal factors have to be considered. However, due to the cost-benefit of the existing sensor technology, the two personal factors are generally set on empirically based assumptions. So generally, PMV control is not suitable for the personalized HVAC system because it cannot consider the MET and Clo, which change rapidly depending on the personal taste and the exercise situation. In this study, introduce a measurement system that combines wearable devices to consider PMV's personal factor. We develop a PMV calculation system that combines a wearable device and discuss the advantages of using a wearable device in comparison with the MET designation method proposed in the ASHRAE standard 55. In this study, we acquired personal bio-signal according to the room temperature by using a clothing integrated wearable device. MET was calculated by the formula presented in ISO 8996, based on the heart rate extracted from the bio-signal. Personalized PMV was compared PMV which is based on the assumption that the MET was set to 1.0. Finally, by discussing the implicit costs and opportunities for system configuration, we present the possibilities of the next generation of intelligent air conditioning systems.

Keywords: Wearable Device, Predicted Mean Vote, Metabolic Rate, Bio-Signal

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Decision Support Model for HVAC System Selection under the Time-Of-Use Pricing

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Abstract Time of Use Pricing(TOU) rate is a common pricing system charged for the residential and commercial building. Many Countries adopting the TOU system encourage peak dispersion by differentiating rates according to the peak divided by off-peak, mid-peak, and on-peak. In Korea, the needs for peak-management of power providers is very high because power grids are isolated. In particular, demand for heating and cooling loads in the summer and winter seasons is too high that seasonal and monthly demand fluctuations are very large. Therefore, in order to encourage the peak management behavior, the Korean electric power provider charges a peak charge which is estimated based on the monthly maximum peak in addition to a volume charge based on the accumulated amount of the usage. The desirable selection of the HVAC system has huge merit for cost savings in terms of the building's lifecycle. Because the presence and capacity of the storage and the HVAC system operation time control directly affect the operation cost of the building. Due to the time of the peak, a coefficient of performance(COP) and the amount of energy consumed are different depending on the HVAC system configuration. In this study, we propose Decision Support Model that can consider peak charge and situation under TOU pricing in Korea. and the validity of the model was verified through the case study data on the office building in Korea.

Keywords: Decision Support Model, HVAC Selection, Time- of Use Pricing, Energy Storage

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