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**March 27-28, 2017**



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# CONFERENCE PROCEEDINGS

## BOOK OF ABSTRACT BESSH-2017

**International Conference on  
“Business Economics, Social Science & Humanities”  
(BESSH-2017) Tokyo, Japan**

# **Book of Abstracts Proceedings**

**International Conference on  
“BUSINESS ECONOMICS, SOCIAL SCIENCE &  
HUMANITIES”  
(BESSH-2017)**

**Tokyo, Japan**

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**“Business Economics, Social Science & Humanities  
(BESSH-2017)”**

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**International Conference on  
“Business Economics, Social Science & Humanities  
Tokyo, Japan  
Venue: Shinjuku New City Hotel, Tokyo, Japan**

**ORGANIZING COMMITTEE**

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## **CONFERENCE CHAIR MESSAGE**

**Dr. Malika Ait Nasser (PhD)**

International Conference on Business Economic, Social Science & Humanities” 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 honourable 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 (PhD)**

**Conference Chair**

**Email: [Chair2017@academicfora.com](mailto:Chair2017@academicfora.com)**

**BESSH-2017**



# CONFERENCE PROGRAM

**DAY 01 Monday (March 27, 2017)**  
**Welcome Reception & Registration**

**9:00– 9:15am**

**Opening Ceremony (09:15 – 9:30 am)**  
**Venue: Room 1**

|                  |  |
|------------------|--|
| 09:30 – 9:40 am  | Introduction of Participants   |
| 09:40– 9:50 am   | Welcome Remarks – <b>Ms. Petrel Qui-</b> Conference Coordinator<br>Academic Fora |
| 09:50 – 10:00 am | Group Photo Session  |

**Grand Networking Session and Tea Break (9:30 am – 10:00 am)**

**DAY 01 Monday (March 27, 2017)**

**Session 1 (10:00 am – 12:30 pm)**

**Session Chair: Leon Yap**

**Venue: Room 1**

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

|                    |   |                        |        |      |
|--------------------|---|------------------------|--------|------|
| <b>TKS-537-101</b> | The Effects of Service Innovation on Customer Value: The Role of Service Employees  | Wen Yi Huang           | Taiwan | Oral |
| <b>TKS-537-102</b> | Mechanisms Linking Frontline Employee Service Competencies to Word-Of-Mouth   | Chu Chun Cheng         | Taiwan | Oral |
| <b>TKS-537-103</b> | Mechanisms Linking Frontline Employee Service Competencies to Customer Purchase Intention: A Moderated Mediation Approach | Chu Chun Cheng         | Taiwan | Oral |
| <b>TKS-537-104</b> | The Outlets of Corporate Social Responsibility Communication in Service Sectors: The Role of Service Employees            | Shan-Shan,Ou Yang      | Taiwan | Oral |
| <b>TKS-537-105</b> | Cooperate Social Responsibility and Discriminatory Import Tariffs   | Yi Ting Huang          | Taiwan | Oral |
| <b>TKS-537-106</b> | Pricing Strategy in Vertically Related Markets  | Meng-Hsuan Yang        | Taiwan | Oral |
| <b>TKS-537-110</b> | Kuznets Curve Hypothesis in Turkey: An Econometrics Analysis  | Hilal Yildiz           | Turkey | Oral |
| <b>TKS-537-111</b> | Operating Efficiency Analysis of China's Commercial Banks: An Application of Bootstrap Method                             | Jyh-Min Horng          | Taiwan | Oral |
| <b>TKS-537-112</b> | Study of M&A and Greenfield in Emerging Markets   | Hsing Yen Chen         | Taiwan | Oral |
| <b>TKS-537-115</b> | Isn't it extremely similar? A Comparative Research on Women Migration Polices of Canada and Turkey                        | Derya Demirdizen Çevik | Turkey | Oral |
| <b>TKS-537-116</b> | Is it Possible to Find an Equilibrium for a Fair Income Distribution in Turkey? Analysing via Game Theoretic Approach     | Evren Denктаş          | Turkey | Oral |
| <b>TKS-537-108</b> | Research Barriers at a Middle-Eastern Higher Education Institution  | Omar Khalil            | Kuwait | Oral |
| <b>TKS-537-107</b> | Evaluation Points in Judging Sheet for English Debates  | Mikako Nobuhara        | Japan  | Oral |

**(Lunch Break: 12:30 to 1:30pm)**

**DAY 01 Monday (March 27, 2017)**

**Session II (1:30 pm – 3:30 pm)**

**Session Chair: Leon Yap**

**Venue: Room 1**

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

|                    |  |                   |        |        |
|--------------------|--|-------------------|--------|--------|
| <b>TKE-537-101</b> | Investigation of Preparation And Photocatalytic Performance For Titanium Dioxide   | Cheng Yi Yu       | Taiwan | Oral   |
| <b>TKE-537-102</b> | Effect of Temperature on The Characteristic Of Carbon-Based Nanofluid  | Ting Chiang Hsiao | Taiwan | Oral   |
| <b>TKE-537-103</b> | System Design and Mechatronics of a Three-Power-Source Experimental Platform   | Hsuan-Yung Chang  | Taiwan | Oral   |
| <b>TKE-537-104</b> | Evaluation of Software Quality Requirement for Educational Mobile Game with Tourism Theme                                      | Anggy Trisnadoli  | Taiwan | Oral   |
| <b>TKE-537-105</b> | On-Line Simulation of the Optimal Energy Management for a Three-Power-Source Hybrid Vehicle Using Bacterial Foraging Algorithm | Kai-Lin Li        | Taiwan | Oral   |
| <b>TKE-537-106</b> | Perceptual Edges Detection for Underwater Images   | Ren Jie Huang     | Taiwan | Poster |

**Track C: Medical, Medicine and Health Sciences**

|                    |   |                |        |        |
|--------------------|---|----------------|--------|--------|
| <b>TKM-537-102</b> | Challenges pertaining to recruitment and retention of older adults in research studies: A qualitative descriptive study             | Su Hui Chen    | Taiwan | Poster |
| <b>TKM-537-103</b> | Development of a Self-Management Program for health outcomes after total knee arthroplasty: design of a randomized controlled trial | Junghua SHAO   | Taiwan | Poster |
| <b>TKM-537-106</b> | Hemin reduces HMGB1 release by UVB in an AMPK/HO-1-dependent pathway in human keratinocytes HaCaT cells                             | Ki Churl Chang | Korea  | Oral   |

**Tea Break (3.30 pm to 3.45 pm)**

**DAY 01 Monday (March 27, 2017)**

**Session III (3:45 pm – 5:00 pm)**

**Session Chair: Leon Yap**

**Venue: Room 1**

**Track C: Medical, Medicine and Health Sciences**

|                    |   |                |       |        |
|--------------------|---|----------------|-------|--------|
| <b>TKM-537-107</b> | The Relationships among Diabetes Attitude, Diabetes Self-Care, and Psychological Insulin Resistance in Korean Patients with Type 2 Diabetes | Youngshin Song | Korea | Poster |
| <b>TKM-537-110</b> | Relationships among Knowledge, Self-Efficacy, and Health Behavior of Osteoporosis and Fall Prevention in Old Aged Women                     | Sukhee Ahn     | Korea | Poster |
| <b>TKM-537-114</b> | Effects of Weight, Weight Misperception, and Weight Satisfaction on Depression of Adolescents According to Gender                           | Jin Suk Ra     | Korea | Poster |
| <b>TKM-537-116</b> | Body Image and Self Esteem of Women Following Breast Cancer Surgery   | Tae Hui Kim    | Korea | Poster |
| <b>TKM-537-119</b> | Different Effects of Leisure Activities on Cognitive Function According to Age of Elderly Koreans   | Eunyoung Chung | Korea | Poster |
| <b>TKM-537-121</b> | Effects of Dementia Caring Education for Nursing Students in Korea  | Jeong Hyun     | Korea | Poster |

**Closing Ceremony**

## LIST OF CONFERENCE ATTENDEES

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

| Sr.no | Official ID           | Name                  | Affiliation Details                    |
|-------|-----------------------|-----------------------|--|
| 1     | <b>TKS-537-119A</b>   | Ilan rubin            | Haduchifat 116 Street Tel Mond, Israel |
| 2     | <b>TKM-537-104A</b>   | Lee Xiao Qi           | Singapore Armed Forces, Singapore      |
| 3     | <b>TKM-537-105A</b>   | Thomas Khor Han Keong | Singapore Armed Forces, Singapore      |
| 4     | <b>TKM-537-107A</b>   | Lee/Yoonhee           | Chungnam National University, Korea    |
| 5     | <b>TKM-537-107AA</b>  | Keumok Park           | Chungnam National University, Korea    |
| 6     | <b>TKM-537-110A</b>   | Jisoon Kim            | Chungnam National University, Korea    |
| 7     | <b>TKM-537-110AA</b>  | Seyeon Park           | Chungnam National University, Korea    |
| 8     | <b>TKM-537-110AAA</b> | Jiwon Oh              | Chungnam National University, Korea    |

## LIST OF CONFERENCE ATTENDEES

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

| Sr.no | Official ID   | Name          | Affiliation Details                 |
|-------|---------------|---------------|-------------------------------------|
| 9     | TKM-537-114A  | Heekyung Yun  | Chungnam National University, Korea |
| 10    | TKM-537-116A  | Bo Hyun Kim   | Chungnam National University, Korea |
| 11    | TKM-537-116AA | Jong Im Kim   | Chungnam National University, Korea |
| 12    | TKM-537-119A  | Mi Sook Jung  | Chungnam National University, Korea |
| 13    | TKM-537-121A  | Myonghwa Park | Chungnam National University, Korea |

## **DAY 02 Tuesday (March 28, 2017)**

### **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 memorable purpose.



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## **TRACK A: BUSINESS, ECONOMICS, SOCIAL SCIENCES AND HUMANITIES**





## The Effects of Service Innovation on Customer Value: The Role of Service Employees

Yu Chi Wu<sup>1</sup>, Wen Yi Huang<sup>2\*</sup>

<sup>1,2</sup>Institute of Business and Management, National University of  
Kaohsiung, Taiwan

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### Abstract

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Nowadays, consumers have more options than before. The business environment of service providers is becoming more and more competitive. In the face of various challenges, we should realize what is consumer needed, and what consumer feel about service industry. Service innovation has been progressively becoming important item to influence on business. Despite this progress, however, not much has been known about the role of service innovation in the relationship between employee's customer orientation and customer value. To address this gap in the literature, this study tried to explore how the employee's customer orientation may influence customer value by proposing the mediator role of service innovation. To test the proposed framework, 250 matched samples including frontline employees and their customers from department stores, restaurants, mobile service shops, and hair salons. This study utilized structural equation modeling (SEM) to verify the research framework and hypotheses. SEM includes the analysis of the measurement model and the structural model. This study offers some important contributions to literature. There is currently a paucity of research on how frontline employee customer orientation influence customer value. This study proposed a mediating effect of service innovation providing a deeper understanding of how customer value increases within a frontline employee customer orientation context. Theoretically, this study tries to provide the rational explanation for how (or process) frontline employee customer orientation may affect customer value by investigate the mediator role of service innovation. Practically, this study can give an understanding of how to increase customer value.

**Keywords:** Service Innovation, Customer Orientation, Customer Value

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## Mechanisms Linking Frontline Employee Service Competencies to Word-of-Mouth

Yu Chi Wu<sup>1</sup>, Chu Chun Cheng<sup>2\*</sup>

<sup>1,2</sup>Institute of Business and Management, National University of  
Kaohsiung, Taiwan

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### Abstract

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In service context, customer service competencies are important for frontline employees to deliver high value service. In other words, frontline employees play an important role to influence the customer service experiences, which in turn may influence the consumer attitudes. There is currently a paucity of research on the relation of frontline employee service competencies and customer word-of-mouth. In addition, how frontline employee service competencies influences customer's word-of-mouth is still unexplained by existing literature. The purpose of this study is to investigate the mediating role of customer service value between frontline employee service competencies and customer word-of-mouth. 250 participants were recruited from department stores, restaurants, mobile service shops, and hair salons. This study utilized structural equation modeling to verify the research framework and hypotheses. Structural equation modeling includes the analysis of the measurement model and the structural model. Theoretically, this study tried to provide the rational explanation for how frontline employee service competencies may affect customer word-of-mouth by investigating the mediating role of customer service value. Practically, this study may provide suggestions to help corporations to raise customer word-of-mouth which may help corporations to attract customers and have fine reputation.

**Keywords:** Mechanisms, Frontline, Word-of-Mouth

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## Mechanisms Linking Frontline Employee Service Competencies to Customer Purchase Intention: A Moderated Mediation Approach

Yu Chi Wu<sup>1</sup>, Chu Chun Cheng<sup>2\*</sup>

<sup>1,2</sup> Institute of Business and Management, National University of Kaohsiung, Taiwan

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### Abstract

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Employees with excellent service competencies may play a critical role in providing satisfactory service quality to customers which can increase customer purchase intention, within the service context. Surprisingly, very few empirical studies have investigated the relationship between employee service competencies and customer purchase intention. This study tried to investigate whether or not customer trust plays a mediating role between frontline employee service competencies and customer purchase intention. Survey data was gathered from the International Travel Fair in Taiwan. Two individuals in the group were approached and asked to fill out the survey. A total of 250 surveys with matched group participant responses were collected. One of them was asked to rate the FLE service competencies, while the other participant provides demographics and rates customer trust, purchase intention, and consumer perceived performance risk. There is currently a paucity of research on how frontline employee service competencies influence customer purchase intention. This study adopted a moderated mediation approach by integrating customer trust and customer perceived risk in order to test the conceptual framework, toward providing a deeper understanding of how customer purchase intention increases within a frontline employee service competence context. The findings of this study benefit both researchers and practitioners, as they reveal a previously unidentified mediator (i.e., customer trust) and moderator (i.e., customer perceived risk) associated with the relationship between frontline employee service competencies and customer purchase intention.

**Keywords:** Mechanisms, Customer Purchase Intention, Mediation Approach

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## The Outlets of Corporate Social Responsibility Communication in Service Sectors: The Role of Service Employees

**Yu Chi Wu<sup>1</sup>, Shan-Shan,Ou Yang<sup>2\*</sup>**

<sup>1,2</sup>Institute of Business and Management, National University of  
Kaohsiung, Taiwan

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### Abstract

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The developing focus on corporate social responsibility issues in consumption, ethical consumerism has emerged as an important influence on business. Most of the existing corporate social responsibility is transmitted through mass media and public relations. The media plays an important role in company and customer. However, there is currently a paucity of research on whether employees may transfer their organization's corporate social responsibility to their customer or not. To address this gap in the literature, the purpose of this study is to investigate whether or not employee's organization identification plays a mediating role between perceived management support for corporate social responsibility and customer identification. 250 participants were recruited from several service sectors. This study utilized structural equation modeling to verify the research framework and hypotheses. Structural equation modeling includes the analysis of the measurement model and the structural model. Theoretically, this study tried to provide the rational explanation for how perceived management support for corporate social responsibility may affect customer identification by investigating the mediating role of employee's organization identification. Practically, this study may provide suggestions to help corporations to raise customer identification. Within service sectors, service employee may be one of the outlets of corporate social responsibility communication in addition to mass media.

**Keywords:** Corporate Social Responsibility, Organization Identification, Customer Identification

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## Evaluation Points in Judging Sheet for English Debates

**Mikako Nobuhara**\*

Tokyo Metropolitan College of Industrial Technology , Japan

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### Abstract

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It is evident that English debates are said to be one of the most efficient teaching methods in Teaching English as a Foreign Language (TEFL), which improve students' English abilities in four major aspects: listening, speaking, writing, and reading. According to the website of World Schools Debating Championship (WSDC), "Debate is a formal argument, in which two opposing teams propose or attack a given proposition or motion in a series of speeches. It is governed by a set of rules and it is judged by a panel of judges or by an audience." In this study, we examined the content of the judging sheets used in schools and colleges in Japan to determine whether they are appropriate in correctly evaluating debates. Results find that the current sheets in general lack evaluation points such as (1) accuracy in English usage, especially in grammar, (2) whether the English speech is listener-friendly, and (3) whether the teams' overall argument structure is good. To achieve more accurate evaluation in classes, this study proposes that the evaluation items should be revised for further advancement, so that English debating is used as a teaching method, and for motivating students to learn English as a second language.

**Keywords:** Debate, TEFL, Judging Sheet, Evaluation, Second Foreign Language

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## Cooperate Social Responsibility and Discriminatory Import Tariffs

**Ya Po Yang<sup>1</sup>, Yi Ting Huang<sup>2\*</sup>**

<sup>1,2</sup>Institute of Business and Management, National University of  
Kaohsiung, Taiwan

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### Abstract

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This paper sets up a three country-two firm model to discuss the optimal import discriminatory tariffs of the domestic country when the exporting firms taking CSR on consumer welfare. In the model, a domestic firm and a foreign firm export their heterogeneous products to the domestic country which imposes discriminatory tariffs on the two importing goods. We find, the difference of the tariff rates is affected not only by the difference of cost but also the difference of CSR level between the two exporting firms. When the two exporting goods are more (less) substitute, the difference of the tariff rates is positively (negatively) correlated with the difference of CSR level. Therefore, when the two exporting goods are less substitute, high cost firm will lord a higher tariff rate than the low cost firm, which is sharply contrast to the result of Hwang and Mai(1991). Moreover, when the two exporting goods are more substitute, the domestic country may tax the CSR firm while subsidize the non CSR firm.

**Keywords:** Discriminatory Import Tariffs, CSR

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## Pricing Strategy in Vertically Related Markets

Ya Po Yang<sup>1</sup>, Meng-Hsuan Yang<sup>2\*</sup>

<sup>1,2</sup>Institute of Business and Management, National University of  
Kaohsiung, Taiwan

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### Abstract

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Welfare effects of input pricing strategies when downstream firms take corporate social responsibility (CSR) on consumer welfare. This paper sets up a vertically related market model to compare the welfare effect of discriminatory and uniform pricing of a monopoly supplier. In the model, a monopoly supplier provides intermediate input for two CSR manufactures with different technology to produce final goods, the supplier uses either discriminatory or uniform pricing to charge the two manufactures. We find, if the more efficient manufacture takes CSR on consumer welfare, then discriminatory pricing will lead to lower output and lower social welfare than uniform pricing, whereas, if the less efficient manufacture takes CSR on consumer welfare, then discriminatory pricing will lead to higher output and higher social welfare than uniform pricing.

**Keywords:** Discriminatory Pricing, CSR

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## Operating Efficiency Analysis of China's Commercial Banks: An Application of Bootstrap Method

Yang Li<sup>1</sup>, Jyh-Min Horng<sup>2\*</sup>

<sup>1,2</sup>Institute of Business and Management, National University of Kaohsiung, Taiwan

### Abstract

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China's economic grows rapidly in recent years. The development and growth of commercial banks play an important role (Agyenim et al., 2015; Philip et al., 2010; SOK-GEE et al., 2010). Since Deng Xiaoping (1904-1997) implement the policy of reformation and opening in 1978, China's commercial banks gradually changed from a single state-owned financial institutions to a regional financial institutions, and began to introduce from foreign investment, in order to improve economic capabilities. In economic development, Dinopoulos and Thompson (1999) indicate that economies of scale will drive economic growth and large economies will grow faster than small economies, while large commercial banks will typically have higher operating efficiencies (Qing et al., 2015; Hui-Yin et al., 2011; Philip et al., 2010). In terms of foreign investment, since China joined the World Trade Organization and loose the standard for foreign-funded commercial banks, so that foreign-funded commercial banks can introduce better technology to improve the banks' competitive strength (Agyenim et al., 2015; Hsiao et al., 2015; Claessens et al., 2014; Ying Xu, 2011), also have a better operating efficiency than home banks (Agyenim et al., 2015; Hsiao et al., 2015; Ziliang et al., 2011; Huidan, 2011). So we think that losing the standard for foreign-funded commercial banks brings out the development of China's banking. This paper aims at two parts. First, if national commercial banks can form a better economics of scale. Second, how operating efficiency of foreign-funded commercial banks affect development of China's banking. The research method of this paper is Data Envelopment Analysis(DEA) and Bootstrap Method to calculate bank efficiency. The research will use replicated sampling in order to construct a sample approximate to population to correct DEA's Estimation bias and have a statistical analysis by Bootstrap Method.

**Keywords:** Chinese Banking Industry, Operating Efficiency, Economies of Scale, Foreign Investment, Bootstrap

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## Study of M&A and Greenfield in Emerging Markets

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### Abstract

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In recent years, emerging economies continue to flourish, attracting a lot of foreign direct investment (FDI). According to the analysis of United Nations Conference on Trade and Development, since 1980, the amount and ratio of FDI attracted from emerging economies have been increasing for a long time. After the financial crisis in 2008, leading to the FDI of global is decrease, but the share of emerging economies in global capital inflows continued to grow. For investors, the purpose of FDI is to reduce the production cost, obtain resources, and expand the international market, etc. And emerging economies have the market, cheap labor and natural resources, therefore, attracting multinational companies to enter. For emerging economies, a large number of FDI inflows can not only bring huge capital, but also introduce new technology, which can make their economic growth and bring employment opportunities. Therefore, their governments have offered incentives to attract foreign investment. There are two entry modes of FDI, namely, mergers and acquisitions and Greenfield. When enterprises choose FDI, they must consider the impact of the two models on the enterprise itself, and then choose a more suitable investment model. For example, Andersson and Svensson (1994) found that Swedish companies with better organizational capabilities would be more likely to invest abroad through mergers and acquisitions, while Swedish firms with higher skills and skills would tend to invest abroad through Greenfield. However, emerging economies also include transition economies, which may have different spillover effects when FDI enters a different system, therefore, this study takes the emerging economies as a case, to explore the difference and comparison of FDI after entry.

**Keywords:** Emerging economies, Economies in transition, Foreign direct investment, Mergers and Acquisitions, Greenfield

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## Research Barriers at a Middle-Eastern Higher Education Institution

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### Abstract

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Knowing what factors impede scholarly productive and what individual characteristics influence faculty's perceptions of research barriers is essential to guiding research productivity improvement efforts in academia. This study investigated a number of factors (barriers) that are believed to challenge research productivity of the faculty at Kuwait University (KU), a Middle-Eastern Higher Education (HE) institution, and explored the influence of the individual characteristics of gender, age, nationality, academic rank, experience, academic field, and times spent on research and teaching on the faculty's perceptions of the investigated research barriers. The results suggest that engaging in research impeding activities, lack of extrinsic motivators and lack of research resources challenge the faculty's research productivity. Although the individual characteristics were found to variably influence the perceptions of these research barriers, the academic field, nationality, and time spent on teaching are the most influential characteristics.

**Keywords:** Research Barriers, Research Productivity, Individual Characteristics, Academic Field

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## Kuznets Curve Hypothesis in Turkey: An Econometrics Analysis

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### Abstract

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The relationship between income inequality and development has been initially investigated by Kuznets in 1955. According to Kuznets hypothesis, income inequality would be low in the first stage of development, however when development improves, first income inequality will increase and then subsequently decrease after a certain point. As an income per capita increases personal income inequality increases in the same proportion and as a result the growth rate will slow down, but after a certain point, as the income rises, the inequality tends to decrease. Kuznets analyzed the nexus between income per capita and personal income inequality, which is based on Germany, UK and USA data and observed the inverted U-relationship among them. This evidence in economic development literature became known as the Kuznets Curve. The numerous theoretical and empirical studies have been done on Kuznets hypothesis and the results are very conflicting, because while some researchers were achieving similar conclusions, others have been finding different outputs. Even in some observations of different countries or group of countries, the relationship in the Kuznets' hypothesis was not inverted U-shaped, but was U-shaped or even horizontal S-shaped. In this paper, Kuznets hypothesis is tested in Turkey for the period of 1990-2016.

**Keywords:** Income Inequality, Kuznets Hypothesis, Turkey

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## Isn't it extremely similar? A Comparative Research on Women Migration Policies of Canada and Turkey

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### Abstract

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This study analyzes labour migration policies of Canada and Turkey on domestic women workers within the context of global labour movement. Canada as a country with a long history of labour migration has a specific program for domestic workers. Even though this program is accepted as one of the best examples in the world, it has many structural problems that leave the migrant workers vulnerable to exploitative work conditions. On the other hand, migrant domestic workers in Turkey are largely unregulated and considered to be a part of the (“illegal”) migration. However, in recent years the Turkish government has made attempts to bring some regulations in this area. This comparative study demonstrates that although the migration policies of both countries considerably differ from each other, migrant domestic workers face similar challenges. Most notably, the restrictions put on their mobility and right to change employers reveal a form of indentured labour facilitated by the governments.

**Keywords:** Migration policies, women migration, domestic workers, Turkey, Canada

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## Is it Possible to Find an Equilibrium for a Fair Income Distribution in Turkey? Analysing via Game Theoretic Approach

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### Abstract

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In this paper, we analyze the fact that the high level of income inequality in Turkey can not be reduced. Although some governments attempted to reform income through income taxes or intervention on the market, these attempts failed in the short time and income inequality returned to previous levels. In this work, we use game theoretic model for income inequality in Turkey by Marxian and institutional perspectives. We define three socioeconomic groups in population; owners of industrial capital, owners of financial capital and labor. After that, we model their relative political power. Then we search for an equilibrium for possible forms of coalitions. The main hypothesis of this study is that if all socioeconomic groups in a country form a coalition, then the ruling regime would be a democracy and income is redistributed most fairly. If not, the ruling regime would be either a mass dictatorship or an oligarchy and income would be redistributed in favor of a certain group. According to our findings, not only conflict between classes but also disunity within classes is the source of unstable democracy and high level of income inequality.

**Keywords:** Income Inequality, Game Theory, Turkish Economy, Social Classes, Democracy

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## **TRACK B: ENGINEERING AND TECHNOLOGY**



## Investigation of Preparation and Photocatalytic Performance for Titanium Dioxide

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### Abstract

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In this study, the Nd: YAG pulsed laser with various laser power (6 and 14 W) and pulse duration (2, 3, and 4 ms) was adopted to prepare titanium dioxide (TiO<sub>2</sub>) on a titanium substrate. The surface morphology, crystallization, and reflectance of samples were measured and analyzed using an optical microscope, X-ray diffractometer (XRD), and visible light spectrometer. Finally, the photocatalytic performance of TiO<sub>2</sub> was tested by contact angle of water droplet and methylene blue (MB) degradation. The results show that this process simultaneously produces anatase and rutile of TiO<sub>2</sub>; and the proportion of anatase is inversely proportional to laser power. Test samples demonstrated no significant differences in the contact angle of water droplet experiment for photocatalytic performance. However, photocatalytic performance showed significant differences in the MB degradation experiment for each sample.

**Keywords:** Anatase, Photocatalytic, Pulsed Laser, Rutile, Titanium Oxide

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## Effect of Temperature on the Characteristic of Carbon-Based Nanofluid

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### Abstract

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In this study, a graphite powder-based heating and cooling processing method (HCPM) was used for producing a carbon-based nanofluid (CBNF). Sodium dodecylbenzenesulfonate (SDBS) as a dispersant was added to CBNF to enhance suspension performance. The morphology, suspended size of carbon-based nanomaterials (CBNMs), and zeta potential of the CBNF were determined using a scanning electron microscope and nanoparticle analyzer. The thermal conductivity, pH, electrical conductivity, and viscosity were measured at various temperatures of 20–60 oC, respectively. The results show that the CBNMs of the CBNF were primarily irregular flaky and particles, and the particle size distribution was bimodal distribution. The thermal conductivity of CBNFs was comparable to that of water. The pH and viscosity of CBNFs was much different from water in the lower temperature conditions (20-30 oC). Electrical conductivity of CBNFs was much higher than water in all experimental conditions.

**Keywords:** Carbon-Based Nanofluid (CBNF), Heating And Cooling Processing Method (HCPM), Nanocarbon (NC), Raman Spectroscopy, Zeta Potential

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## System Design and Mechatronics of a Three-Power-Source Experimental Platform

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### Abstract

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This research develops an experimental platform for a three-power-source powertrain which includes a gasoline engine, an electric motor, and an air motor. For the engine, a 125 c.c. spark-ignition four-stroke engine for a scooter was chosen. A continuously variable transmission (CVT) interconnected to the shaft was to modify the engine operation points for efficient operation. To properly control the engine, a controllable step motor was interconnected to the throttle valve to manage the mass flow rate of the air/fuel mixture. For the electric segment, a 1.5 kW brushless DC motor with its motor control unit (MCU) of an electric scooter was selected. The motor torque was controlled by sending the commanded voltage to the MCU. For the pneumatic power, a 3kW blade-type air motor was chosen. For providing the compressed air to the air motor, a 220V air compressor with a 304L high-pressure accumulator downstream delivered the energy. To control the air flow rate of the air motor, a valve controller was equipped for regulating the air flow rate to the motor. To transfer these power flows, there are two transmission shaft. The first shaft was interconnected to the engine and the air motor, while the second shaft was linked to the electric motor and the powder magnetic brake which was regarded as the outload. The power flows on these two shafts were transferred by two sets of rubber belts, while the controllable electric clutches downstream the power sources determine whether the power was output or not. The torque sensors, flow sensors speed sensors were mounted to measure the performance of three power sources as well as the hybrid performance of any two power sources or three power sources. In this study, the steady-state output performances were measured. The optimal energy management and the transient dynamics will be conducted in the future.

**Keywords:** Green Energy, Mechatronics, Power Sources, System Design

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## Evaluation of Software Quality Requirement for Educational Mobile Game with Tourism Theme

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### Abstract

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Mobile game is one type of game that runs on mobile devices such as smartphones and tablet PCs. In previous research, we have proposed a quality requirement for Educational Mobile Game with Tourism Theme. The quality requirement was correctly build and analyzed to ready to use on educational mobile game development. Educational mobile game is education game genre with mobile based that aimed to learning, so when the proposed quality requirement was implement on the product, it have to evaluated to proof that the proposed quality requirement was useful to make a good mobile game product. In this research, the quality requirement was implement on case study, The case studies that become an evaluation of this research is the tourism of Riau province, Indonesia. To evaluate them, we conducted a survey of several players that have beedn played the educational mobile game then measure the quality with quality model for mobile game, so that the quality of the product will be measured and the proposed quality requirements are proofed to become a reference to build a game product that has a good quality.

**Keywords:** Software Quality, Games, Mobile Games, Educational Mobile Games, Tourism, Riau Province

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## On-Line Simulation of the Optimal Energy Management for a Three-Power-Source Hybrid Vehicle Using Bacterial Foraging Algorithm

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### Abstract

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To truly evaluate the performance of a real-time or rapid-prototyping controller of hybrid electric vehicles (HEVs), the Hardware-in-the-loop (HIL) verification is needed. In this study, a HIL was utilized for evaluating the energy management control of a three-power-source vehicle using the Bacterial Foraging Approach (BFA). The vehicle subsystems include a 65kW traction motor, a 40kW generator, a 80kW spark-ignition engine, and a 25A-h lithium battery. The vehicle weight is 2000 kg. For the optimal energy management using BFA, three main steps were required: 1.swimming and tumbling, 2.reproduciton, and 3.dispersal. The iteration for each time step was 30. Eighty bacteria were selected for optimal energy management. Three inputs for BFA were: battery State-of-Charge (SOC), wheel rotational speed, and required power. Two on-line optimal outputs were power split ratios of engine and the traction motor. The cost function for optimization was the inverse of total equivalent fuel consumption of the engine, motor and generator. To realize the benefit of energy consumption, a 4-mode rule-based control was developed (electric vehicle, hybrid, regenerative braking, and engine generation). For the HIL, one rapid prototyping control was for the vehicle system dynamics, while the second one was for the rapid-prototyping control with the verified BFA control. The real-time simulation verifies the on-line calculation of the vehicle control unit (VCU). The implementation for a real three-power-source vehicle will be conducted in the future.

**Keywords:** Energy Management, Optimal Control, Hybrid Electric Vehicle, Hardware-In-The-Loop, Bacterial Foraging Algorithm

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## Perceptual Edges Detection for Underwater Images

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### Abstract

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This paper presents a novel method to evaluate pixel directivity for depicting underwater image contours of objects as perceived by human eyes. The method employs a shape-variable mask centered at a target pixel to sample neighboring pixels for evaluating the directivity of the target pixel, and applying MLE (Maximum-Likelihood Estimation) to determine one sampling mask that best fits the orientation of the target pixel. Such a fitting process in effect fulfils the similarity and proximity laws in Gestalt theory, and an alignment location can be determined by subjecting the optimal directivity in conjunction with the gradient magnitude of the target pixel to a Bayesian process.

**Keywords:** Maximum-Likelihood Estimation, Directivity, Entropy, Underwater Image

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## **TRACK C: MEDICAL, MEDICINE AND HEALTH SCIENCES**



## Challenges Pertaining to Recruitment and Retention of Older Adults in Research Studies: A Qualitative Descriptive Study

Su Hui Chen<sup>1\*</sup>, Jung-Hua Shao<sup>2</sup>

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### Abstract

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**Background:** The older adult population in Taiwan is increasing. Although life expectation was increased, most of older adults have chronic disease, followed by a growing economic burden and care issues. To solve this situation, we need more research to explore, assess, and intervene for this population. However, little is known about the challenges pertaining to recruitment and retention of older adults in research studies. **Aim:** Explore the challenges pertaining to recruitment and retention of older adults in research studies. **Method:** A qualitative descriptive study was used. Throughout the research process from December 2008 to November 2011, the research staffs recorded challenges as they arose and wrote memos regarding recruitment issues and possible reasons for the issues. Every two weeks group discussions were conducted, and written records of the discussions were kept. The 26 written memos and 30 meeting records were reviewed, and the content was analyzed. **Results:** The challenges pertaining to recruitment and retention of older adults in research studies included response rate, information credibility, and the gap between researchers and the older adults. Moreover, the related factors such as living background and living arrangement, family influence, memory issues, mistrust of outside world, high social desirability, doctor oriented, and language and culture gap were also found. **Conclusions:** For future older adult research, the authors suggest using specific research instrument, make more flexible research process, and provide variety of recruitment strategies..

**Keywords:** Older Adult, Qualitative Research, Research Challenges, Content Analysis

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## Development of A Self-Management Program for Health Outcomes After Total Knee Arthroplasty: Design of A Randomized Controlled Trial

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### Abstract

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**Background.** Osteoarthritis (OA) of the knee is a major cause of mobility impairment. The prevalence of OA is expected to increase dramatically with aging, contributing to a growing demand for total knee arthroplasty (TKA) surgery. According to statistics it is hypothesized that an intensity SM program at this time will have clinical benefits for patients undergoing TKA surgery. **Aim.** The study aims are to develop, implement, and examine the effects of a SM intervention in people after with TKA, over a 12 months follow-up. **Methods.** In this randomized controlled trial of 12 months duration, total 272 patients undergoing TKA will be recruited while the participant at the orthopedic wards of a hospital. The experimental group (N=136) will receive SM intervention added to the clinical routine care, and the control group (N=136) will receive with the clinical routine care only. The strategies of the SM consist of appraisal, goal setting and self-monitoring of TKA-specific physical rehabilitation and symptom management. In order to examine the effects of SM intervention, data will be collected with 5 time points by seven health-related outcomes. The outcome variables will be knee function, knee range of motion, self-efficacy for coping with arthritis, quality of life, depressive symptoms and the frequency of the self-management behaviors and the use of health services. Assessments will be conducted at baseline (pre-discharge hospital) and at 2, 3, 6 and 12 months following hospital discharge. Outcome measures of this study will be analyzed using descriptive and inferential statistics with the generalized estimating equations (GEE) analysis. **Conclusion.** The findings of this study would generate an effective SM model for health professional to facilitate TKA patients the development of self-care capability and improvement of health-related outcomes.

**Keywords:** Total Knee Arthroplasty, Self-Management, Self-Efficacy, Randomized Controlled Trial

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## Hemin Reduces HMGB1 Release by UVB in an AMPK/HO-1-Dependent Pathway in Human Keratinocytes Hacat Cells

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### Abstract

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**Background and Aims.** Epidemiological studies suggest that the ultraviolet B (UVB) irradiation of sunlight is the most prevalent etiological factor for skin cancer. High mobility group box 1 (HMGB1) plays an important role as a pro-inflammatory cytokine that regulates inflammation in various diseases. We hypothesized that hemin might reduce HMGB1 release through the induction of HO-1 in UVB-induced HaCaTs. **Methods.** Using HaCaTs, the effects of hemin on the release of HMGB1 in UVB exposure were evaluated. **Results.** Treatment with hemin inhibited HMGB1 release in UVB-induced HaCaTs in a time-dependent manner. UVB produced reactive oxygen species (ROS) that were significantly reduced by hemin, N-acetyl-cysteine (NAC) and DPI (NADPH oxidase inhibitor). Hemin increased HO-1 induction followed by phosphorylation of AMPK in a time- and dose-dependent manner. Additionally, hemin significantly increased the NAD<sup>+</sup>/NADH ratio in HaCaTs. The inhibitory effects of UVB-induced HMGB1 release by hemin were significantly reversed not only with pharmacological inhibitors of AMPK (compound c) or HO-1 (ZnPPiX) but also through transfection of small interfering RNAs (siRNAs) for AMPK or HO-1. Interestingly, hemin decreased phosphor-AMPK expression by HO-1 siRNA transfection, but it failed to induce HO-1 in AMPK siRNA-transfected cells, which suggested that HO-1 was involved in AMPK activation by hemin in HaCaT. Moreover, recombinant HMGB1 induced Snail and inhibited E-Cadherin in HaCaTs, whereas hemin reversed those effects through rHMGB1. **Conclusions.** Taken together, we concluded that the increased activity of HO-1/AMPK and scavenging ROS are, at least in part, responsible for the inhibition of UVB-induced HMGB1 release in keratinocyte HaCaTs. Therefore, hemin may be a useful agent for preventing UVB-induced skin cancer.

**Keywords:** AMPK, HMGB1, HO-1, ROS, Skin Cancer, EMT

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## The Relationships among Diabetes Attitude, Diabetes Self-Care, and Psychological Insulin Resistance in Korean Patients with Type 2 Diabetes

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### Abstract

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**Background and purpose:** Successful glycemic control in type 2 diabetes is affected by proper self-care managements. This diabetes self-care can be affected by personal attitude on diabetes care and perceived barriers to medication such as insulin. However, little is known about the relationships among them in Korean patients with type 2 diabetes. The purpose of this study was to identify the associations among diabetes attitude, diabetes self-care, and psychological insulin resistance in patients with type 2 diabetes. **Methods:** The cross-sectional descriptive study design was conducted. Total 488 outpatients who registered in endocrinology clinics of Korea were participated in survey using paper-pencil questionnaire. The data were collected using Diabetes Attitude Scale (DAS), the Summary of Diabetes Self-Care Activities (SDSCA) measure, and Psychological Insulin Resistance Korean version (K-PIR) in 2016. Descriptive statistics and Pearson's correlation coefficient were performed using SPSS program. **Results:** About 51% of participants was female, and mean age was 64 years. Diabetes self-care was significantly negatively correlated with psychological insulin resistance, while positive correlation was found with diabetes attitude. The psychological insulin resistance was significantly negatively associated with diabetes self-care and diabetes attitude. **Conclusions:** For enhancing the self-care in type 2 diabetes, the strategies to promote the positive attitude on diabetes and to reduce the psychological insulin resistance should be applied by health care providers in Korea.

**Keywords:** Diabetes Mellitus, Self-Care, Attitude, Insulin

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## Relationships among Knowledge, Self-Efficacy, and Health Behavior of Osteoporosis and Fall Prevention in Old Aged Women

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### Abstract

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**Purpose:** This study was to identify the levels of knowledge, self-efficacy, and preventive health behavior of osteoporosis and fall prevention and to explore relationships among study variables in 94 participants of old aged women. The health belief model was the theoretical framework for this study. **Method:** With a cross-sectional survey design, we recruited old aged women aging from 65 to 74 at a community setting via convenience sampling. After obtaining informed consent, participants completed structured questionnaires. **Results:** Mean age of the participants was 71.23 (SD = 3.64). 54% of the women had no spouse, 60% were middle school graduates or less, and 70% lived with their families. For health information, 82% of them had at least one chronic disease and the most prevalent disease was hypertension. Most women (87%) took a bone mineral density test, 27% of the women were diagnosed with osteoporosis and 13% had a history of falling. Overall, the levels of knowledge, self-efficacy, and preventive behaviors for osteoporosis and falls were considered inadequate. Greater knowledge about physical activity was associated with higher self-efficacy for physical activity for osteoporosis ( $r=.24$ ,  $p<.05$ ), and higher self-efficacy for physical activity was related with higher level of preventive behaviors for osteoporosis ( $r=.32$ ,  $p<.05$ ). For fall prevention, greater fall self-efficacy was related to better preventive behaviors for falls ( $r=.21$ ,  $p<.05$ ). Furthermore, there were significant correlations between osteoporosis knowledge and fall prevention knowledge ( $r=.46$ ,  $p<.001$ ), between osteoporosis self-efficacy and fall self-efficacy ( $r=.420\sim 0.49$ ,  $p<.001$ ), and between preventive behaviors for osteoporosis and falls ( $r=.50$ ,  $p<.001$ ). **Conclusion:** This study demonstrates an urgent need for the implementation of educational and awareness programs for osteoporosis prevention among old aged women.

**Keywords:** Self-Efficacy, Health Behavior, Fall Prevention

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## Effects of Weight, Weight Misperception, and Weight Satisfaction on Depression of Adolescents According to Gender

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### Abstract

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**Purpose** The purpose of this study was to investigate effects of weight, weight misperception and weight satisfaction on depression of Korean adolescents according to gender. **Methods** This cross sectional study used secondary data from the 2015 Adolescent Health Behavior Online Survey. A total 33,374 of middle school students were included in the study. Weight was classified with underweight, normal weight, and overweight or obese according to body mass index percentile. Weight perception was categorized into under-estimation, correct-estimation, and over-estimation. Weight satisfaction was categorized into desired to weight gain, satisfied, and desired to weight loss. Complex samples logistic regression was used to analyze the influence of weight, weight misperception and weight satisfaction on depression. **Results** Among adolescent boys, under-estimation of weight (Adjusted Odds Ratio [AOR]: 1.25, 95% Confidence Interval [CI]: 1.11-1.40) and desired to weight gain (AOR: 1.45, 95% CI: 1.29-1.61) were significant influencing factors on depression. Among adolescent girls, under-estimation (AOR: 1.26, 95% CI: 1.13-1.41) and over-estimation of weight (AOR: 1.15, 95% CI: 1.05-1.27) and desired to weight loss (AOR: 1.29, 95% CI: 1.18-1.41) were significant influencing factors on depression. **Conclusions** In conclusion, weight was not an influencing factor on depression of Korean adolescents regardless of gender. According to gender, effects of weight misperception and weight satisfaction on depression were different. Thus, gender specific intervention program targeted correct weight perception and weight satisfaction is needed to relieve depression.

**Keywords:** Depression, Body weight, Weight perception, Ideal body weight, Adolescent

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## Body Image and Self Esteem of Women Following Breast Cancer Surgery

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### Abstract

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**Background** Breast cancer is one of the most common and life threatening disease of female. During the last decade, there has been a more rapid increase in breast cancer incidence than western countries in South Korea. Women with breast cancer undergo surgery which subsequently results in marked changes to the physical appearance. Depending on the type of operation, women with breast cancer experienced different esthetic result of surgery. The purpose this study was to identify the difference between a body image and self-esteem according to the operation type. **Methods**A cross sectional survey was conducted on a total of 83 eligible breast cancer patients who were agree to participate in the study. Of these, 51 patients underwent mastectomy and 32 patients underwent breast conserving surgery. To evaluate two difference in self-esteem and body image according to independent t-tests were performed. Self-esteem was measured by the Rosenberg's self-esteem tool and body image measurement tool was developed by authors. Body image was measured in two parts, disease related body image and body image recognized in society. Results Mean age of the study population was 47.53±8.69 years old. The self-esteem was not significantly different by operation type ( $t = -1.727$ ,  $p = .088$ ). However disease related body image and body image recognized in society were significantly different by operation type ( $t = 3.660$ ,  $p = .000$  and  $t = 2.814$ ,  $p = .006$ ). **Conclusion** The findings of this study highlight the impact of operation on body image and self esteem of women with breast cancer. This analysis suggests target population for future intervention that nursing intervention such as education program and psychosocial support may best benefit the breast cancer patients after mastectomy.

**Keywords:** Breast Cancer, Surgery, Women, Self Esteem, Body Image

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## Different Effects of Leisure Activities on Cognitive Function According to Age of Elderly Koreans

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### Abstract

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**Background** A beneficial effect of leisure involvement on cognitive function has been reported in studies with elderly men and women. It has been well known that individuals who were frequently engaged in mentally stimulated activities were about 60% less likely to develop dementia than those who were rarely engaged in such activities. Thus, the purpose of this study was to examine the association between types of leisure activities and reduced cognitive function in older adults aged between 65 and 74 years and those older than 75 years of age, respectively. **METHODS** Data were derived from the 2014 Korean National Survey on Older Adults. Leisure activities were categorized into cognitive activities and physical activities. Multiple logistic regression analysis was performed to analyze the effects of cognitive and physical activities on the absence of cognitive decline, when controlling for socio-demographic (job, living status, residing place) and health related factors (smoking, drinking, the number of comorbid conditions, body mass index, sensory problems). **RESULTS** More than half of participants were female (58.2%), aged between 65 and 74 years (59.5%), and less educated (mean = 6.6 years). In the logistic regression models it was found that both cognitive activities (OR=1.33, 95% CI = 1.19 - 1.48) and physical activities (OR=1.13, 95% CI = 1.03 - 1.24) were significantly associated with cognitive decline when controlling for selected covariates. There was a positive relationship between participation in physical activities and cognitive function within a group of individuals aged under 75 years of age (OR=1.17, 95% CI = 1.03 - 1.32). **CONCLUSION** This study revealed that a beneficial effect of leisure activities on cognitive function differed depending on the type of activities and age of older people who were engaged in these leisure activities. Early intervention programs to help the elderly do physical and cognitive leisure activities may develop resistance to decline in cognitive capacity that is often concomitant with aging.

**Keywords:** Cognitive Reserve, Leisure activities, Aged

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## Effects of Dementia Caring Education for Nursing Students in Korea

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### Abstract

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**Background:** A growing dementia population will require nursing students who prefer to care with dementia patients and caregivers. The Dementia Caring Education may be appropriate in order to assist nursing students in achieving dementia care competencies. **Objectives:** The focus of this study was to determine the teaching efficacy, self-confidence of knowledge and skill, and attitude toward dementia of student nurses after the Dementia Caring Education. **Method:** This study was evaluated in a single group, pretest-posttest design (n=80). Participants were recruited from the sophomore nursing students during the period from September to December 2015. **Result:** This study has identified significantly results that are available in the Dementia Caring Education. The education significantly improved the teaching efficacy toward dementia scores ( $t = -14.435$ ,  $p = <.001$ ), the self-confidence of dementia knowledge and skill scores ( $t = -10.723$ ,  $p = <.001$ ), and attitude toward dementia scores ( $t = -13.374$ ,  $p = <.001$ ). **Discussion:** This study was successful in developing the cooperative mindset and professional competence required by a future nursing workforce to meet the complex needs of dementia patients and caregivers. The Dementia Caring Education has been useful in nursing students to meet the dementia care competencies. Future research should include a control group to compare effects of the Dementia Caring Education.

**Keywords:** Dementia, Education, Nursing Students

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