

ISSN 1911-2017 (Print)
ISSN 1911-2025 (Online)

ASIAN SOCIAL SCIENCE

Vol. 14, No. 6 June 2018



CANADIAN CENTER OF SCIENCE AND EDUCATION

Editorial Board

Editor-in-Chief

I-Tsun Chiang, National Changhua University of Education, Taiwan

Associate Editors

Alexander S Takeuchi, University of North Alabama, United States

Nicholas Ruei-lin Lee, Chaoyang University of Technology, Taiwan

Polly Yeung, Massey University, Palmerston North, New Zealand

Editorial Assistant

Jenny Zhang, Canadian Center of Science and Education, Canada

Reviewers

Abdullahi Yibaikwal Shehu	Ivy Haoyin Hsieh	Pescaru Maria
Adilson Marques	Jashpal Kaur Bhatt	Ping Sophie Sun
Akhyar Rido	Jiann-wien Hsu	Pourya Pourhejazy
Alireza Salehi Nejad	Jin Su Jeong	Priyadarshini Sen
Amirhossein Heravi	Jörg Balsiger	R. K. Kavitha
Ana Castro Zubizarreta	KanKana De	Rakhyun Edward Kim
Andrew Schumann	Kerry Li Fang	Roselina Ahmad Saufi
Apostolos Zaridis	Kimburley Choi	Sakip Kahraman
Arash Riasi	Kishore Dere	Salim Razi
Arielle S. Selya	Krishna Chandra Mishra	Sang-Bing Tsai
Arshad Javed Rizvi	Kristina Johansson	Selda Atik
Attama Nilnoppakun	Kwang Ho Lee	Shafiqur Rehman
Bala Salisu	Lamartine Braga	Shaharuddin Md. Salleh
Boaventura DaCosta	Liangliang Wang	Shiwei Jiang
Carolyn Walker	Linda Wolf	Simon Friederich
Cher Weixia Chen	Manolis Adamakis	Siva balan K. Chellappan
Chi Hong Nguyen	Marcelo Afonso Ribeiro	Teguh Budiharso
Choi Sang Long	Marian S. Harris	Tsui-Yii Shih
Chung-Jen Wang	Martina Blaskova	Tsung-Hsien Tsai
Colin Wark	Mohamed Ajouaou	Tugba Yilmaz
Elyase Iskender	Mohammad Abdollahi-Guilani	Tuna Uslu
Emine Özmete	Mohammad J. Maghsoodi Tilaki	Vaishali Diwakar
Faik Ardahan	Muhammad Saeed	Vinay Kumar Gupta
Fatemeh Ahadi	Muhammed Haron	Vincenzo Tufarelli
Fikri Idris	Nawaraj Chaulagain	Won-jun Lee
Garrett Mitchener	Nipapan Jentsantikul	Worarak Sucher
Gianluca Lax	Nor Erne Nazira Bazin Bazin	Xingan Li
Gianvito D'Aprile	Oliver Holtemoeller	Yaoran Li
Görsev Sönmez	Ornella Ricci	Yung-Jaan Lee
Gulay Gunay	Ozgur Demirtas	Zaili Yang
Hasan Aydemir	Pablo Zanor	Zribi El Ghak Teheni
Hyesoo Yoo	Päivi Rasi	
Hyung Seok Lee	Parhad Keyim	
Ishak Kherchi	Parvez Hayat	
Ismail Meric	Paul Allin	
Iuliia Pinkovetskaia	Pavla Chejnová	

Contents

Generating a Cancellable Fingerprint using Matrices Operations and Its Fingerprint Processing Requirements <i>Riki Mukhaiyar</i>	1
Filial Piety, Living Arrangements, and Well-being of Urban Older Adults in Southern China <i>Yong Tang, Nancy Hooyman</i>	21
Inhibiting Factor of Primary School Teacher Competence in Indonesia: Pedagogic and Professionalism <i>Deny Setiawan, Joni Sitorus, M. Natsir</i>	30
A Novel Low-Cost Indicator of Student Perseverance and Its Association with College Student Academic Performance <i>David B. Yerger, Amber L. Stephenson</i>	43
The Integration of the Pottery Handicraft Together with the Basketwork Handicraft Promoting Economic Community Strength <i>Panu Pattanapanithipong</i>	50
The Cognition of Destructive Cults of College Students and Its Influential Factors <i>Bin Li, Baoxiang Fan, Han Ji</i>	65
Parliamentary Immunity in International Legislation <i>Amal Yusuf Alrfua, Ahmad Hasan Abu Sabah, Ayman Yousef Mutlaq Alrfoua</i>	71
Technical Efficiency of Public Service Hospitals in Indonesia: A Data Envelopment Analysis (DEA) <i>Sonny Harmadi, Irwandy Irwandy</i>	81
The Study on Mobile Teaching of Taekwondo in Colleges and Universities Under the Background of “Internet +” <i>Xiuying Hu, Guanjun Wang</i>	91
Study on the Administrative Divisions in China’s Border Areas from the Perspective of Nation-state Building --- Changes to the Administrative Divisions in Inner Mongolia in the 20th Century <i>Sun Jing</i>	98
Narratives as Catalysts for Transformation and Social Action Planning within the Hong Kong Indonesian Migrant Community <i>Howard Lorne Martyn</i>	106
The Research on Evaluation of College Students’ Ability to Achieve the Physical Exercising Habit and Volition <i>Xiaodong Chu, Jianxin Kuang, Jun Liu</i>	118
The Impact of Corporate Governance and Investor Confidence on Earning Management: Evidence from Thai-Listed Company <i>Thanapin Attarit</i>	123
Early Childhood Education and Child Development Outcomes in Least Developed Countries: Empirical Evidence from Lao PDR <i>Manivone Phongsopha, Piriya Pholphirul</i>	131
Impact of Quality of Work-Life (QWL) on Organizational Performance: An Empirical Study in the Private Jordanian Universities <i>Khaled Mahmoud Al-Shawabkeh, Ghufra Saed Hijawi</i>	145
Literature Review of Parenting Style to Support the Development of Adolescent Identity <i>Enung Hasanah, Zamroni, Achmad Dardiri, Setyabudi Indartono & Supardi</i>	157
Reviewer Acknowledgements for Asian Social Science, Vol. 14, No. 6 <i>Jenny Zhang</i>	163

Generating a Cancellable Fingerprint using Matrices Operations and Its Fingerprint Processing Requirements

Riki Mukhaiyar¹

¹ ISPAI Research Group, Universitas Negeri Padang, Padang, Indonesia

Correspondence: Riki Mukhaiyar. E-mail: riki.mukhaiyar@yahoo.co.uk

Received: February 13, 2018

Accepted: April 19, 2018

Online Published: May 28, 2018

doi:10.5539/ass.v14n6p1

URL: <https://doi.org/10.5539/ass.v14n6p1>

Abstract

Cancellable fingerprint uses transformed or intentionally distorted biometric data instead of the original biometric data for identifying person. When a set of biometric data is found to be compromised, they can be discarded, and a new set of biometric data can be regenerated. This initial principal is identical with a non-invertible concept in matrices operations. In matrix domain, a matrix cannot be transformed into its original form if it meets several requirements such as non-square form matrix, consist of one zero row/column, and no row as multiple of another row. These conditions can be acquired by implementing three matrix operations using Kronecker Product (KP) operation, Elementary Row Operation (ERO), and Inverse Matrix (INV) operation. KP is useful to produce a non-square form matrix, to enlarge the size of matrix, to distinguish and disguise the element of matrix by multiplying each of elements of the matrix with a particular matrix. ERO can be defined as multiplication and addition force to matrix rows. INV is utilized to transform one matrix to another one with a different element or form as a reciprocal matrix of the original. These three matrix operations should be implemented together in generating the cancellable feature to robust image. So, if once three conditions are met by imposter, it is impossible to find the original image of the fingerprint. The initial aim of these operations is to camouflage the original look of the fingerprint feature into an abstract-look to deceive an un-authorized personal using the fingerprint irresponsibly. In this research, several fingerprint processing steps such as fingerprint pre-processing, core-point identification, region of interest, minutiae extration, etc; are determined to improve the quality of the cancellable feature. Three different databases i.e. FVC2002, FVC2004, and BRC are utilized in this work.

Keywords: cancellable biometric, fingerprint processing steps, elementary row operation, Kronecker product operation, inverse matrix operation

1. Introduction

Cancellable biometrics has been a challenging but essential approach to protect the privacy of biometric. The biometric trait of a person cannot be easily replaced. Once a biometrics is compromised, it would mean the loss of a user's identity forever (Schneir, 1999. p. 1). The proper cancellable biometric system has to have these criterion; distinctive, reusable, unidirectional transformation, and performance.

Cancellable biometrics offers a solution for preserving user privacy since the user's true biometric is never reveal in the authentication process. It ensures that template protection is achieved at the feature level with the assistance of the auxiliary data/non-invertible transforms. On the other hand, cancellable biometrics has certain limitations that need to be taken into account. For non-invertible transforms, non-invertible enhances the security of the template space by employing a transformation process to reset the order or position of the feature set. However, this weakens the discriminatory power (performance) of the transformed features due to the enlargement of intra-class variation in the biometrics. In this content, if performance is the main concern in the design of a biometric system, then the system is expected to be lacking in randomness are required for the design of a secure and unpredictable template space. Hence, it becomes a challenge to design a non-invertible function that satisfies both performance and non-invertible requirements.

These above basic concepts are similar with the idea of inverse matrix and elementary row operation in matrices domain. Biometric image as a digital image definitely can be processed in matrices domain. This means the acquired biometric image can undergo a series of matrices operations such as inverse matrix (INV) operation, elementary row operation (ERO), and Kronecker product (KP) operation. In matrices domain, these three

operations have their own objectives i.e. INV for inverting matrix elements, ERO for changing rows or columns, and KP for enlarging size of the matrix. The combination of these operations can produce a non-invertible matrix.

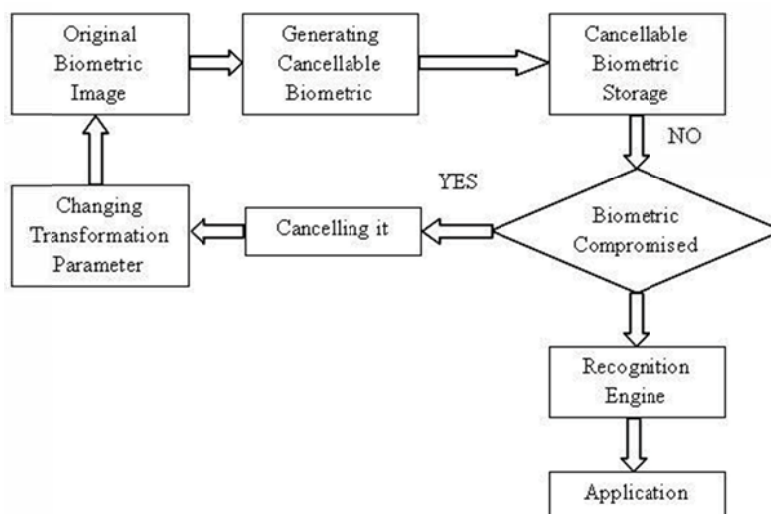


Figure 1. Re-Issuing Procedure

This research aims to develop a cancellable template for fingerprint feature, such as minutiae, based on the similarity between a non-inverted needed of the fingerprint template in cancellable system and a non-inversed matrix in matrices operations. A template can be categorized as a cancellable template when it is non-invertible to the original image. By similar token, matrices cannot be inverted when the following three conditions are met. Firstly, there is at least one zero row. Next, there is a row that is a multiple of another row. Finally, the matrix form is not a square.

The implementation of these matrices operations into a fingerprint image requires several conditions such as clarity and square form of the input image. Working in matrix domain means that every element of matrix/image should be determined to avoid miscalculation in process. Value of each element has to be “true” as a representative of the original condition of the image/matrix. True means that the amount of each element is free from unqualified thing as known as noise. Therefore, in this research, several fingerprint processing steps are demanded to support the system to obtain a fingerprint input with better quality to ensure that no feature information of the fingerprint is missed.

2. Related Works

The security requirement in authentication system based on biometric technology has to be the benchmark mainstay of the system as its characteristic will be permanently associated with the eligible user and cannot be cancelled or withdrawn whenever it is used inappropriately. Since someone’s biometric characteristic cannot be easily replaced, the impost data will be lost. As the result, there is a possibility that the user will lose all the access to the application using those biometric data. In order to overcome this possibility, the susceptibility of biometric system needs to be systematically identified and recognized (Bolle, Connell, & Ratha, 2002. pp. 2727-2738; Schneier, 1999, p. 1). Thus, protecting biometric information become the main concern as well as main challenge to all researchers in this field.

Cancellable biometric is a concept where its biometric template is protected by combining both security system and replacement feature into the biometric system. The main idea of this system is that cancellable biometric transforming and changing all images and features of biometric before continuing to matching process, yet maintaining the natural characteristic of its cancellable scheme. The proper cancellable biometric system has to have these criterion; distinctive, reusable, unidirectional transformation, and performance (Maltoni, Maio, Jain, & Prabhakar, 2003).

The transformation process implemented in various biometric technologies has several functions such as, face identification ((Boult, 2006, pp. 560-566; Ross & Govindraj, 2005, pp. 196-204; Li & Jain, 2004; Cardinaux, Sanderson, & Bengio, 2006, pp. 361-373), signature identification (Campisi, Maiorana, & Neri, 2008; Bhattacharya, Bandopadhyaya, Das, Ganguly, & Mukherjee, 2008, pp. 181-185), iris identification (Kanade, Petrovska-Delacretaz, & Dorizzi, 2009, pp. 120-127; Ganorkar & Ghatol, 2007, pp. 91-96; Wayman, Jain,

Maltoni, & Maio, 2005; Daugman, 2003, pp. 279-291), voice identification (Xu & Cheng, 2008, pp. 263-266; Furui, 1997, pp. 856-872), etc. Many recent literatures state that fingerprint is one of the technologies that are mostly discussed about protection method toward its biometric template (Ratha, Chikkerur, Connell, & Bolle, 2007, pp. 561-572; Mukhaiyar, 2014, pp. 163-166; Lee & Kim, 2010; Lee, Choi, Toh, Lee, & Kim, 2007, pp. 980-992; Farooq, Bolle, Jea, & Ratha, 2007). One of the literatures is as reported in (Ratha, Chikkerur, Connell, & Bolle, 2007, pp. 561-572). In his research, the writer proposed three types of transformation to be implemented in fingerprint images; Cartesian transformation, polar transformation, and image folding.

The first two transformations have a disadvantage in boundary issue. If the original minutiae point is out from its boundary and then divide the area of the feature as the result of minor distortion of image alignment, or if the original fingerprint image is damaged, then the transformation version of minutiae points will be placed on far from where it is supposed to be. Meanwhile, the third method relates to the functional use of smoothing local value to flipping through the space of fingerprint feature. In (Lee, Choi, Toh, Lee, & Kim, 2007, pp. 980-992), Local smoothing function is used to create cancellable fingerprint template by maintaining the original geometric connection (rotation and movement) between the registered template and the questionable template after transformation process is conducted. Therefore, the template transformation result can be used to identify a person without requesting the alignment of image fingerprint used as an input.

However, this analysis security method is yet sufficient enough as a protection over a biometric data. As an example, an impostor might narrow down the candidate owners of the original minutiae design based on the limitation in orientation continuity of minutiae feature and local smoothing process of transformation function. The result of this action can be seen in research report (Ratha, Chikkerur, Connell, & Bolle, 2007, pp. 561-572). Several investigations had been conducted regarding to this issue. For instance, in (Farooq, Bolle, Jea, & Ratha, 2007), the writer presented the conversion of a fingerprint into a binary-string area based on its minutiae series. The representations of binary numbers are transformed into an anonymous representation using a unique personal key. According to the writer, not only that the offering transformation cannot possibly be inverted, but also when it is being misused by someone else, then the template will disappear and can be renewed by entering different key of information. One of the advantages of this representation is that the existed methods like bio-hashing could be implemented.

In (Chikkerur, Ratha, Connell, & Bolle, 2008, pp. 1-6), a secure method to produce a template of cancellable fingerprint is introduced. This method is extracting local image of fingerprint filled with minutia into small pieces and then transforming them into projection matrices without changing the space between each minutia in those small pieces. However, the disadvantage of this method is the poor accuracy in the container of transformation results. In the same year, an author (Bringer, Chabanne, & Kindarji, 2008, pp. 43-51) had presenting an idea in constructing cancellable biometric system and secure sketches in order to protect the privacy of biometric template while supervising the matching process between the protected data and referenced data. The standard process in cancellable biometric is to perform a transformation to create an unchangeable image and to produce a matching process for those transformed images. This research showed that the use of correction system on the sketches that secured from cancellable biometric system resulting a system that supervising the proper matching process.

In (Yang, Busch, Derawi, Bours, & Gafurov, 2009, pp. 490-499), geometric transformation system of minutiae position is proposed to create template of cancellable fingerprints which is useful in alignment process. In order to create template of cancellable fingerprint, a supervising parameter over the encryption of minutiae features is conducted in the surrounding area of minutiae. Then, all the encrypted minutiae will be superimposed to form a protected template. The parameters to control the minutiae encryption are created from the arranged minutiae geometric. Compared with the parameters where the algorithms of cancellable templates use the information of minutiae that have to be encrypted, this minutiae encryption can guaranty the solidity of non-inevitability concept.

3. Cancellable Supporting Elements

As aforementioned previously, several fingerprint processing steps are required in this research to obtain an appropriate fingerprint image as input of the cancellable system i.e. fingerprint pre-processing (Maltoni, Maio, Jain, & Prabhakar, 2003), core-point identification (Cappelli, Lumini, Maio, & Maltoni, 1999, pp. 402-421; Mukhaiyar, 2017, pp. 146-150; Jain, Prabhakar, Hong, & Pankanti, 2000, pp. 846-859), Region of Interest (RoI) (Mukhaiyar, 2017, pp. 146-150), fingerprint classification (Bolle, Connell, & Ratha, 2002, pp. 2727-2738; Nillson & Bigun, 2003, pp. 2135-2144; Mukhaiyar, 2017, pp. 118-123), minutiae extraction (Amengual, Juan, Prez, Prat, Sez, & Vilar, 1997, pp. 871-875; Kasaei, Deriche, & Boashash, 1997, pp. 303-306), and fingerprint

authentication (Cardinaux, Sanderson, & Bengio, 2006, pp. 361-373), signature identification (Campisi, Maiorana, & Neri, 2008). Pre-processing step is required to provide a better quality fingerprint as an input for cancellable fingerprint algorithm. This stage can minimize the possibility of obtaining false-feature information caused by noises, scars, unclear ridges/valleys, etc. Core-point is needed as a reference point to select a certain region for fingerprint input. Moreover, core-point is also utilized as an important requirement in classification step. Lastly, minutiae extraction is used as one of the input of the cancellable system.

Producing a cancellable fingerprint using matrices operations demands a square form image as an input. Since mostly fingerprint recognition images are not square form, Region of Interest step is appropriate to be implemented. Still, this stage is able to omit a useless part of fingerprint so that only a true feature extracted in feature extraction process.

Fingerprint classification aims to split fingerprints in database into a different type based on its pattern combination. This step is required in this research because by classifying the fingerprint either a registered or verified one, time consuming problem in authentication process could be solved. Moreover, fingerprint classification can confidentially gain accuracy to recognize an authenticity of fingerprint.

In this research, the possibility to establish a cancellable fingerprint except by using an enhanced fingerprint image like minutiae extraction is determined as well. The reason is because naturally minutiae by naked eyes not showing as a fingerprint anymore. It just looks like scattered figured points. However, implementing an improved minutiae extraction approach is needed to omit false-recorded information for fingerprint recognition.

4. Matrices Operations

The main aim in generating cancellable biometric is producing a reliable revocable biometric template. Cancellable biometric is needed to preserve information of an authorized person from an impostor. One way is by randomizing the original biometric feature to generate a vague image. In this research, the disguising process is obtained using three matrices operations: Elementary Row Operation (ERO), Kronecker Product (KP) operation, and inverse matrix operation.

This idea is to deliver as one of the cancellable biometric approaches because using ERO, KP, and inverse operations can verily give us a lot of alternatives to randomize the original image as long as it is able to satisfy three requirements of non-inverted matrices. First of all, at least one row or column of the original matrix should be zero (0) value. Secondly, the original matrix must be modified into non-square matrix form. And the last is to make sure that none of each row is a multiple of another row.

Furthermore, the use of Kronecker/Tensor Product is based on due that are needed a large, non-inverted and totally different cancellable biometric image than the original biometric image.

4.1 Elementary Row Operation (ERO)

Generally, Elementary Row Operation, ERO, can be defined as multiplication and addition force to matrix rows. The three operations corresponding to the operations on rows of ERO are multiply a row through by a nonzero constant, interchange two rows, and add a multiple of one row to another row (Anton & Rorres, 2005).

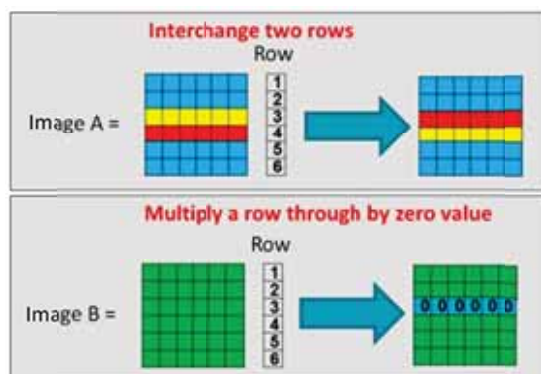


Figure 2. Illustration of the Operation of ERO

4.2 Kronecker Product Operation (KP)

In (Laub, 2005, pp. 139-142), the definition of Kronecker Product or Tensor Product can be obtained as follows. Let $A \in \mathbb{R}^{m \times n}$, $B \in \mathbb{R}^{p \times q}$. Then the Kronecker Product of A and B is defined as the matrix

$$A \otimes B = \begin{bmatrix} a_{11}B & \cdots & a_{1n}B \\ \vdots & \ddots & \vdots \\ a_{m1}B & \cdots & a_{mn}B \end{bmatrix} \in \mathbb{R}^{mp \times nq} \quad (1)$$

Obviously, the same definition holds if A and B are complex-valued matrices.

There are two advantages that are able to be obtained using this operation. First of all, it is obviously able to change the value of each element of the original matrix. And secondly, as if B is any kind of matrix's form, it is mean that a new larger matrix can be generated in any form of matrix.

4.3 Inverse Matrix Operation (INV)

In matrices domain, whether a given $n \times n$ (square) matrix A has a multiplication inverse matrix (that is, a matrix A^{-1} such that $AA^{-1} = I_n$) is going to be considered. Interestingly, not all square matrices have multiplicative inverses, but most do. These inverses can be found by examining some properties of multiplicative inverses and illustrating methods for finding when these exist.

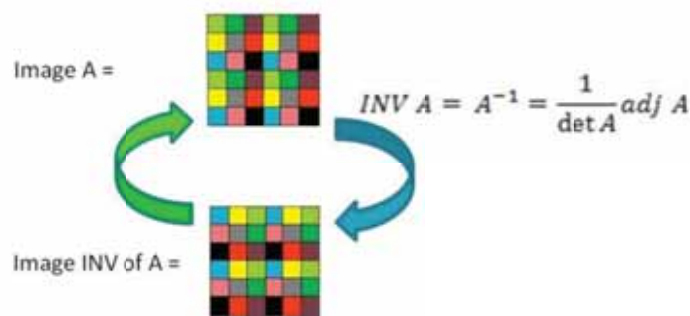


Figure 3. Illustration of the Inverse Operation

5. Cancellable Fingerprint Method

5.1 Basic Concept

A feature can be categorized as a cancellable feature when it is non-invertible to the original image. The same thing applies to matrices. The matrices cannot be inverted when satisfying three situations. Firstly, there is one zero row at least. Next, there is a row that is a multiple of another row. And lastly, the matrix form is not a square.

Related to the first requirement, it can be achieved by using Elementary Row Operation (ERO) where a selected row is multiplied by zero. For the second requirement, since in image system it is rare to find a row which is a multiple of another row, hence by using ERO this condition can be created. Furthermore, to ensure the obtained cancellable matrix is completely masked and able to meet the last requirement of non-invertible matrix, each element of the transformed matrix is multiplied by an arbitrary matrix/element using the Kronecker Product operation. By using this process, the outcome is a matrix that has more numerous elements and an adjustable matrix form (whether rectangle or square matrix).

Since the proposed method deals with matrices, there should be no noise in the system because the existence of noise may add specific information to the biometric feature. Related to cancellable biometric, since the end of this system is authentication process, even a very little noise will affect the quality of cancellable feature significantly and will certainly resulting low precision in verification later on. Thus, the early process to be done toward the result of established fingerprint is the enhancement step. The enhanced fingerprint will provide a feature with the precise value of fingerprint information so that when it is extracted to domain matrices, there will be no unnecessary values that go into it. After the fingerprint enhancement step, the cancellable input image will subject to several matrices transformations. To simplify the next appellation, we name it as matrix A .

Meanwhile, the acquired fingerprint image is in matrices domain, we next discuss how to build the system of cancellable biometrics using matrix A as an input. Firstly, matrix A will be inversed as the first step to disguise the real feature. This idea is tentatively, because it will be considered whether directly inverting matrix A is an effective way or, on the other hand, inverting matrix A after another matrix operation. The next step will be applying the Elementary Row Operation (ERO) to matrix A to obtain zero-value row or to apply Kronecker

Product (KP) operation. In this research, it will be analysed of how much zero rows needed to achieve the requirement of maximum non-invertible. Besides the use of ERO to obtain zero rows, another thing to be considered in this research is the use of ERO to create rows that are the multiple of the other rows.

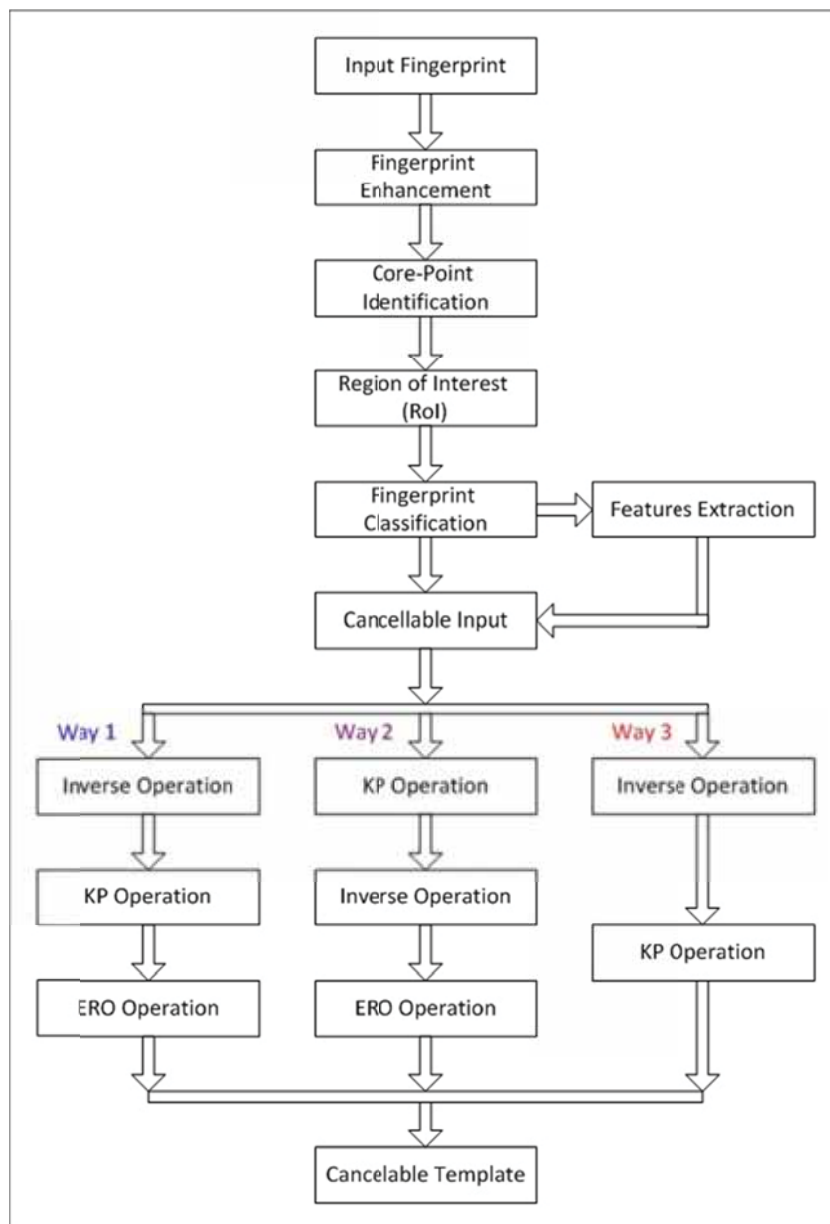


Figure 4. Steps Flow Chart

In case of the ERO as the step taken, matrix A that has been imposed ERO operation; we name it as matrix K; that will go through KP operation to produce KP matrix which every initial element is unrecognizable. Let us name it as matrix M. In this KP operation, matrix K will be multiplied by tensor factor that can be in a form of matrix or integer with constant value. Let name it as B. The form and the value of factor B will be one of the analysis materials in this research. For example, if factor B is matrix B, then the value can be taken from the numbers given by a person who have registered his biometrics when he registered himself as an authentic person of a biometric whose the cancellable feature is being built. In this research, the steps of using ERO and KP will be analysed as well, whether the use of ERO in the beginning and KP afterwards is better, or vice versa. The result of the process above will be a cancellable matrix of matrix A, and be namely as matrix C which is as a cancellable template.

To secure the original input, this algorithm should be executed using one way transform concept. Hence,

identification attempt by imposter can be eluded because the system does not provide a looping process. The following figure illustrates the concept used in this research.

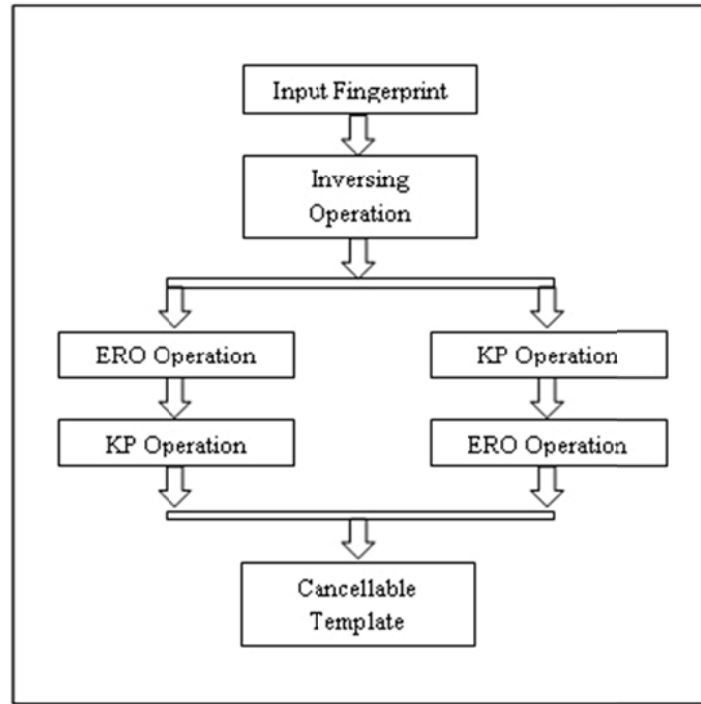


Figure 5. Cancellable System Flow Chart

These aforementioned processes can be illustrated as following mathematical steps. Let say that the original input matrix is A which a three-by-three matrix is. As said before that the first alternative step that is going to do is to inverse the original matrix to camouflage it. Let say it as

$$A^{-1} = \frac{1}{|A|} adj. \quad (2)$$

$$\text{Supposing } A = \begin{bmatrix} 2 & 5 & 7 \\ 3 & 2 & 0 \\ 8 & 9 & 6 \end{bmatrix},$$

where $|A| = 11$, and

$$adjA = \begin{bmatrix} 12 & 33 & 11 \\ -18 & -44 & 21 \\ 11 & 22 & -11 \end{bmatrix},$$

that,

$$A^{-1} = \begin{bmatrix} \frac{12}{11} & 3 & -\frac{14}{11} \\ -\frac{18}{11} & -4 & \frac{21}{11} \\ 1 & 2 & -1 \end{bmatrix}$$

To obtain a Kronecker Product, another matrix should be determined. In order to give more overview, there are

two alternatives of that matrix. Firstly, a non-square form matrix. Let say it as matrix $B = \begin{bmatrix} 11 & 11 \\ 0 & 0 \\ 11 & 11 \end{bmatrix}$. The reasons

to establish this matrix are firstly to show why a non-square matrix cannot be inverted and secondly why if there is at least one zero rows cannot be inverted as well. Furthermore,

$$A^{-1} \otimes B = \begin{bmatrix} \frac{12}{11} & 3 & -\frac{14}{11} \\ -\frac{18}{11} & -4 & \frac{21}{11} \\ 1 & 2 & -1 \end{bmatrix} \otimes \begin{bmatrix} 11 & 11 \\ 0 & 0 \\ 11 & 11 \end{bmatrix} =$$

$$KP = \begin{bmatrix} 12 & 12 & 33 & 33 & -14 & -14 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 12 & 12 & 33 & 33 & -14 & -14 \\ -18 & -18 & -44 & -44 & 21 & 21 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ -18 & -18 & -44 & -44 & 21 & 21 \\ 11 & 11 & 22 & 22 & -11 & -11 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 11 & 11 & 22 & 22 & -11 & -11 \end{bmatrix}$$

KP matrix is a 9 x 6 form (non-square matrix).

Remember that a matrix can be said having an inverse as if $A \cdot A^{-1} = I$; where I is a matrix identity. Meanwhile, a matrix is able to be told as a matrix identity as if the diagonal elements of matrix are 1 (one). Whereas, the others element are 0 (zero). Based on this requirement, it can be ensured that a matrix identity should be a square form matrix. Since 9 by 6 is not a square form matrix, it proves that KP matrix does not have an inverse.

The next alternative is a square form matrix. Let say that the matrix $B = \begin{bmatrix} 11 & 11 & 11 \\ 0 & 0 & 0 \\ 11 & 11 & 11 \end{bmatrix}$.

That,

$$A^{-1} \otimes B = KP = \begin{bmatrix} \frac{12}{11} & 3 & -\frac{14}{11} \\ -\frac{18}{11} & -4 & \frac{21}{11} \\ 1 & 2 & -1 \end{bmatrix} \otimes \begin{bmatrix} 11 & 11 & 11 \\ 0 & 0 & 0 \\ 11 & 11 & 11 \end{bmatrix} = \begin{bmatrix} 12 & 12 & 12 & 33 & 33 & 33 & -14 & -14 & -14 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 12 & 12 & 12 & 33 & 33 & 33 & -14 & -14 & -14 \\ -18 & -18 & -18 & -44 & -44 & -44 & 21 & 21 & 21 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -18 & -18 & -18 & -44 & -44 & -44 & 21 & 21 & 21 \\ 11 & 11 & 11 & 22 & 22 & 22 & -11 & -11 & -11 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 11 & 11 & 11 & 22 & 22 & 22 & -11 & -11 & -11 \end{bmatrix}$$

Now, the form of matrix KP is square (9 by 9). This 9 by 9 matrix can be inverted when $KP \cdot KP^{-1} = I$. In this case, let we symbolize the matrix identity as matrix C and the KP^{-1} as matrix P. Where,

$$C = \begin{bmatrix} C_{11} & C_{12} & C_{13} & C_{14} & C_{15} & C_{16} & C_{17} & C_{18} & C_{19} \\ C_{21} & C_{22} & C_{23} & C_{24} & C_{25} & C_{26} & C_{27} & C_{28} & C_{29} \\ C_{31} & C_{32} & C_{33} & C_{34} & C_{35} & C_{36} & C_{37} & C_{38} & C_{39} \\ C_{41} & C_{42} & C_{43} & C_{44} & C_{45} & C_{46} & C_{47} & C_{48} & C_{49} \\ C_{51} & C_{52} & C_{53} & C_{54} & C_{55} & C_{56} & C_{57} & C_{58} & C_{59} \\ C_{61} & C_{62} & C_{63} & C_{64} & C_{65} & C_{66} & C_{67} & C_{68} & C_{69} \\ C_{71} & C_{72} & C_{73} & C_{74} & C_{75} & C_{76} & C_{77} & C_{78} & C_{79} \\ C_{81} & C_{82} & C_{83} & C_{84} & C_{85} & C_{86} & C_{87} & C_{88} & C_{89} \\ C_{91} & C_{92} & C_{93} & C_{94} & C_{95} & C_{96} & C_{97} & C_{98} & C_{99} \end{bmatrix} = \begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{bmatrix}$$

From the matrix above, it is obvious that the diagonal elements of C should be 1 and the others are 0.

The computation can be simplified by firstly checking the diagonal elements of $KP \cdot KP^{-1}$ or $KP \times P$ (C_{11} , C_{22} , C_{33} , C_{44} , C_{55} , C_{66} , C_{77} , C_{88} , C_{99}). Where,

$$C_{11} = (12 \times P_{11}) + (12 \times P_{21}) + (12 \times P_{31}) + (33 \times P_{41}) + (33 \times P_{51}) + (33 \times P_{61}) + (-14 \times P_{71}) + (-14 \times P_{81}) + (-14 \times P_{91})$$

$$C_{22} = (0 \times P_{12}) + (0 \times P_{22}) + (0 \times P_{32}) + (0 \times P_{42}) + (0 \times P_{52}) + (0 \times P_{62}) + (0 \times P_{72}) + (0 \times P_{82}) + (0 \times P_{92})$$

$$= 0 \implies \text{it means that } C \neq I \text{ (matrix C is not equal to matrix identity)}$$

In conclusion, it can be said that matrix KP is a non-inverted matrix.

5.2 Processing Requirements

Referring to the explanation aforementioned, it is clearly that matrix operations like Elementary Row Operation (ERO) and Kronecker Product (KP) Operation can be implemented into generate a cancellable biometric especially for fingerprint proposed. This concept is based on the similarity approach between cancellable

biometric and non-inversed matrix. In the former, a cancellable method is said successful when the yielded image cannot be reverted to the original image. The same goes for the latter. In matrix domain, if the goal is to obtain a revocable matrix, then the non-inverse matrix requirement should be done to make the matrix non-invertible.

The required conditions of the transformation process are used as parameters to quantize the non-invertibility standard of the cancellable template. Suppose the input A is not imposed by one of the condition, such as INV operation. It is possible for intruder to extract the result of the KP (A^{KP}) and ERO (A^{ERO}) operations because of the similarity appearance of A , A^{KP} , and A^{ERO} . The same case happens as well if ERO operation is eliminated from the generating cancellable system. The only implementation of KP and INV is not enough to shield the cancellable template from an inversion attempt of the intruder. The intruder can experiment to inverse the cancellable template and disannul the arbitrary matrix of the KP operation. Thus, the three conditions of the non-invertibility requirement have to be implemented concurrently.

Furthermore, this situation requires a qualified input A for the system. No noise is allowed in each element of the input to avoid mismatch result in the matching step of the system. The noise can alienate an authorized person from his own cancellable template. So, he will be judged as an imposter hereupon. Therefore, fingerprint pre-processing step is required to enhance the quality of the input image to reduce the false matching.

As we know, this research works in matrices domain. Hence, the requirement of a square form image is determined as well. Region of Interest (RoI) process is used to select a particular area of fingerprint as an input. Moreover, this research offers a new approach of RoI step by optimizing the using of another step in fingerprint process i.e. ridge orientation, ridge frequency, and core-point identification]. Ridge orientation and –frequency is needed to specific an area dense with ridge and valley of fingerprint pattern. Meanwhile, core-point is needed as a reference point of RoI.

Another fingerprint step that is required in this research is fingerprint classification. This step is need for enrolment and verification process. Fingerprint classification step will classify a registered and acquired into its classification to simplify the acknowledging process of the fingerprint. The classification process will join a registered fingerprint into its particular pattern class. Then by using this standard, an acquired fingerprint will be pointed into its pattern class as well to ease the searching process.

6. Experimental Results

The proposed cancellable approach is implemented into several fingerprint's databases i.e. FVC 2002: DB1_B to DB4_B, FVC 2004: DB1_B to DB4_B, and BRC: DBI-Training/Test/DBII. This implementation aims to observe the performance result of the proposed approach based on the specific character of each databases. However, to short the time, we only use several variant of the fingerprint in database BRC DBI to check the diversity and reusability character of the algorithm.

The term of diversity and reusability is used to check the ability of the cancellable system to distinguish and modify the cancellable template from the same input in case of compromising trial by imposter. Variable to be determined is the dissimilarity between the transformed template and transformed template for diversity; and the original input and the cancellable template for reusability. The experiment is conducted into the same fingerprint in the database. For BRC database, every fingerprint has ten different variants divided into two parts. It means that each part has five different variants of the same fingerprint.

Two fingerprints of each part are used for this experiment. One is as registered data and the other as acquired one. Meanwhile, the three others are utilized in authentication step. One of the two fingerprints used for the experiment will be transformed into ten transformed template (cancellable template). Each transformed template is generated by a different arbitrary KP matrix and different ERO order. Later, the other one is used as an acquired transformed template. The following figure illustrates the transformation process of the original fingerprint input into a transformed form by combining the arbitrary matrix in KP and the order in ERO.

Figure 6 shows a complete transformation of the original input of the fingerprint. The transformed template camouflages the appearance of the fingerprint into a distinctive presentation. The histogram presents the different sight of each template to show the variant of the template regarding to the kind of KP and ERO formulas implemented into the input fingerprint. As aforementioned in the previous sub-chapter, the one way transformation guarantees system from revertible trial of the imposter. The variant of the transformed templates show a huge possibility to reproduce a dissimilar template in case that the registered template is compromised by an authorized person. The diversity of the transformed template enables the system confidently to generate the cancellable template automatically as a response of the invalid usage.

**Original Input
BRC Database**



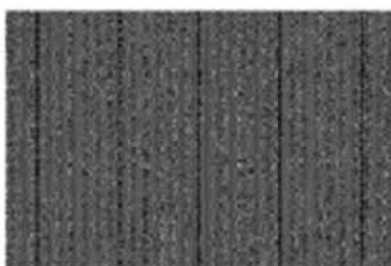
KP and ERO Formulas:

Five Rows Interchanging

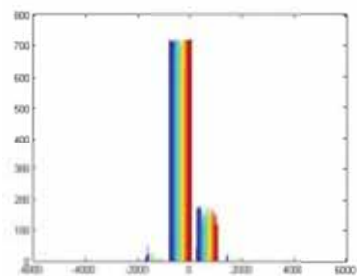
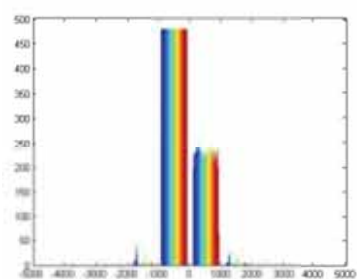
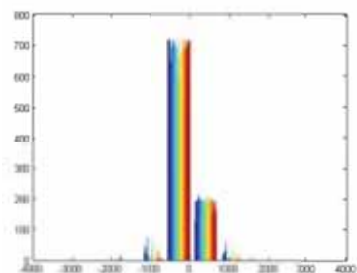
Five Columns Zeroing

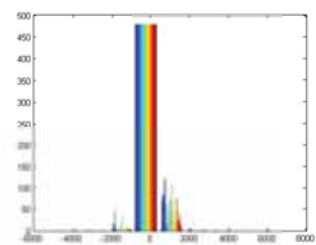
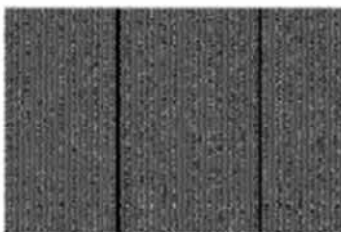
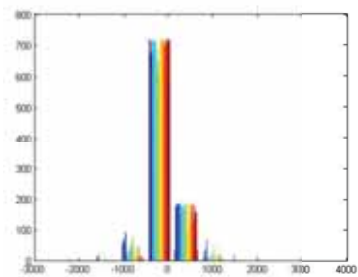
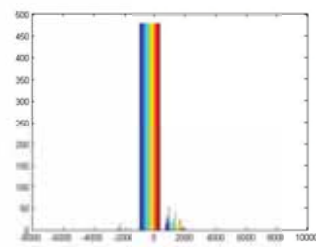
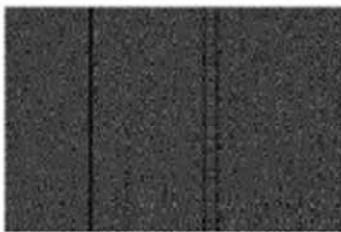
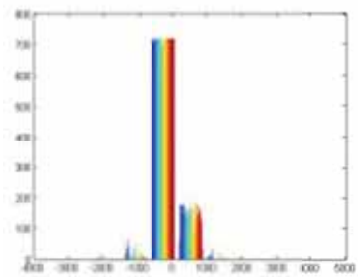
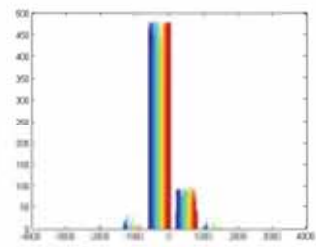
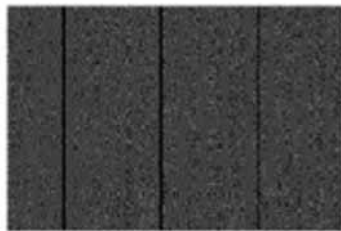
Five Rows Multiplying

Transformed Templates



Histogram Presentation





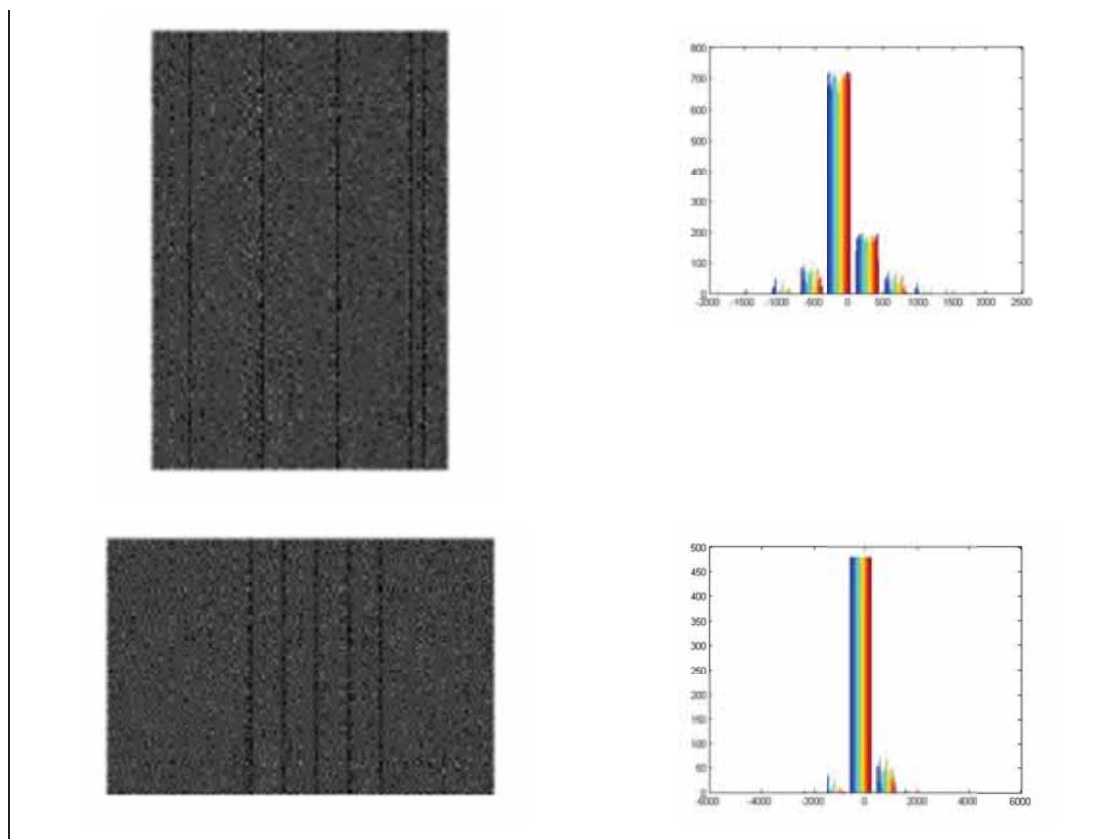


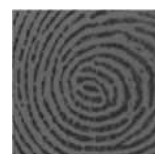
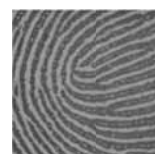
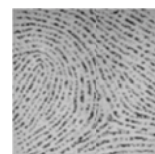
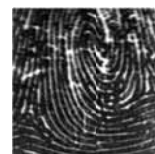
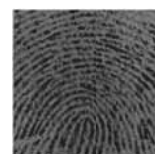
Figure 6. The Variant of Fingerprint Transformed Procedures

In this research, we utilized one fingerprint as a registered data of each database we used. And another six of fingerprint for BRC and eight for FVC2002&2004 are as an enquired fingerprint. It means that there are 80 kinds of fingerprints existing in this database where one of those is selected as the owner representative in database. From the 79 fingerprints left, only seven fingerprints that are categorized into accepted, rejected, false accepted, and false rejected, while the remaining 72 are totally rejected and are not included in those categories as the results of classification step implementation. This step is not only saving time during the process, but also helps the system to shrink number of fingerprints to analyze. During this stage, an enquired input will be grouped into its particular class so that an inappropriate fingerprint would be rejected automatically before it continues to a matching step since each fingerprint in the same database is already categorized into its own class. In this experiment, we used minutiae extraction feature [7, 8, 9] as an input of the cancellable system. The main reason is because minutiae already have a different appearance contrasted with the original fingerprint. Hence, it is become an idea to optimize the minutiae extraction as an input of the system.

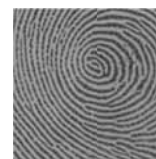
In term of the performance evaluation of the system, we used the authentication step to evaluate the ability of the proposed method to authenticate whether the inputs of fingerprint are a genuine owner or an impostor. This categorizing process justifies the genuineness of the fingerprint by implementing some criterion as a scoring for both an established fingerprint and the input fingerprint as an enquiry fingerprint. The first criterion is by directing the input into its fingerprint classification group to shortage the identification process. Next is by calculating the distance between core and tent arch (TA) of the fingerprint. The third criterion is by scoring a minimum and maximum distances of matrices values of minutiae between an original fingerprint registered in database and several fingerprints from the same owner as information to calculate the distance value of each pixel of the fingerprint, so that variant possibility of a genuine fingerprint can be decided later even when the acquisition process of each fingerprint is taken differently. The next criterion is by evaluating the scoring of minimum and maximum distances of matrices values of minutiae between the genuine data and a false data to score the value to reject an input. The last criterion is by setting a threshold value of accepted and rejected decision as the result of the third and the fourth criteria. The evaluation is started by determining an equal error rate (EER) of each database.

Table 1. EER Comparasion amon All Databases

Databases	EER	GAR/FAR	Threshold	
FVC2002	DB1	0.063	1/0.125	0.475
	DB2	0.063	1/0.125	0.475
	DB3	0.063	1/0.125	0.375
	DB4	0.063	1/0.125	0.425
FVC2004	DB1	0.063	1/0.125	0.525
	DB2	0.063	1/0.125	0.175
	DB3	0.063	1/0.125	0.175
	DB4	0.063	1/0.125	0.325
BRCDBI	Test	0.083	1/0.167	0.675
	Training	0.083	1/0.167	0.625



BRCDBII - 0.083 1/0.167 0.675



It has become commonplace in the authentication step that not all the accepted or rejected fingerprints are true genuine and true impostor. These conditions are known as false genuine and false impostor. False genuine and impostor would create a problem if its rates (EER) are huge. Hence, fingerprint with the lowest EER has a chance to become a better fingerprint in the database. However, EER is not the only requirement to acknowledge which fingerprint has a better error rate. In this research, threshold value is also determined as a parameter to know which fingerprint in the same database has the lowest error rate. The reason is because threshold value would show an excuse level for the authentication system to decide the authenticity of the fingerprint. Finding an error rate for each fingerprint in the database is required to discover the characteristic of the database after imposed by the proposed algorithm. Based on the experiment, the lowest level of the error rate for databases FVC2002 and FVC2004 is in 0.063. Meanwhile, the highest EER and the threshold of each EER could be dissimilar. In term of the threshold score, the highest score would represent a better condition of the fingerprint. If a fingerprint has a high threshold score, it means that the enquired fingerprint would be recognized by system as an authorized fingerprint even with a high qualification matching score. However, the threshold rate does not become a prior regulation to decide which fingerprint has a better error rate but EER with the lowest score does.

The next thing to be evaluated is duration needed to execute the proposed algorithm. Time consuming is a concerning issue to be determined since there are two different input of the fingerprints adapted in generating a cancellable feature and its authentication process. This first combination of input is cancellable step; core-point step; classification step; authentication step (using an original fingerprint image). The second is cancellable step; core-point step; classification step; RoI step; authentication step (using a cropping input). Furthermore, the total times of each combination are compared to see which combination is better. The approach has been tested by using Intel Core i5-2430M CPU@2.40GHz; 4.00 GB installed RAM; and MATLAB version 7.10.0 (R2010a). The following tables illustrate time taken by system to execute all steps of the research. From each table, the comparison among different sub-databases in the same database is shown to provide the different percentage between original input and RoI input in order to show which input has a better time to run all steps.

Table 2. Time Needed for Database FVC 2002 (in Second)

No.	Time Needed		Steps					Time Deficits (%)
			Cancellable	Core-Time	Classification	Region of Interest	Authentication	Total
1.	DB1	Original	0.8589	0.5542	0.7269		0.000187	2.140187
		RoI	0.4834	0.4099	0.5048	0.2316	0.000130	1.62983
2.	DB2	Original	1.1610	0.9232	0.7592		0.000204	2.843604
		RoI	0.5269	0.4190	0.5255	0.2538	0.000142	1.725342
3.	DB3	Original	0.8333	0.6627	0.6941		0.000187	2.190287
		RoI	0.4825	0.3837	0.4811	0.2320	0.000130	1.57943
4.	DB4	Original	0.9826	0.7814	0.6855		0.000184	2.449684
		RoI	0.4765	0.3789	0.4751	0.2291	0.000128	1.559728

Table 3. Time Needed for Database FVC 2004 (in Second)

No.	Time Needed		Steps					Time Deficits (%)
			Cancellable	Core-Time	Classification	Region of Interest	Authentication	Total
1.	DB1	Original	1.0951	0.8709	0.6966		0.000187	2.662787
		RoI	0.4842	0.3850	0.4829	0.2328	0.000130	1.58503

2.	DB2	Original	0.7731	0.6148	0.6820		0.000183	2.070083	25.06
		RoI	0.4738	0.3768	0.4725	0.2280	0.000127	1.551227	
3.	DB3	Original	1.0568	0.8218	0.6878		0.000190	2.566590	38.29
		RoI	0.4903	0.3805	0.4772	0.2357	0.000132	1.583832	
4.	DB4	Original	0.8942	0.7111	0.7009		0.000188	2.306388	30.84
		RoI	0.4873	0.3875	0.4860	0.2343	0.000131	1.595231	

Table 4. Time Needed for Database BRC (in Second)

No.	Time Needed		Steps					Total	Time Deficits (%)
			Cancellable	Core-Time	Classification	Region of Interest	Authentication		
1.	DB1	Original	0.5049	0.4015	0.7120		0.000191	1.618591	0.0057
	Test	RoI	0.4943	0.3931	0.4929	0.2380	0.000133	1.618433	
2.	DB1	Original	0.4762	0.3787	0.6842		0.000184	1.539284	-1.04
	Training	RoI	0.4750	0.3777	0.4737	0.2287	0.000128	1.555228	
3.	DB2	Original	0.6159	0.4898	0.7584		0.000203	1.864303	7.59
		RoI	0.5262	0.4184	0.5247	0.2535	0.000142	1.722942	

Overall, it is obvious that the system using a RoI input consumes less time than an original input except for database BRCDB1Training even though the former system has one more step included in process (RoI step). The size of the input fingerprint significantly contributes to reduce time taken for the process. The following table shows the contribution of the size differences to time taken by the process.

Table 5. Correlation between the size differences of the input fingerprint and the time taken by the process (%)

No.	Time Needed		Databases			
			FVC 2002	FVC 2004	BRC	
1.	DB1	Size	43.13	54.86	DB1 Test	1.81
		Time	23.85	40.47		0.0057
2.	DB2	Size	53.95	38.08	DB1 Training	0.25
		Time	39.33	25.06		-1.04
3.	DB3	Size	41.11	53.38	DB2	14.04
		Time	27.89	38.29		7.59
4.	DB4	Size	51.21	45.30		
		Time	36.32	30.84		

Table 5 clearly shows the affiliation between the size of the input of fingerprint and the duration taken to complete all the processes. A big input would require more time in the process. However in this research case, it cannot be denied that the size difference should not be narrow such as database BRCDB1Training. Because the system that is used a fingerprint with RoI size needs RoI selection step in its process. It means that it would demand more time to execute the process. Nevertheless, table 6.15 proves that this case is not a big obstacle in this research.

Another parameter considered in the performance of the system is the size of the arbitrary matrix that is used to produce a cancellable feature of the fingerprint. The reason is because the size of that matrix could affect the time consumed in running the process. Therefore, the variant of matrix size was simulated to check its influence into the time taken along the running of the process for databases FVC2002, FVC2004, and BRC.

Figure 7 shows the simulation trend by increasing the size of matrix started from 1 x 1 until 25 x 25 while recording the time consuming along the simulation. During the simulation, it is found that the time taken would be tended to increase as well as the increasing of the size of the matrix. However, at matrix 3 x 3, the trend is tended to lower before going up again at matrix 4 x 4. Therefore, the size of the arbitrary matrix used in this research is matrix 3 x 3.

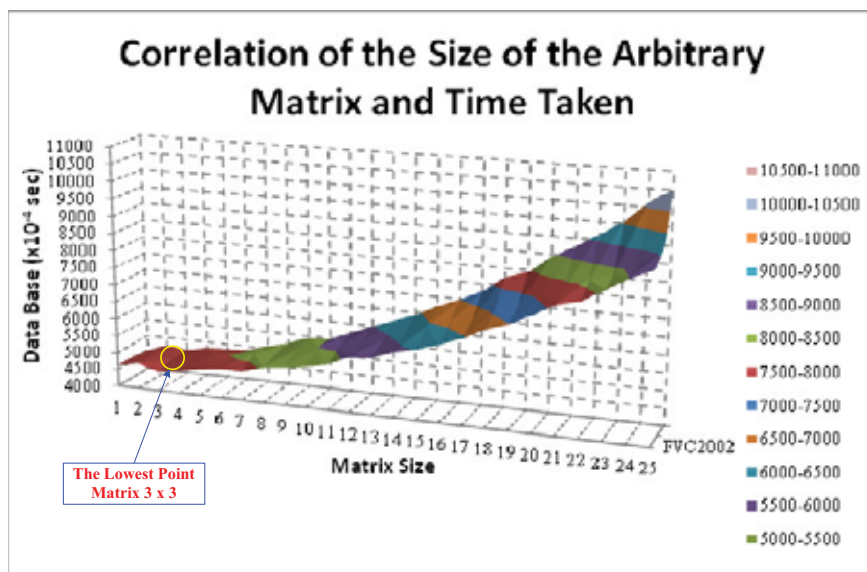


Figure 7. The Correlation between the size of the arbitrary matrix and the time taken of the process

In ERO operation, the most important issue to be discussed is the best number of zero rows and columns needed to make sure that the cancellable template is safe from the impostor. The analysis is done by doing several simulations i.e. increasing number of the zero rows, increasing number of the zero columns, and using the zero rows and columns simultaneously while increasing the number zero rows and columns as well. These increasing simulations is done by starting from one until $n/3$ rows/columns, where n is size of the input of the fingerprint. The reason to choose $n/3$ as the limit to increase the number of rows and columns is because it would erase the detail information of the fingerprint feature. The following figure is illustrated all simulation done in the research.

-13.2515	-48.5150	-62.6468	-50.0396	-16.3391	24.1932	54.9296	63.7668
14.1556	-28.0481	-57.4675	-62.1471	-40.5157	-1.9108	37.4970	62.6071
39.7504	-1.8382	-41.5896	-63.1917	-59.4876	-29.4826	12.6003	49.4918
58.7400	25.1083	-18.0617	-54.2500	-66.9095	-51.6159	-15.1277	27.3705
67.7559	47.9171	9.0100	-34.3391	-62.9618	-65.2899	-40.8292	-0.0031
65.3777	64.5113	35.1631	-8.5376	-48.4109	-68.1412	-60.0694	-27.9643
54.2384	69.3609	55.6404	18.7757	-25.8578	-59.8850	-69.6673	-51.7492
32.5657	63.1902	67.3054	43.1696	0.9109	-41.9890	-68.1936	-67.5786

Figure 8. Illustrating of the original feature of the fingerprint

-13.2515	-48.5150	-62.6468	-50.0396	-16.3391	24.1932	54.9296	63.7668
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
39.7504	-1.8382	-41.5896	-63.1917	-59.4876	-29.4826	12.6003	49.4918
58.7400	25.1083	-18.0617	-54.2500	-66.9095	-51.6159	-15.1277	27.3705
67.7559	47.9171	9.0100	-34.3391	-62.9618	-65.2899	-40.8292	-0.0031
65.3777	64.5113	35.1631	-8.5376	-48.4109	-68.1412	-60.0694	-27.9643
54.2384	69.3609	55.6404	18.7757	-25.8578	-59.8850	-69.6673	-51.7492
32.5657	63.1902	67.3054	43.1696	0.9109	-41.9890	-68.1936	-67.5786

Figure 9. One row of the original feature of the fingerprint replaced by zero row

-13.2515	-48.5150	-62.6468	-50.0396	-16.3391	24.1932	54.9296	63.7668
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
39.7504	-1.8382	-41.5896	-63.1917	-59.4876	-29.4826	12.6003	49.4918
58.7400	25.1083	-18.0617	-54.2500	-66.9095	-51.6159	-15.1277	27.3705
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
65.3777	64.5113	35.1631	-8.5376	-48.4109	-68.1412	-60.0694	-27.9643
54.2384	69.3609	55.6404	18.7757	-25.8578	-59.8850	-69.6673	-51.7492
32.5657	63.1902	67.3054	43.1696	0.9109	-41.9890	-68.1936	-67.5786

Figure 10. Two rows of the original feature of the fingerprint replaced by zero rows

-13.2515	-48.5150	-62.6468	-50.0396	-16.3391	24.1932	54.9296	63.7668
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
39.7504	-1.8382	-41.5896	-63.1917	-59.4876	-29.4826	12.6003	49.4918
58.7400	25.1083	-18.0617	-54.2500	-66.9095	-51.6159	-15.1277	27.3705
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
65.3777	64.5113	35.1631	-8.5376	-48.4109	-68.1412	-60.0694	-27.9643
54.2384	69.3609	55.6404	18.7757	-25.8578	-59.8850	-69.6673	-51.7492
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Figure 11. Three rows of the original feature of the fingerprint replaced by zero rows

-13.2515	0.0000	-62.6468	-50.0396	-16.3391	24.1932	54.9296	63.7668
14.1556	0.0000	-57.4675	-62.1471	-40.5157	-1.9108	37.4970	62.6071
39.7504	0.0000	-41.5896	-63.1917	-59.4876	-29.4826	12.6003	49.4918
58.7400	0.0000	-18.0617	-54.2500	-66.9095	-51.6159	-15.1277	27.3705
67.7559	0.0000	9.0100	-34.3391	-62.9618	-65.2899	-40.8292	-0.0031
65.3777	0.0000	35.1631	-8.5376	-48.4109	-68.1412	-60.0694	-27.9643
54.2384	0.0000	55.6404	18.7757	-25.8578	-59.8850	-69.6673	-51.7492
32.5657	0.0000	67.3054	43.1696	0.9109	-41.9890	-68.1936	-67.5786

Figure 12. One column of the original feature of the fingerprint replaced by zero rows

-13.2515	0.0000	-62.6468	-50.0396	0.0000	24.1932	54.9296	63.7668
14.1556	0.0000	-57.4675	-62.1471	0.0000	-1.9108	37.4970	62.6071
39.7504	0.0000	-41.5896	-63.1917	0.0000	-29.4826	12.6003	49.4918
58.7400	0.0000	-18.0617	-54.2500	0.0000	-51.6159	-15.1277	27.3705
67.7559	0.0000	9.0100	-34.3391	0.0000	-65.2899	-40.8292	-0.0031
65.3777	0.0000	35.1631	-8.5376	0.0000	-68.1412	-60.0694	-27.9643
54.2384	0.0000	55.6404	18.7757	0.0000	-59.8850	-69.6673	-51.7492
32.5657	0.0000	67.3054	43.1696	0.0000	-41.9890	-68.1936	-67.5786

Figure 13. Two columns of the original feature of the fingerprint replaced by zero rows

-13.2515	0.0000	-62.6468	-50.0396	0.0000	24.1932	54.9296	0.0000
14.1556	0.0000	-57.4675	-62.1471	0.0000	-1.9108	37.4970	0.0000
39.7504	0.0000	-41.5896	-63.1917	0.0000	-29.4826	12.6003	0.0000
58.7400	0.0000	-18.0617	-54.2500	0.0000	-51.6159	-15.1277	0.0000
67.7559	0.0000	9.0100	-34.3391	0.0000	-65.2899	-40.8292	0.0000
65.3777	0.0000	35.1631	-8.5376	0.0000	-68.1412	-60.0694	0.0000
54.2384	0.0000	55.6404	18.7757	0.0000	-59.8850	-69.6673	0.0000
32.5657	0.0000	67.3054	43.1696	0.0000	-41.9890	-68.1936	0.0000

Figure 14. Three columns of the original feature of the fingerprint replaced by zero rows

-13.2515	0.0000	-62.6468	-50.0396	0.0000	24.1932	54.9296	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
39.7504	0.0000	-41.5896	-63.1917	0.0000	-29.4826	12.6003	0.0000
58.7400	0.0000	-18.0617	-54.2500	0.0000	-51.6159	-15.1277	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
65.3777	0.0000	35.1631	-8.5376	0.0000	-68.1412	-60.0694	0.0000
54.2384	0.0000	55.6404	18.7757	0.0000	-59.8850	-69.6673	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Figure 15. Illustrating the combination of the zero row and column of the image

The ERO operations initially produce no different about the look of the cancellable template, the speed of the general process, and the matching performance of the process. All results are identical with all results that have been discussed in the previous sub-chapter. For example is an unchanged look of the cancellable template, it happens since minutiae are the feature used to generate the cancellable template. The following figure illustrates how augmenting process of zero row/column does not affect the look of the cancellable template.

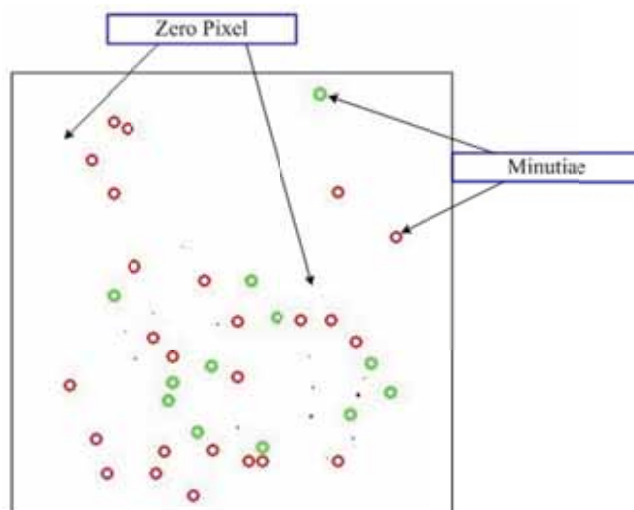


Figure 16. The unchanged look of the fingerprint features after the augmenting process of the zero row and column into the image

7. Conclusions

Establishing a cancellable template for a biometric technology such as fingerprint technology is a big challenge to be achieved especially related to a reissuing ability, a multi-application implementation, and a dependable issue. Implementation of several matrices operations and several fingerprint algorithm requirements becomes a

continuous approach to fulfil these three issues. Matrix application such as KP operation, ERO operation, and Inverse operation can be used as a solution to solve the issues number 1 and 2. Meanwhile, fingerprint regular steps such as fingerprint enhancement, core-point identification, region of interest, fingerprint classification, and minutiae extraction processes can be utilized to complete the last case.

Three kinds of evaluation i.e. error rates evaluation, time take evaluation, and matrices operations requirement evaluation; are performed in here to check the level/score of eleven different databases of the fingerprint. One of the evaluation shows that each database has its own characteristic depend on the type of the fingerprint acquired from the scanner of databases. If the scanner of the fingerprint produces a fingerprint with a good qualification, the error rate and the threshold of the database can be reliable as well as vice versa.

Furthermore, the time consuming along the execution process depends on the size of the input of the fingerprint. The time taken would be lessened if the size is small, vice versa. So then, for the small input of the fingerprint, even though one step would be augmented into the algorithm, the total time used of the process would not be changed significantly with the proviso that the size deficit of the input is not too thin.

Meanwhile, regarding to the implementation of the matrices operations, this procedure does not change the result or the character of the cancellable template as long as the used of the requirement of the matrices operation is not excessive.

References

- Amengual, J. C., Juan, A., Prez, J. C., Prat, F., Sez, S., & Vilar, J. M. (1997). Real-Time Minutiae Extraction in Fingerprint Images. In *Proceeding of the 6th International Conference on Image Processing and Its Application* (pp. 871-875). <https://doi.org/10.1049/cp:19971021>
- Anton, H., & Torres, C. (2005). *Elementary Linear Algebra, Application Version: Ninth Edition*. Wiley eGrade.
- Bhattacharyya, D., Bandopadhyaya, S. K., Das, P., Ganguly, D., & Mukherjee, S. (2008). Statistical Approach for Offline Handwritten Signature Verification. *Journal of Computer Science, Science Publication*, 4(3), 181-185. <https://doi.org/10.3844/jcssp.2008.181.185>
- Bolle, R. M., Connell, J. H., & Ratha, N. K. (2002). Biometric perils and Patches. *Pattern Recognition*, 35(12), 2727-2738. [https://doi.org/10.1016/S0031-3203\(01\)00247-3](https://doi.org/10.1016/S0031-3203(01)00247-3)
- Boulton, T. (2006). Robust Distance Measures for Face-Recognition Supporting Revocable Biometric Token. In *Proc. 7th Int. Conf. Autom. Face & Gesture Recog.* (pp. 560-566). [https://doi.org/10.1016/S0031-3203\(01\)00247-3](https://doi.org/10.1016/S0031-3203(01)00247-3)
- Bringer, J., Chabanne, H., & Kindarji, B. (2008). The Best of Both Worlds: Applying Secure Sketches to Cancellable Biometrics. In *Science of Computer Programming*, 74(1-2), 43-51. [https://doi.org/10.1016/S0031-3203\(01\)00247-3](https://doi.org/10.1016/S0031-3203(01)00247-3)
- Campisi, P., Maiorana, E., & Neri, A. (2008). On-line Signature Based Authentication: Template Security Issues and Countermeasures. In N. V. Boulgouris, K. N. Plataniotis, & E. Micheli-Tzanakou (Eds.), *Biometrics: Theory, Methods, and Applications*. Wiley/IEEE.
- Cappelli, R., Lumini, A., Maio, D., & Maltoni, D. (1999). Fingerprint Classification by Directional Image Partitioning. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 21(5), 402-421. <https://doi.org/10.1109/34.765653>
- Cardinaux, F., Sanderson, C., & Bengio, S. (2006). User Authentication via Adapted Statistical Models of Face Images. *IEEE Transaction on Signal Processing*, 54(1), 361-373. <https://doi.org/10.1109/TSP.2005.861075>
- Chikkerur, S., Ratha, N. K., Connell, H., & Bolle, R. M. (2008). Generating Registration-Free Cancellable Fingerprint Templates. In *BTAS08* (pp. 1-6).
- Daugman, J. G. (2003). The Importance of Being Random: Statistical Principles of Iris Recognition. *Journal of Pattern Recognition, Elsevier*, 36(2), 279-291. [https://doi.org/10.1016/S0031-3203\(02\)00030-4](https://doi.org/10.1016/S0031-3203(02)00030-4)
- Farooq, F., Bolle, R. M., Jea, T. Y., & Ratha, N. (2007). Anonymous and Revocable Fingerprint Recognition. In *Proc. Computer Vision and Pattern Recognition*. <https://doi.org/10.1109/CVPR.2007.383382>
- Furui, S. (1997). Recent Advances in Speaker Recognition. In *Proc. of International Conference on Audio and Video Based Biometric Person Authentication* (pp. 859-872). <https://doi.org/10.1109/CVPR.2007.383382>
- Ganorkar, S. R., & Ghatol, A. A. (2007). Iris Recognition: An Emerging Biometric Technology. In *Proc. Of the 6th WSEAS International Conference on Signal Processing, Robotics and Automation* (pp. 91-96).

- Jain, A. K., Prabhakar, S., Hong, L., & Pankanti, S. (2000). Filterbank-Based Fingerprint Matching. *IEEE Transaction on Image Processing*, 9(5), 846-859. <https://doi.org/10.1109/83.841531>
- Kanade, S., Petrovska-Delacretaz, D., & Dorizzi, B. (2009). Cancellable Iris Biometrics and Using Error Correcting Codes to Reduce Variability in Biometric Data. In *Proc. of IEEE Conference on Computer Vision and Pattern Recognition (CVPR)* (pp. 120-127).
- Kasaei, S., Deriche, M., & Boashash, B. (1997). Fingerprint Feature Extraction using Bloc-Direction on Reconstructed Images. In *IEEE region TEN Conf. Digital Signal Processing Applications* (pp. 303-306).
- Laub, A. J. (2005). Matrix Analysis for Scientists and Engineers. *The Society for Industrial and Applied Mathematics*, 139-142. <https://doi.org/10.1137/1.9780898717907>
- Lee, C., & Kim, J. (2010). Cancellable Fingerprint Templates using Minutiae-Based Bit-Strings. *Journal of Network Comp. Appl.*
- Lee, C., Choi, J., Toh, K., Lee, S., & Kim, J. (2007). Alignment-Free Cancellable Fingerprint Templates Based on Local Minutiae Information. *IEEE Trans. on Systems Man. And Cybernetics-B*, 37, 980-992. <https://doi.org/10.1109/TSMCB.2007.896999>
- Li, S. K., & Jain, A. K. (2004). *Handbook of Face Recognition*. New York: Springer Verlag.
- Maltoni, D., Maio, D., Jain, A. K., & Prabhakar, S. (2003). *Handbook of Fingerprint Recognition*. New York: Springer-Verlag.
- Mukhaiyar, R. (2014). Alternative Approach in Generating Cancellable Fingerprint by using Matrices Operations. In *Proceeding of 56th International Symposium ELMAR-2014* (pp. 163-166). <https://doi.org/10.1109/ELMAR.2014.6923342>
- Mukhaiyar, R. (2017). Analysis of Galton-Henry Classification Method for Fingerprint Database FVC 2002 and 2004. *International Journal of GEOMATE*, 13(40), 118-123. <https://doi.org/10.21660/2017.40.92748>
- Mukhaiyar, R. (2017). Core-Point, Ridge-Frequency, and Ridge-Orientation Density Roles in Selecting Region of Interest of Fingerprint. *International Journal of GEOMATE*, 12(30), 146-150. <https://doi.org/10.21660/2017.30.tvet015>
- Nilsson, K., & Bigun, J. (2003). Localization of Corresponding Points in Fingerprints by Complex Filtering. *Pattern Recognition Letters*, 24, 2135-2144. [https://doi.org/10.1016/S0167-8655\(03\)00083-7](https://doi.org/10.1016/S0167-8655(03)00083-7)
- Ratha, N. K., Chikkerur, S., Connell, J. H., & Bolle, R. M. (2007). Generating Cancellable Fingerprint Templates. *IEEE Trans. on Pattern Analysis and Machine Intelligence*, 29(4), 561-572. <https://doi.org/10.1109/TPAMI.2007.1004>
- Ross, A., & Govindarajan, R. (2005). Feature Level Fusion Using Hand and Face Biometrics. In *Proc. Of SPIE Conf. Biometric Technology for Human Identification II* (pp. 196-204). <https://doi.org/10.1117/12.606093>
- Schneir, B. (1999). Biometrics: Uses and Abuses. *Communications of the ACM*, 42(8), 1.
- Wayman, J. L., Jain, A. K., Maltoni, D., & Maio, D. (2005). *Biometric Systems: Technology, Design and Performance Evaluation*. New York: Springer Verlag. <https://doi.org/10.1007/b138151>
- Xu, W., & Cheng, M. (2008). Cancellable Voiceprint Template Based on Chaff-Points-Mixture Method. In *Proc. of International Conference on Computational Intelligence and Security* (pp. 263-266).
- Yang, B., Busch, C., Derawi, M., Bours, P., & Gafurov, D. (2009). Geometric-Aligned Cancellable Fingerprint Templates. In *Proc. of the 15th Int. Conf. on Image Analysis and Processing, LNCS*, 5716, 490-499.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).

Filial Piety, Living Arrangements, and Well-being of Urban Older Adults in Southern China

Yong Tang¹ & Nancy Hooyman²

¹ School of Psychology and Social Work, Shenzhen University, Shenzhen, China

² School of Social Work, University of Washington, Seattle, WA, United States

Correspondence: Yong Tang. E-mail: tangyong@szu.edu.cn

Received: February 26, 2018

Accepted: April 4, 2018

Online Published: May 28, 2018

doi:10.5539/ass.v14n6p21

URL: <https://doi.org/10.5539/ass.v14n6p21>

Abstract

This article examines the living arrangements and well-being of older adults in urban China. It draws upon the concept of filial piety and intergenerational care models to interpret findings regarding five different living arrangements for urban older adults: living alone (with a spouse or not), living with a son, living with a daughter, living in an institution (public or private), and other. Well-being is measured by activities of daily living, instrumental activities of daily living, and self-rated health questionnaires and the Center for Epidemiologic Studies Depression Scale. The findings have implications for policy makers addressing living arrangements and community-based care services for older adults.

Keywords: filial piety, living arrangements, well-being, older adults, community-based services

1. Introduction

According to the China Statistical Yearbook (2015), the number of people age 65 and older has reached 137 million, representing 10% of the total population. Though these statistics are already impressive, the elderly Chinese population is continuing to grow dramatically both in number and as a proportion of the overall population (Chen & Han, 2016). This trend will result in an increased demand for community-based services.

The elderly care policy and provisions in China have transformed gradually. Until recently, institutional elder care provision was rare and limited to the so-called “Three No’s”—people with no children, no income, and no relatives—who were publicly supported welfare recipients. Institutionalized elders were stigmatized. In the mid-1990s, China implemented reforms to decentralize the operation and financing of state welfare institutions. Since then, these institutions have shifted their financial reliance from public funding to more diversified revenue sources, including privately paying individuals. Elder care homes have proliferated, primarily in the private sector in urban areas. The Chinese government has actively promoted home-based care as the primary pillar of services for the aged. In recent years, the Chinese government has increased its efforts to build residential elder care services by actively promoting the construction of senior housing, homes for the aged, and nursing homes.

China has undergone an extraordinary economic transformation over the past 30 years. This transformation has remade the face of coastal China. Political change has occurred on a number of vitally important areas affecting the day-to-day existence of ordinary Chinese. In addition to political and economic changes, urbanization in China is also profoundly affecting living arrangements, which are central to elderly individuals’ well-being. Traditionally, co-residence with an adult child was a popular living arrangement in both urban and rural China.

China’s rapid urbanization, industrialization, and economic development were triggered by the economic reform that started in 1978. These effects were evident first in rural and then in urban areas. Around the same time, the Chinese government began to implement the One Child Policy. Since then, Chinese families have undergone noticeable changes in their structure and relationships. Rapid social change in China has also modified traditional attitudes toward filial piety and elders’ living arrangements. While traditional extended families exist, there are various forms of Chinese families, i.e., nuclear families, single-parent families, families with double income and no kids, single-person households and cohabitant households. Some scholars predict that China will follow in the footsteps of family modernization in Western industrial societies. They believe that the importance of marriage and family has declined in China. Scholars perceive that these changes have weakened family

functioning (Wu & Li, 2012), filial piety and familial collectivism and increased the emphasis on individualism, which will potentially lead to a crisis in elderly care (Li, 2011).

According to Confucianism, respect for parents is the highest virtue of all. As a Confucian concept, filial piety encompasses a broad range of behaviors toward parents and serves as the basis for traditional patterns of parent care and living arrangements in China and other East Asian countries, such as Japan, Korean, and Singapore (Cheng & Chan, 2006; Tsutsui, Muramatsu, & Higashino, 2013; Park, 2015; Lim et. al., 2016). According to Confucian understandings of filial piety, children must provide material and physical support to their parents, serving them with respect, obedience and loyalty. Urbanization and industrialization are rapid in urban areas, which contain a disproportionate share of the elderly. Thus, filial piety might diminish. Some people are concerned that because of the rapid urbanization and industrialization in urban areas, which contain a disproportionate share of the elderly, filial piety might diminish.

The Chinese family structure is complicated. Traditionally, a happy family was viewed as one in which all family members, including grandparents and great-grandparents, lived together. Now, the 4-2-1 family structure—which includes four older people (paternal and maternal grandparents), two parents, and only one child—has become more prevalent with the increase in the number of families with only one child. These changes in family structure in the past four decades have made it difficult for many people to fulfill filial care responsibilities. As a result, increasing numbers of elderly people are choosing to live alone or in an elder care institution (Zhan, Feng, & Luo, 2008). Given that elders have different possible living arrangements—living alone, with an adult child or in an institution—there is a need to determine how each can impact their well-being.

Although the living arrangements of older individuals in Western countries have been extensively studied (Zimmer & Korinek, 2010), the direct and indirect effects of living arrangements on the well-being of the elderly in China has only recently received research attention (Guo, Aranda & Silverstein, 2009; Ye & Chen, 2014). Studies have found that intergenerational co-residence might give older adults a sense of pride and success as they raise their children. On the other hand, as both children's and parents' understandings of filial piety and what it entails have changed, placing elders in institutions has also come to be viewed as an expression of filial piety in itself because it often still involves children providing their parents with financial support (Zhan, 2013).

In terms of psychological well-being, some studies have found that elders living with their adult children in China have a higher level of subjective well-being than those living alone (Chen & Short, 2008). In contrast, other research found that elders who lived with children actually reported a lower level of happiness than those living in an elder care institution (Zhan, Liu, & Guan, 2006).

In terms of physical health, Zhan, Liu and Guan (2006) suggested that elderly individuals with poor health may choose to live with their children. For example, the Chinese Longitudinal Healthy Longevity Survey found that older adults living with children are more likely to be disabled than those living independently, regardless of their "concordance status," or whether their expected and actual living arrangements are consistent (Sereny, 2011).

Despite the growth of research on living arrangements, several gaps in the literature remain. On the one hand, few studies have recognized how evolving cultural attitudes about elder care practice might be adaptive responses to changing demographic and social structures. Fewer still recognize how Chinese individuals may work to maintain traditional filial piety values when confronting changing family structures and responsibilities. On the other hand, the relationships among filial piety and the living arrangements and well-being of elders in China are not fully explored. To begin to address these gaps, this study aims to examine the influence of traditional cultural beliefs on elders' living arrangements (living alone with or without a spouse, living with a son, living with a daughter, living in an institution, or other) and how this results in societal dilemmas regarding elder care. The aims of this study are (1) to describe elders' present living arrangements in urban areas of coastal China, (2) to explain how filial piety impacts the living arrangements elders actually experience, and (3) to suggest a broad map for further research and elder care policies.

2. Methods

2.1 Data Sample

Guangdong Province has a population of 72 million people living in urban areas and 8.86 million people age 65 and older, who represented 8.27% of total population in 2014 (Guangdong Statistical Bureau, 2015). Because of its economic development, Guangdong is usually regarded as the southern gate of China. Guangzhou, which is also the capital city of the province, reported that 10.86% of its total population was age 65 or above in 2014, making it the city with the highest percentage of older adults among all cities in Guangdong Province

(Guangdong Statistical Bureau, 2015). These data suggest that the aging population of Guangzhou is representative of broader demographic patterns in Guangdong and thus is worthy of further research.

The data were collected in Guangzhou. For this study, the authors selected two urban residential communities in each city and combined these four communities into one list. The selected elders lived in the community and used community-based services. The provision of community-based services, adult day care centers nearby and financial assistance from government or other agencies are underdeveloped in these chosen communities. A combined list of all households with elders age 65 and older from each residential community resulted in a sample of 325 elders over age 65.

2.2 Data Collection

Interviewers were recruited from one university in Guangzhou, which also organized intensive interviewer training sessions. A standardized videotape was produced and used in all training sessions to avoid any inconsistency that might be caused by differences in teaching styles among trainers. The interview process was supervised by researchers from the university and by officials with more fieldwork experience from the Civil Affairs Bureau and the Statistics Bureau in Guangzhou. Each completed questionnaire was double-checked by the interviewers on the spot and then by their supervisors to guarantee that it was filled out properly. On average, interviews took about 40 minutes to complete. Of the 325 eligible older adults, a total of 316 completed the interview process, for response rate of 97.2%.

2.3 Measurements

The dependent variables related to well-being in this study are activities of daily living disability (ADL), instrumental activities of daily living disability (IADL), self-rated health (SRH) and the Center for Epidemiologic Studies Depression Scale (CES-D). ADL and IADL are binary variables, ADL includes six items (bathing, dressing, indoor transferring, toileting, incontinence, and eating), and IADL includes five items (meal preparation, laundry, sweeping, carrying objects, and walking). If a respondent needed assistance in any of the above six ADL, he or she was considered disabled (code=1). Both ADL and IADL items were rated on a 3-point Likert scale of 1=not difficult at all, 2=a little bit difficult and 3=unable to do the task. The higher the cumulative score, the more limited the respondent's functional ability. The internal consistencies for ADL and IADL were 0.86 and 0.85, respectively.

A single item was used to assess self-rated health: "Would you say your health in general is: (1) very poor, (2) poor, (3) fair, (4) good, (5) very good?" A previous study showed that SRH is a good predictor of elderly health conditions (Beyer, Wolff, Warner, Schüz, & Wurm, 2015). Psychological wellbeing was determined based on how elders scored on the CES-D Scale for measuring depression. The CES-D Scale (Sanders et. al., 2016) has been used widely among Chinese populations in mainland China and the United States (Cheng & Chan, 2006; Yang, Jia, & Qin, 2015), and it has been confirmed as a reliable tool for these groups. For each item, respondents were asked how often they felt this way during the past month: almost every day, two or three times a week, two or three times a month, once a month, or never. The response categories were scored from 1 ("never") to 5 ("almost every day"). In the present study, Cronbach's alpha for the Chinese version of the scale was 0.77.

The independent variables in this study were captured through the Filial Piety Scale (FPS) and a recording of elders' actual living arrangements.

Filial piety scale. The 24-item FPS was used to measure filial piety. This tool was developed by adapting 16 items from the 22-item FPS, which measures traditional filial attitudes among people living in Confucian cultural contexts (Lum, et. al., 2015), and 8 items from the Obligation of Filial Piety Scale (OFPS) used in Yue & Ng's study (1999). Some modifications were made when this scale was translated into Chinese. Some items from the 22-item FPS and OFPS were modified to ensure that Chinese people would clearly understand what the tool was asking. For example, in the 22-item FPS, original text that read *Sons and daughters may protest against being unreasonably scolded by parents* was modified to *Do you think that children may protest against being unreasonably scolded by their parents?* In OFPS, the original item *look after them* was modified to *Do you think your child should look after you?* In response to the 24-item FPS, respondents were required to rate items on a five-point scale ranging from strongly disagree to strongly agree (strongly disagree=1, somewhat disagree=2, neutral=3, somewhat agree=4, strongly agree=5).

Actual living arrangements. Elders' actual living arrangements were coded as a categorical variable: 1=living alone (with spouse or not), 2=living with a son, 3=living with a daughter, 4=living in an institution (public or private) and 5=other.

The control variables were respondents' socio-demographic characteristics (age, gender, marital status, education

level and income). Age was measured in years, gender was coded as a dummy variable (0=male, 1=female), and marital status was also coded as a dummy variable (0=unmarried, 1=married). Education level was coded numerically (1=primary school or below, 2=junior high, 3=senior high, 4=junior college, 5=college or above), and monthly income was categorized numerically (1=below ¥3000, 2=¥3000-¥3999, 3=¥4000-¥4999, 4=over ¥5000).

2.4 Data Analysis

The authors divided the data into four groups: elders living alone (with a spouse or not), elders living with children (son or daughter), elders living in institutions, and other. Descriptive statistics (means, standard deviations, and percentage distributions) of dependent and independent variables were computed. To determine whether different factors might be better as predictors of depressive symptoms than others, separate logistic regression analyses were conducted to examine the associations between the predictors. A multicollinearity check was conducted, and the tolerance values of all independent variables were obtained before the regression models were performed. All tolerance values were greater than the common cutoff threshold, meaning that multicollinearity was at an acceptable level.

3. Results

3.1 Socio-demographic Characteristics and Actual Living Arrangements of Elderly

The respondents' socio-demographic characteristics are presented in Table 1. More than 50% of the respondents were in the 60-69 age group, and over 33% were in the 70-79 age group. Over 50% of respondents were female and married. Approximately 90% of the respondents' education level was below junior high. Approximately 80% of the respondents' income level was less than ¥3000 (\$500) per month.

Table 1. Socio-demographic Characteristics of Study Participants (N=316)

Variables	%
Age	
60-69	55.51
70-79	36.23
80 or older	8.26
Gender	
Male	45.30
Female	54.70
Marital status	
Married	55.71
Others	44.29
Education level	
Illiterate	42.21
Junior high	45.21
Senior high	10.23
College or above	2.35
Income per month (RMB)	
Less than 2000	37.21
2001-3000	45.23
3001-4000	14.12
More than 4001	3.44

3.2 Living Arrangements and Health of the Elderly

Table 2 shows the mean SRH, the percentage of the sample with poor SRH, and the percentage of the sample requiring assistance with ADL and IADL, stratified by type of living arrangement. Across living arrangement types, the mean SRH and the percentage of the sample with poor SRH are similar, while ADL disability scores range from 9.81 to 33.11, and IADL disability scores range from 10.23 to 32.29. The data indicate that those living in institutions have the highest incidence of disability that requires assistance with ADL and IADL.

Table 2. Living Arrangements and Health

	Mean of Self-rated health (higher is worse)	% of sample that SRH as poor	% of sample with ADL	% of sample with IADL	N
Living alone (with spouse or not)	2.38	47.12	10.22	11.45	96
Living with son	2.56	50.21	11.12	12.11	118
Living with daughter	2.54	52.21	9.81	10.23	85
Living in institutions	3.01	58.91	33.11	32.29	10
Others	2.67	46.34	14.23	13.23	7

3.3 Filial Piety, Living Arrangements and Well-being of Elderly

Table 3 shows the results of the logistic regressions related to older adults' living arrangements. Although the regression model was statistically significant, some determinants were not significant. The regression model identified that the main effects on actual living arrangements for all significantly related variables were age, marital status, education, filial piety, ADL, IADL, self-rated health status, and CES-D. The authors divided elders into three age groups: a young-old group (60-69 years old), an old-old group (70-79 years old), and an oldest-old group (over age 80). Respondents who were 60-69 years old, married, had a college education or above and scored high in SRH were more likely to live alone than other older adults in the sample. Respondents who were 70-79 years old, were married, had a junior high level of education, and scored high in FPS, ADL and IADL and low in SRH were more likely to live with their adult children. Respondents who were age 80 or above, had no spouse, had an education level grade 12 or above, and scored high in FPS, ADL, IADL and CES-D and low in SRH were more likely to live in institutions. Each of these variables that were significantly related to older adults' living arrangements are discussed more fully below.

Table 3. Logistic Regression of Actual Living Arrangements on Independent and Control Variables

	Living alone (with spouse or not)		Living with children (with son or daughter)		Living in institutions		Others	
	B	Odds-ratio	B	Odds-ratio	B	Odds-ratio	B	Odds-ratio
Control variables								
Age (60-69)								
70-79	0.53	2.01	0.43	2.01	0.38	1.01	0.12	1.02
80 and above	0.09	1.08	0.09	1.08	0.69**	2.08	0.23	1.04
Gender (Female)	0.23	1.35	0.32	1.33	0.22	1.02	0.28	1.11
Marital status (Married)	0.68**	1.89	0.23	1.22	0.18	1.20	0.15	1.03
Education level (illiterate)								
Junior high	0.32	1.25	0.66**	1.88	0.32	1.21	0.34	1.01
Senior high	0.38	1.22	0.45	0.99	0.31**	1.23	0.42	1.05
College or above	0.22**	1.06	0.11	0.23	0.56**	1.68	0.51	1.01
Independent variables								
FPS	0.33	1.31	0.68**	1.35	0.48**	0.96	0.30	0.89
ADL	0.18	1.18	0.61**	1.56	0.78**	1.15	0.45	0.99
IADL	0.23	1.04	0.63**	1.48	0.79**	1.11	0.43	1.02
SRH	0.43**	1.22	0.23	1.33	0.36	1.35	0.56	1.12
CES-D	0.38	1.27	0.58	1.35	0.65**	1.12	0.71	1.21
Constant		1.05		1.02		0.98		0.92
Model chi-square		18.85*		21.23**		27.65**		12.11

Note. *p<0.05; **p<0.01.

FPS (Filial Piety Scale); ADL (Activities of Daily Living); IADL (Instrumental Activities of Daily Living); SRH (Self Rated Health); CES-D (Center for Epidemiologic Studies Depression Scale).

4. Discussion

China's rapidly growing aging population represents a crisis because societal institutions and families are not prepared to address the associated challenges. This study describes filial piety in relation to the living arrangements and well-being of urban elderly people in two cities in China. In the following sections, age, gender, marital status, education level, income, health status, filial piety, and elderly well-being are discussed in more detail.

Age. Wilmoth (2016) demonstrated that adults aged 75 and older in the United States have a greater chance of living with their children because of their increasing likelihood of having physical limitations. Contrary to Zhan, Feng, & Luo's (2008) findings, the results of our study suggest that with the growing life expectancy, more older people in China will be living with an adult child than in the past. The likelihood of living with their children decreased with age for the young-old group but increased with age for the older-old group.

Education level. Education level is found to impact the living arrangements of elders, as the education level of older adults is negatively related to the probability that they co-reside with their children in China (Guo, Aranda, & Silverstein, 2009). Respondents with higher education are less likely to live with their children; this finding suggests that they do not view shared households as ideal residential arrangements.

Marital status. Married couples are more likely to live independently when they are healthy. Older adults who live alone may be vulnerable to social isolation and adverse health outcomes. Although close relationships can provide emotional and instrumental support, social networks can also have negative effects on health and well-being (Rook, 2014).

Income. The living arrangements vary substantially between elderly people urban and rural China. In urban areas, affluent elderly people are less likely to live with their children, which suggests that they can support their daily needs without depending on their adult children.

Health status. Consistent with the findings of Yan, Chen and Yang (2003), our research shows that elders who have more difficulty functioning physically are also more likely to live with their children, specifically because they require assistance with ADL.

Filial piety. A significant relationship was found between elders feeling like their children were filial and elders actually living with their adult children, suggesting that filial piety remains still a strong family norm (Yasuda, Iwai, Yi, & Xie, 2011; Rosenzweig & Zhang, 2014).

Elders' well-being. Elders who lived with their children reported that living together has advantages; for example, they can easily receive care from their children while also enjoying their grandchildren. However, this living arrangement also has disadvantages. For instance, two generations may have conflicts because of different life habits, and some people find that living with parents can create a strange dynamic.

The above findings represent a significant knowledge base that can be used to inform policy makers who aim to address the needs of the increasing numbers of older adults and their families in China.

5. Implications

Since older adults are increasingly living separately from their adult children, community-based services are needed to support them in their own homes and to prevent them from being placed in nursing homes. Compared with those in Western countries, community-based long-term care services in China are in the early stages of development, and they are vital in meeting the needs of a growing elderly population.

Although Guangzhou has some unique characteristics as the most developed city in China, this study offers some broad recommendations for social services and long-term care. These include identifying ways to fully utilize adult day care centers, giving financial assistance to caregivers, creating age-friendly communities, investing more government funding in social services for older adults, and establishing multi-channel financial mechanisms for community-based services.

5.1 Making Full Use of Adult Day Care Centers

One strategy that national and local governments should consider is to more fully utilize adult day care centers as a central component of community-based long-term services and support. The Guangzhou Civil Affairs Bureau has been establishing publicly funded community day care centers in every neighborhood since 2011 (Guangzhou Civil Affairs Bureau, 2016), but their impact on well-being is relatively limited because many of the centers lack transportation to the sites and offer limited activities; therefore, many families prefer to hire a nanny (*bao mu*) to come into their homes instead of fully relying on these centers for care. In addition to providing respite care for families, day care centers should provide more diversified services—for example, practical care

services such as medication monitoring, transportation, and expanded social activities.

5.2 Giving Financial Assistance to Families

The Guangzhou municipal government began giving cash subsidies to registered permanent residents over the age of 60 or any people over age 80 in 2005, but it then stopped these cash subsidies in 2009 and instead offered coupons as a way to ensure that the money was being spent on the intended services. The question of whether it is better to give cash directly to elders or to give them coupons for services is still a matter of debate. It can be very difficult for families to afford to hire a nanny (*bao mu*) to provide elderly care. The monthly salary for a full-time nanny ranges from ¥3,500 to ¥5,000 per month (equivalent to \$530 to \$760) in Guangzhou, which is much more than the monthly income of most elderly individuals or their children. Considering the abovementioned problems, the government should consider more strategies to give financial assistance to families through a range of support options, such as cash subsidies or coupons.

5.3 Creating Age-Friendly Communities

Government, community agencies and enterprises should cooperate to create age-friendly communities for elders, where older adults are viewed as active contributors to their social environments. Additionally, housing developers should incorporate the distinctive housing needs of older people into their architectural designs. The needs of frail elderly people and people with disabilities should also be addressed through both appropriate community services and skilled nursing facilities.

5.4 Establishing Multi-Channel Financial Mechanisms for Community-Based Services

Public financing cannot fully cover the costs associated with using community-based services to meet all of the needs of China's rapidly growing older population. Though the Chinese government is trying to establish a new social welfare system, more financial resources must be channeled into community-based services for that system to be successful. One attempt at investment was when China's Department of Civil Affairs initiated the "*Xing Guang* (Star Light) Project" in 2000. The department allocated approximately 20% of the social welfare lottery money to building community service centers and home care programs for poor and frail elders. In Guangzhou, most of these funds, which totaled over two billion yuan, were spent building 916 "*Xing Guang*" centers, 400 community health service centers, and 20 day care centers (Finance Commission of Guangzhou Municipality, 2015). However, these investments alone cannot address the city's growing needs. For that purpose, multi-channel financing mechanisms, including private investment, are needed (Wu, Carter, Coins, & Cheng, 2005).

5.5 Divide Responsibilities among Family, Community and Institutional Care

As a result of the rapid aging of the population, elderly care has become an important issue in urban China. Despite the implementation of care service provision, the responsibilities among family, community and institutional care should be divided in the future. The government is funding seniors who need care that they cannot afford on their own, but the amount of funding is still negligible. More hospital and nursing home beds will be needed for senior care over in less than five years. The government is making important efforts in building quality standards for caregivers in order to ensure trust and security, with a view toward long-term investment. China is orienting its policy so that real estate developers build entry-level residential senior care into their developing infrastructure, as middle-class elderly Chinese people will need this service very soon. To reach this goal, financial incentives have been settled: Elderly care services in China (entertainment and medical service) are exempt from business tax, and non-profit nursing homes are exempt from corporate income tax and from administrative fees.

6. Study Limitations

This study has some limitations. First, it studies elders from only one province, so its findings cannot serve as a national profile of elders in China. Second, non-sampling error affected the accuracy of the survey findings. The number of respondents was relatively small, and probability sampling methods were not used, which could have caused bias in the results. Third, elders' living arrangements would ideally be divided into more categories, such as living alone, living with a spouse only, living with other relatives, and living with grandchildren. Fourth, the authors used only a single scale (CES-D) to measure emotional well-being rather than combining multiple scales to measure happiness, life satisfaction, etc. Fifth, the high non-response rate affected the study's findings. Some older adults declined to participate in this questionnaire survey, and some did not answer all questions. Sixth, because China is experiencing such dramatic and rapid economic development at the same time that social, demographic and cultural changes are taking place, the results of this study may not be applicable to other countries. Nevertheless, future studies that address these limitations have the potential to further improve policy

and practice in relation to older adults who are living in the community independently of their adult children.

7. Conclusions

This study examined the different living arrangements of older adults in urban China. According to traditional norms in Chinese society, parents both desire and expect to have support from their children in old age, particularly through co-residence. In light of the current and future aging of the Chinese population and a deficit in state programs to support elderly people, it is important to study the extent of intergenerational support and co-residence. In Western societies, intergenerational co-residence declined over the twentieth century, but it is yet unclear to what extent co-residence will decline in China. In this study, the education level of the 60-69 age group was higher than that of the over-age-80 group. As identified in this study, educated people are less likely to live with their adult children; this may be because they have better health and access to health care. If attitudes are indeed changing and better-educated parents do not expect the same level of support as they did in the past, then there may be less cause for concern about the well-being of older adults who are not living with their children. Instead, future cohorts of elders who are better educated and wealthier may be less in need of care provided by their adult children through co-residence and proximity.

References

- Beyer, A. K., Wolff, J. K., Warner, L. M., Schüz, B., & Wurm, S. (2015). The role of physical activity in the relationship between self-perceptions of ageing and self-rated health in older adults. *Psychology & Health, 30*(6), 671-685. <https://doi.org/10.1080/08870446.2015.1014370>.
- Chen, F., & Short, S. E. (2008). Household context and subjective well-being among the oldest old in China. *Journal of Family Issues, 29*(10), 1379-1403. <https://doi.org/10.1177/0192513X07313602>.
- Chen, L. & Han, W. J. (2016). Shanghai: Front-runner of community-based eldercare in China. *Journal of Aging and Social Policy, 29*(2), 1-16. <https://doi.org/10.1080/08959420.2016.1151310>.
- Cheng, S. T., & Chan, A. C. (2006). Filial piety and psychological well-being in well older Chinese. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 61*(5), 262-269. <https://doi.org/10.1093/geronb/61.5.P262>.
- China Statistical Bureau. (2015). *China Statistical Yearbook*. Chinese Statistical Press.
- Finance Commission of Guangzhou Municipality. (2015). Retrieved November 27, 2015, from http://www.szfb.gov.cn/xwzx/gzdt/201511/t20151127_3369641.htm (Chinese).
- Guangdong Statistic Bureau. (2015). *Statistics Bulletin of 2014* (Chinese).
- Guo, M., Aranda, M. P., & Silverstein, M. (2009). The impact of out-migration on the inter-generational support and psychological wellbeing of older adults in rural China. *Ageing and Society, 29*(7), 1085-1104. <https://doi.org/10.1017/S0144686X0900871X>.
- Li, G. M. (2011). Shifts and implications of modern Chinese traditional family virtues. *Philosophical Researches, 4*, 114-118 (in Chinese).
- Lim, H. A., Tan, J. Y., Chua, J., Yoong, R. K., Lim, S. E., Kua, E. H., & Mahendran, R. (2016). Quality of life of family caregivers of cancer patients in Singapore and globally. *Singapore Medical Journal, 58*(5), 258. <http://doc.org/10.11622/smedj.2016083>.
- Lum, T. Y., Yan, E. C., Ho, A. H., Shum, M. H., Wong, G. H., Lau, M. M., & Wang, J. (2015). Measuring Filial Piety in the 21st Century Development, Factor Structure, and Reliability of the 10-Item Contemporary Filial Piety Scale. *Journal of Applied Gerontology, 35*(11), 1235-1247. <https://doi.org/10.1177/0733464815570664>.
- Park, H. J. (2015). Legislating for filial piety: An indirect approach to promoting family support and responsibility for older people in Korea. *Journal of Aging and Social Policy, 27*(3), 280-293. <https://doi.org/10.1080/08959420.2015.1024536>.
- Rook, K. (2014). The health effects of negative social exchanges in later life. *Generations, 38*(1), 15-23.
- Rosenzweig, M., & Zhang, J. (2014). *Co-residence, life-cycle savings and inter-generational support in urban China*. National Bureau of Economic Research. 24-34. <http://doc.org/10.3386/w20057>.
- Sanders, J. L., Arnold, A. M., Hirsch, C. H., Thielke, S. M., Kim, D., Mukamal, K. J., & Newman, A. B. (2016). Effects of Disease Burden and Functional Adaptation on Morbidity and Mortality on Older Adults. *Journal of the American Geriatrics Society, 64*(6), 1242-1249. <https://doi.org/10.1111/jgs.14163>

- Sereny, M. (2011). Living arrangements of older adults in China: The interplay among preferences, realities, and health. *Research on Aging*, 33(2), 172-204. <https://doi.org/10.1177/0164027510392387>
- Guangzhou Civil Affairs Bureau. (2016). Retrieved May 24, 2016 from http://www.gzszmz.gsz.gov.cn/xxgk/ywxx/jjyl/bmxx/201108/t20110825_1724869.htm
- Guangzhou Statistical Bureau. (2012). *Statistical yearbook of 2012* (Chinese).
- Tsutsui, T., Muramatsu, N., & Higashino, S. (2013). Changes in perceived filial obligation norms among coresident family caregivers in Japan. *The Gerontologist*, 54(5), 797-807. <https://doi.org/10.1093/geront/gnt093>
- Wilmoth, J. M. (2016). Demographic Perspectives on Global Population Aging. In M. H. Meyer, & E. A. Daniele (Eds.), *Gerontology: Changes, challenges, and solutions* (pp. 1-23). ABC-CLIO.
- Wu, B., Carter, M. W., Goins, R. T., & Cheng, C. (2005). Emerging services for community-based long-term care in urban China: A systematic analysis of Shanghai's community-based agencies. *Journal of Aging & Social Policy*, 17(4), 37-60. https://doi.org/10.1300/J031v17n04_03.
- Wu, F., & Li, J. (2012). Policy approaches to development capacity of family. *Population Research*, 4, 37-43.
- Yang, L., Jia, C. X., & Qin, P. (2015). Reliability and validity of the Center for Epidemiologic Studies Depression Scale (CES-D) among suicide attempters and comparison residents in rural China. *BMC Psychiatry*, 15(1), 1. <https://doi.org/10.1186/s12888-015-0458-1>.
- Yasuda, T., Iwai, N., Yi, C. C., & Xie, G. (2011). Intergenerational coresidence in China, Japan, South Korea and Taiwan: comparative analyses based on the East Asian social survey 2006. *Journal of Comparative Family Studies*, 703-722.
- Ye, M., & Chen, Y. (2014). The influence of domestic living arrangement and neighborhood identity on mental health among urban Chinese elders. *Aging & Mental Health*, 18(1), 40-50. <https://doi.org/10.1080/13607863.2013.837142>
- Yue, X., & Ng, S. H. (1999). Filial obligations and expectations in China: Current views from young and old people in Beijing. *Asian Journal of Social Psychology*, 2(2), 215-226. <https://doi.org/10.1111/1467-839X.00035>.
- Zhan, H. J. (2013). Population ageing and long-term care in China. *American Society on Ageing*, 37(1), 53-58.
- Zhan, H. J., Feng, X., & Luo, B. (2008). Placing elderly parents in institutions in urban China: A reinterpretation of filial piety. *Research on Aging*, 30(5), 543-571. <https://doi.org/10.1177/0164027508319471>
- Zhan, H. J., Liu, G., & Guan, X. P. (2006). Availability and willingness: compare attitudes toward institutional care between Chinese elderly parents and their adult children. *The Journal of Aging Studies*, 20, 279-290.
- Zimmer, Z., & Korinek, K. (2010). Shifting coresidence near the end of life: Comparing decedents and survivors of a follow-up study in China. *Demography*, 47(3), 537-554. <https://doi.org/10.1353/dem.0.0116>

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).

Inhibiting Factor of Primary School Teacher Competence in Indonesia: Pedagogic and Professionalism

Deny Setiawan¹, Joni Sitorus² & M. Natsir¹

¹ Universitas Negeri Medan, Indonesia

² Balitbang SUMUT, Indonesia

Corresponding author: Deny Setiawan, Universitas Negeri Medan. E-mail: denysetiawan1978@gmail.com

Received: March 15, 2018

Accepted: April 16, 2018

Online Published: May 28, 2018

doi:10.5539/ass.v14n6p30

URL: <https://doi.org/10.5539/ass.v14n6p30>

Abstract

The study aims to describe inhibiting factors of pedagogic and professional competencies from primary school teacher, as well as its problems. Primary data obtained through interviews on focus group discussion, and secondary data obtained through document. Research informants are teachers, principals, head of Education Department, head of District Staffing Agency, and head of District Planning and Development Agency. Data were analyzed descriptively. Result shows that there were four inhibiting factors of teacher competence, such as: inadequate school infrastructure; teacher educational qualification was low; implementation of teacher training was ineffective; and lack of government attention in reward for outstanding teachers.

Keywords: teacher, competence, pedagogic and professionalism

1. Introduction

Competence for teachers becomes main requirements to perform their duties and profession professionally. Competence is an important issue, because of offering an organizational framework effectively and efficiently to empower the limited resources. Teachers certainly need to have appropriate competencies for their duties and responsibilities.

Teacher competence includes: mastery of the subject matter, understanding human nature to improve professional knowledge, workshops, seminars, effective communication, as well as adequate knowledge (Bovina, 2002; Akinbobola, 2004).

Teacher competence is the roundness of knowledge, skills, and attitudes embodied in intelligent action and full of responsibility in carrying out the task of teaching agent which includes: personal, pedagogical, professional, and social (Undang-Undang, 2005; Peraturan Pemerintah, 2005; Peraturan Pemerintah, 2008; Keputusan Menteri Pendidikan, 2002; Ahmad et al., 2012; Sagala, 2009; Syah, 2001; Mulyasa, 2009, Katane, 2006).

From four competencies above, the teachers get difficulty to perform professional competence, focused on ability of writing scientific papers (Ahmad et al., 2012; Setyarahajoe, 2013).

Teachers should have competence to develop students' potentials to become faith and piety man for Almighty God, noble, healthy, knowledgeable, capable, creative, independent, and becoming democratic and responsible citizens (Undang-Undang, 2005; Undang-Undang, 2003; Akhyak et al., 2013; Mustafa, 2013).

Simple ownership of information and confirmed capability gives no confirmation to meet the previously mentioned destinations. For this, it is mandatory for an educator to have fitting appreciation of human instinct, its needs, and formative standards in light of urbanization, innovation progressions and industrialisation locally and internationally. Because of immense augmentation in parts and duties, an educator needs to show high request of demonstrable skill inside and outside the classroom. It is inconceivable for an instructor to have all abilities in consummate amalgam however preparing and encounter lead educator towards capability. A capable instructor is inconsistently warm and genial. She has clear vision of the set targets. She executes fastidiously whatever is arranged. Administration of undertaking is done adequately by her inside and outside the classroom. Her ability of introduction of topic can look for consideration of understudies. She is fit for spurring the back benchers (Bhargava et al., 2011).

Competence influences teacher performance to do his/her duty and profession as a teacher, counselor, as well as

class administrator, for example teacher competence included: understanding the knowledge and education foundation; understanding student's psychology; developing curriculum/syllabus; instructional design; implementation the educated and dialogue learning; using learning technologies; evaluating learning outcomes; and developing student's ability to actualize themselves (Sudjana, 2011; Mulyasa, 2009; Liakopoulou, 2011; Syahrudin et al., 2013; Arikunto, 2004; Sukandar, 2003; Kheruniah, 2013).

Learning conditional expectation as above still seems far from the demands. Result of teacher competence examination held by test in 2013 for 30 695 primary school teachers from all primary school teachers in 33 districts/cities in North Sumatra province as many as 85 998 teachers obtained an average value of 38.08 for value scale of 0-100, with the highest value of 82.05 and the lowest at 1.25 (Balitbang Kemdikbud, 2013).

Generally, the low competence of teachers is caused by 2 factors, namely: external and internal. External factors includes: lack of regulation as a district policy to increase teacher professionalism; lack of supervision for teacher competence; no synergy among related lining sector to implement education and training for teacher, starting from planning, implementation, and evaluation; implementation of education and training for teachers not based on the level and type of teacher competence required (Bhargava et al., 2011; Nadeem et al., 2011; Potyrala, et al, 2011).

The internal factors of low teacher competence are caused by lack of teachers' teaching experience; apathy of teachers to make change for the better ones caused of minimal appreciation in reward from government; bad teacher socioeconomic; teacher socio-cultural; lack of teacher self-development; ineffective teacher workload. (Smit, 2014; Khatoon et al., 2011; Copriady, 2014; Mustafa, 2013; Widyoko, 2005; Pillay, 2005; Hinshaw, et al., 2010).

The low teacher competence in Indonesia is caused by no change of teaching pattern from conventional system towards competence system. (Mason, 1998; Lin et al., 2001; Silver et al., 2005; Spilkova, 2001; Sandt, 2007; Skot, 2009; Susan, 2009; Mulyasa, 2009).

The study aims to describe inhibiting factors of pedagogic and professional competencies from primary school teacher, as well as its problems.

1.1 Teacher Competence

Normal for capable instructor is an educator who urges understudies to reflect social reality and engage them (understudies) to actualize the current conditions for their lives. Also, an able instructor is an educator who dependably interfaces with understudies, so they are making and building information and sharing background for each other (Joy, 2013).

Internal factors can inhibit the teacher competence in performing his/her duties as educator (Smith, 1994). A number of internal factors that affects teacher competence is demand of inefficient time; low salary; incooperative students attitude; and lack of support from all parties that impact on teacher performance. While, other external factors are the lack of gender justice, gender differences, transport problems, political instability and improperly political interference (Nadeem et al., 2011).

A teacher worries about the number of teaching load; often involved for non-teaching activities that does not provide sufficient time for preparation in teaching; lack of self-motivation; minimal opportunity for career advancement in the teaching profession; lack of teacher incentives; ineffective management information system; and high ratios of teacher-students. (Nadeem et al., 2011).

Learning organization can build teacher basic competencies and increase their knowledge and skills used to solve teaching problems (Wang et al., 2003; Senge, 1996; Marqued, 1996). The qualities of learning association is an association that can give chances to instructors to learn persistently to enhance their ability, intensity, proficiency, and authoritative greatness. Along these lines, the execution of learning association at school is critical to create educator ability and instruction quality (Ede, 2014).

One of inhibiting factors of teacher competence is lack of teacher education and training. Trained teachers shows significant differences for some competencies, such as: pedagogic, management, and making assessment. All trained teachers are more competent than teachers not yet (Aziz, 2014). This study shows that teacher training programs should be continuous (ongoing) to improve the teacher competence.

Professional development program for teacher has brought significant and positive changes for teacher professional competence (Prebble et al., 2004; Southwell et al., 2010, Aziz, 2014; Spafford et al., 2002; Hussain et al., 2010; Shaikh et al., 2008;). According to them, concise training impacts for little teacher performance, while an inclusive program impacts a great effect on teacher competence and performance.

Generally, teacher pedagogic training impacts a great effect on mastery of the subject matter and the effects of teaching behavior (Norton et al., 2005; Hammond-Darling, 1999; Gibbs, 2004). Developing teacher professional competence means to develop their knowledge, attitudes, skills, aspirations, and behavior, in turn can improve student learning outcomes (Guskey, 2000; Walter et al., 1996; Borko, 1995).

A current investigation of the key abilities required instructors in the light of educational modules changes distributed by UNESCO proposes that educators ought to encourage the learning procedure by making a situation in which it can happen to be compelling. Instructors ought to have the capacity to decide the requirements of every understudy in connection to another learning errand and after that assistance the student. Instructors ought to have the capacity to make the educational modules pertinent to the individual youngster by connecting it with the genuine issues of the student and making the understudy mindful of social orders concerns (Khatoon et al., 2011).

However, there are a few variables, which have assumed a vital part in forming and deciding the target of instruction and the arrangement of training (Khatoon et al., 2011).

Economic Factor: Formal instruction is conceivable where creation surpasses utilization. This will rely on the fruitfulness of the dirt rich mineral stores and legitimate climatic conditions for work where there is a subsistence economy. This is the motivation behind why poorer and immature nations have a base training for their kids while modernly propelled nations keep almost every one of their kids at school and for a more extended time. The instructive procedure is influenced by the efficient status of person.

Social Factors: Instruction mirrors the social example of society. Indeed, even the general social condition in which an instructor moves influence her passionate wellbeing positively or antagonistically in the city the educators lives in. The schools educators and other individuals, she comes into contact with are dominantly suspicious, stressing squabble some irate threatening and slanted to erupt into sudden attacks of wrath the instructor can barely stay safe to their candidly appropriating impact. Diverse social issues additionally leave their impacts on the showing capabilities and can be jump in running easily the learning procedure.

Environmental Factors: the physical condition is likewise extensively intense on its capacity to shading one's wellbeing. An attractive solid and stylishly engaging climate is relieving and soothing. It is subject to advance enthusiastic amicability and adjust in undesirable condition unexpectedly can turn into a wellspring of numerous passionate surprise and unsettling influences. These aggravations turn into a major snag in compelling instructing. On the off chance that nature isn't solid at that point how might we expect showing effectiveness from the educators?

Linguistic Factors: Language is one of the regular factors that aids and impacts development of the instructive arrangement of a nation. By the distinction and conflicts of dialects the showing competency can likewise be influenced. We can state that in optional level instructing is intricate work. Not at all like different callings educating requires synchronous connection with expansive quantities of individuals. Choices must be made rapidly and sensibly. None of days is very comparative as earlier day; consistently they have a ton of chance of new trials and issues.

Generally, the part of instructing has been one of sustaining and building up understudies' potential. Instructors assume an important part in helping youngsters develop (Evers et al., 2004). With a specific end goal to do this they should remain physically and rationally well. Nonetheless, there is evident discord between educators' apparent limits and the desires of their part (Smith et al., 1992) yet; they keep on carrying out their work. This may have suggestions for their physical and mental prosperity and their expert ability as educators.

Instructor prosperity and fitness have been identified with work fulfillment and studies show that those educators who are less fulfilled will probably leave instructing. For instance, discovered factors, for example, stretch, burnout, work over-burden, and employment disappointment add to instructor wearing down while factors, for example, regulatory support, reasonable part desires, and diminished working environment push add to educators' expectation to remain in instructing (Singh et al., 1996).

One basic to instructor duty is the school central's help (Sarros et al., 1992; Taylor et al., 1995; Xin et al., 1999). Principals assume a critical part in controlling the heading of their school, which requires managing the everyday business of the school incorporating matters related with the two understudies and educators. As to principals' help, (Singh et al., 1996) found that principals who gave input, consolation and utilized participatory basic leadership cultivated responsibility inside their staff. It is additionally clear that an immediate adapting system embraced by educators to oversee pressure is looking for help from school principals (Howard et al., 2002). The setting gave by organization impacts association among staff, instructors' sentiments of being esteemed for their

work and their feeling of contribution in the school (Dear Hammond, 1995). Number of years of showing background is additionally regularly identified with work fulfillment. Longer showing knowledge is related with larger amounts of employment fulfillment (Taylor et al., 1995). In any case, in opposition to this, (Xin et al., 1999) report that educators who have shown longer are less fulfilled, consequently proceeding with the open deliberation and empowering further research.

Employment fulfillment and showing ability are imperative factors as to instructors' proceeding in the calling. Studies, for instance (Certo et al., 2002), demonstrate that activity fulfillment in educating is related with perspectives, for example, work environment conditions, managerial control, and hierarchical culture. It incorporates how instructors feel about their own capabilities, for example, their accomplishment in showing understudies and for the most part how they feel about coming to function ((Xin et al., 1999).

1.1.1 Pedagogic Competence

Pedagogic competence has been considered able to develop teacher behavior and capacity as minimum professional standards based on the existing rules to enhance the role of the teaching profession (Suciu, 2001; Gliga, 2002).

Pedagogic competence reflects teacher competence in terms of collaboration, comprehensive view, and contribute to the pedagogic development to solve the problem and pedagogical tasks by applying knowledge, professional and life experience, values and talents in a creative way, so that the results are precise and effective (Ryegard, 2010).

Nevertheless, hypothetical points of view, strategies and expert practices, globally, appear to demonstrate joining on a couple of, extremely expansive instructor standards or models, which can involve a majority of instructive points and practices: the educator as instructional director; minding individual; master student; social and urban individual (Altet et al., 1996; Conway et al., 2010; Hansen, 2008; Seifert, 1999; Sockett, 2008).

In scholarly writing and level headed discussion, the overwhelming educator worldview, all inclusive, is by all accounts the clinician-proficient model (Dear Hammond et al., 2005; Shulman, 1987, 2005; Sockett, 2008), which systematizes the bases of expert information for training, and claims to be founded on examine and the common viewpoints of specialists and instruction experts. The model, which takes after therapeutic polished skill, portrays the instructor as an intelligent professional, who effectively does inquire about and fundamentally sends logical information to educate rehearse. Despite the fact that few references to key highlights of such a worldview can be followed in most instructor training projects of educator instruction suppliers, and additionally in official national reports in regards to the abilities expected of instructors, the hole amongst hypothesis and practice, amongst points and results frequently ends up being critical in the particular socio-social settings of educators' expert exercises.

1.1.2 Professional Competence

Professional competence is the capacity of educators to ace the learning in science, innovation, and additionally expressions and social identified with instructor showing subject, at any rate included of: (a) topic comprehensively and profoundly as per the gauges of the program content unit of instructive subjects, or potentially a gathering of subjects that will be of instructing; and (b) the ideas and techniques for the science train, innovation, or the important craftsmanship, which reasonably sound with a shade or instructive unit program, subjects or potentially gatherings of subjects that will be of educating (Undang-Undang, 2005).

Proficient fitness is as the capacity of instructors to ace subjects and additionally how to show it to the understudies fittingly (Badan Standar Nasional Pendidikan, 2009; Hung et al., 2005; Rusman, 2010).

Proficient fitness is comprehended as an intricate capacity or capabilities of execution calling that includes the learning, aptitudes, dispositions, values, individual characteristics (Spilková, 2004). Turning into a capable educator isn't sufficient just to take after the classes and preparing or passing calling endorsement examination. Educator ability develops from an extensive variety of experience that includes the entire instructor identity.

One approach to enhance the nature of training is through instructor proficient fitness (Betoret, 2006). It influences the estimation of educator ability, conduct, correspondence, purposes, and lessons, and supporting educational modules for proficient improvement (Selvi, 2010). The part of instructor as expert educator depends on their instructive foundation and experience (Pantic, 2011; Syahrudin et al., 2013).

Instructor proficient ability can be kept up and created through starting training and persistent preparing (Whitty 1996). In especially, inquire about has demonstrated that attributes, for example, adaptability as far as understudy execution, comical inclination, feeling of equity, tolerance, enthusiasm, innovativeness, tend to the understudies,

each of the ones add to the educator viability (Malikow, 2005; Harslett et al., 2000; Liakopoulou, 2011).

2. Method

The study used a descriptive approach taken place in 4 districts/cities, namely: Pematangsiantar, Labuhanbatu Utara, Humbang Hasundutan and Nias Barat, as the representative of the 33 districts/cities in North Sumatra Province, Indonesia. The choice of location is based on the level of Human Development Index (HDI) districts/cities in North Sumatra with the level categories of: "high, medium, less, much less", so assumed that the inhibiting factors of teacher competence from four districts/cities can represent all primary school teachers in North Sumatra.

Primary data is obtained through interviews on focus group discussion, and secondary data obtained through document. Research informants are teachers, principals, head of education department, head of district staffing agency, and head of Agency of District Planning and Development. The number of informants is tailored to research need. Data is analyzed descriptively.

3. Result

Based on interviews result on focus group discussion and document study, found 4 inhibiting factors of teacher pedagogic and professional competencies from primary school teacher in North Sumatra, including:

First, inadequate school infrastructure, for example: science and language laboratories; internet facilities; computers; library; reading materials/books, instructional media, and even though some schools in rural area or far from urban area have no electricity, particularly in Nias Barat District.

The lack of school infrastructure does not only have a negative impact on students, but also make it difficult for teachers to develop their competence, especially professional and pedagogical competence.

The teachers do teaching and learning process in the classroom by only utilizing the existing school facilities. For example: teachers must use no change handbook for over years, even though the book is outdated and irrelevant materials to the current issue.

Teachers get difficulty to access internet to search for teaching materials of subjects, because the schools do not have internet facilities or schools has no electricity. On the other hand, teachers are also difficult to interact by online with other fellow teachers, and students. Limited internet facilities also have an impact on teacher access to submit student examination value by online to the Education Department as a form of their responsibilities and competencies.

Teachers get difficulty to develop their competencies to teach science materials when requiring experiment in lab caused of limited science laboratory, so the learning process only takes place in the form of face-to-face in the classroom that students can be boring. This condition is no different when teachers teach subjects of Indonesia and English Languages. Limited laboratory facilities inhibit teacher competence. For example: when English Language learning process, teacher must prepare and train himself/herself for conversations and pronunciation. When Indonesia Language learning process, one of subjects materials taught is "drama", which should be practiced together with the students, but because of limited lab, then learning process is only done by dialogue in the classroom.

Limited instructional media impacts on teacher pedagogic competence. Teachers get difficulty to explain the subject matter without learning media, so that students do not understand what the teacher explains. Teachers cannot demonstrate subject materials concretely to help students understand them, especially primary school students generally only be able to accept concrete things. Primary school students still think concretely. Providing an understanding for subject materials and teaching them clearly to students are teacher pedagogic competencies.

Agency of District Planning and Development as an institution which plans district development, including to education development states that lack of educational infrastructure is caused of limited district budgets, which is not only in education, but also in other sectors. It is always allocated a budget for the education sector each year based on the proposal of Education Department, but because of limited budget, then funding for school infrastructure cannot be done evenly in every school each year.

Through on focus group discussion, finally Agency of District Planning and Development knows the fundamental problems related to teachers difficulty to develop their competencies, and promises to prioritize isolated school infrastructure away from urban areas in rural areas, for example: schools have no electricity as a basic necessities for teachers to support the improvement of their pedagogical and professional competencies.

On the other hand, Education Department justifies the lack of school infrastructure as complaints of almost every

teacher to develop his/her competence, even though to be public complaints (students' parents) informed through principal. Inequalities school infrastructure is also caused of political factors to get the funding. Some principles are very closed to government official, then almost every year the schools receive funding for infrastructure by lobbying to several officials.

Second, the teacher educational qualification is low. Based on document data, teacher education qualification can be seen as follows:

Table 1. Education qualification of primary school teacher

No.	Education qualification	Total (persons)
1.	$\leq$ Secondary school	23
2.	High school	11.470
3.	Diploma	6.794
4.	$\geq$ Graduate degree	12.408
	Total	30.695

Based on Table 1 above can be explained that the number of teachers who have undergraduate degree is 18 287 teachers or 59.58%, even more than the number of teachers who have graduate degree with the value of 40.42%. Teachers who have bachelor is not feasible to teach and educate.

Conditions of low teacher education qualification above certainly affect the poor performance of teachers, both pedagogical and professional competence, as well as one of inhibits for teacher competencies development. Teachers who have graduate degree are more qualified competence, both of pedagogic and professional. Two things can be done to improve the competence of teachers, namely: sustainable education and training of teacher competence.

Results of interviews with a number of teachers obtained information that to improve their competence, teachers need sustainable education and training. The problem is the cost to pursue higher education is not little. Teachers are burdened on the tuition fee.

The district government through the Education Department and/or District Staffing Agency has allocated higher education expenses every year, including the cost of sustainable education for teachers, both of graduate and postgraduate degrees. However, the opportunity to earn higher education scholarship, the quota is very limited. No all teachers who continue their education have the same chance to get a scholarship.

Results of interviews obtained information that some teachers do not even know the scholarship information referred. Further scholarship disclosure information is not published openly to the public audience (teachers) to be able to compete professionally.

Furthermore, district government policy for higher education scholarship for teachers is not based on the needs of the total teachers who follow more education. The findings of inequality opportunities for teachers to gain higher education scholarships, not only caused of inadequate education budget, but no transparence budget from Education Department and/or District Staffing Agency in selecting and determining eligible teachers for scholarship.

Third, the implementation of teacher training is ineffective. Implementation of teacher training held by Ministry of Education by collaborating with district governments has not been classified based on level of teacher competence. Based on documents data, teachers have got the distribution of diverse competence value. Here are the results of teacher competency based on competence levels.

Table 2. Teacher competence level

Value classification	Value standard	Total of teacher (persons)	Percentage (%)
Very high	90 -100	-	-
High	80 – 89	5	0,018
moderate	65 - 79	256	0,91
low	55 - 64	1701	6,07
very low	0 – 54	26.083	93,00
	Total	28.045	

The value of teacher competency in Table 2 is an average value of pedagogic and professional competencies. All teachers are given the same training materials, though these teachers have varied competence level as shown in Table 2, for example: the category level is “very low, low, medium, and high”. On going implementation, the widyaswara gives the same training approach to the teachers who have diverse competence level. The diversity of teacher competence level shows early knowledge differences possessed by each teacher before training treatment that impact on differences in the ability of teachers to accept and understand the training materials.

Teachers who have got “very low and low” competence levels cannot keep training optimally when compared with teachers who have higher competence level on. Implementation of teacher training by equal treatment for teachers who have diverse competence levels, including to the similarity of material, method of implementation, time required, strategy approach, as well as system of teacher evaluation is certainly less effective to develop and enhance the teacher pedagogic and professional competencies.

In addition, the implementation of teacher training is not based on the urgency of the need for the development or improvement of competence. For example: a teacher needs training on the use of technology in process of teaching and learning, but the training materials provided by widyaswara different to what expected by teachers.

Experience of other teachers is what the teacher get difficulty to provide an understanding of teaching materials for students. Understanding the characteristics of students to what taught by teachers is one of pedagogic competencies to be improved through training. However, in practice that the training material provided by widyaswara is different from what required by teachers indeed.

Training materials, methods of implementation, required time, treatment approach, as well as system of teacher evaluation, all of which have been conceived and designed by Ministry of Education without considering the level and ability of competence for each teacher in the district.

Education Department confirms that the implementation of teacher training has not been classified based on the level and urgency of teacher competence needed. There is not map of teacher competence to determine the level and urgency intended. Education Department will prioritize for mapping of teacher competence for the next programs and activities, in coordination with Agency of District Planning and Development.

Fourth, the lack of government attention for the teacher. Government attention for professional teachers compared with teachers who teach only to fulfill his/her duty as a teacher is almost no difference. The teachers state that the reward is something important to motivate them to teach and educate professionally.

Despite of the duty of teaching and educating students is an obligation for all teachers, but not all teachers can perform the duties and obligations based on their conscience. Every teacher has different work ethos. The differences should not contradict with the attention difference from government for each teacher depending to the level of their professionalism. The impact of government injustice for teacher competence is to whom teachers do not carry out/arrange learning devices such as: delays in the preparation of lesson plans, syllabus, and teacher work program.

Reward as the school policy is ideal and strategic related to the principles of school regulation to stimulate teachers in the framework of improving performance and developing the teacher potential. The reward system is intended as a tribute obtained through hard work, either through the groups and individuals who produce the accomplishment of teacher performance. The principal policy to improve the quality of teachers and the continuity of the learning process by giving an reward for an exemplary teacher based on high work ethos. Reward is something given to someone caused of getting desired achievement by following determined school rules.

Based on interviews with teachers and principals is obtained information that the reward for the teacher performance as a policy for increasing the teacher professionalism needs to consider the teacher ability based on the value of pedagogic and professional competencies. By giving positive reward for teachers, they always try to enhance their performance achievement. In addition, the reward system is very considerable influence on the teaching profession to do something positive and progressive.

4. Discussion

The research finding is relevant with findings of previous studies. The lack of school infrastructure facilities as an inhibiting factor of pedagogic and professional competence for teachers (Watzke, 2007). For example: internet facilities, teachers have to know about technology, so that modern technology can be used by teachers for the benefit of learners in the learning process, although technology knowledge is not the main factor that should be possessed by the teacher as a basic competence (Bhargava et al., 2011). The use of technology in the learning process is very difficult to do caused of the lack of school facilities.

Educators require something other than knowing how to work PC or a specific programming (Potyrala et al., 2011). ICT encourages educators to be innovative in getting data as a type of academic and expert skills. Educators should be persuaded about the estimation of ICT devices to help and improve the learning procedure to exhibit the esteem included instrument expected (Kiridis et al., 2006; Edwards et al., 1999; Peiter et al., 2003). Instructors additionally require academic substance information about the part of ICT devices in defining learning goals (Louka, 2007).

ICT is exceptionally valuable and supportive in creating a speedy effect on the learning of English. The majority of the high and elementary teachers who have been organized by the area government are extremely mindful of the utilization of the web and PCs and related programming capability in English lessons (Mahmood, 2014). On the off chance that the instructors are given and further prepared, they can show English adequately. Amid the study, most schools from country zone don't have PC labs for youngsters, notwithstanding for understudies who are learning PC lessons, they should join the private classes to run their course. Most instructors likewise says that there ought to be an exceptional class of English consistently in the PC lab for understudies who are learning English. The reason is that understudies will have the capacity to use however many words as could be expected under the circumstances and get the opportunity to see equivalent words, antonyms, and expressions that contrast just by a couple of snaps on their PC.

Successful educating happens when instructors have the information and identity. It is on the grounds that the science idea is demonstrated through perception and examination of analysis in the science lab (Copriady, 2014). Tragically, Science instructors still have a low competency level in directing functional or logical trials. There are mechanical and electrical dangers in leading science tests, it is likewise identified with understudies' reasoning procedure when directing an examination. Therefore, in all actuality, educators don't give the possibility for understudies to think, in certainty most instructors neglect understudies' reasoning exercises.

Another hindering component of instructive and expert ability for educators are poor state of school structures; absence of library offices, absence of educating and learning materials (Nadeem et al., 2011). This examination is centered around female instructors, particularly those living in rustic zones, so transportation access from home to class is additionally a repress of educator ability. Transport is a noteworthy issue for ladies to movement long separations for 1 or 2 hours from home to class, particularly in country territories. This exploration isn't just worried about transportation, yet in addition different offices, for instance: the absence of showing helps and PC research centers.

Notwithstanding the constrained offices, the instructors should likewise be prepared to utilize the innovation without a doubt and not simply hypothetical information, but rather educators must be prepared to apply it for all intents and purposes in the classroom. In Indonesia, most prepared educators are not genuine in getting learning (Mustafa, 2013). This is an antagonistic impact for instructing calling. Preparing educator has been situated as an imperative factor for enhancing the instructor execution capacity (Kamis, 2013).

Educators are exceptionally prescribed to be prepared related for the learning procedure as a type of instructive capability for instructors, for example, the administration of understudies conduct, spurring understudies to learn, instruct understudies to think fundamentally and innovatively, conferencing amongst educators and guardians, and show understudies for critical thinking and abilities deciding (Crump et al., 2010).

Some farming instruction specialists (Layfield et al., 2002; Garton et al., 1997) have demonstrated that to oversee understudy conduct issues isn't a noteworthy concern, however different examinations (Joerger, 2002; Duncan et al., 2005) demonstrate that the instructors require the preparation of showing skills (administration of understudies conduct and inspiration, and basic reasoning system) as a type of academic and expert capabilities through expert advancement programs. (Crump, 2010). These discoveries bolster the consequences of research by the creators that the usage of instructor preparing must be identified with the earnestness of educator ability required.

The nature of educators is an imperative issue in training. Capability is an essential part to take a gander at the nature of instructors (Sweetheart et al., 2000). Qualified educators should grasp the vision and mission of learning. Showing part has turned out to be one of educator obligations to build up understudies' capability to enable them to grow up (Evers et al., 2004). Instructor endeavors ensnares to government's consideration regarding educator welfare (Pillay et al., 2005).

In a related report for instructor welfare for 123 educators in Australia found that the instructor capability is expanded altogether when government gives consideration for their welfare (Goddard et al., 2003), one of them through the arrangement of prizes for outstandings instructors, or generally ability will be declined when the obligation of expert instructor more than they get. Further, educators endeavors ought to be practically identical

to compensate instructors get (Pillay et al., 2005).

5. Conclusion

In accordance with the discussion, it can be concluded that the competences of the primary teachers were influenced by four factors. They were: inadequate school infrastructure; teacher educational qualification was low; implementation of teacher training was ineffective; and lack of government attention in reward for outstanding teachers. Therefore, the infrastructure in school should be developed appropriately and matched with the teachers and students' needs. Furthermore, the teachers should be given a chance to improve their educational qualification such as professional course from other countries or further study on their expertise. Besides that, the teachers should be controlled and monitored on their teaching and learning process because they are required to implement the knowledge from training given to make sure the teaching and learning is effective and efficient. Then finally, the outstanding teachers should be given a reward so the other teachers will be motivated to improve their competence and professionalism.

References

- Ahmad, & Setyaningsih. (2012). Teacher professionalism: A study on teachers' professional and pedagogic competence at junior, senior, and vocational high schools in Banyumas Regency, Central Java, Indonesia. In *Sosiohumanika, Jurnal Pendidikan Sain Sosial dan Kemanusiaan*, 5(1).
- Akhyak, Idrus, M., & Bakar, Y. A. (2013). Implementation of teachers pedagogy competence to optimizing learners development in public primary school in Indonesia. *International Journal of Education and Research*, 1(9).
- Akinbobola, A. O. (2004). Effects of co-operative learning strategies on academic performance of students in physics. *Journal of Research in Education*, 1(1), 71-75.
- Altet, M., Chartier, E., Paquay, L., & Perrenoud, P. (1996). *Former des enseignants professionnels. Quelles strategies? Quelles compétences?* Paris: De Boeck & Larcier.
- Arikunto, S. (2004). *Dasar-dasar supervise*. Jakarta: Rineka Cipta.
- Aziz, F., & Akhtar, M. M. S. (2014). Impact of training on teachers competencies at higher education level in Pakistan. *Journal of Arts, Science & Commerce*, 5(1).
- Balitbang. (2013). *Uji kompetesni guru*. Jakarta: Kemdikbud, RI.
- Betoret, F. D. (2006). Stressors, self-efficacy, coping resources and burnout among secondary school teachers in Spain. *Educational Psychology*, 26, 519-539. <https://doi.org/10.1080/01443410500342492>
- Bhargava, A., & Pathy, M. (2011). Perception of student teachers about teaching competencies. *American International Journal of Contemporary Research*, 1(1).
- Borko, H., & Mayfield, V. (1995). The roles of the cooperating teacher and university supervisor in leaning to teach. *Teaching and Teacher Education*, 11(5), 501-518. [https://doi.org/10.1016/0742-051X\(95\)00008-8](https://doi.org/10.1016/0742-051X(95)00008-8)
- Bovina, K. (2002) *Teachers moral the impact of teaching experience*. Retrieved from data base ED (467760).
- BSNP. (2006). *Peraturan pemerintah nomor 19 tahun 2005 tentang standar nasional pendidikan*. Jakarta: Kemdikbud.
- Certo, J. L., & Fox, J. E. (2002). Retaining quality teachers. *The High School Journal*, 86(1), 57- 75. In Hitendra P., Richard G., & Lynn W. (2005). Well-being, burnout and competence: implications for teachers. *Australian Journal of Teacher Education*, 30(2).
- Conway, P. F., & Clark, C. M. (2003). The journey inward and outward: A re-examination of Fuller's concern-based model of teacher development. *Teaching and Teacher Education*, 19, 465-82. [https://doi.org/10.1016/S0742-051X\(03\)00046-5](https://doi.org/10.1016/S0742-051X(03)00046-5)
- Corpriady, J., (2014). Teachers competence in the teaching and learning of chemistry practical. *Mediterranean Journal of Social Sciences*, 5(8).
- Crump, A., Ricketts, J. C., & Duncan, D. W. (2010). Cooperating teachers' perceptions of pedagogical importance, competence, and programmatic need: a frontline assessment of agricultural student teachers. *Online Journal of Workforce Education and Development*, 4(4).
- Darling-Hammond, L. (1995). Policy for restructuring. In A. Lieberman (Ed.), *The work of restructuring schools: Building from the ground up* (pp. 157-175). New York: Teachers College Press.

- Darling-Hammond, L., & Bransford, J. (Eds.) (2005). Preparing teachers for a changing world. *Report of the Committee on Teacher Education of the National Academy of Education*. San Francisco: Jossey-Bass.
- Darling-Hammond, L., & Snyder, J. (2000). Authentic assessment of teaching in context. *Teaching and Teacher Education*, 16, 523-545. [https://doi.org/10.1016/S0742-051X\(00\)00015-9](https://doi.org/10.1016/S0742-051X(00)00015-9)
- Duncan, D. W., Ricketts, J. C., Peake, J. B., & Uessler, J. (2005). Teacher preparation and in-service needs of Georgia agriculture teachers [Electronic version]. *Journal of Southern Agricultural Education Research*, 55(1), 46-59.
- Ede, M. N., & Daud, K. B. (2014). The fifth discipline and teachers competence. *International Journal for Innovation Education and Research*, 2(10).
- Edwards, M. C., & Briers, G. E. (1999). Assessing the in-service needs of entry-phase agriculture teachers in Texas: A discrepancy model versus direct assessment [Electronic version]. *Journal of Agricultural Education*, 40(3), 40-49. <https://doi.org/10.5032/jae.1999.03040>
- Evers, W. J., Tomic, W., & Brouwers, A. (2004). Burnout among teachers: Students' and teachers' perceptions compared. *School Psychology International*, 25(2), 131-148. <https://doi.org/10.1177/0143034304043670>
- Gibbs, G., & Coffey, M. (2004). The impact of training of university teachers on their teaching skills, their approach to teaching and the approach to learning of their students. *Active Learning in Higher Education*, 5, 87-100. <https://doi.org/10.1177/0143034304043670>
- Gliga, L. (2002). *Standarde profesionale pentru profesia didactică*. București: M.E.C.
- Goddard, R., & O'Brien, P. (2003). Beginning teacher perceptions of their work, well-being and intention to leave. *Asia Pacific Journal of Teacher Education and Development*. 6(2).
- Guskey, T. R. (2000). *Evaluating professional development*. London: Corwin Press, Inc.
- Hamilton-Ekeke, J.-T. (2013). Conceptual framework of teachers' competence in relation to students' academic achievement. *International Journal of Networks and Systems*, 2(3), 15-20.
- Hammond-Darling, L. (1999). *A license to teach*. Francisco: Jossey-Bass Publisher.
- Hansen, D. T. (2008a). Values and purpose in teacher education. In M. Cochran-Smith, S. Feiman-Nemser, & D. McIntyre, (Eds.). *Handbook of Research on Teacher Education. Enduring questions in changing contexts*. New York/Abingdon: Routledge/Taylor & Francis.
- Harslett, M. (2000). Teacher perceptions of the characteristics of effective teachers of aboriginal middle school students. *The Australian Journal of Teacher Education*, 25(2). <https://doi.org/10.14221/ajte.2000v25n2.4>
- Hinshaw, K. J., Richter, L. T., & Kramer, G. A. (2010). Stress, burnout, and renewal activities of dental hygiene education administrators in Six US Midwestern States. *Journal of Dental Education*, 74(3), 235-250.
- Howard, S., & Johnson, B. (2002). Resilient teachers: Resisting stress and burnout. Proceedings of the Australian Association for Research in Education Conference, Problematic Futures: Education Research in an Era of Uncertainty, 1-5 December 2002, electronic papers. In P. Hitendra, G. Richard. & W. Lynn (2005). Well-being, burnout and competence: implications for teachers. *Australian Journal of Teacher Education*, 30(2).
- Hung, D., Tan, S. C., Hedberg, J. G., & Koh, T. S. (2005). A framework for fostering a community of practice: scaffolding learners through an evolving continuum. *British Journal of Educational Technology*, 36(2), 159-176. <https://doi.org/10.1111/j.1467-8535.2005.00450.x>
- Husain, M. A., Jumani, M. B., Sultama, M., & Iqbal, M. Z. (2010). Exploring perception and practices about Information and communication technologies in business English teaching in Pakistan world academy of science. *Engineering and Technology*, 4(1), 100-105.
- Joerger, R. M. (2002). A comparison of the in-service education needs of two cohorts of beginning Minnesota agricultural education teachers. *Journal of Agricultural Education*, 43(3), 11-24. <https://doi.org/10.5032/jae.2002.03011>
- Kamis, R. A., Noermijati, & Susilowati, C. (2013). The Influence of organizational commitment and individual competence on teacher performance: In the learning organization perspective: A study on elementary school teachers in Ternate City. *International Journal of Business and Behavioral Sciences*, 3(8).
- Katane, & Selvi. (2006). Teacher competence and further education as priorities for sustainable development of

- rural school in Latvia. *Journal of Teacher Education and Training*, 6, 41-59.
- Keputusan menteri pendidikan nasional Republik Indonesia nomor 045/u/2002 tentang kurikulum inti pendidikan tinggi. Jakarta: Kemdikbud, RI.
- Khatoon, H., Azeem, F., & Akhtar, S. H. (2011). The impact of different factors on teaching competencies at secondary level in Pakistan. *Interdisciplinary Journal of Contemporary Research in Business*, 3(5).
- Kheruniah, A. E., (2013). A teacher personality competence contribution to a student study motivation and discipline to fiqh lesson. *International Journal of Scientific & Technology Research*, 2(2).
- Kiridis, A., Drossos, V., & Tsakiridou, H. (2006). Teachers facing information and communication technology (ICT): The case of Greece. *Journal of Technology and Teacher Education*, 14(1), 75-96.
- Layfield, K. D., & Dobbins, T. R. (2002). In-service needs and perceived competencies of South Carolina agricultural educators [Electronic version]. *Journal of Agricultural Education*, 43(4), 46-55. <https://doi.org/10.5032/jae.2002.04046>
- Liakopoulou, M. (2011). The professional competences of teachers: which qualities, attitudes, skills and knowledge contribute to a teacher's effectiveness? *International Journal of Humanities and Social Science*, 1(21).
- Lin, F. I., & Cooney, T. J. (2001). *Making sense of mathematics teacher education*. Dordrecht: Kluwer Academic Publishers. <https://doi.org/10.1007/978-94-010-0828-0>
- Louka, I., & Constantinou, C. (2007). The integration of ICT tools in education as an example of the interplay between technology and society. In Constantinou, Zacharia, & Papaevripidou (Eds.), *Computer Based learning in Science*. Conference Proceedings. Nicosia: University of Cyprus.
- Mahmood, Q., Iqbal, M. J., Nadeem, M. W., Javad, M. A., & Hassan M. Ul. (2014). Perceptions of English teachers towards teaching English through information & communication technology in Pakistan. *Bulletin of Business and Economics*, 3(3), 150-154.
- Malikow, M. (2005). Effective teacher study. *National Forum of Teacher Education - Journal Electronic*, 16(3). Retrieved from <http://www.nationalforum.com/archives.htm>
- Marquardt, M. J. (1996). *Building the learning organizations: A system approach quantum Improvement and global success*. New York: McGraw-Hil Book Company.
- Mason, J. (1998). Enabling teachers to be real teacher: Necessary levels of awareness and structure of attention. *Journal of Mathematics Teacher Education*, 1, 243-267. <https://doi.org/10.1023/A:1009973717476>
- Mulyasa. (2009). *Implementasi kurikulum tingkat satuan pendidikan kemandirian guru dan kepala sekolah* (1st ed.). Jakarta: Bumi Aksara.
- Mustafa, M. N. (2013). Professional competence differences among high school teachers in Indonesia. *International Education Studies*, 6(9). <https://doi.org/10.5539/ies.v6n9p83>
- Nadeem, M., Rana, M. S., Lone, A. H., Maqbool, S., Naz, K., & Ali, A. (2011). *International Journal of Business and Social Science*, 2(19).
- Norton, L., Richardson, J. T. E., Hartley, J., Newstead, S., & Mayes, J. (2005). Teachers' beliefs and intentions concerning teaching in higher education. *Higher Education*, 50, 531-571. <https://doi.org/10.1007/s10734-004-6363-z>
- Pantic, N., Wubbels, T. & Mainhard, T. (2011). Teacher competence as a basis for teacher education-comparing views of teachers and teacher educators in five Western Balkan countries. *Comparative Education Review*, 55(2), 165-188. <https://doi.org/10.1086/657154>
- Peiter, R. L., Terry, R., Jr., & Cartmell, D. D. II. (2003). Mentoring first year agricultural education teachers. *Journal of Southern Agricultural Education Research*, 53(1), 171-181.
- Peraturan pemerintah no. 74 tahun 2008 tentang guru. Jakarta: Kemdikbud.
- Peraturan pemerintah nomor 19 tahun 2005 tentang standar nasional pendidikan. Jakarta: Kemdikbud.
- Pillay, H., Goddard, R., & Wilss, L. (2005). Well-being, burnout and competence: Implications for teachers. *Australian Journal of Teacher Education*, 30(2). <https://doi.org/10.14221/ajte.2005v30n2.3>
- Potyrala, K., Walosik, A., & Rzepka, A. (2011). New competence of biology teacher in the face of social and cultural changes. *Journal of Educational Science*. ISSN 1308-8971.

- Prebble, T., Margraves, H., Leach, L., Naidoo, K., Suddaby, G., & Zepke, N. (2004). *Impact of student support services and academic development programmes on student outcomes in undergraduate tertiary study a best evidence synthesis*. Wellington, NZ: Report to the Ministry of Education.
- Rusman. (2010). *Model-model pembelajaran*. Bandung: PT. Rajagrafindo Persada.
- Ryegard, A. (2010). *A Swedish perspective on pedagogical competence*. Uppsala: Uppsala University.
- Sagala, S. (2009). *Administrasi pendidikan kontemporer*. Bandung: Alfabeta.
- Sandt, S. (2007). Research framework on mathematics teacher behaviour: Koehler and grouws' framework revisited. *Eurasia Journal of Mathematics, Science & Technology Education*, 3(4), 343-350. <https://doi.org/10.12973/ejmste/75413>
- Sarros, J. C., & Sarros, A. M. (1992). Social support and teacher burnout. *Journal of Educational Administration*, 30(1), 55-70. <https://doi.org/10.1108/09578239210008826>
- Seifert, K. L. (1999). *Reflective thinking and professional development*. Boston: Houghton Mifflin.
- Selvi, K. (2010). Teachers' Competencies Culturass. *International Journal of Philosophy of Culture and Axiology*, 7(1). <https://doi.org/10.5840/cultura20107133>
- Senge, M. P. (1996). *Disiplin kelima, seni dan praktek dari organisasi pembelajar*. Jakarta: Binarupa Aksara.
- Setyarahajoe, R. I. (2013). The competence of teacher as human recouses at senior high school of Kediri City, East Java Province. *Academia Research International*, 4(2), 252-261.
- Shaikh, F. M., Goopang, N. A. & Junejo, M. A. (2008). *Impact of training and development on the performance of university teachers, a case study in Pakistan*. Paper presented at second international conference on Assessing Quality in Higher Education, 1st – 3rd December 2008, Lahore – Pakistan.
- Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review*, 57(1), 1-22. <https://doi.org/10.17763/haer.57.1.j463w79r56455411>
- Shulman, L. S. (2005). The signature pedagogies of the professions of law, medicine, engineering, and the clergy: Potential lessons for the education of teachers. Talk at the Math Science Partnerships workshop: Teacher Education for effective teaching and learning. Irvine, CA. In. Caena, F. (2011). Literature review teachers' core competences: requirements and development. *Education and training 2020 thematic working group: Professional development of teachers*.
- Silver, E., Mills, V., Castro, A., Ghousseini, H., & Stylianides, G. (2005). Complementary approaches to mathematics teacher professional development: integrating case analysis and lesson study in the bifocal project. In: Icmi study 15: *The Professional Education and Development of Teachers of Mathematics*. Retrieved from http://stwww.weizmann.ac.il/gmath/icmi/log_in.html.
- Singh, K., & Billingsley, B. S. (1996). Intent to stay in teaching. *Remedial & Special Education*, 17(1), 37-48. <https://doi.org/10.1177/074193259601700105>
- Skot, J. (2009). Contextualising the notion of belief enactment. *Journal Math Teacher Educ*, 12, 27-46. <https://doi.org/10.1007/s10857-008-9093-9>
- Smit, R. (2014). Individual differences in beginning teachers' competencies – A latent growth curve model based on video data. *Journal for Educational Research Online*, 6(2), 21–43.
- Smith, J. K., & Smith, L. G. (1994). *Education today the foundations of a profession*. St.Martin's press, Inc.
- Smith, M., & Bourke, S. (1992). Teacher stress: Examining a model based on context, workload, and satisfaction. *Teaching and Teacher Education*, 8(1), 31-46. [https://doi.org/10.1016/0742-051X\(92\)90038-5](https://doi.org/10.1016/0742-051X(92)90038-5)
- Socket, H. (2008). The moral and epistemic purposes of teacher education. In M. Cochran-Smith, S. Feiman-Nemser, & D. Mc Intyre (Eds.). *Handbook of Research on Teacher Education. Enduring questions in changing contexts*. New York/Abingdon: Routledge/ Taylor & Francis.
- Southwell, D., & Morgan, W. (2010). *Leadership and the impact of academic staff development and leadership development on student learning outcomes in higher education: A review of the literature a report for the Australian Learning and Teaching Council (ALTC)*.
- Spafford, Jacob, H., & Goody, A. (2002). Are teaching workshops worthwhile? In A. Goody, & D. Ingram (Eds.), *Spheres of influence: Ventures and visions in educational development*. Perth: The University of Western Australia. Accessed December, 2015 from <http://www.csd.uwa.edu.au/ICED2002/publication/>

- Spilkova, V. (2001). Professional development of teachers and student teacher through reflection of practice. *The New Hampshire Journal of Education*, 4, 9–14.
- Spilková, V. a kol. (2004). *Současné proměny vzdělávání učitelů*. Brno: Paido.
- Suciu, A. I., & Mata, L. (2011). Pedagogical competences–The key to efficient education. *International Online Journal of Educational Sciences*, 3(2), 411-423.
- Sudjana, N. (2011). *Dasar-dasar proses belajar mengajar*. Bandung: Sinar Baru Algesindo.
- Sukandar. (2003). Pengaruh kompetensi profesional guru dan iklim organisasi terhadap kinerja guru. *Tesis SPS UPI Bandung*.
- Susan, S. (2009). A longitudinal study of effects of a developmental teacher preparation program on elementary prospective teacher's mathematics beliefs. *Journal Math Teacher Educ*, 12, 47–66. <https://doi.org/10.1007/s10857-008-9092-x>
- Syah, M. (2001). *Psikologi pendidikan suatu pendekatan baru*. Bandung: Rosdakarya.
- Syahrudin, Ernawati, Rahman, M. A. B. A., & Sihes, A. J. B. (2013). The role of teachers' professional competence in implementing school based management: Study analisys at secondary school in Pare-Pare city of South Sulawesi Province-Indonesia. *International Journal of Evaluation and Research in Education (IJERE)*, 2(3).
- Undang-undang nomor 14 tahun 2005 tentang guru dan dosen. Jakarta: Kemdikbud, RI.
- Undang-undang nomor 20 tahun 2003 tentang sistem pendidikan nasional. Bandung: Citra Umbara.
- Walter, J. M., Wilkinson, M., & Yarrow, A. (1996). Facilitating professional development through the study of supervision and instructional change. *British Journal of In-service Education*, 22(1), 41-54. <https://doi.org/10.1080/0305763960220105>
- Wang, Y., dan H. Lo. (2003). Customer-focused performance and the dynamic model for competences building and leveraging: A resource-based view. *Journal of Management Development*, 22(6). <https://doi.org/10.1108/02621710310478486>
- Watzke, J. L. (2007). Longitudinal research on beginning teacher development: Complexity as a challenge to concerns-based stage theory. *Teaching and Teacher Education*, 23(1), 106–122. <https://doi.org/10.1016/j.tate.2006.04.001>
- Whitty, G. (1996). Professional competences and professional characteristics: the Northern Ireland approach to the reform of teacher education. In D. Hustler & D. McIntyre (Eds.), *Developing Competent Teachers: Approaches to Professional Competence in Teacher Educatio*. London: David Fulton.
- Widyoko. (2005). *Competence of teacher's teaching IPS SMA Kabupaten Purworejo*. Studies Pensyarah Muda. Dirjen Pendidikan Tinggi Indonesian.
- Xin, M., & MacMillan, R. B. (1999). Influences of workplace conditions on teachers' job satisfaction. *Journal of Educational Research*, 93(1), 39-47. <https://doi.org/10.1080/00220679909597627>

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).

A Novel Low-Cost Indicator of Student Perseverance and Its Association with College Student Academic Performance

David B. Yerger¹ & Amber L. Stephenson²

¹ Department of Economics, Indiana University of Pennsylvania, Pennsylvania, United States

² David D. Reh School of Business, Clarkson University, New York, United States

Correspondence: David B. Yerger, Department of Economics, McElhaney Hall, 441 North Walk, Indiana, PA 15705-1018, United States. Tel: 1-724-357-2640. E-mail: yerger@iup.edu

Received: March 16, 2018

Accepted: April 9, 2018

Online Published: May 28, 2018

doi:10.5539/ass.v14n6p43

URL: <https://doi.org/10.5539/ass.v14n6p43>

Abstract

Within the research literature investigating how student characteristics related to perseverance impact academic outcomes, leading scholars have encouraged the development of new measurements, both survey and non-survey based. We introduce here an innovative non-survey-based measurement, derived from common higher education variables, that reflects the perseverance construct. The created perseverance proxy is easily created and explainable to audiences with minimal statistical background. The variable was used to analyze academic outcomes at a mid-sized public university in the United States. The perseverance proxy strongly positively associates with academic outcomes, as measured both by GPA and odds of academic probation, in multivariate analysis across both genders. The perseverance proxy explains more of the variation in academic outcomes than any of the cognitive and financial aid variables used in the analysis. The technique for constructing the perseverance proxy is easily replicated at any college or university having data on students' high school ranking and college admission exam scores.

Keywords: student perseverance, college retention, high school performance, academic success

1. Introduction

This paper introduces to the literature a variable easily computed from data commonly found in students' college application materials that is quite likely to correlate with perseverance. The computed perseverance proxy is shown to improve the estimation of academic outcomes for students at the institution studied in this research project. Given the substantial time and resource costs associated with collecting student survey information, this approach can be a valuable alternative for researchers investigating college student retention and practitioners trying to identify students at greater risk of poor academic outcomes.

1.1 *The Importance of Non-Cognitive Characteristics and the Need for Non-Survey Measurements*

A large literature exists investigating variables that help to predict student academic outcomes in college. One set of variables commonly found to be significant are various measures of cognitive ability, such as the Scholastic Aptitude Test (SAT) and American College Testing (ACT) tests often required for admission to U.S. colleges and universities, while another frequently significant variable is a measure of pre-college academic performance such as a high school class rank (Noble & Sawyer, 2004; Sawyer, 2013). In the past decade, however, the scholarly community has shown mounting interest in identifying student qualities beyond cognitive ability that impact performance outcomes (Duckworth & Yeager, 2015). In particular, the concept of grit, or "perseverance and passion for long-term goals" (Duckworth, Peterson, Matthews, & Kelly, 2007, p. 1087), has gained attention as a predictor of academic achievement and success. Specifically, the construct is found, even after controlling for cognitive measures, to associate with higher Grade Point Averages (GPAs) (Duckworth, et al., 2007; Scherer, Talley, & Fife, 2017; Strayhorn, 2013), to impact persistence beyond basic training and retention through West Point Military Academy graduation (Kelly, Matthews, & Bartone, 2014), and sales workforce retention and high school graduation (Eskreis-Winkler, Shulman, Beal, & Duckworth, 2014).

Perseverance or grit has been identified as a major facet of conscientiousness (MacCann, Duckworth, & Roberts, 2009) that is related to, but distinct from, other facets of conscientiousness such as self-control (Duckworth & Gross, 2014). Self-control has been found to positively associate with a wide range of desirable outcomes (de

Ridder et al., 2012; Moffitt et al., 2011). Similarly, the Academic discipline subscale within the Student Readiness Inventory (Le, Casillas, Robbins, & Langley, 2005) has been shown to improve predictions of college GPA beyond that explained by models with only high school GPA and ACT scores (Kommaraju, Ramsey, & Rinella, 2013).

While researchers have found perseverance to associate with various achievement-related outcomes, concerns have been raised, however, about relying exclusively on self-administered survey results. Particularly, obtaining survey-based measures is an unwieldy process that remain vulnerable to socially desirable responding and recall bias (Duckworth et al., 2007). Surveys of self-reporting students, or of teachers about their students, can suffer from reference bias while teacher surveys also may reflect a teacher's misinterpretation of student behavior (Duckworth & Yeager, 2015). Performance task testing is an alternative to surveys, but in addition to the costs of conducting well designed performance task tests, other shortcomings may exist as well. A one-time task test can assess a student's behavior in that test environment, but it may not be representative of the student's behavioral choices in regular daily life (Duckworth & Yeager, 2015). As such, Duckworth and Yeager (2015) recommend developing new, creative measurements and advocate for a "plurality of measurement approaches" (p. 245) that includes surveys, performance task testing, and other measures to be developed. In response to their call to action, this article introduces an innovative non-survey-based measurement, derived from common higher education variables, that reflects the perseverance construct.

1.2 Other Potential Control Variables

In addition to cognitive exam scores, pre-college academic performance, and perseverance-related measures, research on college student academic outcomes has found other variables that associate with students' academic performance. Examples of these variables would include gender, race, and socio-economic status (Reason, 2009; Westrick, Le, Robbins, Radunzel, & Schmidt, 2015). In addition, in the United States differences in financing obstacles across students also are known to impact academic outcomes (ACSFA, 2010). The inadequacies of current governmental grant awards relative to college costs for lower and moderate income households, and the worsening trend of this funding gap over time, is well established (ACSFA, 2010). The larger awards to lower income households are not sufficient to cover the funding gap, contributing to lower degree completion rates for academically prepared students from lower and moderate income households (see Table 12 on p. 36 of ACSFA, 2010). While the financial aid variables are in part determined by the socioeconomic status (SES) of the student's family, and SAT scores also will associate with SES (Sackett, Kuncel, Arneson, Cooper, & Waters, 2009), we expect both sets of variables to have predictive power on GPA given prior findings in the literature. Specifically, a large majority of the correlation between SAT scores and GPA has been found to be independent of SES (Sackett et al., 2009).

1.3 Hypotheses

The hypotheses to be tested in this study are as follows.

Hypothesis 1: There is a positive relationship between GPA and the cognitive ability variables.

Hypothesis 2: There is a negative relationship between the odds of a student being placed on academic probation and the cognitive ability variables.

Hypothesis 3: There is a negative relationship between GPA and the financial stress measurement variables.

Hypothesis 4: There is a positive relationship between the odds of a student being placed on academic probation and the financial stress measurement variables.

Hypothesis 5: There is a positive relationship between GPA and the constructed perseverance proxy variable.

Hypothesis 6: There is a negative relationship between the odds of a student being placed on academic probation and the constructed perseverance proxy variable.

2. Method

2.1 Sample

We used institutional data for two consecutive cohorts of incoming first year college students at a mid-sized public university in the mid-Atlantic region of the United States. The class of 2017 included 2,728 students, most of whom were Caucasian (76%); more than half (58%) were female, and were 18.2 years old on average. The class of 2018 included 2,702 students, most of whom were Caucasian (72%), more than half (56%) were female, and were 18.3 years old on average. We have four semesters of data on GPA for the 2017 class and two semesters of data on GPA for the 2018 class. All data was provided by the university, with institutional review board approval of the study design.

2.2 Non-Perseverance Related Variables in the Study

Dependent variables in the study captured two aspects of student performance, GPA and Academic Probation (=1 if GPA < 2.0).

Cognitive ability is captured in the study using students' scores on both the verbal (SATV) and math (SATM) sections of the SAT exam.

Gender is controlled for by running the GPA and Academic Probation regressions separately for males and females.

Financial stress for students is measured using both government grant awards and loan awards as proxy variables for student financial stress.

2.3 Constructing the Perseverance Proxy

High school class rank percentile (HSPCT) should associate with both cognitive measures and characteristics described in the perseverance literature. For example, optimal high school rank relative performance requires self-discipline, sustained hardiness, and long-term stamina (Duckworth et al., 2007; Kelly et al., 2014; Perkins-Gough, 2013). Hence, our proxy for perseverance for the i^{th} student is defined as:

$$\text{PERSEVERE}_i = \text{Actual HSPCT}_i - \text{Predicted HSPCT}_i$$

where Predicted HSPCT_{*i*} is from an Ordinary Least Squares (OLS) regression of actual HSPCT on SAT verbal (SATV) and SAT math (SATM) scores across all students in a designated class (so class 2017 run separately from class 2018).

To allow for differences by gender, equation (1) is estimated separately for males and females. Utilizing the prediction error from a regression of HSPCT on cognitive measures as our proxy for perseverance related student characteristics has several advantages including easily accessible data, minimal computation costs, and a straightforward interpretation for less statistically informed audiences. For example, a student with a PERSEVERE value of 15 had an actual HSPCT value 15 percentile points above the HSPCT expected, whereas a student with a PERSEVERE value of -10 had an actual HSPCT value 10 percentile points below the HSPCT expected, based on their SAT scores. While PERSEVERE is not solely attributable to unobserved differences across students in perseverance related behavior-- variation in the competitiveness of high schools sending students to this university and variation in students' standardized test taking skills also contribute to PERSEVERE-- it nonetheless is a single variable reflecting four years of behavior in high school that should correlate with students' unobserved perseverance.

Also note that in the regression models that follow HSPCT cannot be included along with SATV, SATM, and PERSEVERE due to collinearity. If HSPCT replaces PERSEVERE in these models the overall fit (adj. R² or pseudo-R²) is similar, but the coefficient on HSPCT does not have the same straightforward perseverance related interpretation as does the coefficient on PERSEVERE.

3. Results

3.1 GPA Regression Results

With four semesters of data available for the 2017 class (Fall 2013 to Spring 2015) and two semesters of data for the 2018 class (Fall 2014 to Spring 2015), analyzed separately by gender, there are 12 OLS regressions on GPA summarized in Table 1. Nested regression models of GPA are run with the first block comprising SATV and SATM, the second block with grants and loans, and the third block with PERSEVERE. As both the White and Breusch-Pagan tests found heteroscedasticity, robust standard errors were used in all regressions. The findings strongly support including our proxy measure of perseverance and splitting the analysis by gender.

A one standard deviation rise in PERSEVERE, an approximate 19.5 percentile point gain in HSPCT for females relative to that expected based on SAT scores, is associated with a 0.30 to 0.35 standard deviation rise in GPA. Likewise, a one standard deviation rise in PERSEVERE, an approximate 21.5 percentile point gain in HSPCT for males relative to that expected based on SAT scores, is associated with a 0.30 to 0.43 standard deviation rise in GPA for males depending upon the semester. Hypothesis 5 is supported for both males and females. The beta coefficients on PERSEVERE are notably larger than those for the SAT and financial aid variables for both genders, and the gain in R² from adding PERSEVERE as the third block in the regression is substantively larger than for any of the SAT or financial aid variables. While PERSEVERE is highly significant for both genders in each of the six regressions, it exhibits both a larger beta and a larger gain in R² for males than for females in five of the six semesters.

The SATV and SATM variables impact GPA in the expected manner, providing support for Hypothesis 1, but again notable differences emerge across genders. SATV is statistically significant in five of six semesters for females, but in only three semesters for males. While SATM is statistically significant in all semesters for both genders, with beta values notably larger than for SATV, its importance is larger for females as the beta on SATM in the female GPA regressions is 1.22 to 2.76 times larger than in the male GPA regressions.

The grant awards variable proves to be much more useful as a proxy for student financial stress than does the loan variable. The grant awards variable is negative and statistically significant in all 12 regressions, providing evidence strongly consistent with Hypothesis 3. Its impact, as measured by beta coefficients, is comparable to the impact from SATV, although in opposite directions. The loan variable, however, is statistically significant in only one of the male GPA regressions and two of the female GPA regressions.

Table 1. Gender Specific Nested Regressions of GPA by Class and Semester

Females	2017_ FA13	2017_ SP14	2017_ FA14	2017_ SP15	2018_ FA14	2018_ SP15
Block 1						
SATV β	.087**	.111**	.122**	.011	.085*	.090**
SATM β	.206**	.238**	.218**	.240**	.246**	.252**
R ² (p-value)	.085 (.00)	.120(.00)	.114(.00)	.079(.00)	.111(.00)	.137(.00)
Block 2						
Grants β	-.096**	-.128**	-.145**	-.109**	-.142**	-.201**
Loans β	-.030	-.054*	-.017	-.044	-.049	-.103**
ΔR^2 (p-value)	.005 (.03)	.011(.00)	.015(.00)	.008(.03)	.015(.00)	.038(.00)
Block 3						
Persevere β	.352**	.346**	.297**	.300**	.318**	.345**
ΔR^2 (p-value)	.123 (.00)	.119(.00)	.088(.00)	.089(.00)	.099(.00)	.117(.00)
Males	2017_ FA13	2017_ SP14	2017_ FA14	2017_ SP15	2018_ FA14	2018_ SP15
Block 1						
SATV β	.083*	.087	.078	.079	.135**	.102*
SATM β	.169**	.129**	.119**	.117*	.089*	.132**
R ² (p-value)	.053(.00)	.044(.00)	.043(.00)	.045(.00)	.033(.00)	.042(.00)
Block 2						
Grants β	-.109**	-.096**	-.106**	-.100*	-.065*	-.111**
Loans β	-.022	-.044	-.071	-.081*	.016	-.062
ΔR^2 (p-value)	.004(.19)	.004(.21)	.008(.07)	.010(.05)	.002(.42)	.013(.00)
Block 3						
Persevere β	.361**	.364**	.305**	.296**	.384**	.429**
ΔR^2 (p-value)	.128(.00)	.128(.00)	.090(.00)	.084(.00)	.146(.00)	.183(.00)

Note. **, & * for p-values on unstandardized coefficients of < .01, & < .05; all regressions executed using robust standard errors

3.2 Academic Probation Regression Results

While the linear regression models for GPA show clear associations with our measures of financial stress and perseverance, not all modest changes in GPA have the same impact upon students. In particular, modest reductions in GPA that drop a student onto academic probation potentially have a much larger impact on retention and graduation rates than an equivalent GPA reduction that still leaves the student comfortably above a 2.0 GPA. With this in mind, the model is rerun using nested logistic regression with a dummy (0/1) academic probation outcome as the dependent variable using the same three block structure as in Table 1 with results summarized in Table 2.

The findings are consistent with Table 1. Again, note the greater importance of SATM scores for females than for males in predicting probation as higher SATM scores reduce probation odds for females in all six semester regressions, but only once for males. SATM also has notably more probation predictive value than does SATV

whose odds value never differs significantly from 1.0 in any of the probation regressions. Overall the findings support Hypothesis 2 for females, but not for males. Larger grant awards as a proxy for financial stress is associated with increased odds of probation for females in all six semesters and for males in four of six semesters, evidence consistent with Hypothesis 4. Once more, loan awards do not meaningfully associate with probation odds. Our perseverance variable continues to be the most important factor, reducing the odds of probation for both genders in every semester. Hypothesis 6 is supported.

Table 2. Gender Specific Nested Logistic Regressions of Odds Academic Probation by Class and Semester

Females	2017_ FA13	2017_ SP14	2017_ FA14	2017_ SP15	2018_ FA14	2018_ SP15
Block 1						
SATV odds ratio	.997	.997	.997	.999	.998	.998
SATM odds ratio	.993**	.995**	.994**	.992**	.994**	.995**
Wald Stat (p-value)	40.4 (.00)	26.0 (.00)	32.7 (.00)	29.8 (.00)	33.2 (.00)	32.3 (.00)
Block 2						
Grants odds ratio	1.007*	1.011**	1.015**	1.012**	1.012**	1.009**
Loans odds ratio	.999	1.004	1.002	1.002	.999	.999
Wald Stat (p-value)	3.2 (.21)	6.8 (.03)	9.5 (.01)	5.6 (.06)	5.9 (.05)	6.0 (.05)
Block 3						
Persevere odds ratio	.965**	.970**	.971**	.971**	.971**	.981**
Wald Stat (p-value)	64.5 (.00)	39.9 (.00)	28.3 (.00)	31.0 (.00)	27.8 (.00)	18.6 (.00)
Males	2017_ FA13	2017_ SP14	2017_ FA14	2017_ SP15	2018_ FA14	2018_ SP15
Block 1						
SATV odds ratio	.997	.997	.999	.997	.998	.997
SATM odds ratio	.997*	.998	.998	.999	.998	.999
Wald Stat (p-value)	16.1(.00)	8.6(.01)	3.8(.15)	4.9 (.09)	5.2 (.07)	5.1 (.08)
Block 2						
Grants odds ratio	1.014**	1.013**	1.011**	1.013**	1.005	1.003
Loans odds ratio	1.000	1.003	1.006*	1.005	.996	.997
Wald Stat (p-value)	8.8 (.01)	4.8 (.09)	6.9 (.03)	6.6 (.04)	3.1 (.21)	1.5 (.48)
Block 3						
Persevere odds ratio	.969**	.963**	.978**	.977**	.965**	.975**
Wald Stat (p-value)	54.0(.00)	61.8(.00)	20.2 (.00)	16.0 (.00)	62.8 (.00)	37.5 (.00)

Note: The odds ratios for student grants and loans are per \$100 change. **, & * for p-values of < .01, & < .05; all regressions executed using robust standard errors; Probation observation = 1 if its GPA < 2.0, 0 otherwise

4. Discussion

This research was motivated by the desire to create a proxy variable for perseverance that can be constructed from variables commonly available to researchers at many institutions. Our constructed perseverance variable is easy to replicate and has a straightforward interpretation: it is a student's relative over, or under, performance on high school class rank given their expected rank based on their SAT scores. This can be replicated for most other American institutions using either students' SAT or ACT scores. Many other nations also have some type of standardized college entrance exam which researchers could use in place of the SAT or ACT, along with data on students' secondary school class ranking or GPA. This approach is generalizable to a wide range of academic institutions globally.

We find the perseverance proxy has strong predictive value for both GPA and odds of academic probation, explaining more of the variance in these outcomes than any of the SAT or financial aid variables. Our research also supports the use of easily available financial aid variables as measures of student financial stress, finding that the student grant award variable is comparable in its impact upon academic outcomes to the SAT verbal variable for both males and females. Splitting the data by gender also is very much supported as the SAT math variable has a notably larger impact upon academic outcomes for females than for males and the perseverance

variable has a larger impact on GPA for males in all but one of the GPA regressions.

We encourage researchers to conduct similar analysis on other institutions in the United States and elsewhere to assess the generalizability of these findings beyond the single mid-sized public university analyzed here. While the results may vary from institution to institution, there can be genuine value in having institution-specific findings in order to better identify students potentially at risk academically prior to problems emerging.

Acknowledgements

The authors would like to thank Elizabeth Poje-Hawk for providing support and assistance with the data.

References

- Advisory Committee on Student Financial Assistance. (2010). *The Rising Price of Inequality: How Inadequate Grant Aid Limits College Access and Persistence*. Report to Congress and the Secretary of Education. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.614.5861&rep=rep1&type=pdf>
- De Ridder, T. D., Lensvelt-Mulders, G., Finkenauer, C., Stok, F. M., & Baumeister, R. F. (2012). Taking Stock of Self-Control: A Meta-Analysis of How Trait Self-Control Relates to a Wide Range of Behaviors. *Personality and Social Psychology Review*, 16(1) 76–99. <https://doi.org/10.1177/1088868311418749>
- Duckworth, A. L., & Yeager, D. S. (2015). Measurement matters: Assessing personal qualities other than cognitive ability for educational purposes. *Educational Researcher*, 44(4), 237-251. <http://dx.doi.org/10.3102/0013189X15584327>
- Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology*, 92(6), 1087-1101. <http://dx.doi.org/10.1037/0022-3514.92.6.1087>
- Duckworth, A., & Gross, J. J. (2014). Self-control and grit: Related but separable determinants of success. *Current Directions in Psychological Science*, 23, 319-325. <https://doi.org/10.1177/0963721414541462>
- Eskreis-Winkler, L., Shulman, E. P., Beal, S. A., & Duckworth, A. L. (2014). The grit effect: Predicting retention in the military, the workplace, school and marriage. *Frontiers in Psychology*, 36(5), 1-12. <https://doi.org/10.3389/fpsyg.2014.00036>
- Kelly, D. R., Matthews, M. D., & Bartone, P. T. (2014). Grit and hardiness as predictors of performance among West Point cadets. *Military Psychology*, 26(4), 327-342. <https://doi.org/10.1037/mil0000050>
- Komaraju, M., Ramsey, A., & Rinella, V. (2013). Cognitive and non-cognitive predictors of college readiness and performance: Role of academic discipline. *Learning and Individual Differences*, 24, 103-109. <https://doi.org/10.1016/j.lindif.2012.12.007>
- Le, H., Casillas, A., Robbins, S., & Langley, R. (2005). Motivational and skills, social, and self-management predictors of college outcomes: Constructing the Student Readiness Inventory. *Educational and Psychological Measurement*, 65, 482-508. <https://doi.org/10.1177/0013164404272493>
- MacCann, C., Duckworth, A. L., & Roberts, R. D. (2009). Empirical identification of the major facets of conscientiousness. *Learning and Individual Differences*, 19, 451-458. <https://doi.org/10.1177/2158244017704686>
- Moffitt, T. E., Arseneault, L., Belsky, D., Dickson, N., Hancox, R. J., Harrington, H., ... Caspi, A. (2011). A gradient of childhood self-control predicts health, wealth, and public safety. *Proceedings of the National Academy of Science*, 108(7), 2693-2698. <https://doi.org/10.1073/pnas.1010076108>
- Noble, J. P., & Sawyer, R. L. (2004). Is high school GPA better than admission test scores for predicting academic success in college? *College and University*, 79(4), 17-22. Retrieved from https://aacrao-web.s3.amazonaws.com/files/Y0C3oKOQQQC3cakPn7ZK_spring2004.pdf
- Perkins-Gough, D. (2013). The significance of grit. *Educational Leadership*, 71(1), 14-20. Retrieved from <http://www.ascd.org/publications/educational-leadership/sept13/vol71/num01/The-Significance-of-Grit@-A-Conversation-with-Angela-Lee-Duckworth.aspx>
- Reason, R. D. (2009). Student variables that predict retention: Recent research and new developments. *NASPA Journal*, 46(3), 482-501. <https://doi.org/10.2202/1949-6605.1286>
- Sackett, P. R., Kuncel, N. R., Arneson, J. J., Cooper, S. R., & Waters, S. D. (2009). Does socioeconomic status explain the relationship between admissions test and post-secondary academic performance? *Psychological Bulletin*, 135(1), 1-22. <http://dx.doi.org/10.1037/a0013978>

- Sawyer, R. L. (2013). Beyond correlations: Usefulness of high school GPA and test scores in making college admissions decisions. *Applied Measurement in Education*, 26(2), 89-112. <https://doi.org/10.1080/08957347.2013.765433>
- Scherer, S. Talley, C. P., & Fife, J. E. (2017). How Personal Factors Influence Academic Behavior and GPA in African American STEM Students. *Sage Open*, April-June, 1014. <https://doi.org/10.1177/2158244017704686>
- Strayhorn, T. L. (2013). What role does grit play in the academic success of black male collegians at predominantly white institutions? *Journal of African American Studies*, 18, 1-10. <https://doi.or/10.1007/s12111-012-9243-0>
- Westrick, P. A., Le, H., Robbins, J., Radnuzel, M. R., & Schmidt, F. L. (2015). College performance and retention: A meta-analysis of the predictive validities of ACT scores, high school grades, and SES. *Educational Assessment*, 20(1), 23-45. <https://doi.org/10.1080/10627197.2015.997614>

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).

The Integration of the Pottery Handicraft Together with the Basketwork Handicraft Promoting Economic Community Strength

Panu Pattanapanithipong¹ & Rosjana Chandhasa²

¹ Faculty of Fine Arts, Department of Visual Art Design: Product Design, Srinakharinwirot University, Thailand

² Faculty of Industrial Technology, Department of Industrial Design, Suan Sunandha Rajabhat University, Thailand

Correspondence: Panu Pattanapanithipong. E-mail: panup@g.swu.ac.th

Received: March 19, 2018

Accepted: April 20, 2018

Online Published: May 28, 2018

doi:10.5539/ass.v14n6p50

URL: <https://doi.org/10.5539/ass.v14n6p50>

Abstract

A study of the integration of the pottery handicraft together with the basketwork promoting economic community strength aims to 1) to study the basketwork identity to apply with the pottery handicraft 2) to examine the experimental design and to develop the pottery handicraft product combined with the basketwork in order to beautiful identical according to market qualifications and 3) to evaluate the market testing of the handicraft product developed conduce to the guidelines for producers apply to use. The samples were 400 people who interested in handicraft wherewith purposive sampling at the handicraft shop by used the accidental sampling, inquired for collect the data before as well as after design, evaluated by 3 groups of community product producer as 3 stars level which experience 10 years at least and 3 product design experts in order to evaluate the optimal pattern of product modified, therefrom, created the prototype as well as evaluated the opinion comments of consumer towards product designs. The results revealed that the most wanted of consumer that were the lamp product, basket product and decorated item products, the container rim of the 3rd pattern by weaving method was appropriate for forming pattern which were combined method with easy, strong and stable pattern, easy to fix when being ruined, the product pattern have been tested marketing by consumer found the satisfaction overall was the highest level, furthermore they satisfied in term of beauty than in term of usability.

Keywords: pottery, handicraft, basketwork, the integration, community

1. Introduction

Under the context of significant changes both global and domestic country, country development in the future is necessary to prepare and produce the country's immune system strong under the philosophy of sufficiency economy to be able adapt to accommodate the impact of the changes in the future with constantly. The conceptual framework of The Eleventh National Economic and Social Development based on the integrated development concept as a holistic with "people-centered development" there are connects to all dimensions of integrated development thought people, social, economic and environment by leading the nation's capital as the potential to integrated utilization and collaboration along with reinforce strengthen the country as the foundation for the important development country by enhancing human capital, social capital, cultural capital, using wisdom, science, technology as well as creativity conform to the need of domestic and foreign markets on the basis of mutual dependency, increasing in productivity and competitiveness of country's economy, especially small and medium enterprises should promote for adding the potential value on the creativity and the innovation, focused on bringing the local wisdom as the intellectual property for further Research & Development, passing on the knowledge and applying the commercial usability also the creating added value for the manufacturing sector with sufficiently both in quantity and quality which are building availability for entering the ASEAN in personnel development (The Eleventh National Economic and Social Development of 2012-2016: 9-20)

To promote of the community's economy is the major policy that the government should manage to enhance the economic strength. The handicraft products play a key role in economics and local society level for helping about community's income, decrease migration into the cities, create economic prosperity for the community and influence to country's economy. The handicraft product development to have a quality standard, unique and pattern as the needed of the market which is one of the government policies to promote Thai handicraft products level should be competitive in the market. At present, Thailand export including the handicrafts have a serious

competition that make a trade barrier, thus, handicraft products development in term of material for producing, in term of beauty, a unique in accordance with the domestic and foreign markets requirement are important to increase more demand in the market.

The art of Thai handicraft related to Thai traditional life style owing to concern with a living of people all levels, aims to an important usability, the handicraft pattern had been developed based of technician skills and improvement for a better usability, therefore, developing and improving must use the knowledge and selecting materials for responding the usability, completely.

The handicrafts have weaknesses, strengths and opportunities for developing in the future. From a study of Department of Industrial Promotion had found the handicrafts strengths were as a cultural values as well as passing on the original individual unique, easy production method also not complicated, be able to use material at the local area for processing with do not destroy the natural resource and environment, not much money for investment that could be developing as the career for the villagers with decreased the labors migration into the city, the weakness were the production process take a lot of time, diseconomies of labor, not suitable for business competition, the producers did not focus on the quality control, unmotivated, do not have the information also the creation for developing about the production method as well as the business operation, the opportunities were the distinctive unique, trends of using Thai's commodity, general production method also less investment and the public and private sectors had paid attention to promote each other, thus, that showed the handicrafts had the opportunities for further development. Although many sectors had assisted to promote, they still had the limited problems such as the production method, the problems were lack of raw materials or a low quality, the obsolete equipment affected to the processing slowly, the shortage of skilled craftsmen and lack of knowledge for making a new pattern product with standard quality (Department of Industrial Promotion, 2012. [Online]). Owing to that problems, the report of the study had been suggestion the operations as well as optimal strategies such as management strategy and technology development strategy, the developing of raw materials pattern as well as production method for quality such as water hyacinth products, weaving products and pottery products, however, the important problem of development for promoting product as they must develop since a raw material, pattern, production method technique, collaboration, public relation also indoctrination for producers to make a local handicrafts as a source of creating the second career of villagers which should be encouraged and supported very seriously. Owing to facing of several problems, if it had been promoted with the properly direction by an obvious framework, continuous and comprehensive under the cooperation from all the parties concerned with seriously that would assist Thai's handicrafts expanded effectively which was the important way to assist the country's economy restored as well as to maintain Thai's unique, decreased labors migration, income distribution to the region which as the important foundation of country development for sustainable growth.

The basketwork is the art of handicraft which could be created in general, currently, many local basketwork have general accepted which highly skilled as well as magnificent pattern such as Yan Lipao basketwork of Nakhon Si Thammarat province, Phanat Nikhom basketwork and Angthong basketwork etc., the basketwork from local areas have inherit from the ancestors for a long time, nevertheless, the social, economic as well as Thai's living have change at the present, a demand of using a basketwork in daily life as decreased, besides, a certain types of raw material is rather expensive and difficult to find that initiate a new raw material such as water hyacinth, midrib of coconut, string made of banana tree and plastic for producing in the basketwork together with developing a new pattern as different from the original in order to accordant consumer's requirement such as applying between Lai Kid pattern and bamboo container become a weaved bag or some locality still have conserved with traditional style such as a small wicker basket, a bamboo basketwork refinement of natives from Tambon Bangchoacha, Pothong district at Angthong province and Phanat Niknom distinct at Chonburi Province etc., many techniques attempt to bring the weaving techniques and raw materials from each of local area for usability as much as possible. That should be an alternative guideline for developing of Thai basketwork adapt to the social and economic changes.

The pottery is a general art of handicrafts that in all regions of the country, they have been produced both manufacturing industry and an industrial craft as a traditional native style of each local areas by the art of handicraft characteristic with a fair price of villagers and most of them still conserve the traditional pattern on the local trend especially, now a day the pottery container for using in everyday still have produced the pottery glaze by industrial craft style in many local areas such as Ratchaburi pottery glaze, Oon Noi pottery glaze at Samut Sakorn province as well as many production sources in Chiang Mai and Lampang province. Therefore, Thai's pottery as the art of handicraft which have still produced with a native style in the present, having produced with uncertain neither unstable thus there should encourage and support for conserving the art of handicraft of Thai for a long time.

Presently, the pottery production development have developed by imitating the basketwork production pattern with bringing the clay into strips and switching weaves it according to the basket form or using bamboo wickerwork adding as the handle of the container or wrapping cover around the pottery product that give an expression of the development have been a separated idea design include the production from each other that affected the identity of a beautiful material including the pattern form have not been harmonious neither separated as well as the usability have not been suitable. Hence, the integration of the pottery handicraft and the basketwork handicraft should study especially about the identities of the material, the characteristic, the productivity, the beauty as well as the marketing of both the pottery and the basketwork as conduce to the integration with suitable combination design as from the material and production that conduct to a unique design, an easy for using, a beauty, integrated with the unity.

According to principle and that factors for solving lack of design knowledge and a new product pattern development, researcher had realized on the necessity of the operated knowledge management about promoting of the handicraft pattern product design and development for getting the quality and developing the great wisdom of both handicraft sciences conduce to the examination of processing, material and production method of both of the pottery and the basketwork investigation bring to a new dimension and more effective production method including the creative thinking process of developing and making a new product for responding the needs of solving problem of groups to have a product pattern with correspond the marketing demand which is an approach to motivate promotion campaign as the effect to increase a study of the investigation and conservation the art of handicraft that conduce to the benefit of the creating community network, adding the craft pattern variety, developing and promoting turn into the international style with the gifts, the souvenirs, the appliances as well as the decorative items, besides the adding handicraft value with varieties which give an expression of local wisdom also adding the distribution channel in the global market that is the important approach for enhancing the market supply although the quality development conduce to increase the exportation also assisting approach the producers of both the pottery and basketwork in the communities to get the prototype and productivity in order to product development with getting from the research conduce to product development with varieties pattern style of their community that influencing a stronger community economy, a strong assistance that bring the knowledge to both private and public educational institution with getting the international standard acceptance, raising a craft skilled as to basic standard of product quality, supporting a party force, developing within the country from the local community to the concerned agencies, focus on the creating networks and the local community efficiency therefore being awareness and preparing of changing current, supporting of the area development mechanism that conduce to the strategy formulation of the province and the provinces group development. Consequently, to achieve the usability in sustainable development about a study of the integration of the pottery handicraft and the basketwork handicraft for developing a strength community economy that bring to create the prototype, developing production method that making a living, increasing a revenue affect to a quality of life, a community economy as well as a culture having a sustainable consistency and balance which is a presentation of developing guideline about a local knowledge for further development as well as supporting a revenue to handicraft producers which is an approach to create a progress for the community to be able improve people's well-being in the community getting better by creating a product based of principle knowledge have become to product with a quality and having a unique obviously correspond with a domestic and global demands by a local knowledge basic principle to the international as they could earn one's living, creative thinking, building human resource owning to the product not only a goods but also the thinking process include the creativeness, the discovery, the conservation of the art and cultural handicraft knowledge, a local knowledge for further development, the handicraft knowledge sciences exchange for becoming as the handicrafts product with getting on quality, prominent point, selling point, wildly being well known both within the country as well as the global as well as conserving and passing on Thai's art and cultural and the handicrafts still not disappear that lead to acquire answers of research with the researcher

1. The conducting of the basketwork handicraft identity applying with the pottery handicraft product for supporting a strength community economy that should do it or not? If it should do, how should the process they do it?
2. The experimental product design development of the pottery together with the basketwork handicraft to get a beautiful unique corresponding conform to a market demands that should do it or not? If it should do, how should the process they do it?
3. The evaluation of market testing result from the developed handicraft product that conclude to producer's guideline for usability that should do it or not, If it should do, how should the process they do it? This research result bring to a useful development for the producers as well as the entrepreneurs of the handicraft product to

get a knowledge of the art of handicraft academy and to get the pottery and basketwork handicrafts skilled for further integration that bring to a new process, a new production as well as a new quality standard product that helping a group of pottery and basketwork community which facing a problem of product development owing to they have been get the guidelines and production method to develop handicraft product pattern of group to meet the market demand that could be able commercial competitiveness correspond to a national strategy and also assists to promote and to create a learning process of value added to other handicraft products that could apply to their own which is the communities database creation of the communities or the concerned agencies that have required a handicraft product development and also inherited the wisdom, conserved and introduced the art of culture for the next generations have perceived the art and cultural, applying from both of handicrafts conduce to a new handicraft product that keep remaining and disappearing forever.

2. Research Objectives

1. To study the art of handicraft identity of the basketwork applying together with the pottery handicraft.
2. To examine a design operation and the pottery handicraft product development together with the basketwork handicraft development to a beautiful identity and suitable for market demand.
3. To evaluate the market testing of a developed handicraft product.

3. Research Conceptual Framework

A conceptual framework the pottery handicraft product development integrated with the basketwork for adding value community product

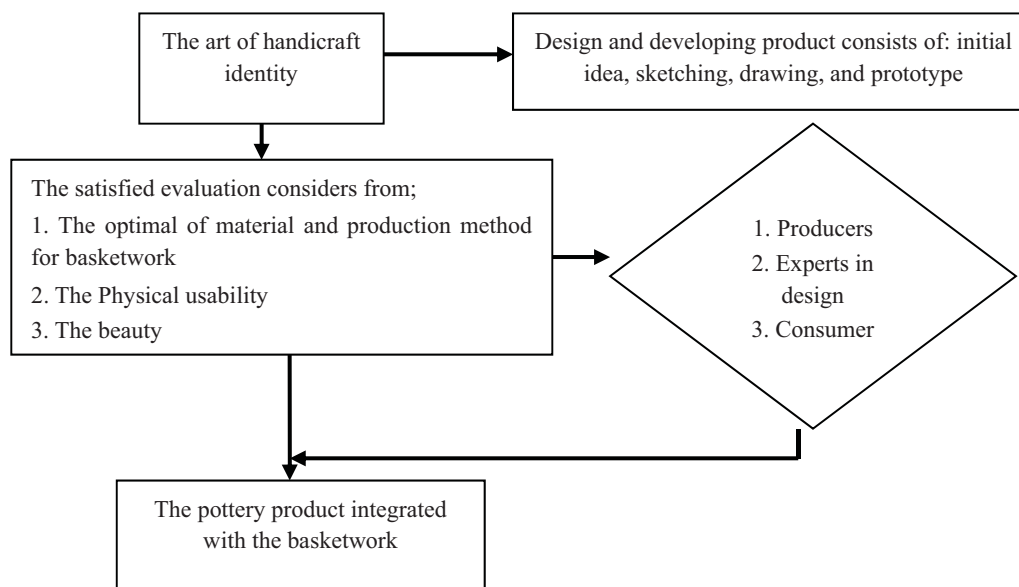


Figure 1. Conceptual framework

4. Research Methodology

This research, research had used a qualitative research method to evaluate the result of pattern design utilized to the pottery product integrated with the basketwork.

4.1 Scope of Research

The delimitation of this research included:

(1) Area scope and sampling of study: 2 groups of handicraft product producer, using the purposive sampling method with qualified selecting from product groups having experiences at least 10 years

- 1.) The basketwork handicraft product group: Sarasilp Bang Chaung Cha group.
- 2.) The pottery handicraft group: Ceramic product group.

They had provided product information and suitable conducting the art of handicraft product concerned with:

1. Factors concerned with the aims to creative achievement.

2. Creating process, limitation, problems and production process.

3. Physical characteristic and pattern of achievement identity.

1.2 The 3 product design experts which selected by having experiences about souvenirs, expert and specialize in product design field at least 5 years in order to consult about a design result, adjust the style in accordance with the aims of research and evaluate a design result.

1.3 Consumer sampling group were 400 people by using a purposive sampling method of the place at 2 handicraft product shop namely: 1) Chatuchoak Weekend Market and 2) JJ Mall, inquiring with an accidental sampling method for getting the art of basketwork handicraft identity and opinions toward the pottery handicraft product before-after developed.

1.4 Scope of design: Researchers have designed the pottery together with the basketwork handicraft.

4.2 Research Instrument

Stage 1. To study the art of handicraft identity of the basketwork applying together with the pottery handicraft.

1. The conference arrangement for explaining the activity operation guideline, a plan and operation method to producer group
2. Study of the art of basketwork handicraft identity for applying together with pottery handicraft.
3. Study and analyze product types for developing to prototype product with focus on a design condition in target area, marketing, materials and production method of pottery handicraft product and basketwork handicraft product to increase value addition along with market trend, by mean of collecting data from the target group of producer at fieldwork with interviewing and using structural questionnaire, observing to study of problems, solving problem guideline and developing guideline by using a Participatory Action Research as well as study and analyze market demand trend with corresponding producers' group.
4. Synthetic principle and developing process to use as the product development guideline for producer group of pottery handicraft product and producer group of basketwork handicraft product
5. Conclusion of study and analyze about the original product, the wisdom, community demand and market demand trend for using as a design data and development in the next step.

Stage 2. To examine a design operation and the pottery handicraft product development together with the basketwork handicraft development to a beautiful identity and suitable for market demand.

1. The process of design and product development of pottery handicraft together with basketwork handicraft were examined by producers group lead to getting a skilled, guideline and production method that conduce to design guideline as well as the pattern of handicraft product with suitable, beautiful with corresponding market demand, therefore, to examine the process operation, production method of pottery handicraft product and basketwork handicraft that conduce to the prototype and optimal process with having a neat and beautiful identity.
2. The product development was evaluated by design experts and marketing experts for getting the information about the opinions toward product in term of usability, in term of beauty, in term of value and identity and in term of marketing by using in depth interview.
3. Conclusion data result from the process of design operation examination and product development of pottery handicraft and basketwork handicraft.

Stage 3. To evaluate the market testing of developed handicraft product.

Market testing though evaluated product development process in term of marketing by people and tourists in Bangkok at handicraft product shop in Bangkok for getting information about the opinions toward a new handicraft product from the development in term of usability, in term of beauty, in term of value and identity and in term of marketing

5. Data Collection and Data Analysis

A study of identity of the art of basketwork handicraft applying with pottery handicraft, researcher had presented the result of research into 2 parts consists of: a result of the art of basketwork handicraft identity and a result of consumer sampling group opinions in terms of the art of basketwork handicraft identity and product demand that getting integrated with the pottery, therefore, this results would been used as the data for design process and for the further development of pattern product , results were as follows:

Stage 1 To study the art of basketwork handicraft identity.

Making a basketwork of Bang Kachao sub-sistricts, Phothong district, Ang-thong province have inherited from the ancestor, in the pass, the basketwork had been used as the container in daily life such as basket, bamboo basket, animal traps, after that, it had been modified as the appliance with conform to a life style of the present such as a bag etc., as the present for senior, as the souvenirs on special days, used as the provincial slogan in official, afterwards, the basketwork pattern was developed to other forms and a new pattern with modern style, adding value to product, being demanded both in country and foreign countries, product is neat, delicate and beautiful, the pattern has blended together between the wisdom and Thai's unique, the pattern was adjusted applying by conducting fabric pattern to blend within the product that make a difference and more value added, having a variety colors, the important characteristic of the principle and consideration of the basketwork production consists of:

1. Different structure is accordance with the shape characteristic such as the vertical line and the horizon line, making a thin bamboo strips to get required size, most of vertical line should have a width and a thickness more than horizon line
2. A weaving for forming to several shapes must have a receptacle inside in order to get the form and the curvature on desirable, thus, the earthenware production that form with the basketry should have a gab or a curvature to handle the basketry.

Stage 2 Analysis the opinions of the art of basketwork handicraft identity and product demand conduce to a design guideline.

Researcher had studied the opinions of 400 consumer as sampling group, inquired at a handicraft shop in Ang-Thong Province, samples were selected by the accidental sampling with close-ended form and photos for asking the opinions of people and tourists toward product, focus on product pattern, materials, the original pattern and product demand that conduct to a new product design, the questionnaire have set the answers as Check Lists Form and Rating Scale Form, the period of explore data between February to March 2017, result as the follows:

Table 1. Number and percentage of consumer sampling group

Order	List of items	Number	Percentage
1. Gender	Female	261	65.25
	Male	139	34.75
2. Consumer	Local Person	221	55.25
	Tourist	179	44.75
3. Age	18-27 years old	35	8.75
	28-37 years old	81	20.25
	38-47 years old	122	30.50
	Over 48 years old	162	40.50
4. Income	Under 10000 Bath	60	15.00
	10001-18000 Bath	95	23.75
	18001 – 26000 Bath	108	27.00
5. Would you like to buy basketwork product?	I would	246	61.50
	I would not	154	38.50
6. Would you like to buy pottery product?	I would	289	72.25
	I would not	111	27.75

From the information with concerned for using as applying product pattern guideline found the general information of respondents that have effect on the opinion in various points divided into consumer sampling group as females were 65.25 percentage, males were 34.75 percentage, divided into local persons were 55.25 percentage and tourists were 44.75 percentage, divided into the age found mostly the age over 48 years old were 40.50, secondly the age during 38-47 years old were 30.50 percentage, the age during 28-37 years old were 20.25 percentage and the age during 18-27 years old were at least with 8.75 percentage, the respondents had income per month divided into a large 4 groups with mostly income per month over 26,000 bath were 34.25 percentage, secondly, income 18,001-26,000 bath were 27.0 percentage, income 10,001-18,000 bath were 23.75 percentage and consumers' income under 10,000 bath were the least as 15.0 percentage.

Result of consumers' opinions and requirement for choosing and reason to purchase the basketwork handicraft product in order to the guideline of a new product development integrated with the pottery, which 400 consumer sampling group opinion towards the basketwork product revealed they would like to buy basketwork product as 61.50 percentage, they would not like to buy basketwork product as 38.50 percentage and the consumer sampling group would like to buy the pottery product as 72.50 percentage and they would not like to buy the pottery as 27.75 percentage.

Table 2. The opinion average of consumer sampling group towards the opinion for making decision to buy the basketwork product. N= 400

Order	List of items	Average	S.D.	Level
1.	Which level you have to make decision causes buying the basketwork product?			
	Buying for their own	4.68	0.47	The highest
	Buying for the others	4.43	0.51	The highest
	Exotic unique product	4.65	0.54	The highest
	Durable strength	4.57	0.64	The highest
	Portable size with convenient	3.86	0.66	High
	Expensive price	3.21	0.75	Medium
	Total			
2.	Which level you have to make decision causes buying the pottery product?			
	Buying for myself	4.57	0.47	The highest
	Buying for the others	4.63	0.51	The highest
	Exotic unique product	4.60	0.54	The highest
	Durable strength	3.76	0.64	High
	Portable size with convenient	4.53	0.66	The highest
	Expensive price	3.24	0.75	Medium
	Total			

As shown in Table 2, a study of making decision to buy the original product of consumer sampling group had the opinions toward the cause of making decision to buy basketwork product which was the highest level as buying for their own at the average 4.68, secondly, the exotic unique product at the average 4.65, the durable strength at the average 4.57 and the consumer sampling group with buying for the others was a highest level with the average, respectively, and considered with portable size to take with convenient at the average 3.86 and considered with the price, if it getting with the expensive price that making decision to buy was a medium level at the average 3.21. A study of making decision to buy the original product revealed that the consumer sampling group had the opinions towards the cause of making decision to buy the pottery was buying for the others with the highest level at the average 4.63, secondly, the exotic unique product with the average 4.60, buying for their own was the highest level with the average 4.57 and considered of the portable size with convenient with the average 4.53, the durable strength with the average 3.76 and considered about the price, if it getting with the expensive price that making decision to buy was a medium level with average 3.21.

Table 3. The exploration of the opinions and consumer sampling group demand for conducting as the design guideline and product development

Order	List of items	Number	Percentage
1. If conducting the basketwork to produce together with the pottery conduce to the appliance product, would it be suitable or not?	Suitable	324	81.00
	Not suitable	76	19.00
2. If conducting the basketwork to produce together with the pottery conduce to product, what kind of the most wanted product	Basket product	168	42.00
	Lamp product	178	44.50
	Home decoration products	54	13.50

As shown as the Table 3, the opinions of the consumer sampling group towards the opinions of product demand

revealed that conducting the basketwork to produce together with the pottery conduce to the appliance product was suitable with the average 81.0 percentage and not suitable with the average 19.0 percentage, the type of appliance product that the consumer sampling group had the most wanted as the lamp product with the average 44.50 percentage, the basket product with the average 42.0 and home decoration products with the average 13.50 percentage.

The exploration result of the opinion and consumer sampling group demand for using as the guideline design and product development of the pottery handicraft product together with the basketwork found the first cause of making decision to buy the basketwork was buying for their own, secondly was the exotic unique product, durable strength and considered about the portable size to take with convenient, however, the cause of making decision to buy the pottery product for the others that revealed the consumer sampling group demand were the lamp product and basket product.

6. Conclusion of Research Result

The exploration result of consumer demand found the type of product that consumer had requirement as the lamp product and the basket product, researcher had designed and developed the pottery handicraft product together with the basketwork handicraft to have the beautiful identity that suitable on market demand that consists of:

1. A study result of product design experiment in order to achieve the pattern and pattern details of the pottery product that being integrated and produced together with the basketwork would be consideration about the connecting between the pottery and the basketwork as well as bringing together of parts of the pottery creation that connect with the basketwork, researcher had experimented design of earthenware edge connecting with the basketwork by connecting method that make 5 guidelines such as:

Guideline 1 The upper edge of container with beetle inside has been made the holes and spaced with 1 inch for binding the wicker on the top then using the weaving method by with pitch in the vertical line and binding with the wicker, as shown in Figure 2

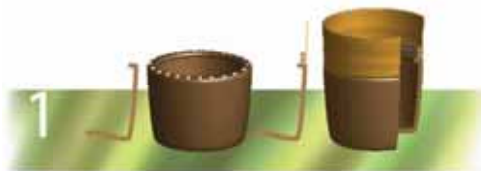


Figure 2. Container edge pattern as the part connected with the basketry method 1

Guideline 2 The upper edge of container stand upright, making the holes as low line below the upper edge with 3 inches, spaced for making a hole with 0.5-1 centimeter, for binding the vertical line in order to increasing strength, as shown in Figure 3



Figure 3. Container edge pattern as the part connected with the basketry method 2

Guideline 3 The upper edge of container stand upright and overlap inside with 0.5 centimeter which was made the holes below the upper edge with 3centimeter, space for making a hole with 1 centimeter to bind the vertical line, overlap distance to support the basketry thickness in order to get a row that align with both materials, as shown in Figure 4



Figure 4. Container edge pattern as the part connected with the basketry method 3

Guideline 4 The upper edge container indent inside as a niche about 0.5 centimeter, using a thickness bamboo stripe tightens around a spaced niche, making a hole below the upper edge with 3 centimeter, spaced for making a hole with 1 centimeter for weaving and tightening with bamboo stripe and cover it in order to increase a strength as well as a thickness of a basketry aligned with edge both materials, as shown in Figure 5



Figure 5. Container edge pattern as the part connected with the basketry method 4

Guideline 5 Upper edge of container have a land edge inside for supporting basketry edge, making the holes below the upper edge with 3 centimeters, spaced for making an each hole with 1 centimeter, for weaving and tightening the bamboo strip, covered into the basketwork, that appearing the edge of earthenware is outside the basketwork, as shown in Figure 6



Figure 6. Container edge pattern as the part connected with the basketry method 5

Data collection of edge earthenware at the part connected with the basketwork, the data was collected by researcher form 3 pottery producers and 3 basketwork producers about the production capabilities, complicating, and suitability for forming the basketry production method that revealed, the evaluated results of patterns and production method could produce with all sketches, 3 producers have the same conclusion as the 3rd guideline is the most suitable production, with both of pottery container pattern and weaving method to from the basketry.

Table 4. Analysis results of the earthenware pattern with the part connecting with the basketwork by 3 pottery producers (N=3)

	List of items	Optimum item									
		Pattern 1		Pattern 1		Pattern 1		Pattern 1		Pattern 1	
		$\bar{x}$	S.D.	$\bar{x}$	S.D.	$\bar{x}$	S.D.	$\bar{x}$	S.D.	$\bar{x}$	S.D.
1	Optimum to materials and pottery production method										
1.1	Optimum pattern for forming by throwing	5.00	0.00	5.00	0.00	5.00	0.00	5.00	0.00	1.00	0.00
1.2	Optimum pattern for forming by slip casting)	5.00	0.00	5.00	0.00	5.00	0.00	5.00	0.00	1.00	0.00
1.3	Optimum pattern for forming by free form	5.00	0.00	5.00	0.00	5.00	0.00	5.00	0.00	5.00	0.00
1.4	Upper edge easy to produce.	5.00	0.00	5.00	0.00	5.00	0.00	5.00	0.00	2.00	0.00
	The optimum production with total	5.00	0.00	5.00	0.00	5.00	0.00	5.00	0.00	2.25	0.00

As shown at the Table 4, the earthenware pattern were optimal for production which could produce by throwing, slip casting and free form, the earthenware pattern 5 with could produce particularly with free form due to the upper edge was difficult to produce and when the patterns were evaluated by basketwork produced revealed the pattern which could be able for weaving with bamboo strip were pattern 1 and 3 as the upper edge pattern of container with optimum forming, easy optimum assembling method, strengthen pattern, easy to repair when get damaged, the optimum production overall was the highest level with average 5.00, pattern 2,4 and 5 that found the earthenware pattern as part connected with the basketwork was not optimum to produce with basketwork, as shown at Table 5

Table 5. Analysis results of the earthenware pattern with the part connecting with the basketwork by 3 basketwork producers (N=3)

List of items	Optimum level									
	Pattern1		Pattern1		Pattern1		Pattern1		Pattern1	
	$\bar{x}$	S.D.	$\bar{x}$	S.D.	$\bar{x}$	S.D.	$\bar{x}$	S.D.	$\bar{x}$	S.D.
1. The optimum to materials and basketwork production method										
1.1 Optimum pattern of container edge for forming by weaving	5.00	0.00	1.00	0.00	5.00	0.00	1.00	0.00	1.00	0.00
1.2 Easy optimum assembling method	5.00	0.00	1.00	0.00	5.00	0.00	1.00	0.00	1.00	0.00
1.3 Strengthen pattern	5.00	0.00	1.00	0.00	5.00	0.00	1.00	0.00	1.00	0.00
1.4 Easy to repair when get damaged	5.00	0.00	1.00	0.00	5.00	0.00	1.00	0.00	1.00	0.00
The optimum production overall	5.00	0.00	1.00	0.00	5.00	0.00	1.00	0.00	1.00	0.00

The next steps of experimental design as researcher had made sketch idea which were the prototypes such as 6 baskets and 6 lamps, according to the concept from exploration and data analysis at beginning which having difference of form pattern, the adhere of handles pattern, the size and assembling of basket, thence, brought the idea sketches to evaluate by the design experts and producers, analyzing and selecting the guideline pattern with optimum to production method, strength and beauty, as shown in Figure 7-8.



Figure 7. Basket product patterns

Table 6. Analysis result of the optimum of assembling method of handles basket by 3 basketwork producers

Order	List of items	Average	S.D.	Level
1.	How to handle the basket assembly is appropriate.			
	Pattern 1	1.00	0.00	Lowest
	Pattern 2	1.00	0.00	Lowest
	Pattern 3	1.00	0.00	Lowest
	Pattern 4	1.00	0.00	Lowest
	Pattern 5	5.00	0.00	Highest
	Pattern 6	5.00	0.00	Highest

As shown at the Table 6, analysis results of pattern and adhering of basket handles by basketwork producers revealed that pattern 5 and 6 having the optimum pattern for the handles basket assembling method was the highest level which optimal to production method, strength, be able supporting a weight and beauty with average 5.00, on the other hand, the pattern 1-4 having the optimum pattern for the handles basket assembling method was the lowest level with average 1.0.

Table 7. Analysis results of the beautiful optimum of figure form by 3 basketwork producers

Order	List of items	Average	S.D.	Level
2.	Beautiful optimum of figure form			
	Pattern 1	1.00	0.00	Lowest
	Pattern 2	5.00	0.00	Highest
	Pattern 3	1.00	0.00	Lowest
	Pattern 4	5.00	0.00	Highest
	Pattern 5	5.00	0.00	Highest
	Pattern 6	1.00	0.00	Lowest

As shown at the Table 7 found, a beautiful optimum of figure form as pattern 2,4 and 5 was the highest level with average 5.00, on the other hand, pattern 1,3 and 6 found a beautiful optimum of figure form was a lowest level with average 1.00.

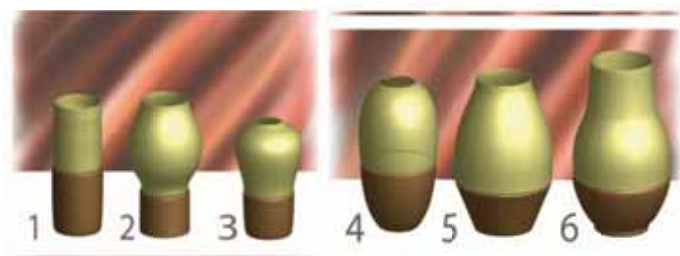


Figure 8. Lamp product pattern

Table 8. Analysis result of lamp patterns with the production method by 3 basketwork producers

Order	List of items	Average	S.D.	Level
1.	The optimal lamp pattern			
	Pattern 1	5.00	0.00	Highest
	Pattern 2	5.00	0.00	Highest
	Pattern 3	5.00	0.00	Highest
	Pattern 4	5.00	0.00	Highest
	Pattern 5	5.00	0.00	Highest
	Pattern 6	5.00	0.00	Highest

As shown at the Table 8 found that all lamp patterns had the optimum to the production method, strength, supporting weight and beauty as the highest level with average 5.0

From the analysis result of basket and lamp pattern evaluation, researcher had experimented to produce the basket prototypes and the lamp prototypes, as shown in Figure 9-10



Figure 9. The basket product prototype



Figure 10. The basket product prototype and the lamp product prototype

After creating the souvenirs product prototype from the participation process amount students, producers' community and research team, conducting the prototypes to market testing by 400 consumer sampling group (n=400) to evaluate the optimum opinions, the result as shown below:

Table 9. Number and percentage of sampling group divided by gender

Order	List of items	Number	Percentage
1.	Gender		
	Female	221	55.20
	Male	179	44.80
	Aged		
	18-27 years old	41	10.30
	28-37 years old	92	23.00
	38-47 years old	100	25.00
	Over 48 years old	167	41.80
	Monthly income		
	Under 10000 baths	69	17.30
	10001–18000 bath	130	32.50
	18001–26000 bath	90	22.50
	Over 26001 bath	111	27.80

As shown at Table 9 found consumer sampling group as female were 55.20 percentage and male were 44.80 percentage which the aged between 38-47 years old were the most interesting at 41.80 percentage, secondly, aged over 48 years old were 25.00 percentage, aged between 28-37 years old were 23.00 percentage and aged between 18-27 were the less interesting at 10.30 percentage, mostly consumer sampling group had monthly income 10,000-18,00 bath were 32.50 percentage, secondly, monthly income over 26,001 bath at 27.80 percentage, monthly income 18,001-26,000 bath at 22.50 percentage and monthly income under 10,000 bath were the lowest income at 17.30 percentage.

A study results of market testing product

A study of the opinions and market testing of basketwork handicraft product integrated with the pottery, consumer had opinions and satisfaction toward product that found they had satisfied with all 3 products that could be conclusion as:

Table 10. Analysis result of basket product prototype type 1

Order	List of items	$\bar{x}$	S.D.	Opinion level
1.	A Physical usefulness (Practical Function) considered form			
	Easily convenient usability	4.53	0.50	Highest
	1.2 The optimum of size	4.38	0.53	Highest
	1.3 Safety for usability	4.55	0.52	Highest
	1.4 Maintenance, Cleaning	4.26	0.72	Highest
	1.5 Durable strength	3.96	0.71	High
	A total of physical usefulness (Practical Function)	4.34	0.59	High
2.	A Beauty (Aesthetic Function) Considered from			
	2.1 The optimum of pattern composition	4.39	0.54	High
	2.2 Beauty in terms of color and pattern	4.39	0.68	Highest
	2.3 Interesting unique	4.70	0.54	Highest
	2.4 Product value	4.63	0.50	Highest
	A total of beauty (Aesthetic Function)	4.53	0.56	Highest
	A total of product design evaluation	4.44	0.57	High

As shown at the Table 10 that analysis result of basket product prototype type 1: the consumer opinions could be concluded as the basket product type had a satisfaction over all was the highest level ($\bar{x}=4.44$) with could be classified into 4 items, namely, the optimum in term of beauty with total was the highest level ($\bar{x}=4.53$) as in term of pattern color and pattern, in term of interesting unique and in term of supporting product value were the highest level ($\bar{x}=4.34$), safety for usability and easily convenient usability.

A suggestion of product was conducting the basketwork to create a product together with the pottery might be

difficult to take care, disadvantage effect on the basketwork that might be easily damage as influence for usability with short time when compared with the pottery, however, if the product had not used with a care that affect to the pottery might be easily damaged too.

Table 11. Analysis of basket product prototype type 2

Order	List of items	$\bar{x}$	S.D.	Opinion level
1.	A Physical usefulness (Practical Function) considered form			
	Easily convenient usability	4.44	0.59	High
	1.2 The optimum of size	4.57	0.74	High
	1.3 Safety for usability	4.65	0.69	High
	1.4 Maintenance, Cleaning	4.35	0.82	High
	1.5 Durable strength	4.18	0.75	High
	A total of physical usefulness (Practical Function)	4.44	0.71	High
2.	A Beauty (Aesthetic Function) Considered from			
	2.1 The optimum of pattern composition	4.51	0.55	Highest
	2.2 Beauty in terms of color and pattern	4.54	0.55	Highest
	2.3 Interesting unique	4.75	0.50	Highest
	2.4 Product value	4.45	0.50	High
	A total of beauty (Aesthetic Function)	4.56	0.52	Highest
	A total of product design evaluation	4.51	0.61	High

As shown at the Table 11, analysis result of basket prototype type 2, the opinions consumer sampling group with having a satisfaction on overall was the highest level ($\bar{x}=4.44$) that could be classified into the items as the optimum in terms of beauty with total (Aesthetic Function) was the highest level ($\bar{x}=4.56$) as in term of color and pattern, in term interesting unique and in term of supporting product value were the highest level ($\bar{x}=4.44$), safety for usability and easily convenient usability.

A suggestion of product was conducting the basketwork creating product together with the pottery might be difficult to take care, disadvantage effect on the basketwork that might be easily damage as influence for usability with short time when compared with the pottery, however, if the product had not used with a care that affect to the pottery might be easily damaged too, the basket product prototype type 2 were strengthening than basket prototype type 1, however, it had the limit usability as compare with a size and a width.

Table 12. Analysis of lamp product prototype

Order	List of items	$\bar{x}$	S.D.	Opinion level
1.	A Physical usefulness (Practical Function) considered form			
	Easily convenient usability	4.56	0.52	Highest
	1.2 The optimum of size	3.84	0.64	High
	1.3 Safety for usability	4.08	0.59	High
	1.4 Maintenance, Cleaning	4.69	0.50	Highest
	1.5 Durable strength	3.87	0.59	High
	A total of physical usefulness (Practical Function)	4.20	0.56	High
2.	A Beauty (Aesthetic Function) Considered from			
	2.1 The optimum of pattern composition	4.62	0.76	Highest
	2.2 Beauty in terms of color and pattern	4.69	0.50	Highest
	2.3 Interesting unique	4.88	0.43	Highest
	2.4 Product value	4.47	0.55	High
	A total of beauty (Aesthetic Function)	4.66	0.56	Highest
	A total of product design evaluation	4.43	0.56	High

As shown at the Table 12, analysis result of lamp product prototype, the opinions consumer sampling group that could be concluded: the product lamp having a satisfaction on overall was the highest level ($\bar{x}=4.43$) that could

be classified into the items as the optimum in terms of beauty with total (Aesthetic Function) was the highest level ($\bar{X}=4.66$) as in term of color and pattern, in term interesting unique and in term of supporting product value were a high level ($\bar{X}=4.20$), safety for usability and easily convenient usability.

7. Discussion of Research Result

This research has focused of the creating product process with integration the wisdom of basketwork handicraft and pottery handicraft, searching design method, techniques, approach and production process for achieving in the integrated product as the appliance product according to consumer sampling group demand. This research have discovered that the producer groups have learnt about the method, thinking process, product development, understanding in pattern development, design of the pottery that integrated together with the basketwork should have to know production method process of material that brought to assemble with the basketwork to understand about the limitation condition of production since material preparing process, size of vertical line and horizon line that affected to the strength, figure size of product form, weaving process, forming structure with the vertical line method, weaving on model, weaving in real which using different material pattern, the horizon line for weaving should correspond with the stand line too,

The effect of the exploration result that revealed producers, researcher, student as co-researcher have learnt about the systematic thinking process, the planning and developing of product pattern which using 2 material to assemble together, thinking and working together and get the suggestions as the improvement guideline that conduce to the optimal beautiful product prototype as acceptance by consumer sampling group, especially the optimal pattern of production process which the co-researcher had a new knowledge guideline for further development with various patterns, as the opinion and the satisfaction of consumer sampling group and producers group have realized on the importance of pattern development from the investigation process that have been the opinions and requirement of a social group during the period time not forever owing to consumer group demand will change on social value at current, with conditions all the time, therefore producers group would be awareness of the social changing all the time, being observed demand of target consumer, thence managed to development at intervals and continuously.

Suggestions

These researches have the suggestion for conducting the result of research to use for benefits and the suggestion for the next research have the consideration as: Suggestion for conducting result to use for benefits

1. Pattern of earthenware edge distance should consider about size of material line that brought to assemble for weaving together in order to specify a hole size for binding and a thickness of optimal vertical line with perfectly.
2. Pattern of decoration commodity product should consider the usefulness of weight supporting, easy for convenient moving, and should not design of basketwork be able support a weight
3. Production should consider about the pattern with taking off to assemble the model with convenient.
4. Consideration of trend design, trend color, and trend of home decoration with each year for applying together that getting worked better.

Suggestion for the Next Research

1. The evaluation of home decoration items product with various patterns by conducting the pottery integrated with the basketwork, asking for the opinion that would be? For market testing of the possibility of developing with quality as product for exportation.
2. There should study of development of bringing the pottery integrated together with basketwork for applying with other furniture product.
3. For further study of bringing the process pattern or unique from this study conduce for further development with other materials such as wood, steel, leather, other fiber etc.

Acknowledgments

This research was supported by Suan Sunandha Rajabhat University.

References

- Bunwong, N. (2002). *Principal of Design*. Bangkok: Chulalongkorn University Printing House Press.
- Chammaric, S. (1986). *Thailand Political and Constitutional Development*. Bangkok: Thammasart University.
- Chansoon, S. (1991). *Folk Wisdom*. In the National Culture Committee, the Office of.

- Chareonrath, O. (2003). *Sufficiency Economy under Social changes of Thailand*. Bangkok: Pimdee Press.
- Gunnasuth, P. (1999). *Statistic for Botanical Research*. Bangkok: Chulalongkorn University Printing House.
- Leesakul, W. (1989). *The weaving Stuff in Thailand*. Bangkok: Odeon Store Press.
- Leesakul, W. (2003). *Folk Art*. Bangkok: Amarin Printing.
- Office of the Special Coordinator for the project due to the initiative. (2009). [Online].
- Pungthein, T. (2000). *Statistic and Research*. Bangkok: Sootpaisan. Odeon Store Press.
- Panthavisit, S. (2000). *The sufficiency and the survival of Thai rural community: The northeast*. Bangkok: Report Research.
- Sangpairoj, S. (2001). *The satisfaction of consumer towards wickerwork Craft from vetiver leaves*. Bangkok: Rankhamhaeng University. Retrieved from <http://www.wt.ac.th/~mayuree/e-book/batik1.htm>
- Sroinakapong, S. (1996). *Using of local knowledge to enhance teaching and learning in schools*. Course of development content.
- Sudsung, N. (2000). *Industrial Design and Product Development Industry*. Bangkok: Textbooks and document Faculty of Industrial Education and Technology King Mongkut's Institute of Technology Ladkrabang.
- Sudsung, N. (2004). *The Industrial Product Design Research*. Bangkok: Odeon Store.
- Suksod, T. (2001). *Industrial Product Design*. Bangkok: Odeon Store Press.
- The Community Development Office of Phayao province*. (2009). Retrieved from http://phayaofocus.com/home/index.php?option=com_content&task=view&id=125&Itemid=48.
- Thepsitha, S. (2007). *An economically self-sufficient Community, and the concept of sufficiency economy philosophy in the context of religion and culture*. Bangkok.
- Thussanapirom, S. (n. d.). *A study of technique of product production from vetiver grass*. Promotion of industrial production at the household level. The industrial development in the family Industrial Development Bureau, family and craft. Department of Industrial Promotion.
- Vejchacheewa, A. (2009). Retrieved from <http://www.pm.go.th/blog/3233>
- Viratchanipawan, V. (2008). *Administration of Management guidelines for integrity and sufficiency economy*. Bangkok: Process.
- Wasee, P. (1991). *Cultural and Development*. Bangkok: Chulalongkorn University Printing House.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).

The Cognition of Destructive Cults of College Students and Its Influential Factors

Bin Li¹, Baoxiang Fan² & Han Ji¹

¹ Business College of Beijing Union University, P. R. China

² Center for the Study of Cultic Groups & Religious Culture, Beijing Union University, P. R. China

Correspondence: Baoxiang Fan, Center for the Study of Cultic Groups & Religious Culture, Beijing Union University, 100101, P. R. China. Tel: 86-139-1139-5752. E-mail: fanpaocheung@163.com

Received: March 20, 2018

Accepted: April 19, 2018

Online Published: May 28, 2018

doi:10.5539/ass.v14n6p65

URL: <https://doi.org/10.5539/ass.v14n6p65>

This paper is phased research results of Beijing Social Science Fund research base project (No. 12ZXB001), the Beijing Social Science Fund research base project (No.14JDZHB008), and the social science plan project of Beijing Municipal Education Commission (No. SM201511417001).

Abstract

The cognition of destructive cults among students and its influential factors are explored in this paper by means of a survey of 500 college students. Objective: Our goal is to explore the cognition of destructive cult and its influential factors, especially the role of self-esteem and security. Methods: A total of 500 college adult students were enrolled and measured on a series of questionnaires. Results: 92.47% of college students think that mind control is the essence of the cult, 89.25% of college students think it is fabricated, 82.8% of college students choose amass wealth, 62.37% of college students regard it as a secret association. The cognition of the college students varies in different groups. The level of students' self-esteem and security have a certain correlation with their cognition of cults. Discussion: The development of college students' ability of self-knowledge, resilience and improvement of adaptability are helpful to upgrade their ability of identification and prevention.

Keywords: cognition, Destructive Cults, college students

1. Introduction

A religious cult represented by Falun Gong, with its doctrines and practices of anti-science, anti-human, anti-society and anti-government is always considered as a dangerous and threatening organization. It hinders human advancement and threatens social security, and more importantly impairs the growth of adolescents and youth. Given that college students are in a phase of forming a world view and an outlook on life and undergoing psychological development and maturity, it is effective to target those groups as a focus of whole cult prevention work.

1.1 College Students' Cognition of Cults



Related research on destructive cults in China started at the beginning of the century. There are in all 95 articles on China's CNKI with topics of "college students" and "religious cults" and an obvious gradual increase of

number of such papers can be observed these years in the chart above.

The research on college students' understanding of evil cults focuses on college students' religious views and safety education, recognition, dissemination, causes and education countermeasures. The existing research results show that "college students' mainstream are positive and healthy, family and school life of college students are harmonious, they are also with a scientific outlook on life and values, and a correct understanding of religion and cults. However, in the special period of social transformation and rapid development, the religious status of university students is still characterized by contradiction, irrationality, diversity and plasticity. Some college students are dissatisfied with the current situation of the society, some deny the role of morality in human development, and some feel lost in their future. And worse still, some are ignorant and superstitious and even agree with the idea of evil religion. Furthermore, faced with various social contradictions, employment pressure, shortage of money and troubles in inter-personal relationship, some college students tend to feel doubtful, confused, anxious, and discontent, and destructive cults are likely to take advantage of their religious crisis." (Zhou, 2010)

College students are "self-indulgent due to spiritual emptiness, ideal frustration, etc. Written in their "hymn", cult "preached" to "enrich" the spiritual life of college students, "comfort" their lonely hearts, created a so-called "spiritual home" for those lost souls, thus providing a breeding ground for all kinds of activities of evil cult of the soil." (Lu, 2015) They have a strong curiosity and a herd mentality, but lack social experience. Belief condition presents contradiction, irrationality, diversity and other characteristics. Problems like political belief confusion, ideal and faith blurring, value distortion, lack of credit, cooperation awareness and social reasonability, fearing hardship and poor psychological quality are not uncommon among college students. In addition, religion attracts contemporary college students owing to its rich culture, its own artistic charm, spiritual consolation function and its consistent moral code with social morality. As a result, the cult organizations have moved in and gradually shifted their goals and priorities, seeking to infiltrate the universities and reach out to contemporary college students who are easily absorbed as their members. (Xu, 2014)

The university students' faith still presents the characteristics of contradiction, irrationality, diversity and plasticity. Some college students lack confidence in the future of socialism and doubt the guiding culture of Marxism. Politically, we actively demand progress, identify with the party's reform and opening-up policy and achievements, and actively need more students to join the party organization. However, party membership motivation is diversified and the concept of party membership is declining. There are many people around university students who practice Falun Gong, although the number is small, we must take it seriously. Most students are affirmative about the government's opposition to cults, but there are still a few students who have a misconception of cults. (Song, 2007)

The above research findings indicate that the research on college students' cognition of destructive cults is still in the initial stage with more focus on concept and value education and less on empirical study. Therefore, a survey is conducted to probe into college students' cognition of destructive cults from the perspectives of their understanding of cult's essence and its ways of transmission.

2. Methods

A self-compiled questionnaire was used to investigate 324 students from freshman to senior year in Beijing area, and 12 students from grade 1 to 4 were interviewed.

3. Results

3.1 The Status Quo of College Students' Cognition of Cults

(1) Most college students think it is meaningful to understand the harm of cults.

80.65 percent of college students thought it was meaningful to learn about cults, and 9.68 percent of college students thought it was meaningless to learn about cults, and 9.68 percent of college students said they didn't think they knew anything about cults. It can be concluded that despite most students have been conscious of the harm of cults, a small number of students don't have any clue about that, which indicates that the threat of cults is underestimated by the public.

(2) The way in which the cult groups infiltrate the campus.

The cults infiltrate the campus in mainly four ways: in the name of student clubs, offering students interest or money along with affection, employing modern information technology, and distributing pamphlets or leaflets on campus. The survey reflects that most students don't have a comprehensive understanding of these means of infiltration, particularly only 68.82% chose the second way. We believe that college students should have the

initiative to understand the cults, and to understand the social causes and ways of infiltration from the theoretical perspective. Only with a thorough understanding of cults can students prevent themselves from going astray.

(3) The essential characteristics of the cult group.

As for students' understanding of the essential characteristics of worship group, 89.25% of college students chose "fabricated heterodox", 82.8% of college students choose "amassing wealth", 92.47% of college students choose "mind control", and "secret of association" was the choice for 62.37% of college students. With a good understanding of the nature of cults, one can distinguish them from other legitimate religions. But the findings of the survey show that most students fail to distinguish and show vigilance when confronting with worship groups, thus they are likely to be targeted by cults and absorbed as their followers. For example, some students believe Christianity and Taoism as destructive cults while they don't have any clue or have little knowledge about Falun Gong. Thus, it is urgent to help students distinguish legal religious groups and destructive cults through education work on them. And these findings are in agreement with those of surveys conducted by other universities in China. According to a survey of some colleges and universities in Guizhou province, "college students have a low awareness of cults, and most students don't have a comprehensive understanding of cults. 15% of the students think it is Qigong, 26% think it is superstition, 56% equal it to Falun Gong cult. They confessed that they knew Falun just via the news reports, and felt pity on victims and lucky for not joining Falun, but when it comes to a further understanding of Falun Gong, they admitted that they had little idea about it and its activities." (Chen, 2016) A study of college students in Quanzhou area of research shows that "64.57% of college students don't believe in any religions while 20.94% believe, 14.49% said they were not clear about their beliefs. 68.41% thought they could distinguish well between religion and cult, 83.07% are firmly sure that cults were not religious, 10.12% were unsure about that and 6.81% were confused with cult and religion. (Wu, 2015)

3.2 Influence Factors of College Students' Cognition of Cults

It is generally a complicated and long-term process full of confrontations to educate college students and raise their consciousness of the threat of cults. So a better understanding of the influencing factors of college students' cognition of cults would be helpful to propose effective education.

According to research the reason why a destructive cult attracts so many followers is that it destroys human nature from the angel of knowing that humans need soul consolation and care, steers people to irrational life goals by offering its irrational, evil theories and what's worse forces people to form irrational judgment. Due to the bewildering and changing social contradictions, people fail to understand or feel ease at some social phenomena, which easily leads to confusion, perplexity and doubt in their minds. And just because a cult generally concerns personal and social life and health, it is no surprise that with these so-called utilitarian theories they can easily absorb an increasing number of people with psychological demands. This was true for college students. Confronted with various pressures like study, work, health, relationships, a minority with utilitarian purposes would choose to join destructive cults.

(1) Insufficient channels of knowing religion and cults.

The freshmen at Business College, Beijing Union University said "the college students' understanding of a cult around us is too little, let alone its danger and characteristic, and keeping alert when confronted with it. I still remember when students got the questionnaire they exclaimed what is the cult group?" Such college students are not rare. At first we were interested in the subject, but now we are full of worry and responsibility. Understanding is the first step to change. From the survey results, we see that college students on the issues of religion and cult limited way, there are few channels for students to get knowledge of cults. The main one is through news reports which is unfortunately limited. The students' understanding of "falun gong" and "almighty god" is only on the surface level, and some students even have no idea about these cults. Students are conscious of cults' threat, but as for its concrete content, the mode of transmission and the difference of essence from that of religion their conception and understanding are very superficial.

(2) Lack of education in the critical period of college students' belief formation.

The university stage is the formation and perfection period of the college students' outlook on life, world outlook, the values, is a critical period in socialization process. However, college students in this period tend to have a lot of thoughts, unable to form mature and stable concepts. The ideal is perfect, and their demand is too high. Due to the limitations of objective conditions, the ideal and requirements cannot be realized immediately. There is a contradiction between subjective needs and objective reality. The physical growth of college students is mature, and they have stronger internal spiritual needs to realize their own values and aspirations. If the organization "takes advantage of" their needs, it is very easy to become the "spiritual fulcrum" of some college students. One

of the questions asked in our questionnaire is "do you believe in the existence of ghosts?" and "believe" "not" and "not sure" are the three options. Based on the statistical data, we found that there are some students choosing 'believe' and 'not sure', this part of the students are the cult's potential object of absorption, once the cult personnel give them wrong instructions, they are more likely to join it, and these followers could do harm to themselves and the personal property safety of others, even the harmonious development of society. However, most students still chose not to believe, indicating that this part still have a clear judgment of things and not easily to be influenced by the cult.

(3) The maturity degree of psychological development of college students is unbalanced.

The psychological development level of college students is the key factor that influences college students' cognition of cults. In the survey, we designed the question to get to know the students' ability of dealing with unfair treatment in the society, 52.69% of college students chose "to report to the relevant authorities", 31.18% chose "to submit to humiliation", 10.75% choose "to take revenge," 5.38% choose "to join some kind of spiritual organizations to ease pressure". It is obvious that some college students are not good at finding a proper way to relieve their own pressure, which gives the cult an opportunity to take advantage of it. "Some of the college students' intellectual development is not mature, being emotionally sensitive, fragile, eager to get others' recognition, but they lack the ability to analyze and rationally identify these social phenomena and a highly rational identification, so they are easily affected by some wrong thoughts and ideas, misled by cult and temptation."

4. Countermeasures and Suggestions for College Students' Cults Prevention

4.1 To Strengthen the Marxist Religious View of College Students by Multiple Channels

Whether education at colleges can achieve victory in the fight against destructive cults depends on how to develop college students' understanding of cults and help them form a right attitude towards cults. Only with a profound and comprehensive knowledge of cults can transmission among the youngsters be stopped and terminated. The course teaching is the main way for students to acquire knowledge, and ideological and political theory course is the main channel and main battle field of college students' ideological and political education. In the course of teaching, we should increase the content of the cognition of cults, so that the college students can have a clear understanding of the scientific atheism, the cult of theism; science, pseudoscience, religion, and cult. By combining history and reality, teachers should clearly present the dangers of cults, guiding students to set up correct world outlooks, values, and the outlook on life, to consciously resist the spread of cults, and be resolute about not joining them.

In addition, we can set up lectures on the prevention of cults, helping students know clearly the harm of cults and the difference between religion and cults. College students' misconception of religion is largely due to their ignorance of the essence of religion, believing it as mystery. So facilitating students' understanding of religion and helping them distinguish it from destructive cults are undoubtedly essential.

4.2 Enhance College Students' Ideal Belief Education

To make full use of the course teaching, the main educational channel of college students, and promote the educational work on students' faith construction, it is highly recommended to adopt social practice and peer counseling.

For example, Fudan University established "student anti-cult research institute" with 71 people as the first registered members. On the first topic seminar, six professors of Fudan University elaborated respectively on the necessity of anti-cult, the difference between the religion and cult, the status quo of international cult and struggle against evil cult. The students responded enthusiastically, saying that they have a further understanding of the essence of the cult, and have a more in-depth thinking about how to resist evil cult. Just as what they said, "falun gong" distracts minds, threatens the stability of society, disrupts the normal order of human production, work and life.

As the generation guided by the party and the people, faced with the knowledge economy era and the development opportunities and challenges in the world, college students take the responsibility of constructing the-socialist power and realizing the great rejuvenation of the Chinese nation's history. Advocating science and exploring the truth are the main melody of contemporary college students. We should adhere to Marxism-Leninism and MAO Zedong thought, Deng Xiaoping theory have great confidence in the party's religious faith, uphold the party's principles and policies, fight against cults, and maintain the hard-won stability and unity of the political situation." (Cao, 2001)

We should make full use of the educational function of environment and create a positive campus atmosphere.

The environment influences students' behavior to a certain extent. For example, if a student who has relatively poor academic performance and is not resolute in constant study is surrounded by hard-working students, he or she will learn more efficiently and attentively. So is the fight against destructive cults, if every student has a clear understanding of its essence and threat, the chance will be slim for destructive cults to target and deceive them. In addition, more various activities like lectures, clubs should be encouraged on campus so that students can enhance their enthusiasm on study and interpersonal communication. By launching some campus activities with the topic of advocating science and opposing to superstition and cults can cultivate a civilized, healthy, and high-quality cultural and psychological atmosphere.

4.3 Pay Attention to College Students' Psychological Health Education

Psychological imbalance is the psychological condition for cults to go deep into college students. People with mental health are more likely to resist the temptation of cults than people with mental illness, and they are less likely to be confused. According to the current situation and characteristics of college students' mental health, the overall psychological quality of college students is low, and they are easy to be confused by the new things and even do harm to themselves and others.

Strengthening education for college students' mental health will help to improve college students' psychological ability to guard against evil cults. We must grasp the psychological characteristics of college students nowadays, to popularize mental health knowledge, teach them how to maintain their mental health, and some stress-relieving method, and improve the capacity of self-adjustment, because not in real time, to a certain extent of pressure comfort is also the important cause leading students to join cults. Secondly, college students' mental health assessment should be done on a regular basis to effectively and timely grasp the psychology of college students, providing effective references and evidence to the judging and counseling of college students' psychological difficulties. The assessment can help students adjust their mental imbalance and prevent themselves from other mental problems. In other words, the bud of mental problems can be killed in the "cradle" stage.

Psychological consultation institutions should be established and improved on campus, and timely psychological counseling for college students should be provided to help students get further understanding of their own psychological problems, and help them get rid of the psychological perplexity in time and maintain mental health.

College students are builders and reliable successors to the cause of socialist construction. Undertaking the historical mission of the great rejuvenation of the Chinese nation, we need to strengthen marxist religion through the course teaching, conduct social practice and peer counseling-and carry out the evaluation and consultation of mental health education. With multi-channels, students' scientific spirit and critical spirit are cultivated, the correct world outlook, the outlook on life, values can be formed, and their ability to resist evil cult can be promoted.

References

- Cao, J. J. (February 21, 2001). The establishment of the anti-cult society of Fudan students. *Guangming Daily*, (A03).
- Chen, K. M., Ni, S. Y., Ma, Q. Q., & Yang, Y. Y. (2016). Investigation and countermeasures of cults in college students: a case study of several universities in Guizhou province. *Management Observation*, (18), 101-102, 105.
- Feng, G. (2000). It is necessary to strengthen the atheism of university students. *Journal of Shenyang Normal University (Social Science Edition)*, (3), 81-83.
- Gao, Y. F. (2016). The influence of college students on the influence of cult organizations. *Journal of Yunnan Police Academy*, (3), 86-88.
- Li, L. (2016). Study on the psychological characteristics and prevention strategies of college students' susceptibility to the cult of the cult. *Modern City*, 11(1), 48-50.
- Lu, Y. (2015). Analysis on the dangers and prevention of college students' mistakes in cults. *Talent Resource Development*, (18), 122.
- Song, B. (2007). *Cult empirical analysis of the impact of college students*. China association against cults. Guided by the spirit of the 17th national congress of prevention against cult to promote social harmony - China association against cults proceedings of conference. The association against cult: in China, 2007-5.
- Wu, S. T. (2015). Investigation on religious and cult identification of college students in Quanzhou district.

Journal of Quanzhou Normal University, 33(4), 82-86.

Xu, L. (2014). Research on the anti-cult education of contemporary college students. *Frontier*, (ZB), 141-145.

Zhou, Q. (2010). Research on the prevention and control strategies of cults - a questionnaire on the prevention and control of cults of college students in Zhejiang province. *Crime Research*, (4), 54-63.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).

Parliamentary Immunity in International Legislation

Amal Yusuf Alrfua¹, Ahmad Hasan Abu Sabah¹ & Ayman Yousef Mutlaq Alrfoua²

¹ Department of Comparative Law, Sheikh Nooh Alqudah's Faculty of Sharia and Law, International University of Islamic Sciences, Jordan

² Department of Law, Middle East University, Jordan

Correspondence: Amal Yusuf Alrfua. E-mail: amalrfoua@yahoo.com

Received: March 25, 2018

Accepted: April 2, 2018

Online Published: May 28, 2018

doi:10.5539/ass.v14n6p71

URL: <https://doi.org/10.5539/ass.v14n6p71>

Abstract

A Legislature is one of the most important bodies in a country, because in addition to its primary duty of passing legislations it also monitors the executive body and holds it accountable for the execution of its duties. Due to this responsibility the national legal systems have granted legal protection for members of the legislature to aid them to carry out their assigned responsibilities in accordance with the constitution, this protection is known as Parliamentary immunity.

We have clarified the concept of Parliamentary immunity and its legal nature, in addition we have also discussed its types (objective and procedural) and made clear the differences between them. In addition, we pointed out the procedure of lifting the immunity, legal reasons that require it be lifted and the position of some constitutions in regard it.

We have also explained and indicated whether Parliamentary immunity was successful in protecting the legislature from intimidation or strong-arming of the executive authority.

1. Introduction

Throughout history parliaments have been recognised as the voice of people since the main purpose of it is to represent the entirety of the nation in any given country. And the role of a member of parliament does not constrict to only representing people in their province but has greater role in representing the entire nation. Constitutions have assigned the parliament its duties of watching over the government's activities and passing legislations for the country, and due to the development and evolution of the parliament over recent years, a balance between the legislative and executive authorities was created in which both could practice their constitutional duties. Parliamentary immunity has been the main tool which led to the creation of this balance which allowed the members of parliament and the senate to scrutinize decisions made by the government and voice the will of the people they represent without pressures or threats of legal actions or questioning by the executive government. This right has been guaranteed to members of the legislature by constitutions all over the world to ensure that those members cannot face malicious legal pressures set to strong-arm them into submission by any party and provides them with the freedom of expression and freedom of choice. Parliamentary immunity does not at all mean that a member of the legislature is above the law but is merely a tool to protect them while they serve their constitutional duties.

Based on this argument, the researcher will discuss the following topics:

1. The legal nature and concept of parliamentary immunity:
 - a. What is parliamentary immunity?
 - i. Conceptual and linguistic meaning of immunity.
 - ii. Typed of immunity.
 - b. Legal nature of parliamentary immunity.
2. Forms and justifications of parliamentary immunity:
 - a. Forms of parliamentary immunity.
 - b. Justifications for parliamentary immunity.

3. Procedure for lifting immunity and reasons for its termination.

- a. Procedures for lifting parliamentary immunity.
- b. Reasons for its termination.

1.1 Significance of the Study

This study has shed light on the justifications of parliamentary immunity and its legal implications which help protect members of the legislature from intimidation and malicious legal prosecution by the executive government. This study also looked into reasons why such immunity might be revoked, and also acted as feedback to experts in the fields of parliament and constitution and member of the parliament and the senate. The study also considered to weigh legal strengths and weaknesses of the immunity to create a general perception to provide decision makers in the parliament and the legislative bureau with relevant feedback.

1.2 Research Problems

Through observation of parliamentary councils during their terms and the times of their dissolution and through the experience of the principal researcher as a member of the Jordanian parliament and feared she had observed from other members about requests from some parties asking the chairman of the council for the revocation of the immunity of some members of the parliament. She had also noticed some problems that have picked up tractions among ordinary people and law specialists about the lifting of immunity from this member or that member. Instances like this have been repeated though the revocation of immunities from some members so that they may stand trial for a criminal offence. Due to multiple points of view about what parliamentary immunity actually is and what occurrences justify its revocation, it was necessary to have a study discusses reasoning behind revoking or keeping the immunity instated in light of the offences the member of parliament might have committed, and so parliamentary immunity which constitutions have guaranteed, is only to protect freedom of opinion and expression and the freedom to practice their duties with complete independence and without fear of being intimidated by the executive government. Thus, the following questions were answered in this study:

1. What is the concept of parliamentary immunity and what is its legal status?
2. What are the forms and justifications of parliamentary immunity?
3. What are the procedures of lifting this immunity?
4. What are the cases leading to termination of parliamentary immunity and what are the effects of it?

1.3 Aims of the Study

This study aimed to identify parliamentary immunity and its legal status and to identify reason leading to the revocation of such immunity and its effects. Toward achieving this aim, three topics were discussed in this study:

2. The Concept of Parliamentary Immunity and Its Legal Nature

2.1 Conceptual and Linguistic Meaning of Immunity

Definition of Immunity in the Arabic language: Chastity, protection, resistance, and Allah has said in his holy book: {And We taught him the fashioning of coats of armour to **protect** you from your [enemy in] battle. So, will you then be grateful?} Al-Anbiaa Sura, [verse 80]. Allah also said: {This day [all] good foods have been made lawful, and the food of those who were given the Scripture is lawful for you and your food is lawful for them. And [lawful in marriage are] **chaste** women from among the believers and **chaste** women from among those who were given the Scripture before you, when you have given them their due compensation, desiring **chastity**, not unlawful sexual intercourse or taking [secret] lovers. And whoever denies the faith - his work has become worthless, and he, in the Hereafter, will be among the losers.} Al-Maeda Sura, [verse 5].

Definition of Immunity as a term: It was essentially a privilege decided by the international law or internal law of a country which relieves a person of a burden that has been imposed on the people of the nation in general or grants him/her the privilege of not being prosecuted by the legal authorities.

The historical foundation of Parliamentary immunity return back to the year 1397 when the House of Commons in the Parliament to the United Kingdom voted on a law which condemns the behaviour of the King Ritchard the second which consequently led prosecuting Thomas Haksy (the member in the Parliament) who took the lead in this issue with execution for his betrayal. After this, a Royal pardon was released after arguments by some groups which took to the House of Commons to discuss the rights of members of this house to talk freely without being interrupted by the royal court. This also recognised the right of the Parliament members to express in the 16th century and confirmed it in the 18th century through the rights law in 1689. This agreement dictated that the right to talk, discuss, and do inside the Parliament will not be a reason for legal prosecutions in any of

legal courts. However, issues related to major betrayal, crimes, and disturbing security were all exempted from this immunity, so it was possible to attest any of the parliament members in any of these crimes with being disclosed from immunity (Hussainyeh, p. 151).

Types of Immunity

Parliamentary immunity is split into two categories:

1. Substantive immunity
2. Procedural immunity

And what can be meant by substantive immunity is a member of parliament cannot be held liable for his opinions and suggestions inside the parliament. However Procedural immunity means that no legal action can be taken against the member by any party or citizen while they are within their parliamentary term unless permission is given by the parliamentary council, except in the case they commit an offence against another member during the parliamentary term (Altugeeri, 2009, p. 17).

In the opinion of some jurists (Kashkash, 2007, p. 40) Procedural immunity is a constitutional privilege given to a member of parliament not for their person but for being a person representing the people so that they may practice their duties to the best of their ability. Although this immunity is a constitutional guarantee though it does not pardon them from offences they commit, these crimes are postponed unless they caught in blazing offence.

Immunity was also considered as protection for a member of parliament against allegations of penal and civil offences, and against being interrogated (Jain, 1984, p. 6). And based on what has been mentioned, it was apparent that main purpose of parliamentary immunity was to ensure that a member of parliament is not abruptly removed from the council during their term unless it has become very clear to the parliamentary council that an offence has actually been committed and is not a malicious allegation whose purpose is to stop a member from performing their duties as representatives, and this alone limits parliamentary immunity (Mustafa, 1984, p. 384). And concerning the Substantive immunity, it was described as a permanent immunity regarding anything said by the member of parliament or ideas they have presented and cannot be questioned in their regard even after the member's term has ended. With procedural immunity however, it was only a matter of postponing action, and so we noticed that there was no effect on the legislations made by a member who commits an offence. And in the case of being caught in blazing offence, the member was detained without needing to inform the council to which they belong. But there are instances; in the French law for example, where the member is detained following an offence while withholding legal actions until the council agrees to allow them to commence, and before the council's term commences officially anyone can pursue legal matters concerning the members.

Also, there is a difference in the extent of implementing immunity on different types of offences. In some cases, its extent included crimes and misdemeanours where as in some constitutions it included crimes, offences and misdemeanours as what was seen in the Egyptian legislations.

2.2 Legal Nature of Immunity

In order to preserve the independence of the legislative authority, so it may carry out its duties with freedoms that its members need in order to do so, they must be protected from any threats or malicious lawsuits/allegations that may interfere with their ability to perform their duties. And so, the immunity can provide protection for the member of parliament because their job dictates it necessary, and not because of their person. For these purposes immunity was considered as an important component of the constitution because it regulated the relationship between different government bodies and because it gave the member of parliament the freedom to express opinions without questioning so he may fulfil the people's will that got him into the parliament. And so the immunity of the members of parliament, be it against parliamentary liability or against legal actions (Alaazmi, 2011, p. 28) was only a tool to provide freedom of speech and expression and as many jurists have described it as being a procedural platform to delay legal actions and law suits with permission from the council during his/her parliamentary term, and that the immunity was in no way a pardon from offences, crimes or responsibilities the member may have committed or have.

Parliamentary immunity was considered a part of the general political system, and that creates consequential conditions (Alaazmi, 2011, p. 28):

1. A member of parliament does not have the option to remove their own immunity under any condition
2. If a case is sent to courts before a parliamentary term is over, it is compulsory for the court to reject it as it defies the legal protocol, and the court makes this ruling automatically even if the member does not invoke the

use of the immunity specifically.

3. Any legal criminal procedures taken against a member of parliament without the permission of the council or its chairman, except in the case of being caught in blaze offence, is considered null.

4. It is permitted to invoke the use of immunity, regardless of the stage the lawsuit is in, even for the first time in the courts for resumption or revocation.

Some may consider Parliamentary immunity a way for the members to bypass the constitution which states that every citizen is equal, because from their point of view they consider it to be a way out from punishment and so they might use it to break the law, abuse their position for personal gain or to commit criminal activity unquestioned (Shurun, p. 153).

Other opinions suggested that it was not for purposes of protection within the parliament but protection from prosecution while on their parliamentary term (Shurun, p. 153).

But in general, immunity was considered a principle which has been agreed on by the majority of constitutions worldwide despite differences in political and/or legal systems because it is considered a protection for the independence of their role and not their person (Saleh & Tamah, 2011, p. 94).

Parliament was formed to represent the people and so it must be concerned with anything that concerned the people, and so must try to defend and negotiate in all matters on their behalf.

And so, the predominant opinion suggests that parliamentary immunity does not tip the scales in anyone's favour in terms of equality between citizens, because equality is applicable to people within a group who are of the same status and circumstances. Since the parliament can be seen as a different group with circumstances, and so immunity was only granted to them because of the conditions brought upon them by the nature of their duties, which consist of defending peoples' interests, and questioning government's decisions. This makes immunity a transitional and protective necessity leaving any interferences from other government parties in their duties at bay (Al-Qaisi, 2011, p. 13). And from what we have seen there were many different opinions, where some believed that immunity was a tool to shield the member from facing trial from their crimes and contaminates the concept of equality, and some argued that not all elected councils have immunity for their members and the concept of immunity does not affect the principle of equality because it is as one might say a job related privilege within the frame of parliamentary work, and here it was clarified that this privilege was not simply for the person but a protection of their role as a member of parliament so that they may carry out their duties without fear of other political or governmental parties.

3. Forms and Justifications of Parliamentary Immunity

3.1 Forms of Parliamentary Immunity

Parliamentary immunity was derived from the principle that the nation's people are the source of its authority, and parliamentarians were merely representatives of those people, and so when a member of parliament raises an issue or voices an opinion they are only echoing the voice of the people. The idea of immunity was introduced in England in the 17th century, where immunity was a privilege given for the common good and in favour of individuals (Alaazmi, 2011, p. 16).

Parliamentary immunity was called a parliamentary privilege in the U.K. and there were two main functions of it, the first being freedom of speech or silence, and the other was the ability challenge the crown (Bomdian, 2015, p. 18).

And so subsequently we can deduce that a parliamentary immunity does not mean that any crime committed by the member holding it becomes legal or protected, but that the immunity was only a delayer of inevitable events, and so any legal questioning or procedures are to be carried out after the immunity has lived its course unless permission was obtained by the respective council or the fulfilment of certain conditions. But when we look at substantive immunity we see that it does not have an expiry date, and so the protection of the members right of opinion remains even after their term has concluded (Fawzi, 1994).

And so we can consider it to be a guarantee against arbitrary commencement of legal actions against the member of parliament that could be malicious or a way to settle scores, and this all because the member may be opposed in opinion on the government's policies or because the member places a governmental sector under scrutiny which is considered to be a right of the member (Alshawabkah, 1997, p. 28). And so, the parliamentary immunity was split into two types:

1. Objective parliamentary immunity.

2. Procedural immunity.

3.1.1 Objective Parliamentary Immunity

Objective parliamentary immunity means that a member of Parliament Cannot be prosecuted in a criminal or civil Court at any time about any opinion or ideas they put forward in the house of Parliament (Al-Qaisi, 2011, p. 10; Murad, 2015, p. 23).

This means that the Member of Parliament can speak freely within the authorities that they have been granted and is able to present any ideas all opinions without any fear and that is, so they can perform their duties to the best of their abilities (Al-Jamal, 1995).

Objective Parliamentary immunity is not absolute, but as in fact limited by two important factors (Alaazmi, 2011, p. 23):

a. Opinions that a member may present during the serving of their term, during a legislative session, and when they vote for or against legislations, in accordance with their belief on the matter, or when inquests are directed at any member of government.

b. Ideas and opinions the member expresses outside parliament but are related to their duties or opinions that they may express through their membership of different committees in the council.

Properties of Objective immunity:

Objective immunity has a number of a unique characteristics and features that we specify as follows (Murad, 2015):

- a. **Complete immunity:** it covers all speeches, opinions and everything the member says under the umbrella of their duties.
- b. **Permanent immunity:** This protects the member of parliament while they are serving their term and after it ends, and so the member benefits from this even if they are not re-elected, and this is under the condition that the protected opinions were said during the period of immunity.
- c. **Absolute immunity:** Includes objective immunity, which protects the member from criminal, civil and political liability, and so the public prosecutors' office cannot initiate any legal file regarding those areas, and the affected party cannot demand any sort of civil compensation and the political authorities cannot in any way prosecute them.
- d. **It is a part of the general regulations/law:** this means that the member cannot refuse or revoke their own immunity and a judge must take it into account automatically, and it can be invoked at any stage of the lawsuit.

3.1.2 Procedural Immunity

This refers to the prohibition of legal procedures to be initiated against the member of parliament about a crime until the permission is granted from the parliamentary council (Murad, 2015, p. 25). This what the article (1/86) from the Jordanian constitution and its amendments dictated and said "A member of both the Senate or the Parliament will never been detained or prosecuted during the meeting unless a decision by the vast majority to say that there is a justified reason to do so or if s/he is detained while in a criminal offense and even though the council should be informed immediately". This text has been interpreted by the Jordan constitutional court in its decision 7/2013 when it said that "The court considers that, a part of the two situations mentioned before, the member should not be detained or prosecuted during the meeting for criminal acts whether before or after being a member until he is lift of the immunity which should be agreed by the vast majority of the Senate or the Parliament to which he belongs.

This might indicate that the constitutional court has widened the boundaries of the Parliament immunity to include all criminal acts which may be performed by the member either before or after being a member.

The Palestinian constitutional court has granted the right for the president to lift any member in the legislative council of the immunity without the council being held in the interpretative decision 3/2016 which dictates that "The high constitutional court consider the decision 4/2012 taken in 3/1/2012 which implied lift of immunity for the legislative council member Mohammad Yousef Shaker Dahlan, who has been contested in the court in a criminal case (decision cancelled 326/2915 which has been made appropriately and according to the rights granted to the president in the law "Decision of the Palestinian high constitutional court 3/2016)".

And the procedural parliamentary immunity consists of the principle of physical freedom, as they could be physically detained and so won't be able to vote in favour or against certain issues, and this prosecution may

have nothing to do with parliamentary affairs, because anything within the parliament is protected by the objective immunity, and the points that follow may be seen as points of difference between the two types of immunity (Alaazmi, 2011, p. 25).

And based on that we see that procedural immunity is only a matter of delaying action until the immunity is lifted by the council except in cases of flagrante delicto.

Properties of Procedural Immunity

Procedural immunity has a number of unique characteristics and features that we specify as follows (Murad, 2015):

- a. It is temporary in nature and not permanent like the objective immunity, and only lasts through the period of the members term, in addition some constitution stated that procedural immunity also ends at the end of the parliamentary term, examples are the Jordanian and the Lebanese constitutions.
- b. It is a part of the general system that has been stated in the constitution and cannot be overruled, and so any legal procedure is considered void against a member of parliament. The criminal chamber in cassation court has approved with the invalidation of the procedures that were performed and broke down the immunity principles (See the decision of the criminal chamber of the cassation court dated 5/8/1985).
- c. This immunity is not like the absolute immunity and so any person affected by a member's actions can take it to civil court.
- d. A member cannot lift this immunity except by submitting a formal request to the respective council chairman as per the law.

The fundamental difference between objective and procedural immunity is that it includes parliamentary members from the present and the past since the effects of opinions may extend till today and the member can't be prosecuted for the people's opinions, whereas only present members can benefit from procedural immunity, so it may not cover criminal or illegal activity the member may commit (Murad, 2015, pp. 28-29).

3.2 Justifications for Parliamentary Immunity

There were a few justifications for parliamentary immunity, these justifications allow the Member of Parliament to carry out their duties while being guaranteed absolute freedom of opinion and expression. It also allows the Member of Parliament to represent the people correctly as he has the freedom to speak and to criticize the government without fear, and so objective parliamentary immunity ensures that the Member of Parliament is not questioned about anything that they express during their time as a parliamentarian. And this guarantee extends from the time they are elected and after the end of their term.

Most constitutions around the world Granted immunity to members of parliament as a guarantee that they can practice their duties with absolute freedom and Boldness. And because confidence and Independence were the pillars of the duties of a parliamentarian, so that they do not fall under pressure or be used by the executive Authority. Immunity was instated to guarantee the Member of Parliament the right to his opinion without fear. This immunity does not aim but to stop the executive government from fabricating lawsuits to stop a member from voting or to change their stance forcibly about a certain matter, and this immunity was not given to the member because of their person but as a way to allow them to practice the job (Shawabkah, 1997, p. 14). And so we found that this immunity has legal effects that can be seen in the passage that follows (Azmi, 2011, pp. 77-78).

Consequential effects of parliamentary Immunity

1. Ideas and opinions cannot be placed under a criminal domain, if it does not cross the boundaries of the law, and so a member of parliament cannot be asked for compensation for damages.
2. The effect dog objective immunity for a member of parliament stretches even after the end of their term, and compensation regarding matters under the umbrella of this immunity are not allowed.
3. A member of parliament is still required to remain within responsible and decency that the law has stated. The immunity does not pardon the member for breaking internal laws of the council or allow them to use the immunity where they cannot, because this would mean they are acting outside the agreed upon rules of the parliament.
4. It is a right for a member of parliament to refuse to waiver the immunity and if they do not state it then the judge must make it so automatically on their behalf.
5. The only beneficiary from the immunity is the person who has acquired the right to be a member of the

parliament and no one else can benefit from it.

4. Procedure for Lifting Immunity and Reasons for Its Termination

It has been stated in many constitutions that a member of parliament must not be detained or stand trial during their parliamentary term, except if the parliamentary council decision otherwise on which the council must pass the decision with a majority vote for a serious enough offence. The immunity may also be disregarded or lifted if the member is caught in blazing offence.

4.1 Procedures for Lifting Parliamentary Immunity

If a member of parliament commits a crime during their parliamentary term, the Prime Minister proceeds to tell the chairman of the council to which that member belongs to take necessary action and sends a detailed explanation of the crime, and this is what most constitutions dictate happens in such circumstance. No public prosecutor can take any actions until after permission has been granted from the chairman of the council the member belongs to Kashakesh (1997 pp. 45-46). So consequentially the order for the revocation of the immunity was presented in accordance with the regulations of the council; This is because immunity delays any prosecutory action until permission is granted by the council. At this point the council's duty was to ensure whether the crime has actually been committed or was just a malicious accusation, and if it was determined that the crime was committed by the member then the order to revoke their immunity is effective and all criminal legal action is taken against the member (Murad, 2015, pp. 84-85; Kashakesh, 1997, pp. 45-46).

And so it is made clear that the process of revoking the immunity begins with an official Request from the chairman of the council to which the member belongs, and when a parliamentary council meeting is held, this request is processed and a verdict is made based on the evidence presented, on whether to revoke the immunity or not, and if the council does not give a verdict within the designated 2 months this can be considered a permission to lift the immunity as has been mentioned in the Algerian Constitution. And in case the council does not hold a meeting, the council is then informed of any procedures taken against that member.

4.2 Reasons for Its Termination

Objective immunity begins and continues onwards from the day the member is elected and does not end under any circumstance for it protects the ideas and opinions of the member because they represent the guarantee of independence for the legislative authority. And this immunity is subject to a few regulations, the system of work and the member's duties.

Procedural immunity however: the law decides the cases that this immunity is terminated, in accordance with scope it resides under (Alshawabkah, 1997).

There were more than one way to terminate a parliamentary immunity:

1. Civil lawsuits: in some countries a civil lawsuit is a valid reason for the immunity to be lifted and so anyone can make a lawsuit against a member of parliament at any time and ask for compensation. The immunity does not necessarily mean member protection from being prosecuted in civil and commercial with the aim for those Lawsuit was to have civil compensation and this was has been approved by the French Judicial court which said that "This solution was offered so the Parliament responsibility for the member does is not a reason for him to be arrested neither to apply a physical harm upon him". (Decision of criminal chamber for the French Court of cassation (1893).
2. Being caught in blazing offence (red-handed): In most constitutions caught red handed in a crime is excluded from the immunity's reach and so if it occurs the immunity is therefore removed, article (41) from the French rules of trial procedures. And this case also includes when a crime or offence is done publicly, or when a person is found holding items tying them to a crime or having papers announcing their involvement in a crime, under the condition that this happened at a time close to that of the occurrence of the crime; as seen in article (28) of the Jordanian criminal trial procedures: a witnessed crime is a crime in which the perpetrators are detained in the middle of a local outrage at the crime scene, or are caught with weapons, items, papers that can prove their involvement in the crime within 24 hours of the crime. It is only normal for the immunity to be revoked in cases of blazing offences because the parliamentary immunity is not a means to cover crimes up but was introduced to aid the interests of the people. And it has become apparent that in blazing offences are not protected by any immunity in any constitution in any way.
3. Reaching the end of a parliamentary term normally:

The parliament comes to comes to an end differently in each country depending in the duration of the length of the parliamentary course as stated by their constitution, for example in Jordan the term ends after 4 years from

the date of election, whereas in France the term is 5 years long. The ending of the parliamentary term also means the immediate withdrawal of any privileges that come with it, and so they can no longer be responsible for holding the government accountable for its actions, they no longer have the duties associated with members of parliament, and they are no longer out of reach of civil courts (Alshawabkah, 1997).

4. Dissolution of the parliamentary council:

This is a weapon in the hands of the executive government that they use against the parliament, and so when a royal or presidential decree is passed down by the king or president the immunity ends, and any members can be taken to courts as normal with the need of approval from the council.

And what is meant by dissolution of the council is: the end of a parliamentary term before it has run its full duration, and it has been stated in many constitutions including the British and Jordanian, that the power to dissolve a council is in the hands of the king/queen and in other countries the president with a few restrictions. For example: in Jordan the dissolution of the parliament also means the dissolution of the government processed the request of dissolution within one week as per the latest constitutional amendments (Jordanian Constitution, article 66).

5. Death of the member:

Immunity is a constitutional privilege that is given to a person and so if the person is deceased they are no longer an MP, and so the immunity is stripped with the status.

6. Loss of competence:

Meaning of competence: fitness of a person to have rights and responsibility (Murad, 2015) and the loss of any accountability due to medical conditions such as dementia, madness etc. And this means that the member has lost competence and accountability and, in some cases, partially.

7. Resignation:

This means that a member of parliament must by their own will submit a request to terminate their services in the council, and it is considered effective when the chairman accepts their resignation and so the immunity is then lifted automatically; this is in accordance with internal regulations of the Jordanian parliamentary council, article (157, 158, 159) (Murad, 2015).

8. Impugning the legitimacy of a member's election:

Impugning the election results after they have been calculated due to ill practices, forgery, disputes over formalities in the process (Qaddourah, 2009).

9. Caught in blazing offence:

Article (26) of the French constitution and article (96) of the Jordanian constitution; and what we mean here is the witnessed crime as per the Jordanian criminal system article (28), revoke the immunity of a member because it is in blazing offence and cannot be delayed. And this is because it is necessary to uphold equality between citizens. And so, an arrest is the main reason for limiting the members' freedom.

10. A member's waiver of their immunity:

Many constitutions, including the Jordanian constitution, have agreed that it is not permitted for a member to waive their immunity without permission from their respective council, because it is considered to be a right and it is not in the members favour to forfeit any of their rights.

Therefore, a member is obliged to follow the council's orders, and the waiver of the immunity must provide a clear, precise reasoning, because the waiver is temporary and does not last till the end of the term.

It has become clear from the previous list of ways above that the normal and abnormal termination of the immunity all are dependent on the specific term the person is a member. The Egyptian constitution goes to say that the immunity lasts the same period as the parliamentary term, whereas the Jordanian constitution it is constricted to the end of the traditional, non-traditional, and exceptional parliamentary cycle. This means that the immunity ends with the end of the parliamentary cycle, or after the duration of the term or until its dissolution, and there are many different opinions between jurists about this matter.

5. Conclusions

As we have made clear before, parliamentary immunity is the most important guarantee, so the member of parliament can carry out their duty freely and in accordance with the constitution, by criticizing the government, directing questions and inquiries and all the tools that can be used to supervise government decisions. And the

immunity provides a safe shield against threats and intimidation by the executive government. And the researcher has come to the following conclusions:

1. Constitution is the binding legal document that regulates the relationship between different authorities in the government.
2. Parliamentary immunity is the most importance guarantee of protection for the member of parliament.
3. Some call immunity an unconstitutional privilege because it distorts the concept of equality.
4. There are differences in how different constitutions define immunity.
5. Objective immunity is absolute, and what is meant here is in relation to the unrestricted freedom to ideas, opinions and speech in the house of parliament.
6. Parliamentary immunity is a constitutional element and has acquired its validity from constitutions around the globe.
7. Parliamentary immunity is for the common good and not personal gain.
8. Immunity does not cover in blazing offence nor witnessed crimes.
9. Different country's political systems decide specific details regarding immunity.

The procedural immunity has been made specific to actions that have no relation to the parliament and are under the umbrella of criminal offences, and so it is not possible to sue a member of parliament without the permission of the parliamentary council, and after the immunity is lifted in accordance with the internal council regulations.

Members are given special privileges, because they do not represent themselves when speaking or expressing opinions but are in fact representing the entire nation. And so, the immunity is nothing but an aiding tool for the common good of the people, by providing the member independence. Even though immunity has been criticized as being unconstitutional, and goes against the concept of equality in punishment, it has also been defending by some because it does not belong to the person in question but their role as a member of parliament.

6. Recommendations

1. It should be stated in the constitution that immunity extends beyond the parliamentary term, so a member is not maliciously sued after the end of the term.
2. Immunity should not be lifted during periods when sessions are not held.
3. There should be legal specialists to decide in cases of revoking an immunity because they possess more knowledge of legal matters than the council.
4. Immunity has become a constitutional principle in many countries around the world and has become a source of protection for the member, therefore the executive government should get less of a say on matters such as immunity and less influence on matters such as the dissolution of the parliamentary council.
5. There should exist a set of procedures to strengthen parliamentary immunity. This means that members' opinions would be reinforced within the context of objective immunity.
6. Immunity within Islamic jurisprudence so regulations and limitations may be set in accordance.

References

- Alaazmi, M. M. (2011). *Parliamentary immunity a comparison between Jordan and Kuwait* (Unpublished Master's Thesis). Middle East University, Jordan.
- Aljamal, Y. (1995). *Egyptian constitutional system* (2nd ed.). Dar alnahda alarabyia, Cairo.
- Al-Qaisi, H. M. (2011). *A comparative study between the internal regulations of the parliamentary council and the national Kurdish council*. Almunaseriah University.
- Alshawabkah, I. (1997). *Parliamentary immunity: Comparative study* (Master's Thesis). Amman, University of Jordan.
- Altugeeri, A. bin A. (2009). *Parliamentary immunity and its application on the Saudi consultative council* (Masters Thesis). Naif University for security sciences, Alriyad.
- Bomdian, A. (2015). *Parliament immunity; A comparative study* (Published PhD Thesis). Abu Bakr University, Qaid, Telmsan.
- Fawzi, S. (1994). *The parliament: An analytical comparative study between world parliaments* (1st ed.). Cairo: Alnahda Alarabyia Printing Press.

- Fawzi, S. A. (2000). *A look into politicians and constitutional law* (35th ed.). Cairo: Alnahda Alarabyia Printing Press.
- Fihmi, M. A. Z. (1984). *Egypt's constitutional system* (1st ed.). Munshaat almaaref, Alexandria.
- Jain, M. P. (1984). Parliamentary Privileges and the press. NM. Tripathi private Ltd, Bombay, India.
- Kashakesh, K. Y. (2007). Procedural immunity a constitutional guarantee for parliamentary work. *Almanarah Journal*, 13(8).
- Murad, M. O. (2015). *Parliamentary immunity in Palestinian legislations* (Unpublished Master's Thesis). Islamic University, Gaza.
- Qaddourah, Z. A. (2009). *Parliamentary immunity- a comparative study between Arab and foreign parliaments* (Vol. 23). Mu'taa journal, for research and studies, social and human studies.
- Saleh, A., & Tamah, N. (2011). *Legal system for immunity* (PhD thesis in general law). School of Law, Algeria University.
- Shurun, H. (2010). *Parliamentary immunity* (5th ed.). Algeria: A published study in Almufaker Journal, School of Law and Political Sciences, Mohammad Khadr University.
- Jordanian Constitution 1952 and Amendments.*
- Decision of interpretation of the Jordanian constitutional court No 7 year 2013, Published in Official Gazette, Vol 5222.
- Decision of criminal chamber for the French Court of cassation (1893), Immunities 49.
- Decision of interpretation of the high Palestinian constitutional court no 3, 2016
- Decision of criminal chamber for the court of cassation (1982), Immunities 41.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).

Technical Efficiency of Public Service Hospitals in Indonesia: A Data Envelopment Analysis (DEA)

Sonny Harmadi¹ & Irwandy²

¹ Faculty of Economics and Business, Universitas Indonesia, Indonesia

² Universitas Hasanuddin, Indonesia

Correspondence: Dr. Sonny Harry Harmadi, Faculty of Economics and Business, Universitas Indonesia, Depok, Jawa Barat, 16424, Indonesia. E-mail: sonnyhbh@gmail.com

Received: March 26, 2018

Accepted: April 6, 2018

Online Published: May 28, 2018

doi:10.5539/ass.v14n6p81

URL: <https://doi.org/10.5539/ass.v14n6p81>

Abstract

In order to promote efficiency and the development of hospitals' services, the Government of Indonesia has issued specific policy which require all of the government-owned hospitals to be managed based on the principals applied in public services agency (Badan Layanan Umum/Badan Layanan Umum Daerah (BLU/BLUD)). The policy of BLU/BLUD is to grant each hospital authorization in managing their funds and resources under the principles of public accounting. Unfortunately, not all government-owned hospitals were granted BLU/BLUD authorization, especially hospitals outside of Jakarta, because local government did not wish to lose one of their main income. The main focus of this research is to calculate the efficiency of the hospitals of which have been granted BLU/BLUD, since one of the main purposes of BLU/BLUD is to provide high quality and efficient health care to the public. The measurement of hospitals' efficiency is not an easy thing to do, since there are so many inputs and outputs that were related to each other. Which is why, this research is measuring the efficiency level using the DEA (Data Envelopment Analysis) which is able to provide efficiency calculation with multiple inputs and outputs. With the total samples of 82 BLU/BLUD hospitals, this research concluded that the average of hospital's efficiency score is still on the level of 78.9 % out of 100%.

Keywords: Data envelopment analysis (DEA), hospital efficiency, Indonesia, technical efficiency

1. Introduction

Hospitals as type of health care facilities have such strategic role in order to accelerate the public's health to reach the Indonesian Health Development Target. Unfortunately, such target will only be possible if Indonesia is able to provide high quality health care services. The service quality is one of many performance indicators for health care providers including hospitals. The main purpose of health care systems all around the world is to achieve the optimal efficiency. The importance of efficiency as one of the main indicators of hospital's performance measurement, has been acknowledged in all around the world by the insertion of efficiency indicators inside the Europe Path Project's Hospital Performance Measurement by WHO.

In Indonesia, health care efficiency has been the main issue in the health care system. This has been made by the entry of free market era and the establishment National Health Security Program (Program Jaminan Kesehatan Nasional/JKN) on January 1st 2014 to achieve universal health coverage in Indonesia. The application of JKN has brought such a big change in health care system by changing the payment system from 'fee for service' into 'service package' payment by social security provided by the government under the program of BPJS (Badan Penyelenggara Jaminan Sosial/Social Insurance Administration Organization) Kesehatan. By using INA-CBGs tariffs, and other strict rules regarding tiered referral systems, BPJS Kesehatan provides all the health care services from primary health care services to referred health care services like hospitals. Referred health care services are health care services management which handle the transfers between duties and responsibility of health care services both horizontally and vertically to the member of health insurance or social health insurance and the whole health care facility.

Indonesian government realized how important it is to be efficient in every aspect, thus introduced the General Services Pattern (PK-BLU) for any health care provider institutions which rules are applied under Indonesian Government Regulation number 1 on year 2004 about The National's Treasury. Government also issued regulations number 44 on year 2009 about hospitals, which mandates government-owned hospitals to be

managed under the form of General Services (BLU/Badan Layanan Umum) or Area General Services (BLUD/Badan Layanan Umum Daerah).

Transformation of Indonesian public sectors institutions in the year of 1990's to early 2000's occurred under some certain circumstances which are: (1) rightsizing (cut the government) by reorganizing organizations to cut bureaucracy in order to gain efficiency (2) corporatization (managing for results) by creating autonomous agencies in the government institution to be working corporate wise, (3) privatization, which allowed public sectors to be acquired by private parties. Under the case of BLU, the transformation pattern applies are the same as the corporatization pattern. As an autonomous agent, BLU's characteristics are not the same as other institutions as described below:

Table 1. The comparison of public sector institutions in Indonesia

Criteria	Ordinary Institutions	General Services (BLU)	State Owned Corporation
Legal Status	Part of Ministry or Institutions	Part of Ministry or Institutions	Legal Entity / State Assets are separated
Purpose	Non profit	Not for profit Autonomous	Profit Corporation
Management	Ministry-wise	Nomenclature Governmental	General Corporation Limited
Financial Management	Universality	Excluded, Universality	Business

BLUs are operating as the ministry/institution/area governments working units to provide services whose managements are authorized and delegated by their parent institutions. BLUs under the authorization of central government are called BLU, while the ones whose authorizations are under the area government are called BLUD. BLUs are formed to improve services to the public by being granted the flexibility of financial management under the principles of efficiency, effectively, productivity and also healthy business practice application. By the presence of flexibilities, BLUs are expected to be able to increase services and financial performance of hospitals, so that they will be able to provide optimal health care services in the competitive health care market.

Until now, the number of government-owned hospitals with the status of BLU/BLUD in Indonesia is keep on increasing. On 2014, 241 hospitals were granted BLU/BLUD status, while on 2016 the number raised to 353 hospitals with 74 BLU hospitals and the other 279 are BLUD. Although the number is keep on increasing, not all government-owned hospitals are BLU, especially area government hospitals. This is caused by the low commitment on some area government to grant autonomy on financial management to their hospitals, and hospitals are their one of the most crucial income.

Based on the resources, hospitals in Indonesia are divided into class A, B, C and D. Class A hospitals are able to provide specialists and subspecialists doctors and have been set as top referral hospitals or central hospitals. Class B hospitals are able to provide wide range of specialists but with restricted subspecialists. These types of hospitals are planned to be built in each of Indonesian capital city of the provinces which are able to provide referral from district's hospital. Class C hospitals are able to provide restricted subspecialist doctors.

There are four types of specialized services which are internists, surgery, child health services and obstetrics. These types of hospitals are built in the cities or districts as level 2 health facilities which can accommodate referrals from level 1 health care facilities. Class D hospitals are transitional, because these hospitals will be improved into Class C hospitals. Class D hospitals are only able to provide general medicines and dental care. Same as Class C hospitals, Class D hospitals also accommodate the referral of level 1 health care facilities.

According to Indonesian Health Profile, Indonesian hospital's growth is currently increasing. Since the year of 2005, the number of hospitals is increasing from 1,268 to 2,488. By November 2016, the number of hospitals was significantly increased into 2,588, or about 104% higher than 2005. The growth of hospitals will benefit people, in terms of their access to health care. While in the other hand, such condition will turn into a liability if the growth is not being balanced by efforts to make hospitals efficient, especially in the era of National Health Insurance provided by BPJS Kesehatan in Indonesia.

Theoretically, the policy to apply health insurance universally, will improve people's access to health care facilities. But in Thailand, this policy has also squeezed out such big amount of resources and needs to be intensively supervised. In the beginning of universal coverage in Thailand, hospitals have only restricted amount of funds and thus, have caused financial problems for hospitals themselves. Dismuke (1999) shown that the use

of DRG payment in insurance system, will improve the efficiency of hospitals in Portugal.

Malonda in 2015 stated in his research that, in the beginning of the implementation of BPJS Kesehatan in RSUD Dr. Sam Ratulangi Tondano/Dr. Sam Ratulangi Regional Hospital. Nationally, the application of health insurance has brought some negative effects to the performance of financial, productivity and hospital efficiency. Chriswardani on 2015 also found that the first year of BPJS Implementation, the income of RSUD in Semarang was relatively declining, since some of INA CBG tariffs are lower than the original hospital tariffs.

To be able to survive in the era of National Health Insurance, efficient hospital management will have to include quality and cost control, especially BLU/BLUD hospitals, which were specifically formed to be able to manage their operations with the principles of efficiency and effectivity.

The purpose of this research is to measure the efficiency level in BLU/BLUD hospitals in Indonesia with DEA approach to be able to acquire images about Indonesian hospital efficiency level and also the strategies to reach optimum efficiency. The data for this is acquired from 82 BLU hospitals and BLUD in the year of 2017 in the form of online hospital reporting system by Indonesian Ministry of Health.

2. Methods

2.1 The Concept of Efficiency

The term of efficiency is commonly used in the economics, which usually are referring to the most optimal way in utilizing resources in order to producing goods or services. Efficiency, in the term of Hospital Efficiency, means the most optimal utilization of inputs in the hospitals in order to produce the number of maximum output possible. In the studies conducted by Europe Path project, in order to measure the achievement of efficiency, efficiency itself is divided into sub-dimensions which are: 'the relationships of the treatment's input and output', and 'the utilization of technology in order to produce the best treatment possible'.

In the corporate's perspectives, there are three kinds of efficiency. First, Technical Efficiency which reflects the company's ability to achieve optimum outputs by utilizing certain inputs. Second, Allocative Efficiency, which reflects the company's ability in order to optimize input utilization with certain price structure and technology. Third, Economic Efficiency which is the combination between technical efficiency and allocative efficiency. Economic Efficiency implies the concept of least cost production. To reach certain outputs, companies are classified as economically efficient when they are able to utilize the costs where the price of each output unit is at the most minimal.

In the health care services, Institute of Medicine of the National Academies described that economic efficiency is generally stated as the relationship of the number and quality of certain outputs by utilizing certain inputs which can minimize the production costs. Different combination of capital, labor and raw materials (doctors, nurses, etc.), are able to be utilized as inputs to produce numbers and qualities of some certain outputs. Generally, there is only one combination of input with the lowest production costs which can produce some certain outputs.

The issues about efficiency were brought up to answer questions about whether the service costs incurred by certain units are sufficient. Hospitals with low service volumes are most likely to have very high unit costs or are operating with rather old equipment like x-rays and radiology equipment. These equipment might require the operator to operate them multiple times in order to achieve the best results possible. In that case, although patients or third parties would not mind to pay certain service costs, these people would not pay the services efficiently¹¹.

2.2 The Methods of Efficiency Measurements

Yazar A. Oscan (2014), efficiency measurements are done by various methods, parametrically and non-parametrically. Some methods used in measuring the efficiency are analysis ratio, least-squares regression (LSR), total factor productivity (TFP), stochastic frontier analysis (SFA) and data envelopment analysis (DEA).¹²

Research done by Hussey, et al. (2009) found that the majority methods used to measure efficiency in the health care fields in all around the world is the frontier analysis methods with DEA included⁽¹³⁾. One of the advantages of DEA is its ability to accommodate many inputs and outputs in many dimensions. Efficiency measurements are more accurate because in hospitals, the inputs and the outputs are pretty various and are connected to each other.

Ozcan⁽¹²⁾ stated in his book about the measurement of efficiency by using DEA methods have now been developing and are commonly used in measuring technical efficiency in hospitals and other health care institutions in the U.S and all around the world like in Spain (Pina & Torres, 1996; Sola & Prior, 2001; Dalmau-Atarrodana & Puig-Junoy, 1998), Taiwan (Chang, 1998), Thailand (Valdmanis et al., 2004), Turkey (Ersoy et al., 1997; Sahin & Ozscan, 2000), Greece (Giokas, 2001; Athanassopoulus & Gounaris, 2001),

Germany (Helmig & Lapsay, 2001), Canada (Oullette & Vierstraete, 2004), Britain (Field & Emrouznejad, 2003; McCaliion et al., 2000), Belgium (Creteur et al., 2003) and Sweden (Gerdtham et al., 1999). Comparison study between countries have also been done by Mobley and Magnussen in 1998 and also Steinman and Zweifel in 2003.

Ramanathan (2003) stated that DEA is a linear program-based technique in measuring the efficiency of organization units named Decision Making Units (DMUs). DMUs are organizations or entities, whose efficiency will be measured relatively to other homogeneous entities. Homogeneous means the inputs and outputs from the DMUs evaluated must be the same or similar. DMUs can mean commercial entities or public, just like commercial banks or government, private and public school, hospitals etc. ⁽¹⁴⁾

The Data Envelopment Analysis compares the efficiency level of one decision making units (DMUs) by using variative input and output with typical DMUs. The calculation of efficiency by using DEA results the score of 0 to 1 (most efficient). DMU with the score of less than 1 is classified as inefficient. Mathematical models of DEA can be described as below:

$$\max E_m = \frac{\sum_{j=0}^j v_{jm} y_{jm}}{\sum_{i=0}^i u_{im} x_{im}}$$

Subject to

$$0 \leq \frac{\sum_{j=0}^j v_{jm} y_{jm}}{\sum_{i=0}^i u_{im} x_{im}} \leq 1; n = 1, 2, K, N$$

$$v_{jm} u_{jm} \geq 0; i = 1, 2, K, I; j = 1, 2, K, J$$

Where:

E_m is the efficiency of DMU to m

Y_{jm} is an output to j from DMU to m

V_{jm} is the weight of the above output

X_{im} is the input to I from DMU to m

U_{im} is the weight of the above input

Y_{jn} and x_{in} is the output to j and the input to I respectively and from DMU to n , $n = 1, 2, N$

There are a few DEA models which might be used depending on the conditions of the problem. The form of DEA can be identified based on economy scale and the orientation of the model. There are four models of DEA which can be used in the research, they are *CRS Input*, *CRS Output*, *VRS Input*, dan *VRS Output*. CRS and VRS are showing the assumptions used, while input and output are showing the orientation of the research.

DEA was found by Farrell on 1957 and was developed by Charnes, Cooper and Rhodes on 1978 which was known as the model of CCR. In its growth DEA has been modified by Banker, Charnes and Cooper on 1984, and that it was named BCC. Unlike CCR which uses the assumption of Constant Return to Scale (CRS), the BCC model uses the assumption of Variable Return to Scale (VRS).

CRS assumption requires DMU to be able to increase or decrease the input and the output linearly without the need to experience of the rise or the drop of the efficiency score. While VRS assumption does not require the change of Input and Output of particular DMU to occur linearly, so that the increasing returns to scale (IRS) and the decreasing returns to scale (DRS) are allowed. CRS assumptions are suitable to utilize when all of the DMUs are working on their most economical scale. But the truth is, there are conditions that might cause some productions to not working optimally. Therefore, the BCC model is the better choice to utilize in such condition.

Input orientation may be used when there is some certain reduction of input to increase efficiency. Input orientation assumes that management has a better control toward Input rather than Output, or in other words, management is able to raise or to reduce the input easily. For example, in the field of health, the reduction or the increase of the number of doctors in certain hospitals. Unlike the input orientation, output orientation is used when the increase of the output with the available input to increase the efficiency score. This means that management has more control toward output rather than input. This research utilizes DEA models with VRS and output orientation because the subjects for this research are government-owned hospital which are easier in controlling their output rather than input which are bonded to the regulations of the government.

2.3 The Source of the Data and the Variables of the Research

The availability of the data for the hospital's resources and performance are still very restricted. This research utilizes secondary data on the online based hospital's reporting system provided by the Indonesian Ministry of

Health in the period of 2017 which were the only source available in national scale. The input and output indicators in this research is based on the availability of the data nationally available in the database. The samples of the hospitals used were sourced from the list of the BLU and BLUD hospitals on the funding of health facility research by Indonesian Ministry of Health in the year of 2016.

In the beginning, the samples were only 84 hospitals, but soon after data cleaning was performed based on the availability of the data, the indicators used in the online hospital reporting database was reduced by 2 hospitals, resulting in only 82 hospitals were used as the samples.

In the determination of input indicators, this research focused on two things, earlier studies about the utilization of input indicators in the hospitals with the DEA approach and also the availability of the said indicators in the hospital's reporting database. Earlier research shown that the number of doctors, nurses, other staffs and beds in hospitals are the most utilized input indicators. Based on those previous research, this research will use the number of doctors, nurses, other staffs and beds as the input indicators.

Studies with DEA approach divided indicators into three which can be used as output indicators, which are outpatients, inpatients and emergency patients. Based on previous studies and the availability of data inside the Indonesian hospital reporting systems, the output indicators used in this research are outpatients, inpatients and emergency patients.

3. Results and Analysis

Out of 82 hospital samples, there were 9 class A hospitals, 37 class B hospitals and 36 class C hospitals. Hospitals in Indonesia are divided into 5 regions based on the payment systems of national health security with INA-CBGs tariff. Regionalization in INA-CBGs tariffs was meant to accommodate distribution costs of medicines and medical equipment in Indonesia. Regionalization is determined by Consumer Pricing Index (IHK) from Statistics Indonesia. The spread of the research samples, based on the regionalization are 36 hospitals on regional 1, 15 hospitals in regional 2, 19 hospitals in regional 3, 5 hospitals in regional 4 and 7 hospitals in regional 5.

The descriptive results for the average of input numbers in the samples of the research are 341 beds, 82 doctors, 344 nurses and 387 other staffs. The average output for outpatients are 116.711, for inpatients are 22.363 and emergency patients are 19.348 annually. The result of descriptive statistics of input and output of the hospitals are including the minimums, maximums, means and deviation standards shown on table 2 below:

Table 2. Descriptive statistics of inputs and outputs

Input/Output	Minimum	Maximum	Mean	Deviation Standard
Beds	96	1.038	341	234
Doctors	15	461	82	88
Nurses	20	1.404	344	274
Other Staffs	38	2.016	387	342
Outpatients	7.000	576.863	116.711	101.348
Inpatients	2.000	144.533	22.363	22.206
Emergency Patients	2.420	46.350	19.348	10.675

Hospitals are considered efficient if all the resources they possess were spent optimally and no other rooms to increase the outputs without changing the inputs used. Technical efficiency scores for hospitals will be 1 or 100 percent. In the other hand, hospitals are considered as inefficient if there are still rooms to reduce the utilization of their inputs without affecting current outputs. Technical efficiency score for these hospitals are less than 1. Based on the above statements, in DEA analysis are between 0 until 1.

3.1 Efficiency Scores

The technical efficiency score for BLU hospitals were calculated by using the 'output-oriented' and Variable Returns to Scale (VRS). Technical efficiency scores were provided in Table 3. From 82 hospitals, 28 hospitals or 34% were technically efficient. The average number of hospital technical efficiency is 78.9 or 0,789, which means that Indonesian hospital Technical Efficiency scores are needed to be increased by 21.1%.

In the DEA analysis model, the term of efficient is not necessarily absolute, but rather relative to other inefficient hospitals. In judging certain efficiency units, the estimation process was conducted by comparing the said unit's performance with other efficient units. The more efficient units were used as the reference in order to assess the other hospital's efficiency. The performance of efficient references in variative assessments dimensions shown

why inefficient units are considered inefficient.

Table 3. Technical efficiency scores for the BLU/BLUD hospitals in Indonesia.

Hospital	Score	Hospital	Score	Hospital	Score	Hospital	Score
RS Dr. R. Soetijono Blora	1	RSUD Dr Doris Sylvanus	0.773236	RSUD Kab. Jombang	0.925421	RSUD Provinsi Kepulauan Riau Tanjungpinang	0.49787
RSU Andi Makkasau Pare2	0.416519	RSUD Dr H Abdul Moeloek	1	RSUD Karangasem	1	RSUD R Syamsudin SH Sukabumi	1
RSU Bangli	1	RSUD Dr H Soemarno S	1	RSUD Kardinah	1	RSUD Sanjiwani Gianyar	0.720587
RSU Cibabat	0.510967	RSUD Dr Soegiri Lamongan	0.927707	RSUD Kepahiang	1	RSUD Sawah Lunto	0.775345
RSU Cilacap	0.497531	RSUD Dr. Abdul Rivai	0.392392	RSUD Kertosono	1	RSUD Taman Husada Bontang	0.662752
RSU Kolaka	0.622165	RSUD Dr. Achmad Mochtar	0.855608	RSUD Kota Mataram	1	RSUD Tangerang	0.259493
RSU Praya	0.825147	RSUD Dr. Fauziah Bireun	1	RSUD Kota Surakarta	1	RSUD Ulin Banjarmasin	0.589823
RSU Prof Dr WZ Johannes	0.519969	RSUD Dr. H. Kumpulan Pane	0.40257	RSUD Kota Yogyakarta	1	RSUD Wates Kulonprogo	1
RSU Sambas	1	RSUD Dr. H. Moch. Ansari Saleh	0.697755	RSUD La Temmamala Soppeng	0.974381	RSUD Wonosari	1
RSU Sawerigading	0.502776	RSUD dr. H. Moh. Anwar Kabupaten Sumenep	0.517206	RSUD Lahat	0.719148	RSUP Dr. Hasan Sadikin	1
RSU Tenriawaru Bone	0.607062	RSUD Dr. H. Yulidin Away	0.651397	RSUD M. Th. Djaman Sanggau	0.610677	RSUP Dr. Mohammad Hoesin	0.703778
RSU Undata Palu	0.862505	RSUD Dr. Ibnu Sutowo Baturaja	0.527159	RSUD Majalaya	1	RSUP Dr. Soeradji Tirtonegoro Klaten	0.690921
RSUD Abdul Wahab Sjahanie	0.421564	RSUD dr. Loekmono Hadi Kudus	0.836246	RSUD Majenang	0.769018	RSUP Fatmawati	0.963215
RSUD Aji Batara Agung Dewa Sakti	1	RSUD Dr. Moh Saleh Probolinggo	0.701063	RSUD Meuraxa	0.758783	RSUP H. Adam Malik	0.609472
RSUD Arosuka, Solok	0.315854	RSUD dr. R. GOETENG TAROENADIBRATA	1	RSUD Muara Enim	0.753488	RSUP Prof. Dr. R. D. Kandou	1
RSUD Bangil	0.869401	RSUD Dr. R. Soedjati Soemodardjo	0.829605	RSUD Nagan Raya	1	RSUP Sanglah Denpasar	1
RSUD Banyuasin	0.701231	RSUD Dr. Saiful Anwar	0.794836	RSUD Pandan Arang Boyolali	0.675473	Mean	0.78901387
RSUD Bayu Asih	0.830738	RSUD Dr. Soedomo Trenggalek	0.63801	RSUD Pantura M.A. Sentot Patrol	1	SD	0.206976212
RSUD Bekasi	1	RSUD dr. Soekardjo Tasikmalaya	0.742276	RSUD Pelabuhan Ratu	0.767716	Min	0.259493
RSUD Ciamis	1	RSUD H. Boejasin Pelaihari	1	RSUD Prof Dr M.A Hanafiah	0.779253	Max	1
RSUD Datu Beru Takengon	1	RSUD K.M.R.T Wongso Ngoro Semarang	0.895361	RSUD Prof Dr. M Soekarjo Banyumas	0.972779	Efisien	28
RSUD Depati Hamzah	0.496313	RSUD Kab. Batang	0.764663	RSUD Prof. Dr. H. Chatib Quzwain	0.572912	Tidak Efisien	54

According to efficiency scores on the above table, inefficient hospitals are grouped into low, medium, and highly inefficient. There are 22 inefficient hospitals which reached the score between 75% - 99.9% and can be classified as low level inefficient units. There are 23 hospitals with efficiency scores of 50% - 74.9% which are classified as medium level inefficient. Nine hospitals that are grouped as highly inefficient are the ones with efficiency level of less than 50%.

Class-wise, the most efficient hospitals are hospital class C with 38.9%. This is caused by less input complexities managed by class C hospitals were not as complicated as class A and B hospitals. Class C hospitals in Indonesia have successfully managed their resources in producing optimum output. Earlier studies shown that hospitals' classes were affecting their efficiency level^(15, 24-26).

Table 4. Indonesian hospital efficiency level based on their classes

Hospital Classes	Efficient	Inefficient	Total
Class A	3	6	9
	33.3%	66.7%	100.0%
Class B	11	26	37
	29.7%	70.3%	100.0%
Class C	14	22	36
	38.9%	61.1%	100.0%

The findings in this research are expected to be Hospital's Policy Makers concern that in an effort to raise hospital's classes like resources and beds replenishment, must be followed with services improvements. Hu and Huang⁽²⁷⁾ stated that the increase of hospital's beds may increase efficiency, but it has to be followed with the balance between capacity and the utilization of the said hospital's services.

With their current available inputs, class C hospitals in Indonesia are considered as more efficient units because they are able to provide more optimum outputs compared to their class A and B counterparts. This output optimization levels may also be affected by hospital tiered referral system in health care facilities in Indonesia. Generally, Indonesian health care facility systems are divided into two which are primary health care facility e.g. Puskesmas (Pusat Kesehatan Masyarakat), clinics, and more advanced, referral health care facilities e.g. class A, B, C and D hospitals. In this era of national health insurance program, Indonesian government applies the rules about referral health care facilities where patients are no longer allowed to enter class A and B hospitals directly without any referrals from class C hospital. When class C hospitals are unable to proceed with their available resources, they will make reference letters for patients to go to class A or B hospitals to be treated with further actions.

Compared to class A and B hospitals, class C hospitals are more efficient, but the number of inefficient hospitals is still high, which are 22 hospitals or 61.1%. This high level of inefficient hospitals is caused by the excessive amount of resources owned compared to the number of output produced. The number of output in this case is the number of patients. The low number of patients in today's hospitals are caused by the ongoing referral system which require patients to come to primary health care facilities such as Puskesmas and clinics before other more advanced, referral health care facilities. The hospitals' referral systems require patients to go to the primary health care facilities such as Puskesmas. Patients are no longer allowed to visit advanced health care facilities such as hospitals, if their current symptoms are treatable by primary health care facilities. This causes the decline in number of patients that came to the hospitals.

This research also showed that, Puskesmas as a gate keeper for tiered referral system has been working appropriately, although it also has brought some negative impacts to hospitals such as the decrease of efficiency. Hospitals that have previously possessed big amount of resources are now being less efficient due to the decrease of their patients visit. In order to overcome such condition, the best strategy is to perform input retribution by transferring doctors, nurses, and other staffs to Puskesmas in order to achieve efficiency while strengthening the basic health care system in Indonesia.

Hospitals of which resources were plenty in producing big outputs, which in this context means patients, are now less optimum due to the decrease of patients visit. To overcome such condition, one of the strategies that can be applied are executing retributions such as doctors, nurses and other staffs from hospitals to Puskesmas to achieve efficiency and strengthen Indonesia's basic health care system.

Table 5. Efficiency Level Based on Hospital's Location in Indonesia.

Location	Efficient	Inefficient	Total
Regional 1	14	22	36
	38.9%	61.1%	100.0%
Regional 2	4	11	15
	26.7%	73.3%	100.0%

Regional 3	6 31.6%	13 68.4%	19 100.0%
Regional 4	2 40.0%	3 60.0%	5 100.0%
Regional 5	2 28,6%	5 71,4%	7 100%

On the above table, it is shown that Regional 4 have the most number of efficient hospitals with the number of efficient hospitals of 40%, While regional 2 have the most inefficient hospitals which are 73.3%. Descriptively, the result of this study did not show significant hospital efficiency score. The majority on each regional, inefficient hospitals are bigger than the efficient counterparts. The result shown that descriptively, regionalization affects only insignificant impact to hospital's efficiency. This is similar to previous result on class efficiency analysis where inefficient hospitals are caused by Jaminan Kesehatan Nasional (JKN), especially the application of tiered referral system. Studies conducted in Thailand and Indonesia shown that any regulations regarding national health insurance have brought negative impacts toward financial, productivity and efficiency especially on the beginning on their application^{6,8,9}. Such phenomena are usually occurred on their early stages of regulation's application. As time goes by, Dismuke (1999) stated that in Portugal, hospital's efficiency will improve. Nevertheless, the improvement of hospital's efficiency shall also be followed by the improved management of health insurance system, referred health care system and regulations for more rational man-power and payment distribution.

3.2 The Frequency of Referred Health Care System

In order to distinguish efficient hospitals, some research suggested to find out the frequency of each efficient hospital to act as referred facilities. Out of 28 technically efficient hospitals, Karangasem hospital, which is classified as class C hospital, is the most referred hospitals with the frequency of 33 times and matched the table 4 where the most efficient hospitals are class C hospitals. On class B hospitals, RSUD Bekasi is the most referred hospital with the frequency of 26 times. On class A hospitals, RSUP Dr. Hasan Sadikin is the most referred hospital with the frequency of 10 times. The above results can be used as benchmarks for other inefficient hospitals to strategically create the utilization of their resources in order to produce the most optimum output.

3.3 Strategies to Improve Efficiency

In the era of national health insurance, Indonesian hospitals are demanded to be able to operate efficiently. Generally, in order to improve hospital's technical efficiency is by reducing the input or increasing the output. The average of input or output that were unable to be improved by 54 inefficient hospitals are shown in table 5. The average number of available beds of all inefficient hospitals are 354 beds and are required to be reduced into 296 beds. The average number of available doctors are 83 doctors and were needed to be reduced into 71 doctors. The average number of nurses and tocologists are 370 and need to be reduced by 278 in order to achieve efficiency. Next up, the average of other staffs in inefficient hospitals are 401 and need to be reduced into 344.

Table 6. The average of Original Score and Input – Output Projection of inefficient hospitals

Input/Output	Average Score		Difference Percentage
	Original	Projection	
Beds	354	296	-16.4%
Doctors	83	71	-14.5%
Nurses & Tocologists	370	278	-24.9%
Other Staffs	401	344	-14.2%
Outpatients	105.362	153.842	46.0%
Inpatients	17.766	29.761	67.5%
Emergency Patients	17.644	27.139	53.8%

In government-owned hospitals, the decrease of the above input is rather hard to execute, especially regarding man-power. Strategies that can be done are executing man-power relocation from hospitals with excessive human resources, into the ones with human resources deficiency. This strategy is possible to execute, while decision makers are advised to be more careful while keep on paying attention on the needs of public for health care in the area of the managed hospitals and the rules of minimum standard for human resources in hospitals. In

DEA analysis, input target for identified hospitals are relative to other hospital's performance which are also affected by other factors such as population needs, and the weight of the diseases.

The other strategies that can be used by hospital management is to improve efficiency by maximizing the productivity of each input. With the increase of productivity, hospitals may reach optimum output. In this study, outputs are referring into the number of patients, whether inpatients, outpatients and emergency patients. In order to minimize the idle capacity on inpatients sectors, the output target in the hospitals will have to be increased by 67.5% or 17.766 into 29.761 patients annually. Emergency patients are expected to be increased by 53.8% or from about 105.362 into 153.842 annually. For emergency patients, the improvement is expected to reach 46% or from about 17.644 into 27.139 annually.

4. Conclusions

In this research paper, the scoring of hospitals in Indonesia were conducted by using DEA Analysis which can generate the technical efficiency score in Indonesian hospitals based on classes, locations, target determination (the level of input and output so that hospitals are relatively efficient). By using DEA analysis, results shown that 54 or about 65.9% inefficient hospitals in Indonesia are inefficient compared to other hospitals. The average score for hospital efficiency is 78.9%, which proves the need for hospital performance increase especially output numbers which are generally 21.1%.

The results of this research have provided a few inputs for hospitals' decision makers in Indonesia. While keep on paying attention on health care needs for society in the proximity of hospitals, the estimation for inefficiency in this research may help in formulating regulations in the increase of hospital efficiency by maximizing input productivity or relocating excessive hospitals' resources such as medical and non-medical human resources, to Puskesmas. This can be done so that hospitals may have more efficient outputs and are able to strengthen their primary health care facilities like Puskesmas as the edge of the spear for Indonesian health quality building. It is also advised for hospitals in Indonesia to maximize their resources to be able to increase the patients visit or hospital utilization to a more optimum level.

Acknowledgements

One of several limitations of this research are the data used to measure hospitals' efficiency only valid for a year. Longitudinal studies will be more useful in monitoring the development of hospital efficiency in Indonesia but are rather hard to be executed due to the limitations of the available of data resources. There are also other factors that can affect hospital's efficiency that have not been studied yet, therefore next researchers are advised to explore those factors and analyze them.

References

- Caballer-Tarazona, M., Moya-Clemente, I., Vivas-Consuelo, D., & Barrachina-Martínez, I. (2010). A model to measure the efficiency of hospital performance. *Mathematical and Computer Modeling*, 52, 1095-1102. <https://doi.org/10.1016/j.mcm.2010.03.006>
- Cellini, R., Pignatoro, G., & Rizzo, I. (1999). Competition and efficiency in health care an analysis of the Italian case.pdf. *JEL Classification*, 1, 11. <https://doi.org/10.1023/A:1008737506560>
- Chang, H., Cheng, M.-A., & Das, S. (2004). Hospital ownership and operating efficiency: Evidence from Taiwan. *European J. of Operational Res.*, 159, 513-527. [https://doi.org/10.1016/S0377-2217\(03\)00412-0](https://doi.org/10.1016/S0377-2217(03)00412-0)
- Chriswardani, S., Sutopo, P., Putri Asmita, W., Pawit, S., & Puri Nur, M. (2015). *The Implementation of National Health Security Problems in Hospitals of Semarang City*, 2014. Faculty of Public Health, Public Health Sciences, Universitas Diponegoro. Presented in INA-HEA 2016.
- Dismuke, C. E., & Sena, V. (1999). *Has DRG payment influenced the technical efficiency and productivity of diagnostic technologies in Portuguese public hospitals? An empirical analysis using parametric and non-parametric*. <https://doi.org/10.1023/A:1019027509833>
- Ersoy, K., Kavuncubasi, S., Ozcan, Y. A., & Harris, J. M. (1997). Technical efficiency of Turkish hospital: DEA approach. *J. Med. Syst.*, 21, 67-74. <https://doi.org/10.1023/A:1022801222540>
- Groff, J., Lien, D., & Su, J. (2007). Measuring efficiency gains from hospital mergers. *Res Health Finance Management*, 11(1), 77-90.
- Hofmarcher, M. M., Paterson, I., & Riedel, M. (2002). Measuring hospital efficiency in Austria: A DEA approach. *Health Care Manag. Sci.*, 5, 7-14. <https://doi.org/10.1023/A:1013292801100>
- Hu, J.-L., & Huang, Y.-F. (2004) Technical efficiencies in large hospitals: A managerial perspective. *Int J Manag.*,

21(4), 506–51.

- Hussey, P. S., De Vries, H., Romley, J., Wang, M. C., Chen, S. S., Shekelle, P. G., & McGlynn, E. A. (2009). A systematic review of health care efficiency measures: Health care efficiency. *Health Services Research*, 44(3), 784–805. <https://doi.org/10.1111/j.1475-6773.2008.00942.x>
- Jacobs, R., Smith, P. C., & Street, A. (2006). *Measuring Efficiency in Health Care: Analytic Techniques and Health Policy*. Cambridge: Cambridge University Press. <https://doi.org/10.1111/j.1468-0335.2009.00763.x>
- Karagiannis, R. (2013). A system-of-equations two-stage DEA approach for explaining capacity utilization and technical efficiency. *Annals of Operations Research*, 1-19. <https://doi.org/10.1007/s10479-013-1367-7>
- Ministry of Home Affairs. (2016). Local General Services. Direcotrate General of Area Local Financial Development, *Indonesian Republic Ministry of Home Affairs*. Retrieved from <http://keuda.kemendagri.go.id/datin/index/3/2014>
- Ministry of Finance. (2016). *A Decade for BLU Toward Better Public Services*. Government Communication and Information Services Bureau, Indonesian Republic Ministry of Communication and Information. Retrieved from https://kominfo.go.id/index.php/content/detail/8409/satu-dekade-blu-menuju-pelayanan-publik-yang-lebih-baik/0/artikel_gpr
- Malonda, T. D., Rattu, A. J. M., & Soleman, T. (2015). The Claim Filing Analysis of Health *Badan Penyelenggara Jaminan Sosial (BPJS) Kesehatan* in Dr. Sam Ratulangi Tondano Local Hospital. Research Article, Magisterial Program, Univesitas Sam Ratulangi. Manado.
- McKillop, D. G., Glass, J. C., Kerr, C. A., & McCallion, G. (1999). Efficiency in Northern Ireland hospitals: A non-parametric analysis. *Econ. Soc. Rev.*, 30, 175–196.
- Ngorsuraches, S., & Sornlertlumvanich, A. (2006). Determinants of hospital loss in Thailand: Experience from the first year of a universal coverage health insurance program. *Health Care Management Science*, 9(1), 59-70. <https://doi.org/10.1007/s10729-006-6280-z>
- Nicola, A. De, Gitto, S., Mancuso, P., & Tor, R. (2012). A two-stage DEA model to evaluate the efficiency of the Italian health system. *Munich Personal RePEc Archive*, (39126).
- Ozcan, Y. A. (2014). *Health Care Benchmarking and Performance Evaluation; An assessment Using Data Envelopment Analysis (DEA)* (2nd ed.). Springer. New York. ISBN 978-0-387-75448-2
- Ozcan, Y. A., Luke, R. D., & Haksever, C. (1992). Ownership and organizational performance: A comparison of technical efficiency across hospital types. *Med. Care*, 30,780–794,
- Rahman, M. (2006). *Measuring and explaining the managerial efficiency of private medical clinics in Bangladesh: an exploratory study*. Thesis. Brandeis University
- Ramanathan, R. (2003). *An Introduction to Data Envelopment Analysis: A Tool for Performance Measurement*. Sage Publications New Delhi.
- Tiemann, O., & Schreyögg, J. (2009). Effects of ownership on hospital efficiency in Germany. *BuR Bus Res.*, 2(2), 115-145. <https://doi.org/10.1007/BF03342707>
- Varabyova, Y., & Schreyogg, J. (2013). International comparisons of the technical efficiency of the hospital sector: Panel data analysis of OECD countries using parametric and non-parametric approaches. *Health Policy*, 112(1–2), 70–79. <https://doi.org/10.1016/j.healthpol.2013.03.003>
- Veillard, J., Champagne, F., Klazinga, N., Kazandjian, V., Arah, O. A., & Guisset, A. (2005). A performance assessment framework for hospitals : the WHO regional office for Europe PATH project. *International Journal for Quality in Health Care*, 17(6), 487–496. <https://doi.org/10.1093/intqhc/mzi072>
- Zelman, W. N., McCue, M. J., Millikan, A. R., & Glick, N. D. (2003). *Financial Management of Health Care Organizations: An Introduction to Fundamental Tools, Concepts, and Applications* (2nd ed.). Blackwell Publishing, USA. ISBN: 978-1-118-46656-8

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).

The Study on Mobile Teaching of Taekwondo in Colleges and Universities Under the Background of “Internet +”

Xiuying Hu¹ & GuanJun Wang¹

¹ College of Physical Education, Qingdao University of Science and Technology, Qingdao, Shandong, China

Correspondence: Xiuying Hu, College of Physical Education, Qingdao University of Science and Technology, Zhengzhou Road No. 53, Qingdao, Shandong, China. E-mail: 422843222@qq.com

Received: April 19, 2018

Accepted: May 2, 2018

Online Published: May 28, 2018

doi:10.5539/ass.v14n6p91

URL: <https://doi.org/10.5539/ass.v14n6p91>

In this paper, it was the items of teaching reform studies of Qingdao University of Science and Technology, 2018.

Abstract

We would carry out the important directive spirit of general secretary Xi jin Ping, which was On promoting education informationization. We should vigorously promote the in-depth integration of information technology and university teaching. Only in this way, we could adapt to the current wave of classroom teaching reform in "Internet + teaching".

In this paper, the author has used the methods of document data, expert interview, experiment and comprehensive analysis to research. This paper has studied the new mobile teaching mode of taekwondo course in colleges and universities under the background of "internet +", and has used some various forms of mobile teaching to carry out experimental research.

The results showed that the “dynamic, subtle, video, feedback and evaluation in time” of mobile teaching. It has made the taekwondo students study interest, efficiency, initiative and innovation ability have remarkable improvement, the effect was obviously. It was easy to popularize and popularize.

Keywords: The “internet +”; the method of mobile teaching; The colleges and universities; the taekwondo course

1. Introduction

Nowadays, the most of college students have all lived in the Internet age, and their social, life, games and shopping were all conducted online. It was also easy for students to fall into the "network trap", who were unable to extricate themselves. Therefore, they have needed the correct guidance from our university teachers, for example, the teachers should renew the teaching philosophy, innovate the teaching mode, and stimulate students' interest in learning. So, new age has needed new requirement, we should take use of the informatization to play the most effective in physical education teaching.

The state council has issued the guideline on actively promoting the "Internet +" action in July 2015. This was the further evolution of the Internet form driven by the innovation of knowledge society. At the same time, it has also promoted the new situation of open innovation and collaborative innovation information society. It has also changed the way people study, live and live, included the improvement and research of physical education methods and means. (Li, 2013)

By the form of moving teaching we have improved college taekwondo teaching concept, means and method, aimed at enhancing the students' interest in learning, improving the quality of teaching, has made students form healthy lifetime sports consciousness under the background of “internet +”.

2. The Research Object

We have quantized analysis on two groups of students' physical quality and basic skills of taekwondo in order to guarantee the validity of the experiment. Before the start of the experiment, and extracting the same level of two girl students of class nature in 2016 grade of Qingdao University of science and technology to compare the experimental teaching, and these girls were the same of the taekwondo technology.

3. The Methods

3.1 *This Article's Method of Literature Review*

The authors researched the information reform of teaching methods around mobile teaching and college taekwondo courses. We also reviewed the research results of relevant disciplines in and out of China in the past 10 years, researched the data, collected the theoretical support, and laid the foundation. (Shen, 2015)

3.2 *The Method of Interview with Experts and Scholars*

On the topic of research, we have traceability accessed for the experts and scholars who were from Beijing university, Tianjin normal university, Shanghai sports institute, Shandong normal university, Qingdao university of science and technology. We have asked for the research ideas of teaching reform and the indexes of experimental design. And these ideas and indexes were concentrated on the form of mobile teaching, microteaching, mooc, micro lectures and taekwondo teaching. (Gao, 2011)

3.3 *The Questionnaire Survey Method*

On the topic of research, we have designed and issued questionnaires basing on the experts ideas. We issued 15 expert questionnaires, recovered 15, 100 per cent recovery and 100 per cent efficiency. We issued 60 students questionnaires, recovered 60, 100 per cent recovery and 100 per cent efficiency.

3.4 *The Method of Experimentation*

According to the project needs, we have designed the *experimental* measurement, and distributed to the sports teaching field experts, scholars of the mobile teaching, and collected the experimental results and data of the students, and analyzed and concluded the data. (Wang, 2011)

The experimental design:

Each class was 30 people, and the experiment time was from September 2017 to December 2017. The teaching content was of the test content the first semester of the boxing course of college taekwondo. Among them, the control class used the traditional teaching method to teach, while the experimental class adopted the various forms of mobile teaching to conduct experimental teaching. In addition, three teachers were selected to test and evaluate students' quality, special skills, learning attitude, learning interest and learning initiative. (Zhang, 2014)

Among them, the special quality was based on "the college student's test standard table" to Evaluate, and to check and ratify the quality score of the test according to the standard. For example, 100 meters was 15' 80, it was 100 points. The results in this paper were all averages. Taekwondo specific skill testing was on the basis of Qingdao University of science and technology college students taekwondo evaluation criteria of evaluation, technology assessment by the double blind method, and the article the skills of the chart reflect the skill score was average.

3.5 *Comprehensive Analysis Method*

Focusing on the topic of this paper, we have made a careful comparison and analysis of the collected data. The experimental results were calculated and analyzed by mathematical and comprehensive analysis. The application of teaching in the professional courses of taekwondo was summarized and summarized.

4. Research Results and Analysis

4.1 *The Transverse Data Analysis of This Article*

4.1.1 *The Test Results and Analysis of Two Groups Before the Experiment*

From the Figure 1, we have known that there was no significant difference between the two groups. So the experiment could be conducted normally and effectively.

The mean score of 100 meters was 17" 8. The 800 meters, the average score of the endurance quality was 3 '40".

According to the physical monitoring standard of university students in Qingdao University of science and technology, their physical condition level was equal, which guarantees the effective conduct of the experiment. In addition, these girls don't have taekwondo training experience before the experiment, just because they liked the taekwondo or because interested in taekwondo to choose taekwondo course.

So these students' special skills would be very general. This was obvious in Figure 1. For example, the test scores of the two groups of students in front kick, cross kick and comprehensive gait were between 50 and 60, and the average level was low. But the experimental group and the control group had similar levels. (Mei, 2003)

It could be seen that there was no significant difference between the two groups of students' special skill level of

taekwondo, which was also guaranteed the effective conduct of the experiment. (Cai & Yang, 2016)

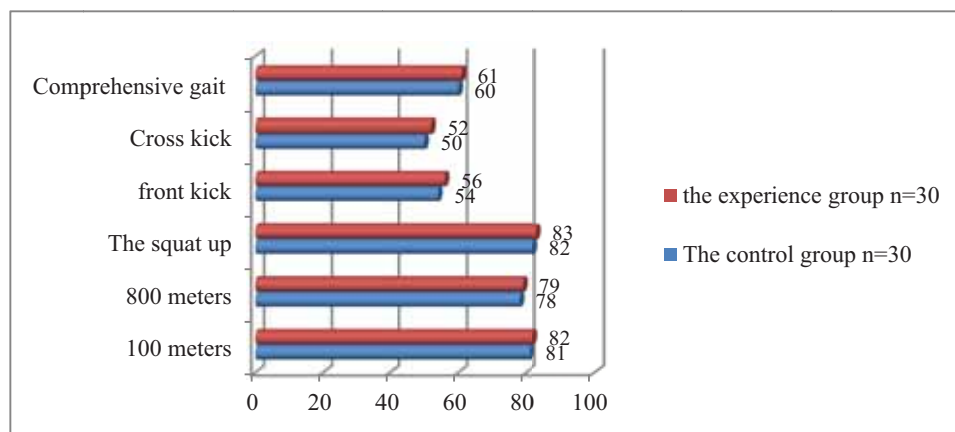


Figure 1. The test data of the two groups before the experiment

Note: The assessment of physical quality and technical skills was 100 point. The assessment was conducted by three professional teachers of taekwondo who don't teach these students. It was according to the college students' physique test standard and the test standard of special skill of taekwondo. The data in the table was the mean.

4.1.2 The Test Conclusion and Analysis of These Groups After the Experiment

As you could see from Figure 2, the two classes of students have improved in different degrees, especially the special technical level has been greatly improved through 16 weeks of teaching and training. Analysis reasons:

Firstly, the students Taekwondo technology foundation was basically zero before the students have learned the taekwondo courses. Therefore, the level of special skills has been significantly improved after a semester of specialized courses.

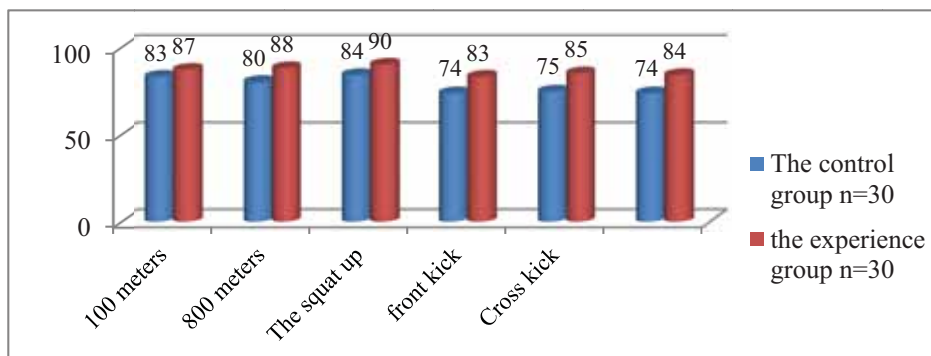


Figure 2. The test data of the two groups after the experiment

Note: The assessment of physical quality and technical skills was 100 point. The assessment was conducted by three professional teachers of taekwondo who don't teach these students. It was according to the college students' physique test standard and the test standard of special skill of taekwondo. The data in the table was the mean.

Secondly, in addition, the students in the experimental class were significantly higher than the control group in the special skills of front kick, cross kick and comprehensive gait, through the infiltration of mobile teaching. There were 9 to 10 points of improvement, and there was a significant difference. This has shown that the special technical level of students has been improved by leaps and bounds, and the teaching quality has improved significantly through the development of the mobile teaching form of taekwondo. (A, 2009)

Comprehensive analysis has shown that there was a significant difference between the experimental class and the control class, and there was a significant difference in the physical quality of the two groups of students. The special skill level had a significant difference, which fully had reflected the effective application and good effect of mobile teaching in taekwondo courses.

4.2 The Longitudinal Data Analysis of the Conclusion

4.2.1 The Description and Analysis Before and After for the Experimental Group

Table 1. The comparison table of the experimental group before and after the experiment (n=30) (Gao, 2011)

Test project	the experience group before the experiment	the experience group after the experiment	P
100 meters	82	87	<0.05
800 meters	79	88	<0.01
The squat up	83	90	<0.05
Front kick	72	83	<0.01
cross kick	73	85	<0.01
Comprehensive gait	73	84	<0.01

Note: The assessment of physical quality and technical skills was 100 point. The assessment was conducted by three professional teachers of taekwondo who don't teach these students. It was according to the college students' physique test standard and the test standard of special skill of taekwondo. The data in the table was the mean.

As could be seen from Figure 1, both the experimental group and the control group had the same level of physical quality and specific skills, before the experiment. According to Figure 1 and Figure 2, there was no significant change in the control group before and after the experiment.

However, the experimental group in the experiment of mobile teaching in taekwondo. The students' learning initiative, participatory enhancement, the form of practice was more novel, and the students' physical quality has been improved unconsciously, through the corresponding changes and adjustments of teachers' roles, students' roles, teaching methods and means, teaching characteristics and environment Settings, etc.

According to Table 1, the score of 100 meters was increased from 82 to 87 before the experiment, and the rapid reaction ability was obvious. The main reason was that the targeted taekwondo rapid reaction ability practice was carried out, and the whole process was tracked, together with the improvement of teaching methods. The learning effect was significantly different in the mobile teaching.

The special endurance was very important for the teaching and training of taekwondo, which has affected the technical level of taekwondo. In mobile teaching, the team has given the students to set up short-term targeted goals, timely communicating with students. The experimental group students' grades have greatly improved, and the overall quality has improved a lot.

The taekwondo was the "art of kicking". So the training of the leg strength and coordination skills was very important.

The leg strength was not simply a practice and test of standing long jump, but a specific training method of taekwondo has made the students more specific, more motivated and more practical. Through the experiment of mobile teaching, the average score has increased from 83 to 90.

Analyzing this data, the taekwondo specific physical qualities of students have given full play to the mobile teaching mode in the powerful role of taekwondo classes. Those students were in the experimental group have significant differences by moving the experiment teaching and some data been highly significant difference. The table 1 has shown that the students of special skills was highly significant difference. (Chen & Wei, 2012)

4.2.2 The Contrast Table of Participation and Innovation Ability of the Experimental Group Before and After the Experiment

We have interspersed with the comprehensive training of taekwondo in mobile teaching. It has let the students study many skills. For example, made the students participate in teaching and curriculum design; participated in the organization and demonstration of the referee's work; participated in the roles of coaches and players. These have made the students' ability of organization, team cooperation ability and the social ability, organization and management ability improve more and more.

As shown in Figure 3, classroom participation increased from 82 to 96 before the experiment, it was highly significant difference.

As shown in Figure 4, the students' innovation ability and team cooperation ability and improvisational strain capacity are greatly improved through the selection and application of techniques and tactics in actual combat games. It is significant difference.

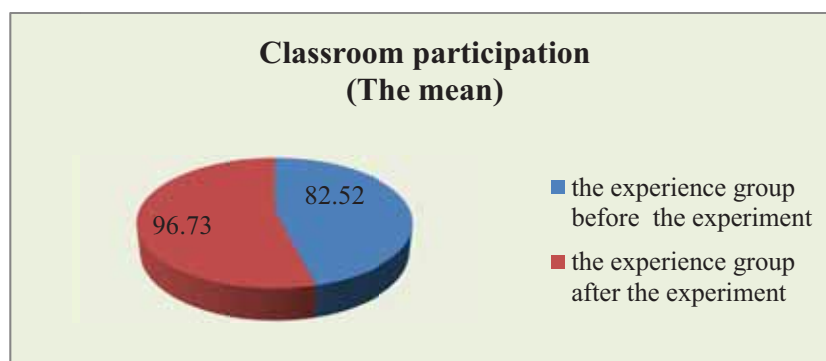


Figure 3. The classroom participation in the experimental group before and after the experiment

Note: the same as Figure 1

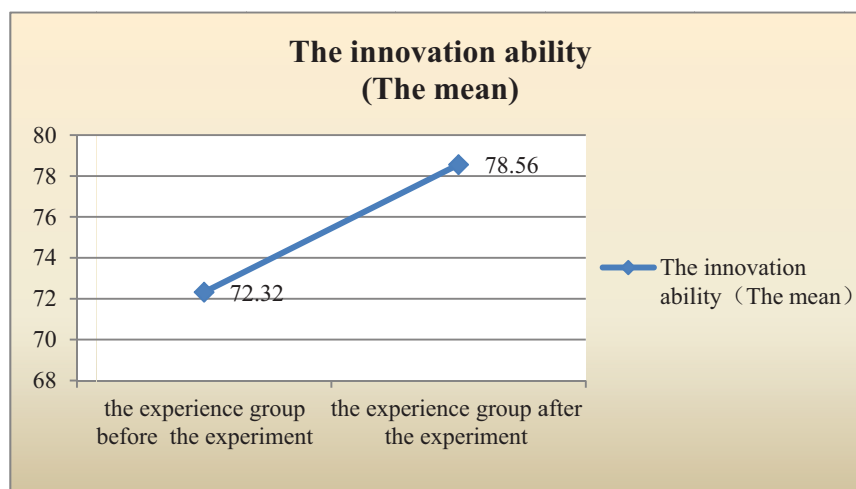


Figure 4. The innovation ability in the experimental group before and after the experiment

Note: the same as Figure 1

4.2.3 The Comparison and Analysis Table of the Learning Interest and Teamwork Ability for the Experimental Group

As shown in Figure 5 and 6, the application of mobile teaching has made students willing to participate in taekwondo teaching, so that students' learning interest could be greatly improved in the process of organization, practice, arrangement, etc. At the same time, it was necessary for students to practice tacit understanding through cooperation and cooperation, so as to achieve good results in class. Therefore, the communication and communication between students was closer, and the cohesion was stronger, and the teamwork ability was improved. So the difference was obvious. (Wang, He, & Zhu, 2013)

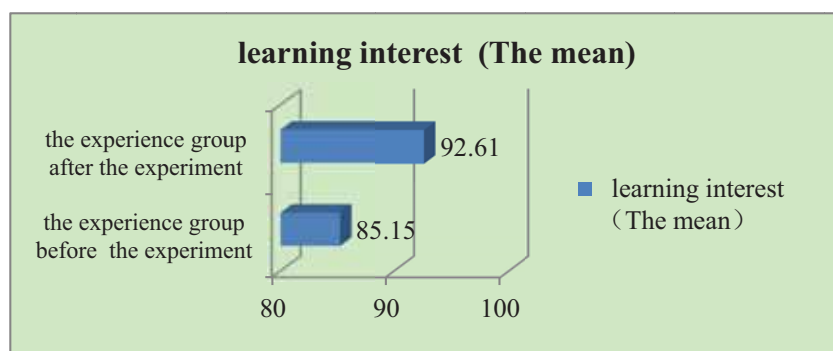


Figure 5. The learning interest of students in the experimental group before and after the experiment

Note: the assessment of physical quality and technical skills was 100 point. The assessment was conducted by three professional teachers of taekwondo who don't teach these students. It was according to the college students' physique test standard and the test standard of special skill of taekwondo. The data in the table was the mean.

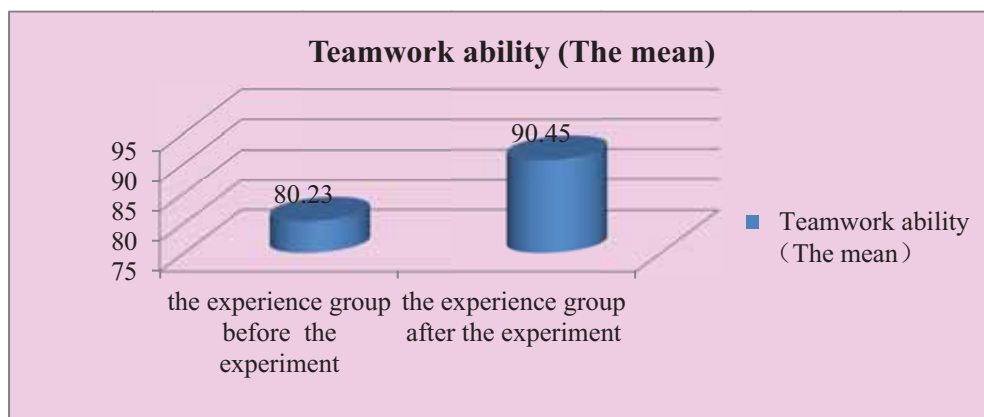


Figure 6. The Teamwork ability in the experimental group before and after the experiment

Note: the same as Figure 5

4.2.4 The Contrasting Data of Knowledge of Taekwondo and the Rapport Between the Teacher and the Student for the Experimental Group

As shown in Figure 7 and 8, the students' learning interest, taekwondo knowledge, and the degree of harmony between teachers and students have been greatly improved through discussion, feedback and self-reflection.

Through testing, the students in the experimental group made full use of modern technology information technology. The knowledge reproduction level, memory retention level, analytical ability has significantly higher than the control group. There were significant differences between the experimental group and the experimental group. (Zhang, 2013)

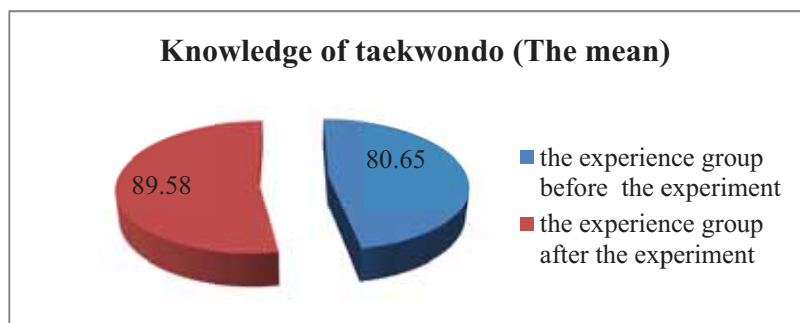


Figure 7. The rapport between the teacher and the student in the experimental group before and after the experiment

Note: the assessment of physical quality and technical skills was 100 point. The assessment was conducted by three professional teachers of taekwondo who don't teach these students. It was according to the college students' physique test standard and the test standard of special skill of taekwondo. The data in the table was the mean.

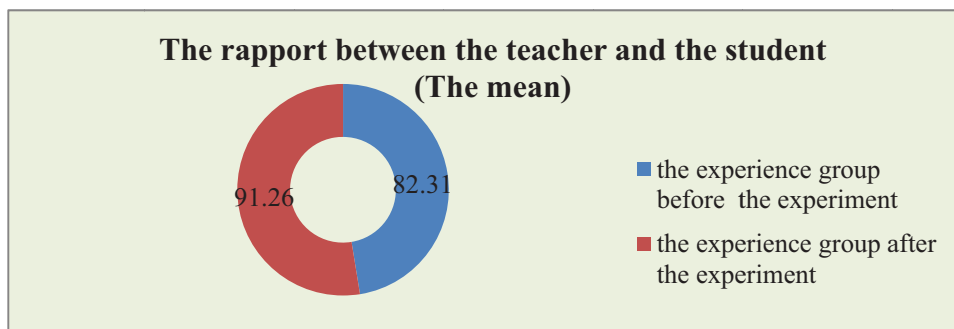


Figure 8. The Knowledge of taekwondo in the experimental group before and after the experiment

Note: the same as Figure 1

5. Conclusions and Suggestions

5.1 It has been seen from a semester's experiment, the "dynamic, subtle, video, feedback and evaluation in time" of mobile teaching under the background of "internet +". It has made the taekwondo students study interest, efficiency, initiative and innovation ability have remarkable improvement, the effect was obviously. It was easy to popularize and popularize.

5.2 The "Internet plus" information means and the advanced education concept of the mobile teaching have made the students' reaction ability, tolerance and special forces in the taekwondo courses of ordinary universities significantly improved. At the same time, it has made a qualitative leap in the basic leg and footwork techniques of taekwondo. (Shen, 2017)

5.3 In the mobile teaching of taekwondo in ordinary universities. The students had a polyhedral test through the transformation of the classroom, and the transformation of teaching roles. For example, the students have experienced the role of the organizer and organizing the organization in organizing taekwondo competition. In the referee, the taekwondo law has applied to the sanctions, learned to use. In addition, the teachers had used the video and its cases to show to the students, explained the working methods in the process of competition organization, and shown the mistakes. In this process, these students would experience many unprecedented experiences and gain valuable experience, and their ability would be improved to innovate and explore. (Yang, 2012)

References

- A, Y. G. (2009). The Research of the Network Current Situation Which is National and Provincial Level Sports Courses. *The Sports and Science*, (11), 11-12.
- Cai, R. H., & Yang, S. Q. (2016). A Case Study of Mobile Learning in Colleges and Universities. *Science Tribune*, (6), 10-11.
- Chen, W. J., & Wei, M. W. (2012). The Experimental Study on the Application of Microteaching in Taekwondo Teaching. *Contemporary Sports Technology*, (4), 91-92.
- Gao, S. Q., & H, J. J. (2011). The Overview of the Development of Mobile Learning Applications in Foreign Countries. *The Research of Electrochemical education*, (5), 108-109.
- Gao, Y. (2001). The Basic Skills of Modern Teaching. *Shan Dong: Qingdao Ocean University Press*, (2), 82-136.
- Li, X. (2013). The Research on the Influence Factors of Mobile Learning in New Media Era. *The Educational and Technical Equipment of China*, (7), 17-18.
- Mei, Y. P. (2003). The Analysis and Application on the Application of Sports Game in Basketball Mobile Teaching. *The Academic Journal of People's Liberation Army Sports Institute*, (1), 116-117.
- Shen, T. J. (2015). The Integration of Domestic Mobile Learning and Traditional Learning. *Science Tribune*, (5), 11-12.
- Shen, Z. P. (2007). The Research of Improve the Teaching and Training Quality of Aerobics by Using Microteaching Model. *Journal of Beijing Sports University*, (12), 1693-1694.
- Wang, D. P., & L, S. N. (2011). The Experimental Study of Microteaching in Table Tennis Ptions in Colleges and Universities. *The Notification for General Information of Sports Science and Technology Literature*, (2), 27-28.
- Wang, M., He, B., & Zhu, Z. T. (2013). The Micro Video Courses: Evolution, Positioning and Application Fields. *The China Educational Technology*, (4), 88-94.
- Yang, J. F. (2012). The Experimental Research of PE Teaching Skills of Microteaching Training Based on the Case Study. *Journal of Guangzhou Sports University*, (32), 118-120.
- Zhang, L. M. (2014). To Cultivate Students' Autonomous Learning Ability Based on Mooc. *The Science Technology Information*, (27), 132-133.
- Zhang, X. H. (2003). The Experimental Study on the Micro Teaching of Basketball Teaching Technology of Education Students. *The Learned Journal of Shanghai Sports Institute*, (5), 80-82.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).

Study on the Administrative Divisions in China's Border Areas from the Perspective of Nation-state Building --- Changes to the Administrative Divisions in Inner Mongolia in the 20th Century

Sun Jing¹

¹ School of Literature, Jinan University, Guangzhou, China

Correspondence: Sun Jing, No. 6 Students Dormitory, Shipai Campus, Jinan University, Tianhe District, Guangzhou, China. E-mail: 568311722@qq.com

Received: April 1, 2018

Accepted: April 24, 2018

Online Published: May 28, 2018

doi:10.5539/ass.v14n6p98

URL: <https://doi.org/10.5539/ass.v14n6p98>

Abstract

From the end of the Yuan Dynasty to the early Qing Dynasty, when Inner Mongolia was still a special administrative region of the Qing Empire, the Mongolian nomad's territory went through numerous significant changes. Since the beginning of the 20th century, the administrative divisions in Inner Mongolia underwent three major changes and after continuous integration they were incorporated into the administrative territory of the People's Republic of China in a manner that was compatible with the behavior of a modern nation-state. Such changes can neither be ascribed to the natural process of national development and its accompanying fissions nor to the sinocization of Inner Mongolian initiated by Han migrants. Instead, it is derived from the game of power played in the region by various forces, from the Manchu and Han peoples, to the Mongolians, Russians and Japanese, and the Kuomintang and the Chinese Communist Party in the period of surging modern nationalism. This is evidenced by the changes of division in Hulunbuir in particular. This case is enough to demonstrate that the issues of China's border and nations are not simply equivalent to the binary opposition between Central Plains and border areas, between Han and ethnic minorities, but a process teeming with complex and diverse points of contention, political wrestling matches and other interactions.

Keywords: territory of Mongolian nomads in Qing Dynasty, changes of administrative division in Inner Mongolia, Chinese nationalist movement, national identity

1. Introduction

As China continues to experience social transformation, ethnic issues have emerged, prompting discussions in mainland Chinese academia on issues related to the “depoliticization of ethnic issues” and “second generation of national policy.” Some argue that the system of regional ethnic autonomy and preferential policies for minorities, borrowed rigidly from the Soviet Union, has led to the solidification of ethnic identity and a weakening of national identity. Therefore, the government should “depoliticize” ethnic issues and adjust preferential policies for minorities so as to strengthen the identity of the Chinese nation. Some, however, think otherwise. They maintain that the system of regional ethnic autonomy should be advanced without any irresolution for it is in keeping with China's national conditions. Despite their divided opinions, their viewpoints and ways of thinking are all colored by theories concerning western nationalism and compare the situation to relevant cases in the US and the like. Meanwhile, few have investigated the history of China's ethnic policies, systems of regional ethnic autonomy, or other related ethnic issues.

In addition, views like the “New Qing History” passed to us from the western world have sought to reinterpret and rewrite Chinese history by placing “frontier” and “ethnic minorities” as the mainstay. In this way, the role ethnic minorities in the Qing Dynasty played in the building of the modern Chinese nation-state is elevated to crucial importance (Yao, 2014; Mao, 2016), and the traditional Central-plains-centered Chinese history (or history of the Chinese empire) is replaced by a “history of an empire built by frontier nomads.” Notwithstanding the changing protagonists of history, the binary opposition between the Central Plains and border areas, between the Han and the ethnic minorities does not change in essence. In fact, this binary understanding of the relationship is far from explanatory, and in “the story of China,” the establishment of the system of regional ethnic autonomy as a product of the influence of the Soviet Union still needs to be understood. The cases

discussed in this paper will elaborate on this point.

This paper focuses on the changes in the administrative divisions in Inner Mongolia in the 20th century, a period crucial to the birth and development of the Chinese nationalist movement and China's Transformation toward Modern Society. As an area which shares borders with Russia, Mongolia and eight provinces in mainland China, Inner Mongolia boasts a vast wealth of land and resources as well as a population with a complex demographic. Consequently, changes of the administrative divisions in Inner Mongolia are of great importance to China's military strategy, ethnic relations, frontier development, etc.

The existing research into the administrative divisions of Inner Mongolia concentrate on the process and successful practices of the merge of Inner Mongolia and Suiyuan, Suiyuan peaceful liberation, regional national autonomy under the leadership of the Chinese Communist Party and so on (For example: Tang, 2014; Li, 2008; Qinggeletu, 2003; Xu, 2013). Study on the Changes of Administrative System in Modern Inner Mongolia (Menghebaoyin, 2012) written by Meng Hebaoyin epitomizes this level of research. This book, using historical and sociological research methods, reviewed the vicissitudes of the administrative system in Inner Mongolia from the Qing Dynasty entered into Shan Haiguan to the found of the People's Republic of China, and is based on rich historical materials, it displays the evolution and interaction of the Mongolian Banner administrative system and province-county administrative system in modern Inner Mongolia. It, however, fails to unchain the narrative from the perspective of Mongolian-Han duality and limits its research focus to Inner Mongolia. In fact, the changes of administrative divisions in Inner Mongolia are correlated with those in Outer Mongolia, Heilongjiang, Xinjiang, Qinghai, and even Buryatia in eastern Russia, and with the broader historical processes that countries like China, Mongolia, Russia, and Japan underwent in the 20th century. However, this kind of content is left out of this book.

This paper will simply review the changes of the administrative divisions in Inner Mongolia which have occurred since the 20th century, and then grant comprehensive consideration to the more intricate aspects of the subject. The historical picture it represents will go well beyond the binary structure of past research into this area, which often contrast the Central Plains and frontier areas, Han and non-Han Chinese. Instead this paper seeks to unfold the complex relationships that cover the gradual involvement of forces including the forces of Manchu, Han, Mongolia, Russia, Japan, KMT and the CPC, and the power-games and connections in various sectors among them.

2. Chapter 1

In the Qing Dynasty (Note 1), Mongolia was vast in its nomadic territory, of which Inner Mongolia was only a small part. Since 1912, the region has undergone three major changes in its administrative divisions.

The first change occurred in 1912, as the old era was replaced by a new one at the end of the Qing Dynasty and the foundation of the Republic of China. At that time, Outer Mongolia and Hulunbuir announced their "independence/autonomy" successively. Meanwhile, the government of the Republic of China accordingly adjusted the administrative division, reorganizing the region into three Special Areas—Jehol, Chahar and Suiyuan. Jehol included the Josutu and Juuuda Leagues (a prefecture-level division), plus the Chengde area (now in northern Hebei). Chahar comprised of Xilingol League and Xing'he region as well as much of the former territory of the Eight Banners (a county-level division) of Chahar. Suiyuan consisted of Ulanqab League, Ih-Ju League, the Guihua Tumed Banner and the Suiyuan region. In 1928, the government turned the Special Areas into provinces, along with two newly founded provinces: Qinghai and Ningxia. As a result, the Khoshut tribe was administered by Qinghai Province, and Ejin Banner plus Alxa Banner by Ningxia Province. So far, the leagues and banners of Inner Mongolia had been converted into provincial or county-level administrative regions.

The second administrative change took place in 1932 when the Japanese invaders established a puppet state of Manchukuo. At that time, Japan had been wrestling with Russia for an extended period, and the Japanese were thus paying great attention to Mongolian issues. To colonize the country in general by availing the power of the Mongolians and the Manchu people, Japan sponsored the foundation of two puppet states of Manchukuo with Puyi as the nominal regent and emperor and of Mongol United Autonomous Government with Mongolian prince Demchugdongrub (also known as Prince De) as the chairman. Besides, Hsingan Province was created as a special administrative sub-division under the control of "Manchukuo". Later, the province was divided into four parts—Hsingan North (former Hulunbuir region), Hsingan South (former Seven Banners of Jirem League), Hsingan East (formerly within the jurisdiction of Buteha General Yamen) and Hsingan West (territory of Juuuda league to the North of Xar Moron River in the past).

Japan did not separate this area according to geometric lines of latitude and longitude as if it was a no-man's land.

Instead, the four sub-provinces were demarcated in consideration of past divisions created around military areas which were formed during the Qing Dynasty and the early years of the Republic of China and different agricultural and pastoral areas which had formed long ago. The Japanese also sought to create a balance between the size of the four sub-divisions and between the powers wielded by the various Mongolian banners and counties (Note 2). The Japanese colonizers adopted a different approach from their European counterparts. According to Benedict Anderson, when European colonizers were mapping the world, “the entire planet’s curved surface had been subjected to a geometrical grid which squared off empty seas and unexplored regions in measured boxes” (Benedict Anderson, 2011). They turned the planet into a picture marked with longitudes and latitudes, casting aside factors like traditional customs and practices, ethnicity or other unique features, or the history and status quo of the colonized region. Japanese colonizers in Inner Mongolia, on the other hand, considered more or less the unique traits of Mongolian ethnicity. The most typical example is that they renamed “Guisui” Hohhot (“厚和浩特”). The town emerging in the Ming Dynasty was called *Kokegota* (“库库和屯”) in Mongolian, referring to a green city. During the Ming and Qing Dynasties the town was twice renovated and given names of “Guihua” and “Suiyuan” (the two names were mixed into “Guisui” later), meaning to gain far-reaching control of the country. The town’s name exudes the sense of subjugation by another nation. During Japanese colonization, the town was renamed Hohhot, of the same sound with *Kokegota*, and retaining its original meaning. At the same time, Hohhot was upgraded to a Special Administrative City. With this, the city established its political status in western Inner Mongolia. Japan and European countries were poles apart in their colonial policies. This may have something to do with the psychology of Japan as a new colonial empire and the highly complicated situation in the colonized region where various parties were in play.

The creation of Hsingan Province integrated the inhabited areas of eastern Mongolia which had been split since the Republic of China. In addition, Mongolians in Hulunbuir and Inner Mongolia in the Qing Dynasty were under the same jurisdiction and management style for the first time ever. Meanwhile, the foundation of the Province divided the land of the leagues of Jirem, Juuuda and Josutu into different provinces. Since then, the Josutu League has been geographically separated (Note 3). Besides, the merger of Hsingan Province and the Mengjiang (also known as Mongol Border Land) led to the secession of Eastern Mongolia and Western Mongolia.

The third administrative change occurred between 1947 and 1954. With the surrender of Japan, Hsingan Province and the Mengjiang United Autonomous Government collapsed. Inner Mongolia was stuck in a power vacuum for a while, and the Mongolian nationalists began to establish authorities for self-government one after another. There are three examples of these authorities. The first authority was the People’s Autonomous Government of East Mongolia, covering the autonomous regions of Jirem League, Juuuda League, Josutu League and Hulunbuir, the second Buteha tribe, the E Ke Ming An, Qiqihar, and the banner of Soulouque. The second one was the Interim government of the People’s Republic of Inner Mongolia, which was reorganized into The Federation of the Inner Mongolian Autonomy Movement after the inter-coordination of the CPC and Ulanhu. The third one is The Autonomous Government of Hulunbuir, with Eerqinbatu, the former governor of North Hsingan Province, as the chairman. Such a political situation would definitely raise the attention and rivalry of many forces. With their sincerity and wisdom, the CPC won the recognition of the Mongolian nationalists. After several negotiations, on May 1, 1947, the Inner Mongolian Autonomous Government was set up, having jurisdiction over Hsingan League, Numoron League, Xilingol League, and Chahar League, and it was located at Wangyemiao (Ulanhot). On January 1, 1948, the local autonomous government of Hulunbuir was revoked and reorganized into the Hulunbuir League, within the jurisdiction of the Inner Mongolian Autonomous Government. After the liberation of the whole of Northeast China, both the Jirem League, formerly in the jurisdiction of Liaobei Province, and the Juuuda League, formerly in the jurisdiction of Rehe Province, officially became part of the Inner Mongolian Autonomous Government in May, 1949. With the successive liberation of Suiyuan, Alxa, and Egin, the whole Mongolian area was liberated. After the completion of the regional merging of Inner Mongolia and Suiyuan in June, 1954, the center of the Inner Mongolian Autonomous Government was moved from Zhangjiakou to Hohhot (It was renamed as “呼和浩特”), thus forming the contemporary appearance of the Inner Mongolian autonomous region. By that time, the territory of the Mongols in the Qing Dynasty had been partially recovered, and Inner Mongolia, which had been broken up several times since 1912, was eventually reintegrated in a new way.

3. Chapter 2

The transitions that the Inner Mongolian administrative division underwent in the 20th century were not only due to the natural fissions of their multi-ethnic society. It took shape within the context of conflicts shaped by many forces such as the Manchu, Han, Mongols, Russians, Japanese, KMT and CPC, as imperial colonialism and

nationalist movements prevailed. The most typical example of this transition occurred in the region of Hulunbuir. Hulunbuir, where the Ewenki, Oroqen, Daur peoples and the Mongols lived together, was divided into the eight banners of Buteha, Solon and Barga by the Qing Authority. It was regarded as a part of Inner Mongolia and governed by Heilongjiang General at that time. Since the establishment of Heilongjiang Province, Hulunbuir has officially belonged to Heilongjiang Province.

Administrative reform for Mongolia and the permission to cultivate virgin land in the late Qing Dynasty damaged the rights of Hulunbuir, thus accelerating the disloyalty of Mongols in this region. However, Russia's control and impact over it had been increasingly intensified by the establishment of the Chinese Eastern Railway. After Outer Mongolia's declaration of "independence", the feudal upper class led by Oriat Director Sheng Fu and New Barga Director Che Hezha immediately deployed forces armed with guns supplied by Russia. They attacked and occupied Hailar City, declared independence and sent documents of allegiance to Outer Mongolia. Therefore, this issue has always been regarded by researchers as a concrete example of an action taken by the emergent Mongolian nationalist movements at that time. However, the situation was relatively complex, considering the leaders and the flags they fought under in this revolt. The force led by Sheng Fu raised the flag of the "Great Qing Dynasty Volunteer Army" instead of the Mongolian National flag, as they considered Hulunbuir Mongols to be a part of the Qing Dynasty who refused to proclaim their allegiance to The Republic of China. They acknowledged that the Hulunbuir banner-men as a small part of the Qing dynasty who never fully merged with the republic. This is remarkable considering that the Hulunbuir flags were those of Inner Mongolia and Sheng Fu himself, the Oriat Director, was directly assigned to his position by the Qing Government, although the nature of his position and his range of power was quite different from that of the Jasaqs of Jasaq, Inner Mongolia. Sheng Fu was a remaining official of the Qing Dynasty, rather than a Mongolian nobleman, thus he held the view that he should fulfill his responsibility to the Qing Government on account of the grace they had shown him over the generations. (Buladuqige, Jin, & Sai, 2002)

After the Hulunbuir event, the new Governor of the Northeastern Qing Government, Zhao Erxun, immediately appointed the grand coordinator of Heilongjiang Province to tackle the rebels. At the same time, he delegated Du Mengtian and Yu Jiaming to propitiate with Sheng Fu. Sheng Fu felt regret for the first time and canceled his drive for independence. At that point, in order to facilitate the independence of Hulunbuir, on the one hand, Russia obstructed the suppression of Heilongjiang authority with the excuse of taking the rights of the Chinese to use the Eastern Railway away. At the same time, Russia threatened Sheng Fu that defying China's provocation wouldn't help him and the charge for the borrowed guns - a huge amount of money - needed be paid. As a result, Sheng Fu compromised and overturned his previous resolutions at once. Heilongjiang authority then sent Qing Shan, governor assistant of the eight banners, and Jiao Jingming, valiant general, to Hulunbuir to propitiate Sheng Fu, but Sheng Fu recalled his decision again. All of this resulted in a fierce brawl between Hulunbuir's Mongolian forces and the Chinese army in Lu Bin Prefecture (now called Manchuria). Russian soldiers disguised themselves as Mongols to join the battle, shocking the Chinese government. Then Sheng Fu's group seized Lu Bin Prefecture, Jilalin and other places rapidly, and took control of the whole Hulunbuir. In May, 1912, Jebtsundamba conferred Sheng Fu as "beizi" (Note 4) and Hulunbuir Minister and awarded him with the silver seal. At this point, Hulunbuir was part of Yeke Mongghol Ulus, and paid taxes to the Cullen Government. Heilongjiang authority strongly condemned Russia's deceit in that they pretended to be neutral but were in fact supporting the independence of Hulunbuir. The government planned to dispatch troops to recapture Hulunbuir, but under the threat of Russia, no achievement was made. At the same time, Russia had gained huge benefits in Hulunbuir. Considering the vested interests and the international situation, in November, 1915, Russia signed the Sino - Russian Treaty of Hulunbier directly with the Chinese authority without Sheng Fu's awareness. In the treaty, Russia recognized "Hulunbuir as a special area under the direct control of the Central Government of the Republic of China" and required the Chinese government to accept all kinds of contracts it had signed with the Sheng Fu authority. Since then, the Hulunbuir region became a "special area" that was namely "self-governed" by Sheng Fu and other members of the Mongolian upper class and was actually controlled by Russia. (Note 5)

Outer Mongolia didn't fully grasp its own economic lifelines after it gained "independence." Moreover, due to the enormous amounts it had spent on its military during the war years, its economy was hit by severe crisis. Furthermore, all of the expenditure and the daily spending of the Mongolian feudal nobility was collected from the lower populace of Ejin Horo Banner, leaving people with no way to make a living. In addition, the strife between monks and lay people from the upper political ranks put Outer Mongolia into further political and economic crisis. However, after the October Revolution in 1917, the Republic of China gained more influence amid the weakening of the Russian Empire's power. Then, the Jebtsundamba regime (Outer Mongolia) turned to China for "protection". On November 17, 1919, the Outer Mongolian Prime Minister and Interior Minister

Gonchigjalzangiin Badamdorj, and Foreign Minister Balingiin Tserendorj signed a document that contained a plea to abdicate Outer Mongolia's autonomy to Chinese rule and a claim to make all treaties previously signed with Russia invalid, stamped it with the seal of Jebtsundamba and sent it to Beijing. On November 22, the same year, Xu Shichang, the then President of the Republic of China, officially issued an order to approve the removal of Outer Mongolia's autonomy and claimed that the feudal nobility of Outer Mongolia such as Jebtsundamba Khutuktu would still enjoy the same reverence and mileage (Note 6). The falling of the Russian Empire and the removal of Outer Mongolia's autonomy took away all support for the Sheng Fu regime, while the White Army of Russia and the Japanese army escalated their provocation and ravage in Hulunbuir region, causing uncertainty to the Sheng Fu regime's independence. And in 1918, the garrison commander of the Chinese Eastern Railway in Heilongjiang Province sent troops to Hulunbuir, further increasing the Chinese government's influence in the region. On December 21, 1919, Hulunbuir's new Vice Governor Guifu thereupon, called upon Beijing to cancel Hulunbuir's autonomy. On January 28, 1920, after negotiations, the then President of the Republic of China Xu Shichang announced the withdrawal of Hulunbuir's "special region" status and let Heilongjiang Province have jurisdiction over it.

When Mongol banners were first set up in Hulunbuir during the Qing Dynasty, Hulunbuir's governance differed from that of the Inner Jiasa Mongolias. As for its affiliation, Hulunbuir has always been under Heilongjiang's jurisdiction except for the period of short-term autonomy from 1912 to 1920. The establishment and elimination of its autonomy were not so much a natural result of the development of the Mongolian nationalist movement as it was the outcome of conflicts between China, Mongolia, Russia, and Japan. From the historical, geographical and folkloric perspective, Hulunbuir and Heilongjiang were more closely related. But, why did the central government assimilate it into the Inner Mongolian Autonomous Region after its establishment in 1947? This was related to Japan's colonization of East Mongolia and the way in which the 1945 national autonomous movement unfolded in the eastern part of Inner Mongolia.

During the "Manchukuo" period, Hulunbuir was fused into the territory of Hsingan North and was first united with the other leagues of Inner Jiasa Mongolia. In August 1945, in the hope of help from the Soviet Union in the fight against Japan in the Northeast China, the Nationalist Government of the Republic of China signed The Treaty of Friendship and Alliance with the Soviet Union. According to the treaty, the independence of Mongolia would be decided through a referendum and the National Government would have to accept the result. The treaty also stipulated that, the Soviet Union should send troops to Northeast China, never interfere with the Chinese government's sovereignty and territorial integrity in the region and withdraw within three months after Japan's surrender. At that time, Outer Mongolia was the Mongolian People's Republic as a result of their declaration of independence in 1924, and the Mongolian nationalist movement was not yet quelled. After Japan's surrender, the eastern region of Inner Mongolia including the Hulunbuir fell into a state of uncertainty about its national future. Some people suggested hopes for uniting Inner Mongolia with Outer Mongolia, which were countered with rejection from Outer Mongolia because of the Yalta agreement and indifference from America because of its relationship with the two political super powers, China and the Soviet Union. With the support of the Soviet Union and Outer Mongolia, Buyanmandu and Ha Feng'a formed the East Mongolian People's Autonomous Government, and established Nunmoran province which was made up of the Arun Banner, Morin Dawa Banner and the Butcha Banner (present name's Evenk) on the west side of the Hulunbuir mountain. Furthermore, dozens of Mongol and Daur political figures including Erkimbatu formed the Hulunbuir Autonomous Government. These two political forces sent representatives to negotiate with both the Kuomintang and the Communist Party about their proposals for autonomy. They were stringently rejected by the Kuomintang yet gained the support of the Chinese Communist Party. In March 1946, the Northeast Administrative Committee approved that the Hulunbuir area would maintain its status quo. After the withdrawal of the Soviet army, the local Hulunbuir Mongolian armed forces and the Northeast Democratic Army jointly repelled the "Guang Fu" Army of the Kuomintang and a group of bandits.

In the meantime, Ulanhu led the autonomous movement of Inner Mongolia and conducted rounds of talks with the East Mongolian People's Autonomous Government. Both sides approved of The Federation of the Inner Mongolian Autonomous Movement acting as the united leading bodies of the Inner Mongolian autonomous movement. On May 1, 1947, the Inner Mongolian Autonomous Region, the first ethnic autonomous region in China, was established and the government was set up in Wangyemiao (Ulanhot). Ulanhu was elected as the chairman and Ha Feng'a was elected as the vice chairman of the government. In early November, The Autonomous Government delegates including Erchinbaku, Konkuoerjabu, Dugaerjabu and Khata arrived at Ulanhot at the invitation of the Autonomous Government of Inner Mongolia. Both sides held a talk on issues regarding the unity of Mongolia. After negotiations, they agreed to establish Hulunbuir, which then had its

jurisdiction over areas including Hailar city, Manzhouli City, Jalainur District, Jalainur District, Yakeshi City, New Barag left Banner, New Barag Right Banner, Ergun Banner, Old Barag Banner and Sauron Banner. On January 1, 1948, Hulunbeier was established following the dissolution of the Autonomous Government of Inner Mongolia.

From then on, Hulunbuir was officially included in the domain of the Inner Mongolia Autonomous region. It can be said that the dissolution of the local autonomous forces in eastern Mongolia and the peaceful handover of the Hulunbuir regime represents a major step in the modern Mongolian national liberation movement. Hulunbuir actively collaborated with the Inner Mongolian autonomous government led by the Chinese communists in the modern Mongolian autonomous, national liberation movement. Therefore, it was enshrined as a revolutionary place of the inner Mongolian liberation movement in modern times, as such, no one could obliterate it from the historical and geographical map of Inner Mongolia, and it has consequently carried much more spiritual significance than it does administrative importance.

4. Conclusion

Inner Mongolia, starting as a special administrative area of the Qing dynasty, after years of continuous integration was finally incorporated into the administrative territory of the People's Republic of China in a way that suits a modern nation-state. The Hulunbuir region has always been a multi-ethnic community wherein different forces are pitted against each other. The fact that it emerged as a part of Inner Mongolia after previously being considered a corner of Heilongjiang is the direct result of the historical revolutions of the Chinese nation, Japan's colonial policies towards Manchuria and Mongolia, Outer Mongolia's nationalist movement, and the interests of The Soviet Union and the US. It is not these complicated internal and international relations that have shaped the game of power and politics in the region. Outer Mongolia's independence movement and the independence movement in Inner Mongolia provoked by Demchugdongrub, more known as Prince De, also played a significant role in the complicated situation in Inner Mongolia as it was swayed by various entangled forces. To various degrees, the Manchu, the Han, the Mongolians, Russians, Japanese, Kuomintang and the Communist party all played a part in the long-term game of related forces that led to the formation of today's Inner Mongolian autonomous region.

In the time between the late Yuan Dynasty and the Qing Dynasty, although the Mongolian nomadic territory had broadly defined borders, its boundaries continued to change, to the point where it became difficult to mark out a certain tribe as belonging to a certain country. As the Qing Dynasty and Russian Empire sought to expand their territories and to bolster their clout in the region, The Mongolian tribes who occupied areas close to the borders entered a period wherein they were subjugated and integrated into different countries. For the Mongolians, this period was highly divisive. For example, the Buryatia Mongolians of eastern Siberia, originally part of North Mongolia, traditionally fall under the auspices of Mongolia Khalkha. During the reign of Kangxi (1661—1722) Tüshiyetu Khan Aimag, a faction of the Mongolian Khalkha, submitted to the Qing Dynasty after their defeat to Galan. At this time, the Buryatia Mongolians also lost their asylum and were subject to Russian invasions. After the signing of the Treaty of Nerchinsk, the Buryatia area was completely integrated into the Russian territory. These Mongolian tribes were incorporated into different countries amid the delimitation and contention of the great powers. Meanwhile, the Mongolians never ceased to resist. In the 20th century, the Pan-Mongolian independence movement involving Outer Mongolia, Inner Mongolia, the Buryats, Xinjiang and Qinghai also indicated an outburst of rebellious consciousness among the Mongolians. Although the great discrepancies and variations among the Pan-Mongolian factions meant that it has proven impossible to achieve success in this way, it was a common aspiration for the Mongolians of all tribes to keep their own land for their herds and to assert their own interests. For the Chinese ruler of the 20th century, to recognize and respect their aspiration constituted the prerequisite for the effective integration of Mongolia.

The present administrative area of Inner Mongolia is the outcome of gradual division and the reintegration of the Mongolian nomadic territory in the Qing Dynasty. This division and reintegration was accompanied by the collapse of the regional relationship of the traditional China, and by the birth and evolution of various nationalist movements in China which is Not only the mainland but also the frontier. In the final analysis, China's Transformation toward Modern Society and the changes of the administrative area of Inner Mongolia reflect the imperialist invasion and partition of the country, and further illustrate how the modern Chinese nation-state came into being, giving witness to the fruit of the Mongolian nationalist movement. The establishment of the Inner Mongolian Autonomous Region and the settlement of issues concerning Mongolian identity set a successful example for the peaceful settlement of Xinjiang, Tibet. It not only accelerated the establishment of the new China, but also greatly reduced the possibility of infighting among the fellow compatriots there which might otherwise have occurred. Therefore, although China's current model of Regional Autonomy for Ethnic

Minorities borrowed some aspects from the experience of the Soviet Union, it was also the historical result of the development of modern China. Furthermore, the region has the novel inheritance of the legacy of the tug-of-war between various different forces that was passed down to the Chinese Communist Party, which constituted the best option at the time given the historical context. Looking at the situation, we can't afford to negate or distort history because of existing problems, nor can we label the frontier and ethnic issues as resting on the infiltration and even assimilation of the Han culture. Furthermore, the historical complexity outlined in this essay and the entanglement of various forces and interests are far beyond the binary differences of central plains versus the frontier territories, Han versus non-Han or the dual system of central and local. All these factors must be taken into serious consideration when we think and speak about China today.

References

- Anderson, B. (1936/2015). *Imagined Communities: Reflections on the Origin and Spread of Nationalism* (Wu Rui Ren, Trans.). Shanghai, SH:Shanghai Century Publishing House.
- Buladuqige, Jin, H., & Sai, H. (2002). *General History of Mongolian Nationality* (Vol. 5, Part 2). Hohhot, Hohhot: Inner Mongolia University Press.
- Li, Y. W. (2008, January). The Decision and Implementation of Unified Administrative Division in Inner Mongolia during the Initial Period of New China. *China's Borderland History and Geography Science*, 18(1), 59-69.
- Mao, S. (2016, October). From the division of nations to territory division --- Comments on Frontier China: the History of National Relations since the 21st Century by Liu Xiaoyuan. *Twenty-First Century*, (157), 131-141.
- Menghebaoyin. (2012). *Research on the Changes of Administrative System in Modern Inner Mongolia*. Shenyang, SY: LiaoNing Ethnic Publishing House.
- Qinggeletu. (2003, April 1). The Progressively Realization of Unified National Regional Autonomy in Inner Mongolia. *Journal of Inner Mongolia University (Humanities and Social Sciences)*, (2), 77-82.
- Tang, M. (2014). *The Ethnic Factor of Administrative Division Transformation since Qing Dynasty* (Master's thesis) Shandong University, Jinan, China.
- Xu, K. (2013). *An Initial Exploration of the Model of Suiyuan Province from the Perspective of Nation-State Integration* (Master's thesis). Minzu University of China, Beijing, China.
- Yao, X. Y. (2014, February). "Introspection Boom" about the Ethnic Issues in Mainland China. *Twenty-First Century*, (141), 31-44.

Notes

Note 1. The nomadic territory of Mongols in Qing dynasty included three major parts: 1. Six leagues made up by 49 banners in Inner Jasaq Mongolia (now called Inner Mongolia); 2. Outer Jasaq Mongolia that includes today's Outer Mongolia, the Heshuo Special Department of Qinghai, the Dzungar Department of Northern Xinjiang, the Ejin Torgout Banner and Alaxa Erut Banner of the Inner Mongolia Autonomous Region; 3. Inner Mongolia, such as the Chahar Department, the Guihua Tümed Department, the Butaha Banner and Barga Banner.

Note 2. For example, the territory of Hsingan North approximately corresponds to that of Hulunbuir in Qing dynasty. Gorlos Front Banner, Gorlos Back Banner, Dorbod Banner and E Ke Ming An Banner were not incorporated in to Hsingan province due to an agricultural belt formed between them and other Mongol banners. Menghebaoyin. (2012). *Research on the Changes of Administrative System in Modern Inner Mongolia*. Shenyang, SY: LiaoNing ethnic publishing house, pp. 134-153.

Note 3. The Josutu League consisted of three Kharachin Banners (Left, Middle, Right), two Tümed Banners (Left, Right), Tanggot Khalkha Banner and Shireet Khuree Banner. Through official territory adjustments, Tanggot Khalkha Banner, Shireet Khuree Banner and Kharachin Left Banner were absorbed into Hure Banner which was returned to Hsingan's jurisdiction. Chaoyang County (eliminated later) and a part of former Tümed Right Banner were emerged into a new Tümed Right Banner. Parts of former Tümed Right and Left Banner were incorporated into Tümed Middle Banner which was, along with the left part of the former Tümed Left Banner, incorporated into Jinzhou Province. The three Kharachin Banners (Left, Middle, Right) were merged into Rehe Province (Menghebaoyin, 2012, p. 138).

Note 4. Beizi: A title that shows status.

Note 5. Historical reference for the independence movement of Hulunbuir (Buladuqige, Jin, & Sai, 2002, p. 216).

Note 6. The cancellation of this self-government didn't last for a long time. From the end of 1920 to the beginning of 1921, a group of Outer Mongolian nobles colluded with Mongolians who purported to be Buryats and stirred up the Pan-Mongolian Independence movement. Rngem, a henchmen of Semenov, besieged Kulun, now known as Ulaanbaatar, and captured Jebtsundamba. In February 1921, Outer Mongolia was declared "independent" again (Buladuqige, Jin, & Sai, 2002, p. 298).

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).

Narratives as Catalysts for Transformation and Social Action Planning within the Hong Kong Indonesian Migrant Community

Howard Lorne Martyn¹

¹ Guangdong University of Foreign Studies, Guangzhou, People's Republic of China

Correspondence: Howard Lorne Martyn. E-mail: howardeap@gmail.com

Received: April 1, 2018

Accepted: April 10, 2018

Online Published: May 28, 2018

doi:10.5539/ass.v14n6p106

URL: <https://doi.org/10.5539/ass.v14n6p106>

Abstract

This paper discusses the use of written and oral narratives, composed as classroom assignments by adult Indonesian migrant workers, sojourning in Hong Kong. Individually written narratives embody group-common elements that can be acted upon, thus becoming catalysts for personal growth and for group social action planning. Personal growth includes refocusing personal identity away from the societally imposed and devalued 'domestic helper', toward identities that offer self-empowerment. Redefining personal identity within a group learning situation also builds group identity which can be directed toward confronting hegemonic forces. This is done on four fronts: firstly, by claiming the symbolic right of cultural space and by demanding respect within the larger Hong Kong community; secondly, by publicly agitating against government policies, such as human rights and minimum wage legislation, that migrant workers believe disadvantage them; thirdly, by increasing ability in English, Cantonese, and basic computer applications that specifically meet Indonesians' work requirements and interests; and finally, by building the capacity to confront employers in claiming government guaranteed minimum wages and rest days. Through these actions, the opportunity for both personal and societal transformation is created.

Data was collected through journal narratives and semi-structured qualitative interviews with migrants who were taking weekly English languages classes at a small private training center in Hong Kong.

Keywords: adult non-formal education, Indonesian migrants, labor globalization, migration in Hong Kong, narrative analysis, transformational learning

1. Introduction

Since the 1950's there has been an overwhelming amount of research conducted on cross-cultural adjustment. Historically most literature has been informed by psycho-social models of culture shock (Oberg, 1960, pp. 8, 23; Winkelman, 1994), models relating to cultural learning and communication (Barna, 1972, 1976; Sobre-Denton & Hart, 2008), models relating to psychosocially induced stress and coping mechanisms (Slavin, Rainer, McCreary, & Gowda, 1991), and models related to identity theory (Deaux & Martin, 2003). Studies are replete with examples that have taken place within the contexts of student exchanges (Nyberg & Jensen, 2009; Sovic, 2009; Zhou, Jindal-Snape, Topping, & Todman, 2008) and company transfers of executives to offshore sub-offices (Ali, Van der Zee, & Sanders, 2003; Friedman, Dyke, & Murphy, 2009; Hyder & Fregidou-Malama, 2009; Wong, 2001). Moreover, cross-cultural adjustment models have most often been applied in situations of relative equality between the dislocated individual, and a large section of the population of the host nation. The socio-economic status of the sojourning student or executive, is, generally, considered in a positive light, by citizens of the host nation, where they are often believed to uplift moral, cultural and economic 'tone'. This is especially so of executives, with immigration laws that do not outrightly preclude, for example, the possibility of eventual permanent residence, or marriage with host nationals. This is in contrast with legislation, in Hong Kong, for example, that specifically prevents migrant workers from permanent residency and work in the informal sector, and in Singapore, for example, that prevents marriage to host nationals, and where pregnancy of migrant laborers subjects them to deportation (Lyons, 2006, pp. 8, 23).

This paper examines the situation of labor migrants from the 'global south' to a region of the 'global north', specifically Indonesian migrant workers sojourning in Hong Kong, and the use of narrative methodology as a catalyst to refocus their locus of identity, away from the externally imposed and statically defined 'domestic worker' and toward psycho-social transformation. Integral to this transformation is both individual and group

identity building which together reify into social action. In addition, I wish to illustrate how migrant workers who are enduring hegemonic forces may find a voice of resistance through redress to government authority, and through planned group collective action.

The theoretical significance of this paper lies in bringing together the fields of narrative inquiry and transformational learning. Participant written narratives act, in situations of dissonance, as catalysts for group discussions and transformation, leading to expanded or replaced cultural frames of reference. In practical terms, participants undergoing stressful cross-cultural life experiences learn to control situations and become assertive through an expanded or replaced cultural frame of reference.

2. Conceptual Framework

The conceptual framework for this research is illustrated in Figure 1, with a flow from cross-cultural dissonance, toward an expanded or replaced cultural frame of reference. Issues of cross-cultural anomie may be thought to reside under what Mezirow (1996, 1997) refers to as a “disorienting dilemma”, which, he believes, is a prerequisite for individual transformative learning. Transformational learning itself is the process of “effecting change in a frame of reference ... structures and assumptions that shape and delimit expectations, perceptions, cognition and feelings” (Mezirow, 1997, p. 5). The frame of reference is composed of two dimensions: habits of mind and points of view. Mezirow cites, as an example, ethnocentrism and cultural centrism as a habit of mind, and negative feelings that may arise regarding those who are ethnically or culturally different as examples of points of view. These positions may be challenged through communicative learning which requires critical questioning of assumptions underlying intentions, values, beliefs and feelings. The transformation from one frame of reference to another requires a “disorientation dilemma” and often occurs within challenging discourse. Effective cross-cultural adjustment and acculturation may result from action taken after discourse, in which one’s worldview is challenged, expanded or replaced.

Written narratives provide the context in which habits of mind and points of view are evident. Riessman (2008) considers thematic analysis most useful when considering meaning, and examining motivations and perceptions within a specific context. In applying thematic analysis, it is necessary to consider changes in attitude and situation over time and place. Bakhtin’s chronotope types (Kiernan, 2010) in conjunction with Gergen and Gergen’s narrative temporal structure (Daiute & Lightfoot, 2004) allow the imposition of plot development onto time and place. The consideration of time and place is fundamental to thematic analysis, “not so much [as] background information as semiotic coordinates for establishing identity” (Kiernan, 2010, p. 87). The formation of identity is bounded by time and place, with new inputs to identity occurring with substantial changes in those dimensions. Thematic analysis of written narratives, discussed in group situations may lead participants to discover new ways of coping with stressful life situations.

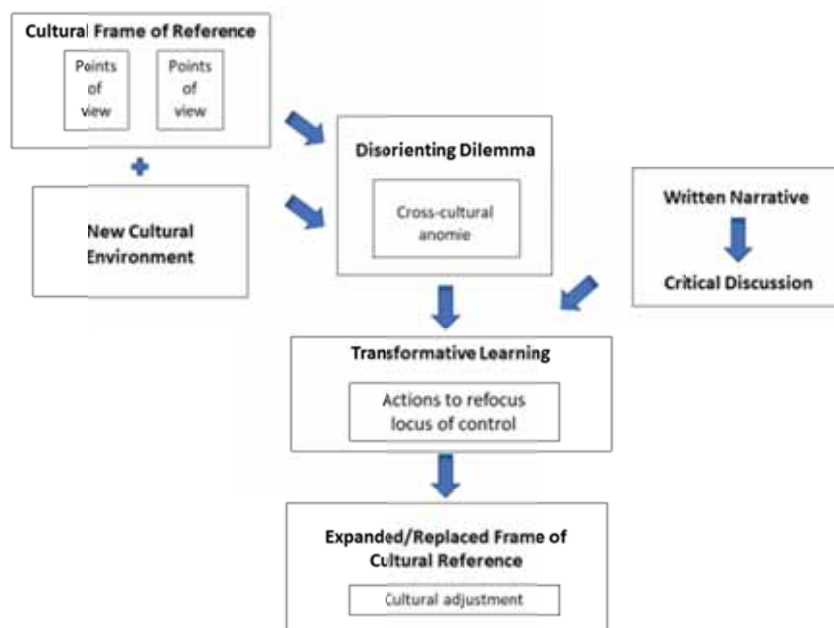


Figure 1. Conceptual framework

3. Situation

Since the late 1990s Indonesian migrant workers in Hong Kong have felt a need to establish communities corresponding to religious, cultural, and economic interests. Numerous groups have sprung up in answer to these needs, many of which joined an umbrella organization, The Coalition of Indonesian Migrant Workers Organization (KOTKIHO). KOTKIHO was established in 2001 as a coordinating body, with the mandate of responding to common issues and providing programming for member organizations. Programming centers on the provision of educational and training courses that meet various member needs.

KOTKIHO operates from a flat in Causeway Bay, Hong Kong, close to a large park, where Indonesian migrants congregate on Sundays, relaxing with friends, and occasionally participating in, or watching, Indonesian cultural performances or rallies. The organization also operates a safe-house for domestic workers who have pending court cases, usually against employers for breaking Hong Kong labor laws. Funding comes from numerous charitable NGOs, fund-raising events, and regular weekly English language and computer training classes.

Education and training classes are held on Sundays with programs running from 9 a.m. to 8 p.m. Regular programming consists of three 2-hour English language classes, and three 2-hour computer literacy classes. These are occasionally interspersed with Cantonese language classes and discussions concerning program planning, religious, legal or human rights issues, sometimes lead by guest speakers.

4. Method

Over an eight-year period I taught Indonesian women basic English language reading, writing and conversation skills in 2 hour classes, in 10 week cycles. In addition, during each of these cycles I asked my participants to write narratives as homework assignments. These focused on two areas; firstly, aspects of their pre-departure lives, often relating to the management of their migration decision and to values and cultural expectations in their home communities, and secondly; aspects of their lives in Hong Kong, focusing on required cultural concessions and how these have impacted on relationships and identity forming dimensions such as self-esteem, life-control, and feelings of connectedness with individuals and cultural organizations to which they might belong. Although the particular details of a participant's entry belong to an individual, group-common themes often emerged. Critical incidents, drawn from narratives that had the potential for transformative learning were, with permission, discussed in class. Critical incidents were often expressed as impacting on self-esteem and the financial security of the participants' families in Indonesia.

Participants wrote sporadically, some for a few weeks, others for several months; in fact, long past the end of the 10-week teaching cycle. Occasionally their writing took the form of poetry and commentary on photographs that were included in their journals. Although narratives can embody a variety of forms, including the interpretation of photographs and other artifacts, I have chosen to confine this article to participants' oral and written comments relating to their deployment in Hong Kong.

The disorienting dilemmas described became the catalysts for group discussions and action planning designed to re-establish the individual's locus of control; to build their capacity to conduct negotiations in work situations, to operationalize the right to claim legally guaranteed employment benefits, and to gain control over situations that cause cultural anomie.

5. Working with Narratives

While working within an English as a Second Language (ESL) environment, I was cognizant of KOTKIHO's role in building a community based on shared experience for social action; individual stories provided a space for refocusing identity and for collective decision making. Polkinghorne (1988) describes the ideal narrative as a "gathering of events into a meaningful story . . . through which life events are conjoined into coherent, meaningful, unified themes" (pp. 126, 131). Polkinghorne points out that narration should be more than simply a recording of events; or more even than a recording of events with analysis. It is the creation of personal identity, the construction of events, and perhaps most importantly, the allocation of merit or noteworthiness. Many narratives, especially in an ESL context, are less than unified and require rewriting to achieve coherence. But no matter how grammatically wanting (within an ESL context) and stylistically crude, the allocation of merit or noteworthiness to one's lived story always demands respect within an emancipatory context.

Clandinin and Connelly's (2000) simply put truism was our grounding: "Why narrative? Because experience" (p. 50). Clandinin and Connelly (1994), expanding on Dewey's belief that narratives must be contextualized within situation, continuity and interaction, feel that narratives should also reach inward to our hopes, feelings, aesthetic and moral values; in effect establishing the locus of identity control, as well as extending outwards, affecting the reader and in so doing create the possibility for social transformation. Narratives are bound to memory and are

thus temporal, just as they are bound to place. While economic, political and social histories have come together at a given place and time to make migration the clear alternative, those forces always bring about discontinuity, dislocation and uprootedness. They strain relationships and tests moral values. Economic and social injustices often precipitate. Common memory, revealed through narratives of time and place, reveal injustices and form catalysts for social action designed to recapture agency, relocating it within the individual, a process “likely to invoke strident forms of reawakening” (Niezen, 2004, p. 40).

The examples illustrate themes of searching for independence, negotiating with employers, underpayment and negotiating with community members. These themes dominated participant writing concerning the Hong Kong segment of their sojourns. The written narratives in the remainder of this paper are authentic. Word choice and grammatical changes have been made only when clarification was necessary.

- A. Ester¹: The manager lets me sell phone cards and beer. Soon the dress shop will be mine.
- B. Salama: A small plot of land. My future in vegetables.
- C. Yasmin: Include me on the graduation list. Money is no object.
- D. Talia: A space for my dishes. I’m not a virus.
- E. Oriana / Yolanda: What can I do with \$200?² My sister needs a bicycle.
- F. Marcia: Being sensitive about local issues. It isn’t just about us.

5.1 *Searching for Independence*

A. Ester: The Manager lets me sell Phone Cards and Beer. Soon the Dress Shop will be Mine.

Most participants managed to save very little money during their sojourn, though a few did save toward the purchase of small Indonesian businesses. Financial issues and the quest for financial independence were major themes throughout Ester’s journal. Over a one-year period she became involved in multi-level marketing and was trying, unsuccessfully, to save money to start a small business. Ester explained her desire for financial success:

I want to prepare my future. I want when I become old still have a lot of money and make my children happy in their future . . . My grandparent very poor. My parent also poor. When I was small child I also poor. Now I am young also still poor. What about my children in the future?? I don’t know yet.

Ester explained that, as a small child, she was very poor in comparison with her neighbors. Her parents worked as indentured laborers on a farm. They kept enough rice and soy beans for their own use, with a little extra to sell in the market. Ester described a cycle of unbroken familial poverty which she was determined to end. On her day off work she attempted to earn extra money by selling long-distance phone cards to other Indonesians through a small Indonesian company operating in Hong Kong. She earned a profit from each card sold and was promised a share in company profits, on a multi-level marketing basis. At first she was quite positive about the scheme.

Now my manager promises I can make future profit if I work selling to my friends on Sunday. I can make more money if sell during holiday. I need to work hard because don’t want to be poor like before. This business give good opportunity. Boss is good man. I think I can save for my good future in this way.

Over time, however, Ester’s estimation of her potential success dwindled. Four months after selling phone cards she had made a small amount of money and was considering looking for other ways to earn more money.

I now making sometimes \$100 each Sunday, sometimes \$200. Friends know I sell phone cards, so they will look for me if they want to buy. Sometimes they hide from me because they know I want to sell. I don’t want to push them too hard because they are friends. This business ok but not enough money for me. I need find something else.

Ester found more success when she stopped selling phone cards just among her friends and started selling them in bars frequented by Indonesians on Sunday afternoons. Ester mentioned that her employer sanctioned her attempts to improve her financial situation. She was able to combine selling phone cards with selling drinks for commission.

Now things better. Have good employer who pay me every month and let me be free all day Sunday. Employer don’t mind I do this business because they know my background. I now free to sell phone cards in bar. Manager know me so let me sell drinks. Now make \$400 every Sunday. After two or three more

¹ All participant names are pseudonyms

² Money is expressed in Hong Kong Dollars: 7.8 HKD = 1 USD

years I have enough to buy dress shop.

Ester had found what she believed to be a viable way of earning extra money for the purchase of a business. Both in her journal and in conversations, she appeared positive about her ability to adapt to the informal Hong Kong work environment and eventually find financial success.

Contracted labor migration is mediated by numerous individuals, companies, government agencies, and government departments in both sending and receiving countries. The extent to which participation in informal work is necessary often depends on the combination of effects these entities produce, over which the migrant has little control. In the case of Indonesians entering Hong Kong, required brokerage fees, training fees, transportation fees, insurance fees and placement fees, may pressure her to take illegal informal work on her day off, thus placing her in a possible deportation situation.

Rural – urban and ‘global south’ – ‘global north’ migration has become a contributing factor to relationship building, networking, and employer-employee relationships in mega-cities throughout the world. Scholars believe this is changing the very nature of city life. Bayat (1997) for example, links the rise in migration in Latin American and Middle Eastern cities to debates about what constitutes democratic entitlement in ‘civil society’. Commenting upon rural-urban migrants in Asia’s less developed cities, Bayat asks at what point “will their sheer cumulative numbers transform them into a potential social force” (p. 58). At what point, we may ask, will migrant demands for what they consider to be democratic civil entitlements, become part of the social contract?

Many migrants, such as Ester, are unavoidably caught between the paternalistic forces of traditional economic arrangements in Indonesia and modern assumptions of entrepreneurship in Hong Kong. Migrants are often forced into the informal sector to meet family financial obligations, yet in doing so, are breaking Hong Kong Immigration law³. This has, to a large extent, removed personal agency from the hands of the migrant; she cannot return home, because to do so would give her no way to service her debt, and she is not allowed to take on menial work, or in doing so, she makes the decision to break immigration law. Goss and Lindquist (2000) in their study of Asian migration point out that present day migration mechanisms are remarkably similar to the indentured labor arrangements of centuries past, though in the Indonesian case, the regional Emir who would have sent laborers to domestic or foreign areas of labor shortage would have retained a moral obligation toward his charges, something that does not exist today.

B. Salama: A Small Plot of Land. My Future in Vegetables.

Home ownership was regarded as tangible evidence of migrants’ sojourn, giving validity to the years away from their family. Participants sometimes expressed a desire to buy a house in their village. A few had entered into agreements to either purchase homes or renovate relatives’ homes.

Over a two-year period Salama discussed her future ambitions and wrote about her quest for independence. During discussions about future ambitions, she would proudly describe the purchase of a house her father had negotiated on her behalf, and her attempts at contributing toward the monthly payments.

I think my house is not really big and it’s just nice for me. It’s 3 bedroom, 2 living room, 1 kitchen, dining room and 1 bathroom. Actually, that is my relative’s house. Relative from my father side. Because they wanted to move to other place so they will sell that house. My father offer it to me and I think I have enough money to buy so I asked my father to do it for me. It’s about \$45,000. It’s really big sum money but I try my best to save money so that I can have it. The house is near to my parents.

Periodically, Salama would comment on the importance of this purchase in terms of future financial security.

I now pay \$1,000 every month to my father. He pay this to my uncle so in a few years I will own house. The house is on small road in Semarang just by my father’s house. When house paid for I will return and live there. When I own house no need to worry so much about work because I will have place to live, so nothing bad will happen. Maybe I can live with father and rent the house if I don’t have job.

Almost two years after purchasing the house Salama began to expand her plans from home ownership to land ownership. She saw this as financial investment to secure her future independence.

Nearby house is small plot of land owned by my uncle. He wants to sell the land, same as my house before. I can pay my father \$400 each month for the land. Maybe later I plant vegetables for sell in the market or maybe I rent the land. This very good for my future.

³ In Hong Kong, as in many other regions, there are no legal income generating opportunities open to migrants outside of work within the contracted employer’s home. Migrants who engage in informal work activities in Hong Kong are subject to deportation.

Salama was a very forward-looking person who seemed well motivated to secure her future independence through house and land ownership. Over an extended period she maintained a very positive outlook about Hong Kong, her employer, her work and her future life in Indonesia.

Land ownership, both as a personal residence and a place of business remained a high priority for Salama. She saw herself as temporarily in Hong Kong at this juncture of her life, but her identity emanated from a village on the outskirts of Semarang, Central Java. In her writing Salama would locate her future in terms of time, place, family and friends in the environment she knows best. She, as well as many other migrants, cope with their longing for home, by framing life in terms of the migration experience; life before migration—childhood, school, adolescence, young adulthood; the sojourn—employers, adjusting to a new lifestyle, planning for the future; and the anticipated return home—reunion with family, marriage, and children, work responsibilities. Having planned for a future in Java, the here and now demanded that Salama settle into her surroundings, make friendships and establish a temporary life in as comfortable a manner as possible; a task that, may not always be successful since migrants may be separated from the familial continuity and village tradition that provides psycho-social stability. Although Salama's adjustment to life in Hong Kong was not as stressful as others', she did miss home and family as evidenced in a poem written shortly after her return to Hong Kong from a bi-yearly visit to Java:

Day by day my time pass by
There's something left behind
My feeling and my mind
My home and happy place
The room I call my space
But most of all I miss
My sisters friendly kiss
My friends being all around
I hope I'll soon be found
And taken back again

In her poem Salama describes missed family and friends, people from her village and the intimate relationships that village life and living with extended family entails. Bell (1997) discusses the "sense of the presence of those who are not physically there" (p. 813), metaphorically as "ghosts", or associations of place with specific people who are no longer physically present, and how, when returning to such a place, the essence of the displaced are felt to varying degrees. In Salama's case it is not the family and friends who have 'disappeared', but herself, deployed to a foreign environment, living with strangers, and wishing for "the room I call my space". Salama's attachment is to home, family and friends; the familiar from which her identity has been formed, and to which she will return.

C. Yasmin: Include Me on the Graduation List. Money is No Object.

Hopes for an independent future sometimes centered on education. Participants occasionally linked future education to independence, but of these, Yasmin was remarkable for her level of dedication in the face of family hardship. Over an 18-month period Yasmin, an English language teacher at KOTKIHO, discussed her desire to upgrade her education and become a professional teacher. Despite having to quit school one year short of high school graduation, the good quality of her self-taught grammar, pronunciation and classroom management skills became self-evident during classes she and I co-taught. Yasmin was a single parent and hoped to take formal teacher training classes upon her return to Indonesia but knowing she would not be accepted by a university, paid to be included on her school's graduation register. In discussions she pointed out:

I had to quit school in my last year of high school. This wasn't my fault. My mother was having terrible troubles with my father when I was 16. He abandoned us. I really hate him for that. My brothers and parents were fighting constantly. I couldn't go on at school, so I quit. Later I paid \$3,000 to the principal, so I could be included on the graduation list. Otherwise I cannot get into teachers' college.

Yasmin had expressed two major reasons for working in Hong Kong. These were to save money toward the tuition at a teachers' college in Indonesia, and to send money home to her mother who was looking after her 3-year-old son. She often mentioned furthering her education within the context of being able to provide for her child.

I'm sure I could be a very successful teacher. I really want to go to teachers' college when I return so I can

earn money to look after my son. I've almost saved enough money for the tuition and to support myself and my son for a couple of years.

Several times Yasmin expressed the importance of voluntarily teaching at KOTKIHO. Through teaching she had found a community of practice and support group as well as a life-purpose; a profession to which she could readily dedicate herself. She adapted well to the KOTKIHO teaching environment, and that in turn helped her to adapt to Hong Kong because it gave her self-confidence that carried on into her involvement in migrant advocacy work and in dealing with the community at large.

I'm teaching 6 hours on Sunday now. That's crazy. [Training manager] has really gone too far. No one else is willing to teach so much but it's ok because I'm really having a good time. [Training manager] asked me to teach another basic class from 6 to 8. That class seems to have better skills. Most of them went to secondary school so their writing isn't too bad. I'm teaching them more complicated sentence construction and I'm using worksheets using Michael Swan's grammar book.

I spend almost all my free time here [at KOTKIHO] now. Last Sunday I was here till after midnight. I'm really lucky because my employer doesn't care. She just says if I do a good job from Monday to Saturday she doesn't care what I do on my day off. Sundays are my days.

Eventually Yasmin decided to take a six-month Montessori training course, offered in Hong Kong by the Canadian Montessori Association. She believed this would provide a suitable qualification for work as a kindergarten teacher when she returns to Indonesia.

I can do the course in Hong Kong and earn a good salary at the same time, so I can support my family. My employer supports this idea too. In Indonesia there is no guarantee I will be accepted to a college. They will want extra payment because I have been working abroad. But I am missing my kid's childhood.

Although Yasmin complained about being overworked, this was done with a tinge of pride at being asked to teach extra hours and being recognized for her abilities. Wenger (1998), like other post-modern theorists views identity as fluid, constantly shifting, and without solid boundaries, though soft, elastic boundaries may emerge through identification with communities of practice, organizations, formal and less formal affiliations and relationships. Yasmin negotiated a hoped for future identity by consolidating factors of past circumstances, over which she had little control, and present associations aimed at testing her suitability for a future community of practice. These would hopefully come together in a "cascading interplay of participation and reification [through which] experience of life becomes one of identity" (Wenger, 1998, p. 151).

5.2 Negotiations with Employers

D. Talia: A Space for my Dishes. I'm Not a Virus.

Talia described humiliating situations, designed to clarify and strengthen the hegemonic relationship imposed by her employer. She described incidents that were emotionally hurtful to her, for example, her employer insisted on keeping Talia's food and eating utensils, separate from her own:

I have special space for washing my own dishes. I can't put [my dishes and eating utensils] with [employer's] dishes. Cannot put my food with her food. Then I felt I'm just like virus for her.

Talia described actions conducted by her employer that she believed had no other purpose than to humiliate her.

After cleaning floor and using wax [employer] wait for 30 minutes. Then she take white cloth and wipe under chair or couch. If any dust she will be angry and telling me she will terminate me. But really, I do good job.

In addition, Talia felt that she was hindered in participation in community activities because her employer did not give her the 24 hours of continuous rest each week as required by Hong Kong labor law, limiting her free time to Sunday morning and afternoon. Lack of time prevented her from taking an official position in the cultural dance group to which she belonged, and limited participation in civil society.

I can leave home after making breakfast. Then go to practice in park with other *Sanggar Budaya* [Indonesian Dance Group] members. But must be home by 4 p.m. to make supper. *Sanggar Budaya* members asked me to be club secretary but cannot because no time. They ask me to do evening performance with them but cannot.

Talia seemed to have a mixed relationship with her employer. She took care of an elderly family member, 'grandma', as well as a middle-aged couple. Although she believed her employers were fundamentally good people, she described comments that she thought were either thoughtless or designed to belittle her. Talia wrote about comments made in a Laundromat.

Grandma asked me about the clothes I had washed in the laundry . . . I said that I needed to wash my clothes because it was already 5 days I didn't wash it. But she became angry. She said I have to use my own money. She scolded me in front of CiCi's [her employer's] husband. I was so ashamed.

Talia believed that the real issue was not the few dollars she saved by washing her clothes with her employer's, but that she had mixed her clothes with her employer's clothes. She interpreted 'Grandma's' words as racist, just as she had interpreted her employer's desire to keep eating utensils separate, as racist. Clarification of meaning, and cross-cultural sensitivity on the part of both Talia and her employer seemed to be lacking, something that Talia had not been expecting. Black, Mendenhall and Oddou (1991) in their "Framework of International Adjustment" assert that the adjustment process begins at the pre-departure stage with individual training, previous experience and careful candidate selection. It then carries on at the deployment stage with individual skills such as relation skills and perception skills, job skills such as role clarity and role conflict, organizational skills such as logistical support and finally involves non-work areas such as family-spouse adjustment. The anticipatory adjustment and in-country adjustment phases described, closely match participants' narrative descriptions of issues which were likely to cause cross-cultural adaptation problems. Participants identified pre-departure training as a major source of misinformation or simply where strategic information that could have relieved cross-cultural difficulties was not given. The miscommunication between Talia and her employer indicates a training need at the pre-departure stage. Pre-departure training, although required, is effectively unregulated in terms of content in Indonesia, something that migrants' rights groups in the country have been lobbying to change.

5.3 Underpayment

E. Oriana / Yolanda: What can I do with \$200? My Sister Needs a Bicycle.

Participants described situations in which underpayment impacted on their ability to meet family obligations, and situations in which they were intimidated into accepting reduced rest days. These situations sometimes lead to severe discontentment with the migration experience for some participants.

It was especially difficult for those who spent their time looking after other people's children, when the parents of those children withheld salary, thereby preventing the participants from providing the only visible demonstration of their love for their own family-money. The promise of money was the compensation for sacrificing the nurturing emotional labor demanded of women in Javanese villages. When that promise was not fulfilled, due to underpayment, it did not simply result in a lack of spending money for participants, but more importantly often prevented them from demonstrating familial love and fulfilling their duties as primary breadwinners.

Research by the Asian Migrant Centre (2005) indicated that approximately 10 percent of Indonesian domestic workers were paid between \$1,800 and \$2,000 per month, just under half of the government approved monthly salary of \$3,740 (The 2018 monthly salary is \$4,410). Anecdotal information from 2017 suggests that this is unchanged. Oriana had been told by training center staff in Indonesia that she would be paid \$1,800 per month as she was inexperienced and had not completed secondary school. In addition, her employer did not pay her on time (inconvenient, though not illegal as long as the full salary has been paid within seven days after the end of the month). After a few months with her employer she indicated how underpayment and late payment affected her ability to assist her family. She had promised to buy a bicycle for her sister in Indonesia but could not, due to her employer's delay in paying her salary.

I have promised . . . to send money [to family in Indonesia] to bought bicycle go to school my younger sister but my employer not give [salary] yet. Before leaving house, I tried waiting my employers wake up. I waited one hour. I telling them I need money for course [KOTKIHO English course] and for buy sister bicycle. Employer give me \$200 [about 8% of the money owed to her]. I want to cried. What can I do with \$200?

One-week later Oriana still had not been paid:

My employers had promised to give me salary, but she talk lies . . . she just give one hundred.

Oriana received her (illegally low) salary 3 weeks after the due date.

Yesterday she paid me \$1,500. With other \$300 I now got full salary. Every month is same thing. Why I have to complain to get salary?

Another participant, Yolanda, had moved to Hong Kong from Purwokerto, Central Java. When Yolanda joined our class, she had been in Hong Kong for two months. As in the case of Oriana, Yolanda had been told by Indonesian training center staff that she would be paid \$1,800 per month. After arriving in Hong Kong, she was

delighted when her employers offered to pay \$2,000. Soon afterward, however, she was disheartened to learn that, in fact, the minimum wage was \$3,540. Still, in other respects the employer treated her well, and she was making more money than she had anticipated. In her journal she wrote:

I work for a good family with two kids. They cannot afford to pay me the minimum wage, so I receive only \$2,000 per month.

Initially Yolanda did not see a discrepancy between a good employer and underpayment, but rather, saw a bond in the common situation of financial hardship. However, some months later, she did indicate some animosity toward her employer for underpaying her.

I understand their situation. They live in public housing estate and have little room. They are not rich people. But I think it unfair that I told \$3,540 when really \$2,000. If \$2,000 should tell while still in Indonesia, not after here and expecting more money.

The opportunity for an egalitarian cross-cultural adaptation to Hong Kong had been compromised from the pre-departure stage when she had been misled about her salary. She had been preparing for departure under the purposeful misguidance of her Indonesia based recruiter and training center staff. Yolanda's initially positive comments about her employer, and Hong Kong employers in general, became pessimistic over time.

They can be very nice, but they don't think about my situation. I come from very poor family. Why they not pay me full salary when so little to them but so much for me?

After 18 months with the same employer Yolanda wrote:

I think I should leave my job and move into shelter. If leave employer I can write letter to immigration about my situation. Maybe I can get money back for underpay.

She was now in a two-year contract from which she could not easily extricate herself, without going through the hurdles of a Labor Tribunal hearing and months of living in a shelter with no income. Even if successful in a hearing, she would have to return to Indonesia and begin the entire recruitment process anew.

5.4 Negotiations with Community Members

F. Marcia: Being Sensitive about Local Issues: It isn't just about Us.

Participants reported both perceived kindnesses and perceived hostility in casual daily encounters outside the employer's home. All participants felt that at some time during their sojourn their ethnic background had affected others' attitudes and actions towards them, either positively or negatively, but Marcia felt that it was the duty of the migrant to garner positive community support.

Marcia seemed to have very good casual relationships with both prominent and non-prominent community members. As leader of one of the largest grassroots migrant organizations in Hong Kong she would, from time to time, be involved in meetings with Hong Kong legislators. She felt that she was treated as an equal in her discussions with them.

We met Emily Lau [a Hong Kong politician] today. She's one of our supporters, actually. We discussed the discrimination legislation and how it doesn't address minority religions. It was a good discussion and she promised to try to do something about that issue.

Similarly, Marcia felt she had good rapport in her casual meetings, such as with shopkeepers. She felt this was because she went out of her way to be a good role model for Indonesians in the community.

Some migrants are not very good at working with local people. They have no consideration for the problems of the ordinary person. He has problems and has to make a living . . . has to send his kid to school and pay bills. We have to consider those things. Migrants' rights isn't just about us. We have to be sensitive about local issues too.

6. Discussion

In groups we discussed overcoming hurdles. One participant, an ardent pacifist, pointed out that she could not be involved in aggressive confrontation. In response Yasmin asked, "Will my sister not get an education because I cannot buy her a bicycle, and will my daughter be in my situation 20 years from now?" Most participants concluded that, yes, that would be the likely result, unless they could take action, which would occasionally be confrontational, to prevent it.

6.1 Issues Identified in Narratives

Clear breaches of immigration and labor law, were first identified. These are summarized in Table 1.

Table 1. Incidents and laws broken

Individual Narrative	Group-common Identified Incident	Violation
Talia	Withholding 24 hours continuous rest per week.	HK Labor Law
Oriana	Underpayment/Late Payment	DH Contract (Immigration Law) / HK Labor Law
Yolanda	Underpayment	DH Contract (Immigration Law)

Note: DH=Domestic Helper, ID=Immigration Department

Group-common issues, from which we could build capacity through participant training, were then identified. These are summarized in Table 2.

Table 2. Narratives and group-common issues

Individual Narrative	Group-Common Identified Issues
Ester	"I want to prepare my [financial] future"
Salama	"I try my best to save money"
Yasmin	"I really want to go to teachers' college"

Finally, instances of perceived hegemony were identified. These are summarized in Table 3. We realized that such instances could not likely be directly stopped, but their psycho-social impact could be lessened, and, to a lesser extent, their frequency could be reduced with training, through public socio-cultural activities aimed at educating the general public.

Table 3. Hegemonic incidents

Individual Narrative	Group-common Identified Incidents
Talia	"I'm just like a virus for her" "She takes white cloth and wipe under chair" "She scolded me for mixing my clothes with hers"

6.2 Group Suggestions and Outcome

Talia

Talia faced breaches of labor law, as well as hurtful accusations from her employer, which she took to be racist. Although migrants are entitled to 24 hours of continuous rest per week, this Labor Law is commonly broken. Typically, migrants are allowed to leave their employer's home (where they are required by law to reside) Sunday morning but must return by Sunday evening. Based on experience, participants knew that a formal complaint to the Hong Kong Labour Department would take 9 to 12 months to process and would not likely result in compensation. A less aggressive stance was adopted with group members suggesting that Talia write a formal letter to her employer, explaining why she needed time off, and subtly reminding her employer of the legal entitlement. The class drafted the letter together. Talia's employer agreed to extend the curfew by four hours, thereby giving Talia time to participate in *Sanggar Buddiah* cultural activities.

Oriana

Oriana was at the beginning of her two-year contract and considered quitting her job, moving into a shelter and reporting her employer to the Hong Kong Labour Department. The group advised her against this, however, as being tactically unwise. The recommendation was that she wait until her \$21,000 debt had been paid, and a longer history of underpayment could be established, before taking action. However, it was also suggested that Oriana point out to her employer minimum pay requirements. As a result of following group advice, Oriana was fired. She moved into a shelter while waiting for a Labor Department tribunal to resolve the case. Although she eventually was compensated for underpayment, she did not receive compensation for loss of employment, nor did her employer have to pay punitive damages.

Yolanda

Since Yolanda had paid off her placement debt, participants advised her to break her contract, move into the shelter, and write a letter to the Hong Kong Immigration Department detailing her underpayment. We composed a draft of the letter in class and asked two migrants to go with Yolanda to the immigration department to present the letter. After 10 months, Yolanda confronted her employer in court and was awarded the entire amount

underpaid. However, she was not awarded money for loss of income, nor was she reimbursed a portion of her placement debt. The employer was not penalized for underpaying her; while this was an unsatisfactory conclusion in the view of migrants' rights activists, it was nevertheless a transformative learning experience for Yolanda. She is currently working for a migrants' advisory group in Jakarta, agitating for migrants to be viewed by the Indonesian government as a legitimate labor group, eligible for protection under labor legislation, and specifically for ratification of the 1990 U.N. *Convention for the Rights of Migrant Workers and Members of their Family*. Yolanda's "perspective shift" (Mezirow, 1996, 2000) lead her to follow a new life, working within Indonesia for the benefit of both pre-departure and returned migrants.

6.3 Group Suggestions Aimed at Cross-cultural Training, Financial and Educational Planning

Everyone in the group could identify with Ester, Salama, and Yasmin (Table 2) in their desire to save money, buy homes in Indonesia and complete training. Throughout the years KOTKIHO or their uplink NGO, the Asian Migrant Centre, has offered training and workshops on financial planning aimed at eventual home or business ownership or saving for future educational or family needs. Group members felt that, while these were valuable, future workshops should also look into cooperative savings and cooperative businesses run in Indonesia for returned migrants.

7. Conclusion

Written and oral narratives can reveal an individual's socio-cultural, training or employment gaps or problems that have group-common elements. KOTKIHO attacks these problems on four fronts. Firstly, migrants need to claim symbolic cultural rights; to have their culture considered a rightful and respected part of Hong Kong society. In this regard, public cultural shows, sometimes in conjunction with other ethnic groups are held several times a year. In addition, migrant groups meet with Hong Kong government Culture and Leisure Department, Labor Department, Immigration Department officials, and individual legislators in planning campaigns designed to educate the public about the socio-cultural background of migrants, and the need for cross-cultural tolerance. Secondly, KOTKIHO, along with other groups, publicly demonstrate in an attempt to politicize and pressure the government over immigration and labor concerns and in order to petition for the same material rights as other migrant categories; inclusion under the minimum wage law (there is currently a separate minimum wage for domestic workers with a significantly lower salary), and permanent residents' rights (the right to pay taxes, vote and for immigration laws that do not favor employers). Thirdly, through basic English language education, Cantonese language education, and basic computer skills education, that specifically meet Indonesian work requirements and interests, a space is provided for individual growth and for the discovery of group-common problems and interests that can be acted upon for transformative change. Finally, where necessary KOTKIHO will assist individuals in confronting their employer with the aim of securing government guaranteed work benefits. In so doing, the opportunity for transformative change may be realized.

References

- Ali, A., Van der Zee, K., & Sanders, G. (2003). Determinants of intercultural adjustment among expatriate spouses. *Int. J. of Intercultural Relations*, 27(5), 563-580. [https://doi.org/10.1016/s0147-1767\(03\)00054-3](https://doi.org/10.1016/s0147-1767(03)00054-3)
- Asian Migrant Centre. (2005). *Underpayment: Systematic extortion of Indonesian migrant workers in Hong Kong*. Hong Kong: Author.
- Barna, L. (1972). Stumbling blocks in interpersonal intercultural communications. In L. Samovar & R. Porter (Eds.), *Intercultural communications: A reader* (pp. 241-245). Belmont: Wadsworth.
- Barna, L. (1976). *How culture shock affects communication*. Paper presented at the Communication Association of the Pacific Annual Convention, Kobe, Japan.
- Bayat, A. (1997). The politics of the 'informal people'. *Third World Quarterly*, 18(1), 53-72. <https://doi.org/10.1080/01436599715055>
- Bell, M. M. (1997). The ghosts of place. *Theory and Society*, 26, 813-836. <https://doi.org/10.1023/A:1006888230610>
- Black, J., Mendenhall, M., & Oddou, G. (1991). Toward a comprehensive model of international adjustment: An integration of multiple theoretical perspectives. *The Academy of Management Review*, 16(2), 291-312. <https://doi.org/10.2307/258863>
- Clandinin, D. J., & Connelly, F. M. (1994). Personal experience methods. In N. K. Denzin & Y. Lincoln (Eds.), *Handbook of Qualitative Research*. Thousand Oaks: Sage.
- Clandinin, D. J., & Connelly, F. M. (2000). *Narrative Inquiry*. San Francisco: Jossey-Bass.

- Daiute, C., & Lightfoot, C. (Eds.). (2004). *Narrative analysis: Studying the development of individuals in society*. Thousand Oaks, CA: Sage. <https://doi.org/10.4135/9781412985246>
- Deaux, K., & Martin, D. (2003). Interpersonal networks and social categories: Specifying levels of context in identity processes. *Social Psychology Quarterly*, 66(2), 101-117. <https://doi.org/10.2307/1519842>
- Friedman, P. A., Dyke, L. S., & Murphy, S. A. (2009). Expatriate adjustment from the inside out: An autoethnographic account. *International Journal of Human Resource Management*, 20(2), 252-268. <https://doi.org/10.1080/09585190802670524>
- Goss, J., & Lindquist, B. (2000). Placing movers: An overview of the Asian-Pacific migration system. *The Contemporary Pacific*, 12(2), 385-414. <https://doi.org/10.1353/cp.2000.0053>
- Hyder, A. S., & Fregidou-Malama, M. (2009). Services marketing in a cross-cultural environment: the case of Egypt. *Journal of Services Marketing*, 23(4), 261-270. <https://doi.org/10.1108/08876040910965593>
- Kiernan, P. (2010). *Narrative identity in English language teaching: Exploring teacher interviews in Japanese and English*.
- Lyons, L. (2006). *The limits of transnational activism: Organizing for migrant worker rights in Malaysia and Singapore*. Paper presented at the Transnationalisation of Solidarities and Women Movements, Montreal.
- Mezirow, J. (1996). *Transformative dimensions of adult learning*. San Francisco, CA: Jossey-Bass.
- Mezirow, J. (1997). Transformative learning: Theory to practice. *New Directions for Adult and Continuing Education*, 74. <https://doi.org/10.1002/ace.7401>
- Mezirow, J., & Associates. (2000). *Learning as transformation*. San Francisco, CA: Jossey-Bass.
- Niezen, R. (2004). *A world beyond difference: Cultural identity in the age of globalization*. Malden: Blackwell. <https://doi.org/10.1002/9780470776582>
- Nyberg, R. S., & Jensen, T. C. (2009). Honoring the Kun Lun Way. Cross-cultural organization development consulting to a hospitality company in Datong, China. *Journal of applied behavioral science*, 45(2), 305-337. <https://doi.org/10.1177/0021886309333444>
- Oberg, K. (1960). Culture Shock: Adjustment to new cultural environments. *Practical Anthropology*, 7, 177-182. <https://doi.org/10.1177/009182966000700405>
- Polkinghorn, D. (1988). *Narrative knowing and the human sciences*. NY: State University of New York Press.
- Riessman, C. K. (2008). *Narrative methods for the human sciences*. Thousand Oaks, CA: Sage.
- Slavin, L., Rainer, K., McCreary, M., & Gowda, K. (1991). Toward a multicultural model of the stress process. *Journal of Counselling and Development*, 70, 156-163. <https://doi.org/10.1002/j.1556-6676.1991.tb01578.x>
- Sobre-Denton, M., & Hart, D. (2008). Mind the gap: Application-based analysis of cultural adjustment models. *International J. of Intercultural Relations*, 32(6), 538-552. <https://doi.org/10.1016/j.ijintrel.2008.06.008>
- Sovic, S. (2009). Hi-bye friends and the herd instinct: International and home students in the creative arts. *Higher Education*, 58(6), 747-761. <https://doi.org/10.1007/s10734-009-9223-z>
- Wenger, E. (1998). *Communities of practice: Learning, meaning and identity*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9780511803932>
- Winkelman, M. (1994). Culture shock and adaptation. *Journal of Counselling and Development*, 73, 121-126. <https://doi.org/10.1002/j.1556-6676.1994.tb01723.x>
- Wong, M. M. L. (2001). Internationalizing Japanese expatriate managers - Organizational learning through international assignment. *Mana. Learning*, 32(2), 237-251. <https://doi.org/10.1177/1350507601322005>
- Zhou, Y., Jindal-Snape, D., Topping, K., & Todman, J. (2008). Theoretical models of culture shock and adaptation in international students in higher education. *Studies in Higher Education*, 33(1), 63-75. <https://doi.org/10.1080/03075070701794833>

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).

The Research on Evaluation of College Students' Ability to Achieve the Physical Exercising Habit and Volition

Xiaodong Chu¹, Jianxin Kuang¹ & Jun Liu²

¹ School of Physical Education, Qingdao University of Science and Technology, Qingdao, China

² Qingdao Zhengzhou Road Primary School, Qingdao, China

Correspondence: Xiaodong Chu, School of Physical Education, Qingdao University of Science and Technology, Laoshan Campus, No. 99 Songling Rd, Qingdao, China. E-mail: xiaodongchu@126.com

Received: April 1, 2018

Accepted: April 20, 2018

Online Published: May 28, 2018

doi:10.5539/ass.v14n6p118

URL: <https://doi.org/10.5539/ass.v14n6p118>

Abstract

With the development of modern society, the competition in all fields is becoming increasingly intensified. Therefore, people must be strong in volition if they want to stand out in such a competitive society. Especially for college students, they should form strong volition with the help of school education, or it will be difficult for them to make a career in the future.

The research on college students' ability to develop the physical exercising habit and volition is vital to the physical education of college students. This paper researches on the feasibility of developing college students' ability to form volition by developing their physical exercising habit through school education, and analyses the influence factors of the formation of volition, hoping to give some theoretical references to the evaluation system of the ability to develop the physical exercising habit and volition.

Keywords: evaluation, college students, ability, physical exercising habit, volition

Ability means the psychological characteristics of personality required for grasping and applying knowledge and skills. The habit of physical exercise is formed through repeated practice in the process of physical exercise and developed into an individualized need of automated behavior (Li, 2008). Ability to get physical exercise habits is to develop personality traits through physical exercise habits. The will is the psychological process of determining the purpose and controlling its own actions according to the purpose, overcoming difficulties and achieving the goal (Li, 2011). The stabilizing factor that makes up willpower is called the volition. The attainment of the will quality ability is the psychological characteristic that promotes the volition. We all know that participating in physical exercise and cultivating the habit of physical exercise are closely related to people's will, but physical exercise and will seem to be bound traditionally, and people think that participation in physical exercise can certainly hone people's willpower. So it is always ignored that the cultivation the habit of physical exercise and achievement of willpower are both abilities. This paper studies the above two abilities to provide a reference for the system construction of two kinds of abilities.

Decision on Deepening Education Reform and Promoting Education in an All-round Way promulgated by Chinese government points out that the Chinese universities should highlight "health first" to enable young people to develop a lifetime habits of physical exercise. Therefore, ability to develop the physical exercising habit is crucial to the implementation of lifelong physical exercise.

Life in university is the last stage of one's school education. To cultivate the students' physical exercising habit, first of all, universities should start with the students' motivation of physical exercise.

1. The Research on Evaluation of the Ability to Develop the Physical Exercising Habit

1.1 Motivation of the Ability to Develop the Physical Exercising Habit

The self-determination theory was founded and developed by American psychologists Edward I. Deci & Richard M. Ryan (Figure 1).

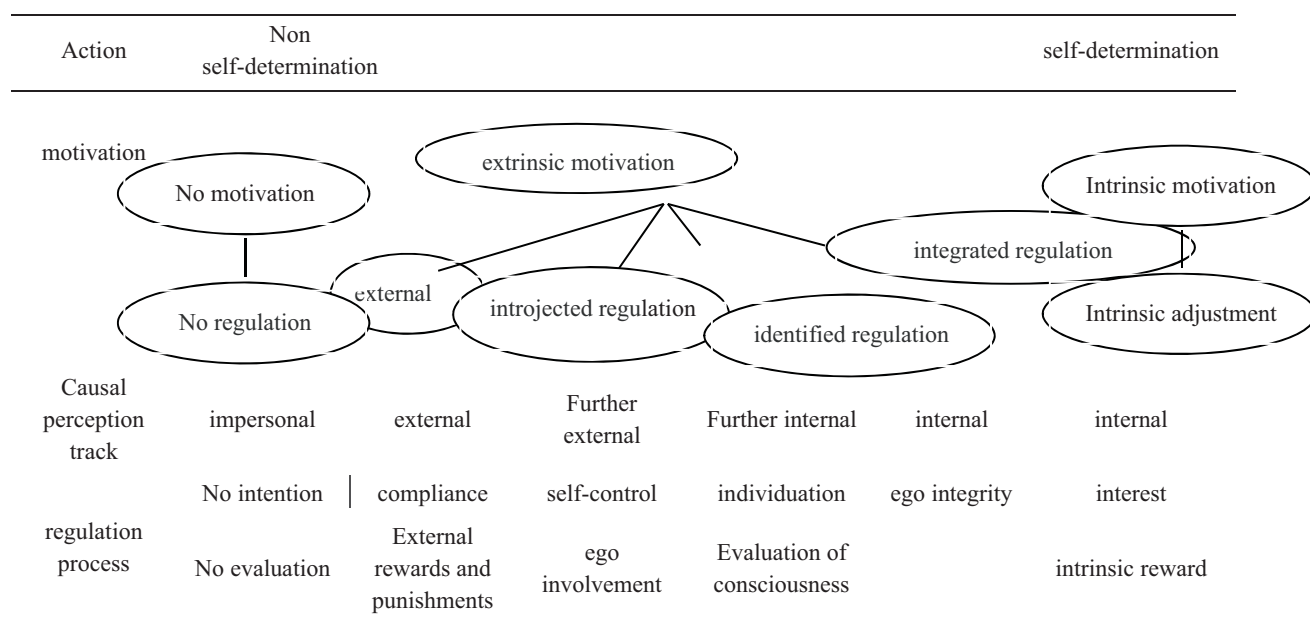


Figure 1. Self-determination continuum (quoted from Deci & Ryan, 2000)

Self-Decide Theory emphasizes the degree of self-determination of human behavior, and regards motivation as a continuum according to the degree of self-determination. The theory holds that human is a kind of positive organism with innate potential for psychological growth and development. Self-determination is a kind of potential for empirical choice based on the individual's understanding of his needs and environmental information, and it is one's choice of action. The potential of self-determination can lead people to engage in interesting and beneficial behavior, and this pursuit of self-determination generates internal motivation for human behavior.

Therefore, how to enhance students' internal motivation, how to promote the internalization of external motivation, and how to turn physical exercise into an intrinsic need of students become the key to cultivate the students' ability of physical exercise habit.

1.2 The Research on Evaluation of the Ability to Develop the Physical Exercising Habit

Ability is the quality to achieve a goal or task, which is the necessary subjective conditions to complete an activity, and it is also individual mental characteristics that directly affect the efficiency and make the activities finished. In the *Modern Chinese Dictionary*, habit refers to the psychological tendency to develop an action through repeated practice, which will not change with the time. Physical exercise habit is the exercise behavior of automation through conscious repetitive exercise, which is not easily changed. In 1998, the current situation of mass sports investigation and study team, concluded that four conditions of physical exercise habit as: exercise to more than 3 times a week, exercise more than 30 minutes each time, exercise intensity in a medium or medium above strength, continuous movement to keep more than six months. College students own active thinking, the pursuit and goals, so how to stimulate students' interest in exercise through the college physical exercise become a key element in ability to develop the physical exercising habit.

1.2.1 The Research on Evaluation of the Ability to Develop the Physical Exercising Habit Influenced by Physical Education

The *Guideline for the Teaching of Physical Education Courses for Colleges and Universities in China* issued by the Ministry of Education points out that physical education courses are public compulsory courses focusing on the main way of physical exercises and achieve physical fitness, health promotion and sports literacy through reasonable physical education and scientific physical training. The physical education curriculum in university is the final stage where students receive purposeful, planned and formally organized, systematic and scientific physical education. It is also the convergence point of school physical education to social sports. Physical education curriculum not only affects students' interest in physical education, but also has an important meaning on students' ability to develop the physical exercising habit.

In the current evaluation system of students' sports scores in common colleges and universities, people habitually equate physical education test scores to the students' physical health, psychological quality, sports participation and exercise habits, and they always consider the athletic level as the only means to measure

students' ability (Tian, 2003). This course evaluation system is easy to result in serious exam-oriented physical phenomenon.

The *Guidance Outline for PE Curriculum Teaching in Colleges and Universities* issued by the Chinese Ministry of Education aims to form a curriculum structure which achieves organic combination of classroom teaching and extra-curricular and extra-curricular sports activities, close link between school and society and organic connections of inside and outside the school. Students should not only according to their ability to master the corresponding movement skills, form self-training habits of sports, and it is more important to be able to test and evaluate the physical health, set up the sports learning goals, improve their ability of scientific exercise, so that develop good habits and tenacious character. Therefore, the physical education curriculum setup should break the traditional pattern of physical education Settings, and let the students choose sports special skill to learn according to the students' interest in personal characteristics, so that the students walked out of the passive in the exam-oriented education and make learning motivation by external motivation into internal motivation, giving full play to students' subjective initiative study, forming the integrated curriculum structure. On the other hand, kinds of sports should be organized based on students' sports skill level to make students enjoy fun and success, and show indomitable willpower when challenging sports, so as to improve the psychological condition to overcome the psychological barriers, develop a positive attitude towards life. The realization of the basic goals and development goals in the guidance outline of the ministry of education has a positive effect on the achievement of students' physical training habits and abilities.

1.2.2 The Research on Evaluation of the Ability to Develop the Physical Exercising Habit Influenced by Physical Monitoring

Students are required to participate in a physical test every year in four-year universities life. After the first physical health test results, the students test scores are directly imported into schools' network management system based on the physical examination of all students in each school year in addition to the use of national student physique Health standard data management system which forms the annual report of students physical health. Students can inquiry their scores online through the network. According to *National Students Physical Health*, the test assessment are graded as: 90 points and above are excellent, 75 points -89 points are good, 60 points -74 points are passed, 59 points and below are not passed.

Students' physical health status is an important indicator to measure the school running level, and also students' physical health test results are included in the student archives, which is the important basis for students' evaluation and evaluation. Therefore, the students will envisage this evaluation. For those students who have poor physical health test results or who hope to further improve their test scores, physical education teachers may establish student physical health status analysis and judgment mechanisms based on the students' physical health test evaluation reports, Health conditions to develop interventions, the use of classification teaching. According to the students' physical health status, the intervention measures should be adopted to guide the students to carry out physical exercise and improve the physical fitness level of the students. At the same time, students need to be more conscious of their initiative in participating in physical exercise. Therefore, the methods and plans of physical exercise will be more scientific. And because of the physical fitness test in every school year, physical fitness test is vital to students' ability of physical exercise habit.



Figure 2. Process of guide to physical exercise by students' physical health test scores

1.2.3 The Research on Evaluation of the Ability to Develop the Physical Exercising Habit Directed by the Exercise Fitness Detection Monitoring System

The exercise monitoring guidance system is mainly carried out from four aspects: health physical fitness, physical exercise habits, comprehensive evaluation report, and exercise prescription. Fitness refers to the ability to engage in leisure activities when the body in the condition of not excessive fatigue, and the ability to deal with the unpredictable emergencies and the ability to engaged in daily work (Xu, Tang, & Liao, 2010).

Physical fitness is divided into two categories: one is physical fitness and physical fitness, and another is

technical fitness. Physical fitness is used by indicators when they need to evaluate one's physical ability, and it is the basis of health, including cardiorespiratory endurance, body composition, strength and muscle strength, flexible quality. Exercise prescription refers to suitable exercise content, exercise intensity, exercise time and frequency put forward by the rehabilitation physician, rehabilitation therapist and physical education teachers, social fitness instructor or personal fitness trainer, according to the patient's age, gender, general medical examination, rehabilitation medical examination, exercise test, physical fitness / physical fitness test results, plus his age, gender, health status, physical fitness and cardiovascular, motor function, combined with the main objective conditions, in the form of prescription for patients or sports fitness, in order to achieve scientific and planned rehabilitation or prevention of fitness (Yang, 2013).

The evaluation job would be done by related teachers in Sports human science laboratory. They formulate corresponding exercise prescription based on provided test for students' individual demand, through survey of fitness related indicators and investigation of physical exercise habits of students, to give students comprehensive evaluation about the body quality and physical exercise, according to the individual differences. The whole operation process is done on the network, all reported by establishing network platform, the applications, such as the WeChat Official Account (a popular application in China) and other accesses which are public for students to query, so as to encourage the students to carry on the science of physical exercise, to help them further form the habit of physical exercising.

2. The Research on Evaluation of the Ability to Develop the Volition

The volition is also a kind of ability which includes consciousness, independence decisiveness and toughness ^[6]. Consciousness refers to the quality that someone controls the maintenance of the action automatically according to its requirements, which is an internal motivation that comes from inner need. Independence refers to the quality that a person can take decisions and execute decisions independently in the act of will according to his own knowledge and belief, without yielding to the pressure of the surrounding environment. Independence is related to the rational analysis and absorption the reasonable ideas of others. Independent people are rational in their decisions and decisions, both socially and morally. Decisiveness means the quality that the subject can distinguish between right and wrong, quickly to take decision and execution in complex cases. Determination is different from the rash. It is based on thorough thinking. The decisive person has a deep understanding and sober estimation of the method of his behavior and the possible consequences, so he can make prompt action without retreat when it comes to the most critical moment. Toughness refers to someone believes his decision correct for a long time and the volition of unremitting struggle for executive decision. People with high degree of volition owns indomitable willpower and triumphalism, does not fear the difficulty and setbacks, is good at summing up experience and lessons, neither driven by invalid desire, nor would it be constraint by preconceived method, and strive to overcome difficulties and implement decisions.

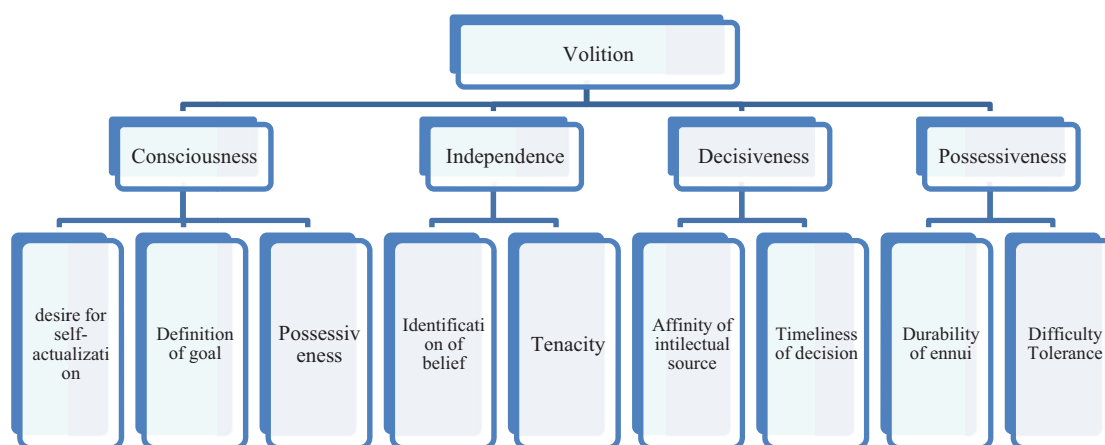


Figure 3. Model Construction of Volition

3. Conclusion

It is a kind of ability to develop the physical exercising habit and volition. Achievement of volition is the basis

for ability to develop the physical exercising habit, and ability to develop the physical exercising habit is a manifestation of Achievement of volition. In previous studies, these two abilities were often tied up in expressions that were detrimental to the assessment of students' ability. This paper only analyzes the evaluation factors of the above two kinds of abilities and does not construct a system, but after this paper, we can form the subjective theory to form physical exercise habits and volition through certain data and evaluation Methodology to provide some theoretical reference for the construction of the evaluation system of the physical exercise habits and volition.

References

- Li, Y. F. (2008). Review and Perspective on Volition in sport. *Journal of TUS*, 23(1), 60-63. Retrieved from <http://kns.cnki.net/KCMS/detail/detail.aspx?dbcode=CJFQ&dbname=CJFD2008&filename=TJTY200801016&v=MDM5NTJGeTNnV3J2UE1TZmZkN0c0SHRuTXJvOUVZb1I4ZVgxTHV4WVM3RGgxVDNxVHJXTTFGckNVUkxLZlkrUnQ=>
- Li, Y. F. (2011, March). A Qualitative Analysis and Model Construction of Volition. *Journal of Beijing Sport University*, 34(3), 75-78. Retrieved from <http://kns.cnki.net/KCMS/detail/detail.aspx?dbcode=CDFD&dbname=CDFD0911&filename=2009126582.nh&v=MDU4MTN5M2hVN3pMVjEyN0Y3SzZHTIRFclpFYIBJUjhlWDFMdXhZUZdEaDFUM3FUclldNMUZyQ1VSTETmWStSdEY=>
- Tian, Y. (2003). *Advanced Physiology of Sport and Exercise*. Beijing: Higher Education Press.
- Xu, Y., Tang, S.-M., & Liao, Y.-S. (2010, November). Multi-assessment system of students university sports grades. *Journal of Wuhan Institute of Physical Education*, 44(11), 89-94. Retrieved from <http://www.cqvip.com/QK/83061X/201011/36270094.html>
- Yang, J. Y. (2013). *Exercise Prescription* Beijing, Higher Education Press.
- Yin, B. (2005, January). The factors that affect the formation of physical exercising habit of undergraduates. *Journal of Physical Education*, 12(1), 139-141. <https://doi.org/10.16237/j.cnki.cn44-1404/g8.2005.01.044>

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).

The Impact of Corporate Governance and Investor Confidence on Earning Management: Evidence from Thai-Listed Company

Thanapin Attarit¹

¹ Faculty of Business Administration, Rajamangala University of Technology Isan, Thailand

Correspondence: Thanapin Attarit. E-mail: thanapin@rmu.ac.th

Received: April 10, 2018

Accepted: April 26, 2018

Online Published: May 28, 2018

doi:10.5539/ass.v14n6p123

URL: <https://doi.org/10.5539/ass.v14n6p123>

Abstract

The aim of the research is to study impact of corporate governance and information of investor confidence on earning management of firms listed on the Stock Exchange of Thailand. Stratified random sampling technique was employed in order to obtain the required sample of 408 Thai-listed companies. The study have excluded financial companies because their capital structure and profit are different. The study uses annual data of companies in 2015. The results showed that the highest shareholders impact on earning management, the proportion of institutional investors influencing both the earning management and investor confidence, and companies with BIG4 have an influence on investors' confidence. However, board size and CEOs Duality did not find any influence on earning management and investor confidence.

Keywords: corporate governance, investor confidence, earning management

1. Introduction

1.1 Introduce the Problem

Financial crisis in Asia on 1997 as well as WorldCom and Enron crises thoroughly any crises in the United State of America and Europe lead to the lower confidence of the investors (Alabdullah, Yahya, & Ramayah, 2014). To call back the confidence of the investors is to use the corporate governance system which is the efficient system for the participation agency problem of the organization. By in the developing country such as Thailand, it has begun to bring the corporate governance practices to apply since 2002 until recent and it stimulates many firms in the Stock Exchange of Thailand to prompt for this change and aim to run the business toward transparency and sustainability.

From the push from corporate governance, it could result on the management to earning management to submit the firm performance in the same way with what they want to. Earning management can be done in various ways and among those including the preparing and presentation of balance according to the accrual basis. What is most of the management normally used in earning management is to run through the residual list of the business. From the past empirical study, there is the research that supports on the concept of earning management in the business or profits decoration in the residual list in which the result has confirmed it is true according to the concept. For example, Teoh, Welch and Wong (1998) studied on earning management and found that if the net profit of the business had reduced, the business was tended to improve the residual list. Byard, Li, and Weintrop (2006) also studied about profits decoration and found that the industry leading businesses tended to improve the residual lists to add more profits to their businesses to remain as the market leader.

There was the empirical study on the measurement of business values that reflected on the investors' confidence and showed that investors can use the tools to predict the returns of common stocks investment in the future including price information and trade volume to be the information to facilitate the decision of investors on any properties. The researcher can use it as the representative for the response of confidence investors toward quantitative information as shown in the financial statement (Orens et al., 2009). For example, Price to Earnings Ratio (P/E), Price to Book Value Ratio (P/BV), Return on Asset (ROA) and Return on Equity (ROE) in that if these ratios are higher, it would reflect the more confidence of investors on the financial reports. In this study, the researcher applies the Return on Equity (ROE).

This study aims to study whether there if the impact of the corporate governance on the investors' confidence through earning management or not. It is the analysis via the influence through path analysis with the

independent variables such as the largest size of shareholder, CEO duality, institutional ownership, Board size and type of audit firm (BIG4) with the earnings management via path analysis and measuring the confidence of investors by the Return on equity as a dependent variable.

2. Literature Review and Hypotheses Development

2.1 Corporate Governance and Earnings Management

Corporate governance is considered as a tool used to solve the conflict problems arise between the management and shareholders. As a provider, the shareholders seek for the ways to make sure that the agent or the management can well handle on their investment toward the best interest.

It is explained from Jensen and Meckling (1976) that the agency theory refers to such of relationship exists between both parties; from one hand the principals or corporation's shareholders and on another hand the management or the corporation's executives. It is argued to determine the relationship according to the explicit and implicit conditions of contract with the aims to obligate the parties to run the quite efficient as per which the activities are assigned from the shareholders to the management for the sake of their own wealth maximizing. Moreover, to delegate them with decision making authority since the lack of skills in management and tasks carry out by the shareholders themselves. In this study, the corporate governance practices that affect earning management are as follows.

2.1.1 The Largest Shareholder and Earnings Management

Liu and Lu (2007) to study in China found that earnings management measured by total accruals was significant and correlated with TOPSHARE, which indicated that management income levels increased with the interest of major shareholders. Ding, Zhang and Zhang (2007) found the highest shareholding is between 55% and 60%. The results are consistent with the revenue management model (discretion), receivables, and non-operating income / sales. Concentration of ownership increases. Resulting in the highest revenue. If there is a lot of stocks, it will reduce the problem of short-term earning management.

H1: Largest shareholder has a significant positive effect on earnings management.

2.1.2 CEO Duality and Earnings Management

García-Meca and Sánchez-Ballesta (2009) use Meta-analysis to study CEO duality has been correlated with revenue management, with a summary model that represents a broader relationship. But other research have no relationship such as Abed, Al-Attar and Suwaidan (2012). The evidence also conflicts with the pairing of the CEO, who in the same person holds the CEO and chairperson. In theory, CEO duality have a negative impact on revenue management as they reduce the level of control required by the board and make the CEO more empowered (Chang, Luo, & Sun, 2011).

H2: CEO duality has a significant positive effect on earnings management.

2.1.3 Institutional Ownership and Earnings Management

Institution ownership is associated with revenue quality as institutional investors often play a dynamic role in the management of the firms by enforcing its own benefits through shareholder votes and involvement in the management of the company (Desender, 2009). Institutional investors are concerned with the low level of asymmetry of information, which is all the information that all investors pay attention to, and by expanding the business, the company will have a better income (Koh, 2003).

H3: Institutional ownership has a significant positive effect on earnings management.

2.1.4 Board Size and Earnings Management

Chen et al. (2006) study that the board size in China was insignificantly correlated with income management. The first factor considered was the size of the board or the number of board members. Alzoubi and Selamat, (2012) found evidence of board size and profitability as conflicting. Theoretical evidence shows a negative correlation between board size and earning quality, as large boards believe they will develop a politeness standard that prohibits effective oversight.

H4: Board size has a significant positive effect on earnings management.

2.1.5 Large Audit Firm and Earnings Management

Van Tendeloo and Vanstraelen, (2005) study on High Investment Opportunities, which represents the growth that high-growth businesses require using quality audits such as audit firms. The test results show that because high growth companies often have outstanding items that require high management discretion as well.

H5: Large audit firm has a significant positive effect on earnings management.

2.2 Earnings Management and Investor Confidence

Investor confidence defined by return on equity (ROE), as studied by Chen et al. (2006) found that firms with lower profitability have higher of earnings management. Bowman and Navissi (2003) explain that earning management can be achieved through two methods: real income management and accrual based earning management. In Pakistan and India, Barney (2002) found that there is a significant negative relationship between earning management and firm performance.

H6: Earnings management firm has a significant positive effect on investor confidence.

2.3 Corporate Governance and Investor Confidence

Corporate governance is the preparation of the mechanisms of the company, procedures and structure (Alabdullah et al., 2014). It gives the shareholders the ultimate wealth through the responsibility of the manager and the people involved. Chen et al. (2009) has recently learned that the agency cost can lead to better prospects. It will lead to more efficiency and value added to the business. It will be good for the confidence of investors. In this study. The corporate governance practices that affect investors' confidence are as follows.

2.3.1 Largest Shareholder and Investor Confidence

It is further determined by Chen et al. (2004) the reverse U-molded association between the largest shareholders and the sapping magnitude among Chinese listed firms. However, it is found by Wang and Xiao (2009) the higher performance of the firm performance if some of the rights control are decentralized to SOE in which indicating the negative relationship of the firm's performance and the degree of control by the government. In additional, it is found by Bai et al. (2004) the increasing awareness among the other large shareholders in which result on the better performance of the firm since the corporate prospective competition and the controls as imposed by other shareholders with the aims of the largest shareholder on tunnel are the crucial determinants for the firm's performance, because prospective opposition for business control and the controls forced by other shareholders on the largest shareholder's objective to tunnel are important factors of corporate performance.

H7: Largest shareholder have a significant positive effect on investor confidence.

2.3.2 CEO Duality and Investor Confidence

In India, Jackling and Johl (2009) studied that CEO Duality was involved in the financial performance. In the United States 70-80 percent of them include the role of Chief Executive Officer (CEO) and President (Rhoades et al., 2001). However, widespread corporate governance in Europe separates CEOs and presidents from together While only 10 companies listed on the UK stock exchange as well as two roles (Kang & Zardkoohi, 2005). In other areas of the world, In the middle of both terminals. In Hong Kong, it is a former British colony and has a good regulatory framework and capital market development. Combining the two roles in the same person makes the business more decisive. But in Thailand, many companies have clearly separated roles, which are in line with the good practices of the Stock Exchange of Thailand.

H8: CEO duality firm has a significant positive effect on investor confidence.

2.3.3 Institutional Ownership and Investor Confidence

Duggal, and Millar, (1999) fond that institutional ownership to be significantly determined by firm's presence in the S&P 500 index. The level of involvement in the administration and the pressure of the institutional investors affects the level of correlation. Other studies conducted in Turkey found that there was a significant positive correlation between institutional ownership and investor confidence (Gürbüz, Aybars, & Kutlu, 2010).

H9: Institutional ownership has a significant positive effect on investor confidence.

2.3.4 Board Size and Investor Confidence

Board number Follow the guidelines of good corporate governance. The board should be of the appropriate size. There should be no less than 5 persons and not more than 12 persons. (SET, Thailand, 2012). Jensen (1993) found that the board size of not more than 7-8 people would help to improve the operation of the business effectively. Alabdullay Yaha and Ramayah (2014) show that a significant and negative relationship between size of board and firm performance. In line with In UK, Guest, P. M. (2009) found that the number of large board companies had problems in working together. Therefore, this research assumes that the bord size is related to the firm performance.

H10: board Size has a significant positive effect on investor confidence.

2.3.5 Large Audit Firm and Investor Confidence

Agency theory, the relationship between the audit firm and investor confidence. Higher quality auditing firms may control opportunistic management practices, reduce agent costs, and increase value to the company. In accordance with this combination, Aljifiri and Moustafa (2001) found that corrante between BIG4 and investor confidence.

H11: Large audit firm has a significant positive effect on investor confidence.

3. Method

3.1 Data and Sample Selection

In sample selection, the data is collected from the annual reports of the listed firms in Thailand by the end of 2015. There were 546 firms on December 31, 2015. The population of this study was 408 firms after the irrelevant were removed. The annual reports of financial year 2015 of sample companies can be downloaded from the SET website.

3.2 Structural Equation Model

Structural Equation Model (SEM) is used in this study for both direct and indirect relationships assessment on the corporate governance, earning management and investor confidence. The main objective of SEM is to describe on a series of consistent dependence relationships pattern among each set of latent (unobserved) constructs in which using multiple manifest (observed) variables in the measurement. In particular, SEM is well matched for causal links analysis between latent constructs (Byrne, 2001). Thus, SEM applied AMOS program for the analysis.

3.3 Earning Management

Sloan et al. (1996) studied the data of accruals that affect earnings quality, based on net working capital And non-cash items such as depreciation. (Depreciation) Amotized expenses are as follows:

$$TACC = [(\Delta CA - \Delta CASH) - (\Delta CL - \Delta STD - \Delta TP) - DEP] / \text{Total Asset}$$

Where:

ACC	=	Accruals component
ΔCA	=	Changes in current assets
ΔCASH	=	Change in cash account
ΔCL	=	Changes in current liabilities
ΔSTD	=	Changes in long-term liabilities due within one year
ΔTP	=	Changes in income tax account
DEP	=	Depreciation account and Amortization account

4. Empirical Results

4.1 Descriptive Analysis

Table 1. Descriptive statistics for variables

Variables	N	Min	Max	Mean	S.D
TOPSHARE	408	2.73	95.76	29.53	17.68
CEODUAL	408	0	1	0.46	0.40
INST	408	0.00	98.11	33.07	28.96
BZBOARD	408	5.00	21.00	10.25	2.45
LnBOARD	408	0.70	1.32	1.00	0.10
BIG4	408	0	1	0.65	0.47
ROE	408	-79.18	119.04	27.74	19.54
ΔCA	408	-17,621.32	187,739.52	730.06	70.38
ΔCASH	408	-21,639.96	36,192.52	112.33	43.04
ΔCL	408	-44,121.34	63,006.00	161.46	92.02
ΔSTD	408	-24,696.43	36,022.36	146.34	99.26
DEP	408	0.18	148,885.55	1,421.70	1,142.30
EARN	408	-71,369.08	50,571.64	-819.09	98.66
TACC	408	-0.53	0.74	-0.04	0.03

TACC= discretionary accruals, TOPSHARE as the high percentage of shares holder measured as the high percentage of total shareholder, INST= Institutional ownership measured as the sum of institutional shareholder, LnBOARD as Natural log of the size of the board of directors, BIG4 as a Big4 auditing is equal to 1 if non-BIG4 firm, 0=auditing firm other than Big4, CEODUAL= the chairman of the board of director is a dummy variable that is equal to 1 if managing director is not as chairman and 0 otherwise.

Form Table 1, TOPSHARE on average, hold around 29.53 % of total shares outstanding of the sample firms. Added to this, 46 % of the firms are managing director is not as chairman (CEODUAL), while the remaining 54% are managing director is not as chairman. The results show that Institutional ownership (INST) is average of approximately 33.07 %. The results show that board size (BZBOARD) is ranging from five to twenty-one members with average of approximately 10 members. Added to this, 65 % of the BIG4, while the remaining 35 % are audited by non-Big4 firms. While, the return on equity (ROE), ranges between -79.18 percent to 119.04 %, the average and standard deviation for it are about 7.74 %, 19.54 %, respectively. The Total accruals, TACC, ranges between about -0.53 % and 0.74 %, the average and standard deviation for it are about -0.04 %, 0.03 %, respectively. On average, the sample firms have negative earning management. This may indicate that Thai firms in sample are management their earnings lowly.

4.2 Correlations Coefficients among the Variables

Table 2. Results of Pearson correlation analysis

Variables	TACC	ROE	TOPSHARE	CEODUAL	INST	LnBOARD	BIG4
TACC	1						
ROE	.231***	1					
TOPSHARE	-.085	.159**	1				
CEODUAL	-.015	.024	-.031	1			
INST	.072	.241***	.493***	.067	1		
LnBOARD	.097	.099*	.010	.112*	.278***	1	
BIG4	-.021	.198***	.232***	.021	.246***	.156**	1

***P-value 0.000, **P-value0.01; *P-value0.05.

As can be seen in Table 2, it has shown the correlation coefficients between the variables and the correlation of Pair-wise between the two is lower than 0.80. This is not considered as a problem to threaten on the regression analysis (Gujarati, 2004) while between two independent variables, there is the relatively high correlation 23.1 percent between the ROE and TACC.

4.3 Structural Equation Model

Table 3. Parameters of the models of before and after adjust

Model	CMIN	CMIN/df	P	GFI	CFI	NFI	RMSEA
After	4.110	1.370	0.250	0.997	0.996	0.985	0.030
Before	200.519	20.052	0.000	0.880	0.235	0.257	0.216

From Table 3, it has shown the impact of path relationships on the corporate governance and investor confidence on earning management information: the evidence from Thai-Listed is then further analyzed by the SEM using AMOS program (Byrne, 2001). Maximum Likelihood is used in this study to estimate on each parameter. The model fit include, the χ^2 value is 1.370, Goodness of Fit Index (GFI) is 0.997, Comparative Fit Index (CFI) is 0.996, Normed Fit Index (NFI) is 0.973, and the root mean square error of approximation is 0.030. Therefore, the structural equation is consistent and appropriate.

In Table 4, the investigative results are listed for the hypothesized research model. The research model shows the acceptable relevant fit indices

4.4 Hypothesis Test and Discussion

In Table 4, hypothesis supporting results in regard of the relationship between earning management and corporate governance is expected in H2, H3 and H5. TOPSHARE is positively and significantly related to the total accrual at the level of 5% thus, this support on hypothesis H1. It is consistent with the former research in which found that TOPSHARE has the positive and significant total accrual in China (Liu & Lu, (2007). In China, it is found that the corporate governance and earning management with the measuring of earning management via TACC is correlated and significant to TOPSHARE. This indicated the higher management income levels and

the interests for major shareholders. It is pointed out that in China, the company's information need to be carefully interpreted since there are usually other incentives and many things in managing revenue. Institutional ownership is positively and significantly related to the total accrual at the level of 5% thus, it has supported on hypothesis H4. This seems consistent with the previous research in which found out that institutional ownership is the one that access into the useful internal information on future perspective, business strategies, and so on via the management direct contact (Nouravesh & Ebrahimi, 2005). There are chances for institutional investors with the ability and resources for manages monitoring in which it is suggested that the efficient monitoring is related to the better institutional ownership monitoring on management activities to lessen the potential of monopolizing of managers on the opportunistically earnings (Koh, 2003).

Table 4. Parameter estimates for hypothesized paths in structure equation model

Research hypothesis	Path description			Result (β) Coefficient	P-value
H1	TOPSHARE	---	TACC	-0.146	.011*
H2	LnBOARD	---	TACC	0.069	.182
H3	BIG4	---	TACC	-0.031	.547
H4	INST	---	TACC	.0135	.023*
H5	CEODUAL	---	TACC	-0.035	.469
H6	TACC	---	ROE	0.229	.000***
H7	TOPSHARE	---	ROE	0.071	.192
H8	LnBOARD	---	ROE	0.010	.840
H9	BIG4	---	ROE	0.148	.002**
H10	INST	---	ROE	0.149	.008**
H11	CEODUAL	---	ROE	0.016	.738

***P-value 0.000, **P-value 0.01; *P-value 0.05.

Higher profitability of the firms can be measured by ROE in which to engage more with the earnings management (positive and significant coefficients to ROE). It is normal for this positive relation as it is consistent with the results from the study by Chen & Yuan (2004). Among the explanation of the positive relation, Stock Exchange of Thailand is mentioned with requirements for the firms to achieve the minimum profitability as to keep being in the list and to apply for the permission for more shares issuing.

5. Conclusion

Corporate governance has influence on earning management, ie, the proportion of shareholders (TOPSHARE) correlates with earning management at significant level of 0.05. This indicate that the proportion of shareholding inc, resulting in a higher profit margin. The findings are consistent with the findings of Fan & Wong (2002). The ownership structure and recognition of Asian accounting earnings have a negative correlation. The high concentration of shareholders in Asia, which is often a high concentration of shareholders, will have a direct impact on financial quality as the controlling shareholders take advantage of the benefits. From minority shareholders through non-returnable operations to minority shareholders, or by limiting their rights. Under the rules, all shareholders have the right to vote at meetings, but because of the minority shareholdings, they cannot be refrigerated and law enforcement is required. The weakening of the protection of minority shareholders' rights. In addition, the results show that Institutional Share (INST) has an influence on profitability. In line with Hashim and Devi (2007), the effect of corporate governance on profitability in Malaysia is examined. Desender, (2009) found that the proportion of institutional investors was correlated with the quality of income. Because institutional investors tend to have an active role in the management of the company by forcing shareholders and stakeholders involved in the management of the company.

There are some research limitations to consider when the findings are interpreting. First, there is the bias in the sample selection as it is done based on a predetermined criterion, not a random method. However, since there is the limited firm number to disclose the relevant and comprehensive corporate governance to public, it is quite hard to study on corporate governance in Turkey by randomly firm selection. As result, another concern in on the limited size of sample.

Acknowledgements

The authors would like to thank the Research and Development Institute of Rajamangala University of Technology Isan, Thailand for financially supporting this research under Contract of Faculty of Business Admiration.

References

- Abed, S., Al-Attar, A., & Suwaidan, M. (2012). Corporate governance and earnings management: Jordanian evidence. *International Business Research*, 5(1), 216-225.
- Alabdullah, T. T. Y. (2016). Are board size and ownership structure beneficial in emerging markets' firms? Evidence from Jordan. *International Journal of Management & Information Systems*, 20(3), 87-94. <https://doi.org/10.19030/ijmis.v20i3.9752>
- Alabdullah, T. T. Y., Yahya, S., & Ramayah, T. (2014). Corporate governance development: new or old concept. *European Journal of Business and Management*, 6(7), 312-315.
- Alabdullah, T.T.Y., Yahya, S., & Ramayah, T. (2014). Corporate governance mechanisms and Jordanian companies' financial performance. *Asian Social Science*, 10(22), 247.
- Alabdullah, T. T. Y., Yahya, S., Nor, M., & Majeed, F. (2016). An investigation of corporate governance from a new perspective: examining the financial performance of companies and the impact of executive turnover. *Corporate Board: Role, Duties & Composition*, 12(1), 53-67. <https://doi.org/10.22495/cbv12i1art6>
- Alzoubi, E. S. S., & Selamat, M. H. (2012). The effectiveness of corporate governance mechanisms on constraining earning management: Literature review and proposed framework. *International Journal of Global Business*, 5(1), 17-35.
- Bai, C., Liu, Q., Lu, J., & Song, F. M. (2004). Corporate governance and market valuation in China. *Journal of Comparative Economics*, 32, 599-616. <https://doi.org/10.1016/j.jce.2004.07.002>
- Barney, J. B. (2002). *Gaining and Sustaining Competitive Advantage*. Prentice-Hall: Upper Saddle River, NJ.
- Bowman, R. G., & Navissi, F. (2003). Earnings management and abnormal returns: Evidence from the 1970–1972 Price Control Regulations. *Accounting & Finance*, 43(1), 1-19. <https://doi.org/10.1111/1467-629X.00080>
- Byard, D., Li, Y., & Weintrop, J. (2006). Corporate governance and the quality of financial analysts' information. *Journal of Accounting and Public policy*, 25(5), 609-625. <https://doi.org/10.1016/j.jaccpubpol.2006.07.003>
- Byrne, B. M. (2001). Structural Equation Modeling with AMOS, EQS and LISREL: comparative approaches to testing for the factorial validity of a measuring instrument. *International Journal of Testing*, 1(1), 55-86. https://doi.org/10.1207/S15327574IJT0101_4
- Byrne, B. M. (2001). *Structural Equation Modeling with AMOS: Basic Concepts, Applications, and Programming*. NJ: Lawrence Erlbaum Associates, Inc.
- Chang, J. C., Luo, M., & Sun, H. L. (2011). The impact of independent and overlapping board structures on CEO compensation, pay-performance sensitivity and accruals management. *Quarterly Journal of Finance & Accounting*, 54-84.
- Chantakhet, N. (2011). *A Study of the Relationship between Corporate Governance and Operating Results of the Listed Companies in the Stock Exchange of Thailand, SET 100 Group* (Doctoral dissertation, University of the Thai Chamber of Commerce (UTCC)).
- Chen, G., Firth, M., Gao, D. N., & Rui, O. M. (2006). Ownership structure, corporate governance, and fraud: Evidence from China. *J. of Corp. Finance*, 12(3), 424-448. <https://doi.org/10.1016/j.jcorpfin.2005.09.002>
- Chen, K., & Yuan, H. (2004). Earnings management and capital resource allocation: evidence from China's accounting-based regulation of rights issue. *The Accounting Review*, 74, 645-665. <https://doi.org/10.2308/accr.2004.79.3.645>
- Chen, X., Chen, D., & Zhu, K. (2004a). Ownership structure and firm performance in China: A survey. *China Accounting and Finance Review*, 6(4), 1-47.
- Cornett, M. M., McNutt, J. J., & Tehranian, H. (2009). Corporate governance and earnings management at large US bank holding companies. *Journal of Corporate finance*, 15(4), 412-430. <https://doi.org/10.1016/j.jcorpfin.2009.04.003>
- Desender, K. A., Aguilera, R. V., Crespi-Cladera, R., & Garcia-Cestona, M. A. (2009). Board characteristics and audit fees: Why ownership structure matters. *University of Illinois at Urbana-Champaign, College of Business WP*, 09-0107.
- Ding, Y., Zhang, H., & Zhang, J. (2007). Private vs state ownership and earnings management: evidence from Chinese listed companies. *Corporate Governance: An International Review*, 15(2), 223-238.

<https://doi.org/10.1111/j.1467-8683.2007.00556.x>

- Duggal, R., & Millar, J. A. (1999). Institutional ownership and firm performance: The case of bidder returns. *Journal of Corporate Finance*, 5(2), 103-117. [https://doi.org/10.1016/S0929-1199\(98\)00018-2](https://doi.org/10.1016/S0929-1199(98)00018-2)
- Fan, J. P. H., & Wong, T. J. (2002). Corporate ownership structure and the informativeness of accounting earnings in East Asia. *Journal of Accounting and Economics*, 33, 401-425. [https://doi.org/10.1016/S0165-4101\(02\)00047-2](https://doi.org/10.1016/S0165-4101(02)00047-2)
- García-Meca, E., & Sánchez-Ballesta, J. P. (2009). Corporate governance and earnings management: A meta-analysis. *Corporate governance: An international review*, 17(5), 594-610. <https://doi.org/10.1111/j.1467-8683.2009.00753.x>
- Guest, P. M. (2009). The impact of board size on firm performance: evidence from the UK. *The European Journal of Finance*, 15(4), 385-404. <https://doi.org/10.1080/13518470802466121>
- Gujarati. (2004). *Basic econometrics* (2nd ed.). The McGraw-Hill Companies.
- Gürbüz, A. O., Aybars, A., & Kutlu, Ö. (2010). Corporate governance and financial performance with a perspective on institutional ownership: Empirical evidence from Turkey. *Journal of Applied Management Accounting Research*, 8(2), 21.
- Jackling, B., & Johl, S. (2009). Board structure and firm performance: Evidence from India's top companies. *Corporate Governance: An Int. Review*, 17(4), 492-509. <https://doi.org/10.1111/j.1467-8683.2009.00760.x>
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics*, 3(4), 305-360. [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
- Kang, E., & Zardkoohi, A. (2005). Board leadership structure and firm performance. *Corporate governance: an international review*, 13(6), 785-799. <https://doi.org/10.1111/j.1467-8683.2005.00470.x>
- Koh, P.-S. (2003). On the association between institutional ownership and aggressive corporate earnings management in Australia. *The British Accounting Review*, 35(2), 105-128. [https://doi.org/10.1016/S0890-8389\(03\)00014-3](https://doi.org/10.1016/S0890-8389(03)00014-3)
- Liu, Q., & Lu, Z. J. (2007). Corporate governance and earnings management in the Chinese listed companies: A tunneling perspective. *Journal of Corporate Finance*, 13(5), 881-906. <https://doi.org/10.1016/j.jcorpfin.2007.07.003>
- Nouravesh, I., & EbrahimiKordelior, A. (2005). Investigate & Explain the Relationship Shareholders Composition with Information Asymmetry & the Usefulness of Performance Accounting Measures. *Journal of Accounting & Audit Investigations*, 42, 97-124
- Orens, R., Aerts, W., & Lybaert, N. (2009). Intellectual capital disclosure, cost of finance and firm value. *Management Decision*, 47(10), 1536-1554. <https://doi.org/10.1108/00251740911004673>
- Rhoades, D. L., Rechner, P. L., & Sundaramurthy, C. (2001). A Meta-analysis of Board Leadership Structure and Financial Performance: are "two heads better than one"? *Corporate Governance: An International Review*, 9(4), 311-319. <https://doi.org/10.1111/1467-8683.00258>
- Rouf, M. (2011). The relationship between corporate governance and value of the firm in developing countries: Evidence from Bangladesh. *The International Journal of Applied Economics and Finance*, 5, 237-244. <https://doi.org/10.3923/ijae.2011.237.244>
- Sloan, R. G. (1996). *Do Stock Prices Fully Reflect Information in Accruals and Cash*.
- Teoh, S. H., Welch, I., & Wong, T. J. (1998). Earnings management and the long-run market performance of initial public offerings. *The Journal of Finance*, 53(6), 1935-1974. <https://doi.org/10.1111/0022-1082.00079>
- Van Tendeloo, B., & Vanstraelen, A. (2005). Earnings management under German GAAP versus IFRS. *European Accounting Review*, 14(1), 155-180. <https://doi.org/10.1080/0963818042000338988>
- Wang, K., & Xiao, X. (2009). Ultimate government control structure and fair value: Evidence from Chinese listed companies. *China J. of Accounting Res.*, 2(1), 13-50. [https://doi.org/10.1016/S1755-3091\(13\)60010-6](https://doi.org/10.1016/S1755-3091(13)60010-6)

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).

Early Childhood Education and Child Development Outcomes in Least Developed Countries: Empirical Evidence from Lao PDR

Manivone Phongsopha¹ & Piriya Pholphirul¹

¹ Graduate School of Development Economics, National Institute of Development Administration, Thailand

Correspondence: Piriya Pholphirul, Graduate School of Development Economics, National Institute of Development Administration, Serithai Road, Klong-Chan, Bangkok, Bangkok 10240, Thailand. Tel: 66-081-171-3213. E-mail: piriya@nida.ac.th

Received: April 15, 2018 Accepted: May 2, 2018 Online Published: May 28, 2018

doi:10.5539/ass.v14n6p131

URL: <https://doi.org/10.5539/ass.v14n6p131>

Abstract

Given the benefits of early childhood education, many countries try to ensure universal accessibility to early childhood education. However, with their limited budgets and chronic poverty, least developed countries face a huge disadvantage in providing access to early childhood education, especially for children of lower income families and those living in remote areas. This study aims to determine how accessibility to early childhood education and child development affects cognitive, learning, physical, and social-emotional readiness. We use nationally representative data from the Lao Social Indicator Survey (LSIS) for a case study of Lao PDR, which is representative of least-developed countries. Our estimation indicates that mother's educational attainment and economic status of the family have an important impact on children's preschool enrollment. In terms of children's development, receiving early childhood education is likely to play a significant role in developing cognitive skills. Furthermore, in addition to early childhood education per se, activities associated such education also play an important role in fostering children's development. Hence, early childhood education should be promoted in order to enhance all children's access to preschools and thus ensure that their development remains on track.

Keywords: early childhood education, child development, education inequality, least developed countries, Lao PDR

1. Introduction

Education is viewed as an investment in human capital that enhances the nature of individuals' lives in ways that bring advantages to their personal and economic prosperity (Acemoglu & Autor, 2011). Even though at the national level increasing educational attainment may not appear to return measureable positive economic outcomes, when human capital is measured in terms of cognitive skills, the benefits become more apparent (Hanushek & Woessmann, 2012). Heckman (2012) has shown that the critical time for strengthening cognitive skills is from birth to age five, when the brain grows quickly as it establishes the cognitive capabilities and character traits fundamental for proper achievement. According to the World Bank, this process has five steps, called "STEP" (Skills Toward Employment and Productivity)¹. The first step, "getting children off to the right start," is crucial for human productivity and lifelong learning and needs to occur early in a child's life.

Accordingly, early childhood education, including ensuring access to preschool, has been given policy precedence in various countries. The considerable transformation that occurs in preschool may concentrate on one or several aspects of children's development (UNESCO, 2006). For example, learning early in life is essential for development of those human skills that are needed in the long term (Opel, Ameer, & Aboud, 2009). In addition, the beneficial outcome of attending preschool has been found to lower the chance of early drop-out and grade failure, as well as to increase IQ scores (Berlinski, Galiani, & Manacorda, 2008)².

In developed countries, for example, the United Kingdom, with its Effective Provision of Pre-school Education (EPPE) project, children's intellectual and social-emotional well-being were enhanced and the good results of this evidenced during their first three years in primary education³. Nevertheless, the activities of parents and children played an important role in helping children, especially disadvantaged children, to develop on track (Siraj-Blatchford et al., 2004). Furthermore, in the United States there are special public programs such as the "Carolina Abecedarian Project"⁴, the "Chicago Child-Parent Center Program"⁵, and the "Perry Preschool

Project⁶ which focus on supporting children's development and creating opportunities for children from economically disadvantaged families. Additionally, MacEwan (2013) has studied the cost-benefit analysis of these three programs and found that children who participated in such programs tended to do better in their studies, have lower rates of premature pregnancy, to be less likely to be involved in crime, and to have occupations with higher earnings than did kids who did not participate in preschool programs.

In recognition of the importance of early childhood intervention, Sweden's National Curriculum for Preschool, which emphasizes lifelong learning, has provided free pre-primary education for children from ages one to five, ensuring that all children get the same opportunities in life regardless of the economic status of their family. In addition, Stoop (2011) found that in New Zealand a specific preschool education is required for every child at least three years old to make sure that the child grows up with skills and learning abilities.

However, due to the fact many developing and least-developed countries are still facing severe economic restrictions that aggravate education inequality, 159 million children, or half of all age three-to-six-year-olds across the world, do not have access to early childhood education, and more than 200 million children under five bear of developmental loss. Although developing countries have expanded access to preschool and there has been an increase in pre-primary enrollment in all regions over the past decade, today children from the poorest families are still largely unable to gain access (World Bank, 2015). Unequal access to early childhood education also has a negative effect on cognitive development and reduces the readiness to learn at the primary education level (Anderson et al., 2003). Moreover, in developing countries children from rich families are much more likely to go to preschool than are children from poor families, resulting in disadvantages in the proper development of these children (Nonoyama-Tarumi & Ota, 2011).

Mexico is, for example, a developing country that made pre-primary education compulsory in 2002, yet unequal access remains a challenge as is the fact that there are public preschools which have poor facilities, few resources, and less-qualified teachers (Santibañez, Vernez, & Razquin, 2005). Corresponding to the advantages of early childhood education, Pholphirul (2017) assessed the access to and the long term benefits of pre-primary education for Thai students by using test scores from PISA. Even though results indicated that early childhood education had a significant effect on scores in reading, mathematics, and science when the children reached age 15, unequal access to pre-primary education remained a major obstacle for Thai children to reap benefits from attending preschool.

Given the benefits of pre-primary education, both in developed and developing countries, it would seem to make sense to make early childhood education universally available, especially to disadvantaged children. However, with limited budgets and chronic poverty, least developed countries face a huge disadvantage with regard to providing access to preschool education for lower income families and for children in remote areas. Bangladesh, for example, is a least developed country in which disadvantaged children have low rates of access to preschool education because, evidently, no department or ministry of education has taken seriously enough the issue of preschool education at the national level (Nath & Sylva, 2007). In Cambodia, for example, where Rao and Pearson (2007) examined childcare and education policies, 80 percent of Cambodians live in rural areas, yet almost no rural children are enrolled in early childhood education.

Likewise, Lao PDR, a country with many ethnic and linguistic groups, still has some of poorest education indicators in Southeast Asia (King, 2010). This demographic diversity results in unbalanced opportunity for early childhood education across the various ethnic groups. Only about 30 percent of the total population of formal preschool education age attended preschools in 2014. Moreover, since preschool education is not compulsory, parents themselves need to decide whether to send their child to preschool (UNICEF, 2012).

Even though the Ministry of Education and Sport of Lao PDR reported that the number of students enrolled in public early childhood education increased to 125,770 and that 33,721 children were enrolled in private schools due to increase the community-based programs, nearly 60 percent of private early childhood education enrollment was only in Vientiane, the capital city, and in two provinces in the north (Saravan and Phongsaly) were no private early childhood education so far⁷.

Differences in the management of preschool education programs between early childhood education centers and community-based programs bring up research questions regarding how to 1) estimate the probability of access to early childhood education and 2) whether children who receive early childhood education do in fact make progress of child development outcomes. Although there were some short-term and long-term studies assessing these qualities, studies using a national representative survey dataset are still rare.

The paper is divided into four parts. The next section assesses Lao children's access to early childhood education. The third section quantifies the impacts of childhood education on child development outcomes. The last section

provides conclusions and policy recommendations.

2. The Accessibility of Early Childhood Education in Lao PDR

This study employed surveyed data from the Lao Social Indicator Survey (LSIS) which was conducted during the year 2011-2012⁸. Nationally representative data can suggest appropriate remedial policies for the nation as opposed to studies based on a specific group of children, which can cause difficulties when formulating recommendations for policies at a national level. The data contains in form of cross-sectional data of 3,869 children. Questions focused on three- and four-year-olds to assess their early learning by determining whether they currently attended any organized learning or early childhood education program, including kindergarten or community child care⁹. This article examines the level of accessibility to early childhood education by gender, place of residence, ethnicity, language, mother's education, father's education, and household wealth¹⁰.

Descriptive statistics (Table 1) show that, from the sample of 3,869 children, around half had access to preschool education (47.28 for male and 52.72 for female). Attending pre-primary education is much higher for those children living in municipality areas (44.63 percent) but surprising low for those living in rural area without road (3.91 percent). Laotian children seemed to have higher probability to attend preschool than other ethnic groups. Furthermore, grouping children according to their parents' educational attainment indicated that students living with parents who completed secondary education tended to be more likely to enroll in preschool. The ratio of preschool education enrollment of students living with mothers who had no education was 12.28 percent and for those living with fathers with no education was 4.33 percent. Additionally, the data show that only 9.35 percent of children from extremely poor households had similar access¹¹.

To estimate accessibility or probability by controlling for a number of variables, a bivariate probit regression model was used to estimate the probability of accessing preschool education. The value of the dependent variable equals 1 if a child participated preschool education and 0 if a child did not. The estimate is divided into three groups – three-year-olds, four-year-olds, and lastly, a total sample of three- and four-year olds together¹². Independent variables were obtained from children's characteristics, namely, gender, language group of household head, ethnicity of household head, family's place of residence, region, parents' educational attainment, and wealth, all of which can describe children's socioeconomic background.

The estimation in Table 2 shows that students living in higher income families tended to have more support from their family to pursue their preschool education. Especially, there was found significant probability of attending preschool among children from extremely wealthy families, by 29.1 percent compared to children from extremely poor families. Higher income of a family was a key factor in supporting children's access to preschool. In addition, the result shows that children living in urban areas had a higher probability of attending preschool than did a children living in rural areas without roads, by 7.73 percent.

Results indicate a significantly positive impact of the educational attainment of parents on students' probability of attending preschool. Students living with mothers who had completed secondary education tended to have a higher probability (by 4.72 percent) of attending preschool than did students living with mothers who had no education. Moreover, there was an even stronger likelihood (by 17.9 percent) for students living with mothers who had completed higher than secondary education to go to preschool than for students living with mothers who lacked such education to do so. The figure for children living with fathers with post-secondary education was 12.2 percent (higher than for children whose fathers lacked such education).

Interestingly, results indicate that mothers' educational attainment was found to have a greater impact on students' probability of attending preschool than did fathers' educational attainment, for both three- and four-year-olds. This suggests that mothers play a crucial role in childrearing and education, especially with regard to sending their children to school.

Table 1. Ratio of children's access to early childhood education by family background of three year-olds, four-year-olds, and both ages (percent)

Variables	Having participated in early childhood education		
	Age 3 years	Age 4 years	Total
Gender			
Male	11.66	22.52	47.28
Female	12.41	28.83	52.72
Language group of household head			
Lao-Tai	24.41	43.22	74.9

Mon-Khmer	4.07	13.49	17.43
Chinese-Tibetan	4.67	14.15	2.79
Hmong-Mien	2.71	9.52	4.88
Ethnicity of household head			
Lao	25.52	42.64	61.65
Khmu	6.27	18.36	9.21
Hmong	2.53	9.85	4.74
Other	7.03	17.78	24.4
Residence			
Urban	38.69	65.74	44.63
Rural with road	7.37	19.63	51.46
Rural without road	2.46	9.52	3.91
Region			
North	10.97	26.46	42.68
Central	18.39	32.54	46.72
South	5.52	15.98	10.6
Mother's education attainment			
None	2.74	9.24	12.28
Primary	8.14	22.06	33.89
Secondary	30.31	59.77	35.7
Higher than secondary	70.37	93.59	18.13
Father's education attainment			
None	1.92	7.10	4.33
Primary	4.91	15.27	25.94
Secondary	18.16	41.61	38.21
Higher than secondary	49.48	74.86	31.52
Economic status			
Extremely poor	1.90	7.65	9.35
Poor	4.01	14.48	11.58
Middle	11.11	28.66	17.43
Wealthy	21.83	46.81	23.01
Extremely wealthy	62.16	83.08	38.63
Total (person)	2,004	1,865	3,869

Source: Authors' calculation from LSIS 2011-2012

Table 2. Estimation using Binary Probit Model (Marginal Effect) of access to early childhood education for three-year-olds, four-year-olds, and both ages

Independent variables	Three-year-olds	Four-year-olds	Total
Four-year-olds (reference: three-year-olds)	-	-	0.157***
	-	-	(0.0121)
Female (reference: Male)	0.00861	0.0656***	0.0337***
	(0.0104)	(0.0212)	(0.0111)
Language (reference: Hmong-Mien)			
Lao-Tai language	0.0471	0.999***	0.218*
	(0.0778)	(0.000352)	(0.130)
Mon-Khmer language	0.0165	0.999***	0.176
	(0.0724)	(0.000272)	(0.132)
Chinese-Tibetan language	0.00273	0.886***	0.134
	(0.0731)	(0.00771)	(0.170)
Ethnicity (reference: Others)			
Lao ethnicity	0.00358	-0.0566	-0.0159

	(0.0173)	(0.0390)	(0.0192)
Khmu ethnicity	-0.0185	-0.0260	-0.0238
	(0.0195)	(0.0409)	(0.0209)
Hmong ethnicity	-0.0437	0.957***	0.0466
	(0.0382)	(0.00450)	(0.125)
Area (reference: Rural without road)			
Urban	0.0737*	0.0919*	0.0849**
	(0.0410)	(0.0554)	(0.0333)
Rural with road	0.0165	0.00594	0.0128
	(0.0206)	(0.0364)	(0.0201)
Region (reference: South)			
North	0.0768***	0.187***	0.129***
	(0.0229)	(0.0407)	(0.0226)
Central	0.0190	0.0367	0.0280
	(0.0190)	(0.0336)	(0.0185)
Mother's education attainment (reference: Uneducated)			
Primary	0.00515	0.0265	0.0136
	(0.0161)	(0.0291)	(0.0159)
Secondary	0.0472*	0.138***	0.0848***
	(0.0262)	(0.0493)	(0.0268)
Higher than secondary	0.179***	0.473***	0.303***
	(0.0671)	(0.103)	(0.0636)
Father's education attainment (reference: Uneducated)			
Primary	0.0125	0.0250	0.0181
	(0.0220)	(0.0363)	(0.0205)
Secondary	0.0416	0.132***	0.0816***
	(0.0296)	(0.0484)	(0.0281)
Higher than secondary	0.122**	0.212***	0.177***
	(0.0542)	(0.0719)	(0.0455)
Economic status (reference: Extremely poor)			
Poor	0.00599	0.0722**	0.0357*
	(0.0195)	(0.0341)	(0.0194)
Middle	0.0525*	0.195***	0.118***
	(0.0273)	(0.0435)	(0.0263)
Wealthy	0.0898**	0.271***	0.181***
	(0.0375)	(0.0542)	(0.0349)
Extremely wealthy	0.291***	0.533***	0.441***
	(0.0717)	(0.0624)	(0.0505)
Pseudo R-squared	0.3772	0.3280	0.3653
Observations	2,004	1,865	3,869

Remark: *** p<0.01, ** p<0.05, * p<0.1; Standard errors in parentheses.

Authors' computation. Data from the Lao Social Indicator Survey (LSIS) 2011-2012.

3. Measuring Impacts on Child Development Outcomes

To show the importance of education during preschool age in preparing children for compulsory education (primary level), this section will compare children's development with and without exposure to an early childhood education program. To measure development in early childhood, the LSIS developed an index called "Early Childhood Development Index (ECDI)"¹³. There are a ten yes/no questions used to determine whether children have achieved at least two of the criteria in each of four domains so as to be developmentally on tracks. The four domains in question are:

- 1) Cognitive readiness: (1) Children can identify/name at least ten letters of the alphabet, (2) they can read at

least four simple and popular words, and (3) they know the name and recognize the symbols of all numbers from 1 to 10.

- 2) Learning readiness: (1) Children can follow simple directions on how to do something correctly, and (2) when given something to do, are able to do it independently.
- 3) Physical readiness: (1) They can pick up a small object with two fingers, like a stick or a rock from the ground, and (2) the mother/caretaker does not indicate that the child is sometimes too sick to play.
- 4) Social-emotional readiness: (1) if the children can get along well with other children, (2) if they do not kick, bite, or hit other children, and (3) if they do not get easily distracted.

Table 3 presents assessment outcomes of children's development. On average, Lao children presented low cognitive skills in terms of learning readiness, physical readiness, and social-emotional readiness. However, children who received early childhood education seem to have higher cognitive skills than children who did not. However, development can vary, according to several factors, including a child's individual characteristics, family characteristics, and interaction with others. It is possible that there may have been some distortion in measuring development of children participating and those not participating in early childhood education. Hence, we applied another probit regression to estimate impacts of attending preprimary education on child development by controlling for the variables described below:

- 1) Children's characteristics including receiving early childhood education, gender, language spoken by the household head, and ethnicity of the household head
- 2) Family characteristics including residential area, region of the country, mother's educational attainment, father's educational attainment, and economic status
- 3) Activity with children including reading books to or looking at picture books with children, telling stories to children, singing songs to children or with children (including lullabies), taking children outside the home/compound/yard/enclosure, playing with children, and naming/counting/drawing things with children.

Table 3. Assessment of children's development outcomes of all children by socioeconomic variables (percent)

Variables	Cognitive readiness	Learning readiness	Physical readiness	Social-emotional readiness
Children's characteristic				
Children's Age				
three years old	12.94	82.12	53.09	86.02
four years old	22.71	81.13	52.62	86.15
Early Childhood Education				
Received	51.73	83.12	54.17	85.74
Not received	8.47	81.27	52.53	86.17
Gender				
Male	16.61	82.61	56.85	85.95
Female	18.65	80.57	48.38	86.23
Language spoken of household head				
Lao-Tai	19.82	85.98	51.30	86.21
Mon-Khmer	13.41	81.73	48.95	85.74
Hmong-Mien	20.78	77.13	57.69	89.03
Chinese-Tibetan	17.50	66.51	71.63	77.65
Ethnicity of household head				
Lao	19.83	86.99	48.81	85.04
Khmu	15.09	86.94	50.90	82.43
Hmong	21.35	76.83	57.94	89.05
Other	14.83	76.67	54.99	87.36
Family characteristic				
Residence				
Urban	40.70	83.33	52.87	88.14
Rural with road	14.03	81.58	52.93	85.94
Rural without road	5.39	79.71	52.54	83.94

Region				
North	16.35	79.89	59.58	85.11
Central	21.75	80.19	47.70	88.94
South	11.58	89.13	46.20	81.78
Mother's education attainment				
None	14.88	76.09	53.47	84.22
Primary	18.19	84.00	53.09	87.09
Secondary	19.44	87.18	51.87	89.16
Higher than secondary	30.28	92.96	48.59	82.61
Father's education attainment				
None	15.69	74.84	53.86	84.21
Primary	16.34	83.33	52.39	86.03
Secondary	19.32	84.57	53.27	87.21
Higher than secondary	22.76	78.86	52.37	86.80
Economic status				
Extremely poor	6.76	79.22	52.38	86.19
Poor	9.02	81.33	53.32	83.22
Middle	19.15	85.04	52.10	86.36
Wealthy	29.77	84.53	55.20	86.57
Extremely wealthy	52.93	82.01	51.99	90.38
Breast feeding				
Breastfed	17.39	81.71	53.01	86.31
Non-breastfed	25.71	78.87	46.48	76.39
Activity with children				
Read books to or look at picture books with children				
Mother	41.04	84.52	50.30	87.34
Father	35.73	81.79	50.36	85.21
Other	26.31	82.59	54.06	85.06
Nobody	15.42	79.00	53.60	84.33
Tell stories to children				
Mother	31.11	83.24	53.63	85.32
Father	24.85	80.09	52.80	83.71
Other	21.84	81.18	53.45	85.14
Nobody	17.20	78.06	50.42	87.27
Sing songs to children or with children, including lullabies (reference: Nobody)				
Mother	32.05	82.64	52.74	86.28
Father	25.66	80.00	51.15	84.01
Other	21.42	80.82	53.44	85.54
Nobody	15.27	78.04	51.65	86.80
Take children outside the home/compound/yard/enclosure (reference: Nobody)				
Mother	21.25	80.73	53.42	87.60
Father	21.35	80.06	52.63	85.37
Other	16.80	81.12	52.41	86.81
Nobody	15.86	79.04	53.98	85.34
Play with children (reference: Nobody)				
Mother	19.97	81.17	52.28	87.14
Father	19.40	82.88	53.26	85.70
Other	17.60	81.76	53.04	86.64
Nobody	17.93	77.38	52.26	86.67
Name/count/draw things to or with children (reference: Nobody)				

Mother	29.04	81.93	54.80	88.06
Father	27.74	80.99	54.07	85.16
Other	23.92	82.09	53.73	86.53
Nobody	15.52	79.90	51.24	83.41
Observations	3,302	3,352	3,344	3,132

Source: Authors' calculations from LSIS 2012

Our estimations show that children who attended preschool tended to have statistically significant on a higher probability of cognitive readiness (by 21.7 percent) but a lower probability of social-emotional readiness (by 3.38 percent) than children who did not go to preschool (Table 3). In this case, children may have limitations in their ability to learn and face exclusion from learning environments from preschool which will effect to their social-emotional development (Brown et al., 2012).

Results also suggest that when mothers had completed higher than secondary education, their children were more likely to have cognitive skills (by 8.05 percent) and also learning skills (by 12 percent) than children living with mothers who were uneducated. We also found that children living with fathers who had completed primary education had 2.84 percent higher probability of learning readiness than children living with fathers who were uneducated.

As for economic status, the estimation found that children from high-income families were more likely to have cognitive readiness than children from extremely poor families. Especially, children from extremely wealthy families had significantly higher probability of social-emotional readiness than children from extremely poor families by 5.56 percent. In addition, children who were breastfed had 8.77 percent higher probability of social-emotional readiness than children who were not breastfed.

Nevertheless, the binary probit estimation above does not consider the problem of endogeneity – children also might have self-selected to attend preschool. This issue may affect the estimation of the model and thus bias the results. Therefore, to prevent a biased estimation, we separated our data into two groups – three-year-olds and four-year-olds. In this case, children begin to undergo early childhood education at the age of three, while variables relating to development measured data on four-year-olds, which is a one-way relationship. Development of children at the age of five reflects no impact from attending preschool when the children were three-year-olds.

Table 4 also presents an econometric estimation of variables affecting development of three- and four-year-olds using the binary probit model. Results show that children of both ages who received early childhood education had significantly higher probability of cognitive readiness than children who did not (by 14.7 percent for three-year-olds and 28.5 percent for four-year-olds).

As for variables relating to parents or other household members doing activities with children, reading books to children or looking at picture books with three-year-olds and naming/counting/drawing things with four-year-olds showed higher probability of promoting cognitive readiness than was found among children who had nobody doing these activities with them. And children with mothers who did activities with them at age four had a higher probability of increasing their cognitive skills, especially when mothers tell them the stories, sing songs, and name/count/draw things with them than did children who had no one doing these kind of activities with them.

However, it was also found that when fathers or others took children outside the home, they were more likely to experience a negative impact on cognitive readiness than did children who were not taken outside. Even though fathers playing with children tended to lower children's cognitive skills, it had a positive impact on learning skills and physical skills. All in all, however, mothers doing activities with children had a higher probability of increasing social-emotional readiness when compared with fathers doing similar activities.

4. Conclusion and Policy Recommendations

This study examines the impact of socioeconomic factors on the accessibility of early childhood education and child development outcomes in Lao PDR, a least developed country. Our estimation has shown that children who live in municipal areas had a higher probability of attending preschool than did those living in rural areas without roads. Interestingly, mothers' educational attainment was found to have a greater impact on students' probability of attending preschool than did fathers'. In addition, a family's economic status was observed to have an important impact on their children's preschool enrollment. Children from high-income families had a higher probability of attending preschool than did children from extremely low-income families.

Table 4. Probit model (Marginal Effect) of an impact of early childhood education and activities with children on child development of three-year-olds, four-year-olds, and all children

Variables	Cognitive readiness			Learning readiness			Physical readiness			Social-emotional readiness		
	3 years	4 years	Total	3 years	4 years	Total	3 years	4 years	Total	3 years	4 years	Total
Children characteristics												
Children Age (reference: three years old)												
four years	-	-	0.0584*** (0.0124)	-	-	-0.0105 (0.0135)	-	-	-0.00949 (0.0179)	-	-	0.00477 (0.0124)
Early Childhood Education (reference: Not Received)												
Received	0.147*** (0.0318)	0.285*** (0.0316)	0.217*** (0.0229)	-0.0217 (0.0331)	0.0249 (0.0264)	0.00663 (0.0202)	-0.0103 (0.0419)	0.0794*** (0.0352)	0.0378 (0.0265)	-0.0219 (0.0309)	-0.0437* (0.0260)	-0.0338* (0.0200)
Gender (reference: Male)												
Female	-0.00517 (0.0180)	0.00786 (0.0285)	0.00782 (0.0164)	0.00971 (0.0255)	0.00776 (0.0264)	0.00909 (0.0184)	0.00284 (0.0445)	0.0917* (0.0478)	0.0420 (0.0322)	-0.0356 (0.0314)	-0.00444 (0.0327)	-0.0194 (0.0227)
Language spoken of household head (reference: Hmong-Mien)												
Lao-Tai	0.917*** (0.0239)	0.0274 (0.120)	0.0380 (0.0872)	-0.0699 (0.123)	-0.0825 (0.122)	-0.0953 (0.0876)	0.125 (0.157)	0.104 (0.143)	0.0815 (0.105)	-0.0515 (0.125)	0.0407 (0.126)	-0.00764 (0.0889)
Mon-Khmer	0.951*** (0.0170)	0.0148 (0.119)	0.0310 (0.0877)	-0.0889 (0.128)	-0.140 (0.127)	-0.137 (0.0921)	0.102 (0.156)	-0.0230 (0.144)	0.0199 (0.105)	0.0419 (0.112)	0.0368 (0.121)	0.0409 (0.0820)
Chinese-Tibeta	0.961*** (0.00428)	0.0870 (0.152)	0.0929 (0.119)	-0.185 (0.168)	-0.242 (0.168)	-0.235* (0.120)	0.240* (0.130)	0.152 (0.134)	0.172* (0.0956)	-0.0779 (0.160)	-0.174 (0.211)	-0.124 (0.129)
Ethnicity of household head (reference: Other)												
Lao	0.0166 (0.0259)	-0.00864 (0.0387)	0.00673 (0.0227)	0.0656** (0.0314)	0.0442 (0.0376)	0.0545** (0.0242)	-0.0272 (0.0478)	-0.134** (0.0530)	-0.0642* (0.0351)	-0.0391 (0.0361)	-0.0862* (0.0478)	-0.0595** (0.0286)
Khmu	0.0330 (0.0327)	0.00789 (0.0441)	0.0277 (0.0275)	0.0826*** (0.0288)	0.0925*** (0.0286)	0.0896*** (0.0203)	-0.0618 (0.0520)	-0.0410 (0.0542)	-0.0524 (0.0371)	-0.185*** (0.0560)	-0.0925* (0.0498)	-0.138*** (0.0374)
Hmong	0.987*** (0.00269)	0.0414 (0.127)	0.0813 (0.106)	-0.0569 (0.131)	-0.135 (0.140)	-0.116 (0.0994)	0.131 (0.149)	0.0783 (0.137)	0.0819 (0.101)	-0.0160 (0.125)	-0.0104 (0.132)	-0.0132 (0.0903)
Family characteristic												
Residence (reference: Rural without road)												
Urban	0.0411 (0.0410)	0.152** (0.0663)	0.0792** (0.0372)	0.00691 (0.0387)	0.0193 (0.0431)	0.0149 (0.0284)	0.0271 (0.0529)	-0.0994* (0.0601)	-0.0273 (0.0394)	0.0138 (0.0342)	0.0167 (0.0381)	0.0194 (0.0250)
Rural with road	0.0404* (0.0237)	0.0586 (0.0361)	0.0471** (0.0214)	0.00252 (0.0293)	0.0277 (0.0308)	0.0113 (0.0211)	0.0144 (0.0394)	-0.0726* (0.0414)	-0.0248 (0.0283)	0.0384 (0.0282)	0.00811 (0.0278)	0.0264 (0.0200)
Region (reference: South)												
North	-0.00762 (0.0154)	-0.0233 (0.0246)	-0.0119 (0.0142)	-0.0483** (0.0230)	-0.0473 (0.0248)	-0.0333** (0.0168)	0.0933 (0.0640)	0.209*** (0.0642)	0.149*** (0.0449)	0.0615 (0.0426)	0.0741* (0.0439)	0.0682** (0.0307)
Central	0.0195 (0.0194)	0.0255 (0.0296)	0.0191 (0.0171)	-0.072*** (0.0272)	-0.0340 (0.0276)	-0.0532*** (0.0194)	0.00740 (0.0446)	-0.0137 (0.0460)	0.00360 (0.0317)	0.112*** (0.0267)	0.0782*** (0.0279)	0.0982*** (0.0193)

Mother's educational attainment (reference: Non-education)													
Primary	0.0355** (0.0177)	-0.00002 (0.0252)	0.0184 (0.0151)	0.0381* (0.0221)	0.0661*** (0.0155)	0.0455*** (0.0306)	0.0123 (0.0318)	0.0352 (0.0218)	0.0227 (0.0198)	0.0392** (0.0211)	0.0303 (0.0145)	0.0365** (0.0177)	0.0498*** (0.0177)
Secondary	0.00583 (0.0241)	0.0662 (0.0425)	0.0275 (0.0233)	0.0570** (0.0267)	0.100*** (0.0256)	0.0725*** (0.0192)	0.0233 (0.0420)	0.0357 (0.0476)	0.0283 (0.0311)	0.0598*** (0.0228)	0.0252 (0.0291)	0.0498*** (0.0177)	0.0498*** (0.0177)
Higher than secondary	0.0357 (0.0419)	0.160** (0.0762)	0.0805* (0.0411)	0.111*** (0.0297)	0.133*** (0.0272)	0.120*** (0.0212)	-0.0624 (0.0649)	0.0595 (0.0704)	-0.0107 (0.0477)	-0.0295 (0.0456)	0.0106 (0.0443)	-0.0136 (0.0324)	-0.0136 (0.0324)
Father's educational attainment (reference: Non-education)													
Primary	0.0101 (0.0138)	-0.0113 (0.0213)	0.00117 (0.0124)	0.0213 (0.0192)	0.0429** (0.0202)	0.0284** (0.0139)	0.0183 (0.0257)	-0.0495* (0.0271)	-0.0127 (0.0185)	0.0140 (0.0176)	-0.000804 (0.0183)	0.00604 (0.0128)	0.00604 (0.0128)
Secondary	-0.00831 (0.0156)	0.0257 (0.0262)	0.00741 (0.0149)	0.0167 (0.0229)	-0.0172 (0.0257)	0.00413 (0.0170)	-0.0246 (0.0309)	0.0582* (0.0321)	0.0107 (0.0220)	0.00266 (0.0212)	-0.00692 (0.0223)	-0.00380 (0.0155)	-0.00380 (0.0155)
Higher than secondary	0.000731 (0.0227)	-0.0133 (0.0350)	-0.00167 (0.0207)	-0.00490 (0.0323)	-0.0262 (0.0371)	-0.0125 (0.0242)	0.0431 (0.0428)	-0.0667 (0.0469)	-0.0037 (0.0316)	-0.00152 (0.0298)	0.00249 (0.0314)	-0.000785 (0.0219)	-0.000785 (0.0219)
Economic status (reference: Extremely poor)													
Poor	0.0182 (0.0219)	-0.00592 (0.0313)	0.00648 (0.0188)	-0.0104 (0.0248)	0.0339 (0.0242)	0.0103 (0.0174)	0.0374 (0.0328)	-0.0310 (0.0358)	0.0106 (0.0240)	-0.0190 (0.0234)	-0.0379 (0.0259)	-0.0259 (0.0173)	-0.0259 (0.0173)
Middle	0.0509* (0.0275)	0.0724* (0.0384)	0.0043*** (0.0235)	0.0470* (0.0256)	0.0354 (0.0284)	0.0449*** (0.0189)	0.0110 (0.0379)	-0.0500 (0.0413)	-0.0149 (0.0277)	0.0107 (0.0254)	0.000470 (0.0278)	0.00447 (0.0189)	0.00447 (0.0189)
Wealthy	0.0739** (0.0338)	0.0836* (0.0446)	0.0852*** (0.0280)	-0.0127 (0.0344)	0.0652*** (0.0306)	0.0239 (0.0233)	0.114*** (0.0426)	-0.0588 (0.0487)	0.0299 (0.0322)	0.0212 (0.0278)	0.00743 (0.0316)	0.0103 (0.0214)	0.0103 (0.0214)
Extremely wealthy	0.133*** (0.0474)	0.147** (0.0607)	0.145*** (0.0380)	0.00129 (0.0420)	-0.00838 (0.0496)	-0.00658 (0.0323)	-0.0122 (0.0555)	0.0147 (0.0618)	-0.0005 (0.0407)	0.0336 (0.0332)	0.0778*** (0.0280)	0.0556** (0.0221)	0.0556** (0.0221)
Breast feeding (reference: Non-breastfed)													
Breastfed	0.0162 (0.0347)	-0.119 (0.0994)	-0.0254 (0.0440)	0.0279 (0.0656)	0.0480 (0.0830)	0.0289 (0.0501)	-0.0168 (0.0790)	0.193** (0.0948)	0.0605 (0.0609)	0.0447 (0.0573)	0.139 (0.0872)	0.0877* (0.0495)	0.0877* (0.0495)
Activity with children													
Read books to or look at picture books with children (reference: Nobody)													
Mother	0.0641*** (0.0243)	0.00396 (0.0294)	0.0450** (0.0191)	0.0252 (0.0276)	0.0347 (0.0301)	0.0280 (0.0204)	-0.0692* (0.0393)	-0.0227 (0.0424)	-0.0544* (0.0284)	-0.00727 (0.0277)	0.0129 (0.0281)	0.00197 (0.0197)	0.00197 (0.0197)
Father	0.0575** (0.0253)	0.0353 (0.0315)	0.0506** (0.0200)	-0.00995 (0.0304)	-0.000794 (0.0319)	-0.00203 (0.0218)	-0.0508 (0.0411)	-0.0244 (0.0419)	-0.0282 (0.0290)	-0.000550 (0.0282)	0.00445 (0.0279)	0.000722 (0.0198)	0.000722 (0.0198)
Other	0.0578** (0.0225)	0.0200 (0.0285)	0.0475*** (0.0180)	0.0257 (0.0248)	0.0192 (0.0270)	0.0239 (0.0182)	0.00853 (0.0349)	0.0167 (0.0372)	0.00888 (0.0251)	-0.0397 (0.0259)	-0.00955 (0.0257)	-0.0239 (0.0182)	-0.0239 (0.0182)

Tell stories to children (reference: Nobody)													
Mother	0.0125 (0.0183)	0.0552* (0.0315)	0.0323* (0.0176)	0.0307 (0.0245)	0.0156 (0.0287)	0.0264 (0.0186)	0.0335 (0.0356)	-0.0162 (0.0391)	0.0151 (0.0259)	-0.0172 (0.0258)	-0.0229 (0.0283)	-0.0184 (0.0189)	
Father	0.00365 (0.0176)	0.00716 (0.0283)	0.00954 (0.0165)	-0.0385 (0.0282)	-0.00457 (0.0287)	-0.0214 (0.0200)	0.00742 (0.0357)	-0.0125 (0.0378)	0.00026 (0.0256)	0.000164 (0.0240)	-0.0409 (0.0279)	-0.0184 (0.0182)	
Other	0.00145 (0.0192)	-0.0237 (0.0260)	-0.00774 (0.0161)	-0.0252 (0.0280)	0.0195 (0.0258)	-0.00369 (0.0190)	0.00667 (0.0363)	-0.0333 (0.0356)	-0.0144 (0.0251)	0.0160 (0.0237)	-0.0332 (0.0255)	-0.00945 (0.0176)	
Sung songs to children or with children, including lullabies (reference: Nobody)													
Mother	0.0437** (0.0204)	0.0801** (0.0347)	0.0586*** (0.0191)	-0.00824 (0.0264)	0.0474* (0.0276)	0.0173 (0.0192)	0.00755 (0.0357)	-0.0163 (0.0403)	0.00125 (0.0264)	-0.00681 (0.0253)	-0.0217 (0.0291)	-0.0134 (0.0191)	
Father	0.0236 (0.0206)	0.0192 (0.0320)	0.0183 (0.0183)	-0.00701 (0.0277)	-0.0579* (0.0339)	-0.0297 (0.0215)	-0.0752** (0.0377)	0.0469 (0.0405)	-0.0269 (0.0274)	0.0163 (0.0244)	-0.0549* (0.0316)	-0.0198 (0.0197)	
Other	-0.00751 (0.0174)	0.105*** (0.0309)	0.0331* (0.0171)	-0.00184 (0.0249)	-0.0419 (0.0279)	-0.0207 (0.0186)	-0.00139 (0.0334)	-0.0057 (0.0361)	-0.0021 (0.0242)	-0.0220 (0.0238)	-0.0129 (0.0250)	-0.0177 (0.0172)	
Take children outside the home/compound/yard/enclosure (reference: Nobody)													
Mother	0.0266* (0.0159)	-0.0596** (0.0253)	-0.00826 (0.0145)	0.0240 (0.0225)	-0.0532** (0.0236)	-0.0129 (0.0162)	0.00997 (0.0300)	0.0249 (0.0318)	0.0139 (0.0215)	0.0164 (0.0203)	0.0374* (0.0218)	0.0249* (0.0148)	
Father	-0.0396*** (0.0144)	-0.0560** (0.0251)	-0.0478*** (0.0140)	-0.0275 (0.0252)	-0.0168 (0.0267)	-0.0256 (0.0184)	-0.0156 (0.0333)	-0.0324 (0.0357)	-0.0217 (0.0241)	0.0136 (0.0222)	-0.0564** (0.0276)	-0.0163 (0.0173)	
Other	-0.0300* (0.0158)	-0.0587** (0.0258)	-0.0430*** (0.0146)	-0.0291 (0.0242)	0.0219 (0.0246)	-0.00384 (0.0172)	-0.0293 (0.0313)	-0.0109 (0.0338)	-0.0176 (0.0227)	0.0179 (0.0210)	0.00584 (0.0229)	0.0113 (0.0155)	
Play with children (reference: Nobody)													
Mother	-0.0383** (0.0157)	-0.0124 (0.0271)	-0.0298** (0.0150)	-0.0252 (0.0247)	-0.0143 (0.0254)	-0.0195 (0.0177)	-0.000765 (0.0329)	-0.0501 (0.0341)	-0.0255 (0.0234)	0.0148 (0.0220)	0.000254 (0.0234)	0.00632 (0.0160)	
Father	-0.0223 (0.0169)	-0.0613** (0.0259)	-0.0418*** (0.0150)	0.0349 (0.0254)	0.0782*** (0.0242)	0.0547*** (0.0178)	-0.0303 (0.0364)	0.0706* (0.0375)	0.0145 (0.0260)	-0.00649 (0.0249)	0.0185 (0.0248)	0.00421 (0.0177)	
Other	-0.0209 (0.0178)	-0.0622** (0.0296)	-0.0398** (0.0166)	0.0505** (0.0252)	-0.0335 (0.0250)	0.0109 (0.0178)	0.0170 (0.0321)	0.00734 (0.0343)	0.00901 (0.0232)	0.000795 (0.0215)	0.0182 (0.0235)	0.0109 (0.0159)	
Name/count/draw things to or with children (reference: Nobody)													
Mother	0.0118 (0.0178)	0.0644** (0.0297)	0.0366** (0.0168)	-0.0224 (0.0257)	0.00774 (0.0277)	-0.00614 (0.0188)	0.00944 (0.0339)	0.0485 (0.0367)	0.0324 (0.0246)	0.0448** (0.0217)	0.0312 (0.0239)	0.0391** (0.0161)	
Father	0.0137 (0.0198)	0.0761** (0.0345)	0.0388** (0.0191)	-0.00980 (0.0289)	0.00795 (0.0301)	-0.00551 (0.0210)	0.0367 (0.0385)	-0.0069 (0.0410)	0.0152 (0.0277)	-0.0770** (0.0317)	0.0291 (0.0254)	-0.0196 (0.0201)	
Other	0.000277 (0.0177)	0.0539* (0.0307)	0.0248 (0.0172)	-0.0165 (0.0253)	0.0142 (0.0264)	-0.00249 (0.0182)	0.00155 (0.0329)	0.0417 (0.0362)	0.0174 (0.0241)	0.0231 (0.0217)	0.00974 (0.0246)	0.0174 (0.0163)	
Children	1.739	1.563	3.302	1.762	1.590	3.352	1.761	1.583	3.344	1.652	1.480	3.132	

Remark: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Our investigation of children's development outcomes in Laos reveals that four-year-olds had a higher probability of attaining cognitive readiness than did three-year-olds. Results indicate that children who participated in early childhood education were likely to have significantly higher cognitive readiness than children who did not participate in early childhood education whether early or later but that they faced social-emotional problems when they reached age four. Regarding parents' educational attainment, we find that children living with mothers who were educated tended to have higher cognitive and learning readiness than children living with mothers who were relatively uneducated.

Results also indicate that children from high-income families had a higher probability of achieving cognitive readiness than children from extremely poor families. Especially, children from extremely wealthy families were likely to have greater social-emotional readiness than were children from extremely poor families. Furthermore, activities done together between parents and children also play an important role in their children's development.

Since socioeconomic factors influence children's preschool enrollment in Lao PDR, which serves here as a case study of a least-developed country, the government should promote early childhood educational opportunities for disadvantaged children in order to reduce the gap in access to early education between urban and rural children. Besides overall support for early childhood education, preschool quality in terms of curriculum and personnel is also a considerable issue that affects children's development. Thus, investing in early childhood education should be considered an economic and social development policy for strengthening employment productivity that will benefit the country in the long-term.

Our data are limited by the fact that there is no information on preschool quality and also no separate data on public and private preschools, which would allow for exploration of the impact of different levels of quality and types of early childhood education on children's development. Moreover, this investigation would require panel data for each individual in order to assess the long-term benefits of early childhood education, which would generate useful information for researchers as they craft recommendations for education policy.

References

- Acemoglu, D., & Autor, D. (2011). Introduction to Human Capital Investments. *Lectures in labor economics* (pp. 3-26). Retrieved from <http://economics.mit.edu/files/4689>
- Banerji, A., Cunningham, W., Fiszbein, A., King, E., Patrinos, H., Robalino, D., & Tan, J. P. (2010). *Stepping up skills for more jobs and higher productivity*. Washington, D.C: The World Bank.
- Berlinski, S., Galiani, S., & Manacorda, M. (2008). Giving children a better start: Preschool attendance and school-age profiles. *Journal of Public Economics*, 92(5-6), 1416-1440. <https://doi.org/10.1016/j.jpubeco.2007.10.007>
- Besharov, D. J., Higney, C. A., & Call, D. M. (2011). Chicago Child-Parent Center (CPC). *Assessments of Twenty-Six Early Childhood Evaluations* (pp. 3-40). Retrieved from http://www.welfareacademy.org/pubs/early_education/pdfs/Besharov_ECE%20Assessments_Chicago_Child-Parent_Center.pdf.
- Campbell, F. A., & Ramey, C. T. (2007). The Abecedarian Project. In A. J. Reynolds, A. Rolnick, M. M. Englund & J. Temple (Eds.), *Cost effective programs in children's first decade: A human capital integration* (pp. 76-95). New York: Cambridge University Press.
- Hanushek, E. A., & Woessmann, L. (2012). Do better schools lead to more growth? Cognitive skills, economic outcomes, and causation. *Journal of Economic Growth*, 17(4), 267-321. <https://doi.org/10.1007/s10887-012-9081-x>
- Heckman, J. J., Moon, S. H., Pinto, R., Savelyev, P. A., & Yavitz, A. (2010). The rate of return to the HighScope Perry Preschool Program. *Journal of Public Economics*, 94(1-2), 114-128. <https://doi.org/10.1016/j.jpubeco.2009.11.001>
- King, E. M., & Walle, D. (2010). Laos: Ethno-linguistic Diversity and Disadvantage The Lao People's Democratic Republic. *Indigenous Peoples, Poverty and development* (pp. 1-17). Retrieved from http://siteresources.worldbank.org/EXTINDPEOPLE/Resources/4078011271860301656/Chapter_7_Laos.pdf.
- Loeb, S., Bridges, M., Bassok, D., Fuller, B., & Rumberger, R. W. (2007). How much is too much? The influence of preschool centers on children's social and cognitive development. *Economics of Education Review*, 26(1), 52-66. <https://doi.org/10.1016/j.econedurev.2005.11.005>
- Loeb, S., Fuller, B., Kagan, S. L., & Carrol, B. (2004). Child Care in Poor Communities: Early Learning Effects of Type, Quality, and Stability. *Child Development*, 75(1), 47-65.

<https://doi.org/10.1111/j.1467-8624.2004.00653.x>

- MacEwan, A. (2013). Early childhood education, economic development, and the need for universal programs: With a focus on New England. *Economics, Management and Financial Markets*, 10(1), 9-11.
- Nath, S. R., & Sylva, K. (2007). Children's access to pre-school education in Bangladesh. *International Journal of Early Years Education*, 15(3), 275-295. <https://doi.org/10.1080/09669760701516967>
- Nonoyama-Tarumi, Y., & Ota, Y. (2011). *Early childhood development in developing countries: Pre-primary education, parenting, and health care*. Retrieved from <http://unesdoc.unesco.org/images/0019/001912/191223e.pdf>
- Opel, A., Ameer, S. S., & Aboud, F. E. (2009). The effect of preschool dialogic reading on vocabulary among rural Bangladeshi children. *International Journal of Educational Research*, 48(1), 12-20. <https://doi.org/10.1016/j.ijer.2009.02.008>
- Pholphirul, P. (2017). Pre-primary education and long-term education performance: Evidence from Programme for International Student Assessment (PISA) Thailand. *Journal of Early Childhood Research*, 15(4), 410-432. <https://doi.org/10.1177/1476718X15616834>.
- Rao, N., & Pearson, E. (2007). *An Evaluation of Early Childhood Care and Education Programmes in Cambodia*. Phnom Penh: UNICEF.
- Santibañez, L., Vernez, G., & Razquin, P. (2005). *Education in Mexico: Challenges and Opportunities*. Retrieved from http://www.rand.org/content/dam/rand/pubs/documented_briefings/2005/RAND_DB480.pdf
- Siraj-Blatchford, I., Sylva, K., Taggart, B., Melhuish, E., Sammons, P., & Elliot, K. (2004). *The Effective Provision of Pre-School Education (EPPE) Project: Findings from the pre-school to end of key stage 1*. Nottingham: Department for Education and Skills.
- Stoop, G. (2011). *Positive Foundations for Learning: Confident and Competent Children in Early Childhood Services*. Wellington: Crown Education Evaluation.
- UNESCO. (2006). *Strong foundations: early childhood care and education*. Paris: UNESCO.
- UNESCO. (2015). *Education for All 2015 National Review: Country Report of Lao PDR*. Vientiane: UNESCO.
- UNICEF. (2012). School readiness: A Conceptual Framework. *JAMA Pediatrics*, 167(8), 1-40.
- World Bank. (2015). Improving learning outcomes through early childhood development. *Education Global Practice*. Washington, D.C.: The World Bank.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).

Notes

Note ¹. The "Skills Toward Employment and Productivity" STEP framework is a simple conceptual framework focused on 5 interlinked steps including Step 1: Getting children off to the right start; Step 2: Ensuring that all students learn; Step 3: Building job-relevant skills that employers demand; Step 4: Encouraging entrepreneurship and innovation; and Step 5: Matching the supply of skills with the demand (Banerji, 2010)

Note ². However, a study by Loeb et al. (2004) has found negative impacts of early childhood education. They found that even though children who had attended preschool tended to have higher cognitive scores, such children tended to exhibit more aggressive behavior compared to those children who did not participate in preschool. Early childhood programs could have negative effects on social behavior (Loeb et al., 2007).

Note ³. The Effective Provision of Pre-School Education (EPPE) project is the first major European longitudinal study of a national sample of young children's development between the ages of 3 and 7 years to investigate the effects of pre-school education on 3,000 children

Note ⁴. The Carolina Abecedarian Project was an extension of the Perry Preschool Project and carried out by the University of North Carolina's FPG Child Development Institute from 1972 to 1977. It intended to improve the

language skills of children from their infancy to five years of age (Campbell & Ramey 2007)

Note ⁵. The Chicago Child-Parent Center Program was implemented in 1967. It provided preschool education for children from disadvantaged families. Parent participation was required on Sundays. Currently, there are still 11 schools hosting this program in Chicago (Besharov, Higney, & Call 2011)

Note ⁶. The Perry Preschool Project was conducted from 1962 to 1967 with the main objective of providing preschool education to disadvantaged African American children. School activities focusing on developing students' skills as well as parent participation were particularly encouraged (Heckman, Moon, Pinto, Savelyev, & Yavitz, 2010).

Note ⁷. Although community-based early childhood education is provided by the Education Department, it is not the same standard as formal early childhood education classes because the caregivers are not trained as formal teachers. This has become a serious problem for disadvantaged children in poor communities and remote areas in Laos (UNESCO, 2015).

Note ⁸. For the analysis of Early Childhood Care and Education (ECCE), this study uses data from questionnaires focusing on the household and children under five. The questionnaire for all children under five asked about mothers or caretakers who care for a child under the age of 5 years and who lives with such children

Note ⁹. The scope of the LSIS 2011-2012 included private households in Lao PDR, men and women 15-49 years old, and children under five years old. For the analysis of Early Childhood Care and Education (ECCE), this study uses data from questionnaires focusing on the household and children under five. The household questionnaire provides data on household composition, location of residence, household wealth and education level, and schooling of household members. The questionnaire for all children under five and each child in the household collected data on early learning, child development, and immunization. This questionnaire asked about mothers or caretakers who care for a child under the age of 5 years and who lives with such children. The questionnaires were designed and developed in both Lao and English by Lao Statistics Bureau (LSB) and based on the questionnaires of Multiple Indicator Cluster Survey (MICS) and Demographic and Health Surveys (DHS) developed by UNICEF. Data collected in face-to-face mode by interviewing households on the operation list which were conducted by 70 operators recruited and trained from LSB. Data collectors are the member of Department of Statistics, Ministry of Planning and Investment, and Ministry of Health.

Note ¹⁰. Household wealth is constructed using principal component analysis and includes several items, such as what material is used for a dwelling's floor, number of rooms in dwelling, main source of drinking water, toilet facility used, and presence of electricity, radio, television, or refrigerator. In addition, questions were asked about whether any members of household own a bicycle or car, and what main cooking fuel was used. Therefore, we have categorized indicators into five levels: (1) extremely poor, (2) poor, (3) middle, (4) wealthy, and (5) extremely wealthy, with the lowest 20 quintile referring to samples with extremely poor status, while the highest 20 quintile referring to samples with extremely wealthy status

Note ¹¹. Since preschool education is not compulsory in Lao PDR, it is reasonable to assume that accessibility to early childhood education is largely determined by socioeconomic factors of children's families. However, in the LSIS survey, questions concerning early childhood education asked only whether a child attended any organized learning or early childhood education program, such as a private or government facility, including kindergarten or community child care.

Note ¹². The reason a sample of four-year-olds is analyzed separately here is that there is a tendency, due to the fact that preschool education is non-compulsory, for some children to not start their early childhood education in their first year of kindergarten, but to start preschool in a later year (second or third year).

Note ¹³. The Early Child Development Index (ECDI) launched a data revolution for the Sustainable Development Goals and is used as an index of developmental potential in early childhood, currently represented in the Multiple Indicator Cluster Survey (MICS) that assesses children aged 36-59 months in four domains. Each of these four domains is measured through instruments based on real time observation, which refers to the ability of children in cognitive readiness, physical readiness, learning readiness, and social-emotional readiness. The MICS surveys calculates an overall Index Score as the percentage of children aged 36-59 months who are on track in at least three of four domains (UNESCO, 2015).

Impact of Quality of Work-Life (QWL) on Organizational Performance: An Empirical Study in the Private Jordanian Universities

Khaled Mahmoud Al-Shawabkeh¹ & Ghufra Saed Hijjawi¹

¹ Management Department, Business and Finance Faculty, The World Islamic Science and Education University (WISE), Amman, Jordan

Correspondence: Khaled Mahmoud Al-Shawabkeh. E-mail: Kaled_high@yahoo.com

Received: January 20, 2018

Accepted: March 5, 2018

Online Published: May 28, 2018

doi:10.5539/ass.v14n6p145

URL: <https://doi.org/10.5539/ass.v14n6p145>

Abstract

Within every matter relating to management, organizational performance is the vital instrument in assessing organizational financial and non-financial results, also a technique to compose evaluation with competitors. Performance is the most significant measure in evaluating organizations and their achievements. Hence, the significant contribution of the current study is developing a model which undertaken on examining the impact of quality of work life (QWL) on organizational performance (by using Balanced Scorecards particularly).

The current study adopted the descriptive analytical method; it was applied in private Jordanian universities (located in Amman). This study used equal stratified random sample. For primary data, questionnaire was used; so 140 questionnaires were distributed to (140) managers. The questionnaire composed of (24) items of close ended statements. Collected data was analyzed by using different statistical techniques such as descriptive statistics, and multiple regression through the SPSS.

This study found that there was a significant statistical impact of Quality of Work-Life (QWL) on Organizational Performance in the Private Jordanian Universities at level ($\alpha \leq 0.05$). The researchers recommend modifying the managerial dimension to get greater effect from Quality of work life on performance, therefore; spending more time and effort on developing, training, motivation through empowerment is essential for all workers.

Keywords: quality of work-life (QWL), organizational performance, balanced scorecards, private Jordanian universities

1. Introduction:

Today, with turbulence and swiftly shifting workplace, the enrichment of organizational performance is attached with individual development performance, skills, occurrence and know-how; thus, how to realize and maintain high performance in organizations are the most important challenge facing organizations nowadays (Covey, 2004; Jones, George & Hill, 2000; Al. Khouri, 2010).

Since the industrial revolution, quality of work life (QWL) launched as slogan that has magnitude. A successful (QWL) is a construct to enhance working situations (perspective of personnel) and better organizational efficiency and performance (perspective of organizations) (Patil & Swadi, 2014; Rahman, Abdul, Uddin & Rahman, 2017).

In the past, organizational performance was measured through financial accounting measures, but today's organizations realize that a balanced view of both financial and operational measures (definitely in a strategic context) is needed for successful organizational control. Organizational performance defined as the ability of an organization to reach its goals and objectives by utilization of resources optimally (Nayak & Sahoo, 2015).

The sector of higher education in Jordan acts a vital notable role in the process of comprehensive development at various levels and matters. (<http://www.mohe.gov.jo>). Private Jordanian universities strive to have applied international standards related to quality management systems through Higher Education Accreditation Commission in Jordan which looks for advance quality and equity in higher education in Jordan whether in assessment, ranking, or conducting testing services that are valid, reliable, and unbiased (<http://www.heac.org.jo>).

Many studies discussed the relationship between quality of work life and organizational performance such as

(Aketch, Odera, Chepkuto & Okaka, 2012; Nayak & Sahoo, 2015; Hosmani, Shambhushankar & Bindurani, 2014; Chib, 2012; Shrie & Ashok, 2014).

The main *purpose* of the current study is to study the impact of Quality of Work-life (QWL) on organizational performance (using the balanced scorecard) in the Private Jordanian Universities.

This study also aims to provide strong *recommendations* to Universities, as well as, to decision makers concerning the impact of Quality of Work-life on Organizational Performance in the private Jordanian universities.

2. Problem Statement

Today's businesses cope with revolutionary challenges. Since organizations are found within sever competition, rapid technological changes, and strategic thinking; management to create sustainable high-performance organization becomes critical and urgent.

According to the significant important role of human resources in achieving organizational goals and gaining the expected performance, enhancing work life quality has become one of the major goals of the organizations. In this study, Quality of work life dimensions to enhance the organizational performance have been illustrated in proposed model, taking into consideration that the private Jordanian universities are the study's objective; therefore, **the problem of this research can be expressed in the main following question:**

- ❖ *What is the impact of Quality of Work-life on organizational performance in the Private Jordanian Universities?*

3. Study Model & Hypotheses

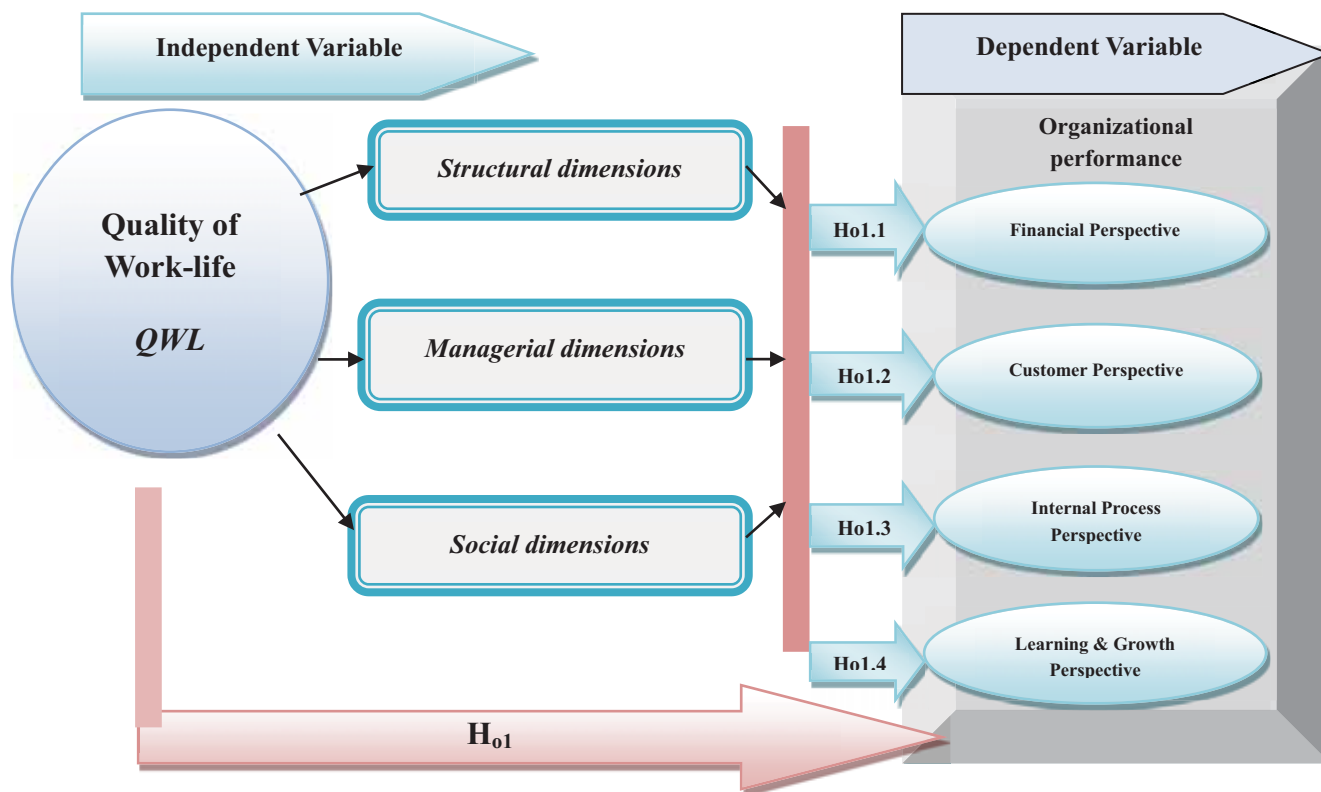


Figure 1. Study Model

In order to attain the study objectives; main hypotheses and their sub-hypotheses are developed for testing:

H₀₁: There is no statistically significant impact at level ($\alpha \leq 0.05$) of Quality of Work-life (Structural dimensions; Managerial dimensions, and Social dimensions) on organizational performance using balanced scorecard measures in the Private Jordanian Universities.

H_{01.1}: There is no statistically significant impact at level ($\alpha \leq 0.05$) of Quality of Work-life (Structural dimensions; Managerial dimensions, and Social dimensions) on Financial Perspective in the Private Jordanian Universities.

H_{01,2}: There is no statistically significant impact at level ($\alpha \leq 0.05$) of Quality of Work-life (Structural dimensions; Managerial dimensions, and Social dimensions) on Customer Perspective in the Private Jordanian Universities.

H_{01,3}: There is no statistically significant impact at level ($\alpha \leq 0.05$) of Quality of Work-life (Structural dimensions; Managerial dimensions, and Social dimensions) on Internal Business Process Perspective in the Private Jordanian Universities.

H_{01,4}: There is no statistically significant impact at level ($\alpha \leq 0.05$) of Quality of Work-life (Structural dimensions; Managerial dimensions, and Social dimensions) on Learning and Growth Perspective in the Private Jordanian Universities.

4. Theoretical Framework

4.1 Organizational Performance using (The Balanced Scorecard)

4.1.1 Balanced Scorecard Concept

The Balanced Scorecard is a theory and management approach first proposed in the Harvard Business Review by Robert S. Kaplan & David P. Norton (1995). The most recent refinement of this theory and management approach appears in Kaplan & Norton's book, *The Strategy-Focused Organization* (Knapp, 2001).

The balanced scorecard is "a comprehensive management control system that balances traditional financial measures with operational measures relating to a company's critical success factor" (Daft, 2008, 449). Financial Perspective related to organization's profit and is measured subjectively through return on investment, return on capital employed and economic value added (Abran & Buglione, 2003).

Chitu & Opris (2014) defines "Balanced scorecard as a strategic instrument for attaching and measuring performance and intends to assist executives to state their main concerns".

A balanced scorecard contains four major perspectives: financial performance, customer service, internal business processes, and the organization's capacity for learning and growth (Kaplan & Norton, 1998).

Balanced Scorecard clarified as a perspective of an organizational performance; it combines financial aspect with other performance aspects perspectives, such as customer, growth and learning, and internal business processes perspectives (Asgari, Haeri, & Jafari, 2017).

Narayanamma & Lalitha (2016) explored that "Balanced Scorecard" supports management to assess financial, customer, internal business processes, and learning & growth perspectives. The terminology (scorecard) indicates quantified measures of performance; and (balanced) indicates the approach is balanced between short-range and long-range goals.

Natarajan & Vijayalakshmi (2016) explored that "Balanced Scorecard" as a performance management instrument to assess the action of mutually intangible and tangible resources of an association. It assists the management to shift from biased financially measurement toward a further balanced and objectively technique that associates the four viewpoints of an organizational performance: financial, customer, internal business process and growth & learning. It has developed a multi-perspective system as a strategic management for performance and acts as a control system.

Within these four areas, managers identify key performance indicator the organization will track. The Balanced Scorecard is based on three general management concepts: Measurement and Goal Setting; Communication, Motivation and Human Relations; and Business Strategy.

The balanced scorecard helps managers focus on the key strategic measures that define the success of a particular organization over time and communicate them clearly throughout the organization. The scorecard has become the core management control system for many organizations today (Daft, 2008, p. 450).

Kaplan and Norton (1996) defined the balanced scorecard "measures to translate an organization's mission and strategy into a comprehensive set of performance measures that provides the framework for a strategic measurement and management system".

4.1.2 Balanced Scorecard Perspectives

4.1.2.1 The Financial Perspective

This perspective reflects a concern that the organization's activities contribute to improving short and long-term financial performance. It includes traditional measures such as net income and return on investment (ROI) (Young, 1998).

Knapp (2001) defined the financial perspective as “the readily measurable economic consequences of actions already taken”. Financial perspective also focuses on desired financial results, like: revenue growth, return on investment, residual income, operating income, and inventory turnover. (Atkison, Kaplan & Young, 2007, p. 395).

4.1.2.2 Customer Perspective

Contains measures that identify the customer and market segments in which the business unit will compete and the measures of the business unit's performance in these targeted segments (Kaplan & Norton, 1996).

Meeting customer needs is the focal point of Customer perspective which consists of delivery, product design, order taking and post-sales service. Measures for customer perspective address factors that associate with customer satisfaction, such as: market share, lead time, customer retention, defects, and client's complaints (Atkison, Kaplan, & Young, 2007, p. 395).

Daft (2008, p. 449) showed customer service indicators measure several items: how customers view the organization, customer satisfaction and retention.

4.1.2.3 Internal Business Process

This perspective measures the crucial internal processes in which the business must be perfect and skillful (Kaplan & Norton, 1995). Young (1998) mentioned that business process indicators spotlight on production and operating indicators, such as order fulfillment or cost per order.

Internal Business Process perspective showed as set of practices used within the organization to obtain and deliver products. The internal business process perspective represents the critical operating, innovation, post-sales service. Measures for this aspect concentrate on factors for instance: order response time, technological capability, new products introductions, cycle time, and capacity utilization (Atkison, Kaplan, & Young, 2007, p. 395).

4.1.2.4 Learning & Growth

This viewpoint measures the infrastructure that the business must initiate to generate long-term growth and enhancement (Kaplan & Norton, 1996). Learning and growth side concentrate on several issues like: the new strategies, continuous improvement, employee developing and learning. Measures for this perspective take into consideration: organizational learning, workers skills, new copyright or patents and business leadership. The final component looks at the organization's potential for learning and growth, focusing on how well human capital is being managed for the company's future (Young, 1998).

Measurements include such things as employee retention, business process improvements and the introduction of new products. The components of the scorecard are designed in an integrative manner so that they reinforce one another and link short- term actions with long- term strategic goals (Daft, 2008, p. 450).

4.2 *Quality of Work Life (QWL)*

4.2.1 QWL Concept

All organizations that caring about their employees' satisfaction, motivation and searching for efficiency through retaining their employees; seeing that quality of work life (QWL) is crucial; therefore, early studies about QWL were done in early 1970s, as The term QWL, was introduced first time during an international labor relations conference in 1972 (Hian & Einstein, 1990). After ‘United Auto Workers’ and ‘General motors’ initiated a QWL program for work reforms, QWL received more and more attention (Jain & Thomas, 2016).

In organizations, QWL is critical for efficient and smooth running of organizations, because with having QWL commitment and loyalty of employees created, and their optimum potential can be gotten (Beelor, Nanjundeswaraswamy, & Swamy, 2017).

QWL is a complex and complicated construct because it is a multi-dimensional one that each dimension is being built on different base; therefore, there is no consensus about specific meaning of QWL since it is a dynamic construct that developed with the development of management; consequently, it can be seen as a comprehensive management of several factors such as: physical, social and psychological, and technological factors that affect organizational culture and its environment. It is how it affects workers and their productivity (Aketch, Odera, Chepkuto, & Okaka, 2012). According to Rahman, Abdul, Ali, Uddin & Rahman (2017) QWL is considered as a philosophy that affects all issues in organizational life of employees that shapes the strategy of employees' retention and their satisfaction.

Finally, QWL has two view points; the first view point is objective which referred to managerial and structural

dimension. Second one is subjective, referred to social dimension (Nekouei, Othman, Masud, & Ahmad, 2014).

4.2.2 Dimensions of Quality of Work Life

4.2.2.1 Managerial Dimension

Referring to Robbins (1989) QWL is the process initiated by organization that enables all employees to participate in decision making. Rose, Beh, Uli & Idris (2006) defined QWL as a philosophy or a set of principles, which consider people are capable and responsible of making a valuable contribution to maximize the value of the organization; Accordingly, it emphasizes what QWL areas management must improve such as: work life balance, leadership, quality circles, workers' participation in management, stress management, working environment, open communication.

4.2.2.2 Structural Dimension

This dimension emphasizes the aspects related to the mental and physical job characteristics and work conditions that affect the employee's motivation and productivity. It can be considered as HR perspective of QWL, consequently Indumathy and Kamalraj (2012) have remarkably pointed out that Attitude, nature of job, opportunities, challenges, and risk involved, stress level, career prospects, growth, development and rewards are the main factors that influence the Quality of Work Life.

From other side, Kaur (2016) QWL can be improved through different ways like: education and training, union involvement, workers communication, admiration of changing environment and research projects.

4.2.2.3 Social Dimension

This dimension express how balance is there between work life and personal life (Cunningham & Eberle, 1990); therefore, it can be seen how employees having freedom in their jobs and work environment which accordingly increases their satisfaction and productivity through commitment (Nekouei et al., 2014).

4.3 Quality of Work-life & Organizational Performance

Nasirizade, Amouzeshi, Unesi, Vagharseyyedin, Biabani, & Bahrami (2017) illustrated the relationship between quality of work life and organizational effectiveness which is one dimension of organizational performance, through conducting the study on (225) hospital nurses who worked in teaching hospitals affiliated to Birjand University of Medical Sciences, Birjand, Iran. The results were Nurses' quality of work life is significantly correlated and related to the organizational electiveness.

Salajegheha, Chamanifard, Chamanifard, & Nikpour (2015) investigated the relation between quality of work life and organizational performance in the presence of demographic variables as a moderator; in Foreign Exchange Units of Tejarat Bank. The findings were there is a positive direct relationship between QWL and organizational performance from one side, and also significant relation between QWL and all sub dimension of organizational performance in terms of (effectiveness, efficiency, productivity, quality and innovation).

The study by Nayak & Sahoo (2015) searched the relationship between Quality of Work Life and organizational performance in the presence of employee commitment as a mediating variable through the quality advances in health care. It was found that a better quality of work of member of staff is an important leading factor for organizational performance of a health care. The results showed that the employee's commitment plays as a partial and major mediating variable in the relationship between Quality of Work Life and organizational performance.

Shrie & Ashok (2014) have been examined the existing literature review on the aspects influencing organizational changes; Quality of working life and organizational culture, and explored the association between these variables and the effectiveness of the organization. The study examined that improving Quality of Work Life give better employee family life, in addition to developing organizational performance.

Hosmani, Shambhushankar & Bindurani (2014) have shown that applying Quality of Life programs, guide to more development and maturity of human being, develops conviction between executives and employees, attracts and retains talented personnel, builds strong employee engagement, reinforces place of work and enhances organizational effectiveness. The search showed that there is an extreme point of approval along with employees with respect to the quality of working life, since it has been improved employees' performance and organizational performance.

Aketch, Odera, Chepkuto & Okaka (2012) studied the accessible literature review on Quality of Work Life and how it affects the organizational performance. They also studied how motivation influences the organizational performance. The literature has been pointed to a strong relationship linking the well-being of employees at job

and the organizational performance.

Chib (2012) study established the significance of the Quality of Work Life in terms of (vocational training, worker transport, maternity leave for employees, health policies, and holiday availability) within the nationwide environment and also within a private business. The results of the study have been showed that Quality of Work has a crucial connection with organizational performance.

5. Methodology

The nature of current study is descriptive and has been made to analyze the impact of quality of work life on organizational performance (using Balanced Scorecards). In the *theoretical perspective*, the researchers relied on the previous searches that are related to the present study. Whereas in the *applied aspect*, the researchers dealt with *descriptive and analytical methods* using a questionnaire to gather primary data, then analyze these data and test hypotheses.

5.1 Study Population and Sample

Population for this study consists of **(8)** Private Jordanian Universities located in Amman (Princess Sumaya University, Middle East University, Applied Science Private University, Al-Isra University, Al-Zaytoonah University, Amman Arab University, Petra University, and Amman Al.Ahlya University) in which **(202)** individuals work in its top and middle levels.

5.2 Study Sample

The study sample is stratified proportionate random sample and consisted of a total of (140) targeted respondents according to (Sekaran & Bougie, 2010, 184), from which a total of (134) answered questionnaires were retrieved, of which (8) were invalid. Thus, **(126) were valid** answered questionnaires. A stratified proportionate random sample has been drowning from the universities. Since the population of the current study was being divided into **(8)** classes or proportions according to the universities number recognized in this study.

Table 1. Study population and sample

#	University	Sample Number	Withdrawn
1.	Princess Sumaya	21	15
2.	Middle East	30	21
3.	Applied Science	27	19
4.	Al-Isra	26	18
5.	Al-Zaytoonah	24	16
6.	Amman Arab	23	16
7.	Petra	25	17
8.	Amman Al.Ahlya	26	18
#	Total	202	140

5.3 Unit of Analysis

Unit of analysis in the current study consists of the middle and top managerial level in the private Jordanian universities located in Amman.

5.4 Study Tools and Data Collection

The current study uses both *secondary and primary data*. The primary data collected for the model were through questionnaire that built after conducting a review of literature pertaining to study variables.

The questionnaire sections are as follows:

- ❖ **Section One:** Demographic Variables. The demographic information was collected with closed-ended questions, covering (4) dimensions (Gender; Age; Qualifications; and Experience).
- ❖ **Section Two:** Quality of Work-life QWL. Measuring Quality of Work-life through (3) dimensions (Structural dimensions; Managerial dimensions, and Social dimensions); (12) items.
- ❖ **Section Four:** Organizational Performance through Balanced Scorecard Perspective. This section measured the Organizational Performance using balanced scorecard perspectives through (4) perspectives (Financial perspective; Customers perspective; Internal Business Process perspective and Learning and growth perspective); (12) items.

5.5 Reliability

Cronbach's alpha was used to measure the internal consistent reliability of the variables. Reliability should be (0.60%) or higher to indicate acceptable convergence or internal consistency (Sekaran & Bougie, 2010, 184). Table 1 showed that all items have reliability coefficients above 0.60%. The reliability coefficients for all the items ranged from (0.781 to 0.968). Hence, the study's questionnaire items were all of reasonable satisfactory reliability.

Table 2. Reliability coefficients / Cronbach's Alpha

Variables	No. of Items	Cronbach's Alpha
# Quality of Work-life	<i>12</i>	<i>0.927</i>
<i>Structural dimensions</i>	<i>4</i>	<i>0.878</i>
<i>Managerial dimensions</i>	<i>4</i>	<i>0.830</i>
<i>Social dimensions</i>	<i>4</i>	<i>0.805</i>
# Organizational Performance	<i>12</i>	<i>0.938</i>
<i>Financial Perspective</i>	<i>3</i>	<i>0.805</i>
<i>Customer Perspective</i>	<i>3</i>	<i>0.781</i>
<i>Internal Business Process</i>	<i>3</i>	<i>0.843</i>
<i>Learning and Growth</i>	<i>3</i>	<i>0.804</i>
Total Instrument	<i>24</i>	<i>0.968</i>

6. Testing Study's Hypothesis

H_{0.1}: There is no statistically significant impact at level ($\alpha \leq 0.05$) of Quality of Work-life (Structural dimensions; Managerial dimensions, and Social dimensions) on organizational performance using balanced scorecard measures in the Private Jordanian Universities.

To test this hypothesis, the researchers use the multiple regression analysis to ensure the impact of Quality of Work-life dimensions on Organizational Performance in Private Jordanian Universities. As shown in Table (3).

Table 3. Standard Multiple regression analysis for the main hypothesis:

Dependent variable	(R)	(R ²)	F calculate	DF	Sig*	Sub-Independent-variables	β	T calculate	Sig*
<i>Organizational Performance</i>	0.857	0.735	111.834	3	0.000	<i>Structural dimensions</i>	.315	4.245	.000
						<i>Managerial dimensions</i>	.185	2.172	.032
						<i>Social dimensions</i>	.448	6.142	.000

Table 3 above illustrates the impact of Quality of Work-life dimensions (structural dimensions, managerial dimensions, and social dimensions) on organizational performance in private Jordanian universities. The multiple regression of this model achieves a high degree of fitting, since has been reflected through (R) ".857" and "R²" ".735", which emphasized that "73.5%" of the justified variance on organizational performance in private Jordanian universities can be accounted for Quality of Work-life dimensions (structural dimensions, managerial dimensions, and social dimensions).

As well as Table 3 shows that the analysis of variance of the fitted regression equation is significant with Analysis of variance Show that (F= 111.834), with (Sig. = 0.000), on (DF= 3), which indicates a significant regression. It is noticed from the table of coefficients: (beta = .315), (t= 4.245), at (Sig. = 0 .000) for structural dimensions and from managerial dimensions (beta =.185), (t= 2.172), at (Sig. =0 .032), and from social dimensions (beta =.448), (t= 6.142), at (Sig. =0 .000), this confirms that A significant Coefficient, for Quality of Work-life dimensions. Based on " $\alpha \leq 0.05$ ", it explains a statistically impact among the variables at "0.95" level of confidence.

This further rejected zero (null) hypothesis and supported the study's first alternate hypothesis: There is a statistically significant impact at level ($\alpha \leq 0.05$) of Quality of Work-life (Structural dimensions; Managerial dimensions, and Social dimensions) on organizational performance using balanced scorecard measures in the Private Jordanian Universities.

H_{01.1}: There is no statistically significant impact at level ($\alpha \leq 0.05$) of Quality of Work-life (Structural dimensions; Managerial dimensions, and Social dimensions) on Financial Perspective in the Private Jordanian Universities.

To test this hypothesis, the researchers use the multiple regression analysis to ensure the impact of Quality of Work-life dimensions on Financial Perspective in Private Jordanian Universities. As shown in Table 4.

Table 4. Standard Multiple regression analysis

Dependent variable	(R)	(R ²)	F calculate	DF	Sig*	Sub-Independent-variables	β	T calculate	Sig*
<i>Financial Perspective</i>	0.824	0.679	85.261	3	0.000	<i>Structural dimensions</i>	.214	2.624	.010
						<i>Managerial dimensions</i>	.296	3.158	.002
						<i>Social dimensions</i>	.398	4.950	.000

Table 4 above illustrates impact of Quality of Work-life dimensions (structural dimensions, managerial dimensions, and social dimensions) on financial perspective in private Jordanian universities. The multiple regression of this model achieves a high degree of fitting, since has been reflected through (R) ".824" and "R²" ".679", which emphasized that "67.9%" of the justified variance on financial perspective for Quality of Work-life dimensions (structural dimensions, managerial dimensions, and social dimensions).

Table 4 above explains that the analysis of variation of the convenient regression statement is significant; through which "F= 85.261", on "df= 3" by means of "Sig. = .000", which indicates a significant regression. It is noticed from the table of coefficients: " β = .214", "t= 2.624", at "Sig. = .010" for structural dimensions and for managerial dimensions " β = .296", "t= 3.158", at "Sig. = .002", and for social dimensions: " β = .398", "t= 4.950", at "Sig. = .000", this proves that there is a significant Coefficient, for Quality of Work-life dimensions. Based on " $\alpha \leq 0.05$ ", it explains a statistically impact among the variables at "0.95" level of confidence.

This further rejected zero (null) hypothesis and supported the study's first alternate hypothesis: There is a statistically significant impact at level ($\alpha \leq 0.05$) of Quality of Work-life (Structural dimensions; Managerial dimensions, and Social dimensions) on financial perspective in the Private Jordanian Universities.

H_{01,2}: There is no statistically significant impact at level ($\alpha \leq 0.05$) of Quality of Work-life (Structural dimensions; Managerial dimensions, and Social dimensions) on Customer Perspective in the Private Jordanian Universities.

To test this hypothesis, the researchers use the multiple regression analysis to ensure the impact of Quality of Work-life dimensions on Customer Perspective in Private Jordanian Universities. As shown in Table 5.

Table 5. Standard Multiple regression analysis

Dependent variable	(R)	(R ²)	F calculate	DF	Sig*	Sub-Independent-variables	β	T calculate	Sig*
<i>Customer Perspective</i>	0.709	0.503	40.806	3	0.000	<i>Structural dimensions</i>	.207	2.041	.043
						<i>Managerial dimensions</i>	.136	1.170	.244
						<i>Social dimensions</i>	.435	4.352	.000

Table 5 above illustrates impact of Quality of Work-life dimensions (structural dimensions, managerial dimensions, and social dimensions) on customer perspective in private Jordanian universities. The multiple regression of this model achieves a high degree of fitting, since it has been reflected through (R) ".709" and "R²" ".503", which emphasized that "50.3%" of the justified variance on customer perspective for Quality of Work-life dimensions (structural dimensions, managerial dimensions, and social dimensions).

Table 5 above explains that the analysis of variation of the convenient regression statement is significant through analyzing the variation illustrate that "F= 40.809", with "Sig. = .000", on "df= 3", which indicates a significant regression. It is noticed from the table of coefficients: (beta = .209), (t= 2.041), at (Sig. = 0 .043) for structural dimensions and from managerial dimensions (beta = .136), (t= 1.170), at (Sig. = 0 .244), and from social dimensions " β = .435", (t= 4.352), at "Sig. = .000", this proves that there is a significant Coefficient, for Quality of Work-life dimensions. Based on " $\alpha \leq 0.05$ ", it explains statistical impact among the variables at "0.95" level of confidence.

This further rejected zero (null) hypothesis and supported the study's first alternate hypothesis: There is a statistically significant impact at level ($\alpha \leq 0.05$) of Quality of Work-life (Structural dimensions; Managerial dimensions, and Social dimensions) on customer perspective in the Private Jordanian Universities.

H_{01,3}: There is no statistically significant impact at level ($\alpha \leq 0.05$) of Quality of Work-life (Structural dimensions; Managerial dimensions, and Social dimensions) on Internal Business Process Perspective in the Private Jordanian Universities.

To test this hypothesis, the researchers use the multiple regression analysis to ensure the impact of Quality of Work-life dimensions on Internal Business Process Perspective in Private Jordanian Universities. As shown in Table 6.

Table 6. Standard Multiple regression analysis

Dependent variable	(R)	(R ²)	F calculate	DF	Sig*	Sub-Independent-variables	β	T calculate	Sig*
Internal Business Process Perspective	0.777	0.603	61.325	3	0.000	<i>Structural dimensions</i>	.449	4.954	.000
						<i>Managerial dimensions</i>	.077	.736	.463
						<i>Social dimensions</i>	.330	3.696	.000

Table 6 above illustrates impact of Quality of Work-life dimensions (structural dimensions, managerial dimensions, and social dimensions) on Internal Business Process Perspective in private Jordanian universities. The multiple regression of this model achieves a high degree of fitting, since it has been reflected through (R) ".777" and "R²" ".603", which emphasized that "60.3%" of the justified variance on Internal Business Process for Quality of Work-life dimensions (structural dimensions, managerial dimensions, and social dimensions).

Table 6 above, explains that the analysis of variation of the convenient regression statement is significant; through which "F= 61.325", with "Sig. =.000", on "df= 3", which indicates a significant regression. It is noticed from the table of coefficients: " β = .449", "t= 4.954", at "Sig. = .000" for structural dimensions and from managerial dimensions " β =.077", "t= 0.736", at "Sig. = .463", and from social dimensions " β =.330", "t= 3.696", at "Sig. =.000", this proves that there is a significant Coefficient, for Quality of Work-life dimensions. Based on " $\alpha \leq 0.05$ ", it explains a statistically impact among the variables at "0.95" level of confidence.

This further rejected zero (null) hypothesis and supported the study's first alternate hypothesis: There is a statistically significant impact at level ($\alpha \leq 0.05$) of Quality of Work-life (Structural dimensions; Managerial dimensions, and Social dimensions) on Internal Business Process Perspective in the Private Jordanian Universities.

H0_{1.4}: There is no statistically significant impact at level ($\alpha \leq 0.05$) of Quality of Work-life on Learning and Growth Perspective in the Private Jordanian Universities.

To examine this hypothesis, the researchers used the standard multiple regression analysis in order to ensure impact of Quality of Work-life (Structural dimensions; Managerial dimensions, and Social dimensions) on Learning and Growth Perspective in Private Jordanian Universities. As shown in Table 7.

Table 7. Standard Multiple regression analysis

Dependent variable	(R)	(R ²)	F calculate	DF	Sig*	Sub-Independent-variables	β	T calculate	Sig*
<i>Learning and Growth Perspective</i>	0.799	0.638	71.081	3	0.000	<i>Structural dimensions</i>	.281	3.242	.002
						<i>Managerial dimensions</i>	.145	1.458	.147
						<i>Social dimensions</i>	.455	5.334	.000

Table 7 above illustrates impact of impact of Quality of Work-life dimensions (structural dimensions, managerial dimensions, and social dimensions) on Learning and Growth Perspective in private Jordanian universities. The multiple regression of this model achieves a high degree of fitting, since has been reflected through (R) ".799" and "R²" ".638", which emphasized that "63.8%" of the justified variance on Learning and Growth Perspective in private Jordanian universities can be accounted for Quality of Work-life dimensions (structural dimensions, managerial dimensions, and social dimensions).

Table 7 above, explains that the analysis of variation of the convenient regression statement is significant through which "F= 1.081", with "Sig. =.000", on "df= 3", which indicates a significant regression. It is noticed from the table of coefficients: "beta = .281", "t= 3.242", at "Sig. =.002" for structural dimensions and from managerial dimensions (beta =.145), (t= 1.458), at "Sig. =.147", and from social dimensions "beta =.455", "t= 5.334", at "Sig. =0 .000", this proves that there is a significant Coefficient, for Quality of Work-life dimensions. Based on " $\alpha \leq 0.05$ ", it explains a statistically impact among the variables at "0.95" level of confidence.

This further rejected zero (null) hypothesis and supported the study's first alternate hypothesis: There is a statistically significant impact at level ($\alpha \leq 0.05$) of Quality of Work-life (Structural dimensions; Managerial dimensions, and Social dimensions) on Learning and Growth Perspective in the Private Jordanian Universities.

7. Discussion & Conclusion

The main purpose of the current study is to explore the impact of the impact of Quality of Work-life dimensions (structural dimensions, managerial dimensions, and social dimensions) on Organizational Performance in Private Jordanian Universities. Results reveal that "73.5%" of the justified variance on organizational performance in private Jordanian universities can be accounted for Quality of Work-life dimensions (structural dimensions, managerial dimensions, and social dimensions).

As well, results showed that the aspects of quality of work life (structural dimensions, managerial dimensions, and social dimensions) have the most influence on financial perspective, which emphasized that "67.9%" of the justified variance on financial perspective for Quality of Work-life dimensions (structural dimensions, managerial dimensions, and social dimensions).

Consequently, results of the present study are consistent with conclusions of other searches which explored impact of quality of work life (QWL) on organizational performance. Such as Nasirizade, Amouzesi, Unesi, Vagharseyyedin, Biabani, & Bahrami study (2017); also it is consistent with study of Salajegheha, Chamanifard, Chamanifard & Nikpour (2015) which investigated the relation between quality of work life and organizational performance in the presence of demographic variables as a moderator in Foreign Exchange Units of Tejarat Bank; and it is consistent with the study by Nayak & Sahoo (2015) which searched the relationship between Quality of Work Life and organizational performance. It was found that a better quality of work of member of staff is an important leading factor for organizational performance of a health care.

This study is important because it deals with very important and critical service providers which are private universities. In this study performance illustrated from the quality of work life corner and found that it has great effect especially from the social side, therefore caring of lecturers and keeping the balance in their lives is crucial to have good performance and can be seen that the corner stone and the strong base for any service work is people and their needs, in the second level it was the managerial dimension and this is logic for any business to go forward and in the right direction, thus will be not completed until there is a good structure and effective organization.

This study also lightened that all perspectives of performance (*financial, customer, internal business process and learning and growth*) affected with quality of work life big deal. As a result quality of work life has to be to get effective and efficient performance in our universities.

The researchers recommend modifying the managerial dimension to get greater effect from Quality of work life on performance, therefore; spending more time and effort on developing, training, motivation through empowerment is essential for all workers.

From other side, performance from customer perspective is critical for all universities to continue and survive, thus; researchers recommend investigating which dimension of QWL is critical to maximize the effect of it.

8. Study's Limitations

The current study has set of limitations, which can be summarized in the followings:

- Accessing to primary data in Jordanian Private Universities was obtained through the researcher's individual relations and networks; therefore the whole results were supported by the data given by the respondents and are prone to the possible bias to the persons involved.
- The field of the current study is restricted toward the study's population (private universities in Amman. So, the results possibly will modify and vary if the study was applied to another spot as public universities, demographic settings or sector.
- The degree to which the purpose of the current study might be achieved was influenced by restrictions of time. Findings reflect the private Jordanian universities sector within a period of administrative and financial crisis.

References

- Abran, A., & Buglione, L. (2003). A multidimensional performance model for consolidating balanced scorecards. *Advances in Engineering Soft-ware*, 34, 339-349. [https://doi.org/10.1016/S0965-9978\(03\)00033-4](https://doi.org/10.1016/S0965-9978(03)00033-4)
- Aketch, J. R., Odera, O., Chepkuto, P., & Okaka, O. (2012). Effects of Quality of Work Life on Job Performance: Theoretical Perspectives and Literature Review. *Current Research Journal of Social Sciences*, 4(5), 383-388.
- Al-Khour, A., & Mohammed, S. M. (2010). *Improving Organizational Performance*. The Association on

- Employment Practices and Principles (AEPP) Eighteenth Annual International Conference 29 September – October 1, 2010 University of San Francisco, San Francisco, CA.
- Asgari, S. D., Haeri, A., & Jafari, M. (2017). Integration of Balanced Scorecard and Three-stage Data Envelopment Analysis Approaches. *Iranian Journal of Management Studies (IJMS)*, 10(2), 527-550. <https://doi.org/10.22059/ijms.2017.222588.672419>
- Atkinson, A. A., Kaplan, R. S., Matsumura, E. M., & Young, S. M. (2011). *Management Accounting, International Edition* (6th ed.). New Jersey, NJ: Pearson.
- Atkinson, A. A., Kaplan, R. S., & Young, S. M. (2007). *Management accounting* (5th ed.). New Jersey: Person Prentice Hall.
- Beloor, V., Nanjundeswaraswamy, T. S., & Swamy, D. R. (2017). Employee Commitment and Quality of Work Life – A Literature Review. *The International Journal of Indian Psychology*, 4(2), 176-188. <https://doi.org/18.01.040/20170402>
- Chib. (2012). Quality of Work Life and Organizational Performance Parameters at Workplace. *SEGi Review*, 5(2), 36-47.
- Chitu, A., & Opris, M. (2014). Importance of financial perspective indicators in Balanced Scorecard in a leasing company. *Theoretical and Applied Economics*, 21(8), 59-68.
- Covey, S. R. (2004). *The 8th Habit: From Effectiveness to Greatness*. UK: Simon & Schuster.
- Cunningham, J. B., & Eberle, T. (1990). A guide to job enrichment and redesign. *Personnel*, 67, 56-61.
- Daft, L. R. (2008). *Organizational Theory and Design* (8th ed.). Thomson Learning, USA.
- Hian, C. C., & Einstein, W. O. (1990). Quality of work Life (QWL): What can unions do? *SAM Advanced Management Journal*, 55(2), 17-22.
- Hosmani, A. P., Shambhushankar, & Bindurani, R. (2014). Study on Impact of Quality of Work Life on Job Performance amongst Employees of Secunderabad Division of South Central Railway. *Research Journal of Management Sciences*, 3(11), 8-11.
- Indumathy, R., & Kamalraj, S. (2012). A Study on Quality of Work Life among Workers with Special Reference to Textile Industry in Tirupur District-A Textile Hub. *International Journal of Multidisciplinary Research*, 2(4), 265-281.
- Islam, M. Z., & Siengthai, S. (2009). *Quality of work life and organizational performance: Empirical evidence from Dhaka Export Processing Zone*. Proceeding of ILO Conference on Regulating for Decent Work. International Labor Office: Geneva. Retrieved from https://www.researchgate.net/publication/311369555_
- Jain, Y., & Thomas, R. (2016). A study on quality of work life among the employees of a leading pharmaceuticals limited company of Vadodara district. *International J. of Applied Research*, 2(5), 926-934.
- Jones, G. R., George, J. M., & Hill, C. W. L. (2000). *Contemporary Management* (2nd ed.). Boston: McGraw-Hill.
- Kaplan, R. S., & Norton, D. P. (1992). The balanced scorecard - Measures that drive performance. *Harvard Business Review*, 70(1), 71-79.
- Kaplan, R. S., & Norton, D. P. (1995). The balanced scorecard measures that drive performance. *Harvard Business Review*, January.
- Kaplan, R. S., & Norton, D. P. (1996). *The balanced scorecard: Translating strategy into action*. Boston, MA: Harvard Business School Press.
- Kaur, A. (2016). Quality of Work Life. *International Journal of Engineering Science and Computing*, 6(7), 8305-83011.
- Knapp, K. R. (2001). The Balanced Scorecard: Historical Development and Context, As Developed by Robert Kaplan & David Norton. *Foundations of Management, Anderson University DBA*.
- Narayanamma, P. L., & Lalitha, K. (2016). Balanced Scorecard - The Learning & Growth Perspective. *Aweshkar Research Journal*, 22(2), 59-66.
- Nasirizade, M., Amouzeshe, Z., Unesi, Z., Vagharseyyedin, S., Biabani, F., & Bahrami, M. (2017). The Relationship between Quality of Work Life and Organizational Effectiveness among Hospital Nurses. *Mod Care Journal*, 14(1). <https://doi.org/10.5812/modernc.63815>

- Natarajan, P., & Vijayalakshmi, M. (2016). Employees' Awareness about Balanced Scorecard in Tata Consultancy Services LTD. Chennai. *International Journal of Research in Management, Science and Technology*, 6(11), 35-39.
- Nayak, T., & Sahoo, K. (2015). Quality of Work Life and Organizational Performance: The Mediating Role of Employee Commitment. *Journal of Health Management*, 17(3), 263-273. <https://doi.org/10.1177/0972063415589236>
- Nekouei, M. H., Othman, M., Masud, J., & Ahmad, A. (2014). Quality of Work Life and Job Satisfaction among employee in government organizations in IRAN. *Journal of Basic and Applied Scientific Research*, 4(1), 217-229.
- Patil, S. L., & Swadi, S.Y. (2014). Quality of work life: A review. *Indian Journal of Research*, 3(11), 146-148.
- Rahman, M. M., Abdul, M., Ali, N. A., Uddin, M. J., & Rahman, M. S. (2017). Employees' Retention Strategy on Quality of Work Life (QWL) Dimensions of Private Commercial Banks in Bangladesh. *Pertanika J. Soc. Sci. & Hum.*, 25(2), 647-662.
- Robbins, S. P. (1989). *Organizational Behavior Concepts, Controversies and Applications*. Angle wood Cliffs, NJ, Prentice Hall.
- Rose, R., Beh, L., Uli, J., & Idris, K. (2006). An analysis of quality of work life and career-related variables. *American Journal of Applied Sciences*, 3(2), 2151-2159.
- Salajegheh, S., Chamanifard, R., Chamanifard, S., & Nikpour, A. (2015). The Relationship between Quality of Work Life and Organizational Performance: The Moderating Role of Demographic Variables (A Case Study of Foreign Exchange Units of Tejarat Bank, Iran). *Asian Journal of Research in Business Economics and Management*, 5(9), 128-141. <https://doi.org/10.5958/2249-7307.2015.00178.4>
- Sekaran, U., & Bougie, R. (2010). *Research methods for business: A skill-building approach* (5th ed.). New York, NY: John Wiley & Sons Inc.
- Shrie, B., & Ashok, K. (2014). Impact of Organisational Culture (OC), Quality of Worklife (QWL) and Organisational Change (OCh) on Organisational Effectiveness (OE): A Literature Review. *International Journal of Advance Research in Computer Science and Management Studies*, 2(12), 247-250.
- Young, D. (1998, November). Score It a Hit. *CIO Enterprise Magazine* (Section 2). http://www.heac.org.jo/?page_id=651, Retrieved October 15, 2017.
- <http://www.mohe.gov.jo/en/pages/BriefMohe1.aspx>, Retrieved September 18, 2017.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).

Literature Review of Parenting Style to Support the Development of Adolescent Identity

Enung Hasanah¹, Zamroni¹, Achmad Dardiri¹, Setyabudi Indartono¹ & Supardi²

¹ Education Science, Post Graduate, Yogyakarta State University, Indonesia

² Social Science, Post Graduate, Yogyakarta State University, Indonesia

Correspondence: Enung Hasanah, Education Science, Post Graduate, Yogyakarta State University, Karang Malang No 1, Yogyakarta, Indonesia. Tel: 68-12-2696-1900. E-mail: enung.hasanah2016@student.uny.ac.id

Received: April 12, 2018

Accepted: April 24, 2018

Online Published: May 29, 2018

doi:10.5539/ass.v14n6p157

URL: <https://doi.org/10.5539/ass.v14n6p157>

Abstract

The purpose of this literature review is to identify the pattern of family care to support the development of adolescent identity. The results of the literature review show that the pattern of parenting that is able to optimize the identity of adolescents is authoritative parenting pattern. Parents are believed to be more democratic in communicating, giving adolescent independence to think and act about something that concerns their life, and put the youth as the center of family education.

Keywords: parenting, adolescent, self identity

1. Introduction

In the 21st century, deviation of adolescent behavior is still a complex problem that has not found a solution. Various adolescent negative behaviors, such as externalization actions (Bushment et al., 2016; Mahajan, 2010, Ormel et al., 2005; Cutulli et al., 2013), school gangs (Issurdat, 2011), bullying (Yen, 2010), and juvenile pregnancy cases (WHO, 2004), of which about 16 million adolescent girls give birth annually (WHO, 2014), have become a concern of the world community.

Youth behavior problems can't be separated from the influence of family parenting (Somer, 2010; Hann & Borek, 2001). The family is foremost environment in terms of behavioral development (Somer, 2010; O'Connor & Scott, 2007). Problematic families i.e lack of parental concern for children, parents who too often break their promises, overly harsh but inconsistent disciplinary planting, all of which are identified as risk factors for the development of social behavior problems of adolescent (Hann & Borek, 2001), especially in big cities.

Adolescence is a normative crisis, i.e. a normal phase of increased conflict, which comes about from uncertainty about their identity, or identity diffusion (Abbot, 2001). Self-identity is known as a predictor of adolescent behavior (Hamilton & White, 2008). Thus, the process of adolescent growth of determining identity is a very important part of their behavior development. It because the mistake in determining self identity cause deviation from teen social behavior (Mahajan, 2010; Hadisiwi & Suminar, 2013).

Self identity is a very complicated construct. There is no single consensus on what and how to self identify. Based on the psychosocial theory (Salkind, 2014) that self-identity (self-image in various social roles) is formed as a result of the interaction between basic biological needs and its disclosure as social actions. Other points of life span theory view (Santrock, 2011) show that self-identity is a self-portrait of a person included in this section is the identity of a career (job), political identity (conservative, liberal, or middle way), religious identity (spiritual beliefs of a person) single, married, or divorced), intellectual identity (achievement achieved), and sexual identity (whether heterosexual, homosexual, or bisexual). In adolescence is a period of sexual exploration and experimentation, sexual fantasies and reality, combining sexuality into one's identity. In the phase of adolescent, (Rawlins, 1992) identity is related to the image they feel and the image that people respond to and see through the various experiments and mistakes they make. It helps teenagers to understand themselves. Therefore, adult supports are needed to foster teenagers find their own identities in accordance with their natural nature.

Research on the effects of family care on youth output has been widely practiced in various countries, and is acknowledged by its correlation. Research conducted by Singh & Udainiya (2009) shows significant effects of

the type of family and gender on self-efficacy. The interaction between family type and gender was also found to be significant. The results of Tam et al. research, shows that authoritative parenting has a positive effect on adolescent development, especially self efficacy (Tam et al., 2012). Other research (Abrheim, 2014) showed that the style and practice of parenting and adolescent self-concept are closely related in teen psychosocial development. But, although there is broad consensus about the effects of childcare practices on adolescent identity development, many questions about what affects teens care patterns in each family remain unanswered. Especially the issue of variability in the effects of parenting as a function of the teen's cultural background for they identity development (Darling & Steinberg, 1993). This phenomenon encourages the need to explore how parenting can help teenagers build their own identity according to their potential from the adolescent's view.

2. Life Span Development Theory

Baltes, Reese, & Nesselroade (1997) states that the psychology of human lives development is needed to answer questions focused on describing, explaining, and modifying processes to produce the expected output. In Baltes's view, it is important to understand that human development is built on biological, sociocultural, and cooperative factors (Santrock, 2011). These three factors no one can monopolize in the process of adolescent development, but influence each other. This means that the development of adolescents is the result of interaction and cooperation between genetically derived factors/traits, social environment, and individual innate factors.

Physically, teenagers will experience a change (Santrock, 2011). Three things physical changes are puberty, brain changes, and sexuality. The changes that occur in adolescent boys or girls are characterized by the presence of puberty. However, it is difficult to show early and late puberty. But the changes in their height and weight, is the most visible sign of sexual maturation.

Santrock (2011) said that the development of the brain in adolescence tends to rapid growth. Adolescents have an increased ability to process information. But, despite advances in the development of the prefrontal cortex - the highest level of the frontal lobes involved in reasoning, decision making, and self-control, the prefrontal cortex is not completed until 18-25 years. While the amygdala (emotional chair) arrives earlier than the prefrontal cortex. So that although teenagers are able to have very strong emotions, their prefrontal cortex is not well developed to the point where they can control it. The change of adolescent's brain causes adolescents to enter a period of transition. At this time they tend to experience confusion in determining identity. Hence, (Rubia, 2000) the teens are more aggressive and always want to try new things.

Santrock (2011) described changes that take place in adolescents' relationships with their parents. The effectively monitoring on the adolescent's development is as a key aspect of the managerial role of adolescence parenting. Parents conduct adolescents' behavior control in supervising choice of social settings, activities, friends, and academic efforts. The adolescents' disclosure to parents about their whereabouts is linked to positive adolescent attitude. Adolescents tend to gain an autonomy from their parents. However many parents seem difficult to handle teen autonomy drives and manage them productively. The different perspectives of teenagers and their parents sometimes promote the parents expectation is delivered in a not appropriate way that in turn teenagers interpreted differently and vice versa. As a result there was a misunderstanding, which led to conflict among them. However, the increase of conflict can serve a positive developmental function to promote autonomy and identity.

3. Ki Hadjar Dewantara's Theory of Family Education for Teens

Ki Hajar Dewantara, known as the father of Indonesian education, has his own view of special education of family education for adolescents. In Dewantara's view, the family is the best place to conduct individual and social education (Dewantara, 1977). The ideal education is education that liberate the education process that seeks to help the child to grow as his nature, to be as the potential that he has. He insists that liberate education contains three things ie independent, not dependent on others, and self-regulating.

Adolescence is a period of transition from child to maturity, so that at this time matches the way of educating behavior (self discipline) and the experience of inner birth (*nglakoni*=doing, *ngroso*=feeling, and believing) (Dewantara, 1977). This means how to educate the right teenager is to let the teen decide what to do, allowing the teenagers to reflect on their own experiences, and need dialogue, not just be observed or arranged as a childhood. The concept is in line with Freire's statement (Freire, 2011) that dialogue is important. Without dialogue, there will be no communication, and without communication there will be no real education. Human dialogue must be based on sensitivity to the innate ability to find self identity

4. Baumrind Theory of Foster Parenting

Parenting style as a psychological construction is a standard strategy in parenting (Arulsubila & Subasree, 2016;

Kordi & Baharudin, 2010) are those who provide primary care to children. They may their biological parents, adoptive parents, grandparents, other families, or adult friends who protect, care for, and nurture children to be a good and successful in their life (Tomlinsom & Andina, 2015).

The relationship between parents and their children promotes a process of transformation of knowledge, attitudes and skills through direct and indirect interaction. It is a social process that aims to socialize as a form of parental responsibility to the child. Based on Baumrind's opinion, parents are responsible to contribute the development of character and ethical competence of their children through their socialization efforts (Baumrind & Thompson, 2002). Baumrind categorized parenting based on two dimensions of parenting behavior i.e. demandingness and responsiveness (Darling, N., & Steinberg, 1993; Bibi et al., 2013). Baumrind (1996) conceptualizes parenting into 3 forms, namely authoritative, authoritarian, and permissive parenting style. Authoritative parents guide children's activities in a rational, problem-oriented way. They encourage giving and taking verbal, sharing with children with reason for their policies, and asking for refutation when he refuses to adjust. Parents appreciate expressive and instrumental attributes, both volition and discipline. Whereas authoritarian parents try to shape, control and evaluate children's behavior and attitudes according to established standards of conduct, usually an absolute standard, motivated theologically and formulated by higher authorities. However, permissive parents try to behave helplessly, acceptor and affirmative toward the child's drives, desires, and actions. They consult children about policy decisions and provide explanations for family rules. Parents make few demands for household responsibilities and orderly behavior. They present itself to the child as a source for him to use as he wishes, not as an ideal for him to imitate, or as an active agent responsible for shaping or changing his ongoing or future behavior (Baumrind, 1996).

5. Parenting and Adolescent Self Identity

Life span development theory and Ki Hadjar Dewantara's Educational Theory assume that adolescence is a transition from childhood to adulthood. However those perspective have difference focus of the analysis. Life span theory uses an integrative approach and point of view in showing the characteristics of adolescents (puberty, brain changes, and sexuality), while Dewantara sees teenagers from the potential possessed character, mind, intellect, and physical mind which need to be developed comprehensively.

Those theories agree that the development of a teenager's identity, is the result of the interaction between natural talent and the process of parent/adult guidance. Hence, in the condition of teenagers who are all volatile and tend to full of desire to try new things in his life, the role of parents is still needed. Previous study found that the process of personality growth and identity formation in adolescence is greatly influenced by the quality of parent-child relationships (Arulsubila & Subasree, 2016).

How to educate teenagers is not the same as educating children. As it is said that adolescents already have the ability to think (Santrock, 2011), and it's time to do self-discipline (Dewantara, 1977), so it should be treated as the subject of his own life. Teens need to be given the opportunity to express their will and act according to their needs. Adolescents need an education that liberates and builds self-reliance.

The liberating substance of education is contained in a type of authoritative pattern (Baumrind, 1996; Bibi et al., 2013) where authoritative parents direct youth activities in a rational, problem-oriented way. Parents encourage communication, share with children using reason behind their policies, and ask for refutation when he refuses to conform (Baumrind, 1996). An authoritative parenting style prioritizes dialogue in parenting.

In authoritative parenting, adolescents act as educational subjects, so every teenager has to understand what he really wants. Teenagers must see themselves as being who has a natural desire and have an obligation to respect others, (White, 2010) the individual is responsible for defining his own life. Correspondingly, individuals are responsible for their own knowledge (Gutek, 1974). Various empirical evidence proves that authoritative parenting can develop adolescent identity, either developing self esteem (Sharma & Pandey, 2015), developing self-efficacy and well-being of adolescents (Sing & Udainiya, 2009; Tam et al., 2012), and Psychosocial Development of Adolescents (Solfema, 2013; Abrihiem, 2014; Allen et al., 1998).

In the process of building adolescent identity, authoritative parenting patterns prove to be the best. The key to the authoritative success of parenting is the mutual trust and respect between children and parents, cause according to Baumrind (1967) that in the Authoritative parenting styles tend to make teenagers happier, have good emotional and regulatory control, and have confidence in their ability to learn new skills. The indicator of mutual trust and respect in authoritative parenting is the existence of a democratic communication process between parents and their adolescents (Steinberg, 1991). Both teenagers and parents alike have the right to express their own opinions for decision-making. Parents continue to exercise behavioral control without intimidating, through a two-way communication process, showing affection, responsiveness, consistency, and commitment.

In summary, the link between life span theory, Dewantara theory, and Baumrind authoritative parenting theory about parenting that can help build adolescent identity can be seen in Figure 1 below:

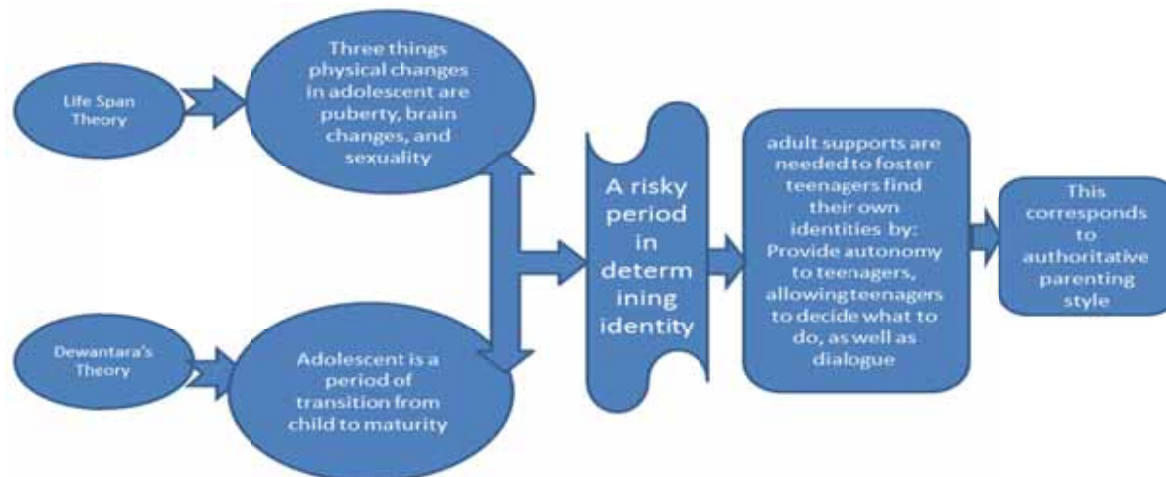


Figure 1. Parenting Style to Support the Development of Adolescent Identity

6. Acceptability of Authoritative Parenting in Asian Culture

In Asian cultures, teenagers are more required to succeed in school by their parents. Parents as well as children in Asian cultures have a strong belief that hard work in school will bring long-term benefits to Abbot (2001). That belief, adding to the burden on Asian teenagers because they have to accept the pressure to always excel from parents, must also meet the unrealistic expectations of their teachers. These conditions affect the process of familiarizing parents, family parenting, and expectations of parents to their children (Lynch & Hanson, 2003). The results of Kordi & Baharudin (2010) found that authoritative parenting style has the greatest influence on achievement of children. However, in this case there is an inconsistency between Asian and American students, where Asian students tend to be academically successful if their parents have an authoritarian parenting style. These findings suggest that for Asians, authoritative parenting style can possibly have a different cultural meanings.

7. Conclusion

In theory, it can be seen that how to take care of adolescents need a different approach with parenting children. Teenagers already have the ability to think and have their own desires about what he will accomplish in his life. To that end, parents (including teachers) need to understand the character of adolescents and be able to listen to what teenagers want.

In adolescence, conflicts between adolescents and the elderly tend to increase. Adolescence becomes an important part for children to gain freedom from parents as they learn something new in search of self identity. Therefore, the proper way to educate teenagers is that parents should give space for thinking and acting for teenagers as well as engaging in dialogue with them. Parents need to change the evaluation emphasis on adolescents about how close their behaviors approach their parents' wants and standards, move to a more open attitude, and make effective communication to find solutions. This parenting pattern is reflected in authoritative parenting that gives teens the freedom to think and act about something that concerns their lives, and to place young people as the center of family education. This is necessary to help teenagers to more easily determine their identity, according to their potential.

References

- Abbot, T. (2001). *Social and personality development*. New York: Routledge.
- Abrihiem, T. H. (2014). The role of parenting styles in psychosocial development of adolescents. *Business and Management Review*, 3(11), 47-52. Retrieved from <http://www.businessjournalz.org/bmr>.
- Allen, J. P., Moore, C., Kuperminc, G., & Bell, K. (1998). Attachment and adolescent psychosocial functioning. *Child Development*, 69(5), 1406-1419. <https://doi.org/10.2307/1132274>
- Arusubila, M., & Subasree, R. (2016). Parenting styles influencing personality development of catering students. *International Journal of Indian Psychology*, 4(1), 79.

- Baltes, P. B., Reese, H. W., & Nesselroade, J. R. (1997). *Life Span Developmental Psychology. Introduction to Research Methods*. Lawrence Erlbaum Associates, Publisher.
- Baumrind & Thompson. (2002). The ethics of parenting. In M. H. Bornstein (Ed.), *Handbook of parenting* (2nd ed., pp. 3-34). United States of America: Lawrence Erlbaum Associates, Inc.
- Baumrind, D. (1967). Child care practices anteceding three patterns of preschool behavior. *Genetic Psychology Monographs*, 75(1), 43-88.
- Baumrind, D. (1996). Effects of authoritative parental control on child behavior. *Child Development*, 37(4), 887-907. <https://doi.org/10.2307/1126611>
- Bibi, F., Chaudhry, A. G., Awan, E. A., & Tariq, B. (2013). Contribution of parenting style in life domain of children. *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, 12(2), 91-95.
- Bushman, B. J., Newman, K., Calvert, S. L., Downey, G., Dredze, M., Gottfredson, M., ... Webster, D. W. (2016). Youth violence: What we know and what we need to know. *American Psychologist*, 71(1), 17-39. <https://doi.org/10.1037/a0039687>
- Cutuli, J. J., Gillham, J. E., Chaplinc, T. M., Reivichd, K. J., Seligman, M. E. P., Gallopf, R. J., Abenavolig, R. M., & Freresh, D. R. (2013). Preventing adolescents' externalizing and internalizing symptoms: Effects of the Penn Resiliency Program. *The International Journal of Emotional Education*, 5(2), 67-79.
- Darling, N., & Steinberg, L. (1993). Parenting style as context: An integrative model. *Psychological Bulletin*, 113, 487-496. <https://doi.org/10.1037/0033-2909.113.3.487>
- Dewantara, K. H. (1977). *Ki hadjar dewantara: pemikiran, konsepsi, keteladanan, sikap merdeka. jilid I Pendidikan*. Yogyakarta: UST PRESS bekerjasama dengan Majelis Luhur Persatuan Tamansiswa.
- Freire, P. (2011). *Pendidikan kaum tertindas*. Penerjemah: (Tim Redaksi. Jakarta: LP3ES, 2011)
- Gutek, G. L. (1974). *Philosophical alternatives in education*. Ohio: Charles E. Merrill Publishing Company.
- Hadisiwi, P., & Suminar, J. R. (2013). Konstruksi sosial anggota geng motor di kota Bandung. *Jurnal Kajian Komunikasi*, 1(1), 1-10. Departemen Ilmu Komunikasi, Fakultas Ilmu Komunikasi, Universitas Padjadjaran. <https://doi.org/10.24198/jkk.v1i1.6026>
- Hamilton, K., & White, K. M. (2008). Extending the theory of planned behavior: the role of self and social influences in predicting adolescent regular moderate-to-vigorous physical activity. *Journal of Sport & Exercise Psychology*, 30, 56-74. Human Kinetics, Inc. <https://doi.org/10.1123/jsep.30.1.56>
- Hann, D., & Borek, N. (2001). *Taking stock of risk factors for child/youth externalising behaviour problems*. Dept. of Health and Human Services, Public Health Service, National Institutes of Health, National Institute of Mental Health.
- Issurdatt, S. (2011). *Gangs: A growing problem in schools*. Washington, DC 20002-4241. Social Workers.org
- Kordi, A., & Baharudin, R. (2010). Parenting attitude and style and its effect on children's school achievements. *International Journal of Psychological Studies*, 2(2). <https://doi.org/10.5539/ijps.v2n2p217>
- Lynch, & Hanson. (2001). *A guide for working with children and their Families: Developing cross-cultural competence* (3rd ed.). Brookes: Baltimore.
- Mahajan, S., Arora, A. K., Gupta, P., & Kapoor, S. S. (2010). Adolescent violence: an emerging challenge. *J Punjab Acad Forensic Med Toxicol*, 10(2), 97-100.
- O'Connor, T. G., & Scott, S. B. C. (2007). *Parenting and outcomes for children*. Joseph Rowntree Foundation.
- Ormel, J., Oldehinke, A. J., Referdinand, Chahartman, C. A., Dewinter, A. F., Venstra, R., ... Verhulst, C. (2005). Internalizing and externalizing problems in adolescence: general and dimension-specific effects of familial loadings and preadolescent temperament traits, *Psychological Medicine* 35, 1825-1835. Cambridge University Press.
- Rawlins, W. K. (1992). Friendship matters: Communication, dialectics, and life course. *Aldine de Gruyter*. New York. <https://doi.org/10.1017/S0144686X00000143>
- Ries, F. (2012). Self-identity as a component of the Theory of Planned Behaviour in predicting physical activity. *European Physical Education Review*, 18(3), 322-334. <https://doi.org/10.1177/1356336X12450792>
- Rubia, K., Overmeyer, S., Taylor, E., Brammer, M., Williams, S. C., & Simmons, A. (2000). Functional frontalisation with age: mapping neurodevelopmental trajectories with fMRI. *Neurosci Biobehav Rev*, 24(1),

- 13-19. [https://doi.org/10.1016/S0149-7634\(99\)00055-X](https://doi.org/10.1016/S0149-7634(99)00055-X)
- Salkind, N. J. (2014). *An introduction to theories of human development*. CA: Sage Publication, Inc.
- Santrock, J. W. (2011). *Life-span development* (13th ed.). New York: McGraw-Hill.
- Sharma, G., & Pandey, N. (2015). Parenting styles and its effect on self-esteem of adolescents. *The International Journal of Indian Psychology*, 3(1), 7.
- Sing, B., & Udainiya, R. (2009). Self-efficacy and well-being of adolescents. *Journal of the Indian Academy of Applied Psychology*, 35(2), 227-232.
- Smetana, J. G. (2011). *Adolescents, families, and social development: How teens construct their worlds*. Malaysia: Toppan Best-set Premedia Limited.
- Solfema. (2013). Pengasuhan orangtua, budaya sekolah, budaya masyarakat, dan empati anak usia remaja. *Jurnal Ilmu Pendidikan*, 19(2), 149-154.
- Sommer, K. L. (2010). *The relationship between parenting styles, parental reading involvement, child behavior outcomes, child classroom competence, and early childhood literacy*. Faculty of the Graduate College of the Oklahoma State University in partial fulfillment of the requirements for the Degree of Master of Science.
- Steinberg, L., Mounts, N. S., Lamborn, S. D., & Dornbusch, S. M. (1991). Authoritative parenting and adolescent adjustment across varied ecological niches. *Journal of Research on Adolescence*, 1(1), 19-36.
- Tam, C.-L., Chong, A., Kadirvelu, A., & Khoo, Y.-T. (2012). Parenting styles and self-efficacy of adolescents: malaysian scenario. *Global Journal of Human Social Science Arts & Humanities*, 12(14), 19-25.
- Tomlinson, H. B., & Andina, S. (2015). Parenting education in Indonesia: Review and recommendations to strengthen programs and systems. *World Bank Studies*. Washington, DC: World Bank. <https://doi.org/10.1596/978-1-4648-0621-6>
- White, J. (2010). *The aims of education restated*. London and New York: Taylor & Francis e-Library.
- WHO. (2014). *Adolescent pregnancy*. Retrieved from <http://www.who.int/reproductivehealth>
- WHO. (2004). *Adolescent Pregnancy*. Department of Child and Adolescent Health and Development World Health Organization. Geneva.
- Yen, C. F. (2010). School bullying and mental health in children and adolescents. *Taiwanese Journal of Psychiatry (Taipei)*, 24(1), 3-13.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).

Reviewer Acknowledgements

Asian Social Science wishes to acknowledge the following individuals for their assistance with peer review of manuscripts for this issue. Their help and contributions in maintaining the quality of the journal are greatly appreciated.

Asian Social Science is recruiting reviewers for the journal. If you are interested in becoming a reviewer, we welcome you to join us. Please find the application form and details at <http://recruitment.ccsenet.org> and e-mail the completed application form to ass@ccsenet.org.

Reviewers for Volume 14, Number 6

Ambrin Faraz Masood, Montana State University Billings, USA

Ana Castro Zubizarreta, University of Cantabria, Spain

Chi Hong Nguyen, Can Tho University, Vietnam

Du Shu-shu, East China Normal University, China

Kankana De, Vidyasagar University, India

Kishore Dere, India

Mohammad Abdollahi-Guilani, Buein Zahra Technical University, Iran

Nipapan Jentsantikul, Nakhon Pathom Rajabhat University, Thailand

Ozgur Demirtas, Inonu University, Turkey

Tariq Tawfeeq Yousif Alabdullah, University of Basrah, Iraq

Call for Manuscripts

Asian Social Science is a peer-reviewed journal, published by Canadian Center of Science and Education. The journal publishes research papers in the fields of arts, sociology, politics, culture, history, philosophy, economics, management, education, statistics, laws, linguistics and psychology. The journal is available in electronic form in conjunction with its print edition. All articles and issues are available for free download online.

We are seeking submissions for forthcoming issues. All manuscripts should be written in English. Manuscripts from 3000–8000 words in length are preferred. All manuscripts should be prepared in MS-Word format, and submitted online, or sent to: ass@ccsenet.org

Paper Selection and Publishing Process

- a) Upon receipt of a submission, the editor sends an e-mail of confirmation to the submission's author within one to three working days. If you fail to receive this confirmation, your submission e-mail may have been missed.
- b) Peer review. We use a double-blind system for peer review; both reviewers' and authors' identities remain anonymous. The paper will be reviewed by at least two experts: one editorial staff member and at least one external reviewer. The review process may take two to three weeks.
- c) Notification of the result of review by e-mail.
- d) If the submission is accepted, the authors revise paper and pay the publication fee.
- e) After publication, the corresponding author will receive two hard copies of the journal, free of charge. If you want to keep more copies, please contact the editor before making an order.
- f) A PDF version of the journal is available for download on the journal's website, free of charge.

Requirements and Copyrights

Submission of an article implies that the work described has not been published previously (except in the form of an abstract or as part of a published lecture or academic thesis), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the authorities responsible where the work was carried out, and that, if accepted, the article will not be published elsewhere in the same form, in English or in any other language, without the written consent of the publisher. The editors reserve the right to edit or otherwise alter all contributions, but authors will receive proofs for approval before publication.

Copyrights for articles are retained by the authors, with first publication rights granted to the journal. The journal/publisher is not responsible for subsequent uses of the work. It is the author's responsibility to bring an infringement action if so desired by the author.

More Information

E-mail: ass@ccsenet.org

Website: <http://ass.ccsenet.org>

Paper Submission Guide: <http://submission.ccsenet.org>

Recruitment for Reviewers: <http://recruitment.ccsenet.org>

The journal is peer-reviewed
The journal is open-access to the full text
The journal is included in:

Australian Business Deans Council
Google Scholar
Lockss
Open J-Gate
PKP Open Archives Harvester

RePEc
SHERPA/RoMEO
The Excellence in Research for Australia
Ulrich's
Universe Digital Library

Asian Social Science Monthly

Publisher	Canadian Center of Science and Education
Address	1120 Finch Avenue West, Suite 701-309, Toronto, ON., M3J 3H7, Canada
Telephone	1-416-642-2606
Fax	1-416-642-2608
E-mail	ass@ccsenet.org
Website	ass.ccsenet.org

