

MODELLING BASIC NUMERACY LEARNING APPLICATION FOR CHILDREN WITH AUTISM: A PILOT STUDY

Muhamad Fairus Kamaruzaman ¹, Harrinni Mohd Noor ², Mustafa Halabi Hj Azahari ³

¹Formgiving Design Research Group, Faculty of Art & Design,
Universiti Teknologi MARA
40450 Shah Alam, Selangor, Malaysia

²Faculty of Education, Universiti Teknologi MARA,
42300 Puncak Alam, Selangor, Malaysia

³Faculty of Art & Design, Universiti Teknologi MARA,
42300 Puncak Alam, Selangor, Malaysia

¹Email: muhamadfairus@salam.uitm.edu.my

Received: 24 January 2017

Accepted: 8 November 2017

ABSTRACT

Children with autism have various difficulties in developing cognitive abilities and attaining new knowledge. However, it is essential they obtain a competence approach in order to achieve independence. The state of art has shown that a significant aspiration for children with autism is to become independent. Part of attaining independence includes achieving skills that allow for self-determination and involvement in social activities. Hence, it is essential for every child with autism to acquire basic numeracy skills to enhance their self-determination. With the emergence of assistive learning technology such as smartphones, PDAs, tablets, and laptops with touchscreen features, there are extensive ways to improve the quality of life for children with autism. This study, therefore, aims to explore the basic numeracy skills-based dynamic visual for children with autism that will possibly be of assistance to parents, educators, and facilitators in the development of digital assistive learning tools to meet the requirements of children with autism in learning environments. From the proposed theoretical framework, an application was designed and tested with several children with autism. Based on observations from the experiment, the users showed positive attitudes towards the outcome of the application.

Keywords: *children with autism, assistive learning technology, apps, numeracy, education*

INTRODUCTION

Autism spectrum disorders (ASDs) are a group of developmental disabilities characterised by impairments in social interaction and communication and by restricted, repetitive, and stereotyped patterns of behaviour (Association, 2000). Symptoms are typically apparent before the age of three. Since the early 1990s, elevated public concern about continued reported increases in the number of children receiving services for ASDs and reports of higher-than-expected ASD prevalence estimates have underscored the need for the systematic public health monitoring of ASDs (Rice *et al.*, 2007). Autism symptoms can be present in a variety of combinations and may accompany other disabilities. Some individuals with autism have normal levels of intelligence, although most individuals with autism have some level of intellectual disability, ranging from mild to severe. This range is often referred to as high-functioning autism to low-functioning autism. Autism is a life-long developmental disability that prevents society from understanding what people with autism see, hear, and otherwise sense. Autism counts differently when compared with typically developing individuals (Ingvarsson & Hollobaugh, 2010). Those with autism typically develop differently from other individuals in their counting skills by having a slower reaction time when naming quantities, a later development of sequencing skills and recalling positions, and no benefit from recognising a canonical placement of dots. The exemplary development of number knowledge, especially counting skills and the working memory is crucial for accumulated brain development. Hence, children with autism were believed to calculate in a different way when it comes to measuring up to normal emergent individuals (Kamaruzaman, Rahman, Abdullah, Anwar, 2013; Wehmeyer *et al.*, 2012). Characteristically raising these individuals need special attention and special goals when it comes to their education as this disability may affect their level of self-determination.

Previous studies have found that children with autism prefer instructions delivered through digital devices such as tablets (Ayres, Mechling & Sansosti, 2013; Pellicano, 2010) while the skilled application of assistive learning technology may increase many areas of independence for them and provide support for their lack in psychomotor skills. It is believed that the bright screen and interactivity of an assistive touch-screen applications learning technology has made the device much more attractive.

The assistive learning technology will complement the conventional method of learning as it certainly can provide a reliable level of predictability, from the device's touch response to the calm, steady voice emitted from the device when children with autism explore basic numeracy knowledge. This allows children with autism not only to display emotion and other personal aspects of calculation, but also answer questions and work together with the teacher, instructor, and course material. This research may result in a better alternative and be useful for children with autism as they develop their motor skills. Since basic numeracy skill is essential in one's life to cope with the surrounding world, a touch-screen-based device with an application for basic counting skill has been developed in this research to support children with autism in their learning environment, independence, and quality of life.

SIGNIFICANCE OF STUDY

This study provides opportunities for new knowledge in the learning styles of children with autism, especially in mathematics, and to foster academic and self-determination capabilities. It is also believed that these children will probably share their understanding of the application and basic numeracy with their peers both within and outside the classroom.

LITERATURE REVIEW

Children with autism have a psycho-educational profile that is different from typically developing children. Studies show that there may be deficits in many cognitive functions, yet not all are affected. Though there may be deficits in complex abilities; nevertheless, the simpler abilities in the same area may be intact. Some children with autism have stronger abilities in the areas of rote memory and visual-spatial tasks than they have in other areas (Cohen & Sloan, 2007). Children with autism also often display other kinds of visual-spatial talents, such as putting puzzles together, and perform well at spatial, perceptual, and matching tasks. Some may be able to recall simple information but have difficulty recalling more complex information (Grandin, 2011). Yet some others perform at superior levels on 'local' visual-spatial tasks that require finding parts within wholes. The local processing

tasks on which children with autism excel include the Embedded Figures Task (Carmo *et al.*, 2016; Edgin & Pennington, 2005) in which one must find a small part hidden in a larger pattern, and the block design task (Pellicano, Maybery, Durkin, & Maley, 2006), in which one must use blocks to copy a two-dimensional pattern. Strength in visual-spatial skills has been described in personal accounts of children with autism.

Apart from visual-spatial skills, these children can easily learn and remember information that is presented in a visual format (Grandin & Panek, 2013; Mukerji, Motttron & McPartland, 2013) often demonstrating essential strengths in concrete thinking, rote memory, and understanding of visual-spatial relationships, but have difficulties in abstract thinking, social cognition, communication, and attention (Carnahan, Musti-Rao, & Bailey, 2009). Visual graphics and written cues can often help them learn, communicate, and develop self-control (Rani, Rahman & Kamaruzaman, 2015). Visual game therapy however needs specific game design that incorporates deep study on target users, which have often been overlooked (Alankus & Kelleher, 2012). One of the advantages of using mobile game-based learning is that children or adolescents can practice it for as long as they need to process the information. This technology has enriched, motivated, and empowered the human mind (Kamaruzaman & Zainol, 2012; Rani, Zainol, & Kamaruzaman, 2015). According to Rani, Yusoff, Azman and Kamaruzaman (2015) by using mobile game-based learning assistance, the individual learns to emphasise and concentrate on the message.

THE COUNTING MODEL OF INSTRUCTION

Various counting patterns have been developed in the past thirty years. Based on Schaeffer, Eggleston, and Scot's (1974) counting model, there are three steps required for the acquisition of counting. Firstly, children have to obtain knowledge in counting words sequence. Secondly, the children should learn enumeration, which is the aptitude to point to and calculate each object. Finally, children should learn the cardinality rule which understands that the last number they count in a particular set represents the number in the set.

THE COUNTING PRINCIPLES

Counting is one of the earliest and most essential skills for every child to learn in order to gain self-reliance. Scholars have recommended that learning basic numeracy and calculation is an important element in the enhancement of number perception (Kim & Cameron, 2016). Additionally, it has been documented that counting skills are essential prerequisites that can lead to an independent adult life. It is believed that counting skills develop in a hierarchal approach according to five most important principles (Gallistel & Gelman 1992). The first three principles involve how children count (process), the fourth principle deals with what to count (explanation), and lastly, it involves a combination of the features of the other four principles. It consists of the one-to-one principle; the constant classify theory; the cardinality theory; the conceptual theory; and the order inconsequence theory. Table 1 summarises the principles of counting as described by Gallistel and Gelman (1992) in Preverbal and verbal counting and computation.

Table 1: Gallistel and Gelman's Principles of Counting

Principle	Description
One to One	Items are identified one by one with a name given to each one.
Stable Order	The tags used in counting are arranged in a fixed order.
Cardinality	Final tag counted represents the total number of items in the set.
Abstraction	The counting procedure can be applied to all kinds of things whether concrete or mental.
Order Irrelevance	Items can be counted in any order so long as each item is tagged once.

More and more special educational needs children are using technological devices to carry out tasks and activities (Muñoz, Barcelos, Noël & Kreisel, 2012). There has been a variety of applications developed for use by children with autism in the past few years. Many applications were designed as an instructional tool to teach children with autism the skills they need in order to enhance their self-determination. It has been found that the use of such applications was well received by children with autism and incorporated into the regular activities of their school. In this

research paper, a numeracy design learning application was developed to support basic counting skill for children with autism. Since children with autism have a psycho-learning outline that varies from typical children, there may be countless insufficiencies in their cognitive tasks, though not all (Kamaruzaman, Rahman, Abdullah, Anwar, 2013). Compared to typical children, children with autism count up in a different way (Hasnah Toran, 2013; Torii, Ohtani, Niwa, Yamamoto, & Ishii, 2012), differing from characteristically emergent development by a slower consequence moment in time when inaugurating figures; a later maturity of series dexterities and evoking arrangements, and no advantage from identifying a canonical position of marks. They however have the talent to show other kinds of visual and spatial abilities such as composing puzzles and the capability to accomplish spatial, perceptual and mix match assignments.

Experts believe that children with autism can understand through visual means. According to Kamaruzaman and Azahari (2014), Munoz-Soto *et al.* (2016) and Kamaruzaman, Nor, and Azahari (2016) some children with autism may easily learn and remember information that is presented in a visual format. The major advantage of using infographic supports is that they could be used everywhere and anytime to process information. In developing a design application architecture that is more practical and usable, it is vital to look closely into user modelling. It is believed that works about usability and user characteristics help shape how the end user interacts with the application system (Zhang, Carey, Te'eni, & Tremaine, 2004). Kamaruzaman *et al.* (2013) believe that the existing framework should incorporate the counting principles outlined by Gallistel and Gelman (1992) as a basis.

RESEARCH DESIGN DEVELOPMENT

Five main phases are implied in developing the autistic education application design model. The earliest stage comprises children with autism's issues of learning how to count, objectives, possibility, and lifelong learning environment. The following stage forms the outline of the design application which includes creating the mood board, storyboard, and prototype model. This model will also look into certain elements and aspects of children with autism's user interface, dynamic visual, and contents. The third phase

focuses on building the contents and materials based on the earlier phases. Next, the experiment stage comprises testing and analysing the prototype with children with autism. Autism experts believe that in ensuring the success of the investigation, the instructor, mentor, and parents will need to run the application with the children with autism in their natural atmosphere. A distance observation session was used and these children's behaviour were recorded and analysed (Gallistel & Gelman, 1992). It is also believed that the natural atmosphere plays a dynamic role in determining the children's capacity to produce discerning responses. Any issues and matters that arise during this phase will be identified and documented. The final stage comprises of compiling data and feedback from the instructor, mentor, and parents of participating children with autism about the numeracy design learning application.

USER INTERFACE DESIGN APPLICATION FOR CHILDREN WITH AUTISM

The Content Application

The numeracy interface design learning application was designed according to the needs of children with autism (M. Kamaruzaman & Zainol, 2012). The numeracy learning application consists of basic numbering information, number recognition, and drag and drop and drag and match numbering games. The languages used in this numeracy learning application are English and Malay (Bahasa Malaysia) as they are the most common languages used by children with autism in Malaysia. The contents of this application were divided into two parts: learning to count and numbering exercises. All the segments' contents were adapted and aligned with the Integrated Curriculum for Learning Disabilities issued by Ministry of Education Malaysia.

The Development of the Basic Counting Application

According to Gallistel and Gelman (1992), designing assistive learning systems for children with autism should anticipate existing limitations. The first stage is the analysis phase, where the main purpose was to consider all factors that are related to the project and how to produce a desirable result.

The investigation involved several children with autism. To comprehend the needs of the children with autism, and to identify the issues and purpose for the application, interviews were held with the instructor, mentor, and parents at the onset of the project. Since the goal of the investigation was to develop a prototype that focuses on the method of learning how to count, information gathered in the analysis phase was used to develop a hypothetical design of the application. The primary design of the application needs to emphasise the practicality and usability of the application with testing being the key objective. A mood board and a storyboard were created to identify the interface design of the application. The visual layout has been delicately thought out to ensure that the overall application is pleasurable and easy to use. Aspects such as the children with autism's skill and ability to use the assistive learning technology such as a tablet, Smartphone, and computer were taken into consideration. Dynamic visual elements such as audio, video, animation, text, and graphics were included in the design to enrich the application.

Numeracy Skills Learning Application Experiment with Autism Children

A total of 15 children with autism from the Klang Valley, Selangor, Malaysia had participated in this research. They were selected by the Education Planning and Research Division (EPRD), Ministry of Education (MOE) Malaysia in collaboration with Selangor Education Department due to the specific area of research in Special Education. Two primary schools with integrated special education programmes (PPKI) in Selangor, Malaysia participated in the study. All children with autism were protected by agreements with their school principal to ensure that the protocol in research ethics has been followed accordingly (REC: 600-IRMI (5/1/6)).

Testing of the prototype was conducted in the participants' natural surroundings and environment as it is important to make them feel 'natural and relaxed' (Hood Mohamad Salleh, 2012). The experiment was led and guided by the children's respective teachers and instructors who had been briefed on the structure as well as the configuration of the application, its user interface, looks and feels, and most importantly its practicality and usability for children with autism's self-development in understanding basic numeracy by using the assistive learning technology.

Based on the distance observation and teachers' feedback, most of the participating children were found to be fond of and had enjoyed using the application. As a learning tool, the application will provide support for learning basic numbers for children with autism both within and outside the classroom beyond normal classroom instructions. Table 2, shows the different outcomes.

Table 2: Numeracy Result Experimentation towards Children with Autism Learning Development

No of Children with Autism	Age	Numeracy Skill Learning Application									
		Ability to understand basic numeracy skill		Cognitive Level				Children with Autism Response Psychomotor Level	Psychomotor Level		
		Slow	Poor	Modest	Good	Excellent			Low	Medium	High
1	7	Yes	✓					Blur	✓		
2	6	Yes		✓				Confuse	✓		
3	8	Yes	✓					Low	✓		
4	7	Yes		✓				Uncertain	✓		
5	6	Yes			✓			Skepticism	✓		
6	6	Yes			✓			Severe	✓		
7	7	Yes			✓			Enjoy	✓		
8	6	Yes				✓		Connect	✓		
9	8	Yes					✓	Determine		✓	
10	7	Yes			✓			Enthusiastic		✓	
11	8	Yes			✓			Hyper		✓	
12	7	Yes			✓			Inspire		✓	
13	9	Yes				✓		Intense		✓	
14	6	Yes				✓		Passionate		✓	
15	8	Yes				✓		Extreme		✓	

Note: Age reflects participant's age at the time of the experiment.

Numeracy Learning Design Application Screenshots

Figure 1 until Figure 4, are print screens on several existing activities in the numeracy learning skill design application.

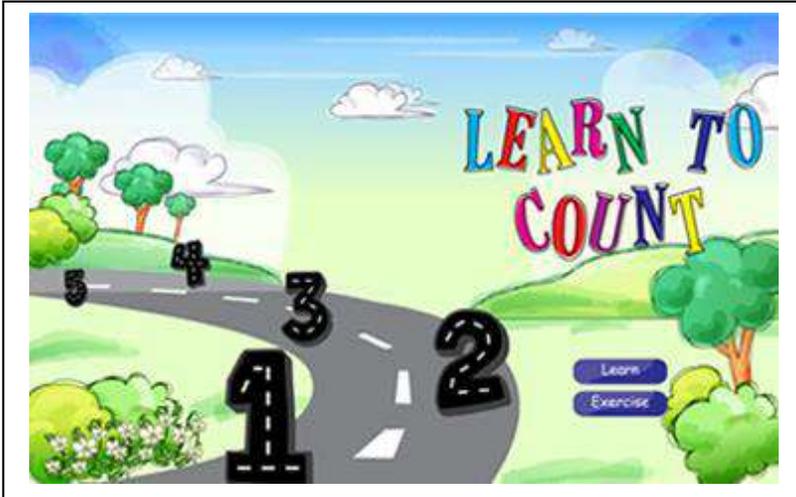


Figure 1: Main page of Numeracy Learning Design Application Screen

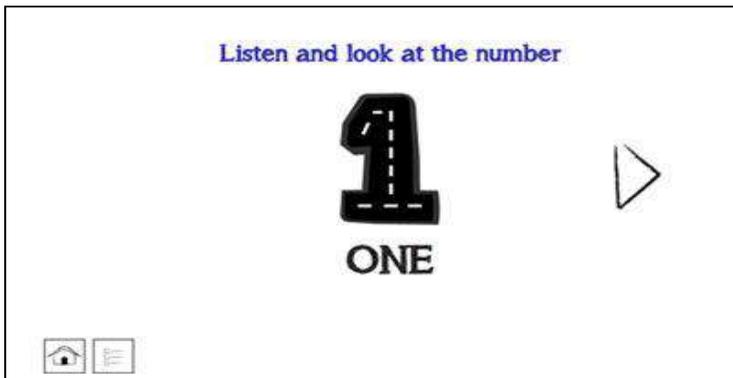


Figure 2: Example of number one in basic numeracy learning skill screen page

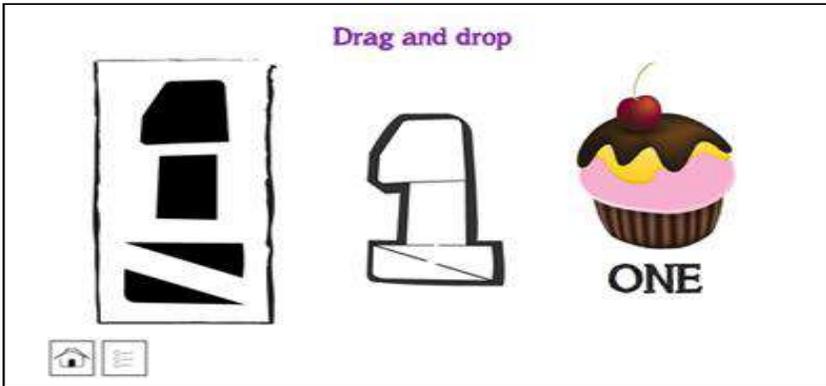


Figure 3: Example of Drag and Drop on Number One in Numeracy Learning Skill Application Screen Page



Figure 4: Example of Joining the Dots on Number One in Numeracy Learning Skill Application Screen Page

FINDINGS

It is relevant to note that results of the experiment indicated that children with autism were attracted by the application. The attraction had led them to eventually spend more time on the numeracy application; practising and doing exercises while exploring their idealistic conceptions beyond the logical perception as well as to attain their learning interests and achieve self-independence.

CONCLUSION

As the population of children with autism increases it becomes more pressing for parents and educators to have better understanding of their special needs, notably in the area of learning and self-independence. This research provides support for understanding such needs. Results from the study show that almost all of the teachers and instructors who had participated agree that using assistive learning technology will enhance and enrich children with autism's state of mind and inspire them to acquire new knowledge independently.

This research is a progressive work on basic numeracy learning application which is a part of a comprehensive numeracy learning design application. As soon as the comprehensive numeracy learning design application is ready, it will be tested again to establish the practicality and usability of the model. It is also relevant to note that it is possible to use the application in psychoanalysis to enhance children with autism's independence, lifelong learning, and quality of life.

ACKNOWLEDGEMENT

This research was approved by the local Research Ethics Committee, Universiti Teknologi MARA (UiTM) and Ministry of Education, Malaysia. This project was funded by UiTM under the LESTARI grant scheme. The authors also would like to thank Faculty of Art & Design, UiTM and Research Management Centre, UiTM for the administrative support.

REFERENCES

- Alankus, G., & Kelleher, C. (2012, May). *Reducing compensatory motions in video games for stroke rehabilitation*. Paper presented at the Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, Ausin, Texas.
- Association, A. P. (2000). *Diagnostic criteria from dsm-iv-tr*: American Psychiatric Pub.

Ayres, K. M., Mechling, L., & Sansosti, F. J. (2013). The use of mobile technologies to assist with life skills/independence of students with moderate/severe intellectual disability and/or autism spectrum disorders: Considerations for the future of school psychology. *Psychology in the Schools, 50*(3), 259-271. DOI: 10.1002/pits.21673.

Carmo, J. C., Souza, C., Gonçalves, F., Pinho, S., Filipe, C. N., & Lachmann, T. (2016). Effects of categorical representation on visuospatial working memory in autism spectrum disorder. *Journal of Clinical and Experimental Neuropsychology, 39*(2), 1-11. <http://dx.doi.org/10.1080/13803395.2016.1207754>.

Carnahan, C., Musti-Rao, S., & Bailey, J. (2009). Promoting active engagement in small group learning experiences for students with autism and significant learning needs. *Education and Treatment of Children, 32*(1), 37-61. DOI: 10.1353/etc.0.0047.

Cohen, M. J., & Sloan, D. L. (2007). *Visual Supports for People with Autism: A Guide for Parents and Professionals*. United States of America: Woodbine House.

Edgin, J. O., & Pennington, B. F. (2005). Spatial cognition in autism spectrum disorders: Superior, impaired, or just intact? *Journal of Autism and Developmental Disorders, 35*(6), 729-745. DOI: 10.1007/s10803-005-0020-y

Gallistel, C. R., & Gelman, R. (1992). Preverbal and verbal counting and computation. *Cognition, 44*(1), 43-74. [https://doi.org/10.1016/0010-0277\(92\)90050-R](https://doi.org/10.1016/0010-0277(92)90050-R).

Grandin, T. (2011). *The Way I See It: A Personal Look At Autism & Asperger's*. United States of America: Future Horizons.

Grandin, T., & Panek, R. (2013). *The Autistic Brain: Thinking Across the Spectrum*. New York: Houghton Mifflin Harcourt.

Hasnah Toran, S. B., Fadliana Chiri. (2013). *Siri Pendidikan Autisme: Pengajaran Berstruktur*. Bangi: UKM Press.

- Hood Mohamad Salleh, H., Zaharatul Sophia Mohamed Amir Abas & Aishah Mohamed Yusoff. (2012). *Do You Know Autism?* Bangi: UKM Press.
- Ingvarsson, E. T., & Hollobaugh, T. (2010). Acquisition of intraverbal behavior: Teaching children with autism to mand for answers to questions. *Journal of Applied Behavior Analysis*, 43(1), 1-17. doi: 10.1901/jaba.2010.43-1.
- Kamaruzaman, M., & Zainol, I. (2012, December). *Behavior response among secondary school students development towards mobile learning application*. Paper presented at the 2012 IEEE Colloquium on Humanities, Science and Engineering (CHUSER, Sabah. doi: 10.1109/CHUSER.2012.6504381.
- Kamaruzaman, M. F., Rahman, S.H.A., Abdullah, K.Z., Anwar, R. (2013, April). *Conceptual framework study of basic counting skills based dynamic visual architecture towards autistic children's development*. Paper presented at the 2013 IEEE Business Engineering and Industrial Applications Colloquium (BEIAC), Langkawi. doi:10.1109/BEIAC.2013.6560108.
- Kamaruzaman, M. F., Azahari, M.H.H. (2014, September). *Form design development study on autistic counting skill learning application*. Paper presented at the 2014 International Conference on Computer, Communications, and Control Technology (I4CT), Langkawi. Doi: 10.1104/I4CT.2014.6914148.
- Kamaruzaman, M. F., Nor, H.M., Azahari, M.H.H. (2016). Using touchscreen technology to support basic numeracy learning process for high functioning children with autism. *Turkish Online Journal of Educational Technology*, 2016(July) pp. 632-639.
- Kim, H., & Cameron, C. E. (2016). Implications of Visuospatial Skills and Executive Functions for Learning Mathematics: Evidence From Children With Autism and Williams Syndrome. *AERA Open*, 2(4), doi:10.1177/2332858416675124.

- Mukerji, C., Mottron, L., & McPartland, J. C. (2013). *Enhanced Perceptual Functioning Encyclopedia of Autism Spectrum Disorders*. New York: Springer. doi:10.1007/978-1-4409-1698-3.
- Munoz-Soto, R., Becerra, C., Noël, R., Barcelos, T., Villarroel, R., Kreisel, S., & Cambor, M. (2016, October). *Proyect@ matemáticas: A learning object for supporting the practitioners in autism spectrum disorders*. Paper presented at the 2016 XI Latin American Conference on Learning Objects and Technology (LACLO). San Carlos, Costa Rica. DOI: 10.1109/LACLO.2016.7751760.
- Muñoz, R., Barcelos, T., Noël, R., & Kreisel, S. (2012). *Development of software that supports the improvement of the empathy in children with autism spectrum disorder*. Paper presented at the 2012 31st International Conference of the Chilean Computer Science Society. Valparaiso, Chile. DOI: 10.1109/SCCC.2012.33.
- Schaeffer, B., Eggleston, V. H., & Scott, J. L. (1974). Number development in young children. *Cognitive Psychology*, 6(3), 357-379. [https://doi.org/10.1016/0010-0285\(74\)90017-6](https://doi.org/10.1016/0010-0285(74)90017-6).
- Pellicano, E. (2010). Individual differences in executive function and central coherence predict developmental changes in theory of mind in autism. *Developmental psychology*, 46(2), 530. doi: 10.1037/a0018287.
- Pellicano, E., Maybery, M., Durkin, K., & Maley, A. (2006). Multiple cognitive capabilities/deficits in children with an autism spectrum disorder: "Weak" central coherence and its relationship to theory of mind and executive control. *Development and psychopathology*, 18(1), 77. DOI:10.1017/S0954579406060056.
- Rani N.M., Rahman S.H.A., Kamaruzaman M.F. (2015) Color Cognition Framework for Autistic Children Development. In: Hassan O., Abidin S., Anwar R., Kamaruzaman M. (eds) Proceedings of the International Symposium on Research of Arts, Design and Humanities (ISRADH 2014). Singapore: Springer. https://doi.org/10.1007/978-981-287-530-3_47.

- Rani N.M., Yusoff M.F., Azman F.Z.R., Kamaruzaman M.F. (2015) The Role of Digital Educational Game Design Learning Environment: An Empirical Study. In: Hassan O., Abidin S., Anwar R., Kamaruzaman M. (eds) *Proceedings of the International Symposium on Research of Arts, Design and Humanities* (ISRADH 2014). Singapore: Springer. https://doi.org/10.1007/978-981-287-530-3_14.
- Rani N. M, Zainol I.H., Kamaruzaman M.F. (2015) Empirical Study on Game-Based Learning Phenomenon Through Mobile Design Technology. In: Hassan O., Abidin S., Legino R., Anwar R., Kamaruzaman M. (eds) *International Colloquium of Art and Design Education Research* (i-CADER 2014). Singapore: Springer. https://doi.org/10.1007/978-981-287-332-3_20
- Rice, C. E., Baio, J., Van Naarden Braun, K., Doernberg, N., Meaney, F. J., & Kirby, R. S. (2007). A public health collaboration for the surveillance of autism spectrum disorders. *Paediatric and perinatal epidemiology*, 21(2), 179-190. DOI:10.1111/j.1365-3016.2007.00801.x
- Torii, I., Ohtani, K., Niwa, T., Yamamoto, A., & Ishii, N. (2012, January). *Augmentative and alternative communication with digital assistant for autistic children*. Paper presented at the 2012 IEEE International Conference on Emerging Signal Processing Applications. Las Vegas. DOI: 10.1109/ESPA.2012.6152448.
- Wehmeyer, M. L., Shogren, K. A., Palmer, S. B., Williams-Diehm, K. L., Little, T., & Boulton, A.(2012). Impact of the Self-Determined Learning Model of Instruction on Self-Determination: A Randomized-Trial Control Group Study. *Exceptional Children*, 78(2), 135–153.
- Zhang, P., Carey, J., Te'eni, D., & Tremaine, M. (2004, August). *Integrating human-computer interaction development into SDLC: A methodology*. 10th Americas Conference on Information Systems, AMCIS 2004, New York, NY, USA.

GUIDELINES FOR SUBMISSION OF ARTICLES

The SOCIAL AND MANAGEMENT RESEARCH JOURNAL is an international refereed journal, jointly published by the Institute of Research Management and Innovation (IRMI) and University Press of Universiti Teknologi MARA, Malaysia. This journal is launched in the hope of stimulating quality research into social and management related areas. Researchers are strongly encouraged to use this publication as a platform for disseminating their research findings to the members of the academia and the community at large.

- The SOCIAL AND MANAGEMENT RESEARCH JOURNAL publishes research papers that address significant issues in the field of social and management which are of relevance to the academia and community at large.
- To provide a balanced presentation of articles, the journal solicits contributions from the field of; accounting, taxation, business, economics, econometrics, finance, management, language, mathematics, ICT, education, arts and humanities, social science, and interdisciplinary studies
- Research papers should be analytical and may be empirically based (including the use of survey, field study, or case study methods) and theoretically based. Comparative studies of culture and practices among countries in and around the Asian region are strongly encouraged.
- Manuscripts that present viewpoints should address issues of wide interest among social and management scholars in this region.
- All contributions must be in English. Emphasis is placed on direct and clearly understood communication, originality, and scholarly merit.

Submissions may be made in the form of MS Word files submitted by email to the chief editor. Only original papers will be accepted and copyright of published papers will be vested in the publisher.

Manuscripts submitted should be typed with double-spacing and should not exceed 6,000 words. Authors are required to include a cover page indicating the name(s), institutional affiliation (s), address, contact numbers and email of the author(s).

An abstract not exceeding 150 words should be enclosed on a separate sheet, at the beginning of the text. The abstract should provide a statement of the purpose and procedures of the study, including major conclusions of the research. Immediately after the abstract, provide a maximum of five (5) keywords. These keywords will be used for indexing purposes.

Figures, tables, and references should also be on separate pages at the end of the text. Endnotes should be kept to a minimum. Acknowledgment (if any) of no more than 80 words and references should be complete and placed at the end of the manuscript. Samples of entries are as follows;

Book: Williamson, O. (1993). *The Nature of the Firm*. New York: Oxford Press.

Journal: Zhou, Z.H. (1998). Chinese Accounting Systems and Practices, *Accounting, Organisations and Society*, 13(2): 207-24.

Manuscript submitted to the journal will be initially screened by the editor, to determine its appropriateness. Those considered inappropriate in totality, will be returned to the sender. Only those manuscripts considered appropriate will follow a double blind refereeing process. They will be passed to an editorial board member for appraisal of their value. Additionally, they will be reviewed by an expert in that discipline.

Please e-mail your manuscripts to:

Prof. Dr. Rosmimah Roslin
Chief Editor
rosmimah@salam.uitm.edu.my
rosmimahm@gmail.com

SOCIAL and **MANAGEMENT** **RESEARCH** **JOURNAL**

Institute of Research Management Innovation (IRMI)

Vol. 14 No. 2

December 2017

ISSN 1675-7017

1. **A Futures Study on the Quality of Life from the Point of View of Iranian Youth** 1
Sina Saeedy
Mojtaba Amiri
Mohammad Mahdi Zolfagharzadeh
Mohammad Rahim Eyvazi

2. **Housing for Young People: What are their Opportunities?** 15
Mahazril 'Aini Yaacob
Siti Hajar Abu Bakar
Wan Nor Azriyati Wan Abdul Aziz

3. **The Mediating Effect of Happiness on the Relationship between Work-Life Balance and Life Satisfaction: An Empirical Study on Employees of Malaysian Financial Industry** 33
Siti Hartini Najamudin
Muhamad Khalil Omar
Azzarina Zakaria

- | | | |
|----|---|-----|
| 4. | Descriptive Analysis - Predictors of Attitude towards Purchasing Halal Skin Care Products
<i>Azreen Jihan</i>
<i>Rosidah Musa</i> | 55 |
| 5. | The Roles of Employees Coaching towards Employee Outcomes
<i>NurSaadatun Nisak Ahmad</i>
<i>Azman Ismail</i>
<i>Ida Rosnita Ismail</i> | 71 |
| 6. | MDAB Programme is a Waste of Money?
<i>Nor Hazizah Julaihi</i>
<i>Mohammad Isa Mohamadin</i>
<i>Bebe Norlita Mohamed</i>
<i>Mariathy Karim</i> | 89 |
| 7. | Orientalism in Celluloid: The Production of the ‘Crazy Year’
<i>Théry Béord</i>
<i>Achim Alan Merlo</i> | 109 |
| 8. | Modelling Basic Numeracy Learning Application for Children with Autism: A Pilot Study
<i>Muhamad Fairus Kamaruzaman</i>
<i>Harrinni Mohd Noor</i>
<i>Mustaffa Halabi Hj Azahari</i> | 125 |

A FUTURES STUDY ON THE QUALITY OF LIFE FROM THE POINT OF VIEW OF IRANIAN YOUTH

Sina Saeedy^{1*}, Mojtaba Amiri¹, Mohammad Mahdi Zolfagharzadeh¹,
Mohammad Rahim Eyvazi²

¹Faculty of Management,
University of Tehran, Tehran, Iran

²Imam Khomeini International University, Qazvin, Iran
E-mail: *sinasaedy@ut.ac.ir

Received: 24 May 2017

Accepted: 7 November 2017

ABSTRACT

Quality of life and satisfaction with life as tightly interconnected concepts have become of much importance in the urbanism era. No doubt, it is one of the most important goals of every human society to enhance a citizen's quality of life and to increase their satisfaction with life. However, there are many signs which demonstrate the low level of life satisfaction of Iranian citizens especially among the youth. Thus, considering the temporal concept of life satisfaction, this research aims to make a futures study in this field. Therefore, using a mixed model and employing research methods from futures studies, life satisfaction among the students of the University of Tehran were measured and their views on this subject investigated. Both quantitative and qualitative data were analysed together in order to test the hypotheses and to address the research questions on the youth discontentment with quality of life. Findings showed that the level of life satisfaction among students is relatively low and their image of the future is not positive and not optimistic. These views were elicited and discussed in the social, economic, political, environmental and technological perspectives.

Keywords: *futures studies, quality of life, satisfaction with life, youth*

INTRODUCTION

Ensuring and increasing public welfare and solving societal problems are the principle matters of governments. Similarly, improving the quality of life (QOL) is also among the most important objectives of policy makers, hence enhancing life satisfaction is the ultimate goal of every good governance.

Indeed, judgments of life satisfaction are dependent upon a comparison of one's circumstances with what is thought to be an appropriate standard, where judgment of how satisfied individuals are with their lives is based on a comparison with a standard which is determined by each individual (Evren, 2013). In fact, life satisfaction is a cognitive measure of quality of life (Kahn & Juster, 2002).

Nowadays, the search for quality of life has become a growing concern for individuals, communities and governments seeking to find and sustain satisfaction, happiness and a belief in the future in a rapidly changing world (Meditinos, 2014). But, quality of life is a multi-faceted concept that is frequently used in the media and by politicians which defies precise definition. Often it is difficult to differentiate between the notions of QOL, well-being, satisfaction, and happiness (Marans, 2012).

Quality of life consists of two main dimensions: (1) Objective QOL that represents in a broad sense the individual's standard of living comprising of verifiable conditions inherent in the given cultural unit; (2) Subjective QOL that explores the degree to which the individual's life is perceived to match some implicit or explicit internal standard (Dissart & Deller, 2000). Subjective QOL is a person's evaluative reactions to his or her life. The individual's judgment is important in the investigation of individual wellbeing, and in the evaluation of the quality of life of societies (Diener, Inglehart & Tay, 2013).

There is considerable evidence to show that 'place' matters when it comes to QOL concerns, and studies focusing on urban quality of life enable us to better understand the meaning of QOL and how it might be measured (Marans, 2002). Urban growth in the 20th century increased the urban population so that urbanisation has currently become the dominant form of life. Although urbanisation is one of the most important indicators of social

and economic well-being and development, its rapid growth can reduce the enjoyment of many social and economic facilities per capita and thereby its implications appear as reduced quality of life in urban areas. Hence, the quality of urban life is one of the first subjects associated with urban growth that has gradually attracted specialists since several decades ago.

Urban quality of life is not a simple term that has a clear or an agreed definition but is a complex concept which might be defined by various disciplines. Nevertheless, some researchers have proposed several attributes for this concept. For example, the model used in a study by Ulengin *et al.* (2001) consisted of the following categories:

- Quality of physical environment: building arrangement, house type, green areas, recreational areas, infrastructure and municipal services.
- Quality of social environment: extent of educational services, price of educational services, extent of health services, price of health services, cultural activities and entertainment, safety.
- Quality of economic environment: cost of living, opportunity of finding a satisfactory job, accommodation cost.
- Quality of transportation and communication: means of communication, means of public transportation, traffic flow.

Life satisfaction, or the self-perceived well-being, of college students has recently become an important issue since, improving students' life satisfaction can help reduce the risks of physical injury and mental disorder among them (Valois *et al.*, 2004, 2006). It is noteworthy that there is no one key to happiness or life satisfaction, but rather a recipe that includes a number of ingredients (Omar *et al.*, 2016). Also, assessing the satisfaction with life can be focused on the different stages of life; how has life been in the past? How is it now? And how will it be like in the future? A person may have a positive view about life in the past but a negative view about the future of his life.

Mercer Institute as an accredited institution in the field of human resources, annually assesses and ranks different cities worldwide in terms of quality of life, taking into account several criteria (Mercer, 2016). According to Mercer's 2016 quality of living city rankings report, the capital of Iran, Tehran, ranks 203rd among the 230 major cities in the world. This report reveals that the living condition of Iranian citizens is distant from international criteria and acceptable standards of urban life.

According to official reports, several signs such as high rate of migration and the growing tendency of youth to leave the country, has made Iran top in the world's brain drain. This implies youth dissatisfaction with the current quality of life and hopelessness about the future quality of life in this society.

Considering the importance of citizens' satisfaction with urban quality life, especially the young generation and since life satisfaction is a temporal concept, this study tries to measure students' present and future satisfaction with quality of life with a futures approach and to investigate the causes of this phenomenon. Therefore, the research questions, hypotheses and the methods to address them are as follows.

RESEARCH HYPOTHESES

- H1: The average students' present satisfaction with life is low.
- H2: The average students' future satisfaction with life is low.
- H3: Present satisfaction with life is significantly related to future satisfaction with life.

RESEARCH QUESTIONS

1. What are the factors influencing youths' satisfaction with life?
2. What are the characteristics of youths' ideal society?
3. What is the youths' image of the future quality of life like?

RESEARCH METHOD

To include only quantitative or qualitative methods would fall short of the major approaches being used today in the study of social and human sciences. Thus, in mixed methods research, investigators use both quantitative and qualitative data because they work to provide the best understanding of a research problem. The researcher bases the inquiry on the assumption that collecting diverse types of data best provides an understanding of a research problem. Hence, the study begins with a survey in order to generalise results to a population and then focuses, in a second phase, on qualitative methods to collect detailed views from participants (Cresswell, 2003).

The statistical population of this research comprised the students of University of Tehran. Hence, in order to measure their satisfaction with the quality of life, a survey was performed. Thus, questionnaires were randomly distributed among students and gathered at different faculties of the university. Finally, after the distribution of 360 questionnaires, 352 complete ones were used for the further analysis.

A 10-item questionnaire (Cronbach's $\alpha = 0.81$) was employed to measure the present and future life satisfaction, which was rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) (Pavot *et al.*, 1998).

Then, futures workshops were held in order to study different aspects of the subject more deeply. This method was originally developed by Robert Jungk for citizen groups with limited resources who wanted to influence the decision making process related to their future life. It is a workshop or conference meant to shed light on a common problematic situation, to generate visions about the future, and to discuss how these visions can be realised. It is usually composed of the following main phases:

- 1- Critique phase
- 2- Fantasy phase
- 3- Implementation phase (Vidal, 2006)

RESULTS

Demographic data are demonstrated in Table 1, based on gender and academic grade. Data shows that 42.3% of the students are male and 57.7% of them are female. Also, 48.5% of students are bachelor, 41.8% masters and 9.7% are PhD students.

Table 1: Demographic Data of the Sample

Demographic variables		Percentage	Frequency
Gender	Male	42.3	149
	Female	57.7	203
	Total	100	352
Grade	MS	48.5	171
	BS	41.8	147
	PhD	9.7	34
	Total	100	352

SPSS software was used to calculate the means of research variables. Table 2 indicates the means of responses and the standard deviation of these means.

Table 2: t Test Statistics

	Mean	Standard deviation	T	Degree of Freedom	Sig.
Present satisfaction with life	2.20	0.722	20.92	351	0
Future satisfaction with life	2.28	0.609	22.33	351	0

According to the *t* test statistics, the means of both research variables are less than average, thus the H1 and H2 are accepted.

Table 3 indicates the correlation between the present satisfaction with life and the future satisfaction with life.

Table 3: Pearson Correlation Between Present and Future Satisfaction with Life

	R (Pearson correlation)	Sig. (P-value)
Future satisfaction with life	0.63**	0.0
Present satisfaction with life		

**Correlation is significant at the 0.01 level (2-tailed).

According to the data shown in Table 3, H3 is accepted, since the present satisfaction with life is significantly correlated with the future satisfaction with life ($R = 0.63, P = 0.0$).

Also a regression model has been used to analyse the relationship between the present satisfaction with life and the future satisfaction with life. Table 4 and Table 5 indicate the regression coefficients between the present life satisfaction and the future life satisfaction.

Table 4: Correlation Coefficients Between Present and Future Satisfaction with Life

Model	R	R square	Adjusted R square	Std. Error
1	0.63	0.39	0.39	0.475

Table 5: Regression Coefficients

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	1.12	0.081		13.77	0.0
Present satisfaction with life	0.53	0.035	0.063	15.03	0.0

According to Table 4, the present satisfaction with life predicts 39% of the future satisfaction with life.

Subsequently, three futures workshops with eight to 12 participants were held. The result of these workshops is as follows:

Critique Phase

In the critique phase, the problem is being critically framed. All innovative processes consist of two divergent and convergent parts. In this phase, brainstorming technique can be used in the divergent part and tools such as matrices and mind maps in the convergent part.

First, in order to clarify different aspects of the problem and to find its roots from the participants' opinions, the following items in the five social, economic, political, environmental and technological fields were identified as the main factors affecting the youths' satisfaction with the quality of life:

- In the social field: problems such as lack of social injustice, despair, pessimism, comparing the current situation with developed countries and the gap between generations
- In the economic field: problems such as poverty, inequality, class differences, inflation, unemployment, financial barriers to marriage and economic corruption.
- In the political field: Issues such as lack of sufficient freedom, lack of accountability of authorities, official corruption and lack of transparency.
- In the environmental field: problems such as air pollution, heavy traffic, noise pollution and lack of green space per capita.
- In the technological field: issues such as lack of advanced technological facilities, lack of opportunities for use of youths' knowledge and expertise and weakness of national industries.

Fantasy Phase

In the fantasy stage, all participants have to rely on their intuitive knowledge to try to create a utopia and exaggerated images of possible futures and to offer solutions without taking into account the current barriers. The central question at this point is, "If there were no limitations and there were many resources available with no legal restrictions, what would you do?" In this phase, a utopia is visualised and free from the constraints and limitations, it will be attempted to imagine the desirable future. On the one hand, participants' responses about the characteristics of an ideal society and desired future included the following key concepts: peace of mind and optimism, economic development, easy wealth, no poverty, equality, justice, peace and security, freedom, ethics, pluralism, respect for each other and self-actualisation.

On the other hand, their talks about their mental picture of the probable future included several key concepts such lack of optimism about the future, despair, uncertain future, challenges of the future and the desire to migrate.

Implementation Phase

In the implementation phase, the key actors, the basic changes and the most promising solutions to achieve the desired future were discussed. At this stage, the participants unanimously recognised the government as the main responsible institution for the current situation and the most important agent that affects their present and future quality of life. Hence, they uttered several demands and offered some solutions to achieve the desired future, including: economic reform and recovery, paying attention to youths' employment, paying attention to the poor and elimination of class differences, cultural reform, rebuilding youths' spirit, public enforcement of justice, elimination of gender discrimination, meritocracy, increasing freedom, curbing corruption and practice of law, respecting educated youths and assuring their future.

DISCUSSION

As the findings from the survey showed, the research respondents' satisfaction with the quality of life is below average. Hence, the causes of this problem were explored in futures workshops. The results of discussions and what was the consensus of the participants were then classified into five categories.

In the social context, weakness of social justice is one of the main causes of students' dissatisfaction. In fact, the young generation, especially students and the young elite have special sensitivity about justice, so that according to investigations, the perception of social justice and brain drain are in a significant inverse relationship.

In addition, justice is a key concept in Islam and religious teachings have made the young generation more sensitive on this subject. But, it seems that their perception of the current situation is far from what they perceive as fair, and this has become a source of dissatisfaction.

Moreover, due to expansion of communication technologies, today's young generation through sources such as foreign movies, TV shows, world news and the internet have become aware of the quality of life in advanced

societies. Comparing what they have with what their peers in the western societies have cause them to feel severe underdevelopment and despair.

Also, in the economic field, financial difficulties of families and class differences in the society are the most important causes of youths' discontent. Today, not only economic issues and lack of employment are challenging the youth, but also, thanks to social networks, lifestyle of the rich class has been revealed and has caused the youth to perceive such a large division. Young people under the burden of inflation, unemployment, discrimination and inequality find themselves incapable of marriage and recognise the government's inefficiency and corruption as the main cause.

Besides, in the political field, there is such a condition that the young people feel they do not have enough liberty, especially in the realm of thought and expression, while many of them have new ideas and thoughts, which are sometimes in a distance from the official ideology and may not be much welcome.

Furthermore, in the students' view, the corruption in governmental organizations and lack of transparency in the processes has undermined meritocracy and caused lots of problems in the country, while authorities usually avoid accountability.

Also, there exist problems such as air pollution, traffic congestion, noise pollution and lack of green space per capita which have greatly reduced the liveability and environmental quality, especially in Tehran. Although, the negative impact of these problems on community's physical and mental health is obvious, the students believe that government policies to solve these problems are inadequate and inefficient.

In addition, issues such as lack of advanced technological facilities, lack of opportunities for use of knowledge and expertise, weak industry, low quality of products and the shortcomings of technology compared to advanced industrial countries are other factors affecting discontent of the young generation.

According to the results, a significant correlation exists between dissatisfaction with the quality of present life and lack of satisfaction with

future life. In fact, the present life satisfaction can significantly predict the future life satisfaction.

Explanation of the relationship between these two components lies in the fact that today's problems and low level of students' satisfaction with the quality of life have negatively affected their images of the future.

The negative assessment of the present situation and the pessimistic mental images of the future have caused frustration and reluctance among the youth, thus many of them intend to migrate to another country in order to obtain the chance of making their ideal future.

It is noteworthy that the ideal society from their perspective is somewhere rich with spiritual peace, progress and prosperity, full of justice, freedom and security, full of knowledge and ethics. A place where diversity and plural ideas are respected, growth and self-actualisation are achieved and citizens' satisfaction is met.

In the young generation's view, construction of such a society is most dependent on government policies as the responsible institution for the prosperity of society and the public good. Hence, they expect the government to properly play its role to achieve their demands such as justice, freedom, and meritocracy, reduction of corruption and improvement of the economic situation.

CONCLUSION

Urban quality of life has been given much attention in recent times. However, based on Mercer's 2016 quality of living report, quality of life in the city of Tehran is not desirable. Hence, in this study, life satisfaction among the students of the University of Tehran was investigated. Regarding the temporal essence of satisfaction with life, present life satisfaction and future life satisfaction were measured using survey questionnaires. The quantitative data analysis indicated that both levels of life satisfaction were low and there was a significant correlation between them.

Furthermore, in order to determine the causes of dissatisfaction with life among the youth, future workshops were held with participation of university students and three phases of critique, fantasy and implementation were conducted. According to the findings, several influential factors were discovered in social, economic, political, environmental and technological fields, among them lack of social injustice, pessimism, poverty, inequality, class differences, inflation, unemployment, lack of sufficient freedom, official corruption, lack of transparency, air pollution, heavy traffic, noise pollution, lack of advanced technological facilities and weakness of national industries.

In addition, the characteristics of young participants' utopia were delineated. In their ideal society there exist peace of mind, economic development, equality, justice, security, freedom, pluralism, respect for each other and self-actualisation. However, as a result of suffering from negative perspectives, they were relatively hopeless and pessimistic about the perceived probable future.

Moreover, the students believed that government should be responsible for their current and future living conditions. They expected the government to make economic and cultural reforms, pay more attention to youth employment, establish justice and meritocracy, eliminate gender discrimination, increase freedom, harness corruption and enforce laws.

Finally, based on findings, it would be expected of the government to make more efficient attempts and to pay more attention to the satisfaction with life of Iranian youth. For this purpose, the government should not only take tangible actions to improve the objective quality of life but also, ensure bright and promising visions of the future among the young generation as a subjective driver of development.

REFERENCES

- Creswell, J. W. (2003). *Research Design - Qualitative, Quantitative and Mixed Methods Approaches*. United State of America: Sage Publications, Inc.
- Diener, E., Inglehart, R., Tay, L. (2013). Theory and validity of life satisfaction scales. *Social Indicators Research*, 112(3), 497-527. <https://doi.org/10.1007/s11205-012-0076-y>.
- Dissart, J. C., Deller, S. C. (2000). Quality of Life in the Planning Literature. *Journal of Planning Literature*, 15(1), 135-162. <https://doi.org/10.1177/08854120022092962>.
- Evren, A. (2013). Life satisfaction, perceived freedom in leisure and self-esteem: The case of physical education and sport students. *Procedia - Social and Behavioral Sciences*, 93, 2186-2193. <https://doi.org/10.1016/j.sbspro.2013.10.185>.
- Kahn, R. L., Juster, F. T. (2002). Well-being: concepts and measures. *Journal of Social Issues*, 58(4), 627-644.
- Maditinos, D. I., Papadopoulos, D., Prats, L. (2014). The Free Time Allocation and its Relationship with the Perceived Quality of Life (QoL) and Satisfaction with Life (SwL). *Procedia Economics and Finance*, 9, 519-532. [https://doi.org/10.1016/S2212-5671\(14\)00053-7](https://doi.org/10.1016/S2212-5671(14)00053-7).
- Marans, R. W. (2003). Understanding environmental quality through quality of life studies: The 2001 DAS and its use of subjective and objective indicators. *Journal of Landscape and Urban Planning*, 65(1-2), 73-83. [https://doi.org/10.1016/S0169-2046\(02\)00239-6](https://doi.org/10.1016/S0169-2046(02)00239-6).
- Marans, R. W. (2012). Quality of Urban Life Studies: An Overview and Implications for Environment-Behaviour Research. *Procedia - Social and Behavioral Sciences*, 35, 9-22. <https://doi.org/10.1016/j.sbspro.2012.02.058>.
- Mercer (2016). Mercer's 2016 Quality of Living City Rankings. Retrieved from <https://www.mercer.com>.

- Omar, M. K., Zakaria, R., Zakaria, A. (2016). Organizational happiness index (OHI): Conceptualization and operationalization of measurement among employees in services industry. *Social and Management Research Journal*, 13(1), 8-17.
- Pavot, W., Diener, E., Suh, E. (1998). The temporal satisfaction with life scale. *Journal of Personality Assessment*, 70(2), 340-354. http://dx.doi.org/10.1207/s15327752jpa7002_11.
- Ulengin, B., Ulengin, F., Umit, G. (2001). A multidimensional approach to urban quality of life: The case of Istanbul. *European Journal of Operational Research*, 130(2), 361-374. [https://doi.org/10.1016/S0377-2217\(00\)00047-3](https://doi.org/10.1016/S0377-2217(00)00047-3).
- Valois, R. F., Zullig, K. J., Huebner, E. S., Drane, J. W. (2004). Life satisfaction and suicide among high school adolescents. *Social Indicators Research*, 66(1-2), 81-105. <https://doi.org/10.1023/B:SOCI.0000007499.19430.2f>.
- Valois, R., Paxton, R., Zullig, K., Huebner, E.S. (2006). Life satisfaction and violent behaviors among middle school students. *Journal of Child and Family Studies*, 15(6), 695-707. <https://doi.org/10.1007/s10826-006-9043-z>.
- Vidal, R. V. V. (2006). *Creative and Participative Problem Solving*. Albertslund: Technical University of Denmark.

HOUSING FOR YOUNG PEOPLE: WHAT ARE THEIR OPPORTUNITIES?

Mahazril 'Aini Yaacob^{1,2}, Siti Hajar Abu Bakar¹, and Wan Nor Azriyati Wan Abdul Aziz³

¹ Department of Administration and Social Justice, Faculty of Arts and Social Sciences, University Malaya, Malaysia

² Faculty of Administrative Science and Policy Studies, Universiti Teknologi MARA, Malaysia

³ Department of Estate Management, Faculty of Built Environment, University Malaya, Malaysia

E-mail: mahazril@siswa.um.edu.my

Received: 24 May 2017

Accepted: 7 November 2017

ABSTRACT

Housing does not only serve the basic needs of the citizens, but it is also considered as one of the important features of independent living. A comprehensive literature search revealed that access to housing is vital in the transition to adulthood, mainly to ensure that young adults enjoy a higher quality of life. Young adults face many hardships in their pursuit of adequate and affordable housing. Nevertheless, the act of leaving home, are typically determined by the economic resources (income) and other influential factors. The debate on establishing the homeownership was rampantly discussed by numerous researchers. However, efforts to examine the factors influencing the housing opportunities among the young people are limited. In response to this need, a preliminary study was carried out to identify the factors affecting the housing opportunities among the young people. Except for locational factor, affordability, housing knowledge and structural factors play prominent roles in inducing housing opportunities among the youth. Therefore, strategies such as comprehensive information about housing schemes should be made available and accessible to the young people. Additionally, other relevant parties, such as financial institutions and developers, may need to revise their requirement for loan financing, and the eligibility criteria. Overall, these measures should be able to ensure that young can people enjoy housing opportunities and improve their quality of life.

Keywords: *affordability, housing knowledge, housing opportunities, location, structural*

INTRODUCTION

Inadequate housing caused the transition to adulthood, a period where young people change by stages into adult roles, longer to complete. To date, there were numerous issues, but the most critical one is providing affordable and adequate housing for the citizens. The lack of affordable housing confines individuals' choices about the place for them to live. The financial burden of the unaffordable housing can inhibit people from meeting other basic needs, comprising health care and nutrition, and this is predominantly significant for the low-income individuals. According to Hochstenbach and Boterman (2014), in many western cities, housing opportunities for young people are controlled due to housing market reforms and declining affordability, as a result of the gentrification process. Similarly, in the Eastern counterparts, Japan, for instance, there was a remarkable declination of housing opportunities among their young people, which was due to the rise of neoliberal policy and economic uncertainties (Hirayama, 2012).

Homeownership is one of the tools for wealth creation and investment good (Doling & Omar, 2012; Doling & Ronald, 2010; Rugg & Quilgars, 2015). Holdsworth and Solda (2002) demonstrated that in countries with most homeowners, the structure of their housing market focuses on homeownership. However, renting is not an effective solution as it hinders wealth accumulation. When people focus on homeownership, they are excluded from accessing the housing ladder, in terms of obtaining the mortgage financing, in which, hinder their opportunities to affordable, adequate and reasonable housing. There are various types of housing affordability measures available. However, they are limited to the economic approach rather than social approach. This study aims to identify the association between the housing opportunities among young people with several factors such as affordability, location, housing knowledge and structural factors.

LITERATURE REVIEW

Undeniably, everyone has the rights to housing regardless of the economic resources of the individual. The rights to housing are more than just the rights to have a shelter. The right to housing must be enjoyed by everyone entitled to it. Previous studies have primarily concentrated on homeownership (i.e., Belsky, 2013; Khan, Mahamud, Kamaruddin, 2012; Blaauboer, 2010; Castro Campos, Yiu, Shen, Liao, & Maing, 2016) affordability (i.e., A.A.Bujang, Jiram, Zarin & Anuar, 2015; Ariffian, Anuar & Zarin, 2013; Bruce & Kelly, 2013; Poon & Garratt, 2012) and housing accessibility (i.e., Marijin Sleurink, 2012; Yang, Z., Yi, C., Zhang, W., & Zhang, C., 2013). However, little attention has been paid to investigate the opportunities to adequate housing, especially for young people. Therefore, this study chose to employ the term opportunities because it represents the wider context in explaining housing situations of the young people.

The issue on opportunities to adequate housing is more than just the issue of affordability or homeownership. Instead, it concerns the rights and accessibility to adequate housing. Without the rights, one cannot have access to the housing market, hence their opportunities to adequate housing are hindered. A study conducted by Zyed (2014) suggests that the rights to housing show that everyone should have the opportunity towards adequate housing regardless of households' income group. It is vital to explain further the opportunities they have about adequate housing in any efforts to understand the challenges faced by individuals in their pursuit to adequate housing (Lee, Parrott & Ahn, 2012).

In the pursuit to live independently, young people should be given the opportunities to adequate housing. There are many problems faced by people in their pursuit for affordable and adequate housing. Hochstenbach and Boterman (2014) addressed the question of how young people deal with the housing constraints in many western cities. They found that the housing market reforms constrained the housing opportunities of young people. The gentrification processes contribute to the decreasing of affordability. Most young people are not able to access affordable, adequate and reasonable housing due to social constraints such as obtaining the mortgage financing. Therefore, for young people to have the housing opportunity, factors that hinder their opportunity for adequate housing should be looked upon.

Various variables are widely employed in the previous literature. However, their concerns were limited to the issues of housing affordability which are examined from the economic approach; rather than social approach. This study, which adopts the social approach, has chosen the factors such as affordability, location, housing knowledge and structural factors to explain the housing opportunities among young people because it is more relevant in the context of the study.

Affordability includes elements such as financial resources (i.e., income, housing price, household expenses and financing). Housing affordability refers broadly to a person's ability to pay for housing. Roween (2014) defines affordability as the capacity of a person in providing something, which is commonly referred to the ability of the individual in financial terms. A study led by Roween (2014) investigates the housing affordability among middle-income earners in the Philippines from the perspectives of demographic and socio-economic background. The result highlights that the most important factor which influences housing adequacy and affordability is their income. Without a stable income, a person's ability to have a home is limited either by owning or renting as these tenures are correlated with having a sufficient income.

The influence of financial criteria was discussed by Doling (1999). In his assessment of the housing system in the Eastern Europe, he concluded that even though the housing production is dominated by the state, access to housing is not based on non-financial criteria such as need. Instead, it reflects on labour market position whereby higher income groups will normally get access to the largest and best facilities in the best locations. As such, in order for young people to earn their rights to housing, having a stable income is necessary as it marks their capability to enter the housing market. Household income and individual level of monthly earnings are important to determine the housing affordability among young generation or Y Generation (Bujang, Jiram, Zarin & Anuar, 2015).

McKee and Hoolachan's (2015) study among the younger generation in Scotland identified that parental supports and employment are two important determinants for individual access to homeownership. Similarly, Li's (2014) study among young people in Taiwan discovered that 65 percent of them who just entered the workforce could not afford to live outside their

parental house due to the expensive homes. As a result, they choose to live with their parents as they cannot afford either owning or renting a house.

Another significant element is location. Tan (2012) in a study among younger people in Greater Kuala Lumpur claims that location is placed as an important aspect in owning a home. Location significantly influences their housing opportunities, mainly on homeownership. They prefer houses that are located near the facilities such as retailing outlets, schools, recreational parks and the workplace. The findings are parallel with the findings by Yip (2013) who found that prime location was the primary concern for young people in choosing a house to buy. They prefer the houses which are near to their workplace, near their parents and near to the social facilities such as shopping mall and leisure places. Specifically, they prefer the location to be along the railway lines as most of the people in Hong Kong are highly dependent on public transportation for their daily activities.

Drew (2015) also confirmed that young people aged between 25 to 34 years old placed location as one of the important preferences for housing. Meanwhile, in a study regarding Shanghai people's living arrangement, Yang, Wang and Wang (2015) discovered that majority of Shanghai middle class, whom the majority of them are university graduates, live in the middle elevated ring. This social class prefers living in the high residential areas where facilities such as malls, schools, business districts are easily accessible.

Other than affordability and location, housing knowledge plays an importance role in explaining the housing opportunities among young people. Housing knowledge concerns information and understanding on housing especially on housing policy, initiatives and schemes offered either by the government or relevant parties that provide housing opportunities for young people. Knowledge of real estate market opportunities differs between categories of people. Highly educated people may have more opportunities than those with a relatively low educational level because they might be more capable of finding and using information, and of dealing with the complexity of the housing allocation system. Knowledge enhances the probability of finding a new dwelling that meets the household's preferences. Some households also try to negotiate with the housing association for

better housing conditions, and some succeed at this (Meerts *et al.*, 2011). Furthermore, Atilas and Bohon (2003) point out that lack of knowledge about available housing programmes hindered the Latinos from enjoying their housing opportunities.

In Malaysia, the importance of housing knowledge is further discussed by Saari (2014). The study acknowledges that knowledge on the home-buying process including financial literacy needs to be exposed to people starting from an earlier age so that they can make a wise decision when deciding to own or to rent. Even though the government has extensively come out with various housing strategies and schemes such as *Program Rumah 1Malaysia* (PR1MA), *Skim Rumah Pertamaku* (SRP), Rent to Own Scheme (RTO) and many others as assistance for people to own a home, many Malaysians are still not aware of them. Interviews with the younger working household in Malaysia highlight that among the factors that determine their housing opportunities either by renting or owning is financial literacy. Houses are unaffordable due to lack of financial literacy. Since not everyone has the awareness and understanding on the appropriate financial management such as the amount of money they should save or invest in buying house, their opportunities to adequate housing are hindered (Al *et al.*, 2013).

Besides affordability, location and housing knowledge, structural factor also plays significant roles in influencing housing opportunities among young people. The structural aspect refers to the administrative and regulatory aspects that consist of elements such as government housing policy as well as government programmes and initiatives. Clark and Mulder (2000) argue that factors such as the structure of the housing market, regional factors, and resources, are closely related to the level of access to housing, particularly among the young adults. These factors have been highlighted by Visser, Bolt and Kempen (2013). They confirmed that housing opportunities which include availability and the affordability are largely dependent on national housing market policies. In addition, they also posit that the housing opportunities of households are confined by two rules. Firstly, it depends on their position on the waiting list. Secondly, they need to meet the suitability criteria in terms of household size and income.

Li (2014) in a study among Hong Kong post-80s discovers that due to the high housing prices, majority of them could not afford a home. As

a result, they agreed that government is responsible for providing more housing assistance for them to have the housing opportunities and thus achieve their independent living. Similarly, in developed countries, the affordability and the desirability of ownership are also influenced by the availability of social housing (Blanco, Gilbert & Kim, 2016). In Malaysia, state intervention through housing policy is crucial, particularly when the private market monopolised the housing development. Hence, housing policy is developed with the aim to provide adequate housing for all groups of people. Nevertheless, there is criticism of the state intervention in terms of housing production, exchange, and consumption that are deficient to address the housing affordability problems especially among the young working households (Zyed, 2014). In comparison with the older generations who easily climbed the housing ladder with the support from government subsidies, younger generations, on the other hand, received less support on housing subsidies. Instead, in their pursuit to adequate housing and independent living, they need to rely on the private market (Ronald & Elsinga, 2012). The dependency resulted in the delay in their transition to independent living and distort their general well-being.

METHOD

A preliminary survey was conducted to determine the factors influencing housing opportunities among young people in Malaysia. The survey questionnaires were distributed to 30 respondents, based on the inclusion criteria. The respondents consist of Malaysians, currently employed, residing in Klang Valley, aged between 20 to 39 years old, either own a house, renting or living with their parents or relatives and the employees of either government bodies, private sector or self-employed. It is noted that this was a preliminary study, therefore employing 30 respondents within the inclusive criteria corresponds with the recommendation highlighted by Johanson and Brooks (2010) that a minimum of 30 participants from the population of interest is reasonable for the preliminary survey.

For data gathering, the study used a structured and supervised self-administered questionnaire. The instrument consists of seven sections. Part A gathers the information on the socio-demographic data of the respondents. Part B captures the information on the respondents' employment background

such as their job status. Part C focuses on the information about the respondents’ financial resources, which include their gross monthly income, household income, and other assets/wealth that they might have. Also, this part collects the information on the respondents’ household expenditure and consumptions. Part D is for the respondents’ current living arrangement and includes information such as household types, the location of their contemporary living and period of living, their housing tenure (i.e., whether they own the house, renting, family residence or other forms of tenure). Part E gathers information on the challenges faced by the respondents in their pursuit to adequate housing. Part F collects the respondents’ opinion on the contributing factors in providing opportunities to adequate housing. It comprises of four main components consisting of affordability, location, habitability and structural factors. The researcher also gathered information on suggestions by the respondents to improve housing situations in Malaysia, particularly in respond to the needs of young people. Part G collects the opinions and recommendations regarding the housing situations and housing policy in Malaysia. Finally, Part H is intended to obtain information of future planning of young people on housing. As for statistical analysis, the Pearson’s correlation analysis was used to investigate the association between housing opportunities among young people with several factors such as affordability, location, housing knowledge and structural factors.

RESULTS AND DISCUSSION

Data in Table 1 denotes the correlation between the independent and the dependent variables. Four factors were identified to explain the housing opportunities among young people from the aspects of affordability, location, housing knowledge and structural factors. According to the results, there is a significant positive relationship between affordability and housing opportunities, at 90 % confidence level, ($p < .10$). However, the relationship is reported to be weak (correlation coefficient, $r = .310$).

Table 1: Summary Results of Pearson’s Correlation

Variable	(1)	(2)	(3)	(4)	(5)
(1)	1.000	-	-	-	-
(2)	.096	1.000	-	-	-

(3)	.344*	.478**	1.000	-	-
(4)	.263	.569**	.770**	1.000	-
(5)	.310*	.241	.637**	.622**	1.000

Note: (1) = Affordability; (2) = Location; (3) = Housing Knowledge; (4) = Structural factors; (5) = Housing Opportunities; * $p < .10$; ** $p < .05$; $n = 30$.

Apart from that, housing knowledge and structural factors also revealed statistically significant positive association, at 90 % confidence level. ($p < .10$). There is a strong correlation between housing knowledge ($r = .637$), structural factors ($r = .622$) and housing opportunities. On the other hand, no significant relationship is found between location and housing opportunities among young people.

The finding supports the evidence from the previous studies which claim that factors such as affordability, housing knowledge and structural factors play prominent roles in determining whether one can have a place to call their home. A person needs to have a stable income for them to own a home either through homeownership or renting (Filandri & Bertolini, 2016). Furthermore, there is a need for young people to pay for the housing deposits or the down-payments. However, this group of individuals often encountered difficulties in getting access to adequate and affordable house due to the meagre income, especially for the deposit. This scenario is very apparent among those who work in the city centre where the standard of living is high. In fact, renting also require them to have sufficient income. A study by Roween (2014), investigated the housing affordability among middle-income earners in the Philippines from the perspectives of demographic and socio-economic background. The result highlights that the most important factor that influence housing adequacy and affordability is their income. Without a stable income, a person's ability to have a home is limited either by owning or renting, as these tenures are correlated with having a sufficient income.

Castro Campos *et al.*, (2016) conducted a study among the young Chinese in Hong Kong. They discovered that young people encounter the affordability challenges, mainly due to the high price of housing and transaction cost such as down payment and other fees. For young people to earn their rights to housing, having a stable income is necessary as this marks their capability to enter the housing market. Household income and individual level of monthly incomes are needed to determine the housing

affordability among the young generation (Bujang *et al.*, 2015). Furthermore, in a study done by McKee and Hoolachan (2015) among the younger generation in Scotland, for an individual to become the homeowner, parental support, and employment are two crucial determinants of the individual's success to homeownership.

As for the location factor, past studies have identified the influence of the location with the housing opportunities among young people. Tan (2012) in a study among younger people in greater Kuala Lumpur showed that when someone owns a home; the location is significantly influenced by their housing opportunities mainly on homeownership. They prefer houses that are located near facilities such as retailing outlets, schools, recreational parks and workplace. Also, there is a need for the government to provide affordable houses in strategic locations where all the infrastructure, necessary facilities, and employment opportunities are there. Additionally, it is important to give them a decent housing to ensure that they are adequately housed and not end up in improper housing. This has gained attention of private developers' where their housing projects nowadays are developed based on the concept of 'live, learn, work and play'.

Nevertheless, results claim that location is not a major determinant of the housing opportunities among young people since there is no significant association between location and housing opportunities. Thus, for these people, the location of the house is not their major constraint. Even though youth nowadays live in the suburbs where access to the workplace is relatively far, they can still enjoy these housing opportunities due to efficient public transportation in their neighbourhood. Some of them prefer to carpool with their friends to their workplace, thus location is not a big issue to them. The price of houses in their area is more reasonable and satisfactory as compared to urban areas.

Apart from affordability and location, housing knowledge and structural factors are two main factors influencing their housing opportunities. Information related to housing schemes and initiatives must be made available through government websites. Young people need all the information on home buying process before they can decide to own or rent. Information such as availability of houses in each of the states, home buying process and available housing schemes for lower and middle-income group must be easily accessed by them. However, knowledge regarding

the property market differs depending on their social status. The highly educated people may have more opportunities than those with a relatively low educational level because those with high educational attainment are more exposed to information and resources (Visser *et al.*, 2013).

Nonetheless, the current situation shows otherwise. There is a lack of information concerning housing schemes or programmes available for young people. Hence, it hinders their housing opportunities as they do not have the awareness and knowledge on the process of purchasing or renting a house. Although the government has introduced several schemes and assistance programme to ease their difficulties, many are still not aware. Concerns are raised as to what extent the systems are adequate in helping them to have a place to call home. This corresponds with the study conducted by Mackie (2016) that highlights the main challenges faced by the government in ensuring that all young people can live independently and improve the availability and suitability of housing for them.

On the contrary, in other countries where all information on housing is made available to the public, information on housing property such as the availability of affordable houses, the buying process, and information on financing are less accessible in this country. Thus, knowledge on home buying, selling and renting should be exposed not only at the early stage of education but at the tertiary level. It then facilitates them in understanding the process of owning a home either as homeowners or renters based on their ability to do so. The guidelines can make the process easy and even quicker (Saari, 2014).

Even though various initiatives have been taken by the government to help young people to access adequate and affordable housing, there is still a significant number of people who are not aware of those schemes. In other words, some of them do not understand the benefits they can gain from those schemes. As a result, these people failed to seize the opportunity for adequate housing, which later affects their social well-being and disrupts their independent living.

CONCLUSION

Results from the preliminary survey clearly indicate that aspects such as affordability, housing knowledge and structural factors play significant roles in determining housing opportunities among young people in Malaysia. In their pursuit to adequate shelter, they need to depend on their economic resources (i.e., income, assets or other financial assistance) and knowledge about all aspects of housing, especially on home buying process. Additionally, an inclusive housing policy and suitable housing schemes offered by the government also plays a dominant role in ensuring that these people can enjoy their rights to adequate housing, which in turn indicate their housing opportunities. With regards to this, government and other relevant bodies should cooperate and take necessary actions in minimising the issues. Various strategies should be carried out such as providing transit houses especially for young people who have just joined the workforce or newly married couples. Information regarding affordable housing schemes introduced by the government should be made available to them. Apart from that, websites or any other channels promoting these initiatives must be readily accessible to young people. Also, other relevant parties such as financial institutions can loosen requirements for loan financing, and developers must lessen the eligibility criteria for housing. In summary, these strategies are expected to provide a more inclusive framework that can benefit everyone, as well as protect their social welfare.

ACKNOWLEDGEMENT

The author gratefully acknowledges the help of Universiti Malaya in providing the PPP Research Grant (Project Number: PG236-2015B), Universiti Teknologi MARA and Ministry of Education for the SLAB/SLAI Scheme. The author is also thankful to the respondents who agreed to participate in the preliminary study.

REFERENCES

- A.Bujang, Jiram, W. R. A., Zarin, H. A., & Anuar, F. H. M. (2015). Measuring the Gen Y Housing Affordability Problem. *International*

- Journal of Trade, Economics and Finance*, 6(1), pp 22–26. <http://doi.org/10.7763/IJTEF.2015.V6.435>.
- Ariffian, A., Anuar, F. H., & Zarin, H. A. (2013). *Generation Y Housing Affordability*. Paper presented at Asia Pacific Network for Housing Research Conference (APNHR), Kuala Lumpur, pp. 20–22.
- Al, Z., Zyed, S., Nor, W., Wan, A., Aziz, A., Hanif, N. R, Tedong PA (2013). Affordable Housing Schemes : Overcoming Homeownership Problems among Younger Working Household. *Open House International*, 39(4), pp. 5-13.
- Atiles, J. H., & Bohon, S. A. (2003). Camas Calientes: Housing Adjustments and Barriers to Social and Economic Adaptation among Georgia’s Rural Latinos. *Southern Rural Sociology*, 19(1), pp. 97–122.
- Belsky, E. S. (2013). *The Dream Lives on: The Future of Homeownership in America*. Cambridge: Joint Center for Housing Studies, Harvard University.
- Blaauboer, M. (2010). Family Background, Individual Resources and the Homeownership of Couples and Singles. *Housing Studies*, 25(4), pp. 441–461. <http://doi.org/10.1080/02673031003711493>.
- Blanco, A., Gilbert, A., & Kim, J. (2016). Housing tenure in Latin American Cities: The Role of Household Income. *Habitat International*, 51, pp. 1–10. <http://doi.org/10.1016/j.habitatint.2015.09.006>.
- Bruce, M., & Kelly, S. (2013). Expectations, Identity and Affordability: The Housing Dreams of Australia’s Generation Y. *Housing, Theory and Society*, 30(4), pp. 416–432. <http://doi.org/10.1080/14036096.2013.767279>.
- Castro Campos, B., Yiu, C. Y., Shen, J., Liao, K. H., & Maing, M. (2016). The Anticipated Housing Pathways to Homeownership of Young People in Hong Kong. *International Journal of Housing Policy*, 16(2), pp. 1–20. <http://doi.org/10.1080/14616718.2015.1130605>.

Clark, W. A V, & Mulder, C. H. (2000). Leaving Home and Entering the Housing Market. *Environment and Planning A*, 32(9), pp. 1657–1671. <http://doi.org/10.1068/a3315>.

Doling, J. (1999). De-commodification and Welfare: Evaluating Housing Systems. *Housing, Theory and Society*, 16(4), pp. 156–164. <http://doi.org/10.1080/14036099950149884>.

Doling, J., & Ronald, R. (2010). Home ownership and asset-based welfare. *Journal of Housing and the Built Environment*, 25(2), pp. 165–173. <http://doi.org/10.1007/s10901-009-9177-6>.

Doling, J., & Omar, R. (2012). Home Ownership and Pensions in East Asia: The Case of Malaysia. *Journal of Population Ageing*, 5(1), pp. 67–85. <http://doi.org/10.1007/s12062-012-9056-x>.

Drew, R. B. (2015). *Effect of Changing Demographics on Young Adult Homeownership Rates*. Joint Centre for Housing Studies, Harvard University.

Filandri, M., & Bertolini, S. (2016). Young People and Home Ownership in Europe. *International Journal of Housing Policy*, 16(2), pp. 1–21. <http://doi.org/10.1080/14616718.2015.1130606>.

Hirayama, Y. (2010) The Role of Home Ownership in Japan’s Aged Society. *Journal of Housing and the Built Environment*, 25(2), pp. 175-191. <http://doi.org/10.1007/s10901-010-9183-8>.

Hochstenbach, C., & Boterman, W. R. (2014). Navigating the Field of Housing: Housing Pathways of Young People in Amsterdam. *Journal of Housing and the Built Environment*, 30(2), pp. 257-274. <http://doi.org/10.1007/s10901-014-9405-6>.

Holdsworth, C., & Solda, M.I. (2002). First Housing Moves in Spain: An Analysis of Leaving Home and First Housing Acquisition. *European Journal of Population*, 18(1), pp. 1-19. <https://doi.org/10.1023/A:101383181>.

Izuhara, M. (2010). Shifting Trajectories of Homeownership in Japan. *Housing*

- Studies*, 25(3), pp. 301–315. <http://doi.org/10.1080/02673031003711527>.
- Johanson, G. A., & Brooks, G. P. (2010). Initial Scale Development: Sample Size for Pilot Studies. *Educational and Psychological Measurement*, 70(3), pp. 394–400. <http://doi.org/10.1177/0013164409355692>.
- Khan, P. A. M., Mahamud, R., & Kamaruddin, P. M. N. (2012). *An Overview of Housing Affordability for First Time Home Buyer in Malaysia*. Paper presented at 3rd International Conference on Business and Economic (ICBER 2012), Bandung.
- Lee, S. J., Parrott, K. R., & Ahn, M. (2012). Exploring Housing Challenges of Low-Income Minorities in the Southern United States. *Cityscape: American Housing*, 14(1), pp. 73–98.
- Li, J. (2014). “I Am NOT Leaving Home”: Post - 80s’ Housing Attitudes and Aspirations in Hong Kong (Working paper No 2/2014). Retrieved from Urban Research Group.
- Mackie, P. K. (2016). Young people and housing: identifying the key issues. *International Journal of Housing Policy*, 16(2), pp. 137–143.
- Marijijn Sleurink. (2012). The Transformation of the Amsterdam Housing Market and How Young Adults Respond to Declined Access to Housing. Unpublished Master Dissertation, University of Amsterdam.
- Meerts, A., Kleinhans, R. & Posthumus, H. (2011, July) *Choice within Limits. How Forced Relocation Affects Residents’ Dwelling Searches and Trade-Offs in Dwelling Choice*. Paper presented at the Conference of the European Network for Housing Research, Toulouse.
- McKee, K. (2012). Young People, Homeownership and Future Welfare. *Housing Studies*, 27(6), pp. 853–862. <http://doi.org/10.1080/02673037.2012.714463>.
- McKee, K., & Hoolachan, J. (2015). *Housing Generation Rent What are the Challenges for Housing Policy in Scotland?* Center for Housing Research, University of St Andrews.

- Poon, J., & Garratt, D. (2012). Evaluating UK Housing Policies to Tackle Housing Affordability. *International Journal of Housing Markets and Analysis*, 5(3), pp. 253–271. <http://doi.org/10.1108/17538271211243599>.
- Ronald, R., & Elsinga, M. (2012). *Beyond Home Ownership* (First Edition). New York: Routledge.
- Roween, C. C. A. (2014). Housing Affordability Challenges : The Case of the Median Income Households in Cagayan de Oro City Philippines College of Arts and Sciences. *International Journal of Humanities and Social Sciences*, 4(10), pp. 95–107.
- Rugg, J. J., & Quilgars, D. J. (2015). *Young People and Housing : A Review of the Present Policy and Practice Landscape*. Youth and Policy, pp. 5-16.
- Saari, N. H. (2014). *Impian atau Realiti Golongan Muda Memiliki Rumah*. Retrieved on September 25, 2014, from <http://www.ikim.gov.my/index.php/en/utusan-malaysia/9024-impian-atau-realiti-golongan-muda-memiliki-rumah>.
- Tan, T. H. (2012). Meeting First-Time Buyers' Housing Needs and Preferences in Greater Kuala Lumpur. *Cities*, 29(6), pp. 389–396. <http://doi.org/10.1016/j.cities.2011.11.016>.
- Visser, K., Bolt, G., & Kempen, R. Van. (2013). Urban Restructuring and Forced Relocations: Housing Opportunities for Youth? A Case Study in Utrecht, the Netherlands. *Housing Studies*, 28(2), pp. 294–316. <http://doi.org/10.1080/02673037.2013.767881>.
- Yang, S., Wang, M. Y. L., & Wang, C. (2015). Socio-spatial restructuring in Shanghai: Sorting out Where You Live by Affordability and Social Status. *Cities*, 47, pp. 23–34. <http://doi.org/10.1016/j.cities.2014.12.008>.
- Yang, Z., Yi, C., Zhang, W., & Zhang, C. (2013). Affordability of Housing and Accessibility of Public Services: Evaluation of Housing Programs in Beijing. *Journal of Housing and the Built Environment*, 29(3), pp. 521–540. <http://doi.org/10.1007/s10901-013-9363-4>.

Yip, N. M. (2013). Homeownership, Cohort Trajectories and Hong Kong's Post-Eighties Generation. In Forest, R., & Yip, N.M. (First Edition), *Young People and Housing: Transitions, Trajectories and General Fractures*. Oxon: Routledge, pp. 64-88. Doi:10.4324/9780203095096.

Zyed, Z. A. S. (2014). *Assessment of Housing Affordability Problems among Younger Working Households in Greater Kuala Lumpur*, PhD Dissertation, Universiti Malaya.

THE MEDIATING EFFECT OF HAPPINESS ON THE RELATIONSHIP BETWEEN WORK-LIFE BALANCE AND LIFE SATISFACTION: AN EMPIRICAL STUDY ON EMPLOYEES OF MALAYSIAN FINANCIAL INDUSTRY

Siti Hartini Najamudin¹, Muhamad Khalil Omar, Azzarina Zakaria

*Faculty of Business and Management,
Universiti Teknologi MARA, Selangor, Malaysia
¹E-mail: tinienajamudin@ymail.com*

Received: 24 May 2017
Accepted: 7 November 2017

ABSTRACT

The issue of happiness in organisation has been debated among academicians, practitioners, and policy makers nowadays. This is because it provides an index of how well things are going within the organisational context. The ability for an organisation to track front-line employee's happiness over time is a very useful in order to achieve organisation's successful policies and practices. Some previous studies conducted to measure the relationship contribute of work-life balance effects in quality in life, life satisfaction and wellbeing. Also, the impact of decreased income on happiness has hardly been studied except through the drop in income due to unemployment. Therefore, this paper attempts to show the relationship of work-life balance and life satisfaction with the mediating role of happiness. The main problem is to relate the situation to the Malaysian Financial Sector work-life balance with sense of happiness by World Happiness Report to get the outcomes of life satisfaction. Perhaps for these reasons, towards the end of this paper, happiness is proposed to be measured in mediating concept by linking the relationship of work-life balance and life satisfaction.

Keywords: *work-life balance, happiness, life satisfaction*

INTRODUCTION

This chapter will provide a clear view of the background of the study, statement of the problem, research questions, research objective, significance of the study and definitions of terms. Basically, this research is about the outcomes of work-life balance which is called 'life satisfaction of an employee' in the Malaysian Financial Sector with the mediating role of happiness. Happiness can be classified as a basic emotion characterised by a positive emotional state, marked by the sensation of well-being and pleasure, together with a feeling of success associated with a clear understanding of the world. In previous studies, it has been reported that Bhutan has famously adopted the policy goal of Gross National Happiness.

Background of the Study

Today, all humans want a satisfying life for themselves and their children. Because of that, they have to manage their time wisely to balance their work and life (work-life balance). Work-life balance refers to the degree when an individual engage in and is equally satisfied with his or her work role and family role. There are three components of work-family balance: time balance (equal time divided to work and family), involvement balance (equal involvement in work and family) and satisfaction balance (equal satisfaction with work and family) (Greenhaus, Collin and Shaw, 2003). For some organisations, work-life balance is important in order to attain employees' happiness. Some managers believed that happy employees will increase the level of life satisfaction.

Work-life balance is an important issue in each organisation in order to achieve organisation's goals. Employees must give their full commitment to the organisation to increase productivity through their responsibility. Many past studies have discussed issues in work-life balance through many outcomes which has been reviewed in this study. This study aims to show the relationship between work-life balance and life satisfaction with the mediating concept of role of happiness. In addition, Haddon (2013) illustrated that a good work-life balance will impact an employee's feelings or happiness towards their life. Nonetheless, when the level of happiness is achieved, another level of achievement which is called satisfaction is utilised (Valcour, 2007). Moreover, Helliwell and Putnam (2004) believe that God

plays a very important role in human lives and have higher reported measures of both happiness and life satisfaction. However, the researcher has not found studies on the mediating role of happiness to show the relationship between work-life balance and life satisfaction. There have been few studies conducted using the mediating concept of happiness through other outcomes.

Thus, this study is conducted to link the issue in the World Happiness Report and also the work-life balance problem in the Malaysian Financial Sector by using mediating concept. This study will be conducted in the financial sector in Malaysia because this sector is the highest contributor of organisation in the country. Furthermore, this sector is now in a prime position to be more innovative, relying on new technologies and emphasizing on skills and knowledge of their employees instead of on assets such as plants or machinery.

Problem Statement

Nowadays, Malaysia’s services sector is expected to contribute 70% of the country’s gross domestic product (GDP) by 2015 as the government aggressively expands the sector. Deputy International Trade and Industry Minister, Mukhriz Mahathir said in the 10th Malaysia Plan, from 2011 through 2015, anticipates that the average real annual growth rate of the sector should accelerate to 7.2% during the period and higher investments are needed in the services sector’.

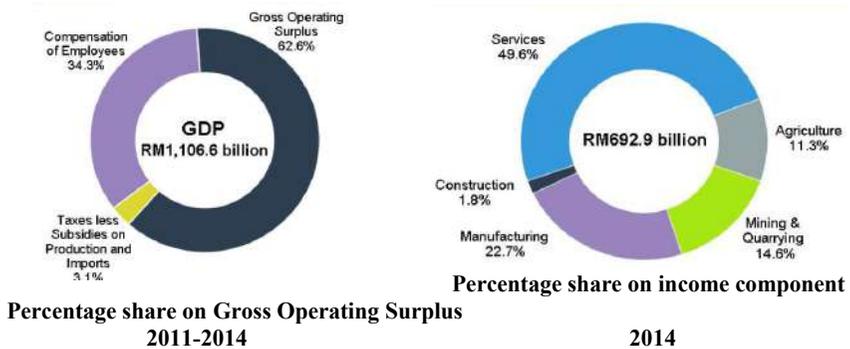
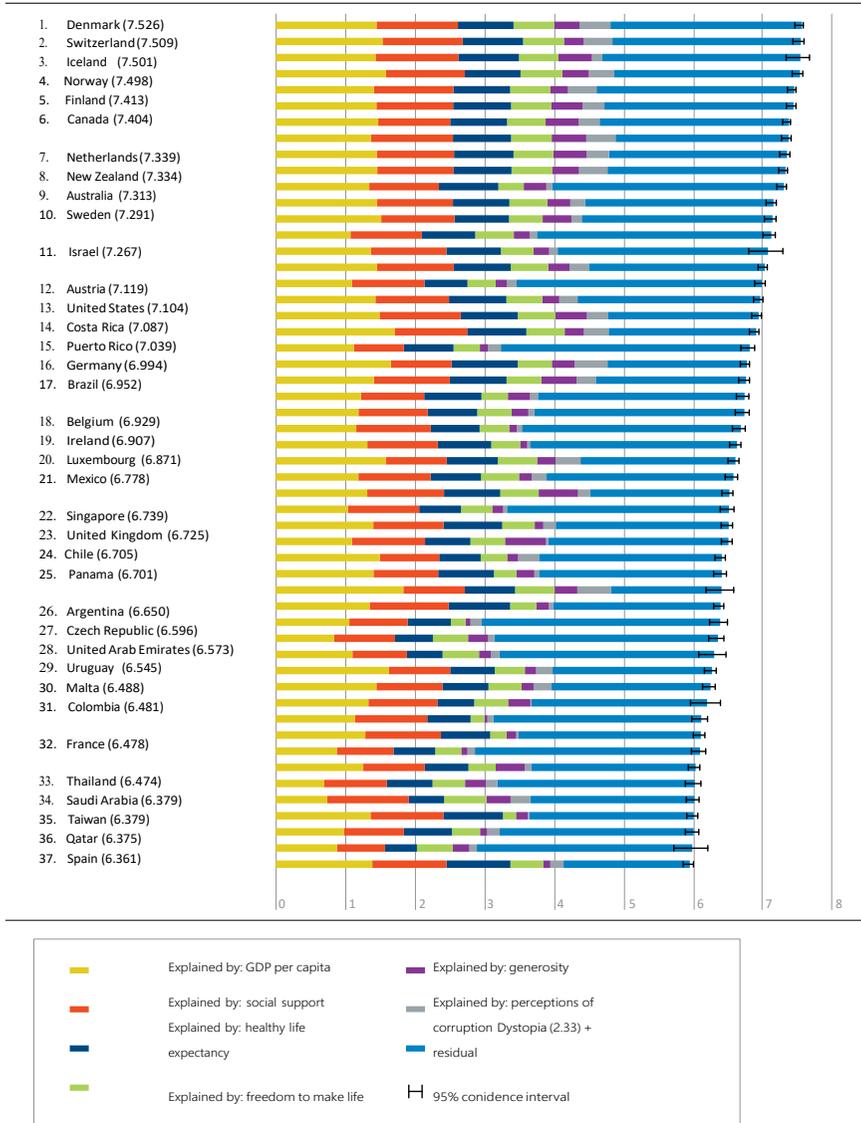


Figure 1: Gross Domestic Product Income Approaches 2010-2014

In Malaysia, the advancement of human capital, enhancement of the mentality and intellectual capacity of a nation is one of the areas targeted under the 10th Malaysia Plan. Moreover, the part of human capital is significant to the development of a world-class capital market. The financial sector is the highest contributor in country's GDP. According to the result from Figure 1 it clearly shows that the largest income component is Gross Operating Surplus which resulted in 62.6 %. As the largest contributor to the economy, the services sector accounted 49.6 % to total Gross Operating Surplus in 2014. Thus, Gross Operating Surplus represents the revenues that the business sector generates by operating activities after the labour factor input has been recompensed. Therefore, the financial sector has been chosen for this study. In addition, the financial sector needs to anticipate and respond to these demands and expectations. In order to reach the demands and expectations, individuals in financial sector should firstly have examined the ability of demands (Donohoe, 2012). Because of expanding number of hours employees went through at work and the amount of employment requests placed on them the boundaries between work and life domains were highlighted (Donohoe, 2012; Bakker, 2008). Previous research has analysed the negative part of work-life balance and the constructs, which contribute to the difficulties experienced by employees as they manage adjusting the balancing of work and life. Work-life balance is accepting impressive consideration by work-life scholars as a result of the possibility to portray positive qualities and benefits gained from the work-life interface. However, because this is an emerging area of research, no consistent conclusions can be made at this time (McMillan *et al.*, 2011).



Sources from: World Happiness Report 2015.

Figure 2: Ranking of World Happiness Report 2013-2015

In addition, if an individual can manage their work-life balance, in turn, he/she will express good feeling which is happiness. Figure 2 below shows the Ranking of World Happiness Report. Malaysia is one of the countries included in it as is ranked 47th which scores 6.005 out of 10 in scales. This means, there must be some issues of happiness in Malaysia. Furthermore, happiness report is designed to help countries in order to achieve a more balanced approach, thereby leading to higher levels of well-being for the present and future generations. However, there are many factors affecting differences in happiness report between nations. One of the factors is the working environment. If an individual can manage their time wisely due to their work and life, he/she will find happiness in their working environment. Moreover, he/she will tend to appreciate their life and provide a quality living conditions. Furthermore, a country with a good quality of living condition will help in economic growth.

The financial sector is also important as a key driver and catalyst of economic growth. At the same time, the contribution of the financial sector to GDP is expected to increase from 8.6 % of 2010 to between 10% and 12% by 2020 as stated in 10th Malaysia Plan. Nonetheless, Gross Operating Surplus represents the income available to financial and non-financial corporations that enable them to pay taxes or repay debt to creditors. In the other words, work-life balance is important for each employee to be paid. Work-life balance is the focus for organisation and people since people have advantages of having better wellbeing and when they have WLB and this, it affects hierarchical efficiency and execution (Zheng, 2015). Zheng (2015) shows the direct relationship between work-life balance and happiness. This study is proposed to contribute to body knowledge in mediator concept of happiness in the relationship between work-life balance and life satisfaction. This is because until today, the researcher found that there is a dearth of studies that clearly showed the mediating role of happiness in the relationship between work-life balance and life satisfaction. Therefore, this study proposed a new relationship by linking the mediating role of happiness between work-life balance and life satisfaction.

Research Questions

- a) Is there any relationship between work-life balance and happiness?
- b) Is there any relationship between work-life balance and life satisfaction?
- c) Is there any relationship between happiness and life satisfaction?
- d) Does happiness mediate work-life balance and life satisfaction?

Research Objective

- a) To determine a relationship between work-life balance and happiness.
- b) To examine a relationship of work-life balance and life satisfaction.
- c) To evaluate a relationship between happiness and life satisfaction.
- d) To identify the mediating role of happiness in the relationship between work-life balance and life satisfaction.

Significance of the Study

The goal of this study is to contribute knowledge in literature by linking the relationship of work-life balance and life satisfaction with the mediating role of happiness. This study will be conducted among employees in the Malaysian Financial Sector. By referring to past studies, this study will use mediating concept to link the relationship of work-life balance and life satisfaction. Nonetheless, previous studies focused on work-life balance or happiness with other outcomes. Hence, this study will focus on life satisfaction as outcome from work-life balance and happiness. In addition, this study will provide practical implication to country in order to increase economic growth with a good quality of living condition and working environment. Thus, in this study the researcher replicated the conceptual referent theory of happiness (CRT) by Rojas (2005).

Definition of Terms

Work-Life Balance

Work-life balance is defined as the extent to which an individual's effectiveness and satisfaction in work and family roles are compatible with the individual's life role priorities at a given point in time. (Greenhaus and Allen, 2010).

Happiness

Happiness can be defined as a basic emotion characterised by a positive emotional state, marked by the sensation of well-being and pleasure, together with a feeling of success associated with a clear understanding of the world(Paco, 2012).

Life Satisfaction

Life satisfaction is an overall assessment of feelings and attitudes about one's life at a particular point in time ranging from negative to positive. It is one of three major indicators of well-being: life satisfaction, positive affect, and negative affect (Diener, 1985).

Summary

This chapter provides an overview of the study. Overall, this chapter highlighted the research gaps in both practical and knowledge in literature of work-life balance, happiness and life satisfaction. The next chapter provides a detailed relevant past literature that supports this study.

LITERATURE REVIEW

This chapter will demonstrate a relevant previous literature, studies, opinion and empirical studies. The chapter starts with a review of work-life balance, happiness and life satisfaction then followed by subsections clarifying the past studies of definition, development of study and outcomes from each variable. Lastly, the chapter will show the relationship between work-life balance and happiness, the relationship between work-life balance and life satisfaction, happiness with life satisfaction and mediating role of happiness with work-life balance and life satisfaction. From this chapter the research gaps will be identified.

Work-Life Balance and Happiness

Many outcomes relate with work-life balance such as job performance, women, adults, married and those having more family and job responsibilities as persons who are involved more in work-life balance. Thus, this study will propose to determine the relationship between work-life balance and happiness.

Haddon (2013) believed that a good balance in work and life is when an individual feels satisfied with how much time they spend in each area and feel out of balance if time spent in any area that gives adversely impacts on another. For example, an individual who does not have much time to do things with loved ones because he or she has pressure at work. This situation clearly illustrates that individuals cannot juggle with work-life balance and their feelings. If they have pressure at work, they will definitely not express good feelings or happiness towards their loved ones. Haddon (2013) remarked that if an individual does not feel happy, try to take time to work out why and the do something positive to make a difference. In other words, bring more happiness and start balance into life.

Nonetheless, Rodriguez-Muñoz (2013) expanded the study and hopes that the positive focus of this special issue may serve to encourage further research in the domain of happiness and wellbeing at work. This is because most studies focus more on productivity and happiness in organisation. In addition, the mix of work-life balance and happiness makes representatives feel good since satisfaction is characterised as ‘a fundamental feeling portrayed by a positive passionate state, set apart by the vibe of prosperity and delight, together with a sentiment achievement connected with an unmistakable comprehension of the world’ (Nave, 2013).

Therefore, this study is aimed to propose the clear relationship between work-life balance and happiness.

Hypothesis 1 (H1): There is a relationship between work-life balance and happiness

Work-life Balance and Life Satisfaction

Valcour (2007) focused on thought of satisfaction with work-family balance as a general level of happiness. Using hierarchical regression analysis, the bringing together develop of satisfaction with work-family balance was operationalised among full-timers. Valcour (2007)'s study was measured by seven things including the appraisal of three noteworthy types of mental contemplations of work and non-work communications; time, strain, and conduct based, as recommended by Greenhaus and Beutell (1985).

Other than that, by utilising basic comparison, Karatepe (2012) reinvestigated those representatives with overwhelming workloads had low WLB, were more averse to be inserted in their occupations and indicated poor employment execution. The author believed that unevenness in the middle of work and family life is truth be told a more grounded danger variable than work stress for instigating mental scatters among representatives and essentially influences worker health. The results show that representatives who have substantial workloads and cannot develop a work-life balance part are sincerely depleted. Such representatives thus are less implanted in their occupations and showcase poor execution in the administration conveyance process.

Thus, this study will propose to show there is a relationship between work-life balance and life satisfaction.

Hypothesis 2 (H2): There is a relationship between work-life balance and life satisfaction.

Happiness and Life Satisfaction

Happiness in organisations has been linked to employees making personal sacrifices for the sake of clients, despite the fact that these sacrifices were neither required nor be remunerated by the organisation. Happiness and life satisfaction were both rated well above neutral on importance (and more important than money) in every e country (Diener, 2000). Helliwell and Putnam (2004) discuss the study of evidence on the determinants of life

satisfaction, happiness and self-assessed health status from several different nationals. Helliwell and Putnam (2004) focus on the effects of social capital on alternative measures of wellbeing. Nonetheless, they also believe from the global sample, those who report that God plays a very important role in our lives have higher reported measures of both life satisfaction and happiness, although the effect is larger and more significant for life satisfaction. The effects of trust shows more significantly (and are generally larger) in the equations for life satisfaction than in those for happiness. Furthermore, the study includes 29 000 observations drawn from a national random sample from many participating communities. The data from the World Values Survey (WVS) conducted in US shows linear estimation results of life satisfaction and happiness equations.

The idea supported by Veenhoven (2005) in a past study clarifies the presence of the social angle in life satisfaction from a transformative methodology: there are human needs, for example adoration, wellbeing that should be satisfied and subjective prosperity flags the level of satisfaction. Life satisfaction relies on the delight of necessities, instead of on the apparent acknowledgment of needs. Habituation and social correlations would work just as for needs (e.g., wage, material merchandise, and expert profession).

In addition, Singh and Jha (2008) claimed that the happiness and life satisfaction also shows a significant correlation. This research was conduct among 254 undergraduate students of Technology in Delhi. They found that positive and negative affect bear a significantly positive and negative (respectively) correlation with both aspects of well-being namely happiness and life satisfaction. As stated earlier, the concept of life satisfaction is encompassed within the concept of Happiness. We cannot rule out that the changed life would be less happy, or happier, than the one we were originally assessing.

Later, Ling *et al.* (2009) promote happy lifestyle through happiness activities. They used Well Being Index (WHO-5), Life Satisfaction Scale (LSS; Hong Kong Chinese version) and General Happiness Scale (GHS; Hong Kong Chinese version) to determine an outcome. Hence, from their study, they found an effective relationship in improving happiness and life satisfaction for community living clients. Happiness from the perspective of management is satisfying employees, management and institutional

partners and satisfies the society, suppliers and its clients and customers. As happiness is derived from satisfaction, happiness targets the importance of customers, employees, partners and suppliers and states that the relationships with them contain value which is intangible in nature.

Moreover, another study by Dockery (2016) reinvestigated for further analysis constructs of 'happiness' or 'life satisfaction' capture quite different aspects of wellbeing than do measures of mental health. He used data from the Longitudinal Surveys of Australian Youth (LSAY) and the Household Income and Labour Dynamics Australia survey (HILDA) to measure happiness and life-satisfaction. The results from both the LSAY and HILDA show that work has a significant impact upon people's feelings of wellbeing. Moreover, it is not just the state of being in work as opposed to out of work that affects wellbeing, but rather the quality of one's working life. Thus, this study has proved that higher satisfaction with the various job attributes is positively correlated with workers' overall happiness.

Therefore, from all the past studies, this study is proposed to show-the mediating role of happiness and the relationship between happiness and life satisfaction.

Hypothesis 3 (H3): There is a relationship between happiness and life satisfaction

Mediating variable of happiness between the relationship of work-life balance and life satisfaction

Overall, until today, the researcher has not found a study on the mediating role of happiness to work-life balance and life satisfaction. Thus, this study is proposed to examine the mediating role of happiness and its relationship with work-life balance and life satisfaction. Moreover, there are few previous studies conducted on using the mediating concept of happiness to many outcomes.

Stephens (2012) studied the prediction of happiness mediates the relationship between international activities and health. Using multiple regression analysis, she had collected the data from a representative

population survey of older New Zealanders' health, work and retirement. Hence, in result, she claimed that happiness fully mediates the relationship between socially related activities and physical health, to partly mediate the relationships between personal interest and achievement oriented activities and physical health.

Later Campos (2015) extended the study to examine how meditation frequency (from daily to non-practice) is related to greater happiness, and how dispositional mindfulness and self-compassion could be mediating this relationship. This study used hierarchical regression analysis to show two FFMQ facets (Observing and Awareness) and two SCS components (Self-kindness and Common humanity) that were significant predictors of happiness. Moreover, the author has posted a link of his online survey on several Spanish websites to be completed. Thus, Campos (2015) revealed a significant total indirect effect of observing, awareness, self-kindness and common humanity in the meditation frequency–happiness relationship.

Work-life balance is directly involved with the happiness and life satisfaction. Nowadays, with the changes in the economy in the country it can affect many aspects involved such as happiness, life satisfaction and how people deal with their work-life balance through this following situation. All humans want a satisfying life for themselves and their children and this shows up in high ranking of happiness in the value hierarchy of students everywhere throughout the world (Diener & Oishi, 2004). It also reflects in the improvement of life-coaching businesses. In the other words, balancing work and life will reflect happiness. Furthermore, happiness can also contribute more to society, not only because including more working hours over life-time, but also because specialisation becomes more profitable. As most previous studies, researchers have been able to relate the mediating role of happiness with other outcomes but until today, the researcher found there is a dearth of studies that clearly showed the mediating role of happiness in the relationship between work-life balance and life satisfaction. Therefore, this study proposed a new relationship by linking the mediating role of happiness with work-life balance and life satisfaction.

Hypothesis 4 (H4): Happiness mediates the relationship between work-life balance and life satisfaction.

Proposed Research Framework

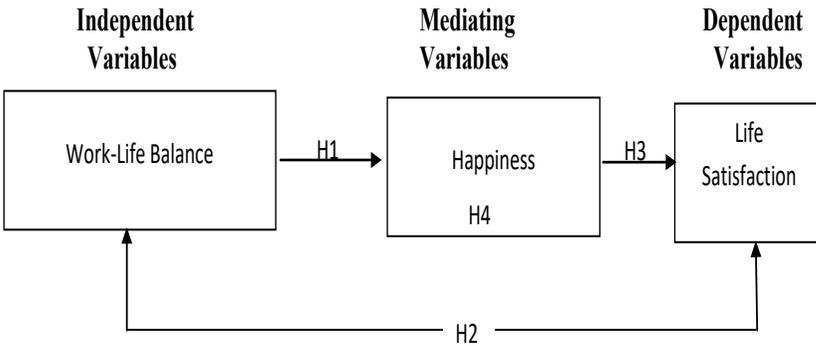


Figure 3: Theoretical Framework

Hypotheses

A hypothesis is couched in term of the particular independent and dependent variables that will be proposed in this study. For this research, the hypotheses are:

- H₁ : There is a relationship between work-life balance and happiness.
- H₂ : There is a relationship between work-life balance and life satisfaction.
- H₃ : There is a relationship between happiness and life satisfaction.
- H₄ : Happiness mediates the relationship between work-life balance and life satisfaction.

METHODOLOGY

This chapter reports the research design, population, sampling size, and data collection method and measurement and instrument. It also describes the development of questionnaires, the selection of the research measures and the targeted respondents and location. It briefly explains the data analysis techniques and provides an overview of Statistical Package for the Social Science (SPSS) and structural equation modelling (SEM).

Research Design

The descriptive study will be used in order to determine and to describe the characteristic of the variables of interest in a situation. This section assists the researcher to analyse the quantitative method that will be used in this study. A research design is a framework or blue print for conducting a research project. It details the procedure necessary for obtaining the required information and its purpose is to design a study that will test hypothesis of interest, determine the possible answer to the research question and provide the information needed for decision making (Malhotra, 1996). In this study, the researcher decided to use descriptive study in order to ascertain and be able to describe the characteristics of the variables of interest in a situation (Uma Sekaran, 2003). Descriptive study provides researcher with aspects that influence or gives outcomes of life satisfaction. The descriptive statistics involved Pearson correlation, independent samples t-tests, and one-way analysis of variance (ANOVA) was then employed to analyse the data further.

Thus, structural equation modelling (SEM) analysis will be used to examine the relationship of hypotheses in the framework of study whereas Statistical Package for the Social Science (SPSS) will be used to analyse a descriptive statistics.

Population

In this study, the researcher proposed to use questionnaires as a method to collect data. The target was to collect data from a few staff from the Malaysian Financial Sector area. The unit analysis of this study would be 200-300 employees of any rank/level from each Malaysian Financial Sector. The distribution of the questionnaire is using the purposive sampling. Later, the questions will be validated by using factor analysis using SPSS and AMOS combination that can perform SEM (Structural Equation Modelling) analysis to strengthen the questionnaire.

Sampling

To conduct this study, questionnaires will be distributed to 200-300 staffs from any rank/level in each department of Malaysian Financial Sector. The questionnaires will be distributed to the employees in person or by hand to get their feedback. Once completed, the respondents will then return the questionnaires to the researcher for data evaluation and analysis. This study proposed to use purposive sampling in order to obtain information from a specified target group. This is because, the sampling is confined to that group who fit the characteristics fixed by the researcher. Thus, the questionnaire will be distributed to a specified target group which is Malaysian Financial Sector.

Data Collection Method

In this research, the researcher proposed to distribute 200-300 questionnaires at Malaysian Financial Industry to get primary data as required for SEM modelling.

Measurement and Instrument

In a nutshell, the researcher will adapt established and valid research measurements of previous studies with some adjustments for certain measures. Hereby, the following subsections provide details of the research measures, including the sources and adjustments.

Work-Life Balance

Work-life balance is the adjustment from the phrase ‘work-family balance’ by Omar (2014) that consists of the items ‘family’ to ‘non-work’. This study will adapt seven items of measurement by Omar (2014). Thus, Omar (2014) remarked that to obtain the more favourable attitude towards work-life balance, all the seven items are summed and the higher score is indicated. The respondents has to select one out of 7-point Likert scale ranging from 1 = strongly disagree, to 7 = strongly agree. The items to be considered are, “I am successful in balancing my work and non-work life”, “I am satisfied with the balance between my job and non-work life”, “I am

satisfied with the way I divide my time between work and non-work life”, “I am satisfied with the way I divide my attention between work and non-work life”, “I am satisfied with how well my work life and my non-work life fit together”, “I am satisfied with my ability to balance the needs of my job with those of my non-work life”, and “I am satisfied with the opportunity I have to perform my job well and yet be able to perform non-work related duties adequately.

Happiness

In this study, the researcher introduced the mediator role of happiness to link the relationship between work-life balance and life satisfaction. However, to measure the happiness, there are many different methods such as interview or external observer. This study will adapt the four items of happiness measurement developed by Lyubomirsky and Lepper (1999) which is called Subjective Happiness Scale (SHS). The respondent will be asked to make a choice out of 7-point Likert Scale ranging from 1=Not a Very Happy, to 7=A Very happy. The items are, “In general, I consider myself”, “Compared to most of my peers, I consider myself”, “Some people are generally very happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extent does this characterisation describe you?” and “Some people are generally not very happy. Although they are not depressed, they never seem as happy as they might be. To what extent does this characterisation describe you?”.

Life Satisfaction

Life satisfaction is the result to be understood what life domains are important to the individual and the basis of the evaluation made (Corrigan, 2013). This study will be adapting the five items from Diener (1985) scale which is called Satisfaction with Life Scale (SWLS) with some modifications. The respondents have to choose one out of 7-point Likert Scale ranging from 1=Strongly Disagree, to 7=Strongly Agree. The items include were, “In most ways my life is close to my ideal”, “The conditions of my life are excellent”, “I am satisfied with my life”, “So far I have gotten the important things I want in life” and “If I could live my life over, I would change almost nothing”.

Data Analysis

All primary data will be processed and analysed using two statistical software packages in order to process raw data and to test the hypotheses of the study. For data analysis, Statistical Package for Social Science (SPSS) will be used to get the results between variables from the questionnaire, the researcher has to use reliability test. Frequency distribution is to determine how many respondents respond to the questionnaire and also to see if there are unanswered items by respondents. Pearson correlation analysis is utilised to test the relationship between dependent variables (DV) and Independent Variables (IV). Data will be entered into the computer using Microsoft Word, Excel and SPSS. Results presented through frequency counts and other descriptive statistics whereas the other software will be analysed using Structural Equation Modelling (SEM). The SEM software will be adapted to validate the measurements and confirm the hypothesized relationship of the variables in the research model.

SUMMARY

In conclusion, this chapter has briefly explained the research design, population, sampling size, data collection method, measurement that were adapt from past studies and data analysis strategy that were adapted in this study.

REFERENCES

- Bakker, A. B. (2008). The Work-Related Flow Inventory: Construction and initial validation of the WOLF. *Journal of Vocational Behavior, Vol. 72*(3), 400-414. <https://doi.org/10.1016/j.jvb.2007.11.007>.
- Campos, D. (2016). Meditation and happiness: Mindfulness and self-compassion may mediate the meditation–happiness relationship. *Personality and Individual Differences, Vol. 93*, 80-85. <https://doi.org/10.1016/j.paid.2015.08.040>.
- Corrigan, J. D. (2013). The Satisfaction with Life Scale. *Journal of Head Trauma Rehabilitation, Vol. 28*(6), 489-491. DOI: 10.1097/HTR.000000000000004.
- Diener, E., Emmons, R. A., Larsen, R. J. And Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment, Vol. 49*, 71-75.
- Diener, E. (2000). Subjective well-being: The science of happiness and a proposal for a national index. *American Psychologist, Vol. 55*(1), 34–43.
- Diener, E., & Oishi, S. (2004). Are Scandinavians happier than Asians? Issues in comparing nations on subjective well-being. In F. Columbus (Ed.), *Asian Economic and Political Issues, Vol. 10*, 20, 1–25. Hauppauge, NY: Nova Science.
- Dockery, A. M. (2003). Happiness, life satisfaction and the role of work: Evidence from Two Australian surveys. In Carlson, Ellen (Editor). *Full Employment Imperative*. Callaghan, NSW: University of Newcastle, Centre of Full Employment and Equity.
- Donohoe, T. N. (2012). A holistic approach to work-life balance and job-life satisfaction: A multiple case study (Order No. 3524311). Available from ProQuest Dissertations & Theses Global. (1038836408). Retrieved from <http://search.proquest.com.ezaccess.library.uitm.edu.my/docview/1038836408?accountid=42518>.

Greenhaus, J. H., and Beutell, N. J. (1985). Sources of Conflict between Work and Family Roles. *Academy of Management Review*, Vol. 10(1), 76–88.

Greenhaus, J.H., Collins, K. and Shaw, D. (2003). The Relation between Work-Family Balance and Quality of Life. *Journal of Vocational Behaviour, Quality of Work Life Balance*, Vol. 63(3), 510-31. [https://doi.org/10.1016/S0001-8791\(02\)00042-8](https://doi.org/10.1016/S0001-8791(02)00042-8).

Greenhaus, G.H. and Allen, T.D. (2010). Work-family balance: a review and extension of the literature. In Tetrick, L. and Quick, J.C. (Eds), *Handbook of Occupational Health Psychology*, 2nd edition, Washington: American Psychological Association, 165-183.

Haddon, J. (2013). The Secret to Life Balance and Happiness. *Management Services*, Vol. 57(1), 30.

Helliwell, J. F. and R. D. Putnam (2004). The Social Context of Well-Being, *Philosophical Transactions of the Royal Society of London B: Biological Sciences*, Vol. 359, pp 1435-1446. doi: 10.1098/rstb.2004.1522.

Jha, K.S. (2008). Positive and Negative Affect, and Grit as predictors of Happiness and Life Satisfaction. *Journal of the Indian Academy of Applied Psychology*, Vol. 34(Special Issue), 40-45.

Karatepe, O.M. (2012). Perceived organisational support, career satisfaction, and performance outcomes: a study of hotel employees in Cameroon. *International Journal of Contemporary Hospitality Management*, Vol. 24(5), 735-752. <https://doi.org/10.1108/09596111211237273>.

Ling, K. (2009). An Occupational Lifestyle Redesign Programme to Improve Happiness. *Hong Kong Journal of Occupational Therapy*, Vol. 19(2), 35-57.

Lyubomirsky, S., and Lepper, H. S. (1999). A Measure of Subjective Happiness: Preliminary Reliability And Construct Validation. *Social Indicators Research*, Vol. 46(2), 137-155. <https://doi.org/10.1023/A:1006824100041>.

- Malhotra, N.K. (1986). Why Developing Societies Need Marketing Technology. *International Marketing Review*, Vol. 3(1), 61-73. <https://doi.org/10.1108/eb008299>.
- McMillan, H. S. (2016). Constructs of the Work / Life Interface: A Synthesis of the Literature and Introduction of the Concept of Work/ Life Harmony. *Human Resource Development Review*, Vol. 10(1), 6-25. doi:10.1177/1534484310384958.
- Nave, A. C., Arminda do Paço (2013). Corporate volunteering: A case study centred on the motivations, satisfaction and happiness of company employees, *Employee Relations*, Vol. 35(5), 547 – 559. <https://doi.org/10.1108/ER-12-2012-0089>.
- Omar, M. K. and Zakaria, A. (2015). Conceptualizing Work-life balance; Extension of work-family balance. *Advanced Science Letters*, Vol 21(6), 2155-2158. doi:10.1166/asl.2015.6240.
- Rodríguez-Muñoz, A., Ana I.Sanz-Vergel (2013). Happiness and well-being at work: A special issue introduction. *Revista de Psicología del Trabajo y de las Organizaciones*, Vol. 29(3), 95-97. <https://doi.org/10.5093/tr2013a14>.
- Rojas, M. (2007). Heterogeneity in the relationship between income and happiness: A conceptual- referent-theory explanation. *Journal of Economic Psychology*, Vol. 28(1), 1-14. <https://doi.org/10.1016/j.joep.2005.10.002>.
- Stephens, A. H. (2012). *The Mediating role of happiness in the relationship between adults' international activities and health*. Paper presented at Refereed Proceeding of the Doing Psychology: Manawatū Doctoral Research Symposium, School of Psychology, Manawatū Campus, New Zealand, 41-50.
- Uma Sekaran and Roger Bougie (2010). *Research Methods for Business*, West Sussex, United Kingdom: John Wiley & Sons Ltd.

- Valcour, M. (2007). Work-based resources as moderators of the relationship between work hours and satisfaction with work–family balance. *Journal of Applied Psychology*, Vol. 92(6), 1512–1523. DOI:10.1037/0021-9010.92.6.1512.
- Veenhoven, R. (2005). Is life getting better? How long and happy do people live in modern society? *European Psychologist*, 2005, *Special section on 'Human development and Well-being'*, Vol. 10(4), 330–343. <http://dx.doi.org/10.1027/1016-9040.10.4.330>.
- Zheng, C., Molineux J., Mirshekary S., & Scarparo S. (2015). Developing individual and organisational work-life balance strategies to improve employee health and wellbeing. *Employee Relations*, Vol. 37(3), 354–379. <https://doi.org/10.1108/ER-10-2013-0142>.

DESCRIPTIVE ANALYSIS - PREDICTORS OF ATTITUDE TOWARDS PURCHASING HALAL SKIN CARE PRODUCTS

Azreen Jihan¹, Rosidah Musa²

¹Faculty of Economics and Muamalat, Universiti Sains Islam Malaysia,
Bandar Baru Nilai, 71800, Nilai, Negeri Sembilan, Malaysia

²Institute of Business Excellence, Faculty of Business Management,
Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia
E-mail: azreenjihan@gmail.com, rosidahm@salam.uitm.edu.my

Received: 27 January 2017

Accepted: 19 September 2017

ABSTRACT

The purpose of this paper is to discuss the percentage of frequencies with measures of central tendency (mean value) and dispersion (standard deviation) of predictors of attitude, namely, spiritual intelligence, spiritual congruence, product image and product involvement of halal skin care products towards a continuous intention to purchase. The primary objective of the descriptive analysis is to explore and gain an initial understanding and get the feel of the data gathered from the survey. It was based upon a representative sample of adult urban Muslim career woman (users and non-users) who work or live in the target area for this study. These areas are the federal territory of the Klang Valley which are considered urbanised. The survey reached 449 adults, achieving 100 percent of the target sample size of 400. The respondents involved are those who have experience in purchasing and continue to purchase the halal skin care products. The quota sampling technique was employed. Two demographic variables have been determined as a mechanism to control the composition of the sample (gender and age).

Keywords: *spiritual intelligence, spiritual congruence, product image, product involvement*

INTRODUCTION

There are various benefits of implementing Islamic business practices. Among them are the products can be used by Muslims without any doubts as most of the Malaysian products are produced by non-Muslims (Azmi, 2014). The industry has been forecasted to emerge as the next important segment of the halal industry. It is essential as the consumers will become more halal-conscious and they will consider products which not only satisfy their needs, but also give them 'peace of mind'. Within the perspective of halal skin care products, it would be more effective to place the value of halal prominence and influence to the spiritual needs as a Muslim in gaining momentum amongst the Muslims. There are many skin care products in the market that vigorously attempt to encourage customers to purchase. The local brands are no less exceptional, they have obtained places in the eyes of customers today and claim them as an 'Islamic' brand by offering creative and eye-catching promotions. Nevertheless, Malaysia's skin care products have yet to become a 'home brand' for the Muslim woman customers in Malaysia today.

Thus, the scholars have focused enormous attention on the phenomenon of spiritual intelligence in organisations and workplaces. However, the researcher is focusing on the construct of spiritual intelligence from an individual's perspective, specifically in the marketing research stream which is limited and an established scale to operationalise the concept has been under explored.

PREDICTORS OF ATTITUDE

The emphasis of the antecedent of attitude which has extended the understanding of the concept of attitude in the TPB which provides more accurate (Baker, Al-Gahtani and Hubona, 2007), comprehensive and meaningful results in examining the user and non-user's attitude towards purchasing Halal skin care products.

OVERALL SAMPLE DEMOGRAPHIC PROFILE

This section is designed to present an overview of the research sample profile. Firstly, it has been reported in several empirical studies conducted in Malaysia as well as in other similar countries, where women make up a significantly larger percentage of purchasers of cosmetic products. Secondly, it is obvious that the specific product categories that are under study (skin care product) have direct appeal to women. Hence, the present focuses only on women's group for present purposes. Age also plays a role for example, previous research reported that age is a significant discriminator of halal skin care products.

In this study, 470 survey questionnaires were initially distributed to targeted survey respondents, consisting of career women and well-educated office-workers. A total of 449 (95%) legible questionnaires was returned. A univariate frequency distribution analysis examines and describes the demographic profiles of the current sample population. The percentages for the results are also included. Respondents were asked to provide demographic characteristics such as age, marital status, educational back group, employment sectors, occupation and income. The results of the present study seem consistent with most previous empirical findings. Table 1 displays a detailed breakdown of the survey of the participants' characteristics.

Table 1: Overall Sample Demographic Profile

Demographic		User	Percentages	Non-user	Percentages
Group	User	227	51%		
	Non-User			222	49%
Age	20 - 29 years old	32	14	44	20
	30 - 39 years old	166	73	144	65
	40 - 49 years old	29	13	34	15
Education Level	SPM/ STPM	27	12%	31	14%
	Diploma	57	25%	24	11%
	Degree	64	28%	100	45%
	Post graduate	79	35%	67	30%
Occupation	Executive	61	27%	104	47%
	Non-Executive	47	21%	44	20%
	Senior Management	57	25%	33	15%
	Professional	52	23%	33	15%
	Others	7	3%	7	3%
Household Monthly Income	RM1000 - RM3000	43	19 %	89	35%
	RM3001 - RM 5000	90	40%	89	40%
	RM5001 - RM7000	79	35	33	20%
	More than RM7000	14	6%	11	5%

It needs to be reiterated that all target respondents are well educated office workers employed in both private and local sectors within the commercial regions of the Klang Valley. They hold various occupational organisation positions and have equivalent qualifications. The respondents were fairly evenly split in terms of groups between users and non-users of halal skin care products. Malaysia’s three major ethnic groups were also approximately represented, revealing some consistencies with the level of ethnic composition in the study. As Malays comprise the largest ethnic group in this country, the religion distribution ratio is approximately 65%

‘Muslim’ which consists of Malay ethnic groups. For the user respondents, as for age, the majority of the respondents are 30-99 years old (73%). Most of the respondents are degree holders which contributes 35%. On the whole, most of the respondents are among the senior management which indicates 27%.

Finally, the highest level of income of the respondents is from RM3000–RM5000 per month. While for the non-users respondents, as for age, the majority of the respondents are 30-39 years old (65%). Most of the respondents are Degree holders which contribute to 45%. On the whole, most of the respondents are among the executives group which indicates 47 %. Therefore, due to the aforementioned similarities, the sample of this research is believed to be representative of the wider population of adult urban Muslim career women in Malaysia.

This section describes in detail the user respondents’ exposure and experience concerning purchasing the purchase of halal skin care products. The questions had to be answered just among the users of halal skin care products. Additionally, any pertinent brand name, perception and factors that influence purchasing, in terms of purchase frequency will be discussed.

DESCRIPTIVE ANALYSIS

Descriptive statistics in this paper describe basic data analysis, such as mean values, standard deviations and test of significance among selected variables (Chatfield, 1989). The findings are displayed using tables and graphs to illuminate the features of the data as well as to provide a simplified picture of large data sets. These constructs comprise of the predictors and criterion variables identified within the final conceptual model of international behaviour. The main aim of conducting such an analyses is to explore and gain an initial understanding of and ‘feel’ for the gathered survey data (Hair *et al.*, 2003). Discussion focuses on the respondents general viewpoint of agreement or disagreement about the examined key factors. Most of the results reveal the respondents strong agreement and strong likelihood of each of the statements identified in measuring the relevant constructs. Most of the standard deviations reported for each of these items are from 0.5 to 0.9. The results were acceptable since the responses are generally clustered round the mean value and do not exceed a value of 2.5 (Hair, *et al.*, 2003).

SPIRITUAL INTELLIGENCE

With congruity between the development of ummah and its teaching, the relationship between human and creator, the relationship between the different components in oneself and another and creating balance in mind, spirit and body (Lubis, 2015). In this section, three spiritual intelligence constructs, which consist of Sense of Purpose (God), Sense of Community (Society) and Well Being (Self) will be examined. A seven point Likert scale anchored scale, ranging from (1) which denotes “Strongly Disagree”, (2) For “Disagree”, (3) For Slightly Disagree, (4) Neutral, (5) “Slightly Agree” (6) “Agree”, (7) “Strongly Agree” was utilised to elicit participants’ response. Agree-Disagree ratings were utilised to evaluate spiritual intelligence rather than having respondents rate spiritual intelligence based on the attributes of the goods or products.

SPIRITUAL INTELLIGENCE - SENSE OF PURPOSE (GOD)

An examination of the results revealed in Table 2 illustrates the extent of respondents’ (users and non-users) spiritual intelligence concerning each of the items in the scale investigated. The total respondents among users are 222 while non-users are 227. All the items in the scale are closely related to the spiritual strength behaviour aspect. Earlier studies have proclaimed that these items are established and results in higher scores in measuring the individual’s level of spiritual intelligence among the employees in an organisation (Akmar, 2011; Karakas, 2009; Freeman, 2011). Although one of the items for ‘life is a gift’ (non-users results) reported above 1.00, this is still acceptable since responses are still generally clustered around the mean value, and do not exceed a value of 2.5 (Putit, 2007).

Table 2: Descriptive statistical analysis of measurement scales for respective hypothesised constructs

Scales	User		Non-user	
	Mean	SD	Mean	Std. Deviation
I feel deep inner peace and harmony	6.00	0.68	5.32	1.12
My life is a gift and I try to value each moment in	5.91	0.73	5.75	0.71
I find comfort and strength in my religion	6.02	0.67	5.98	0.68
I enjoy listening Islamic channel in radio	5.86	0.70	5.96	0.71
I enjoy watching Islamic channel on television	5.88	0.73	5.76	0.69
I feel blessed with what I have today	5.58	0.86	5.87	0.72
Prayer is for peace and happiness	5.56	0.81	5.45	0.83

SPIRITUAL INTELLIGENCE-SENSE OF COMMUNITY (SOCIETY)

Table 3 provides an account of response frequencies, the mean value and standard deviation for measurement of individuals towards society. Respondents were asked to rate their degree of how they see themselves when dealing with others in their daily life. From the table, it can be observed that both respondent groups perceived a level of dealing with society generally favourable, since all items are reportedly identified at the positive endpoints of the Likert scale. Compared to the users and non-users of standard deviation score results, the users of halal skin care products is slightly higher than non-users.

The findings suggest that in regards to the sense of community, user held in high concern and awareness towards society and people surrounding them, with the mean score of 5.95. While the highest mean score for the nonuser is 6.00. All the standard deviations exhibit a value of less than 1, which suggest that the results are packed around the mean.

Table 3: Sense of Community - Descriptive Statistics

Scales	User		Non-user	
	Mean	SD	Mean	Std. Deviation
I feel a deep sense of respect for others	5.95	0.74	5.84	0.67
I have a deep sense of interconnectedness and community	5.96	0.73	5.90	0.69
I feel deep concern towards the environment	5.91	0.75	5.95	0.66
I do not like feeling controlled by other people	5.83	0.72	5.91	0.71
I do not like other people telling me what to do	5.75	0.72	6.00	0.68
I like to make my own decisions and not be too influenced by others	5.19	0.93	5.43	0.83

SPIRITUAL INTELLIGENCE – WELL-BEING (SELF)

Table 4 provides descriptive statistic results of well being, which the sub-dimension of spiritual intelligence describes the respondent’s perspective of self well-being. This includes individual level positive effects of spirituality; integrity, hygiene, forgiveness, materialism and patient. A careful examination of the frequency distribution, mean score and standard deviation presented in Table 4 convinces that all the items investigated in the measurement scale obtain a result of higher than 5.

Table 4: Well-being (self) - Descriptive Statistics

Scales	User		Non-user	
	Mean	SD	Mean	Std. Deviation
I am genuinely open, honest about who I am	5.91	0.71	5.89	.687
I am the same person in public that I am in private	6.00	0.68	6.00	.670
If I promise something I can be certain that it will happen	6.02	0.67	6.05	.634
Money is important	5.71	0.73	6.60	0.82
Money reflects my accomplishment	5.59	0.86	6.67	0.81
I like to own luxury things in my life	5.68	0.80	5.58	0.80
My life will be more enjoyable if I am rich and have more money	5.66	0.76	5.89	0.69
Being hygienic (to be clean) is a duty to act	5.68	0.84	5.71	0.77
Being hygienic (to be clean) is part of my religion	5.59	0.88	6.01	0.73
The bathrooms and toilets should always be kept clean and pleasant to use	5.54	0.92	5.86	0.79
I do not mind traffic jams	5.64	0.89	5.84	0.86
I get upset while waiting	5.68	0.74	5.86	0.81
I can always find something to do when I have to wait	5.40	0.98	5.67	0.87
It is easy for me to admit that I am wrong	5.63	0.85	5.78	0.78
I believed that God forgives me	5.78	0.75	5.94	0.65
I believe that there are times when God has punished me	5.53	0.77	5.86	0.69

SPIRITUAL CONGRUENCE

Table 5 illustrates the response frequencies and descriptive statistics for each of the spiritual congruence items investigated. Participants response are captured on an eight-items, measure on seven-Likert scale. Finally the items presented only four items as stated in Table 5. Respondents are requested to evaluate the extent to which their purchasing attitude from users and non-users respondents of halal skin care products.

Table 5: Spiritual Congruence – Descriptive Statistics

Scales	User		Non-user	
	Mean	SD	Mean	Std. Deviation
By using halal skin care products reflects who I am	6.19	0.93	4.35	1.44
Halal skin care products describe me as a person	5.42	1.09	4.24	1.43
Halal skin care products are similar to my personality	5.43	0.83	4.4	1.4
I can identify myself with halal skin care products	5.53	0.77	5.65	1.05
User of halal skin care products typically signify how I would like to be	5.78	0.98	5.89	0.69
Halal skin care products are similar to my preference	5.69	0.875	5.71	0.77
The price of the halal skin care products is similar to the price I expected	5.73	0.903	5.49	0.985
The innovativeness of halal skin care products has been just like myself	5.5	0.945	5.3	1.22

PRODUCT IMAGE

A three-item, seven point Likert scales was utilised to capture the respondent’s perception towards the product image of the products that includes the packaging, price range, ingredient, reliability and quality of the

product. The scales were adapted by Wilkie (1994) by modifying the items to fit the halal skin care products context. Results from Table 6 demonstrate that the items of packaging in the scale record the highest score for users, mean- (5.82 and 5.59), an item on the quality is the lowest score mean 5.32 for users. While for the non-users, the lowest mean score which equals to 5.40 (price). Overall, the evidence derived from the results suggests that the respondent's perception towards the product image towards the halal skin care products was over 5 which shows that this construct plays a vital role in halal skin care products to have a good product image to create confidence and are attractive to purchase.

Table 6: Product Image – Descriptive Statistics

Scales	User		Non-user	
	Mean	SD	Mean	Std. Deviation
The design of the halal skin care product packaging really appeals to me	5.66	0.76	5.54	0.92
The halal skin care products has an affordable price range	5.78	0.75	5.40	0.98
The packaging of the halal skin care products is as pleasing as the product	5.82	0.71	5.59	0.88
The ingredient of the halal skin care products, product are better than another product	5.65	1.05	5.68	0.84
The halal skin care products are consistently high quality	5.32	1.04	5.46	.915
The halal cosmetic product is reliable	5.46	.909	5.50	.921

PRODUCT INVOLVEMENT – DESCRIPTIVE STATISTICS

A detailed inspection of the results in Table 7 reveals the response of users and non-users frequencies and descriptive statistics for each of the 'purchase involvement' items. These are adapted by (Mittal, 1989; Musa, 2004) and refined to purchase halal skin care products. Respondents were captured on a three-item measure on a seven-point bipolar phases.

Table 7: Product Involvement – Descriptive Statistics

Scales	User		Non-user	
	Mean	SD	Mean	Std. Deviation
In selecting from the many types of skin care products available in the market, would you say that	5.81	0.76	5.81	0.98
Do you think that the various types of skin care products available in the market are all very alike or are all very different?	4.13	0.73	5.74	0.82
How important would it be for you to make a right choice of skin care products?	5.55	0.78	5.59	0.75
In making your selection of skin care products, how concerned would you be about the outcome of your choice	5.60	0.78	5.58	0.75
How important will be the purchase of skin care products in my life?	5.57	0.76	5.58	0.78

CONCLUSION

The overall results provide the evidence that for this particular purchase decision, it could be concluded that both the respondents are particular in making a purchase decision that they could be highly involved in. The standard deviation for all items is less than 1, which indicates that the data clusters closely around the mean. These findings provide the evidence that both respondent groups have an intention to purchase halal skin care products. Initially, spiritual intelligence and spiritual congruence have a positive significant effect on attitude and influences continuous to purchase halal skin care products for users, but not for non-users. Consequently, product image is the most influential predictor’s of attitude and has positive significant influence in intention to purchase halal skin care products for non-users, and spiritual intelligence for users’ respondents. Finally, it was revealed that product involvement found to be a significant predictor of attitude towards purchasing halal skin care products for both users and

non-users. In terms of the predictors of intention of purchasing halal skin care products, the results delineate several interesting findings. Primarily, attitude, subjective norms and perceived behaviour control have positive significant effect in influencing user and non-users to continue to purchase and intention to purchase halal skin care products. The research unveils four new links, namely for users, spiritual intelligence, spiritual congruence (that have not been examined empirically by previous research), product image and product involvement. On the other hand, for the non-users, product image and product involvement seem to be significant predictors of intention to purchase halal skin care products. Notably, the research has also developed and validated a new measuring scale of spiritual intelligence particularly in halal skin care products (Hashim & Musa, 2013). These findings form part of the strategic recommendations to marketing strategy in the face of understanding purchaser attitude and behavioural intention which has established an empirical foundation for future research.

ACKNOWLEDGEMENT

The authors would like to thank the Ministry of Education (MOE) for providing the grant through the Exploratory Research Grant Scheme (ERGS) and Universiti Teknologi MARA for the support and facilitating this research.

REFERENCES

- Azmi I. A. G., (2014). The Implementation of Islamic Business Practices of Women Traders: A Study in An Islamic State in a Developing Country, *Global Journal Al-Taqafar, Vol. 4(2)*, pp. 17. <https://doi.org/10.7187/GJAT632014.04.02>.
- Baker E. W., Al-Gahtani S. S., and Hubona G. S., The effects of gender and age on new technology implementation in a developing country: Testing the theory of planned behavior (TPB). *Information Technology & People, Vol. 20(4)*, pp. 352–375, 2007. <https://doi.org/10.1108/0959384071839798>.
- Chatfield, C. 1985. The Initial Examination of Data. *Journal of the Royal Statistical Society, Vol. 148(3)*, 214-253.
- Freeman, G.T. (2011). Spirituality And Servant Leadership: A Conceptual Model And Research Proposal. *Emerging Leadership Journeys, Vol. 4(1)* Pp 120-140.
- Hair, Jb., Money, A.H., and Samouel, P. (2003). *Essentials of Business Research Methods*. New York: Wiley.
- Hashim, A. J. C. M., & Musa, R. (2013). Modeling the effects on the attitude of young adult urban Muslim women towards halal cosmetic products: new insights for championing the halal economy. *International Journal of Education and Research, Vol. 1(7)*, 1-8.
- Karakas, F. (2009). Spirituality and Performance in Organizations: A Literature Review. *Journal of Business Ethics, Vol. 94(1)*, 89–106. Doi: 10.1007/S10551-009-0251-5.
- Lubis M. A., (2015). Effective Implementation of the Integrated Islamic Education. *Global Journal Al-Taqafar, Vol. 5(1)*, pp. 59-68.
- Mittal, B., and Lee, S. M. (1989). A Casual Model of Consumer Involvement. *Journal of Economic Psychology, 10(3)*, 131-142. [https://doi.org/10.1016/0167-4890\(89\)90030-5](https://doi.org/10.1016/0167-4890(89)90030-5).

Musa R., (2004). Modelling Customer Satisfaction and Consequences in the Direct Sales Industry: A Consumption Systems Approach. Unpublished PhD's Dissertation, University of Wales, Cardiff.

Putit, L., and Arnott, D. C. (2007). Micro-Culture And Consumers' Adoption Of Technology : A Need To Re-Evaluate The Concept Of National Culture. *Academy of Marketing Science Review*, Vol .11(6), 1-17.

Samah S.A. A., Jusoff K, Nor M. R. M. (2011). Prophetic Best Practices in Business for Human Capital Development. *Global Journal Al-Thaqafah (GJAT)*, Vol. 1(1), 7–14.

Tieman M. J. G., Van D. V., and Ghazali M. C. (2012). Principles in halal supply chain management. *Journal Islamic Marketing*, Vol. 3(3), pp. 217–243. <http://doi.org/10.1108/17590831211259727>

Wilkie, W. L. (1994) *Consumer Behavior*, 3rd Edition. New York: John Wiley and Sons.

THE ROLES OF EMPLOYEES COACHING TOWARDS EMPLOYEE OUTCOMES

Nursaadatun Nisak Ahmad¹, Ida Rosnita Ismail¹ and Azman Ismail²

¹Graduate School of Business, Universiti Kebangsaan Malaysia, Malaysia

²Faculty of Economics & Management, Universiti Kebangsaan Malaysia, Malaysia

¹E-mail: nisakniss@gmail.com

Received: 27 January 2017

Accepted: 19 September 2017

ABSTRACT

Employees' coaching is an effective management tool to enhance employees' performance and development. Since 1980, a number of researchers have noted the value of the employees' coaching relationship, but there is still little evidence regarding what makes employees' coaching to be effective in Malaysia. Therefore, the study looked at the role of leader coach (supervisory coaching behaviour and autonomy support) toward enhancing employees' motivation (employees' self-efficacy) and performance to explore this topic in-depth. Again, the purpose of an immediate supervisor as a coach in a practice context is to help employees to consider how they might work and behave differently with a more effective behaviour and thus lead to better outcomes, without a reliance on the formal authority the manager possesses. The outcomes of using PLS-SEM path model analysis showed three important findings: First, the relationship between supervisory coaching behaviour was not correlated with employees' self-efficacy. Second, autonomy support was positively correlated with employees' self-efficacy; and third, employees' self-efficacy indirectly influences employees' performance.

Keywords: *supervisory coaching behaviour, autonomy support, employees' self-efficacy and performance*

INTRODUCTION

Study on coaching employees began in the 1980s, where the role of the supervisor as coach was discussed. This opportunity was taken by the immediate supervisor to motivate employees thus guiding them towards achieving better performance (Hagen, 2012). In addition, the roles of the immediate supervisor as a coach also predict a strategy and changing relationship between the immediate supervisors and subordinates (McLean *et al.*, 2009). The importance of employees coaching is to mould the employee towards an expected behaviour and achievement of better performance.

Employees' coaching is often related to effective managerial tool and mechanism to enhance employees' development (Jane *et al.*, 2010). In the practice of employees coaching, an immediate supervisor implements coaching behaviour practices, purposely to help their subordinates to achieve the standard organisational goals and to increase their job-related performance. For example, each employee has his or her own target and standard of performance that need to be achieved (based on organisational key performance indicator). Besides, the concept of Managerial Coaching is named as a new effective management and leadership behaviour in organisations. It has been recognised as a relatively new practice for Human Resource Development (HRD) and management whereby it contributes to the importance of enhancing employees' productivity and development (Ellinger *et al.*, 2014; Egan T, 2013).

Traditionally, immediate supervisor implements managerial coaching practice as a way to solve daily job weaknesses and increase daily performance of their employees and teams (Bacon & Spear, 2003; Feldman, 2005; Kampa-Kokesch & Anderson, 2001; Rekalde *et al.*, 2015). Nonetheless, despite the importance of this coaching approach, it may not be strategic for the future. Coaching is one of the tools that aims to contribute and assist in the development of strategies of the personal and professional growth of manager (Rekalde *et al.*, 2015). In an era of global competition, many excellent organisations have shifted their paradigms from a traditional job based managerial coaching to contemporary based managerial coaching to support their organisations' strategies and cultures (Analoui, 1999; DeSimone *et al.*, 2002; Ellinger *et al.*, 2014). Under this new coaching

approach, management and supporting staff are aware that they need to work together in improving the quality of employees' roles and functions as well as to motivate them to learn new knowledge, up-to-date skills, latest abilities, and other capabilities consistent with their organisations' needs and expectations (Sherman, & Freas, 2004; Peltier, 2012).

Surprisingly, extant studies in workplace coaching practice revealed that the ability of the management to appropriately behave as coach and to manage autonomy support in the design and administration of managerial coaching may have a significant impact on employees' internal motivation (Egen, 2013; Johansson *et al.* 2014). From a training management perspective, employees' internal motivation such as employees' self-efficacy is defined as an interest and attitude that influence the trainees to attend, learn, and master the knowledge, skills, and abilities as well as to have a positive attitude towards their fields. This content explains that the employees believe and have confidence in their ability to transfer what they have learnt from trainings or supervisor to the organisation (Johansson *et al.* 2014).

In organisational coaching model, many scholars believe that supervisory coaching behaviour, autonomy support, and employees' motivation are distinct but interconnected concepts. For example, the management ability to coach and adequately provide support to employees may lead to greater employees' motivation in organisation (Johansson, 2014; Pousa *et al.*, 2015). Although the relationship has been widely discussed, the role of managerial coaching as an important determinant has been given less attention in organisational training model. This situation may be caused by several factors. First, coaching activities in the organisation are not clear. Usually, coaching duties are carried out directly by manager or directly reported to the employees. Due to problems in terms of time constraint, coaching is reported to be a common activity and is not emphasised in detail; and despite coaching duties served as an essential service, these duties have not been evaluated for specific objectives (Bass & Bass, 2008; Gilley, 2000; Pousa *et al.*, 2015). Second, since the implementation of managerial coaching involves those middle and lower-income group of employees, the concern about the role of managerial coaching is not widely discussed. This is because most organisations nowadays are more interested in the development of their senior and executive employees who greatly

impact the direction and strategic development of the organisation through managerial coaching research (Ellinger *et al.* 2014; McLean *et al.*, 2009).

UNDERPINNING THEORIES AND HYPOTHESES DEVELOPMENT

A review of the recent literature regarding the workplace training highlights that an effective managerial coaching has two salient features: supervisory coaching behaviour and autonomy support (Ellinger *et al.*, 2005; McLean *et al.*, 2009; Kim *et al.*, 2013:2014). From the managerial coaching perspective, supervisory coaching behaviour is defined as an effective managerial and leadership practice that advances employees learning and performance (Kim *et al.*, 2013; 2014). For example, a direct relationship between coach and coachees through effective and clear direction of task can help the coachees to improve their performance with their internal motivation. Autonomy support is broadly defined as management practices that provides physical and moral support to employees before, during, and after managerial coaching practices (Merwe & Sloman, 2013) and results from previous research showed that a highly supportive management can enhance employees' engagement and performance in performing their tasks (Rekalde *et al.*, 2015). Social Cognitive Theory (Bandura 1977) explained that the coaching practices influenced the employees' judgments of self-efficacy, and also strengthened the employees' trust in their abilities for specific task. During the coaching process, immediate supervisor and employees work together to tackle the work situation and prepare some feedback of the evaluation. Therefore, the support from an immediate supervisor helps the employees to increase their confidence in implementing the actions (Pousa *et al.*, 2015). This statement is supported by a study conducted by Pousa *et al.* (2015) on 122 financial advisors in Canada, and by Anthony's (2013) study on 49 couples counselling workers in Australia. The outcomes of these surveys reported that the capability of the management to plan appropriately and behave as a coach and support had been an important predictor of employees' internal motivation (self-efficacy) in a work environment. Hence, it was hypothesised as:

H1: The roles of managerial coaching positively related to employees self-efficacy.

H1a: Supervisory coaching behaviour is positively related to employees’ self-efficacy.

H1b: Autonomy support is positively related to employees’ self-efficacy.

Furthermore, according to path-goal theory (House, 1996), when the immediate supervisor practices an effective management and leadership behaviour, employees commonly react with positive attitude and performance-related responses. In addition, directive and supportive styles are presented by effective leadership behaviour (House & Mitchell, 1974). This is also supported by several studies which were conducted using indirect effect model to investigate the supervisor coaching roles based on different samples such as the perception of 122 financial advisors in Canada (Pousa *et al.*, 2015), perception of 343 public healthcare workers in Sweden (Kim *et al.*, 2013), and a study on 411 lecturers at three polytechnics in Malaysia (Ying-Leh *et al.*, 2015) The outcomes of these surveys indicated that the readiness of the management to play appropriately the roles as a coach and prepare a full support to the employees can increase their self-confidence in performing tasks, and indirectly improve their performance. Hence, it was hypothesised as:

H2: Self-efficacy positively related to employees’ performance.

The relationships among the study variable are depicted in Figure 1. Both predictive variables which are supervisory coaching behaviour and autonomy support have direct relationship between employees self-efficacy and employees performance.

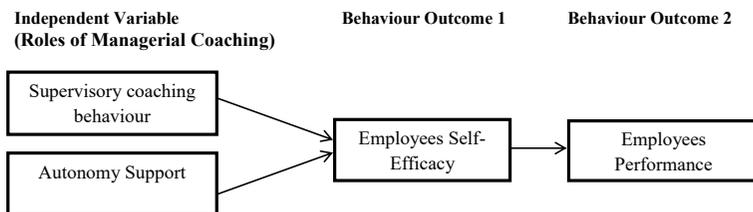


Figure 1: Conceptual Framework

METHOD

This study utilised a cross-sectional research design, which allowed the researcher to integrate the employees coaching literature, the semi-structured interview, pilot study and the actual survey as the main procedure to data collection. This procedure may help the researchers to gather accurate data, decrease bias, and increase the quality of data being collected (Sekaran & Bougie, 2013). Data were collected using questionnaires from a purposive sample of 120 employees working at *Unit Pemodenan Tadbiran dan Perancangan Pengurusan Malaysia (MAMPU)* and *Kementerian Kemajuan Luar Bandar dan Wilayah (KKLW)*, located in federal government, Malaysia. At the initial stage of this study, a semi-structured interview was conducted involving two (2) experienced line supervisors and three (3) experienced support staffs in the management department of the studied organisation. Information gained from this interview method was used to understand the nature and features of the workplace employees coaching practices, self-efficacy and employees' performance as well as the relationship between such variables in the context of this study. Next, a survey questionnaire was drafted based on the employees coaching literatures. These employees were selected using purposive sampling technique because they already have working experiences for at least six (6) months, and have experience of working together with their immediate supervisor. Besides, the information gathered from the pilot study helped the researcher to improve the content and format of the questionnaires for the actual study.

The questionnaire consisted of three (3) major parts: first, supervisory coaching behaviour has 20 items adopted from the research literatures related to the open communication, team approach, value people over task, accept ambiguity, and facilitate development (McLean, 2005: 2008; Park, 2008). Besides that, autonomy support has ten items that have been modified from the literature study with the support of autonomy (Gillet *et al.*, 2012; Jungert *et al.*, 2013). The dimensions used to measure this concept are in terms of moral support and material such as financial assistance, the welfare of individuals and families, involvement of employees in decision-making, and guidance provided to workers in applying learned competencies. Second, self-efficacy has eight items adopted from Parker (1998) and has been modified from previous literature studies related to employees' self-efficacy. Third, employee performance was represented by

15 items that have been modified from the literature studies with the support of the in-role and extra-role performance. The dimensions used to measure this concept were taken from the aspects of whether it could contribute to employees' holistic performance (William's & Anderson's 1991). All items used in the questionnaire were measured using a 7-item scale ranging from "very strongly disagree/dissatisfied" (1) to "very strongly agree/satisfied" (7). Demographic variables were used as controlling variables because this study only focused on employee perception.

RESULTS AND DISCUSSION

The Partial least squares structural equation modelling (PLS-SEM) was employed to assess the validity and reliability of questionnaires' data, and further test the research hypotheses. The main advantage of using this method is because it may deliver latent variable scores, avoid small sample size problems, estimate complex models with many latent variable, manifest variables and error terms, also handle both reflective and formative measurement models (Henseler *et al.*, 2009). The path coefficients for measuring a structural model uses the standardised beta (β) and *t* statistics ($t > 1.65$). The value of R² is used as an indicator of the overall predictive strength of the model. The value of R² is considered as follows: 0.19 (weak), 0.33 (moderate), and 0.67 (substantial) (Chin, 1998; Henseler *et al.*, 2009).

Respondents' characteristics

Table 1 shows that majority of respondents are females (65.8%), aged between 25 to 34 years old (62.5%), degree holders (33.3%), employees who served from 5 to 14 years (10.8%) and employees who had monthly salaries of between RM1000-RM2499 (43.3%).

Table 1: Participants' Characteristics (n=120)

Participants' Characteristics	Sub-Profile	Frequency	Percentage
Gender	Male	41	34.2
	Female	79	65.8
Age	< 25 years old	5	4.2
	25 to 34 years old	75	62.5
	35 to 44 years old	31	25.8
	45 to 54 years old	6	5
	> 55 years old	3	2.5
Education	<i>Sijil Pelajaran Malaysia (SPM)</i>	21	17.5
	<i>Sijil Tinggi Pelajaran Malaysia (STPM)</i>	8	6.7
	Diploma	38	31.7
	Degree	40	33.3
	Master	13	10.8
Length of Service	< 6 months	-	-
	6 months to 2 years old	5	4.2
	3 to 4 years old	7	5.8
	5 to 14 years old	13	10.8
	15 to 24 years old	8	6.7
	> 25 years old	4	3.3
Monthly Salary	< RM1000	-	-
	RM 1000 to 2499	52	43.3
	RM 2500 to 3999	41	34.2
	RM 4000 to 5499	16	13.3
	RM5500 to 6999	5	4.2
	RM 7000 >	6	5

Measurement Model

Table 2 shows the result of reliability analysis for the instrument. The value of composite reliability and Cronbach Alpha were greater than 0.8, indicating that the instrument used in the study had high internal consistency (Henseler *et al.*, 2014). Besides, the composite reliability value also ranged from 0.883 to 0.949, which also explained that 0.70 or greater is considered accepted (Fornell and Larcker, 1981) and thus it can be concluded that the measurements are reliable. The values of variance inflation factor for the correlation between the independent variable (supervisory coaching behaviour and autonomy support) and the dependent variable (self-efficacy and employees performance) are less than 5, showing that the data are not affected by serious collinearity problem (Hair *et al.*, 2012).

Table 2. Results of Reliability Test

Variables	Items	Item Loading	Cronbach's alfa	Composite Reliability	Variance Inflation Factor (VIF)
1. Supervisor behaviour coaching	20	0.497-0.768	0.944	0.949	3.688
2. Autonomy support	10	0.731-0.840	0.929	0.939	3.688
3. Self-efficacy	8	0.614-0.763	0.852	0.883	1.001
4. Performance	15	0.583-0.772	0.905	0.918	1.000

Table 3 shows the results of convergent and discriminant validity analysis. All constructs have the values of AVE larger than 0.5, indicating that they met the acceptable standard of convergent validity (Barclay *et al.*, 1995; Fornell & Larcker, 1981; Henseler *et al.*, 2009). Next, the discriminant validity of the measures was assessed by examining the correlations between the measures of potentially overlapping constructs. Besides that, the item should load more strongly on its own construct and the average variance shared between each construct should be greater than the variance shared between the construct and other construct (Wang *et al.*, 1999). Practically, discriminant validity reported Heterotrait-Monotrait Ratio (HTMT) results. The HTMT values using 0.85 is a relevant threshold level. However, the threshold value for conceptual similar constructs is 0.90 (Hair *et al.*, 2014).

Table 3: Results of Convergent and Discriminant Validity Analyses

Variables	AVE	1	2	3	4
1. Supervisory coaching behaviour	0.504	0.846			
2. Autonomy support	0.609	0.880	0.760		
3. Self-efficacy	0.608	0.607	0.741	0.752	
4. Performance	0.565	0.637	0.624	0.560	0.659

Structural Model

Figure 1 shows the outcomes of testing a direct effect model using PLS-SEM path model. The inclusion of supervisory coaching behaviour and autonomy support in the analysis explained 47% of the variance in dependent variable. Specifically, the results of testing the research hypotheses displayed two important findings: first, supervisory coaching behaviour is insignificantly correlated with employees’ self-efficacy ($\beta=0.038$; $t=0.238$); therefore, H1a is not supported. Besides, autonomy support is significantly correlated with employees’ self-efficacy ($\beta=0.719$; $t=4.349$); therefore, H1b was supported. Second, employees’ self-efficacy is significantly correlated with impact of employees’ behaviour outcomes which is employees’ performance ($\beta=0.616$; $t=6.902$); therefore, H2 was supported. Overall, the results demonstrate that supervisory coaching behaviour is not an important determinant of employees’ self-efficacy, and autonomy support is an important determinant of employees’ self-efficacy in the studied organisations. Further to the above hypothesis testing, a test of accuracy of the estimate (predictive relevance) using Stone-Geisser, the Q2 test had been carried out as specified: $q2 = Q2 \text{ included} - Q2 \text{ excluded} / 1 - Q2 \text{ included} = 0.331$ (Hair *et al.*, 2012); and it was found that the Q2 (self-efficacy = 0.187; employees performance = 0.146) is above the standard, which is greater than zero (Henseler *et al.*, 2009). Therefore, these findings generally support the expected accuracy SmartPLS route model used in this study.

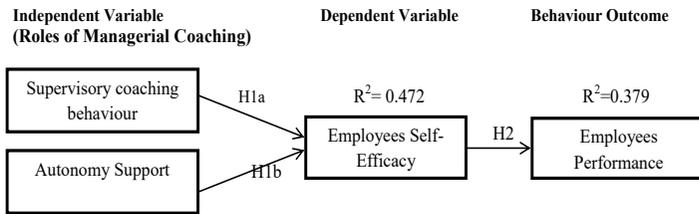


Figure 2: Result of the path analysis

IMPLICATIONS

The finding of this study shows that supervisory coaching behaviour did not act as an important determinant of employees' motivation. While the autonomy support did act as an important determinant of employees' motivation in the studied organisation. In the context of this study, majority of the respondents perceived that the stronger the supervisory coaching behaviour, the higher the autonomy support and employees' motivation is. This indicates that supervisory coaching behaviour is actively practiced in organisational activities; but it is unable to enhance employees' motivation. This situation may be caused by many supervisors who do not show a clear attitude as a coach in Malaysia mainly due to a more individualistic culture (Ying-Leh *et al.*, 2015).

The implications of this study can be divided into three major aspects: theoretical contribution, robustness of research methodology and practical contribution. In terms of theoretical contribution, this study reveals two important findings: First, autonomy support has been able to increase employees' internal motivation. This finding also supports and extends the studies by Gillet *et al.* (2013) and Jungert *et al.* (2013). Second, supervisory coaching behaviour has not been able to increase employees' internal motivation (employees' self-efficacy). A thorough review on the outcomes of the semi-structured interview in this finding may be affected by external factors: first, respondents who have different service and personal backgrounds may have different values and judgments about the impact of implementing coaching behaviour in organisations practices. Second, the nature of government work culture emphasizes on tall structure, high centralisation and high distance power, hence all the instructions referring

to the main task structure have been set. Therefore, the guidance practices by the leaders were not found clearly, referring on supervisor attitude and behaviour. With respect to the robustness of research methodology, the questionnaire used in this study has met the requirements of validity and reliability analyses. This may lead to its ability to produce accurate and reliable findings.

Regarding the practical contribution, the findings of this study can be used as a guideline by the immediate supervisor to improve the design and administration of leadership management practices of government employees'. This objective will be met if the management focuses on the following aspects: first, the immediate supervisors should be given a proper leadership training to ensure they are prepared to guide the employees in the workplace. Lack of leadership training to the heads, will cause them to be less aware of the importance to guide the employees in their daily work. Second, appropriate training content can help the immediate supervisor, especially to guide the employees toward the achievement of the objectives of the organisation. Third, managerial coaching practices should be used as a practice that takes place during working hours, where direct guidance within working hours can help to improve the understanding and clarity of a task carried out (Hagen, 2012; Kim *et al.* 2014). Thus, in order to provide credible leaders who are effective and efficient, leaders in organisations need to draw up a leadership training syllabus that must be taken by all personnel, according to rank and position held. These activities will directly train the leader or manager to be the coach to his or her subordinates.

CONCLUSION AND FUTURE RESEARCH

This study proposed a conceptual framework based on the managerial coaching practices research literature. The exploratory factor analysis showed that the instrument of this study had met the acceptable standards of validity and reliability analyses. Furthermore, PLS-SEM model analysis confirmed the outcomes of Managerial Coaching measurement such as supervisory coaching behaviour and autonomy support. Based on the results, supervisory coaching behaviour does not have a significant correlation with employees' self-efficacy; therefore H1a is not supported. Besides that, autonomy support significantly correlated with employees' self-efficacy, and

therefore H1b is supported. In addition, the effect of employees' internal motivation influence to employees' behaviour outcome such as performance, and indirectly H2 is supported. The conclusion drawn on the basis of these findings must take into account the limits of the conceptual framework and methodology of the study. First, the cross-sectional method used in this study could not detect the dynamic changes and patterns of relationships between variables, and variables that are more specialised in the study sample. Secondly, this study does not highlight the relationship between specific indicators for the independent variables and the dependent variables. Finally, this study uses only 120 respondents from federal government offices (MAMPU and KKLW) selected through purposive sampling technique. Therefore, this study only seeks to anticipate the pattern of the relationship between the dependent variables of the study in general and it may not be generalised to different organisations.

For future discussion, a research on the expected limitations could be used as a guide to improve the study. Among the actions that can be taken: First, some personal and organisational characteristics should be explored in greater depth as these can be better in showing the impact of the implementation of the managerial coaching on the employees. Second, the design methodology of research that is more reliable such as a longitudinal study should be used to collect data, elaborate pattern of relationships, the direction and degree of firmness of the relationship between independent variables and the dependent variable. Third, future research should include more respondents from various departments to ensure the accuracy and validity of the findings. Fourth, the independent variables and the dependent variables also need to be taken into account in future studies, whereby selected variables can contribute to the novelty concept. Besides, indirectly it may also be interesting to discuss the variable's relationship with the framework. If the above proposals are taken into account, it could help to produce more robust findings in the future.

REFERENCES

- Analoui, F. (1999). *Effective Human Resource Development: A Challenge for Developing Countries*. England: Ashgate Publishing Ltd. 101-119.
- Anthony M. (2013). Autonomy support, relationship satisfaction and goal focus in the coach-coachee relationship: Which best predicts coaching success? *Journal of Theory, Research and Practice*, Vol. 7(1), 18-38. <http://dx.doi.org/10.1080/17521882.2013.850106>.
- Bacon, T.R. & Spear, K.I. (2003). *Adaptive Coaching: The Art and Practice of a Client-Centered Approach to Performance Improvement*. California: Palo Alto. 212-130.
- Bandura, A. (1977). *Self-Efficacy: The Exercise of Control*. New York: Worth Publisher.
- Barclay, D., Higgins, C., & Thompson, R. (1995). The Partial Least Squares (PLS) approach to causal modeling: Personal computer adoption and use as an illustration. *Technology Study*, Vol. 2(2), 285-309.
- Bass, B. M. & Bass, R. (2008). *Handbook of Leadership: Theory, Research, and Applications*. New York: Free Press.
- Chin, W.W. (1998). The Partial Least Squares approach to Structural Equation Modelling. In Hoyle, R.H., *Statistical Strategies for Small Sample Research*. 307-341. California: Sage Publication, Inc.
- DeSimone, R. L., Werner, J. M. & Harris, D.M. (2002). *Human Resource Development*. United States of America: Thompson Learning, Inc.
- Egan, T (2013). Response to Nieminen Et Al.'S Feature Article on Executive Coaching and Facilitated Multisource Feedback: Toward Better Understanding of a Growing HRD Practice. *Human Resource Development Quarterly*, Vol. 24(2). Doi: 10.1002/hrdq.21159.

- Ellinger, A. D., Ellinger, A. E., & Keller, S. B. (2005). Supervisory coaching behavior, employee satisfaction, and warehouse employee performance: A dyadic perspective in the distribution industry. *Human Resource Development Quarterly*, *Vol. 14*(4), 435–458. Doi: 10.1002/hrdq.1078.
- Ellinger, A. D., & Kim, S. (2014). Coaching and human resource development examining relevant theories, coaching genres, and scales to advance research and practice. *Advances in Developing Human Resources*, *Vol. 16*(2), 127-138.
- Feldman, D.C. & Lankau, M.J. (2005). Executive coaching: A review and agenda for future research. *Journal of Management*, *31*(6), 829-848.
- Fornell, C., & Larcker, D.F. 1981. Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *Vol. 18*(1), 39-50.
- Gillet N., Gagn M, Sauvagre S & Fouquereau E (2013) The role of supervisor autonomy support, organisational support, and autonomous and controlled motivation in predicting employees' satisfaction and turnover intentions, *European Journal of Work and Organisational Psychology*, *Vol. 22*(4), 450-460. <http://dx.doi.org/1080/1359432X.2012.665228>.
- Gilley, J. W. (2000). Manager as learning champion. *Performance Improvement Quarterly*, *Vol. 13*(4), 106-121. Doi:10.1111/j.1937.2000.tb00194.x.
- Hagen, M. and Aguilar, M.G. (2012), Managerial coaching for team performance improvement: The facilitation of team learning outcomes. *Human Resource Development Quarterly*, *Vol. 23*(3), 363-388.
- Hair, J.F., Hult, G.T., Ringle, C. M., & Sarstedt, M. (2012). *A Primer on Partial Least Squares Structural Equation Modelling* (PLS-SEM). United States of America: SAGE Publication. 126-145.
- Hair, J.F., Hult, G.T., Ringle, C. M., & Sarstedt, M. (2014). *A Primer on Partial Least Squares Structural Equation Modelling* (PLS-SEM), 60-78. United States of America: SAGE Publication.

- Henseler, J., Ringle, C.M., & Sinkovics, R.R. (2009). The use of the partial least square path modeling in international marketing. In Rudolf R Sinkovics, Pervez N Ghauri (ed) *New Challenges to International Marketing Advances in International Marketing, Vol. 20*. United Kingdom: Emerald Group Publishing Limited, 277-319.
- Henseler, J., Ringle, C.M., & sarstrdt. M. (2014). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, Vol. 43*(1), 115-135. <https://doi.org/10.1007/s11747-014-0403-8>.
- House, R.J., Mitchell, T.R (1974). Path-goal theory of Leadership. *Journal of Contemporary Business, Vol. 3*(4), 81-97.
- Jane B.G and Paul E. Levy (2010). Employee coaching relationship: enhancing construct clarity and measurement. *Coaching: An International Journal of Theory, Research and Practice, Vol. 3*(2), 109-123. <http://dx.doi.org/10.1080/17521882.2010.502901>.
- Johansson, Catrin; Miller, Vernon, D. & Hamrin, Solange (2014). Conceptualizing communicative leadership. *Corporate Communications: An International Journal, Vol. 19*(2), 147 – 165. <https://doi.org/10.1108/CCIJ-02-2013-0007>.
- Jungert T., Koestner R. F., Houlfort N. Schattake K (2013). Distinguishing source of autonomy support in relation to workers' motivation and self-efficacy. *Journal of Social Psychology, Vol. 153*(6), 651-666.
- Kampa-Kokesch, S. & Anderson, M.Z. (2001). Executive coaching: A comprehensive review of the literature. *Consulting Psychology Journal: Practice and Research, Vol. 53*(4), 205–228. Doi: 10.1037/1061-4087.53.4.205.
- Kim S. W., Egan T. M., Kim W. S., Kim J. K. (2013). The Impact of Management Coaching Behavior on Employees Work-Related Reactions. *Journal of Business Psychology, Vol. 23*, 315- 330. Doi: 10.1007/s10879-013-9286-9.

- Kim S. W., Egan T. M., Kim W. S., Kim J. K. (2014). Managerial Coaching Efficacy & Performance in Public Organizations: A comparative International Study. *Public Personnel Administration*, Vol. 34(3), pp. 237- 267. Doi: <https://doi.org/10.1177/0734371X13491120>.
- McLean, G., Yang, B., Min-Hsun, C., Tolbert, A and Larkin C (2009). Development and initial validation of an instrument measuring managerial coaching skill. *Human Resource Development quarterly*. Vol. 16(2), 157-78. Doi:10/1002/hrdq.1131.
- Merwe J. & Sloman M (2013) Training the trainer-lesson from the new South Africa. *Higher Education, Skills and Work-based Learning*, Vol. 4(1), 17-30. <https://doi.org/10.1108/HESWBL-03-2-12-0005>.
- Park, S., McLean, G. N., & Yang, B. (2008, February). *Revision and validation of an instrument measuring managerial coaching skills in organisations*. Paper presented at Academy of Human Resource Development Conference, Panama City.
- Parker, S.K. 1998. Enhancing role of breadth self-efficacy: The roles of job enrichment and other organisational inventions. *Journal of Applied Psychology*, Vol. 83(6), 835-852.
- Peltier, B. (2012). *The Psychology of Executive Coaching: Theory and Application* (2nd edition.). United States of America: Routledge, 23-44.
- Pousa C & Mathieu A. (2015). Is managerial coaching a source of competitive advantage? Promoting employees self-regulation through coaching. *Coaching: An International Journal of Theory, Research and Practice*, Vol. 8(1), 20-35.
- Rekalde, Izaskun; Landeta, Jon & Albizu, Eneka (2015). Determining factors in the effectiveness of executive coaching as a management development tool. *Management Decision*, Vol. 53(8), 1677 – 1697. <https://doi.org/10.1108/MD-12-2014-0666>.
- Sekaran, Y., & Bougie R. (2013) *Research Methods for Business: A Skill Building Approach*. New York: John Wiley & Sons, Inc.

- Sherman, S. & Freas, A. (2004). The wild west of executive coaching. *Harvard Business Review*, Vol. 82(4), 82–90.
- Wang, C.W., Hsieh, C.-T., Fan, K.-T., & Menefee, M. (2009). Impact of motivating language on team creativity performance. *Journal of Computer Information Systems*, Vol. 19(1), 133-140.
- Williams, L. J. & Anderson, S. E. 1991. Job satisfaction and organisational commitment as predictors of organisational citizenship and in-role behaviors. *Journal of Management*, Vol. 17(3), 601-617. <https://doi.org/10.1177/014920639101700305>.
- Ying-Leh Ling and Abdul Ghani Kanesan Abdullah (2015). Do feedback environment and coaching communication determine self-efficacy of teaching? A case of Malaysia polytechnic lecturers. *International Journal of Management And Applied Research*, Vol. 2(2), 59-72.

MDAB PROGRAMME IS A WASTE OF MONEY?

Nor Hazizah Julaihi¹, Mohammad Isa Mohamad², Bebe Norlita Mohamed², Mariathy Karim¹

¹Faculty of Computer Science & Mathematics, Universiti Teknologi MARA Sarawak,
94300 Kota Samarahan, Sarawak, Malaysia

²Faculty of Applied Sciences, Universiti Teknologi MARA Sarawak,
94300 Kota Samarahan, Sarawak, Malaysia

E-mail: norhazizah@sarawak.uitm.edu.my

Received: 27 January 2017

Accepted: 19 September 2017

ABSTRACT

The MDAB programme is a remedial course introduced by Universiti Teknologi MARA (UiTM) in June 2010. The main objective of the programme is to give an opportunity to Bumiputera students having under qualified entry results and coming from low income families to further their tertiary studies in UiTM. The students entering this programme are fully sponsored and to date about 22000 students have undergone this programme and about RM20 million has been spent just for the students' allowance. Thus, this research was embarked to investigate the overall performance of the students in this programme in order to justify that the money invested was indeed well spent and also such remedial courses have helped the students. The performance of all MDAB students for the last nine semesters as well as the performance of a particular MDAB programme namely Pre-Science at UiTM Sarawak are reported in this paper. The results showed that 83.43% of the overall MDAB students managed to complete the courses and continued their studies at diploma level. However, only 70.94% of Pre-Science students in UiTM Sarawak managed to complete their courses. In general, the overall performance showed that the programme has indeed succeeded in helping the students to further their studies at a higher level.

Keywords: MDAB, Pre-Commerce, Pre-Science, performance, UiTM

INTRODUCTION

The MDAB programme, the short form of Destiny Child Nations Foundation (*Mengubah Destini Anak Bangsa*) is a programme that was inspired by Y.Bhg. Tan Sri Dato' Prof. Ir. Dr. Sahol Hamid Abu Bakar, the Vice Chancellor of Universiti Teknologi MARA (UiTM) in 2010, based on the idea sparked by YAB Dato' Sri Haji Mohd Najib bin Tun Haji Abdul Razak, the Prime Minister of Malaysia. The main purpose of this programme is to help the students who want to further their studies but are unable to do so due to their poor performance in the Malaysian public examination namely Malaysia Certificate of Examination (SPM) which is an entry requirement to Malaysian universities. In addition, apart from education limitation, the students who are mainly selected to this programme are all having financial restrictions especially those from the rural areas. As the policy of UiTM, the programme is only offered to Bumiputera students, which consists of students which consists of students from Malay, *Orang Asli* and indigenous natives of Sabah and Sarawak.

UiTM offers two MDAB preparatory courses namely Pre-Commerce (PD002) and Pre-Science (PD007). These two courses can be considered as remedial programmes but with two slightly different focuses. The Pre-Commerce programme helps the students to enhance their Mathematics and English language while the Pre-Science, on top of focusing on these two subjects, also focus on enhancing the understanding in science subjects such as Physics, Chemistry and Biology. Thus, it is rather significant and interesting to find out whether going through such remedial programmes will help those less fortunate students to excel in their studies and continue to the diploma programme of their choice later on. Poverty or low income families are shown to have a direct impact on students' academic performance. Some studies have shown that students from better endowed families perform better in examinations and the adverse effects of poverty on student performance are well documented (Myers *et al.*, 2004; Bernstein, 2007). The low income parents face certain constraints in their financial resources, availability of time and educational skills, thus limited their ability to be active partners in their children's education (Hawkins, 2001).

In general, the main objective of the MDAB programme is to give an opportunity to Bumiputera students who do not meet the minimum direct entry requirements to continue their tertiary studies in UiTM. Additionally, the students also received 100% financial assistance. Thus, it is very significant to know whether such a remedial course namely MDAB programme and free financial assistance as such have indeed met its objectives and has helped the students to perform well in their studies despite having under qualified results and coming from low income family. This paper aims to share some analysis gathered on the overall performance of MDAB students for the past nine semesters of intakes for the whole UiTM system. In addition, the performance of Pre-Science students in the first six semesters of MDAB intakes particularly at UiTM Sarawak was also studied in order to get more meaningful output. A short survey was also conducted to identify the students' recommendation on the MDAB programme.

LITERATURE REVIEW

MDAB Requirement

In order to apply for the MDAB programme, the applicants must submit all their certified copies of certain documents including their identification card, SPM results, birth certificate, parents' identification cards, parents' birth certificates and parents' payslips together with the MDAB application form to UiTM branches of their choices. The entry form can be downloaded from the UiTM Official website for free and there is no fee. The general and entry requirements to apply for the MDAB programme is shown in Table 1.

Table 1: The General and Entry Requirements to Apply for The MDAB Programme

General Requirements

i. **Bumiputera* only

ii. Students from low income and poor families
Unable to continue their education due to poverty.
Parents' with a monthly gross income less than RM3000

Entry Requirements

i. **Bumiputera* with Malaysian citizenship aged 16 and above

ii. SPM qualification with 3 credits including *Bahasa Melayu*

iii. Passed in History

Programme Entry Requirements

Pre-Commerce (PD002)	Passed in Mathematics Passed in English
Pre-Science (PD007)	Credit in Mathematics / Additional Mathematics Passed in English Passed in any of these Science subjects (Physics, Chemistry, Biology and Additional Science)

Additional Requirements

Physically healthy, free from mental illnesses and capable of participating in any planned programmes.

* **Bumiputera** are Malays; *Orang Asli*; indigenous natives of Sabah and Sarawak

MDAB Funding Partnerships

UiTM has established the fund for the MDAB programme since July 2010. The students benefitting from MDAB fund come from the poor families with a total family income of less than RM3, 000. This programme enables the qualified students to study in UiTM without paying any fees and with free accommodation provided. The students also receive monthly allowances based on their parents' salaries that could help them to support their cost of living in the university.

Yayasan Sime Darby (YSD), is among the sponsors of the MDAB programme. YSD governing council member Datin Paduka Zaitoon Dato' Othman said contributions from the foundation have made it possible for students lacking academic qualifications to enter pre-university courses in Malaysia and those from less fortunate backgrounds, to pursue education opportunities they would never receive elsewhere. YSD strongly believes that with the support given to UiTM through the programme, these underprivileged youths are given a chance to enable and empower themselves to fulfil their dreams and achieve a better livelihood for themselves and their families through higher education (Yayasan Sime Darby, 2013).

YSD has pledged a total of RM6 million for six years from July 2011 to June 2017 to MDAB. The funding covers the students' living expenses, which include allowances for food, pocket money and transportation (Yayasan Sime Darby, 2014). YSD is also working with UiTM to identify MDAB graduates with good academic results and award them with YSD's bursaries as a continuation of the foundation's support for the programme (Yayasan Sime Darby, 2013).

Apart from this, Bank Islam Malaysia Berhad (BIMB) has unveiled a co-branded Platinum MasterCard Card known as 'Kad Platinum MasterCard Bank Islam - Alumni UiTM' in order to raise funds for the MDAB programme. Under this initiative, 0.3% of the amount transacted using these cards will be donated to the fund. In addition, RM60 will also be donated for every new approved and activated Principal Card membership (Bank Islam, 2010).

BIMB Managing Director Dato Sri Zukri Samat said this noble effort will provide a permanent channel for the thousands of UiTM Alumni members who have benefited from their education at UiTM to give back to UiTM and the society by supporting their former alma mater to provide unfortunate students with a life-long gift of education, which will consequently enrich the quality of the country's human capital. Other than that, MDAB has also received funds from the zakat contribution by BIMB (The Borneo Post, 2011), Etiqa Takaful Berhad (The Borneo Post, 2012) and others.

Allowances for MDAB Students

The cost of study for MDAB students are fully supported by UiTM. Additionally, MDAB students also received allowances that help them to support their costs of living in the university and a free accommodation for the whole semesters of study at UiTM hostels.

According to the UiTM circular dated 28 June 2012, it was stated that the total of subsistence allowance received by the MDAB students are based on the family grade income. This means that each MDAB student will receive different amounts of allowance depending on their parents' monthly salary. Table 2 shows the guidelines on the total allowance received by these MDAB students effective from November 2012.

Table 2: The Guidelines on The Allowance Received by The MDAB Students

Criteria		Total of Allowance
Student with family monthly income RM499.99 or less		RM1700
Breakdown:		
Food Allowance	RM10 daily x 30 days x 4 months	RM1200
Pocket Money	RM100 monthly x 4 months	RM400
Transportation (return fares)	RM100 (one time only)	RM100
Student with family monthly income between RM500 to RM999.99		RM1220
Breakdown:		
Food Allowance	RM6 daily x 30 days x 4 months	RM720
Pocket Money	RM100 monthly x 4 months	RM400
Transportation (return fares)	RM100 (one time only)	RM100
Student with family monthly income between RM1000 to RM1999.99		RM1040

positively the educational performance of female students but interestingly has negative impact on educational performance of male students (Kling *et al.*, 2007).

The study done by Hassan *et al.* (2011), also showed that the higher schooling expenditure by parents has positive correlation with student academic performance which was also proved to be directly related to the higher income parents. The general pattern shows that socioeconomic factors namely better educated and higher income families are significant factors in enhancing educational outcomes. The study further confirmed that poverty in rural areas is invariably linked to lower student achievement and thus ultimately suggested that providing sufficient financial assistance such as subsidies and scholarships for poor students should continue to be very high on policy agenda (Hassan *et al.*, 2011).

Carter (2013) also demonstrated that students coming from low income families did not succeed in schools and required remedial courses while in the university. It was stated that a remedial course was taken by as many as 1.7 million first-year students entering colleges in the United States of America (USA) and majority of those who need the remedial course are the low-income students. A remedial course is defined as coursework below college-level offered at a postsecondary institution (Calcagno and Long, 2008). Carter (2013) listed five factors that contribute to low income students requiring the remedial course which are lack of exposure to books; language barriers where English is not their first language; lack of stability in terms of income and health; lack of positive academic role models; and they are the first generation in their families to go to college.

METHODOLOGY

This study employed a quantitative procedure. The overall performance of MDAB students for the latest nine semesters of intake at UiTM branches nationwide was obtained from the Students Information Management System (SIMS). Meanwhile, the performance of Pre-Science (PD007) at UiTM Sarawak for the past six semesters of intake (December 2011 to March 2012, June to October 2012, December 2012 to March 2013, June to October 2013, December 2013 to March 2014 and June to October

2014) was obtained from the report of final examination analysis (LE13). The missing results were found by using SIMS. The data was analysed using Descriptive Statistical Analysis, which was performed by Microsoft Office Excel 2007. A short survey was also conducted in order to identify the students' recommendation on the MDAB programme. The sample of the survey was the Pre-Science graduates of UiTM Sarawak. The survey was done online using Google Forms and the sampling design was based on random sampling. The survey consisted of three sections (Student' Profile; MDAB Significance; Recommendation) which had been validated.

RESULTS AND DISCUSSION

Overall performance of MDAB students

Figure 1 and Figure 2 below show the performance of MDAB students for both Pre-Commerce (PD002) and Pre-Science (PD007) for the latest nine semesters of intake in UiTM. The figures indicated that more than 75% of the MDAB Pre-Commerce students had completed the course and the trend seems to be upward for most semesters except for semester June 2014 to October 2014. As for MDAB Pre-Science, it shows a fluctuating trend. However, the percentage of students who graduated from this course in the latest semester i.e. semester December 2015 to March 2016 was the best (more than 90%) if compared to the past nine semesters.

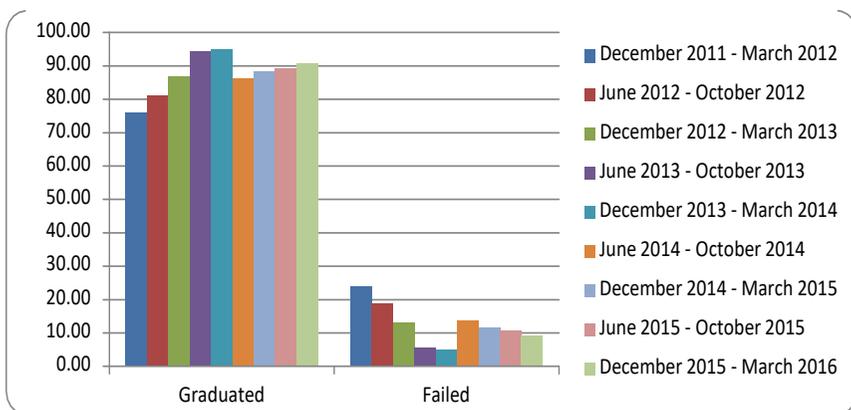


Figure1: The performance of MDAB Pre-Commerce (PD002) Students According to Semesters

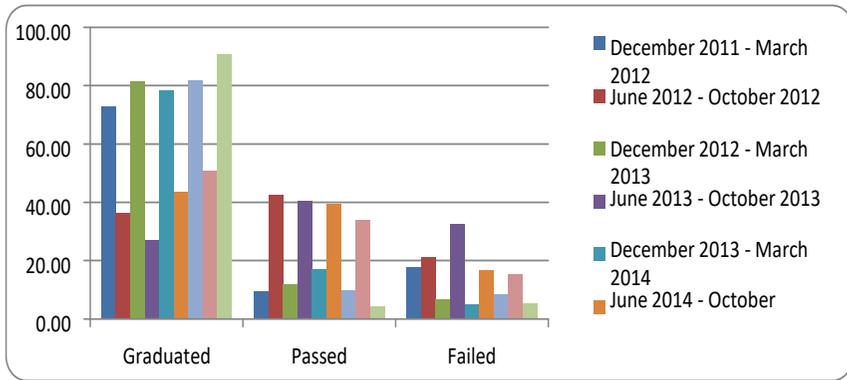


Figure 2: The performance of MDAB Pre-Science (PD007) Students According to Semesters

Table 3 below shows the overall performance of MDAB students for the whole UiTM system. It is shown that 16581 (87.32%) students from Pre-Commerce and 1361 (54.07%) students from Pre-Science successfully completed the courses. 723 (28.72%) students from Pre-Science passed the course and continued their studies in part 2. Unfortunately, 2408 (12.68%) students from Pre-Commerce and 433 (17.20%) students from Pre-Science failed the courses. Overall, from semester December 2011 to March 2012 up to semester December 2011 to March 2015, the total of MDAB students from both Pre-Commerce and Pre-Science was 21506 where 17942 (83.43%) of them graduated and only 2841 (13.21%) failed the courses.

Table 3: The Overall Performance of MDAB Students for the Whole UiTM

Programme	Total	Graduated	Passed	Failed
Pre-Commerce	18989	16581 (87.32 %)	-	2408 (12.68 %)
Pre-Science	2517	1361 (54.07 %)	723 (28.72 %)	433 (17.20 %)
Grand Total	21506	17942 (83.4 %)	723 (3.36 %)	2841 (13.21 %)

Performance of MDAB Pre-Science (PD007) at UiTM Sarawak

MDAB Pre-Science (PD007) consisted of two parts. Students who achieved very good results in part 1 and fulfil the current requirements (CGPA equal or more than 3.00 and passed all subjects) could be promoted straight into diploma programmes whereas those whose CGPA is between 2.00 – 2.99 and CGPA equal or more than 3.00 but failed anyone of the subjects has to undergo part 2 of the programme. Upon completion of part 2, with the fulfilment of the current requirements (CGPA equal or more than 2.00 and passed all subjects), the students are allowed to enter the diploma programmes. Failing to achieve the stipulated requirements will cause the termination of their study.

MDAB Pre-Science Performance in Part 1 Studies

From semester June to October 2011 until semester June to October 2014, the total intake of MDAB Pre-Science students at UiTM Sarawak was 265. Table 4 shows the enrolment of students and their status of studies according to semester of intake.

Table 4: Enrolment of MDAB Pre-Science Students and Their Status of Studies According to Semester of Intake

UiTM Sarawak MDAB Pre-Science (PD007) Part 1				
Semester of Intake	Number of Students	Completed and Promoted to Diploma	Passed and Proceed to Part 2	Failed
June 2011 - October 2011	64	22	24	18
December 2011 - March 2012	No Intake			
June 2012 - October 2012	39	16	14	9
December 2012 - March 2013	11	3	7	1
June 2013 - October 2013	57	20	23	14
December 2013 - March 2014	18	6	11	1

June 2014 - October 2014	76	40	29	7
Total	265	107	108	50

From the total of 265 MDAB Pre-Science students, 107 of them completed the course and were promoted to diploma programmes in UiTM whereas 108 of them passed and proceeded to part 2. Unfortunately, 50 of them failed in the course.

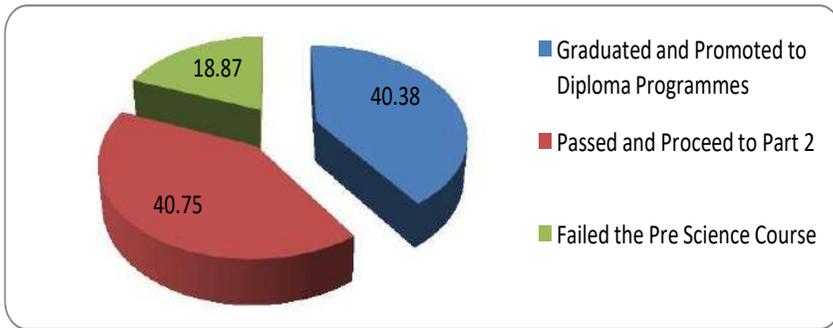


Figure 3: The MDAB Pre-Science Students (Part 1) According to Status of Studies

Figure 3 shows the percentage of the students who passed and were promoted to diploma, passed and proceed to part 2 and failed in the Pre-Science course. It indicates that more than 80% of the students passed the Pre-Science course in part 1 where 40.38% of them successfully graduated and promoted to Diploma programmes.

MDAB Pre-Science Performance in Part 2 Studies

From the total of 108 students who passed and proceeded to part 2, only 95 of them continued their studies. Table 5 shows the number of students and their status of studies according to semesters. It is shown that 81 MDAB students from part 2 completed and were promoted to diploma programmes. Unfortunately, 14 students failed in the course. From Figure4, it is shown that more than 85% of students from MDAB part 2 managed to complete their Pre- Science programme and have been promoted to diploma level. Out of 95 students, 86 of them (90.5%) had improved their GPA in part 2. This is consistent with Iris et. al. (1999) which reported that Part 2 Pre-Science graduates tended to do better in their second semester of the Pre-Science course. The improvement in GPA of the Part 2 students means

that that there was improvement as well in their CGPA. However none of them obtained CGPA of 3.50 – 4.00.

Table 5: Number of MDAB Pre-Science Students (Part 2) and Their Status of Studies

Semester of Intake	Number of Students	Promoted to Diploma	Failed
June 2011 - October 2011	24	18	6
December 2011 - March 2012	No Intake		
June 2012 - October 2012	12	12	0
December 2012 - March 2013	7	6	1
June 2013 - October 2013	19	17	2
December 2013 - March 2014	7	6	1
June 2014 - October 2014	26	22	4
Total	95	81	14

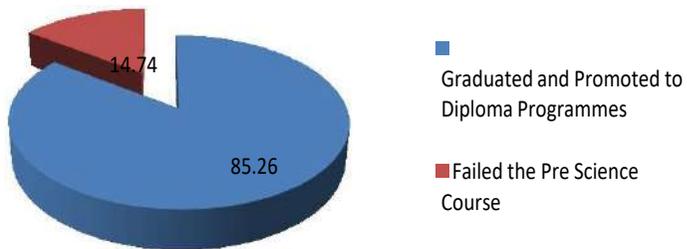


Figure 4: Percentage of the MDAB Pre-Science Students (Part 2) According to Status of Studies

MDAB Pre-Science Performance in Overall

Based on Table 6, out of 265 MDAB students who enrolled in Pre-Science from semester June to October 2011 until semester June to October 2014, 188 (70.94%) of them completed their Pre-Science courses and promoted to the diploma programmes at UiTM branches nationwide. Meanwhile, 64 (24.15%) students failed in this course and the remaining 13 (4.91%) decided not to proceed with the part 2 studies.

TABLE 6: Summary of the status of studies for MDAB Pre-Science Students

Status of Studies	Frequency	Percentage
Promoted to Diploma	188	70.94
Failed Pre-Science Course	64	24.15
Didn't proceed with part 2	13	4.91

Factors contributed to the Pre-Science Failure

Based on Table 4 above, 50 (18.87%) students from MDAB Pre-Science part 1 failed the programme. The reason for the failure was the students achieved a CGPA below than 2.00. Table 7 shows the CGPA distribution of these students.

Table 7: The CGPA Distribution of MDAB Pre-Science Failure in Part 1 Studies

CGPA	Frequency	Percentage
0.00 – 0.49	6	12.0
0.50 – 0.99	1	2.00
1.00 – 1.49	23	46.00
1.50 –1.99	20	40.00

Meanwhile, 14 (14.74%) students from MDAB Pre-Science part 2 failed the programme (refer to Table 5). Table 8 shows the CGPA distribution of these students. The table indicated that 13 students from MDAB Pre-Science failed the programme with the CGPA of 2.00 – 2.99. The reason for the failure was these students failed one of the courses taken in their second semester. 11 of them failed in MAT082 (Mathematics 1B) while the remaining two students failed in ELC020 (English 2). None of these students failed the Pre- Science because of the Science courses.

Table 8: The CGPA Distribution of both MDAB Pre-Science Failure in Part 2 Studies

CGPA	Frequency	Percentage
0.00 – 0.49	0	0
0.50 – 0.99	0	0
1.00 – 1.49	0	0
1.50 – 1.99	1	7.14
2.00 – 2.49	10	71.43
2.50 – 2.99	3	21.43

Students' recommendation on MDAB Programme

Table 9 shows the students' recommendation on the MDAB programme. The results indicated that 82.73% of the respondents fully support the programme to be continued in the years to come with no changes, 5.45% of them fully support the programme to be continued with small changes whilst 10.9% fully support the programme to be continued with some changes.

Table 9: Students' Recommendation on the MDAB Programme

Recommendation	Female	Male	Total	Percentage (%)
I would fully support the programme to be continued in the years to come with no changes.	60	31	91	82.73
I would fully support the programme to be continued with small changes.	5	1	6	5.45
I would fully support the programme to be continued with some changes.	9	3	12	10.9
I would recommend this programme to be repealed.	1	0	1	0.91
Grand Total	75	35	110	100

Only one respondent (0.91%) chose the last statement, “I would recommend this programme to be repealed”. This clearly showed that more than 80% students were satisfied with the existing MDAB programme and totally supported the programme to be continued in years to come.

Expenses return for MDAB students

The MDAB students received an allowance according to the total parents’ income per month as shown in Table 2. The allowances were cost spent by MDAB Funding Partnerships to support the students’ living costs during studies. Based on Table 3, the total of MDAB students in UiTM system from December 2011 to March 2015 was 21506. Table 10 shows the estimated minimum cost spent by UiTM just to cover the students allowance and the return of benefits in the form of students’ success in completing the MDAB courses. About 86.79% of the total money spent for 18665 students has been successfully used as these students managed to complete their MDAB studies and continued their studies at diploma level.

Table 10: The Estimated Minimum Expenses for Students’ Allowances and the Benefit Return

	Graduated & Passed	Failed	Total
Number of students	18665	2841	21506
Minimum Expenses (RM) (RM920 per student- Table 2)	17,171,800	2,613,720	19,785,520
Percentage of Minimum Expenses	86.79	13.21	100.00

CONCLUSION

The MDAB programme has indeed been proven to benefit the students. More than 80% of MDAB students from the whole UiTM system managed to complete the programme and pursue their studies at the diploma level. With regard to the students’ recommendation on the MDAB programme, 82.73%

of the respondents fully supported and are satisfied with the existing MDAB programme. The study data also showed that providing financial assistance to those coming from lower income group has indeed substantially helped those students who were initially under qualified to pursue their studies at the tertiary level. This result parallels the claim made by Hassan *et. al.* (2011) in their study. Thus, the MDAB programme should be continued in years to come to ensure less privileged students have the same opportunity to pursue their studies at tertiary level and a much more organised and fixed financial assistance should be developed. What is more significant is, the MDAB programme (through MDAB Pre-Science) has greatly contributed to the increasing number of graduates in science, technology, engineering and mathematics (STEM) programmes, which in the end can fulfil the job demands in the technical area especially from among Bumiputera graduates. This indeed creates another avenue for the Government of Malaysia on ways to increase the number of students in Science and Technology areas. Although UiTM has spent about RM20 million just for the allowance to 22000 students, it was worth it as majority of these students graduated the programme and managed to further their studies at higher level. Without MDAB programme, the students may not be able pursue their studies and achieve the success like now. Thus, MDAB is not a waste of money.

REFERENCES

- The Borneo Post (February 19, 2011). Bank Islam hand over RM200000 zakat money to MDAB UiTM. *The Borneo Post*. Retrieved from <http://www.theborneopost.com/>.
- Bank Islam (2010) *Bank Islam Launches Co-Branded Platinum MasterCard for UiTM Alumni*. Retrieved from <http://www.bankislam.com.my>.
- Bernstein, J. *Is Education the Cure for Poverty?*. The American Prospect. Retrieved from http://www.prospect.org/cs/articles?article=is_education_the_cure_for_poverty.
- Calcagno, J. C., & Long, B. T. (2008). The impact of postsecondary remediation using a regression discontinuity approach: Addressing endogenous sorting and noncompliance (No. w14194). Retrieved from National Bureau of Economic Research. www.nber.org/papers/w14194.

- Carter, C. (2013, May 19). Why Aren't Low-Income Students Succeeding in School?. *The Huffington Post*. Retrieved from http://www.huffingtonpost.com/carol-j-carter/why-arent-low-income-stud_b_2909180.html.
- The Borneo Post (April 21, 2012). Corporate Bodies, NGOs Urged to Help UiTM Students. *The Borneo Post*. Retrieved from <http://www.theborneopost.com>.
- Hanushek, E.A. (1995). Interpreting Recent Research on Schooling in Developing Countries, *World Bank Research Observer*, 10(2), 227 – 246.
- Hassan, O.R., & Rasiah, R. (2011). Poverty and Student Performance in Malaysia. *International Journal of Institution and Economies*, 3(1), 61-76.
- Hawkins, H.G. (2001). *Understanding Poor Performance: Palmetto Achievement Challenge Test (PACT) Scores and Poverty*. United States of America: Clemson University.
- Iris, S.S.L., Ong, M.L., & Khadijah, K. (1999). *Following the Academic Progress of Students Who Have Successfully Completed the Pre-Science Course in ITM Sarawak*. BRC Report: ITM.
- Kling, J.R., Liebman, J.B., & Katz, L.F. (2007). Experimental Analysis of Neighborhood Effects. *Econometrica*, 75(1), 83-119.
- Lee, J.W., & Barro, R.J. (2001). Schooling Quality in a Cross-Section of Countries. *Economica*, 68(272), 465-488.
- Myers, S.L. Jr., Kim, H., & Mandala, C. (2004). The Effects of School Poverty on Racial Gaps in Test Scores: The Case of Minnesota Basic Standard Test. *Journal of Negro Education*, 73(1), 81-98.
- Sharifah Mohd Noor (1991). Faktor-faktor Latar Belakang yang Berkaitan dengan Pencapaian Akademik. *Jurnal Pendidikan*, 11, 61 - 69.

World Bank (2003). *World Development Report 2004: Making Services Work for Poor People*. Retrieved from <https://openknowledge.worldbank.org/handle/10986/5986>.

Yayasan Sime Darby (2013) *Students Get another Chance at Higher Education through Yayasan Sime Darby's Sponsorship of UiTM's MDAB Programme*. Retrieved from <http://www.yayasansimedarby.com/>.

Yayasan Sime Darby (2014). *Yayasan Sime Darby allocates RM7.5 million to increase supply chain management talent*. Retrieved from <http://www.yayasansimedarby.com/>.

ORIENTALISM IN CELLULOID: THE PRODUCTION OF THE 'CRAZY YEAR'

Théry Béord¹ and Achim Alan Merlo²

¹Universiti Kuala Lumpur, Malaysia France Institute,
43650 Bandar Baru Bangi, Malaysia

²Graduate Institute of International and Development Studies,
1211 Geneva 21, Switzerland

E-mail: thery@unikl.edu.my, achim.merlo@graduateinstitute.ch

Received: 27 January 2017

Accepted: 19 September 2017

ABSTRACT

This article introduces a journey in the orientalist movement that characterises the cinema of the 'crazy years' between 1919 and 1929. Attention will be turned on the peculiarities of this period, including the socio-cultural dimension of that epoch. The role of the woman in cinematographic art will be considered as an appropriate tool for the interpretation of orientalism in the European society during the interwar period. Period of the creation of a popular culture or popularisation of culture, Orientalism became a mean to escape with fantasy the everyday way of life of modern European society. The film directors involved in the new emerging art, cinema for instance, included Orientalism into their scripts as an artistic style which was already extensively developed in painting and literature beforehand. This process leads to the trivialisation of Orientalism in the collective imagination and to the estrangement of the more ethnographic documentary films with the fictional treatments. We introduce here in this article some significant achievements proceeding from this estrangement. Finally a comparative look will be granted to the French-German couple, core of the European building, with the example of the Atlantis myth, revisited with an Orientalist vision.

Keywords: Orientalism, cinema, 'crazy years', Atlantis

PECULIARITIES OF THE EPOCH: BETWEEN TWO CENTURIES AND TWO WARS

Some people accuse Orientalism in the cinema during the ‘crazy years’ of being linked with European colonialist ideology. On the contrary, Orientalism appears rather as the result of technical advances in cinematography, opening new artistic perspectives, instead of what Edward Saïd suggests in his remarkable work *Orientalism* (1978). Far from the context and problems of colonialism as an ideology of conquest, Michel Serceau in *Le Mythe, Le Miroir Et Le Divan: Pour Lire Le Cinéma* (2009) specifies:

“They always aspire in a historicist reading to portray the colonial film (which I prefer for my part to call it film of colonial adventures) as an ideological product. They would say already more if they introduced it as an under-product of orientalism. As an artistic and literary movement, going back at least to the 18th century, orientalism established some new styles in Europe. The East had, one time, such a broad important impact as the one that will have America later on. Important but different.”

This does not mean that cinema remains always independent of any political power, certain Orientalist productions were in effect at that time financed by different European governments. Nevertheless the orientalist movement as a whole is, and remains, an artistic expression in its full measure. Orientalism after having inspired painting, literature and music in the course of the 18th and 19th centuries, nourishes in its turn cinematographic art, an art of escape par excellence. According to Ricciotto Canudo (1911), cinema is a mixture of material and aestheticism, the most consumable art, since it includes the five artistic elements: language, sound, picture, movement and interactivity. At the beginning of the 20th century cinema cannot avoid the attraction from abroad and far away, caused by the general feeling of dizziness in Europe. This escape contrasts with the violent world of the European wars, the technocratic state formation and belligerent nationalism, the whole embedded in the economic context of a growing industrial society. Hence, the establishment of a modern rational European society was created by bureaucracy and capitalism. This situation of self-defining crisis gives rise to the mythical oriental world in which the time has stopped. This attraction to abroad, search of exoticism in the Eastern world

therefore influences the European society of the time. This phenomenon is like the opium in European bourgeois suites as in the fancy dress balls on the model of an imaginative fantastic and coloured Eastern fashion. The effect of these trends is that certain mundane people of the time took the postures to portray themselves dressed in silky clothes, proper of an emir. Emblematic case in Britain of this type of European naivety is the stowing performed in 1910 on board of His Majesty Ship (H.M.S) Dreadnought, who sees the participation of future writer Virginia Woolf and that established the so famous expression *Bunga-Bunga*¹. This last reveals not the Oriental look in itself, but in reality just an imagination of the East created by Europeans.

We are persuaded that Orientalism in the cinema remains basically a Euro-centric vision justified by the European origins of the film directors during the early stage of cinema. But this vision is based on the discovery of the world as it is outside Europe and the extraordinary diversity of these worlds revealed by the expansionism and new transport technologies of the time².

It is also the age of the discoveries of the vestiges of ancient civilisations (Egypt, Mesopotamia, etc.). Therefore the collective imagination of the urban society settled in the European cities sees itself very penetrated by pictures of distant countries, those of Africa, Persia, Arabia and their exotic cultures experienced and portrayed by European adventurers and explorers abroad. The film directors as their audience are persuaded to have grabbed the genuineness of these different societies, which they imagine being outside any course of History. Exotic societies likely to give pure social forms, immune of any outsider's influence and especially still sheltered from European impact.

This marvellous world is not necessarily perceived by the European audience as wrong, in a negative vision. Well on the contrary. Exoticism and Orientalism with their wild figures, or even primitive - but genuine - must be preserved because they represent an ideal of purity, not polluted by modernity. In philosophy and in European literature this concept of the wild noble individual, the noble savage in French, or natural man, was already studied by Rousseau and Diderot in the 18th century. It is in this stream of thought that we can find later some achievements such as Robinson Crusoe or Tarzan.

This collective imaginary iconography of the East, sometimes naive, sometimes extraordinary, materialises itself on the wide screen with visually researched decadent ambiances, natural decors and genuine costumes allowed by studio devices. It involves strong character figures as bloody and despotic oriental leaders³ that enliven ancestral fears of a new plague of oriental masses (the European ancestral memory rooted with the barbaric invasions).

Already Voltaire pointed out this fear and idea of the ‘despotic oriental’ in his description of the Ottoman Empire under the rule of Sultan Ahmet III. According to Voltaire, Turkey represents an oriental country in which this Oriental effect constitutes for him a source of new spirituality and an alternative, favouring therefore the emergence of modern cultural relativism.

This vision of the Turkish world, as oriental and despotic, is easily comparable by the European public and also easily transposable in the collective imagination through cinemas. Firstly, this is because of the vicinity of Turkey to Europe. Secondly, this difference is demonstrated by the clashes between the two civilisations that also mark the passage between the 19th and 20th century (notably the Greek-Turkish war and the Italian-Turkish war). Having this oriental country represented on stage by harems full of embroidering and women, the Turkish ambience also provokes various fantasies to the public linked with the myth of sexual permissiveness, polygamous culture, and prohibited pleasures. The cinema auditorium becomes therefore the outlet of the European world towards extraordinary situations of sexual freedom, in contrast to the restrictive pressures promoted by a European Christian culture.

THE ORIENTAL WOMAN: TRANSGRESSIONS

Particularly developed during the ‘crazy years’, the Orientalist myth issued in cinema across exoticism and oriental eroticism defines and materialises itself on the screen with the female figures. The Orientalist cinema will favour therefore the representation of fantastical harems, populated with delightful women. The concubine woman is also the object of the sexual dictatorship of the sultan. The oriental female figure is represented also under mysterious traits, carrying as well the stamp of fate, as it is illustrated by

the example of the artist's name Theda Bara (anagram of Arab Death), an actress that became a star of this kind of films. Particularly, female mystery is instinctive by the use of the oriental veil covering the face. An obliged passage regarding this particular point is taken from Meyda Yeğenoğlu, an Orientalist scholar of Turkish origin:

“Meyda Yeğenoğlu works out a theory of orientalism starting from the pece (the veil, in Turkish). The East is a veil, and represents a very female aspect in a hiding game. The veiled woman is mysterious and becomes a fantastical visage to be caught. Via this metaphor, Meyda Yeğenoğlu explains that the East is a secret, inaccessible to the Occident, as it is a veiled woman⁴.”

The presentation of womanhood in such a way through the Orientalist cinema, updates the cultural relativism, the dichotomy of Europe in comparison to the Oriental world. We think that the oriental female element and its representation on the wide screen during the ‘crazy years’ serves to illustrate a parallel cultural process following the European psychological disaster created by the First World War. The European society, during the 20’s was in search of entertainment and amusements to erase the living memories of massacres and deaths. Orientalism and its alliance within the early cinema becomes therefore the ideal cure for the new popular audience of the post-war period. The objectification or materialisation of the oriental woman for this purpose, will be transported and consumed on place by the urban public. This travel novelty erstwhile reserved to the elites, now popularises and transforms the oriental woman into a key element for the interpretation of the ‘crazy years’. The popularisation of Orientalism and more in general of exoticism in cinema leads to the trivialisation of this trend, as the phenomenon Josephine Baker clearly has shown. This distortion of the reality linked to unreliable concessions to the popular genre produce an ambiguous orientalist representation. In the same way as the arrival of sound in cinema is interpreted as a form of chatting, French bavardization, by certain orthodox film directors of the mute film era. Orientalism, made as a commonplace of consumption during the ‘crazy years’, loses the scientific and realistic approach that is then maintained later by film directors such as Robert Flaherty. For this reason, it became at the time necessary to preserve the scientific method from this trivialisation in a more urgent manner than the explorative Orientalism before the First World War. Crossing the ‘crazy

years' anthropology and ethnography are therefore going from now on to take a separated way of productions; by means of inventories and thematic programmes entrusted from scientists to professional film-makers (Piault, 1995).

ORIENTALIST FILM DIRECTORS OF THE 'CRAZY YEARS'

Since the creation of a motion pictures camera by the brothers Lumière, a panoply of film directors used this new tool to register in the Orientalist vague. The vanguard of the cinema, inspired by travels literature such the one of Pierre Loti, or at the beginning of the 20th century by Henry Michaux, finds a certain Alexander Promio among its first supporters. Promio was one of the first innovative documentary filmmakers that linked cinematography with the camera motion itself, by filming for example Venice (from a gondola) or the Algerian desert (from a car). Promio is at the crossroad of two centuries, he makes the link between the Orientalism of the 19th century and that of the 20th century (Seguin, 1998). At the end of 1911 Promio came across in Algeria Camille Morlhon, another Frenchman and vanguard orientalist who was turning ten screenplays in the south Sahara desert with the support of the French government. However, in terms of stylistic approach, the oriental vision in cinema productions remains still exploratory up to the 1914-18 war. Even if it is necessary to highlight in this innovative field the peculiar production by George Méliès with, already in 1905, *'The Palace of the thousand and One Nights'*.

The end of the First World War marks a break in filmmaking aesthetical approaches. A new generation of film directors and technicians appears. They are sometimes film directors with an experience as war photographers or reporters. Sometimes are also young artists, either from the theatre or from the fine and decorative arts scene, which are going to completely renew the decors and costumes on the screens. A new generation of painters, choreographers, fine carpenters and interior decorators participate as well, after the war, in the elaboration of the Orientalist movement during the 20's. The cinema is therefore placed at the centre of the inventive proliferation developing during the 'crazy years'. An example of this type of collaboration with extravagant decors and oriental costumes is the film of

Jean Epstein, *'The Mongolian Lion'*, produced in 1924, with contemporary stars such as Ivan Mosjoukine and Nathalie Lissenko. This strange film approaches the topic of banishment and identity, by comparing a fictitious oriental kingdom with the Parisian metropolitan lifestyle⁵.

It is notable, in regard to the names origins of the actors of *'The Mongolian Lion'*, that the 1917 revolution in Russia created a wave of artists' migration towards the West, and among them the Russian creators of the performing company 'Albatross'. These human resources altogether contributed to the genuine revival of the French cinema during the 20's. A representative of this wave of Russian immigration to France is in the person of Victor Tourjansky, film director in 1925 of *'The Charming Prince'*⁶. This film represents a fantasized East, the grandeurs of ancient courtyards in central Europe and the modern world of the 20's in France. This disabused Orientalism, which involves also Pierre Loti, echoes *'The Mongolian Lion'* of Epstein where the modern world itself is confronted to a residual extravaganza. The following film done by Tourjansky is of a bigger wingspan and knows an international distribution notably in the United States; this is the *'Tales of the Thousand and One Night'*. In its fashionable type of Orientalism Tourjansky is quite obvious. The conception of the decor (owed to Lochakoff) and self-made costumes come from the tradition of the Russian Ballets. It contrasts with achievements of French contemporaries as in the *'Sultan of Love'* directed by René Le Somptier and Charles Burguet. Where this last film only portrays fragments of decors, Tourjansky melts the production in a group of buildings, centred and symmetrical, which give the phantasm of an enchanting world. With its fancy splendour and its dance stages, Tourjansky's movie seemed to be able to compete with emerging Hollywood. In the 'crazy years' numerous tailors became involved to 'dress up' film productions, the costume becomes a key element of film plasticism.

The film *Hara-Kiri*, produced in 1928 by Marie-Luise Iribe, is one of the first experimentation of orientalist Japanese style in France after the work of Cecil B. de Mille in the USA in 1915 with *'Forfaiture'*. This rare film *Hara-Kiri* reports social conventions, prejudices, and carries an embarrassing look on the Japanese culture and aesthetics. Another production of the genre is *The West* original *L'Occident*⁷ (1928) accomplished by one of the founders of the 'Club of the Cinematographic Art Friends' founded

in 1920, Henry Fescourt. It presents natural landscapes which intercut with the studio decors of superb Moorish creations or art deco, with genuine Moroccan clothes and rich costumes. Before passing to the thirties, lastly we must indicate commercial failure of Jean Renoir with the orientalist film *'The Village'* (1929), made in Algeria with a propagandist approach. Finally Léon Poirier just at the end of the 'crazy years' establishes himself as the Eurasian Orientalist with the *'Yellow Cruise'* in 1932. After three accomplished whole series of Orientalist films such as *'Souls of the East'* (1919), *'Narayana and the Thinker'* (1920), and *'The Jade Coffer'* (1926), *'The Black Cruise'* of Poirier constitutes a break point between the invention of Art deco Orientalism and the realism given by a pictorial and naturalist journey across Africa. This trip, which takes place from October 28th, 1924 till June 26th, 1925, also bears the name of 'Expedition Citroën Central Africa'. The African experience gives rise to a second expedition in 1932, this time in Asia with the already mentioned *'The Yellow Cruise'*⁸. This film documents the diversity of landscapes, men and cultures in the course of the journey covering about 30, 000 km and borrowing partly the track of the ancient Silk Road. It narrates numerous events during the trip and is realised in cinemas in 1934.

On the other side of the Vosges Mountains, film extravaganza at the time of the Weimar Republic finds the same attraction for the East as in France. Paul Wegener accomplished three versions of Golem inspired by the novels of the Austrian writer Meyrink (1915), and in which he interprets himself the living creature made of loam. The last version, called 'Golem: How He Was Born', co-produced in 1920 with Carle Boese, goes back to the origins of the myth. The Golem is fabricated to protect the Jewish population from pogrom threats. Made of loam, it takes life when its creator inscribes on the forehead the magical letters of the Tetragrammaton. But it becomes a threat also for those whom the creature was supposed to protect. The film aesthetically complies with German expressionism of the epoch: distortion of lines and colours, dialectic of the good and evil. Jewish folklore, cabbalists and fantastic elements dominate the screenplay and make it a singularity of orientalism. The film uses double exposures inherited both from Méliès and especially from a circle of fire which remembers Friedrich Wilhelm Murnau and Fritz Lang, the first in the *'Faust'* (1926), the second in *'Metropolis'* (1927). Later, in 1931, *'Frankenstein'* of James Whales, will draw inspiration from Golem with the example of the game between the Golem and some children.

ATLANTIS

The myth of Atlantis aroused a keen interest in the European cinema at the beginning of the 20th century. This rebound of interests is owed to the literary success of the novel written by Pierre Benoît, 'Atlantis' (1919). It received the French Academy prize for novels, translated into twenty languages and published 1.2 million copies. To recall the plot in broad traits, the officers Saint-Avis and Morhange travelled across the Western Sahara where they believed Atlantis was located, but they fell in an ambush. Separated and then confined in the tunnels of a mysterious city, each searches the other, however, the crazy love felt immediately by Saint-Avis for Antinea, the Queen of the place, is used by the Queen against Morhange, which instead is pushing her back. Two eponymous films draw directly inspiration from the novel of Pierre Benoît, one accomplished in 1921 by French film director Jacques Feyder, and one in 1932 by the German, Georg Wilhelm Pabst. If the original Atlantis thoughts of Plato, updated in the political and cultural context of the interwar period, are decisive in each of both films, the epic operated in the novel by Pierre Benoît and imprinted by Orientalism, constitutes the backbone of these two achievements. At the same time, it nourishes the two film productions with poignant metaphors.

First interpretative dimension: the location of Atlantis, object of debate since Plato's time, as much on the place as on the signification of such myth. Pierre Benoît in the novel opts for a form of scenery that changes original Atlantis by orientalising the myth. It will not be located in a Mediterranean island as Plato describes, but on an Algerian plateau: stony Sahara desert, ruins of volcanoes, a sanctuary of piton snakes. With the inclusions of the memories by Charles de Foucauld who established himself there in 1911. Memories of his trajectory, as much as his interest for the Touareg nomadic people⁹. This version of Atlantis loads the original myth with new poetic elements, capable to reveal the dimension of the European agony during the period. Second interpretative dimension: Atlantis is not only a place on earth, but also is personified, especially as a woman - a Queen - Antinea, at the top of a loving triangle that the two friends, Saint-Avis and Morhange, come to supplement. The folkloric dimension and the oriental folklore in the films translate the wishes besides a traumatised Europe (see concepts noted previously). This aspect remains there, and is not less marked by the societies for which these two films aimed at making the trauma forget.

Orientalism, because it is constructed against the Occident, or to escape it, continues carrying in this hollow as Daniel-Henry Pageaux sums up:

“Because it is ‘oriental’, this exoticism is first of all the expression of the absolute antithesis of the Occident. Occident antinomian, the East is an Occident reversed, confined in an irreducible way: not reason but passion, marvellous, atrocity; not progress or modernity but stopped time, primitive; not close daily but distant enchanter; lost garden or found paradise.”¹⁰

This ‘Occident reversed’ gives to Europe a picture of itself, picture used by both film directors Feyder and Pabst as an inspiring identification of the soldiers fighting the 14-18 war. The *Atlantis* of Feyder opens with Saint-Avis dying of thirst in the desert. He remembers in his suffering the episodes of his healing, his recovery from war wounds, in order to return to the desert. This identification allows paradoxically some criticism, as such the Orientalism of film director Feyder pretends to bear a colonialist dimension. Saïd Tamba (2010) speculates that the distribution of the film of Feyder coincides with the insurrection of the Rif (1921-1926) and the massive dispatch of weaponry by France to Morocco. According to this interpretation the media treatment favoured a legalist reading of violence, rather than the identification of a strengthening colonial domination, the latter, in order to provoke a ‘patriotic fervour’. And Tamba (*ibid*) on the *Atlantis* goes on with:

“The schema is suitable in any point for the mythology of the starring hero which was already displayed for some time in the narrative cinema, and the presence of which is enough to justify the imperial reason without having to wonder much about the motivations of the adversary.”

The palace of Atlantis in the film of Feyder reassembles the popular imagery, introducing spectacularly a palm grove in supported traits and simplified light visions. While Pabst, still impregnated by German expressionism, gives to the palace an oversized architecture, meaning the step down of individual values, at the same time as the fall of Saint-Avis. Also, the military fort of Hassi-Inifel in Feyder plays on a simplistic presentation, otherwise grotesque of Orientalism – a decor of palms, a wooden hut – where Pabst recalls in its abstractism the madness, by stressing the Pascalian troubles of the principal character. The desert then looks

like a dangerous temptation, awakening the wish to get lost in it, without leaving any trace.

If Antinea represents the oriental Eros in both films, sexuality is to be the object of a differentiated treatment, illustrating the almost hysterical effervescence of the 'crazy years' later followed by the shatters of the 1929 crash, which leads to a hieratic presentation of womanhood. This evolution will find therefore at the beginning of 1920's a baroque Antinea: made up, adorned with jewellery or with feathers, already showing masculine hair cut (she carries short hair). Her sensuality is distinctly a manner which Breton would qualify as 'erotic veiled'. For Daniel-Henry Pageaux this sexualisation 'allows to dominate [orientalism] or to give it up, more or less erroneously' (*ibid*). And indeed, in both versions, Saint-Avis falls in love with Antinea – implicitly in the film of Pabst – and his wish infantilises up till the loss of any virile attribute. Contrariwise, Morhange, interpreted in both films by Jean Angelo (the nephew of Sarah Bernhardt), refuses to become the umpteenth lover of Antinea, because the model of masculinity which he represents, cannot support to be chosen, when it is accustomed to choose. At the beginning of the 1930s, Antinea's representation bears no more any kind of sensuousness: the chess game with Saint-Avis takes place in a stony silence, without the slightest smile; as the statue of the Commander, she does not speak more than to condemn saying: 'failure' – a fatal word which gets the transformation of Eros in Thanatos. Thanatos, the Greek god of gentle death, is the desert, in which, turning the back to Atlantis, Saint-Avis will finally leave and bury his guilty conscience – a curtain of sand to fade it.

The nearness in time of both productions by Feyder and Pabst does not prevent the Orientalist treatment of the Atlantis from varying for social and political reasons between both versions. The film of Feyder registers the clichés of the 'crazy years', while that of Pabst carries the stigmata of the economic crisis and announces the protectionism that is hardening nations. On the one hand, Feyder, whose locations shooting in Algeria began in autumn 1919, ratifies the participation of women in the economic life of countries at war and their relatively emancipation. This typicality of the bourgeois family schema portrays a sensual Antinea especially taking pleasure for men. Master of harems, she is the one who infringes taboos. On the other hand, Pabst offers with the interpretation of

Antinea by Gisele Eve Schittenhelm, a womanhood once again lined up, severe, almost dehumanised, announced by the androids in *'Metropolis'* of Fritz Lang (1927). In this film of Lang, Schittenhelm played the role of the android under the name of Birgitt Helm. The choice of this actress highlights the atmosphere at the end of the 'crazy years' itself. In fact one had reproached Pabst for his detriment of German actress Marlene Dietrich in having chosen the American actress Louise Brooks to hold the top of the distribution posters in *'Loulou'* (1929) and in *'The Diary of a Lost Girl'* (1929). But in 1932, German self-definition reverberates culturally a new stage of 'Germanisation', who would not tolerate any longer this kind of alien choice. Pabst therefore from now leaves the stage, the time of an ellipse, in the explosively of French cancan, women in swishing sound in an atmosphere filled with smoke of a Parisian cabaret – memories of the gone 'crazy years'.

CONCLUSION

In its trajectory, Orientalism firstly exploratory, then fashionable and trendy, culminates as a zenith in the interwar period. The myth of orientalist Atlantis favoured a comparative look between both French and German societies. It has revealed that two nations which had confronted one another twice in the first half of the century, had at the end the same artistic aspirations in that short peace time separating two worldwide conflicts. The popular attraction for Orientalism revealed at the same time separated evolutions, but nevertheless, it highlights already a cultural community existing within European people, with their common aspirations and their common dreams.

Orientalist film appeared as a type of movement in full measure, having developed its own aesthetic codes and having left a place of choice to female figures and to the question of womanhood. Being born from the aspirations of the 'crazy years', the Orientalist movement in the cinema survived this period of the 20's and has been perpetuated through great achievements after World War II. Despite decades of decolonization, the East will continuously nourish the imaginary of European and American directors. Ancient East is often brought about by tales and legends drawn from eastern literature (*'The Thousand and One Nights'* adapted by Pier Paolo Pasolini in 1974). Particularly exemplary is the Persian-Arabic tale Aladdin popularised by

the Disney studios, featuring architecture components of Moghul India and Medieval Persia –tapestries, Muqarnas, bulbous domes, labyrinths of lanes and other noisy Bazaars –at the same time as it conveys racist representations of Arabs. The Baron Munchausen, improbable hero of the Russo-Turkish war of 1735-1739 immortalised by the German writer Rudolf Erich Raspe, has also experienced an extraordinary posterity among magicians of the seventh art from Meliès (1911) until the American director Terry Gilliam (1988). The Egyptomania, with its imaginary of ancient tombs, buried treasures and ancestral magic forms an artistic movement in its own right from Mankievieks' *'Cleopatra'* (1963) until Steven Spielberg's *'Indiana Jones'*, *'Raiders of the Lost Arks'* (1981) or the more recent *'Mummy'* (Stephen Sommers, 1999) while Antic Persia is often invoked as a symptom -sometimes a cerebation- of our violent world (*'Alexandre'*, Oliver Stone, 2004 or *'300'*, Zack Snyder, 2007).

But the most original form of post-colonial Orientalism remains the one proposed by directors such as Louis Malle who spent six months in India with a hand camera, hunting down poetic images, who immerses spectators in a radical otherness in an eight hours visual travelogue (*Calcutta, Phantom India* in 1969). Likewise, whereas Japan has long remained outside the scope of European directors, Chris Marker, another French director, obsessed by the question of memory and fascinated by Japan (see his documentary *'The Mystery Koumiko'*, 1965), finds in this country, what he calls, one of the 'extreme poles of survival'. In his film-essay *'Sunless'* (1983), he meditates on the blend of animism and hyper modernity that made emerge a new artificial world of synthesized images and videos games. He finally observes how the human cellular memory is being replaced by a constructed one and finds in this new system of images a metaphor of our future:

"Video games are the first stage in a plan for machines to help the human race, the only plan that offers a future for intelligence. For the moment, the inseparable philosophy of our time is contained in the Pac-Man. I didn't know when I was sacrificing all my hundred yen coins to him that he was going to conquer the world. Perhaps because he is the most perfect graphic metaphor of man's fate. He puts into true perspective the balance of power between the individual and the environment. And he tells us soberly that though there may be honour in carrying out the greatest number of victorious attacks, it always comes a cropper" (ibid).

NOTES

¹The 'Bunga hoax' refers to the stowing of the aristocrat Horace de Vere Cole who pretended to be Emperor of Abyssinia along with a group of artists, including Virginia Woolf, all disguised, with painted face.

²See case of 'The Black Cruise' original *La Croisière Noire* and 'The Yellow Cruise' original *La Croisière Jaune* of Citroën in both Africa and Asia, in Audouin-Dubreuil, A. (2009) and Haard, G.M. & Audouin-Dubreuil, L. (1924).

³The cinema advertising poster of 'The Yellow Cruise' in 1934 is very emblematic for this case.

⁴See the article *L'orientalisme* on the internet site of the Club du Millénaire.

⁵The kingdom of the Mongolians is plunged into the most complete chaos. The prince Roundghito-Sing, a young officer of the palace, interpreted by Ivan Mosjoukine, escapes the kingdom of the Grand Kahn by liberating the captive princess Zengali. Roundghito-Sing becomes a cinema star in France, but becomes also inebriated with the pleasures of being in Paris. In the film casting, the star Anna falls in love with him. But he discovers that she is actually his sister and that his destiny is therefore to marry Zengali.

⁶The principal character of the Prince (Count Patrice), an heir of the crown of Bengali, hides his identity during a high-society yacht cruise. The Prince is interpreted by Jacque Catelain. Count Patrice kidnaps a captive oriental princess, Nathalie Kovanko, whom the prince will want to free with the help of Koline, an amusing extra. It runs away from the harem of the Caliph with her on the yacht. Adventures and an odyssey across several civilizations begin.

⁷In Morocco, Hassina is under captivity of master Taïeb, a strong enemy of the French settlers. She falls in love with an officer of the French navy.

⁸The Citroën Expedition implied two teams, one from Beirut, another from Beijing, using both half-tracks Citroën vehicles (Audouin-Dubreuil, 2009).

⁹A former officer of the French army, Charles de Foucauld (1858-1916) became explorer before to become hermit. After he entered in the Order, he left to Sahara to leave with the Touareg. He became one of the most prominent specialists of this culture.

¹⁰ Article 'Orientalisme' in Encyclopaedia Universalis.

REFERENCES

- Audouin-Dubreuil, A. (2009). *La Croisière Jaune: Sur La Route De La Soie*, Grenoble: Glénat.
- Benoît, P. (1919). *L'Atlantide*, Paris: Albin Michel.
- Bureau, L.M., Değer, L., Gandois, F., Uğur, S., Uzun, C. (2010). *L'orientalisme*. Retrieved on April 6, 2010 from <http://clubdumillenaire.fr>.
- Canudo, R. (1911). The Birth of the Sixth Art. In Abel R (ed) *French Film Theory and Critism, Volume I: 1907-1929*. Princeton, NJ: Princeton University Press, 291-303.
- Haard, G.M. & Audouin-Dubreuil, L. (1924). *Le Raid Citroën: La Première Traversée du Sahara en automobile, de Touggourt à Tombouctou par l'Atlantide*. Paris: Plon.
- Pageau, D.H. *Orientalisme*. France: Encyclopédia Universalis.
- Piault, M.H. (1995). L'exotisme et le Cinéma Ethnographique: La Rupture D'une Croisière Coloniale. *Horizontes Antropológicos, Porto Alegre, 1(2)* Juil, p. 11-22.
- Saïed, E. (1978). *Orientalism*. New York: Pantheon Books.
- Seguin, J.C. (1998). *Alexandre Promio, ou les Enigmes de la Lumière*. Paris: L'Harmattan.
- Serceau, M. (2009). *Le Mythe, Le Miroir Et Le Divan: Pour Lire Le Cinéma*. France: Presses Universitaires du Septentrion.

Tamba, S. (2010). Propos sur le cinéma colonial en tant que genre populaire.
In L'homme Et La Société, N. 175. Paris: L'Harmattan. Doi: 10.3917/
lhs.175.0099.

MODELLING BASIC NUMERACY LEARNING APPLICATION FOR CHILDREN WITH AUTISM: A PILOT STUDY

Muhamad Fairus Kamaruzaman ¹, Harrinni Mohd Noor ², Mustafa Halabi
Hj Azahari ³

¹Formgiving Design Research Group, Faculty of Art & Design,
Universiti Teknologi MARA
40450 Shah Alam, Selangor, Malaysia

²Faculty of Education, Universiti Teknologi MARA,
42300 Puncak Alam, Selangor, Malaysia

³Faculty of Art & Design, Universiti Teknologi MARA,
42300 Puncak Alam, Selangor, Malaysia

¹Email: muhamadfairus@salam.uitm.edu.my

Received: 24 January 2017

Accepted: 8 November 2017

ABSTRACT

Children with autism have various difficulties in developing cognitive abilities and attaining new knowledge. However, it is essential they obtain a competence approach in order to achieve independence. The state of art has shown that a significant aspiration for children with autism is to become independent. Part of attaining independence includes achieving skills that allow for self-determination and involvement in social activities. Hence, it is essential for every child with autism to acquire basic numeracy skills to enhance their self-determination. With the emergence of assistive learning technology such as smartphones, PDAs, tablets, and laptops with touchscreen features, there are extensive ways to improve the quality of life for children with autism. This study, therefore, aims to explore the basic numeracy skills-based dynamic visual for children with autism that will possibly be of assistance to parents, educators, and facilitators in the development of digital assistive learning tools to meet the requirements of children with autism in learning environments. From the proposed theoretical framework, an application was designed and tested with several children with autism. Based on observations from the experiment, the users showed positive attitudes towards the outcome of the application.

Keywords: *children with autism, assistive learning technology, apps, numeracy, education*

INTRODUCTION

Autism spectrum disorders (ASDs) are a group of developmental disabilities characterised by impairments in social interaction and communication and by restricted, repetitive, and stereotyped patterns of behaviour (Association, 2000). Symptoms are typically apparent before the age of three. Since the early 1990s, elevated public concern about continued reported increases in the number of children receiving services for ASDs and reports of higher-than-expected ASD prevalence estimates have underscored the need for the systematic public health monitoring of ASDs (Rice *et al.*, 2007). Autism symptoms can be present in a variety of combinations and may accompany other disabilities. Some individuals with autism have normal levels of intelligence, although most individuals with autism have some level of intellectual disability, ranging from mild to severe. This range is often referred to as high-functioning autism to low-functioning autism. Autism is a life-long developmental disability that prevents society from understanding what people with autism see, hear, and otherwise sense. Autism counts differently when compared with typically developing individuals (Ingvarsson & Hollobaugh, 2010). Those with autism typically develop differently from other individuals in their counting skills by having a slower reaction time when naming quantities, a later development of sequencing skills and recalling positions, and no benefit from recognising a canonical placement of dots. The exemplary development of number knowledge, especially counting skills and the working memory is crucial for accumulated brain development. Hence, children with autism were believed to calculate in a different way when it comes to measuring up to normal emergent individuals (Kamaruzaman, Rahman, Abdullah, Anwar, 2013; Wehmeyer *et al.*, 2012). Characteristically raising these individuals need special attention and special goals when it comes to their education as this disability may affect their level of self-determination.

Previous studies have found that children with autism prefer instructions delivered through digital devices such as tablets (Ayres, Mechling & Sansosti, 2013; Pellicano, 2010) while the skilled application of assistive learning technology may increase many areas of independence for them and provide support for their lack in psychomotor skills. It is believed that the bright screen and interactivity of an assistive touch-screen applications learning technology has made the device much more attractive.

The assistive learning technology will complement the conventional method of learning as it certainly can provide a reliable level of predictability, from the device's touch response to the calm, steady voice emitted from the device when children with autism explore basic numeracy knowledge. This allows children with autism not only to display emotion and other personal aspects of calculation, but also answer questions and work together with the teacher, instructor, and course material. This research may result in a better alternative and be useful for children with autism as they develop their motor skills. Since basic numeracy skill is essential in one's life to cope with the surrounding world, a touch-screen-based device with an application for basic counting skill has been developed in this research to support children with autism in their learning environment, independence, and quality of life.

SIGNIFICANCE OF STUDY

This study provides opportunities for new knowledge in the learning styles of children with autism, especially in mathematics, and to foster academic and self-determination capabilities. It is also believed that these children will probably share their understanding of the application and basic numeracy with their peers both within and outside the classroom.

LITERATURE REVIEW

Children with autism have a psycho-educational profile that is different from typically developing children. Studies show that there may be deficits in many cognitive functions, yet not all are affected. Though there may be deficits in complex abilities; nevertheless, the simpler abilities in the same area may be intact. Some children with autism have stronger abilities in the areas of rote memory and visual-spatial tasks than they have in other areas (Cohen & Sloan, 2007). Children with autism also often display other kinds of visual-spatial talents, such as putting puzzles together, and perform well at spatial, perceptual, and matching tasks. Some may be able to recall simple information but have difficulty recalling more complex information (Grandin, 2011). Yet some others perform at superior levels on 'local' visual-spatial tasks that require finding parts within wholes. The local processing

tasks on which children with autism excel include the Embedded Figures Task (Carmo *et al.*, 2016; Edgin & Pennington, 2005) in which one must find a small part hidden in a larger pattern, and the block design task (Pellicano, Maybery, Durkin, & Maley, 2006), in which one must use blocks to copy a two-dimensional pattern. Strength in visual-spatial skills has been described in personal accounts of children with autism.

Apart from visual-spatial skills, these children can easily learn and remember information that is presented in a visual format (Grandin & Panek, 2013; Mukerji, Motttron & McPartland, 2013) often demonstrating essential strengths in concrete thinking, rote memory, and understanding of visual-spatial relationships, but have difficulties in abstract thinking, social cognition, communication, and attention (Carnahan, Musti-Rao, & Bailey, 2009). Visual graphics and written cues can often help them learn, communicate, and develop self-control (Rani, Rahman & Kamaruzaman, 2015). Visual game therapy however needs specific game design that incorporates deep study on target users, which have often been overlooked (Alankus & Kelleher, 2012). One of the advantages of using mobile game-based learning is that children or adolescents can practice it for as long as they need to process the information. This technology has enriched, motivated, and empowered the human mind (Kamaruzaman & Zainol, 2012; Rani, Zainol, & Kamaruzaman, 2015). According to Rani, Yusoff, Azman and Kamaruzaman (2015) by using mobile game-based learning assistance, the individual learns to emphasise and concentrate on the message.

THE COUNTING MODEL OF INSTRUCTION

Various counting patterns have been developed in the past thirty years. Based on Schaeffer, Eggleston, and Scot's (1974) counting model, there are three steps required for the acquisition of counting. Firstly, children have to obtain knowledge in counting words sequence. Secondly, the children should learn enumeration, which is the aptitude to point to and calculate each object. Finally, children should learn the cardinality rule which understands that the last number they count in a particular set represents the number in the set.

THE COUNTING PRINCIPLES

Counting is one of the earliest and most essential skills for every child to learn in order to gain self-reliance. Scholars have recommended that learning basic numeracy and calculation is an important element in the enhancement of number perception (Kim & Cameron, 2016). Additionally, it has been documented that counting skills are essential prerequisites that can lead to an independent adult life. It is believed that counting skills develop in a hierarchal approach according to five most important principles (Gallistel & Gelman 1992). The first three principles involve how children count (process), the fourth principle deals with what to count (explanation), and lastly, it involves a combination of the features of the other four principles. It consists of the one-to-one principle; the constant classify theory; the cardinality theory; the conceptual theory; and the order inconsequence theory. Table 1 summarises the principles of counting as described by Gallistel and Gelman (1992) in Preverbal and verbal counting and computation.

Table 1: Gallistel and Gelman's Principles of Counting

Principle	Description
One to One	Items are identified one by one with a name given to each one.
Stable Order	The tags used in counting are arranged in a fixed order.
Cardinality	Final tag counted represents the total number of items in the set.
Abstraction	The counting procedure can be applied to all kinds of things whether concrete or mental.
Order Irrelevance	Items can be counted in any order so long as each item is tagged once.

More and more special educational needs children are using technological devices to carry out tasks and activities (Muñoz, Barcelos, Noël & Kreisel, 2012). There has been a variety of applications developed for use by children with autism in the past few years. Many applications were designed as an instructional tool to teach children with autism the skills they need in order to enhance their self-determination. It has been found that the use of such applications was well received by children with autism and incorporated into the regular activities of their school. In this

research paper, a numeracy design learning application was developed to support basic counting skill for children with autism. Since children with autism have a psycho-learning outline that varies from typical children, there may be countless insufficiencies in their cognitive tasks, though not all (Kamaruzaman, Rahman, Abdullah, Anwar, 2013). Compared to typical children, children with autism count up in a different way (Hasnah Toran, 2013; Torii, Ohtani, Niwa, Yamamoto, & Ishii, 2012), differing from characteristically emergent development by a slower consequence moment in time when inaugurating figures; a later maturity of series dexterities and evoking arrangements, and no advantage from identifying a canonical position of marks. They however have the talent to show other kinds of visual and spatial abilities such as composing puzzles and the capability to accomplish spatial, perceptual and mix match assignments.

Experts believe that children with autism can understand through visual means. According to Kamaruzaman and Azahari (2014), Munoz-Soto *et al.* (2016) and Kamaruzaman, Nor, and Azahari (2016) some children with autism may easily learn and remember information that is presented in a visual format. The major advantage of using infographic supports is that they could be used everywhere and anytime to process information. In developing a design application architecture that is more practical and usable, it is vital to look closely into user modelling. It is believed that works about usability and user characteristics help shape how the end user interacts with the application system (Zhang, Carey, Te'eni, & Tremaine, 2004). Kamaruzaman *et al.* (2013) believe that the existing framework should incorporate the counting principles outlined by Gallistel and Gelman (1992) as a basis.

RESEARCH DESIGN DEVELOPMENT

Five main phases are implied in developing the autistic education application design model. The earliest stage comprises children with autism's issues of learning how to count, objectives, possibility, and lifelong learning environment. The following stage forms the outline of the design application which includes creating the mood board, storyboard, and prototype model. This model will also look into certain elements and aspects of children with autism's user interface, dynamic visual, and contents. The third phase

focuses on building the contents and materials based on the earlier phases. Next, the experiment stage comprises testing and analysing the prototype with children with autism. Autism experts believe that in ensuring the success of the investigation, the instructor, mentor, and parents will need to run the application with the children with autism in their natural atmosphere. A distance observation session was used and these children's behaviour were recorded and analysed (Gallistel & Gelman, 1992). It is also believed that the natural atmosphere plays a dynamic role in determining the children's capacity to produce discerning responses. Any issues and matters that arise during this phase will be identified and documented. The final stage comprises of compiling data and feedback from the instructor, mentor, and parents of participating children with autism about the numeracy design learning application.

USER INTERFACE DESIGN APPLICATION FOR CHILDREN WITH AUTISM

The Content Application

The numeracy interface design learning application was designed according to the needs of children with autism (M. Kamaruzaman & Zainol, 2012). The numeracy learning application consists of basic numbering information, number recognition, and drag and drop and drag and match numbering games. The languages used in this numeracy learning application are English and Malay (Bahasa Malaysia) as they are the most common languages used by children with autism in Malaysia. The contents of this application were divided into two parts: learning to count and numbering exercises. All the segments' contents were adapted and aligned with the Integrated Curriculum for Learning Disabilities issued by Ministry of Education Malaysia.

The Development of the Basic Counting Application

According to Gallistel and Gelman (1992), designing assistive learning systems for children with autism should anticipate existing limitations. The first stage is the analysis phase, where the main purpose was to consider all factors that are related to the project and how to produce a desirable result.

The investigation involved several children with autism. To comprehend the needs of the children with autism, and to identify the issues and purpose for the application, interviews were held with the instructor, mentor, and parents at the onset of the project. Since the goal of the investigation was to develop a prototype that focuses on the method of learning how to count, information gathered in the analysis phase was used to develop a hypothetical design of the application. The primary design of the application needs to emphasise the practicality and usability of the application with testing being the key objective. A mood board and a storyboard were created to identify the interface design of the application. The visual layout has been delicately thought out to ensure that the overall application is pleasurable and easy to use. Aspects such as the children with autism's skill and ability to use the assistive learning technology such as a tablet, Smartphone, and computer were taken into consideration. Dynamic visual elements such as audio, video, animation, text, and graphics were included in the design to enrich the application.

Numeracy Skills Learning Application Experiment with Autism Children

A total of 15 children with autism from the Klang Valley, Selangor, Malaysia had participated in this research. They were selected by the Education Planning and Research Division (EPRD), Ministry of Education (MOE) Malaysia in collaboration with Selangor Education Department due to the specific area of research in Special Education. Two primary schools with integrated special education programmes (PPKI) in Selangor, Malaysia participated in the study. All children with autism were protected by agreements with their school principal to ensure that the protocol in research ethics has been followed accordingly (REC: 600-IRMI (5/1/6)).

Testing of the prototype was conducted in the participants' natural surroundings and environment as it is important to make them feel 'natural and relaxed' (Hood Mohamad Salleh, 2012). The experiment was led and guided by the children's respective teachers and instructors who had been briefed on the structure as well as the configuration of the application, its user interface, looks and feels, and most importantly its practicality and usability for children with autism's self-development in understanding basic numeracy by using the assistive learning technology.

Based on the distance observation and teachers' feedback, most of the participating children were found to be fond of and had enjoyed using the application. As a learning tool, the application will provide support for learning basic numbers for children with autism both within and outside the classroom beyond normal classroom instructions. Table 2, shows the different outcomes.

Table 2: Numeracy Result Experimentation towards Children with Autism Learning Development

No of Children with Autism	Age	Numeracy Skill Learning Application									
		Ability to understand basic numeracy skill		Cognitive Level				Children with Autism Response Psychomotor Level	Psychomotor Level		
		Slow	Poor	Modest	Good	Excellent	Low		Medium	High	
1	7	Yes	✓					Blur	✓		
2	6	Yes		✓				Confuse	✓		
3	8	Yes	✓					Low	✓		
4	7	Yes		✓				Uncertain	✓		
5	6	Yes			✓			Skepticism		✓	
6	6	Yes			✓			Severe		✓	
7	7	Yes			✓			Enjoy		✓	
8	6	Yes				✓		Connect		✓	
9	8	Yes					✓	Determine			✓
10	7	Yes				✓		Enthusiastic			✓
11	8	Yes				✓		Hyper			✓
12	7	Yes				✓		Inspire			✓
13	9	Yes					✓	Intense			✓
14	6	Yes					✓	Passionate			✓
15	8	Yes					✓	Extreme			✓

Note: Age reflects participant's age at the time of the experiment.

Numeracy Learning Design Application Screenshots

Figure 1 until Figure 4, are print screens on several existing activities in the numeracy learning skill design application.

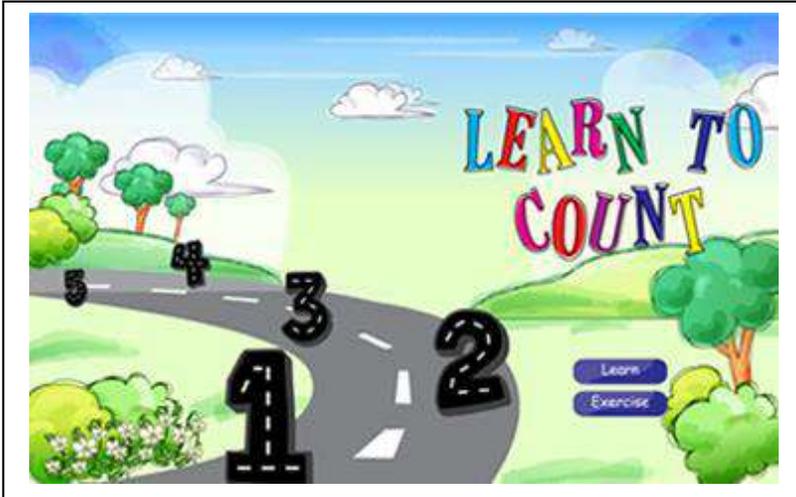


Figure 1: Main page of Numeracy Learning Design Application Screen

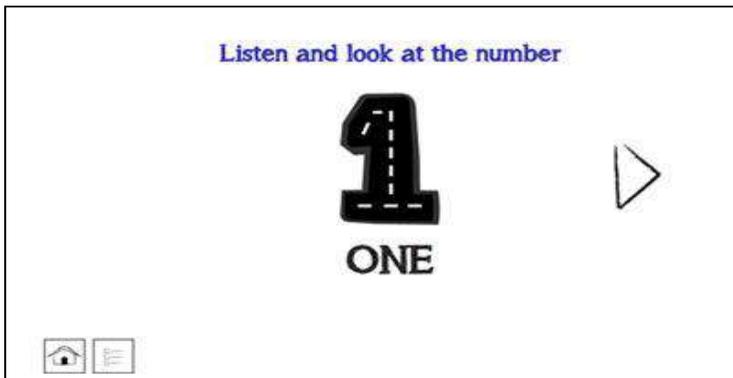


Figure 2: Example of number one in basic numeracy learning skill screen page

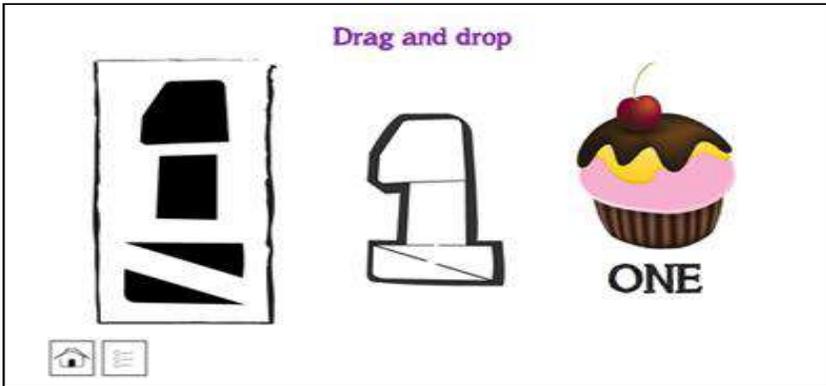


Figure 3: Example of Drag and Drop on Number One in Numeracy Learning Skill Application Screen Page



Figure 4: Example of Joining the Dots on Number One in Numeracy Learning Skill Application Screen Page

FINDINGS

It is relevant to note that results of the experiment indicated that children with autism were attracted by the application. The attraction had led them to eventually spend more time on the numeracy application; practising and doing exercises while exploring their idealistic conceptions beyond the logical perception as well as to attain their learning interests and achieve self-independence.

CONCLUSION

As the population of children with autism increases it becomes more pressing for parents and educators to have better understanding of their special needs, notably in the area of learning and self-independence. This research provides support for understanding such needs. Results from the study show that almost all of the teachers and instructors who had participated agree that using assistive learning technology will enhance and enrich children with autism's state of mind and inspire them to acquire new knowledge independently.

This research is a progressive work on basic numeracy learning application which is a part of a comprehensive numeracy learning design application. As soon as the comprehensive numeracy learning design application is ready, it will be tested again to establish the practicality and usability of the model. It is also relevant to note that it is possible to use the application in psychoanalysis to enhance children with autism's independence, lifelong learning, and quality of life.

ACKNOWLEDGEMENT

This research was approved by the local Research Ethics Committee, Universiti Teknologi MARA (UiTM) and Ministry of Education, Malaysia. This project was funded by UiTM under the LESTARI grant scheme. The authors also would like to thank Faculty of Art & Design, UiTM and Research Management Centre, UiTM for the administrative support.

REFERENCES

- Alankus, G., & Kelleher, C. (2012, May). *Reducing compensatory motions in video games for stroke rehabilitation*. Paper presented at the Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, Ausin, Texas.
- Association, A. P. (2000). *Diagnostic criteria from dsm-iv-tr*: American Psychiatric Pub.

- Ayres, K. M., Mechling, L., & Sansosti, F. J. (2013). The use of mobile technologies to assist with life skills/independence of students with moderate/severe intellectual disability and/or autism spectrum disorders: Considerations for the future of school psychology. *Psychology in the Schools, 50*(3), 259-271. DOI: 10.1002/pits.21673.
- Carmo, J. C., Souza, C., Gonçalves, F., Pinho, S., Filipe, C. N., & Lachmann, T. (2016). Effects of categorical representation on visuospatial working memory in autism spectrum disorder. *Journal of Clinical and Experimental Neuropsychology, 39*(2), 1-11. <http://dx.doi.org/10.1080/13803395.2016.1207754>.
- Carnahan, C., Musti-Rao, S., & Bailey, J. (2009). Promoting active engagement in small group learning experiences for students with autism and significant learning needs. *Education and Treatment of Children, 32*(1), 37-61. DOI: 10.1353/etc.0.0047.
- Cohen, M. J., & Sloan, D. L. (2007). *Visual Supports for People with Autism: A Guide for Parents and Professionals*. United States of America: Woodbine House.
- Edgin, J. O., & Pennington, B. F. (2005). Spatial cognition in autism spectrum disorders: Superior, impaired, or just intact? *Journal of Autism and Developmental Disorders, 35*(6), 729-745. DOI: 10.1007/s10803-005-0020-y
- Gallistel, C. R., & Gelman, R. (1992). Preverbal and verbal counting and computation. *Cognition, 44*(1), 43-74. [https://doi.org/10.1016/0010-0277\(92\)90050-R](https://doi.org/10.1016/0010-0277(92)90050-R).
- Grandin, T. (2011). *The Way I See It: A Personal Look At Autism & Asperger's*. United States of America: Future Horizons.
- Grandin, T., & Panek, R. (2013). *The Autistic Brain: Thinking Across the Spectrum*. New York: Houghton Mifflin Harcourt.
- Hasnah Toran, S. B., Fadliana Chiri. (2013). *Siri Pendidikan Autisme: Pengajaran Berstruktur*. Bangi: UKM Press.

- Hood Mohamad Salleh, H., Zaharatul Sophia Mohamed Amir Abas & Aishah Mohamed Yusoff. (2012). *Do You Know Autism?* Bangi: UKM Press.
- Ingvarsson, E. T., & Hollobaugh, T. (2010). Acquisition of intraverbal behavior: Teaching children with autism to mand for answers to questions. *Journal of Applied Behavior Analysis*, 43(1), 1-17. doi: 10.1901/jaba.2010.43-1.
- Kamaruzaman, M., & Zainol, I. (2012, December). *Behavior response among secondary school students development towards mobile learning application*. Paper presented at the 2012 IEEE Colloquium on Humanities, Science and Engineering (CHUSER, Sabah. doi: 10.1109/CHUSER.2012.6504381.
- Kamaruzaman, M. F., Rahman, S.H.A., Abdullah, K.Z., Anwar, R. (2013, April). *Conceptual framework study of basic counting skills based dynamic visual architecture towards autistic children's development*. Paper presented at the 2013 IEEE Business Engineering and Industrial Applications Colloquium (BEIAC), Langkawi. doi:10.1109/BEIAC.2013.6560108.
- Kamaruzaman, M. F., Azahari, M.H.H. (2014, September). *Form design development study on autistic counting skill learning application*. Paper presented at the 2014 International Conference on Computer, Communications, and Control Technology (I4CT), Langkawi. Doi: 10.1104/I4CT.2014.6914148.
- Kamaruzaman, M. F., Nor, H.M., Azahari, M.H.H. (2016). Using touchscreen technology to support basic numeracy learning process for high functioning children with autism. *Turkish Online Journal of Educational Technology*, 2016(July) pp. 632-639.
- Kim, H., & Cameron, C. E. (2016). Implications of Visuospatial Skills and Executive Functions for Learning Mathematics: Evidence From Children With Autism and Williams Syndrome. *AERA Open*, 2(4), doi:10.1177/2332858416675124.

Mukerji, C., Mottron, L., & McPartland, J. C. (2013). *Enhanced Perceptual Functioning Encyclopedia of Autism Spectrum Disorders*. New York: Springer. doi:10.1007/978-1-4409-1698-3.

Munoz-Soto, R., Becerra, C., Noël, R., Barcelos, T., Villarroel, R., Kreisel, S., & Cambor, M. (2016, October). *Proyect@ matemáticas: A learning object for supporting the practitioners in autism spectrum disorders*. Paper presented at the 2016 XI Latin American Conference on Learning Objects and Technology (LACLO). San Carlos, Costa Rica. DOI: 10.1109/LACLO.2016.7751760.

Muñoz, R., Barcelos, T., Noël, R., & Kreisel, S. (2012). *Development of software that supports the improvement of the empathy in children with autism spectrum disorder*. Paper presented at the 2012 31st International Conference of the Chilean Computer Science Society. Valparaiso, Chile. DOI: 10.1109/SCCC.2012.33.

Schaeffer, B., Eggleston, V. H., & Scott, J. L. (1974). Number development in young children. *Cognitive Psychology*, 6(3), 357-379. [https://doi.org/10.1016/0010-0285\(74\)90017-6](https://doi.org/10.1016/0010-0285(74)90017-6).

Pellicano, E. (2010). Individual differences in executive function and central coherence predict developmental changes in theory of mind in autism. *Developmental psychology*, 46(2), 530. doi: 10.1037/a0018287.

Pellicano, E., Maybery, M., Durkin, K., & Maley, A. (2006). Multiple cognitive capabilities/deficits in children with an autism spectrum disorder: "Weak" central coherence and its relationship to theory of mind and executive control. *Development and psychopathology*, 18(1), 77. DOI:10.1017/S0954579406060056.

Rani N.M., Rahman S.H.A., Kamaruzaman M.F. (2015) Color Cognition Framework for Autistic Children Development. In: Hassan O., Abidin S., Anwar R., Kamaruzaman M. (eds) Proceedings of the International Symposium on Research of Arts, Design and Humanities (ISRADH 2014). Singapore: Springer. https://doi.org/10.1007/978-981-287-530-3_47.

- Rani N.M., Yusoff M.F., Azman F.Z.R., Kamaruzaman M.F. (2015) The Role of Digital Educational Game Design Learning Environment: An Empirical Study. In: Hassan O., Abidin S., Anwar R., Kamaruzaman M. (eds) *Proceedings of the International Symposium on Research of Arts, Design and Humanities* (ISRADH 2014). Singapore: Springer. https://doi.org/10.1007/978-981-287-530-3_14.
- Rani N. M, Zainol I.H., Kamaruzaman M.F. (2015) Empirical Study on Game-Based Learning Phenomenon Through Mobile Design Technology. In: Hassan O., Abidin S., Legino R., Anwar R., Kamaruzaman M. (eds) *International Colloquium of Art and Design Education Research* (i-CADER 2014). Singapore: Springer. https://doi.org/10.1007/978-981-287-332-3_20
- Rice, C. E., Baio, J., Van Naarden Braun, K., Doernberg, N., Meaney, F. J., & Kirby, R. S. (2007). A public health collaboration for the surveillance of autism spectrum disorders. *Paediatric and perinatal epidemiology*, 21(2), 179-190. DOI:10.1111/j.1365-3016.2007.00801.x
- Torii, I., Ohtani, K., Niwa, T., Yamamoto, A., & Ishii, N. (2012, January). *Augmentative and alternative communication with digital assistant for autistic children*. Paper presented at the 2012 IEEE International Conference on Emerging Signal Processing Applications. Las Vegas. DOI: 10.1109/ESPA.2012.6152448.
- Wehmeyer, M. L., Shogren, K. A., Palmer, S. B., Williams-Diehm, K. L., Little, T., & Boulton, A.(2012). Impact of the Self-Determined Learning Model of Instruction on Self-Determination: A Randomized-Trial Control Group Study. *Exceptional Children*, 78(2), 135–153.
- Zhang, P., Carey, J., Te'eni, D., & Tremaine, M. (2004, August). *Integrating human-computer interaction development into SDLC: A methodology*. 10th Americas Conference on Information Systems, AMCIS 2004, New York, NY, USA.

