ISLAMIC MODERATION (WASATIYYAH) MANIFESTATION OF PRACTICES: AN ELABORATION OF ITS DEGREE OF EFFECTIVENESS

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Abstract

Purpose: The study is an attempt to elaborate on students’ development explicitly, understanding and practices of Islamic Moderation Personality (IMP) in Malaysian Higher Learning Institution (MHLI). The measurement of the development of their understanding, especially in term of its representation of IMP is underlined. Based on this measurement, personal conceptual beliefs, understanding principles in life and the manifestation of IMP able to make a person different compared to others. In this article, the cause of differences is measured by comparing the intensity of IM practices and the manifestation types and patterns.

Methodology: The method used in this study is a quantitative methodology, and by using the questionnaires, the survey has been conducted to 508 respondents in six MHLIs. The data analysis was performed using Structural Equation Modelling (SEM) method with the help of AMOS software version 23.

Results: The survey administered to the students of MHLI showed a higher level of IMP manifestation expressed by their self-conceptual understanding and attitudinal paradigm through attitude to Allah SWT, attitude to own-self, and attitude to others. These strongly contributed to self-satisfaction personality in achieving awareness, perfection, and reasonable state of balanced and robust willingness. Simultaneously, item practices acted as a mediator between Islamic moderation conceptual paradigm and its manifestation practices.

Implications: The finding provides a foundation for further research in IMP manifestation, both as a general principle in life and specific domains such as religion, education, and socialization practices. Hence, IM as a complete balanced system in life should be adopted and practiced accurately and precisely according to the revelation sources.

Keywords: wasatiyyah, Islamic-moderation, practices, conceptual paradigm, manifestation.

INTRODUCTION

The challenging situation in daily life plus struggling with increasing pressure and socio-psychological vulnerability, make individual anxious to know and understand the real types and patterns of Islamic Moderation (IM) experienced by others and how it’s manifest in their life. In this context, IM (Wasatiyyah) is regarded as a notoriously difficult term to define and to understand its conceptual application. Even though, it is a well-known terminology within the Muslim community. However, going through the English literature, there have been some terminologies associated with IM such as mainstream, tolerance, balance, and others. The history of the term IM is rooted in the Holy Qur’an which describes the Muslims as an Ummah Wasatan which mean a global Muslim community with justly balanced characteristics (al-Baqarah:143). The term Wasatan is an Arabic terminology in which it understanding goes and expanding to two different forms, one is based on knowledge of reality and the other being based on knowledge of consequences (Rosidi, 2002). Thus, both are not similar concerning reference and application. Each aspect has its epistemological definition and functional requirements. To find the exact meaning of IM as what the Qur’an meant, one must analyze its root word meaning and ideally relate it’s contextual usage (which is known in the Qur’anic studies as the cause of revelation). In this particular point, one must wonder how it has been understood and received by the people on that particular time and space. Their acceptance of this terminology is evidence for its common usage and applied by an accurate context (Islamic Foundation UK, 2017).
LITERATURE REVIEW

The concept of IM is one of the unique terminologies within Islamic epistemological understanding. Based on its general and literal definition, it can be regarded as denoting to the ‘middle’ conceptual senses such as fair and simple approach and yields toward the best or denoting to the state of balancing act that zero from extreme and fanatic in every aspect of human life. It is regarded as almost synonymous with everything that carries the objectivity of ‘Islam’ as a religion, where the first principle of justly balanced thought is ‘a complete and comprehensive understanding of Islam’ (Qaradawi, 2016). A similar term also exists in many other languages such as ‘moderation’ in English and ‘kesederhanaan’ in Malay. It can be considered as one of humanistic conceptual thinking or understanding in a certain particular area or a system of thought within human communities. However, the issue here is whether this conceptual paradigm is a well-known principle that had been practiced by a certain community? How the community members manage to construct and establish its principle of practices? Therefore, a practical analysis focusing on a deeper understanding and implementation of the term ‘Wasatiyyah’ from its authentic resources is very crucial, especially within the contemporary atmosphere of terrorism and due to the global development and geopolitical changes. The study of IM drastically evolves towards various dimensions and approaches. Before, it was only discussed within the field of Quranic exaggeration, but now it has attracted the attention of many scholars in various fields such as linguistics, socio-psychology, Islamic development, and Islamic capital market, either within the scope of religious contexts or socio-political strategies. This expansion can be observed from the general opinion of modern scholars in defining ‘religion’ as an organized collection of beliefs and cultural systems adopted by a community which become part and parcel of their worldview and socio-cultural existence (Pecorino, 2001). In this context, this study examining IM within the true nature of Muslim belief and socio-cultural practices throughout their communal life. The main objectives of this study can be summarized as follows:-

i. To examine the relationship between IM and item practices of students of MHLI.
ii. To examine the direct relationship between item practices and manifestation practices.
iii. To analyze item of practices as a mediator in the relationship between IM and manifestation practices.

The framework of the Study

As mentioned before, IM usually discussed and analyzed from the perspective of Islamic religious ethics, either physically or spiritually. Therefore, as an attempt to understand this issue from its conceptual implication and manifestation in the reality of life activities, the specific framework should be established to make it workable. In other words, IM should be demonstrated accurately to picture its manifestation within an individual's daily life. The main framework of this study stood on three fundamental key features as listed in Table 1:

| No. | Key                  | The Definition                                                                 |
|-----|----------------------|--------------------------------------------------------------------------------|
| 1.  | Islamic (IM)         | A distinct intellectual creation or an art of thought that giving rise to the specific conceptual domain in life; |
| 2.  | Manifestation        | A physical or non-verbal representation of IM as according to the elaboration finding; and |
| 3.  | Item of practices (IOP) | A single exemplary such as an action or reaction that elaborate a manifestation of IM entity in the reality of practices. |

These three key features describe the whole idea of the study. It begins with an abstractly conceptual understanding of the term IM. Then followed by an objective to observe and measure its manifestation. From here, emanate an issue of how to materialize that objectivity. And finally, the study suggests using the item of practices as a clarification in answering all the questions regarding the IM subject and practices. The above key features of the study can be described as in the following framework in Figure 1.

As stated before, the main objective of this study is an attempt to understand why people differ in their IM understanding and practices? On what basis it happens? How to identify those differences? Hence, this study derived from the hypotheses that the answers for most of such questions can be obtained from the analysis of a certain manifestation pattern. For instance, by examining the manifestation of IM within MHLI will provide basic information on the above mention questions. On the basis of the literature reviewed, the research questions and the objectives of this study, the following framework is developed to measure the IM manifestation pattern within the MHLI.
Figure 1. Key features of IM manifestation framework

Figure 2. A theoretical framework for the manifestation of Islamic moderation conceptual paradigm (IMCP) and representation of self-achievement personality (RSAP) among MHLI students

Figure 2 describes a theoretical framework adopted in this study in which it refers to the process of identifying the manifestation of IM personality, using two factors model used as a parameter in identifying and describing the accuracy of IM manifestation within university student’s daily practices. The two factors are self-conceptual and attitudinal paradigm measures on IMCP and self-satisfaction measures on RSAP. Fourteen items (as in Table 4) were used to measures the first factor, and ten items (as in Table 5) were used for the second factor in which they reflect the participants self-conceptual and attitudinal paradigm and self-satisfaction personality in achieving awareness, perfection, reasonable state and strong willingness.

RESEARCH METHODOLOGY

This study employed the quantitative method. There were 508 respondents who were taken from six MHLIs. The questionnaires consisted of closed-ended questions. It was used to measure the conceptual manifestation of IM and by doing empirical, can evaluate the non-figurative values and relationship that has no precise magnitude quantified before. The simple random sampling technique has been used to select the sample of this study.

Demographic Profiles

This section presents a description of the sample. The characteristic of respondents is described by gender, age, level of education, CGPA and year of study which is presented in Table 2.

Based on Table 2, the respondents comprises of six public universities MHLI1 (17.3%), MHLI2 (16.5%), MHLI3 (15.4%), MHLI4 (17.3%), MHLI5 (17.1%) and MHLI6 (16.3%). The majority of respondents are female (72.2%) and
male (27.2%). With regard to age, 77% of respondents come from the age group of 19-23, 14.6% of respondents were from the age of 24-28, 8.5% respondents from the age of 28 and above.

Table 2. A demographic sampling of six MHLI

| Characteristics       | MHLL1 (n=88) | MHLL2 (n=84) | MHLL3 (n=78) | MHLL4 (n=88) | MHLL5 (n=87) | MHLL6 (n=83) | TOTAL (n=508) |
|-----------------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Gender (n=508)        |              |              |              |              |              |              |               |
| Male                  | 4            | 27           | 23           | 22           | 33           | 32           | 141 (27.2%)   |
| Female                | 84           | 57           | 55           | 66           | 54           | 51           | 367 (72.2%)   |
| Age (n=508)           |              |              |              |              |              |              |               |
| 19-23                 | 75           | 63           | 58           | 45           | 68           | 82           | 391 (77.0%)   |
| 24-28                 | 8            | 18           | 4            | 32           | 11           | 1            | 74 (14.6%)    |
| 28 and above          | 5            | 3            | 16           | 11           | 8            | 0            | 43 (8.5%)     |
| Level (n=508)         |              |              |              |              |              |              |               |
| Matriculation/Tamhidi | 7            | 0            | 11           | 5            | 0            | 8            | 26 (5.1%)     |
| STAM/STPM/Diploma     | 19           | 2            | 3            | 48           | 2            | 5            | 36 (7.1%)     |
| Degree                | 57           | 72           | 51           | 35           | 78           | 70           | 376 (74%)     |
| Master                | 4            | 10           | 13           | 0            | 7            | 0            | 69 (13.6%)    |
| PHD                   | 1            | 0            | 0            | 0            | 0            | 0            | 1 (0.2%)      |
| CGPA (cgpa=508)       |              |              |              |              |              |              |               |
| 2.0 – 2.59            | 1            | 2            | 4            | 0            | 6            | 2            | 15 (3%)       |
| 2.6 – 2.99            | 3            | 3            | 7            | 2            | 10           | 16           | 41 (8.1%)     |
| 3.0 – 3.59            | 60           | 54           | 49           | 49           | 50           | 58           | 320 (63%)     |
| 3.6 and above         | 24           | 25           | 18           | 37           | 21           | 7            | 132 (26%)     |
| Year (n=508)          |              |              |              |              |              |              |               |
| Year 1                | 3            | 2            | 24           | 1            | 7            | 42           | 37 (7.3%)     |
| Year 2                | 34           | 20           | 29           | 15           | 39           | 20           | 179 (35.2%)   |
| Year 3                | 25           | 17           | 23           | 46           | 27           | 21           | 158 (31.1%)   |
| Year 4                | 26           | 45           | 2            | 26           | 14           | 0            | 134 (26.4%)   |

The majority of respondents have bachelor degree qualification (74% - 376 respondents), 69 respondents (13.6%) have Masters degree qualification, 36 respondents (7.1%) have STAM/STPM/Diploma qualification, 26 (5.1%) respondents have foundation/Tamhidi, and only one respondents (0.2%) hold a Ph.D. 320 respondents (63%) are having CGPA 3.0 - 3.59, 132 respondents (26%) are having CGPA 3.6 and above, 41 respondents (8.1%) are having CGPA 2.6-2.99, and 15 respondents (3%) are having CGPA 2.0-2.59. The majority of respondents are in Year 2 of the study (179 respondents - 35.2%), 158 respondents (31.1%) in Year 3, 134 (26.4%) of respondents in Year 4 and 37 (7.3%) of respondents in Year 1.

Instrument

Two types of the instrument were used to measure the independent variables (Islamic Moderation, Item Practices (mediator) and the dependent variable (Manifestation). The following sections discuss how the variables were measured. The measures of the variable of Islamic Moderation were used from IMCP questions. The 6 items were found reliable at Cronbach’s Alpha of 0.839. The items in every variable are listed in Table 3.

Table 3. Questionnaire items for Islamic moderation conceptual paradigm

| Self-Understanding                                                                 |
|------------------------------------------------------------------------------------|
| A Muslim should strive to be moderate in anything worthwhile.                       |
| A Muslim should be a balance between their physical and spiritual                   |
| A Muslim must also be moderate in their actions and their behavior                  |
| Muslims will become weak when fanaticism and bigotry toward something              |
| When there is no balance of elements, various problems can occur                   |
| Society will be harmonious if Wasatiyyah concept is practiced                       |

The measures of the variable of Item Practices used the IMCP. The three dimension consists attitude to Allah (5 items), attitude to own self (5 items) and attitude to others (4 items) were found reliable at Cronbach’s Alpha of 0.856. Responses
were recorded on a 5-point Likert scale, ranging from 5 = strongly agree to 1 = strongly disagree. The items in every variable are listed in Table 4.

**Table 4. Questionnaire items for Islamic moderation practices**

| Item Practices of Islamic Moderation | Attitude to Allah |
|-------------------------------------|-------------------|
|                                     | Environment noise does not affect my devotion in prayer |
|                                     | The duty of fasting Ramadan is very harmful to my daily tasks |
|                                     | Read the Quran without understanding is normal for me. |
|                                     | Observe all the command of Allah at all circumstances, times, and places are the principle of my life. |
| 5.                                  | I always thank God when getting good news or bad. |

| Item Practices of Islamic Moderation | Attitude to Own-self |
|-------------------------------------|----------------------|
|                                     | Learn up to late night has caused I couldn’t pray tahajud |
|                                     | Reading before bed is my routine every night. |
|                                     | I love sports though tiring |
|                                     | I still eat even though I was already full |
|                                     | I always think positive when facing difficulties |

| Item Practices of Islamic Moderation | Attitude to Others |
|-------------------------------------|-------------------|
|                                     | I just help someone else if they asked me to help him |
|                                     | I use the stuff my friends without asking permission from them |
|                                     | In honor of my parents is an obligation for me although they more deal with other siblings. |
|                                     | I'm easy to forgive my friend even though he hurt me |

The measures of the variable of manifestation of practices were used RSAP. The four dimension consists Self-awareness achievement (3 items), perfect achievement (2 items), moderate achievement (3 items) and self-strive achievement (2 items) were found reliable at Cronbach’s Alpha of 0.898. The items in every variable are listed in Table 5.

**Table 5. Questionnaire items for item practices of Islamic moderation manifestation**

| Item Practices of Islamic Moderation Manifestation | Self-Awareness Achievement |
|--------------------------------------------------|----------------------------|
|                                                  | 1. I would ask the lecturer or friends if there are things I do not understand |
|                                                  | 2. I need more often to the mosque to improve my spirituality |
|                                                  | 3. A good relationship between family and friends can help me to succeed. |

| Item Practices of Islamic Moderation Manifestation | Perfect Achievement |
|--------------------------------------------------|----------------------|
|                                                  | 1. I am satisfied with my personality decorum and behavior |
|                                                  | 2. I am satisfied with the exercise of worship/My act of worship is perfect. |

| Item Practices of Islamic Moderation Manifestation | Moderate Achievement |
|--------------------------------------------------|----------------------|
|                                                  | 1. I like to learn in groups even if it imposes |
|                                                  | 2. I do not like to make a study schedule even though it was very helpful. |
|                                                  | 3. I really like studying when it was almost the time of the examination. |

| Item Practices of Islamic Moderation Manifestation | Self-Strive Achievement |
|--------------------------------------------------|-------------------------|
|                                                  | 1. I study hard to get the dean's list every semester |
|                                                  | 2. I often stay up late to prepare for the exam |

**RESULTS AND DISCUSSION**

**The Reliability and Validity of Analyses**

Table 6 shows the Explanatory Factor Analysis (EFA) for each variable (Islamic Moderation, Item Practices, and Manifestation) in this study. The Kaiser-Meyer-Olkin Test (KMO) which is a measure of sampling adequacy was
conducted for each variable and the results indicated that it was acceptable. The statistical results showed that (1) all research variables exceeded the acceptable standard of Kaiser-Meyer Olkin’s value of 0.50 (Trappey et al., 2012) and were significant in Bartlett’s test of sphericity, (2) all research variables had eigenvalue larger than 1, (3) the items for each research variable exceeded factor loadings of 0.40 (Hair et al., 1998) and (4) all research variables exceeded the acceptable standard of reliability analysis of 0.70 (Nunally and Bernstein, 1994). The value of factor analysis for all items representing each research variable was 0.6 and more, indicating the items met the acceptable standard of validity analysis.

Table 6. Explanatory factor analysis (EFA) summary

| Variable            | Items/Dimension | Factor Loadings | KMO | Barlett of Sphericity | Eigenvalue | Cronbach Alpha |
|---------------------|-----------------|-----------------|-----|-----------------------|------------|----------------|
| Islamic Moderation  | 6 Items         | 0.622, 0.797    | 0.834 | 1193.927             | 3.398      | 0.839          |
| Items of Practice   | 3 Dimensions    | 0.543, 0.898    | 0.682 | 391.534               | 1.864      | 0.856          |
| Manifestation       | 4 Dimensions    | 0.602, 0.718    | 0.678 | 44.168                | 1.348      | 0.898          |

Measurement Model

The measurement model for each construct was independently tested for validity and reliability using Pool-CFA. Construct validity for this study was met with each indicator variables arrived at a minimum value of 0.5 for standardized regression weight (Hair et al., 2010). For reliability testing, the Cronbach’s alpha value was above 0.70, which indicated the existence of internal consistency (Hair et al., 2010) while composite reliability is a measure of the overall reliability of a collection of heterogeneous (Fornel and Larcker, 1981) also met the value of 0.70 (Raykov, 1997). The standardized loadings are larger than 0.5, all average variance extract (AVE) value exceed 0.5, Composite reliability and Cronbach’s alpha value exceeded 0.70. Thus, the scale has a good convergent validity (Gefen et al., 2000) discriminant validity requirement been well fulfilled and all Cronbach’s (Zainudin, 2010).

The result of factor loading for each construct is above 0.50 (Hair et al., 2010) but Manifestation construct (Perfect Achievement- 2 items) and item practices construct (Attitude to Allah (2 items deleted), Attitude to own self (3 items deleted) and Attitude to others (2 items deleted) because the factor loading was below 0.50 (Zainudin, 2010). After the low loading item deleted, it was found that fitness indexes for the measurement model were achieved as shown in Figure 3.

Table 7 summarized the goodness-of-fit index, it was revealed that the models met the level of goodness-of-fit for this study.

Table 7. The fitness indexes for the measurement model

| Absolute fit    | Incremental fit | Parsimonious fit | Result            |
|-----------------|-----------------|------------------|-------------------|
| RMSEA < 0.08    | CFI > 0.90      | Chisq/df < 5.0   | The required level achieved |
| 0.052           | 0.900           | 2.406            |                   |

Assessing Mediating Relationship

The mediating or intervening variable is the arbitrator that strings the relationship as a minimum with two constructs (Hair et al., 2010). The selection of the mediator is built through three relationships: firstly, the direct effect of the independent variable in the direction of the dependent variable; secondly, measuring the indirect effects of independent variable towards the dependent variable, and finally, it should be figured out whether there is a positive impact on the mediating and dependent variable (Baron and Kenny, 1986). Consequently, as in Figure 4 shows a model of item practices acted as a mediator between Islamic moderation conceptual paradigm and its manifestation practices.
The first path coefficient Islamic Moderation $\rightarrow$ Item Practices as shown in Table 8 proved an acceptable result that can be judged via Critical Ratio (C.R.) and significance level (P). As C.R. is greater than 1.96 and P is significant, thus, it can be shown that the regression weight for Islamic Moderation in the prediction of Item Practices which is significantly different from zero at the 0.001 level (two-tailed). Besides, the second path coefficient Item Practices $\rightarrow$ Manifestation also confirms an adequate result that can be determined using Critical Ratio (C.R.) and significance level (P). Since the C.R. is greater than 1.96 and P are significant, as a result, it can be indicated that the regression weight for Item Practices in the prediction of Manifestation is considerably different from zero at the 0.044 level (two-tailed). Hence, there is a true mediating relationship exists between Islamic Moderation and Manifestation when Item Practice is treated as a mediator.

Table 8. The Amos output showing regression weights between constructs

|                      | Estimate | S.E.  | C.R.   | P     | Result   |
|----------------------|----------|-------|--------|-------|----------|
| Item Practices $\leftarrow$ Islamic Moderation | 0.410    | 0.064 | 6.394  | ***   | Supported |
| Manifestation $\leftarrow$ Item Practices     | 0.173    | 0.086 | 2.014  | 0.044 | Supported |
| Manifestation $\leftarrow$ Islamic Moderation | 0.064    | 0.033 | 1.990  | 0.050 | Supported |
Furthermore, the third path coefficient Islamic Moderation → Manifestation indicated an acceptable result that can be proved using Critical Ration (C.R.) and significance level (P) values. In this circumstance, the C.R. value is greater than 1.96 and P is significant, therefore, there is a direct relationship between Islamic Moderation and Manifestation, which is a sign of partial mediating relationship while there is a factual intervening relationship exists between Islamic Moderation and Manifestation when Item Practice is treated as a mediating role.

CONCLUSION

The major argument of this study is that IM researchers should be cautious whenever they are framing the nature of the existence of IM traits and phenomenon which is observable in many contemporary social contexts especially with the emergence of religious extremism. Thus, the study extends beyond the perspective of Islamic religious ethics and spiritually. We highlight the lack of attention in the IM literature to what and how to measure the practices of IM attitudinal and personality. For that reason, an empirical study has been conducted to illustrate with measurable items that personal conceptual beliefs or understanding principles in life can make a person different compared to others. The different parameter estimates and conclusions can be drawn based on two views of a higher level of IMP manifestation expressed by the self-conceptual inspiration and attitudinal paradigm compared to self-satisfaction personality in achieving awareness, perfection, and reasonable state with a strong will. The finding here provides a foundation for further study of conceptual manifestation, both as a general principle in life and specific content domains such as religion, education and socialization practices. Hence, IM as a complete balanced system in life should be adopted and practiced accurately and precisely according to the revelation sources.

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REFERENCES

Baron, R.M. and D.A. Kenny, 1986. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. Journal of Personality and Social Psychology, 51(6): 1173-1182.

Fornel, C. and D.F. Larcker, 1981. Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 18(1): 39-50.

Gefen, D., D.W. Straub and M.C. Boudreau, 2000. Structural equation modeling and regression: Guidelines for research practice. Communication of the Association for Information System, 4(7): 1-70.

Hair, J.F., R.E. Anderson, R.L. Tatham and W.C. Black, 1998. Multivariate data analysis. New Jersey: Prentice Hall International, Inc.

Hair, J.F., W.C. Black, B.J. Babin, and R.E. Anderson, 2010. Multivariate data analysis: A global perspective. 7th Edn., Upper Saddle River: Pearson Prentice-Hall.

Islamic Foundation UK, 2017. Towards understanding the Quran. Available from http://www.islamicstudies.info/tafheem.php?surra=2&verse=143&to=143 [Accessed 20 Feb. 2018].

Nunally, J.C. and I.H. Bernstein, 1994. Psychological measurement. New York: McGraw-Hill.

Pecorino, P.A., 2001. Philosophy of religion. [ebook]. CUNY: Queensborough Community College. Available from http://www.qcc.cuny.edu/SocialSciences/ppcorino/PHIL_of_R [Accessed 25 Oct. 2017].

Qaradawi, Y., 2016. Principles of Wasatiyyah. Available from http://www.suhaibwebb.com/islam-studies/the-30-principles-of-wasatiyyah/ [Accessed 15 Feb. 2018].

Raykov, T., 1997. Estimation of composite reliability for congeneric measures. Applied Psychological Measurement, 21(2): 173-184.
Rosidi, S., 2002. The history of modern thought. Malang: Center of Inter-Disciplinary Study and Cooperation.

Trappey, A.J., C.V. Trappey, C.Y. Wu, and C.W. Lin, 2012. A patent quality analysis for innovative technology and product development. Advanced Engineering Informatics, 26(1): 26-34.