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Measurement Model of Evaluation Utilization: External Evaluation

Tochot, P.\textsuperscript{a}, Junpeng, P.\textsuperscript{b*}, Makmee, P.\textsuperscript{c}

\textsuperscript{a} Graduate School, Khon Kaen University, Khon Kaen Province. 40002, Thailand
\textsuperscript{b} Education Faculty, Khon Kaen University, Khon Kaen Province. 40002, Thailand
\textsuperscript{c} RMCS College, Burapha University, Chonburi Province, 20331, Thailand

Abstract

In Thailand, external evaluations are evaluated by The Office for National Education Standards and Quality Assessment (Public Organization) (ONESQA). The finding of external evaluation is useful for the improvement of education. Evaluation helps stakeholders to find out what works and what doesn’t. Done well, it provides a road map for an organization to improve the processes, participant outcome, and to have a bigger impact on the organization and the community. Therefore, evaluation utilization is the basis of external quality assessment in basic education. However, one weakness of external evaluation utilization is inadequacy with regards to the indicators of measurement model. The objectives of this research were to develop the indicators of measurement model of external evaluation utilization, and to test the congruence of developed model with empirical data. This research used questionnaires with 5 level rating scales. Samples were selected by multi-stage random sampling and included 970 teachers and administrators from 71 basic schools in the Northeast of Thailand. Data collection was done during the second semester in academic year 2011. Data analyses employed descriptive statistics and model validation using Mplus. According to the findings of this study, the indicators of measurement model consisted of conceptual use, symbolic use, legitimate use, and instrumental use. The measurement model was in congruence with empirical data. The results provided guidance for measuring evaluations from a utilization-focused perspective, which oriented around an evaluation’s intended users and intended use.

Introduction

The schools in Basic Education Level of Thailand in the present, needed to obtain the External Quality Assessment from The Office for National Education Standards and Quality Assessment (Public Organization) (ONESQA) as Mass Organization or central work unit for correcting the things to be improved so that the Educational Institutes would have quality as standard criterion as well as development of instructional quality. The institutions could adjusted the recommendations immediately (The Office for National Education Standards and Quality Assessment (Public Organization) (ONESQA)), 2003. However, if the institutions were informed, but they didn’t use the evaluation findings, it would be Educational wastage especially in North Eastern Region which included more institutions than the other regions in Thailand.

* Corresponding author. Tel.: +6-681-061-8670
E-mail address: putchaj@hotmail.com

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Therefore, during former decade until now, Thailand is one of many countries which are alert in conducting research studies as well as application of findings which would be information for the ONESQA in following and measuring the implementation of application in the assessment findings for both of inside, and outside the country, found that the guidelines for Measurement of Evaluation Utilization were theoretical ones, by using deduction technique in Measurement of Evaluation Utilization without empirical evidence as well as clearness of Measurement Model of Evaluation Utilization. The Office for National Education Standards and Quality Assessment (Public Organization) (ONESQA), 2011.

Consequently, the researcher was interested in developing the Measurement Model of Evaluation Utilization as a good guideline of practice for appropriate measurement of evaluation utilization by using data for improving the Educational institutions to accomplish goal data especially obtain major information technology for the original affiliation or related work units for enhancing the institutions in planning, policy making, improving and developing of persons and institutions in Basic Education Level in order to serve the External Quality Assurance with quality as a major mechanism to Educational Quality Development as well as the improvement of Thai Educational Standard in future.

**Research Objectives**

1. To develop the Measurement Model of Evaluation Utilization.
2. To investigate validity of the Measurement Model of Evaluation Utilization.

**Conceptual Framework**

For the Evaluation Utilization, the definitions could be concluded into 2 types. Scriven (2007) emphasized on the Evaluation Utilization in a practical one whereas Preskll and Caracelli (1997); Weiss et al. (2005); Patton (1997), and Kanjanawasee, Sirichai (2009) focused on the definition of application from both of approach, and practice. Consequently, the definitions of Evaluation Utilization, were concluded as the application of findings or Evaluation Outcome in enhancing the work practice leading to changes in project or policy of implementation in better direction as well as serving the needs of project administrators, supporters, as well as related persons which would lead to decision making, management, or development in improvement of implementation or one activity both in the approach, and practice.

For factors using in the Measurement of Evaluation Utilization, were based on the Utilization of Evaluation from approaches of Alkin et al. (1979); Weiss (1980); Patton (1997), and Kanjanawasee, Sirichai (2009) which included few differences as: the approach used the Symbolic Use, Legitimate Use, and Instrumental Use combining as Action Evaluation Utilization. But, in this study, the researcher classified into 4 factors so that they would be able to measure the Evaluation Utilization more clearly as well as concretely as: 1) Conceptual Use, 2) Legitimate Use, 3) Symbolic Use, and 4) Instrumental Use. According to consideration in Measurement Model of Evaluation Utilization, from 4 factors, found that every factor had to study the indicators in each factor. The indicators should cover different issues of application in External Quality Assessment based on research delimitation. It was needed to show the congruence with context of Thai Society completely when the indicators and item numbers in Measurement of Evaluation Utilization from related literatures were considered. (Boonjiem, Warapon. 2003; Kantiyanon, Raiton, 2005; Sonjansri, Siriprapa. 2006; Nongna, Chachawan. 2007; Bootser eechai, Lanapon. 2007; Sakdee, Manud. 2007; ONESQA., 2009) including the frequency of at least 3 persons/groups up. The details could be concluded into total of 4 factors, and 18 indicators. The details could be concluded into the Table.

| Factors in Measurement of Evaluation Utilization | Indicators |
|-----------------------------------------------|------------|
| 1. Conceptual Use (CU)                        | 1.1 Hold conference for creating related persons’ awareness. |
|                                               | 1.2 Discuss with teacher team in order to see the importance of the evaluation. |
|                                               | 1.3 Stimulate the awareness for improving the Educational Quality Development. |
|                                               | 1.4 Develop Motivation in development. |
|                                               | 1.5 Understand strength, weak points, and the points needed to be developed. |
|                                               | 1.6 Use as conceptual framework for concluding and presenting the findings of quality development in Educational Institutes. |
## Factors in Measurement of Evaluation Utilization

| Factors in Measurement of Evaluation Utilization | Indicators |
|-------------------------------------------------|------------|
| 2. Symbolic Use (SU)                             | 2.1 Be guidelines for system establishment. |
|                                                 | 2.2 Be information technology in different documents of Educational Institutes. |
|                                                 | 2.3 Be information technology in determining the guidelines for developing the Educational Institutes. |
|                                                 | 2.4 Be guidelines for implementing for improvement and development of Educational Institutes. |
| 3. Legitimate Use (LU)                           | 3.1 Assure the Internal Quality Assurance of Educational Institutes. |
|                                                 | 3.2 Audit and review the appropriateness of implementation in Educational Institutes. |
|                                                 | 3.3 Be information for work improvement and development. |
| 4. Instrumental Use (IU)                         | 4.1 Improve and develop the Educational Institutes. |
|                                                 | 4.2 Determine the direction of Educational Institutes. |
|                                                 | 4.3 Improve the model and technique of work implementation. |
|                                                 | 4.4 Establish the projects for solving the instructional or administrative problems. |
|                                                 | 4.5 Implement the activities based on project for solving the instructional or administrative problems. |

### Research Hypothesis

The Measurement Model of Evaluation Utilization consisted of Construct Validity or was congruent with empirical data.

### Methodology

#### Population and Sample

The samples used in this research were 970 teachers, and school administrators in Basic Education Level, from 71 schools in North Eastern Region. They were selected by Multi-Stage Random Sampling from total of 164,999 teachers, and school administrators.

#### Instrument

The instrument used in this research included the Questionnaire of Evaluation Utilization. The items covered variables of 4 factors, 18 observable variables. The Questionnaire was 5 Level Rating Scale. Its quality as Content Validity, was investigated by 9 experts. The Reliability was investigated by evaluating the consistency of this instrument considering the Alpha Coefficient as 0.5 up. (Sitrichai Kanjanawasee, 2003) For criterion of Reliability Evaluation, Cronbach’s Alpha Coefficient, the Rules of Thumb by George and Mallery (2003), was used. The findings found that the Reliability values of Questionnaire were ranged between 0.768 - 0.934. The data were collected with teachers and school administrators in North Eastern Region during November 2011-January 2012.

#### Data Analysis

Data were analyzed by using the Confirmatory Factor Analysis through Mplus 6.11 Program.
Results
1. The Measurement Model of Evaluation Utilization consisted of 4 factors: 1) Conceptual Use, 2) Legitimate Use, 3) Symbolic Use, and 4) Instrumental Use. It was found that there was significant relationship between variables at .01 level, from “Moderate” level (.50 < r < .69) to “Quite High” level (.70 < r < .89) which could be shown in Table 1. Considering factor loading (\( \beta \)) of all 4 factors, found that the coefficient value of factor loading in every one, was significant at .01 level. The factor with highest value of significant loading, was the Symbolic Use (SU) (\( \beta = 0.915 \)). The second order was the Legitimate Use or LU (\( \beta = 0.898 \)), and Instrumental Use (IU) (\( \beta = 0.853 \)) including nearly the same loading. For the usage of approach, it included the least factor loading (\( \beta = 0.648 \)) Considering covariance of factors, and Measurement Model of Evaluation Utilization, it was ranged from “Quite High,” to “High,” level. (\( R^2 \) ranged between 0.648 - 0.853) as shown in Table 2:

Table 1: The Mean, Standard Deviation, and Correlation of Observable Variables in Measurement Model of Evaluation Utilization (EU)

| Factors             | Correlation Coefficient |
|---------------------|-------------------------|
|                     | CU  | SU  | LU  | IU  |
| 1. Conceptual Use (CU) | 1.00       |     |     |     |
| 2. Symbolic Use (SU)   | .593**     | 1.00|     |     |
| 3. Legitimate Use (LU)  | .585**     | .821** | 1.00|     |
| 4. Instrumental Use (IU)| .549**     | .782** | .823** | 1.00|
| Mean (\( \bar{x} \)) | 4.233       | 4.120 | 4.230 | 4.166|
| Standard Deviation (SD)| .670       | .608 | .632 | .659|

Note * \( p < .05 \), ** \( p < .01 \)

Table 2: Statistic value of analysis findings of Confirmatory Factor Analysis: CFA), Measurement Model of Evaluation Utilization (EU)

| Observable Variables | CFA Model | |
|----------------------|-----------|
|                      | \( \beta \) | SE  | Z   | \( R^2 \) |
| 1. Conceptual Use (CU) | 0.648** | 0.052 | 12.574 | 0.420** |
| 2. Symbolic Use (SU)   | 0.915** | 0.012 | 75.179 | 0.837** |
| 3. Legitimate Use (LU)  | 0.898** | 0.013 | 67.776 | 0.807** |
| 4. Instrumental Use (IU)| 0.853** | 0.016 | 52.686 | 0.728** |

\( \chi^2 = 0.316, df = 1, p = 0.574 \) \( \chi^2/df = 0.316 \), \( CFI = 1.000, TLI = 1.000 \), \( RMSEA = 0.000, SRMR = 0.001 \)

Note: \(|Z| > 1.96 \) referred to \( p < .05 \), \(|Z| > 2.58 \) referred to \( p < .01 \)

2. The Measurement Model of Evaluation Utilization had its Construct Validity considering by statistic value using for investigating the validity of model including: \( \chi^2 = 0.316, df = 1, p = 0.574 \) \( \chi^2/df = 0.316 \), \( CFI = 1.000, TLI = 1.000 \), \( RMSEA = 0.000, SRMR = 0.001 \), and \( \chi^2/df = 0.316 \). The \( p \) value was high enough not to reject hypothesis, showed that the testing of \( \chi^2 \) value, was not significant differences from zero. The hypothesis was accepted that the Measurement Model of
Evaluation Utilization including its Construct Validity which was congruent with the analysis findings of the CFI and TLI indicators were 1, the RMSEA and SRMR indicator values were approaching 0, and $\chi^2/df$ value was less than 2 as shown in Figure 2.

$\chi^2 = 0.316$, $df = 1$, $p = 0.574$, $\chi^2/df = 0.316$, CFI = 1.000, TLI = 1.000, RMSEA = 0.000, SRMR = 0.001 (Mplus 6.11 standardized estimates)

**Figure 2:** The Measurement Model of Evaluation Utilization

**Discussions and Conclusion**

According to research findings, concluded that all of 4 factors as: 1) Conceptual Use) 2) Legitimate Use, 3) Symbolic Use, and 4) Instrumental Use were major factors in measuring the evaluation utilization. Every one had positive loading which meant that if persons in educational institute perceived that the institution had characteristics with those factors in “High” level, it would affect the findings of evaluation utilization in “High” level as well. On the contrary, it one perceived that the institutions had Low level of those characteristics, it would affect the measurement findings to be Low. Besides, each factor included positive relationship from “Moderate” level to “Quite High,” showed that each factor of Measurement of Evaluation Utilization, had supportive relationship with each other without being freely separated. The research findings were congruent with research hypothesis: the Model of Evaluation Utilization obtained Construct Validity or was congruent with empirical data in “High” level which was supported the specified hypothesis. It was supported by the approaches of Alkin et al. (1979); Preskill and Caracelli (1997); Patton (1997); Weiss et al. (2005), and Kamjanawasee, Sirichai (2009) including Boonjiem, Warapon. 2003; Kantiyanon, Ratikon, 2005; Sonjansri, Siriprapa. 2006; Nongna, Chachawan. 2007; Bootsereechai, Lanapon. 2007; Sakdee, Manud. 2007; The Office for National Education Standards and Quality Assessment (Public Organization) (ONESQA), (2009).

However, the findings of development for Measurement Model of Evaluation Utilization, found that the factor loading nearly the same as factor loading using in the approach, was significant in lower level than the other factors obviously. In addition, the factor using in the approach, could be able to explain co-variance in lower level than the other factors obviously as well. It might be because of the application in the finings of the approach was only steps in applying the findings of External Quality Assessment in indirect way for usefulness of understanding in situation of instructional activity management as well as administration which could provide clarification by the evaluation findings could affect the school administrators’ opinion. So, they perceived information of work practice. But, they didn’t use in their decision making and practice for their work plan, project, instructional management and administration. As a result, there were no changes since there were no real practice in schools. It was supported by the approach of Kanajanawassee, Sirichai (2009), found that the use of approach was to use the evaluation findings so that the information and news, and the cognitive light affecting the school administrators or related persons’ opinion. But, there were not used in direct decision making on work plan, or project for using in action including 3 sub-characteristics as: 1) Legitimate Use, 2) Symbolic Use, and 3) Instrumental Use would influence the changes of philosophy, organizational vision, organizational structure, rationale/theory of project, resources, implementation and future of work plan/project/work clearly.

However, there were 2 notices in this study. Firstly, there were limitations of research study since the research methodology didn’t consider organizational authentic situation which included hierarchy relationship especially the Educational Organization such as the person level, school level, and Educational Service Area level. The upper level of work
units would have influence on subordinate work units in hierarchy. Consequently, it couldn’t be specified that those influences were caused by variable in what level, how much they were. Secondly, if the organization had relationship in hierarchical order, the specific selection of person in only one level, the other variables might be analyzed in one level. As a result, the estimation of error with standard value less than real one, the testing of Type One Error was higher than specified. Consequently, the estimation was bias and lacked of efficiency. (Kanjanawasee, Sirichai. 2007; Muthén and Muthén, 2010; Farmer, 2000; Hox, 2002) Therefore, in future research studies should include the development of model for using the model as well as the evaluation findings by applying the multi-level analysis in within group level, between level, and Educational Service Area level whereas the model testing in consistency of model in different contexts such as region, school size, etc. Then, the findings were compared with the findings of this study especially in the Within Group.

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