A Study on the Evaluation of Development Education Effectiveness: A Case Study of the KOICA ODA Academy

By

Kwang-geol CHO

Thesis

Submitted to
KDI School of Public Policy and Management
in partial fulfillment of the requirements
for the degree of

MASTER OF PUBLIC POLICY

2011

A Study on the Evaluation of Development Education Effectiveness: A Case Study of the KOICA ODA Academy

By

Kwang-geol CHO

Thesis

Submitted to
KDI School of Public Policy and Management
in partial fulfillment of the requirements
for the degree of

MASTER OF PUBLIC POLICY

2011

Professor: Dr. Yoon Cheong CHO

A Study on the Evaluation of Development Education Effectiveness: A Case of KOICA ODA Academy

By

Kwang-geol CHO

Thesis

Submitted to
KDI School of Public Policy and Management
in partial fulfillment of the requirements
for the degree of

MASTER OF PUBLIC POLICY

Committee in charge:

Professor Yoon Cheong CHO, Supervisor

Professor Jin PARK

Professor Jin Soo LEE

Approval as of December, 2011

ABSTRACT

A Study on the Evaluation of Development Education Effectiveness: A Case Study of the KOICA ODA Academy

By

Kwang-geol CHO

This paper proposes an evaluation model of Development Education effectiveness, based on quantitative and qualitative analysis on the impact of the KOICA educational program on individual, team, organizational, and societal level outcomes. The individual-level impact chain of satisfaction on Development Education is tracked; how the internal psychological fulfillment can reach out to external changes e.g. sequence of events such as Acquisition of Development Knowledge (ADK), satisfaction, recommendation. Survey methods may lead different result in responses; this research was executed in two different ways; one is based on on-line survey, the other off-line based. Development Education must be empirical and pragmatic as well; aid agencies including the KOICA are recommended to develop case-study method, and to disperse educational cases containing field stories. A significant finding in this paper is that individual and social perception on ODA can be astonishingly altered toward 'beyond the 0.7% ODA/GNI' target with effective Development Education.

Acknowledgements

To my country, Korea, I am so grateful since my entire education has been owed to my home country; from the primary school to the graduate course, very fortunately. I feel tied with ODA as I graduated from the Kum-Oh Technical High School and have studied at the KDI, which were founded with assistance of foreign aid, and I work for KOICA which executes the Korean aid to foreign countries. This paper is a meaningful souvenir to me as the 20th anniversary of joining the KOICA.

I would like to extend heartfelt thanks to KDI faculty and staff, KOICA family members, anonymous respondents to the survey; in particular supervisory Prof. Cho encourages me to challenge this thesis. I hope that this paper starts my requital to the people who have supported and inspired me.

My deepest appreciation is offered to my sole support, the late honorable Kim Seung-Bok, and my family who put up with, prays for me and keeps lit deep into the night during last two years; my mother, my daughter Yezin, Yewon, and my wife Eunsook. Without any of you, it was impossible for me to precede this work. I love you all.

TABLE OF CONTENTS

INDEX OF FIGURES & TABLES

[Index of Figures]

[Index of Tables]

ABBREVIATION AND ACRONYMS

ADK	Acquisition of Development Knowledge
CSO	Civil Society Organization
D.E	Development Education
DevCom	Development Communication
E.U	European Union
KDI	Korea Development Institute
KIEP	Korea Institute of Economic Policy
KMO	Kaiser-Meyer-Olkin
MPP/ED	Master of Public Policy/Economic Development
NGOs	Non-Governmental Organizations
ODA	Official Development Assistance
OECD	Organization for Economic Co-operation and Development
OEM	Organizational Elements Model
PM	Project Manager
TA	Technical Assistance
TOTADO	Taxonomy of Training and Development Outcomes

A Study on the Evaluation of Development Education Effectiveness: A Case Study of the KOICA ODA Academy

1. Introduction

1.1 Concept of Development Education

Aid effectiveness is a key issue in delivering aid together with expansion of aid volume. In line with efforts aimed at poverty reduction and sustainable development, the importance of development education has long been recognized as a means to improve aid effectiveness whose principles are depicted in detail in the Paris Declaration of 2005. In particular, the E.U made a common framework for its member states to carry out persistent, regular development educational work for the EU citizens with cooperation of many stakeholders including OECD; *The European Consensus on Development: The contribution of Development Education & Awareness Raising* (2005). The Consensus facilitates "to learn from other's experiences to avoid possible flaws and overlaps" and "to encourage different stakeholders to be involved in cross-cutting activities" (Lappalainen Rilli, 2010, p78).

The OECD DevCom network, which has been catalyzed to shape thinking on how effectively to raise public awareness and support for development cooperation, takes Development Education as one of the three communication works[1]; *Development*

[1] • *Development Communication*, i.e. "communication about aid and development challenges, policies,

Communication, Communication for Development, Development Education (European Multi-Stakeholder Steering Group on Development Education, 2010). It is thus fair to say that Development Education is conceptualized in different ways depending on the historical context of ODA in respective countries, aid institutional realities, and actors, for example whether they are NGOs.

The conceptual ambiguity of Development Education is one of the greatest challenges to understanding what Development Education is and how can Development Education policies and practices be assessed. Activities for information dissemination and Public Relations are regarded as Development Education in some cases, but other cases excludes these activities (especially PR in the EU) out of Development Education. The Development Education usually takes other form linked with major development issues such as Human Rights, Peace and Conflict, the Environment and so on. That is why Global Education may be occasionally understood as broader than Development Education. Therefore, taking an approach to categorize diverse activities related to Development Education may be a more pragmatic way of understanding Development Education rather than simply defining the concept of Development Education as DEEP did. Even though this typology is neither complete nor exhaustive in mapping out the current concept of Development Education, it is helpful to systemize various concepts and to get clearer pictures of common characteristics and differences of Development Education.

---

programmes, and results to publics in donor countries for transparency and accountability purposes as well as to raise public support for official development assistance (ODA) and other forms of development co-operation";
• *Communication for Development*, i.e. "integrating communication into development planning and implementation in recipient countries' development processes to achieve positive developmental change and progress";
• *Development Education*, i.e. "Education that opens people's eyes and minds to the realities of the world, and awakens them to bring about a world of greater justice, equity and human rights for all."

In reality, five types of activities can be executed in a mixed way; to raise awareness on development may include activities for Public Relations (P.R), or raising awareness may go together with application education. Broadly speaking, however, Development Education, within the South Korean context, can be differentiated from other general education in the perspective of emphasizing justice and North-South issues. Furthermore, education projects (or programs) which may be executed mainly in the developing countries as a form of aid activities e.g. Technical Assistance (TA) should be recognized as being different from Development Education; for instance 'Education in Development'. It thus follows that Development Education may seem to share commonalities with Education in Development, but the two deserve different treatments in the respect to their goals, target groups and scopes. Development projects are in sharp contrast to the notion of Education in Development in that the former has specific stakeholders while stakeholders are usually not obvious in the latter (SusanGallwey, 2010)

Table 1 Typology of Development Education

	Public Relations	Raising Awareness	Global Education	Application Education	Life Skills
Goal	public support	awareness	responsible action	Effective action	fulfilling life, social change
Scope	development cooperation	wider development issues	global interdependency; North-South issues (environmental, economic, political, social)	Awareness Raising + attitude changes for development effectiveness	social ethics in world society (beyond a North-South perspective)
Educative approach	"indoctrination"	information	participation; promoting engagement	Information, experience sharing	support/offer; empowerment

Target group	object of PR	recipient of information	activist	Actors (to be) in the field	agent of social change
Context	foreign aid	development policy	(recent) globalization	Aid effectiveness	local community & world society

Source: developed by author from European Multi-Stakeholder Steering Group on Development Education (2010, p7)

2.1 Necessity of effectiveness evaluation on Development Education

Both merits and demerits of the Development Education, which may be disclosed by evaluation, can feed back to the current and future practices and facilitate desirable changes. Evaluating training and development may be defined as 'any attempt to obtain information (feedback) on the effects of the particular training program, and to assess the value of the training in the light of that information' or 'the systematic collection and assessment of information for deciding how best to utilize available training resources in order to achieve organizational goals (Hamblin, 1974, Warr, 1969, respectively; cited Iftikhar Ahmad & and Siraj ud Din, 2009). According to Global Education Guidelines Working Group (2008), global education needs to be evaluated as a necessary and spiral circular process since practitioners are empowered by raising their awareness of the education program effectiveness. Boosted morale may result in a wider and stronger development impact. In particular, assessment is required to make government-funded programs more efficient and effective.

2. Literature review

1.2 Review on evaluation framework for training and education

The traditional and standard evaluation framework for training and education is Donald Kirkpatrick's four-level model which consists of trainee reaction, learning of knowledge and skills, on-the-job behavior, and results (organizational performance). Kirkpatrick's framework has been used in many applications of business, government, military and industrial training since it was introduced in 1959. Additionally, it also has been applied in the light of social and organizational changes through modification or reversion to its evaluation framework for education and training.

Kaufman & Keller (1994) introduced the Kirkpatrick Plus framework based on Organizational Elements Model (OEM) (Kaufman, 1992; 1998) as an expanded framework which includes societal value-added evaluation. This revised evaluation model also reflects quality management methodology with the separation of Kirkpatrick's model level one into two segments; learning resource availability and quality, and educational process acceptability and efficiency. The approach of this model, which is *de facto* the reverse of the Kirkpatrick evaluation approach, since the evaluation stage steps down from the fourth level or organizational outcome to the first level or individual level, aligns the evaluation with the planning process. Evaluation criteria are required to be developed prior to interventions or during the process. Adoption of the ROI to analysis at the fifth level of the Kirkpatrick Plus framework, which is proposed by Philips (1996), could provide decision-makers with the information necessary for making responsive and responsible decisions. (Ryan Watkins et al.,

1998)

Kraiger et al. (1993) propose the construct-oriented approach based on psychological theory, which could provide a systematic framework for conducting training evaluation research. Learning constructs are derived from cognitive, social, and instructional psychology and human factors, from which a classification scheme for learning outcomes for training evaluation could be drawn: cognitive, skill-based, and affective learning outcomes (relevant to training). According to Birdi (2010), this approach has rarely been used in subsequent research studies (Beech & Leather, 2006, recited Birdi, 2010) as it only focuses on learning outcomes. In order to assess the complete range of outcomes of training, it is necessary for a such a model to be merged into the wider frameworks offered by Kirkpatrick (1959) or Warr et al. (1970). This study, however, identifies a multidimensional perspective to learning outcomes and defines the specific types of criteria which indicate the learning required.

Birdi (2010) proposes the Taxonomy of Training and Development Outcomes (TOTADO) which measure training effectiveness from the perspective of the individual as well as the team, organizational, and societal level. The TOTADO framework is considered to integrate Kraiger et al.'s construct-oriented approach based on psychological theory with the employee development literature such as Maurer and Pierce (2000)'s Three-Dimensional Social Exchange Model which employees may perceive learning activities to benefit not only themselves but also (or alternatively) a supervisor and/or the organization.

We have arguments on causalities between the outcomes of each level while much research contributes to identifying whether educational impacts on individual could be integrated into beyond-individual level. Birdi (2010) claims his TOTADO framework is to "provide the

building blocks for creating models which propose causal linkages" as taxonomy (p5). Kirkpatrick (1996) claims that his framework is solely taxonomy; however, it has widely been interpreted as a training effectiveness model which specifies causal linkages between individual and organizational outcomes (Alliger et al., 1997, recited Birdi & Pierce, 2010). The Three-Dimensional Social Exchange Model, which is proposed by Maurer & Pierce (2002), prensents connections involving pro-social organizational behavior and organizational citizenship behavior; as a model of employee decision making where employees may decide to pursue learning activities, depending on personal values, leader-member exchange, perceived organizational support, self-efficacy for development, and credibility of information source. (ToddMaurer & HeatherPierce, 2002)

2.2 Other literature review

This research touches several aspects of customer satisfaction in the higher education field with regards to the individual level. 'Satisfaction' (RichardOliver 2010) provides both basic and in-depth understanding on the relationship between satisfaction and an individual's expectations, by which measure construction of the Operational Evaluation Structure at the individual level (Fig.3, below) is based. In order to cover customer satisfaction in higher education, 'Customer Satisfaction in Higher Education' (SusanAldridge, JenniferRowley 1998) helps to make a basis of survey framework. This literature applied "negative quality" model to offer a framework for response to different types of feedback from students. In conjunction with this, 'Quality Management of Higher Education Based on Services Marketing Perspective'[2] was considered into classifying criteria of educational evaluation:

[2] Retrieved from http://www.china-papers.com/?p=156213 (2011.10.30)

lectures as core services, and auxiliary services, accessorial services. For developing tools to evaluate satisfaction in education, 'Study on developing tools to evaluate satisfaction in education' (Yang B. Kim & et al, 2004) was used as a reference point for understanding satisfaction evaluation criteria and methodology in education, and in establishing detail questionnaire.

3. Hypotheses

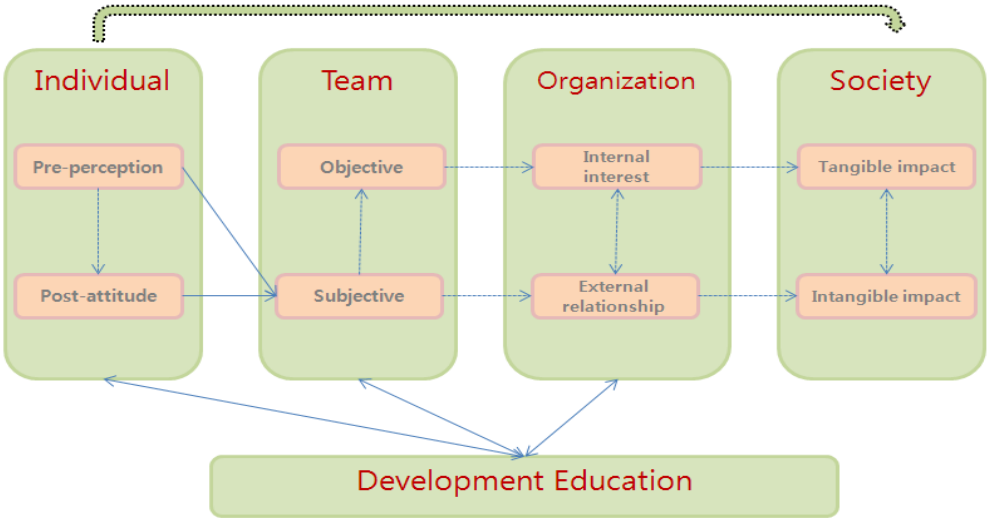
1.3 Proposed Model of the Study

Methodology for evaluation on Development Education could vary according to the target people, curricula and time schedule, learning tools, objectives and especially the context of educational project. Peer reviews, pilot evaluation, case studies, context analysis, S.W.O.T. analysis, impact assessment may give a foundation of evaluation framework. The objects that can be evaluated in the field of development education are a wide spectrum of activities, defined by goal, type, or tools; for instance "learning methodology, resources, tools, learning environment, curriculum issues, educators' competences, learners' knowledge, type of actions, planning, communication strategy, people's involvement, impact on local realities, etc" (Global Education Guidelines Working Group, 2010, p52).

In line with the theories and guidelines outlined above in the review of the wider literature regarding Development Education methodologies, an attempt to capture the full impact of Development Education merits a great deal of attention since it can contribute to the promotion of Development Education, which could lead to better aid. The primary target for

Development Education is an individual person as a member of any society. He/ She who takes any educational program is an independent existence to make a decision of choice. He/ She is also one member of a certain organization or society, so inevitably affected by interactions between individuals, and by organizational or societal regulations as well as psychological pressure, and vice versa. This concept may be shown as Figure 1.

Figure 1 Model of Operational Evaluation Structure for Development Education (concise)



Source: developed by author from Kraiger's Construct-Oriented Approach, Birdi's TOTADO evaluation framework and Maurer & Pierce's Three-Dimensional Social Exchange Model

Both pre-perception on a designated education program and post-attitude to be formulated by the program may affect the attitude of team member who belong to certain team. This subjective factor makes influences to the team's objective achievement. The team-level objective performance leads to internal corporate interest while the subjective factor can play a catalytic role of promoting shared values of development and building better relationships with stakeholders. Internal as well as external factors may be reciprocal. Organizations which achieve tangible outcomes can recruit more staff, which means new job creation. Educational institutions can also open new educational courses. With improved organizational relationships with stakeholders, societal tangible impacts may impact on intangible societal

factors. Stepping from the individual to the upper level, the interaction between respective levels is presumed to be weaker than previous stages. Development Education may be provided to three tier levels from individual to team, and organization.

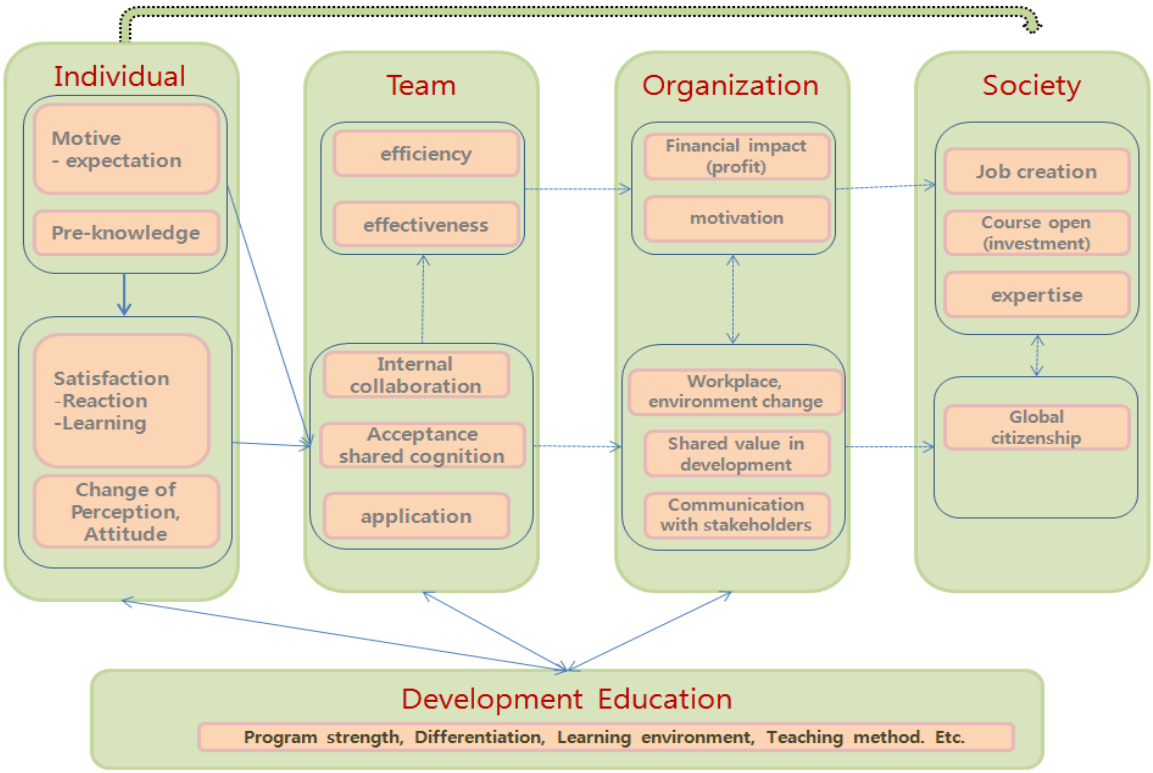
Based on Fig.1 the Model of Operational Evaluation Structure for Development Education (concise), detail items which can be dovetailed into each criterion at respective level needs to be developed. Fig.2 considered more variables for each main variable to examine feasible correlations in more detailed way. Variables may be different from level to level and affected by the goal of educational program.

Generally speaking, the educational outcomes of a trainee with pre-knowledge, or with motivations or prior expectations may be differentiated from those without them. High expectations or a strong motivation to join a Development Education program can affect the reaction to the program, the degree of satisfaction, the learning attitude, the change of attitude and perception. Reaction may be captured in a way of program contents including learning materials, lecturing slides etc, as well as program delivery such as lecturing skills. According to R. Oliver (2010), "expectations are central to the satisfaction response…The role of expectations, first as anticipations and later assimilation agents, provides the mechanisms by which expectations may influence satisfaction directly."(p86) The expectation level is a measuring stick for judging performance, high (low) positive expectations poses high (low) levels of likely satisfaction.

These subjective factors may lead psychological changes within the team which a trainee belongs to. Improved subjective factors such as acceptance of shared cognition, application to works, internal coherent collaboration can make influence on objective team performance in

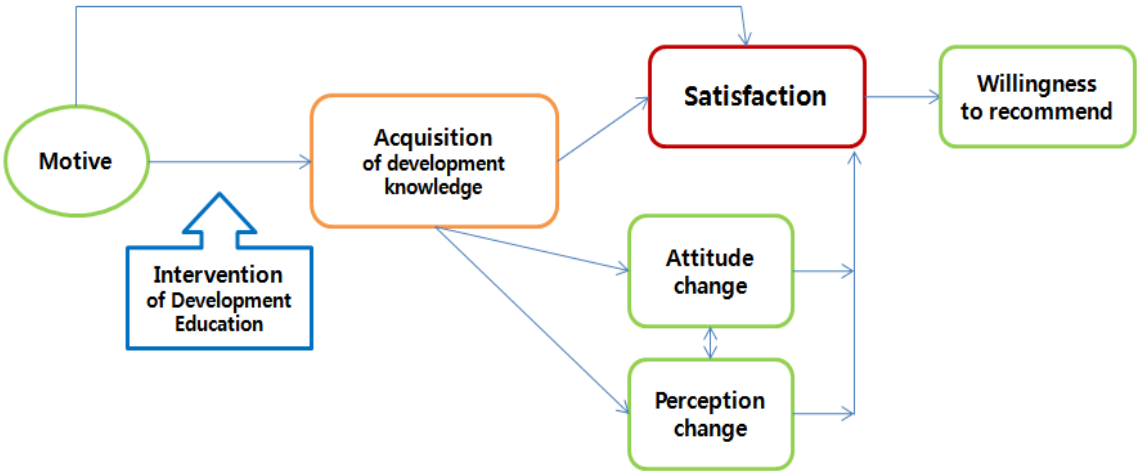
the respect of efficiency and effectiveness, and *vice versa*. The subjective aspect could affect the organizational capacity to improve the external relationship with development stakeholders e.g. aid agencies, and *vice versa* even though it might be weaker than one that individual makes impact on the subjective factor of team level. Performance outcomes which could be captured with regard to efficiency as well as effectiveness could be reflected further in financial profit and organizational motivation for further training, which could lead to greater tangible impact upon society e.g. job creation, opening of new courses at educational institution e.g. college. Tangible societal impacts as well as individual attitude changes can trigger the realization of the goal of global citizenship. Individuals can make an influence to induce societal changes, especially in case that he/ she is in the position of influencing decision-making.

Figure 2 Extended Model of Operational Evaluation Structure for Development Education



Components of each level can be inferred as logically correlated, and the logic which underlies in hypotheses can be provisionally explained as an impact chain of Figure 3.

Figure 3 Model of Operational Evaluation Structure (Individual part: Impact Chain of Satisfaction in Development Education)



Source: designed by author

2.3 Hypotheses Development

Based on the responses of in-depth interviewees, literature review, and the proposed model (Fig.1~3) for this study as well, hypotheses were established into two main parts; one part is related with the contents and value of Development Education, the other part is for the satisfaction and effectiveness of Development Education. The former contains the evaluation on KOICA ODA Academy's program which is an input to Development Education, the latter deals with the evaluation on outcomes and impact of Development Education.

While the KOICA ODA Academy's program is researched in Study 1, the research on Satisfaction and Effectiveness of Development Education is made in Study 2 which demonstrates the impact chain at individual level and identify impacts on team, organization and society as well.

1.2.3 Hypotheses for Contents and Value of Development Education

Hypotheses 1~3 concentrate on the contents and value of KOICA ODA Academy education program. Based on in-depth interviews, a tentative conclusion made is that KOICA ODA education program might be very satisfactory and highly valuable due to delivering field experiences, and telling local stories with case studies, etc.

Hypothesis 1: Participants who took KOICA ODA education program are satisfied with KOICA staff's professionalism, expertise and textbook.

Functional equation is as follows;

$$y=\alpha^{*}x_1 + \beta^{*}x_2 + \delta^{*}x_3$$

, where У is satisfaction; x1 professionalism, x2 expertise, x3 textbook; α, β, δ stands for covariance coefficient respectively. With multiple regressions, we can infer which part of the three variables has comparatively statistically stronger influence.

Hypothesis 2: lecturing as core service is satisfactory while auxiliary or accessorial services have to be improved.

In order to maximize the effect of education, every component of the education program needs to be implemented in a successful synthesis. In spite of on-line services, the geographical location of the ODA Academy is not particularly convenient. Especially, auxiliary services to students such as introducing lecturers to students in official and trustworthy way, giving information on courses and cafeteria for lunch, providing music during recessions, etc, will promote educational environment. There are needs to narrow down service items and to develop the program in more strategic and effective way.

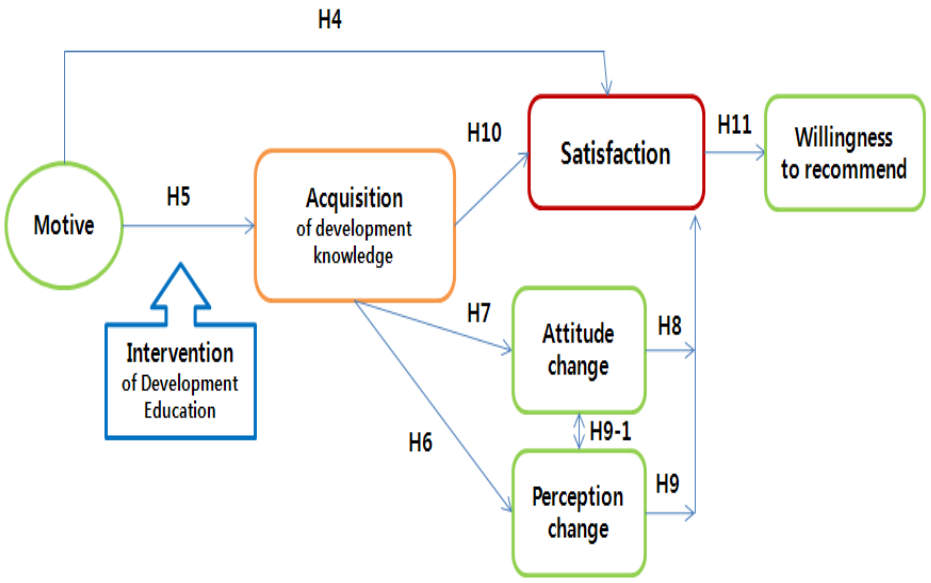
Hypothesis 3: The KOICA ODA Academy's education program is more valuable than that suggested by the current tuition-fee level.

Based on hypothesis 1, this paper infers that KOICA education program could increase its current tuition-fee level. The gap between current tuition-fee level and the feasibility of its increase can tell the inherent value of the ODA Academy program in financial term.

2.2.3 Hypotheses for Satisfaction and Effectiveness of Development Education

This section could be classified into two parts; satisfaction and effectiveness of Development Education. The satisfaction part will identify the correlation among psychological factors which can affect the satisfaction of Development Education, and analyze the impact and its logical chain at the level of team, organization and society. The effectiveness part will verify effects within respective group and estimate the impact on each level e.g. team or society. Diagram Figure 4 (below), which is drawn from the Model of Operational Evaluation Structure (Fig.3, above), shows the detailed structure of the hypotheses to be verified in the Satisfaction part.

Figure 4 Model of Operational Evaluation Structure (Hypotheses to be verified)



Hypothesis 4: The satisfaction degree in Development Education is affected directly by motivation.

Hypothesis 5: Motivation affects Acquisition of Development Knowledge. (thereby influencing the degree of Satisfaction)

High motivation can catalyze positive learning attitude, pose high expectation. High positive expectations may produce high level of likely satisfaction, degree of which could be measured by differences between expectation and performance (RichardOliver 2010). Motivation is presumed to affect satisfaction in either way; directly or indirectly through ADK.

Hypothesis 6: Acquisition of Development Knowledge affects changes of perception on development cooperation.

Hypothesis 7: Acquisition of Development Knowledge affects to change attitude to contribution for the global development.

As Development Education delivers very practical information, Acquisition of Development Knowledge can affect changes of attitude, perception and even career path. In case that this hypothesis as well as hypothesis 1 is correct, educational contents which are new, recent and case-based should be developed and strengthened when building up curricula of the ODA Academy .

Hypothesis 8: Satisfaction in Development Education is affected by attitude change.

Hypothesis 9 & 9-1: Satisfaction in Development Education is affected by perception change or indirectly through attitude change.

If students change their attitude with the ODA Academy education, for example having the willingness to contribute to global development, then this is a highly important psychological change to influence the degree of satisfaction. The same logic can be applied to the perception changes in development cooperation.

Hypothesis 10: Acquisition of Development Knowledge is the main factor to formulate satisfaction in Development Education.

There must be many factors to formulate the level of satisfaction directly or indirectly. Among possible factors, Acquisition of Development Knowledge factor may have many routes leading to satisfaction. Not to mention in detail, a direct possible impact of this Acquisition factor on satisfaction may be accounted for, while this factor can trigger changes of perception and attitude on development cooperation which may link to satisfaction.

Hypothesis 11: High satisfaction leads to willingness to recommend the ODA Academy's education program to others.

This hypothesis has a distinguished meaning in that high satisfaction can reach an impact on relationship with outside beyond the internal psychological changes: other members of society. This can be interpreted as a linkage between individual level and team or organizational level as a subjective or internal factor.

Hypothesis 12: Those who have higher global citizenship show positive

attitude toward ODA scale.

Development Education effect can be detected from the aspect of understanding of aid, attitude on ODA. If the ODA Academy education program is satisfactory to the students, respondents who took the ODA Academy program are likely to show a more positive attitude toward aid scale-up.

Hypothesis 13: There is a statistically significant difference in satisfaction, attitude changes, and Acquisition of Development Knowledge between those who have experience to visit developing countries and those who have not.

Hypothesis 14: There is a statistically significant difference in satisfaction, attitude changes, global citizenship, and acquisition of development knowledge between genders.

Experience may show different responses just like Benjamin Franklin says “Experience is a dear teacher.” The ODA Academy education program is based on developing countries, so the experience of visiting to developing countries may affect such targeted variables as the Acquisition of Development Knowledge, which may vary from the educational outcomes expected.

Hypothesis 15: Opinions on aid volume turns more positive than before taking the class.

Hypothesis 16: Humanitarian aspect in the direction of Korean aid is improved by the ODA Academy program more than before taking the class.

Opinions on the scale and policy of ODA may be affected by the Development Education since the ODA Academy aims not only to promote awareness of ODA, but also to enlarge supporters as the formal educational center of KOICA which executes Technical Assistance (T.A) and grant aid.

Hypothesis 17: At the team level, internal collaboration and shared cognition is promoted, which leads to improve efficiency and effectiveness.

Hypothesis 18: At the organizational level, internal factors such as shared value in development, communication with stakeholders were advanced, which leads positive impact on external factors such as profit, and motivation to provide more D.E.

Hypothesis 19: Societal impacts are created e.g. opening of new education course at university, and job opportunities.

Even though climbing up the ladder in the Extended Model (Fig.2), the end goals are able to be achieved by the member in each component; the most important factor to make changes must be the people. Thus the above hypothesis can be verified with factual cases, which people make.

4. Methodology

The objective of this research aims to evaluate the impact of Development Education. The KOICA's ODA Academy Program was chosen as a case study for evaluating its effectiveness. The ODA Academy has provided official education programs and taught more than 1,700 persons since its inception in April 2010, which is expected to easily provide necessary data for analysis.

Both qualitative and quantitative methodologies were mobilized at study 1 and study 2 as well. For quantitative analysis, total four surveys were made; once by e-mail for study 1, three time collecting questionnaire for study 2. Four questionnaire contain different questions as well as exactly same questions which may guide to the possible 'Before and After' analysis, and enlarge the data volume.

For a qualitative research, in-depth interviews were carried out twice at stage of on-line data collection for study 1, and three times for study 2. In-depth interviews were more important in Study 2 as it has to cover the impact on team, organization and society level as well, not to mention individual level. This paper makes a list of those who have attended all courses opened by the ODA Academy since inception of the ODA Academy in April, 2010. Fortunately, 13 persons were on the list, where two interviewees were chosen since they are working for universities, which can influence societal impacts. One team leader was selected, who took the ODA Academy program together with all members of his team. For securing vivid memory and clearer impact of the ODA Academy program, time factor was made into account. He has some experiences in working in developing countries as a Project Manager

(PM) of KOICA projects.

Study 2 is planned and analyzed on the foundation of Study 1. Hypotheses which were tested at study 1 and versioned-up lead to better questionnaire for study 2. In the process of making questionnaire, 'Study on developing tools to evaluate satisfaction in education' (Yang B. Kim & et al, 2004) was consulted at the stage of study 1. For study 2, the recent research whch was conducted by KIEP in 2011 was reffered. In order to keep samples more representative of the population and to reduce sampling bias, data were collected four times from June to Oct. 2011. It is estimated that respondents have no reason to respond differently from the random sample of the whole population.

1.4 Study 1

Study 1 aims to investigate students' opinions on Development Education program and to build up possible methodologies for analysis, which can lead further study.

1.1.4 Development of Research Questions

Research question is developed under the research objective as follows;

RQ1. People who took KOICA ODA educational program are satisfied with the program?

RQ2. Which parts of KOICA educational program needs to improve?

RQ3. What kind of policy should KOICA adopt to be differentiated from any other similar educational program?

RQ4. How much rates will be acceptable for participants if the tuition fee is to be increased?

2.1.4 In-depth Interview

First interviewee was a KDI student who majors in MPP/ED and took a two-day course of KOICA ODA academy program last May, 2011. Respondent is male, 48 years old, working for public sector, married and has acquaintance with interviewer. With benefit of interviewing with him, the tentative position was made that KOICA ODA program provides a unique curriculum and very informative, in-depth, and practical as well. On the other hand, auxiliary service management such as officially introducing lecturers to students, giving information beforehand about courses and cafeteria for lunch was pointed out for improvement.

Second interview was carried out separately into two days, 15 minutes respectively for fruitful interview. The interviewee was a female, 28 years old, single, got a master degree which is related with Development, and has been working for a development consultant company since 2010, and taking a two-day KOICA ODA education courses at the time of interview. Her responses on strong points of KOICA education program are lecturing based on field cases, practicality and chances for participating KOICA programs.

3.1.4 Research Design and Execution

Respondents are all Korean since students who took the ODA Academy course are all Korean. Lecture is delivered in Korean. They came from various classes and different fields e.g. under (post)-graduate students, engineers, volunteers, NGO activities, staff in public organizations, and so on so forth. Survey respondents are randomly selected among the sample population who took courses during one month from 1st to 31st June 2011. All members in the sample group came to the ODA Academy to take the two-day class at least more than once. The

entire population is a group of people who got at least one course provided by KOICA ODA Academy from the opening time of ODA Academy up to the time of survey. The sample size of the survey accounts for 126 persons, which occupies about 7.4% of total students at the survey time. Response rate is about 19%; number of actual responses is 24 from the population of 126 persons[3]. The questionnaire was coded in Korean language since the target group was Korean only[4].

Questionnaire has 34 items which focus mainly on the ODA Academy's education program; 11 items for basic question e.g. gender, age, job, working year, and position etc; 13 questions for the ODA Academy's educational courses; 4 questions for textbook and lectures; 5 questions for educational environment and tuition fee; and one open question.

The survey was executed for 12 days from 10th to 21st July by means of on-line questionnaires. Survey is performed based on the on-line survey website Qualtric from distribution of questionnaire to data collection.

[3] The Qualtrics shows 26 responses including invalid 2 test responses of author's

[4] The Qualtrics provides translation function; however, collected data retrieved from the Qualtrics were shattered. In order to decipher the data, author had to communicate with SPSS Syntax data (attached 2). Processing raw data on the SPSS program was required. In case that English version made first, data condition has no problem.

2.4 Study 2

Based on the review by study 1, study 2 is designed based on the model of this paper. This paper developed the Extended Model of Operational Evaluation Structure for Development Education (Fig.2~3), which provides the foundation of this entire research.

1.1.5 Development of Research Questions

Research question is developed under the research objective and based on the results of three interviews as follows;

RQ1. What difference of satisfaction may we get if students have certain motivaions, pre-knowledge?

RQ2. What kinds of path to satisfaction does the Development Education have?

RQ3. Does the KOICA ODA Academy make societal impacts? If any, then what kind of societal impact may the ODA Academy program have?

RQ4. Does the KOICA ODA Academy program have an impact on newly-opening ODA courses in Universities?

RQ5. Is there any difference of satisfaction between on-line and off-line responses?

2.1.5 In-depth interview

Two interviewees were chosen among three professors[5], who have attended all courses opened by the ODA Academy since inception of the ODA Academy in April, 2010. The main points concentrated on motivation, satisfaction, problems, and outcomes. Interviews were

[5] One professor who is excluded from in-depth interview is over mid-60 years old, working for comparatively small college.

carried out over the phone for fifteen minutes or so for each interviewee. One ‘A’ who is mid-forties and male replied that initial motivation to attend the classes was to reinforce theoretical background and to enlarge his understanding on development. He was fairly satisfied with the contents of educational program, especially text books which provided by the ODA Academy were very helpful to understand development systematically. He owes the Development Education programs of the ODA Academy to open a new course ‘the International Multi-culture Education’ in 2012, at the University he belongs to.

Another interviewee ‘B’ who is male and fifty years old answered that initial motivation was to work better with aid agencies e.g. KOICA because he experiences trial and errors in the previous development project. He introduced to interviewer his success in expanding his activities with NGOs, opening development curriculum, and getting a new position; organizing a civil society organization (CSO) which consists of 60 student members and is supposed to go to the Laos for helping the poor people coming December, 2011.

The other interviewee ‘C’ is male and early forties. He requested the ODA Academy’s course three weeks ago as a team leader for a development project of KOICA in the IT sector. He has two kinds of motivations; one is to get additional credit on KOICA’s bidding, the other is to make in-depth understanding on development. He delivered his team members’ responses; they come to know something new on development, to have better communication within team members. He also replied that the course helps team members to understand the local needs of developing countries, to eradicate somewhat negative perception on KOICA ODA program e.g. Invitation Program. His team members got proud of joining development programs as Korean. This deepened comprehension on development leads to shorten the

project period, which could be calculated into financial benefit. He mentioned opportunities of job opening based on his internal experience. He want to have his team attend a management tool course e.g. PDM as recommended in the previous class. He added that he can remind his management at decision-making level meetings of characteristics and differences on development project, and disperse his understanding on development.

By the result of Study 2 interview, the evaluation model as seen Fig2~3 was reinforced and modified more persuadable. Impact linkage between individual and society can be confirmed more influentially than expected; e.g. at the level of university as well as interaction between subjective and objective factors within a team level.

3.1.5 Research Design and Execution

This research has challenges: to deal with wide range of impact on individual and societal level. So as to show the entire picture of the research, both quantitative and qualitative analysis approaches needs to be applied. The quantitative method focuses on mainly individual level, and covers some part of impact on the team and society level. The qualitative approach is useful to explain the individual impacts on team and society based on some factual cases e.g. opening curricula related development in the university or organizing overseas volunteer program, which must be convincing.

The survey was executed one time before and two times just after delivering lectures during October, 2011. The survey was targeted to two groups; one is a consulting team which has experience in working with donor agencies, the other is a group which is pooled at the same class of the ODA Academy. The consulting team answered ‘Before and After’ questionnaire

while the latter responded ‘After’ only. ‘Before and After’ respondents is comparatively identical as a team than ‘After’ respondents as class members. ‘Before’ answering sheets were collected one day before lecturing. Lecturing site for consulting team was a meeting room where the team works while ‘After’ respondents come to the classroom of the ODA Academy.

Total respondents are 79 persons, response rate amount at 97% or so. Since respondents were all Korean, Questionnaire was written in Korean. In case of questionnaire for Study 2, it contains 24 items; 4 items for basic question e.g. gender, age, experience of visit to developing countries and working with KOICA; 8 questions for the individual level; 7 questions for aid policies which is common in ‘Before and After’ questionnaire, to be compared to results of the recent survey; 4 questions for management expertise for development; and one open question. Answer sheets were collected on the spot.

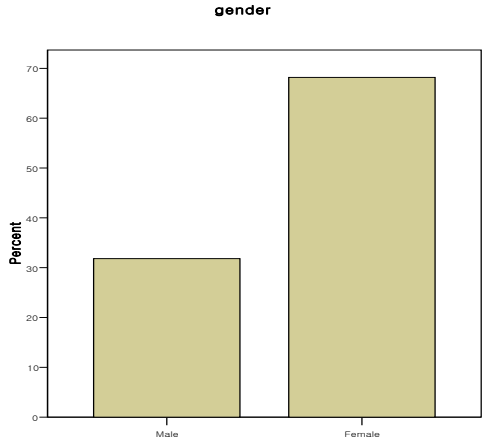
5. Data Analysis[6]

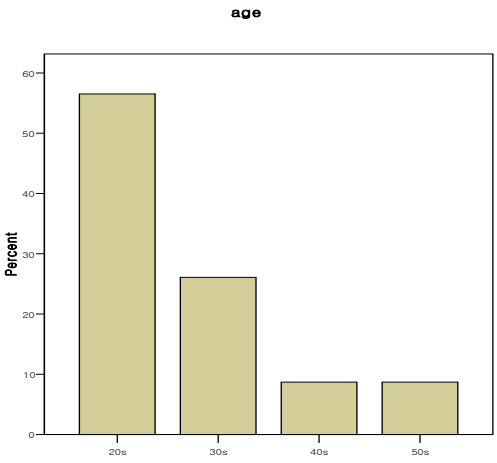
1.5 Analysis of study 1

1.1.5 Frequencies analysis

Male respondents for study 1 occupy 32%[7] while female 68%. Age distribution between 20's and 30's has 82%, among which 20's is biggest portion 56%.

Figure 5 Frequency analyses of gender and age (study 1)





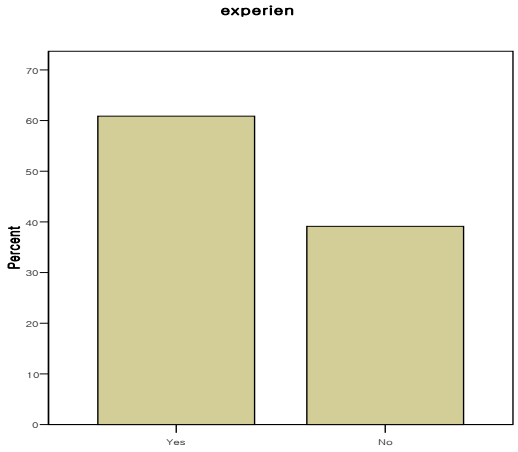


Figure 6 Frequency analyses of experience with KOICA (study 1)

Those who have experience in working with KOICA occupy 61% among respondents in study 1.

[6] SPSS statistical tool (ver. 12.0) was applied in this paper.
[7] 8% shows missing.

2.1.5 Regression analysis

Hypothesis 1: Participants who took KOICA ODA education program are satisfied with KOICA staff's professionalism, expertise and textbook.

To verify the Hypothesis 1, multiple regressions were carried out among overall satisfaction (Q14) and professional (Q21), expertise (Q26), textbook (Q29). Regression model presents 6.759 F-value with Sig. 0.003, which means regression line is appropriate and Durbin-Watson indicates 2.173 which could affect correlation between residuals. R^2 shows 53.0% explanatory power to the function. But t-value of variable 'expertise' and 'textbook' shows 1.564, 1.576 respectively. This part of the hypothesis is to be turned down. Variable 'professionalism' has 2.699 t-value with 0.015 p-value, which means acceptance of hypothesis. Variable 'professionalism' is statistically significant within α significance of 5%.

Table 2 Satisfaction and Lecture

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.863	3	2.288	6.759	.003[a]
	Residual	6.092	18	.338		
	Total	12.955	21			

a. Predictors: (Constant), book, profesio, expertis

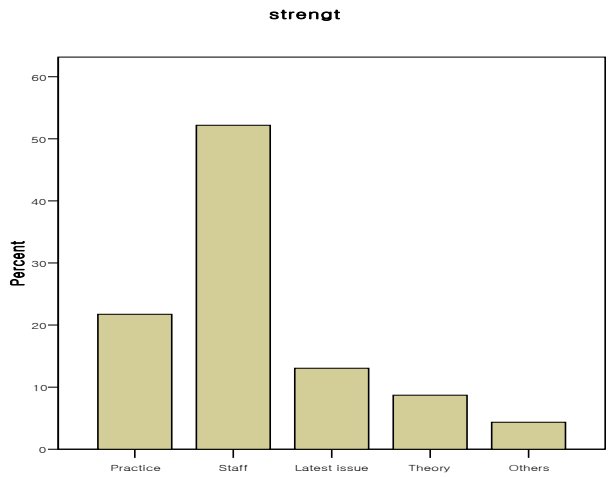
b. Dependent Variable: satisfa

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.373	.990		-.377	.710		
	expertis	.301	.192	.277	1.564	.135	.834	1.199
	profesio	.548	.203	.465	2.699	.015	.882	1.134
	book	.289	.183	.266	1.576	.133	.918	1.089

a. Dependent Variable: satisfa

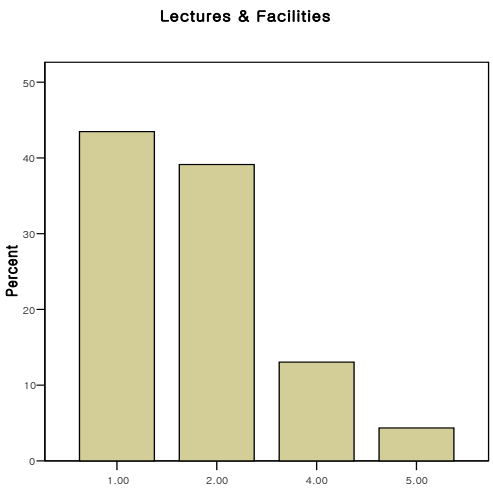
Figure 7 Component of satisfaction (study 1)



Among satisfaction components of the ODA Academy program, staff's lecturing and practice-oriented teaching occupies 51%, 22% respectively, total 74% of satisfaction.

Hypothesis 2: lecturing as core service is satisfied while auxiliary or accessorial service has to be improved.

Figure 8 Responses on Lecture and Facilities



Regression analysis between satisfaction and accessorial services indicates 0.147 F-value, which is not appropriate model. Hypothesis 2 was turned down with 93% p-value. Result of the response to auxiliary or accessorial service (Q24, Q30) shows fairly positive and got high score.

Table 3 Satisfaction and Auxiliary service

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.475	3	.158	.147	.930
	Residual	19.389	18	1.077		
	Total	19.864	21			

a Predictors: (Constant), WALKING, KINDNESS, CLASROOM
b Dependent Variable: SATISFACTION

Hypothesis 3: The KOICA ODA Academy's education program is more valuable than current level of tuition fee.

Respondents[8] made a very progressive reply to increase tuition fee by at least 30% up to 120% (response rates 50%, 13% of respective reply) with standard variation of 0.72 (table3-1). Response on Q35, however, shows that 36% of replies agree to increase tuition fee while 28% responds negatively, and 36% are neutral. Thus based on the verification of hypothesis 1, 2, we can infer that increasing tuition may be feasible to certain degree but not too high. This paper can make coarse estimate that the ODA Academy education program has more value than 30% of the current level. For improved confidence levels, there needs to be further studies.

Table 4 Scale of raising tuition fee

33. you are willing to take, to what extent do you think is suitable? (2 day course basis)

#	answer		%
1	60 th. won		50%
2	80 th. won		38%
3	100 th. won		13%
4	120 th. Won		0%
5	140 th. won		0%
	Total		100%

Table 5 Proponent degree of raising tuition fee

32. In case of raising tuition fee to ensure better instructors, are you willing to take the course?

#	answer		%
1	Absolutely not		4%
2	Mostly not		24%
3	Neutral		36%
4	Usually		28%
5	Totally		8%
	Total		100%

[8] Respondents are designed to exclude students group under the assumption that they have no job.

3.1.5 Answers to Research Questions

Regarding **RQ1** (People who took KOICA ODA educational program are satisfied with the program?), overall satisfaction is fairly high, showing 68% positive answers.

RQ2 (Which parts of KOICA educational program needs to improve?) has replies with 67% which means no more need to improve. Two subjects (Korean NGOs, Development and ODA) got focuses on revision.

RQ3 (What kind of policy should KOICA adopt to be differentiated from any other similar educational program?) confirms us that the ODA Academy program should concentrate on field, and case-oriented program, and field-experienced staff lecturing based on answers to Q22(expertise, no negative response), Q20(changing attitude, only 4% negative), Q24(strength).

Regarding **RQ4** (How much rates will be acceptable for participants if the tuition fee is to be increased?), this paper makes coarse estimate based on Hypothesis 3 that the ODA Academy education program has more value than 30% of the current level.

2.5 Analysis of study 2

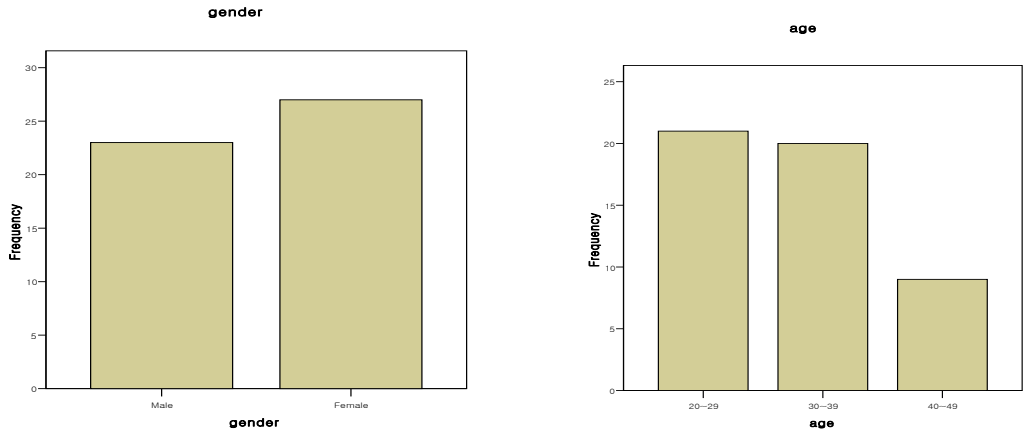
1.2.5 Frequencies analysis

Male respondents for study 2 occupy 41.8%[9] while female 49.1%. Age distribution between 20's and 30's shows 74.6%, while 40's 16.4%. Respondents aged 20's are biggest portion

[9] 9.1% shows missing

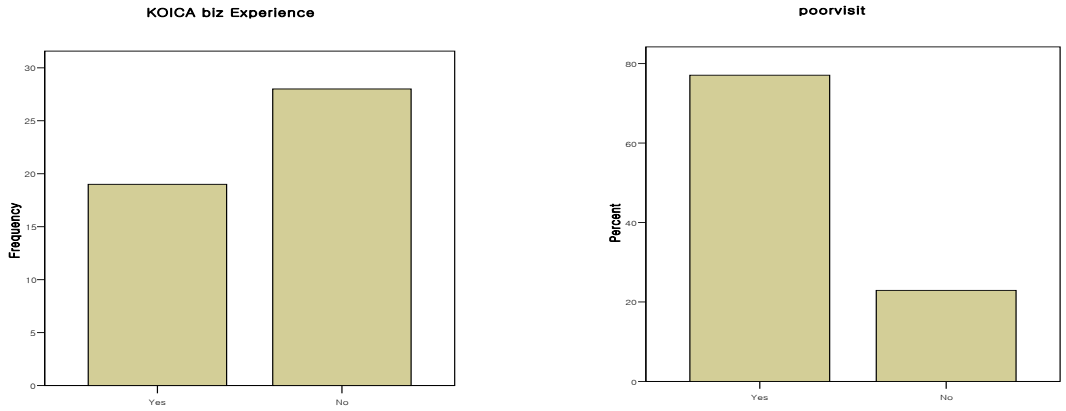
(41.8%).

Figure 9 Frequencies of gender and age for study 2



Those who have an experience in working with KOICA occupy 40.4 valid percentages, and the occupancy rate of those who visited the poor countries is 77.1 % (37 responses).

Figure 10 Frequencies of experience in KOICA project and visit developing country for study 2



2.2.5 Factor analysis

Pre-knowledge variable was extracted by factor analysis on 6 items related with pre-knowledge. KMO (Kaiser-Meyer-Olkin) Measure of Sampling Adequacy shows 0.795, which is appropriate level. Under a situation that the Eigen Value is above 1 and Varimax with

maximum iteration for convergence (25) was adopted[10], Squared Loading indicates 84.5% in the Total Variance Explained, which is very appropriate.

Simplification of 'motivation' data was attempted in various eight ways with factor analysis, hoping that regression analysis demonstrates a strong correlation between purified motivation variable and satisfaction. Among 4 variables, variable mt1 and mt2 could be emerged with 0.50 of KMO value and 68.5% of Squared Loading, which is lower than expectation.

With factor analysis of 3 items related with global awareness, this paper extracts global citizenship. One variable with low score of Component Matrix (0.035) was excluded from the initial 4 variables. Another factor analysis which leads to reduce to 3 variables provides better Component Matrix; Squared Loading is 72.9%, KMO is 71.3% with zero significance.

Table 6 Pre-knowledge factor analysis

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.713
Bartlett's Test of Sphericity	Approx. Chi-Square	49.632
	df	3
	Sig.	.000

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.189	72.958	72.958	2.189	72.958	72.958
2	.444	14.808	87.766			
3	.367	12.234	100.000			

Extraction Method: Principal Component Analysis.

[10] Same conditions to other factor analyses were applied in this paper

3.2.5 Regression analysis

Hypothesis 4: The satisfaction degree in Development Education is affected directly by motivation or pre-knowledge

To verify the Hypothesis 4, the first regression analysis was carried out between satisfaction and factored motivation variable. Results of regression demonstrate R^2 '0.302' level and 3.7% of p-value; the regression line is appropriate to the model. Thus the Hypothesis 4 for motivation part is accepted under α significance of 5%. For reference, 4 each motivation without factor analysis as independent variable was verified by regression analysis with satisfaction dependent variable; the result shows that R^2 decreases up to 0.191, but p-value of mt1, mt2, mt4 demonstrates high above 10%. While p-value of mt3 shows 2.4%, its beta value displays negative, -0.334.

Regarding with pre-knowledge variable, regression analysis was conducted with setting the satisfaction as dependent variable. Results of regression demonstrate R^2 '0.279' level and 0.1% of p-value. In conclusion, the Hypothesis 4 is accepted with 0.1% of p-value. As the beta value of pre-knowledge (0.528) is higher than that of factored motivation variable (0.302), so pre-knowledge variable is estimated more significant to satisfaction than motivation variable.

Table 7 Regression Analysis between factored 'pre-knowledge' and 'satisfaction'

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.528[a]	.279	.256	.63488

a. Predictors: (Constant), REGR factor score 1 for analysis 1

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	4.059	.109		37.277	.000
	REGR factor score 1 for analysis 1	.389	.111	.528	3.516	.001

a. Dependent Variable: exsat

Hypothesis 5: Motivation affects Acquisition of Development Knowledge (ADK).

Regression analysis between factored variable (mt1, mt2) and ADK variable show 0.068 of R^2, 7.3% of p-value. β coefficients indicates positive, but does not show so high score (0.261). Hypothesis is turned down under α significance of 5%.

Hypothesis 6: Acquisition of Development Knowledge affects changes of perception on development cooperation.

Regression analysis results show 0.445 of $R^{2,}$ '0' of p-value. Hypothesis is accepted within α significance of 1%. β coefficients indicates 0.667.

Table 8 Regression Analysis between 'ADK' **and 'perception change'**

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.667[a]	.445	.435	.61374

a. Predictors: (Constant), nlearn

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.952	.474		2.006	.050
	nlearn	.729	.112	.667	6.525	.000

a. Dependent Variable: thchange

Hypothesis 7: Acquisition of Development Knowledge affects to change attitude to contribution for the global development.

Regression analysis results show 24.6% of $R^{2,}$ '0' of p-value. Hypothesis is accepted within α significance of 1%. β coefficients indicates 0.496.

Hypothesis 8: Satisfaction in Development Education is affected by attitude change.

Regression analysis results show 25.4% of $R^{2,}$ '0' of p-value. Hypothesis is accepted within α significance of 1%. β coefficients indicates 0.504.

Hypothesis 9(9-1): Satisfaction in Development Education is affected by perception change or indirectly through attitude change.

Regression analysis of satisfaction and perception change show 24.6% of R^2 with β coefficients of 0.496. Hypothesis is accepted under α significance of 1% (with 0% of p-value and 4.1 of t-value). Regression analysis between perception change and attitude change variable shows statistically significant correlation within α significance of 5%, as it indicates 24.4% of R^2, 4.41 t-values and '0' p-value; Hypothesis 9-1 is accepted. Thus perception change variable has two ways to make impacts on satisfaction.

Table 9 Regression analysis for perception and attitude changes

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.494[a]	.244	.230	.72472

a. Predictors: (Constant), thchange

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.945	.493		3.947	.000
	thchange	.500	.121	.494	4.140	.000

a. Dependent Variable: atti

Hypothesis 10: Acquisition of Development Knowledge is the main factor to formulate satisfaction in Development Education.

So as to arrange variables which affect satisfaction in the order of impact, the hierarchical regression method was applied to 4 variables: motivation, ADK, perception change, and attitude change. Model 4 can explain 45.3% of satisfaction variables, which is the biggest. With co linearity tolerance of all variables being above 0.1 and Durbin-Watson having 1.88, Model 4 is regarded appropriate.

2 variables turn out to make statistically significant positive impact on dependent variable, satisfaction; ADK (t=2.41, p=0.02), and attitude change (t=2.30, p=0.026). ADK (β=0.376) has comparatively the biggest impact on satisfaction even in case of excluding positive correlation with perception and attitude changes. The attitude change variable was followed with β=0.298.

Table 10 Hierarchical regression analysis for satisfaction path

Model Summary[e]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.302[a]	.091	.071	.62827	
2	.614[b]	.377	.350	.52584	
3	.621[c]	.386	.344	.52815	
4	.673[d]	.453	.402	.50412	1.888

a. Predictors: (Constant), REGR factor score 1 for analysis 1

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	4.146	.091		45.718	.000		
	REGR factor score 1 for analysis 1	.197	.092	.302	2.148	.037	1.000	1.000
2	(Constant)	2.099	.457		4.596	.000		
	REGR factor score 1 for analysis 1	.103	.079	.157	1.291	.203	.932	1.073
	nlearn	.486	.107	.554	4.546	.000	.932	1.073
3	(Constant)	1.932	.506		3.815	.000		
	REGR factor score 1 for analysis 1	.078	.086	.120	.913	.366	.808	1.237
	nlearn	.420	.137	.478	3.062	.004	.572	1.748
	thchange	.111	.142	.131	.779	.440	.497	2.013
4	(Constant)	1.497	.519		2.886	.006		
	REGR factor score 1 for analysis 1	.064	.082	.098	.776	.442	.804	1.244
	nlearn	.330	.137	.376	2.414	.020	.525	1.905
	thchange	.071	.136	.084	.520	.606	.489	2.045
	atti	.243	.106	.298	2.301	.026	.757	1.321

a. Dependent Variable: exsat

Hypothesis 11: High satisfaction leads to willingness to recommend the ODA Academy's education program to others.

Regression analysis results show 57.6% of R2, '0'of p-value. Hypothesis is accepted within α significance of 1%. With β coefficients indicating 0.759, this correlation estimates highest sensitivity.

Table 11 Regression Analysis between 'willingness to recommend' and 'satisfaction'

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.759[a]	.576	.568	.43237

a. Predictors: (Constant), exsat

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.891	.384		2.322	.024
	exsat	.780	.092	.759	8.478	.000

a. Dependent Variable: recmd

Hypothesis 12: Those who have higher global citizenship show positive attitude toward ODA scale.

With the variable of global citizenship which was extracted from factor analysis, regression analysis was conducted with dependent variable, ODA scale. Regression analysis results show 0.0% of $R^{2,}$ 98.4% p-value with β coefficients indicated in a negative way as -0.003. Hypothesis is turned down.

Table 12 Regression Analysis between 'global citizenship' and 'aid scaling-up'

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.003[a]	.000	-.021	.87297

a. Predictors: (Constant), REGR factor score 1 for analysis 3

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.000	1	.000	.000	.984[a]
	Residual	36.580	48	.762		
	Total	36.580	49			

a. Predictors: (Constant), REGR factor score 1 for analysis 3

b. Dependent Variable: scale

Hypothesis 13: There is a statistically significant difference in satisfaction, attitude changes, global citizenship and Acquisition of Development Knowledge (ADK) between those who have experience to visit developing countries and those who have not.

According to the result of t-test, Levene's test for equality of variance shows that 4 independent variables are higher than 0.05 of α significance. With the result, test should be carried out in the row of 'equal variances assumed'. The t-value demonstrates -0.387 for acquisition of development knowledge (ADK), -0.492 for global citizenship, and 0.788 for attitude changes, all of which are below the absolute value of 1.96. Thus the variable 'experience to visit developing countries' has no statistically significant difference in the above three variables. So the hypothesis was rejected. But the t-value of 'satisfaction' shows 2.159, so hypothesis is accepted within α significance of 5%. Mean value of male is 4.18 while that of female is 3.72.

Table 13 T-Test for 'visit to developing countries' difference

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
exsat	Equal variances assumed	1.106	.299	2.159	46	.036	.46192	.21397	.03122	.89262
	Equal variances not assumed			2.598	23.126	.016	.46192	.17777	.09428	.82956
atti	Equal variances assumed	1.000	.323	.788	46	.435	.21867	.27768	-.34026	.77761
	Equal variances not assumed			.726	14.708	.479	.21867	.30136	-.42476	.86211
nlearn	Equal variances assumed	.297	.588	-.387	46	.700	-.10074	.26013	-.62435	.42288
	Equal variances not assumed			-.450	21.418	.657	-.10074	.22393	-.56586	.36439
REGR factor score 1 for analysis 3	Equal variances assumed	2.240	.142	-.492	43	.625	-.17656311	.35864547	-.89984063	.54671442
	Equal variances not assumed			-.556	21.334	.584	-.17656311	.31757222	-.83636226	.48323605

Hypothesis 14: There is a statistically significant difference in satisfaction, attitude changes, global citizenship, and Acquisition of Development Knowledge (ADK) between genders.

According to the result of t-test, Levene's test for equality of variance shows that 4 independent variables are higher than 0.05 of α significance. With the result, test should be carried out in the row of 'equal variances assumed'. The t-value's significance demonstrates 0.304 for satisfaction, 1.640 for Acquisition of Development Knowledge, 1.059 for global citizenship, 1.518 for attitude changes, all of which are below the absolute value of 1.96; genders have no statistically significant difference in the above four sectors.

Table 14 T-Test for 'gender' difference

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
exsat	Equal variances assumed	.876	.354	.304	48	.762	.05636	.18526	-.31613	.42885
	Equal variances not assumed			.301	44.455	.765	.05636	.18708	-.32057	.43329
atti	Equal variances assumed	.042	.838	1.518	48	.136	.34622	.22808	-.11236	.80479
	Equal variances not assumed			1.521	47.094	.135	.34622	.22761	-.11164	.80408
nlearn	Equal variances assumed	.077	.782	1.640	48	.108	.34138	.20816	-.07715	.75992
	Equal variances not assumed			1.672	47.724	.101	.34138	.20419	-.06922	.75199
REGR factor score 1 for analysis 3	Equal variances assumed	.392	.534	1.059	45	.295	.31768013	.29984591	-.28624054	.92160081
	Equal variances not assumed			1.051	42.337	.299	.31768013	.30222636	-.29209360	.92745386

4.2.5 Other quantitative and qualitative analyses

Hypothesis 15: Opinions on aid volume turns more positive than before class

Paired sample t-test shows that KOICA D.E courses improve awareness of ODA expansion, which is statistically significant within α significance of 5%. After taking the class, average opinion on increasing aid scale was increased from 3.51 to 3.97, by 13.1%.

Table 15 Paired t-test on scale of before and after

Paired Samples Statistics

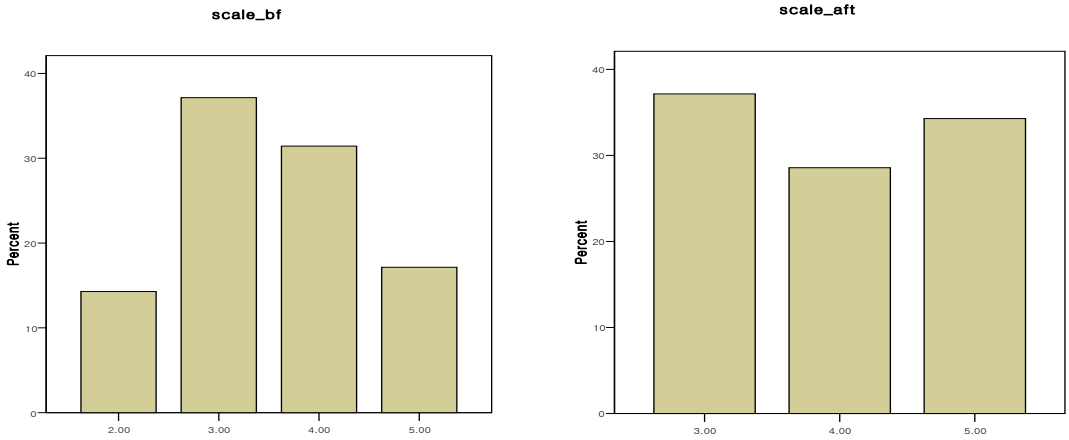
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	scale_bf2	3.5143	35	.95090	.16073
	scale_aft2	3.9714	35	.85700	.14486

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	scale_bf2 - scale_aft2	-.45714	1.14642	.19378	-.85095	-.06333	-2.359	34	.024

Figure 11 shows that opinion of ‘maintaining current level of ODA’ reduced to ‘zero’ while response on the 0.7% of GNI which is targeted by the UN was jumped up as much as 2 times; from 17.1% to 34.3%.

Figure 11 Attitude change of aid scale[11]



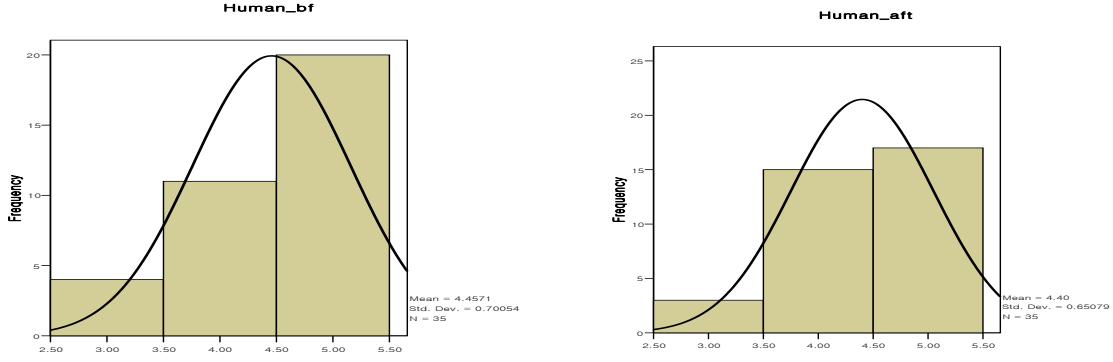
11 ②Maintain current level, ③Double current level, ④Average level of DAC, ⑤UN targeted 0.7% of GNI

Proponent rates for ODA expansion up to DAC's average level or UN designated 0.7% ODA/GNI target occupies 48.5% before taking the class. After attending the class, advocate rate climbs up to 62.9%. The ODA Academy education program is a hopeful and powerful solution to secure national supports of ODA as proponent rate was increased by 30% or so on basis of initial point. According to the results of KIEP survey which covers 1,000 Korean interviewees in a way of Multi-Stage Stratified Random Sampling, 55.9% of interviewees have a reserved position on a future expansion plan[12]. Equivalent to KIEP's this result in this paper amounts to 51.4%, which means students who are before taking the class at the KOICA ODA Academy are estimated to have very similar position on ODA expansion. These two figures consolidate the findings of this paper.

Hypothesis 16: Humanitarian aspect in direction of Korean aid is improved by the ODA Academy program more than before taking the class.

According to the Paired-Sample t-test of humanitarian aspect, t-value demonstrates 0.339 which is smaller than absolute t-value 1.96, and 73.7% p-value which is bigger than 5%. So impact on humanitarianism is not statistically significant. Thus the hypothesis is rejected.

Figure 12 Perception change of humanitarian aspect between before and after class



[12] '(Korean government) complies with the level of foreign aid expansion which Korean government promised internationally, but no need to scale up the volume' (55.9%)

Hypothesis 17: At the team level, internal collaboration and shared cognition is promoted, which leads improved efficiency and effectiveness.

From depth interview with interviewee ‘C’, new facts which can support this hypothesis were found. Based on negating a negative perception on KOICA ODA, and being proud of joining development programs, team members come to have better communication within other members, and promote understanding the local needs of developing countries. Deepened comprehension on development leads to shorten the project period, which could be calculated into financial benefit (Interviewee ‘C’). To prove financial impacts in monetary terms needs following study.

Hypothesis 18: At the organizational level, internal factors such as shared value in development, communication with stakeholders were advanced, which leads positive impact on external factors such as profit, and motivation to provide more D.E.

Interviewee ‘C’ discloses his experiences that the ODA Academy encourages him to remind his management at decision-making level meetings of characteristics and differences of development projects, and to disperse his understanding on development. This can be interpreted that a favorite environmental condition to share values in development is formulated. Linkage bridging between internal and external factors can be inferred from “Deepened comprehension on development leads to shorten the project period, which could be calculated into financial benefit” (Interviewee ‘C’). If the reduction of project period which could be transformed into man-month function is multiplied by unit cost of labor, then total savings we can get. This represents a value added by the ODA Academy program,

besides advanced images of Korean ODA, improved benefit to the recipient government. Regarding with other factors e.g. ‘communication with stakeholders’, ‘motivation to provide more Development Education’ and ‘cross-societal impacts,’ this paper set aside further study.

Hypothesis 19: Societal impacts are created e.g. opening of new education course at university, and job opportunities.

From depth interviews, new facts which can support this hypothesis were found; a new major course, ‘the International Multi-culture Education’ would be opened at the University from spring semester 2012 (Interviewee ‘A’); opening of a development curriculum, organizing a civil society organization (CSO), which will go to the Laos for helping the poor people coming December, 2011. And He gets a new position (Interviewee ‘B’). Interviewee ‘C’ mentioned opportunities of job opening based on his internal experience. Thus this paper can estimate that the ODA Academy education program works more powerful than initially expected, which can achieve societal impacts.

5.2.5 Sum-up of the hypothesis verification

Summary of the above verification results are as below the Table 7;

Table 16 synopsis on results of verification

No.	**Acceptance of Hypothesis**	**Turn-down of Hypothesis**
1	H1 (satisfaction & edu. Components) - professionalism part accepted	
2	H3 (value of ODA Academy program)	H2 (satisfaction & Accessorial services vs. lecturing)
3	H4 (motivation, pre-knowledge -> satisfaction)	
4	H6 (ADK -> perception)	H5 (motivation ->ADK)
5	H7 (ADK -> attitude)	
6	H8 (attitude -> recommend)	
7	H9 (perception change -> satisfaction)	
8	H10 (ADK -> satisfaction)	
9	H11 (satisfaction -> recommend)	H12 (global citizenship -> ODA scale)
10	H13 (experience in D.E -> ADK, attitude)	H14 (gender difference -> satisfaction)
11	H15 (ODA scale: before vs. after)	H16 (Humanitarian: before vs. after)
12	H17~19 (impact on team, society)	

6.2.5 Answers to Research Questions

RQ1. What differences of satisfaction may we get if students have certain motivation, pre-knowledge?

According to the result of hypothesis 4, pre-knowledge as well as motivation variables which are factored with mt1, mt2 has a statistically significant effect on satisfaction variable.

RQ2. What kinds of path to satisfaction does the Development Education have?

To sum up with hypothesis 4~10, satisfaction path is estimated as 5 ways; ① motivation, pre-knowledge-satisfaction, ②ADK-satisfaction, ③ADK-attitude change - satisfaction, ④ADK-perception change – satisfaction, ⑤ADK- perception change – attitude change – satisfaction.

RQ3. Does the KOICA ODA Academy make societal impacts? If any, then what kind of societal impact may the ODA Academy program have?

RQ4. Does the KOICA ODA Academy program have an impact on newly-opening ODA courses in Universities?

To answer RQ3 & 4, the ODA Academy program is estimated to achieve job opportunities, opening new curricula, and organizing development, social volunteer program as elaborated in hypothesis 19.

RQ5. Is there any difference of satisfaction between on-line and off-line responses?

According to the Paired-Sample t-test, however, t-value demonstrates -2.083 which is bigger than absolute t-value 1.96, and 0.049 p-value which are smaller than 0.05. Thus the hypothesis is accepted within α significance of 5%. Thus there is statistically significant difference in satisfaction between on-line and off-line response, assuming that the same qualified lecture was delivered.

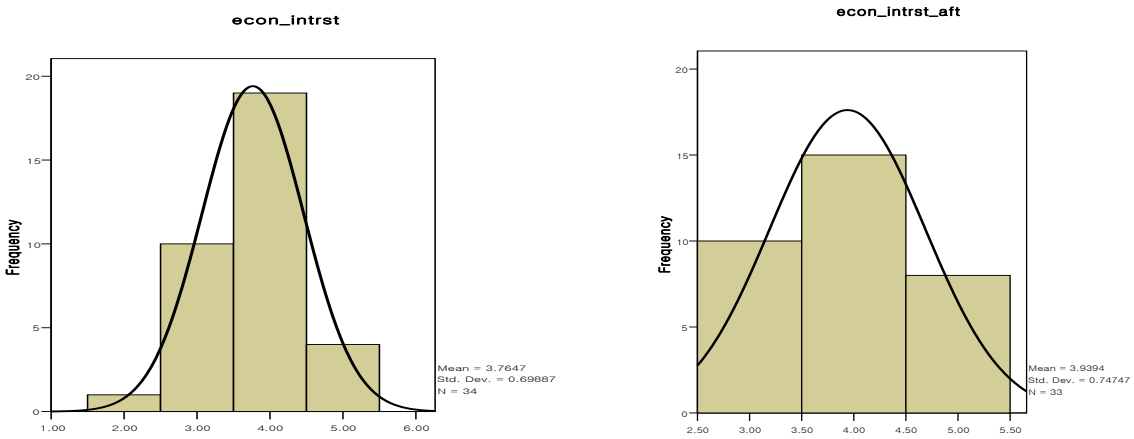
3.5 Other findings in the survey

Regarding with Study 1, variation of online responses' duration is wide. While it took average 5 minutes or so. But two responses took more than 1 and half, and 7 hours respectively, and one response took less than 2 minutes[13]. It could bring about data bias.

Obtrusive differences between genders, ages in study 1 and study 2 are observed. Gender difference in female demonstrates 68% (study1) vs. 49% (study2). Regarding age distribution, 20's shows biggest portion in both studies; 56% in study 1, 42% in study 2.

Concerning with variable 'promotion of trade and economic interest' as a mean of ODA, variable 'economic interest' gets reinforced; biggest occupation moves from 'mostly agree' to 'strongly agree'; from 11.4% to 22.9%. According to the Paired-Sample t-test of economic interest, however, it is not statistically significant as t-value and p-value demonstrates -1.35, 0.187 respectively. Result might be different with larger sample data. It needs further study.

Figure 13 Perception change on economic interest between before and after class



[13] Two responses might be author's test responses.

6. Implications and suggestions for further research

This paper proposes an evaluation model of Development Education effectiveness, based on quantitative and qualitative analysis on the impact of the KOICA educational program on individual, team, organizational, and societal level outcomes. The path toward satisfaction, behavior changes as well as a main actor for satisfaction is identified; motivation, pre-knowledge, ADK, perception and attitude change. Estimated value of ODA Academy program is higher by 30% more than current fee level which was set on basis of 'user-pays principle'. Immanent value must be much higher in case of considering interviews on success stories, internal impacts within team/ organization, and society e.g. shortening the project period.

Alteration of perception such as advocate rates on ODA expansion was dramatically demonstrated by the analysis of before and after comparison; from 49% to 63%. Dispersion of D.E in the campus was initiated and accelarated by the ODA Academy program, its difusion is very speedy e.g. even opening a major course. Thus in order to secure national consensus on ODA expansion, D.E must be promoted as it is more powerful and effective than simple activities just for P.R. From the analysis of the individual-level impact chain of satisfaction on D.E., the acquisition of Development Knowledge (ADK) plays a pivotal role in triggering increases in participants' satisfaction with training, of which more than 70% comes from staff's lecturing and practice-oriented teaching. Thus Development Education must be empirical and pragmatic as well; aid agencies including the KOICA are recommended to develop the case-study research method, and to disperse educational case studies which contain field stories, in line with the observation that "contents were three times stronger than applicability" (TonyLingham et al, 2006).

Limitations in this study concern data size, the probable selection bias which might be raised without ideal randomization and back translation can also be overcome with following studies. This paper excludes responses of the South as it is too early to evaluate impacts on the fields of development. It was also kept in mind that Guba and Lincoln's 'fourth generation evaluation' may be "ideally suited for D.E" since this approach advocates and coordinates opinions from both South and North, but it has substantial limitation or skepticism on the equal power in evaluation (Susan, 2010, p71). The evaluation methodology developed in this paper, however, can be applied to the Invitation Program of KOICA.

Cross-societal impacts which could be facilatated by the campuses deserve evaluation even though it forcasts many trial and errors. So as to make D.E more efficient, effective, and to capture whole impacts of D.E as much as possible, further study on this issue is needed. Comparing that of E.U, Development Education in Korean society has been activated and rapidly diffusing with significant levels of impact: the opening formal curricula at universities, mandatory school textbooks containing development activities, etc. This is a favorable signal for Korean society to move forward with the international development community.

References

Birdi Kamal. "The Texonomy of Training and Development Outcomes (TOTADO): A New Model of Training Evaluation." "Annual BPS Division of Occupational Psychology Conference." Brighton: Institute of Work Psychology, University of Sheffield, 2010, Jan., 13th~15th.

Center for Global Education. "Reflections and Projections: Mapping the past and charting the future of development education." Conference Report, Belfast: Center for Global Education, 2011.

European Multi-Stakeholder Steering Group on Development Education. "European Development Education Monitoring Report." Bruxelles: Developing Europeans Engagement for the Eradication of Global Poverty, 2010.

GeorgeBenson, DavidFinegold, SusanMohrmanAlbers. "You paid for the skills, now keep them: tuition reimbersement and voluntary turnover." "Academy of Management Journal" 47, No: 3 (2004): 315-331.

GilbertStorrs. "Evaluation in development education: Crossing borders." "Policy & Practice: A Development Education Review", 2010: 7-21.

HaslindaA, MahyuddinM.Y. "The Effectiveness ofTraining in the Public Service." "American Journal of Scientific Research", Issue: 6 (2009): 39-51.

IftikharAhmad, and Siraj udDin. "EVALUATING TRAINING AND DEVELOPMENT." "Gomal Journal of Medical Sciences", 2009: 165

JeanneWilsonM., PaulGoodmanS., MathewA.Cronin. "Group Learning." "Academy of Management Review", 2007: 1041-4059.

Kehysry: The Finnish NGDO Platform to the EU. "National Seminar on Development Education in Finland." DEEEEP Report, Helsinki: Kehysry, 2010.

KIEP. "The result and Implication of public-opinion survey on ODA." "WORLD ECONOMY UPDATE", 27th June, 2011.

Kurt KraigerKevin Ford, and Eduardo SalasJ. "Application of Cognitive, Skilled-based, and Affective Theories of Learning Outcomes to New Methods of Training Evaluation." "Jurnal of Applied Phychology Monogragh", 1993: 311-328.

LappalainenRilli. "The European Consensus on development education: From scratch to implementation and monitoring." "Policy & Practice: A Development Education Review", 2010: 77-83.

ReidBates. "A critical analysis of evaluation practice: the Kirkpatrickmodel and the principle of beneficence." "Evaluation and Program Planning", 2004: 341-347.

RichardOliver. "Satisfaction: A Behavior Perspective on the Consumer." New York: M.E. Sharpe, 2010.

RyanWatkins, DougLeigh, RobFoshay, RogerKaufman. "Kirkpatrick Plus: Evaluation and Continuous Improvement with a Community Focus." "ETR&D" Vol.46, No: No.4 (1998): 90-96.

SusanAldridge, JenniferRowley. "Measuring Customer Satisfaction in Higher Education." "Quality Assurance in Education" 6, No: 4 (1998): 197-204.

SusanGallwey. "The Role of Southern Perspectives in the Evaluation of Development Education." "Policy & Practice: A Development Education Review", 2010: 69-76.

The North-South Centre of the Council of Europe. "Global Education Guidelines - Concepts and Methodologies on Global Education for Educators and Policy Makers." Lisbon: The North-South Centre of the Council of Europe, 2010.

ToddMaurer, HeatherPierce. "PERCEIVED BENEFICIARY OF EMPLOYEE DEVELOPMENT ACTIVITY: A THREE-DIMENSIONAL SOCIAL EXCHANGE MODEL." "Academy of Management Review" 27, No: 3 (2002): 432-444.

TonyLingham, BonnieRichley, DavarRezania. "n evaluation system for training programs: a case study using a four-phase approach." "Career Development International" 11, No: 4 (2006): 334-351.

Yang B.Kim, etal. "Study on developing tools to evaluate satisfaction in education." study on current issue, Seoul: Korea Education Development Institute, 2004.