An Empirical Test and Validation of Dubai Government Excellence Program (DGEP) using ABCD Model Analysis

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Abstract: - This paper focus on the validation of Dubai Government Excellence Program (DGEP) model for the first time using new management tool for validation of business excellence model called ABCD Model Analysis. The validation carried out on DGEP model 2009 version and has led to some alteration in the DGEP model and has been considered and implemented as part of the internal continuous process improvement in the latest version of DEGP 2014.

Different methods are used in this paper, namely the new proposed ABCD Model, questionnaires, SPSS and AMOS. The proposed new ABCD Model Analysis, consists of four stages, *Analyse, Build, Check and Decide*. In this paper the focus is to analyse the DGEP criteria, Building the model according to the ABCD model analysis, building the measurement instrument through questionnaires distributed in the Emirate of Dubai, using research hypotheses and ABCD path analysis which is developed to facilitate, analyzing, testing the model and Check the built model to verify the analysis that was made on DGEP.

The critical analysis carried out on the nine DGEP criteria distributed into 38 main sub criteria and 200 sub-sub criteria found to be valid and reliable. The DGEP adopted the structure of the EFQM model and adapted to the UAE culture settings. Most of the DGEP model component linked strongly the five enablers "*Leadership*", "*Strategy*", "*People*", "*Partnership*" and "*Resources and Process*" with the model outcomes represented in the four types of results; people result, customer result, society result and key result.

The study shows that for the first time and by using the ABCD Model Analysis the DGEP Model was validated successfully and confirmed to be fit for use. In addition, it is evident that the proposed ABCD Model Analysis is a very useful management tool for validation due to its systematic, simple, easy to remember, implement and to refine. In addition, the Path Analysis in the ABCD Model is a better version of the known Path Analysis techniques.

Key-Words: - Dubai Government Excellence Award (DGEP), Business Excellence Model, Validation Process, ABCD Model Analysis.

1 Introduction

Many Business Excellence Models especially the European Foundation Quality Management (EFQM), has evolved from a means of recognizing and promoting excellence service based on the eight excellence dimensions and based on total quality management as can be seen in figure 1. As such, it determines the theoretical platform for world class performance. The Dubai Government Excellence Program is one of the unique business excellence model that allocate substantial resources towards improvement of the participated organizations process based on the best practice excellence models such as European Foundation Quality Management (EFQM) and Malcolm Baldridge National Quality Award (MBNQA). As per the best practice approach, all business excellence models that are under proposal or revision need to be validated to sustain the development, obtain the comments and feedback and gain overall acceptance by all concerns. In other words, testing the goodness fit of the structure model is called validation process for business excellence model validation.

To assess the validity of the DGEP between the leadership dimension and each of the remaining four enablers, a set of regression analysis were conducted. The relationships between each of all the five enablers in three groups were strong and statistically significant. It was concluded that the leadership requirement for people may not be the same for Partnership and Resources and verse versa.

The strategy was found to be the heart of the model and should be embedded in each of the enabler. The inter link between the three groups were found to be lack of direct effect on the results. When the three groups were trimmed the test was showing an acceptable level of goodness of fit with the data. While the DGEP has captured the attention of validation, there has been little or no empirical research examining the usefulness of the award program criteria to guide the actions of organization that seek improvement. This research takes the first step in providing scientific approach to test and validate it. This study seeks to examine the model in its larger context as a theoretical model for organizations in Dubai.
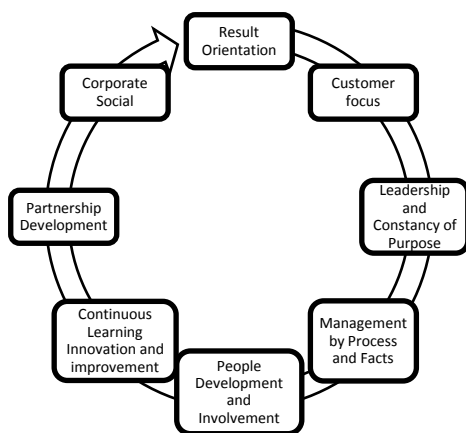

Figure 1 The eight dimensions of Excellence (EFQM 2010)

1.1 Background to the Dubai Government Excellence Program (DGEP)

Dubai Government Excellence Program (DGEP) is a pioneer program established with a clear vision, values and objectives (figure 2) in 1997 by the UAE Vice President, Prime Minister and Ruler of Dubai, aiming at engraving the culture of excellence in Dubai government and recognizing distinguished departments, teams and individuals (Nuseirat, 2012). The program aims at spreading the concept of excellence, innovation, quality, best management and professional practices in the Government Sector. The DGEP Model for institutional excellence as described by Kahlout (2002) "is built around the European Foundation Quality Management (EFQM) model with an extra emphasis on innovation and transparency". In other words, adaption of UAE culture ensures the most vital subjects such as risk management, contingency plans, emiratisation, governance, environmental management and Integrated Management System are addressed. The DGEP model for institutional excellence uses RADAR concept (results, approach,

deployment, assessment and refine) in principle along with the other well-known continuous improvement like Deming cycle and PDCA cycle. DGEP has many other excellence programs other than the institutional excellence, which is also backed up with additional criteria for assessing and rewarding distinguished projects, initiatives and employees, customer satisfaction, employees satisfaction and mystery shoppers surveys.

"This program is the force behind improvements of the public sector. It propagated a spirit of competition not known by governmental departments before. All managers, officials, and employees seek to compete to provide the best and win one of the awards"

HH Sheikh Mohamed Bin Rashid Al Maktoum. My vision" book p141

Figure 2 DGEP Role (DGEP Power Point, 2012)

The DGEP Process as shown in figure 3 consists of 6 steps, developing the model, communicate, carry on the assessment, recognize achievement, feedback and document it.

Figure 3 DGEP Process Cycle (DGEP Power Point, 2012)

While the DGEP is basically award program that contributed significantly in the development of organization excellence in Dubai Emirate, this research takes the first step toward providing the implementation of validation process on the DGEP and accordingly allowing a theoretical examination on the relationships between categories and overall linkages among the nine criteria as can be seen in figure 4 below.
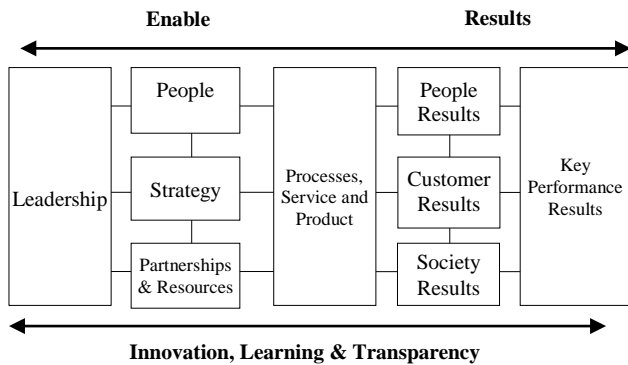

Figure 4 The DGEP 2012

Figure 4 is the DGEP model in its 2012 version which indicates the evaluation criteria for the category of the distinguished Government which is similar to EFQM. The DGEP is an effective model worldwide, comply and in line with the international standards, results oriented, it has 83 sub-criteria, 179 area of enablers and 112 measures/indicators of results. The evaluation based on RADAR of results.

The results are combination of performance outcomes such as trends, targets, comparisons, causes, the appropriate of use such as scope and relevance, integrity and segmentation.

1.2 Assessment Mechanism
The mechanism of the assessment passes through four phases, interviews, site visit, winner recommendations and the jury. The first phase (interviews), interviewing all candidates at The Executive Council. The second phase is the (site visit) where the interviewing short listed candidates with the highest results not less than 40% at their respective work. The third phase (Winner recommendation) is the recommending a winner based on the site visit results. And the fourth phase (The jury) conducting specialized sessions with assessment teams to verify reports awarded to each Government entity.

1.3 DGEP Categories
There are at least total of 20 category award, each one of them represents Business excellence model, these categories are divided into two parts: Organization Excellence and Employee Excellence.

2.0 ABCD Validation Model
The validation process for DGEP is based on ABCD Model for validation and analysis. The validation process were described and addressed in the model. Most of the steps were covered in this section.
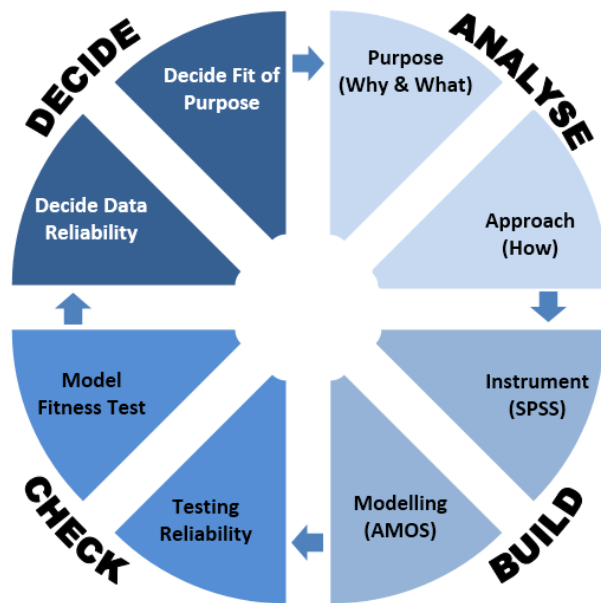
	ABCD Validation Score	Step	Weight Score
Analyse (40%)	Purpose (What, Why, When) & Approach (How)	1	10%
	Exploratory Analysis	2	5%
	Degree of Well Enabled	3	5%
	Synthesis Analysis	4	5%
	ABCD Path Analysis	5	5%
	Hypothesis Analysis	6	5%
	Measurement Model Specification	7	5%
Build (15%)	Hypothesis Development to questionnaire	8	5%
	Instrument for data collection & processing (SPSS)	9	5%
	Modeling (AMOS)	10	5%
Check (25%)	Reliability Test	11	5%
	Measurement Model Identification (Degree of Freedom)	12	5%
	Breakdown (VIF & others)	13	5%
	Regression Estimation	14	5%
	Fitness Test	15	5%
Decide (20%)	Good Range of Model Fitness	16	5%
	Model Modification and Refitting	17	5%
	Interpretation of Valid Model	18	5%
	Fitness for Purpose	19	5%
	Total ABCD Score 100%		

Figure 5 ABCD Model Analysis- Complete steps for model validation

There are four basic ABCD steps:

a. Analyse of the Business Excellence Model validation by identifying the purpose and approach.

b. Build the business excellence model according to the purpose and approach.

c. Check the fitness of the business excellence model by a series of tests and analysis to determine the validation of the measurement model and to determine the fit of purpose.

d. Decide the validity of business excellence model for the theory, measurement and final interpretation and determine the correlation values, the regression and Model fitness tests and finally decide the fitness of the model and the fit of purpose.

The analysis was conducted first by dividing the model into three parts instead of 9 components; Drive, System and Results which corresponds to components of leadership for the drive, people, strategy, partnership and process as the system and the results which covers the four results (people result, customer result, society result and key results). Then further the system was re-arranged into three main components, (see figures 6 and 7) each component merged with its own related process. Finally each one of the three main components was thoroughly checked by means of linkage and satisfactory level of correlation to the driver (leadership) and results (all the four) and against each of the other two main components (People, Strategy and Partnership & Resources). The DGEP Model which was analysed is 2009 version follows EFQM 2008/9 and a further revision will be issued on October 2012 following update of the latest EFQM.

2.1 Questionnaire design and development

ABCD Model analysis was developed to ease the analysis and testing the model as in figure 5. To investigate the DGEP criteria, a model is constructed in AMOS separating into three groups; the leadership, people, process, people result and key result as one group called ABCD1, second group is Leadership, strategy, process, customer result and key results as ABCD2, and the third group is Leadership, Partnership & Resources, process, society result and key results as ABCD3 as illustrated in figure 7.

Most of the changes, difference and additions from the EFQM basic old version are due to either elaboration or detailed explanation. However, certain areas are being changed to adapt the culture setting in UAE. However, DGEP 2009 is based on EFQM 2003 to 2008; from 2009 onwards EFQM has changed significantly which cannot be compared with the earlier version. EFQM 2009 version or 2010 is reflecting the recent global business environment. The findings in these studies provided statistical support for the EFQM model relationships. Most of the studies found that the Leadership dimension is classified as a driver of quality (Meyer and Collier, 2001; Winn and Cameron, 1998; Pannirselvam and Ferguson, 2001; Flynn and Saladin, 2001) the remaining enablers are considered to be the system and all the four outcomes are results.
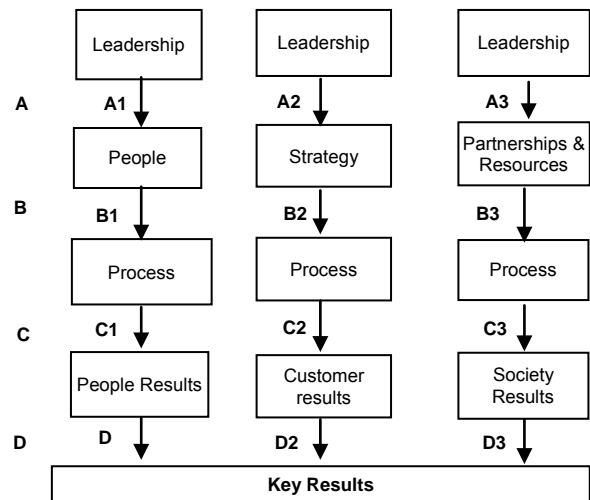

Figure 6 Testing the DGEP model

Since this is the first validation process applied on the DGEP model, this research address two questions:

a. Is the proposed relationship between the categories in the DGEP which based on EFQM model valid relationship?

b. Are the driver (Leadership), System (Process) and Results for each of People, Strategy and Partnership & resources common?

The questionnaires are divided into three groups; the first group is called the ABCD vertical direct path which focuses on the strength on each of the three parallel lines, see figure 8, which indicates a flowchart of the overall design validation model. The second group is the horizontal indirect path, which is studying the relationship between the leadership A1, A2, A3 and Process B1, B2 and B3.

The third group is the overall validation model which confirms and validates further the vertical direct path. In the first attempt when the questionnaires were tested with a scale of either yes or no, it was found that the reliability scale was so poor due to uncertainty in obtaining the predicted calculation in the model so it was recommended to use a scale of 1 to 5 to get accurate results and obtain a model fitness test. The study defines the DGEP as three parts.

The first one is the driver, The second on is the system which consist the combination of the three processers of the middle enablers The third part is the results of the three enablers and the key performance results Analysis can be carried out backwards; results of each processer, what process we need to obtain the results from, what enabler we need to process and then link it with the driver source. For instance, selecting the people enabler sub criteria plan and manage HR, how does the organisation process it, then look into the process enabler and study the most appropriate sub criteria indicating this purpose, then looking at the strategy and finding which part of the strategy sub criteria support this purpose "plan & Manage HR" , then looking at the leadership and finding which criteria can drive the purpose of People enabler, and finally look at the people results and study how strong the results are measured from the purpose of the plan. This lengthy exercise was carried out in full and was weighted by very strong, strong, moderate, weak and very week. From this analysis we can see that there are some weak relations that need to be enhanced. Therefore, for validation purposes, the numbers of repeated questionnaires were chosen carefully based on researchers opinions which calls for a pre-check before validating the complete framework so it fulfil two purposes, to validate DGEP model and to test the response and the questionnaires for further improvement in the further questionnaires in the future.
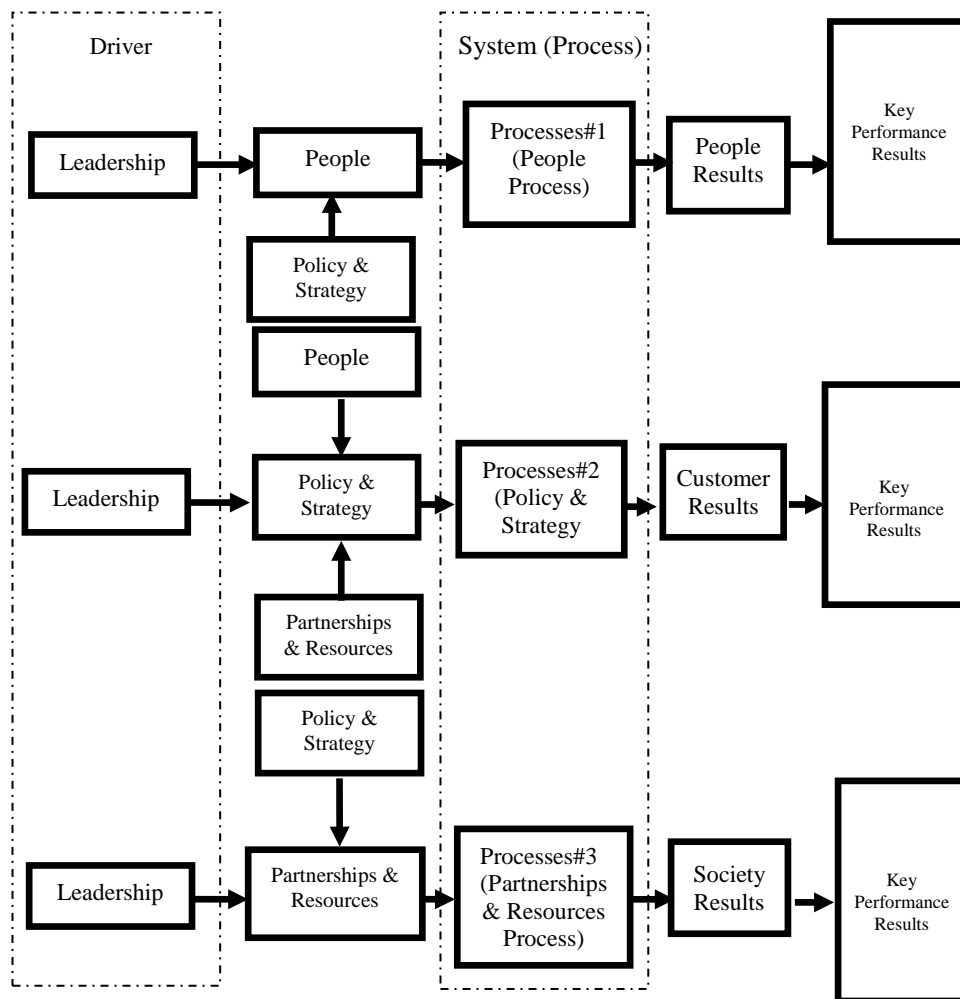

Figure 7. DGEP (Driver, System and Results)

The flow chart of the validation is shown in figure 8, contains the steps of building the instrument for questionnaire processed in SPSS then build it in AMOS to conduct all necessary checks to verify the model fitness. The figure shows two levels of validations, one with the details questionnaires distributed in horizontal path and vertical path namely ABCD1, ABCD2, ABCD3 in vertical path processed with13 question in SPSS, and horizontal path indicated as A1A2/ B1B2/ A2A3/ B2B3/ A1A3/ B1B3 processed with 6 questions
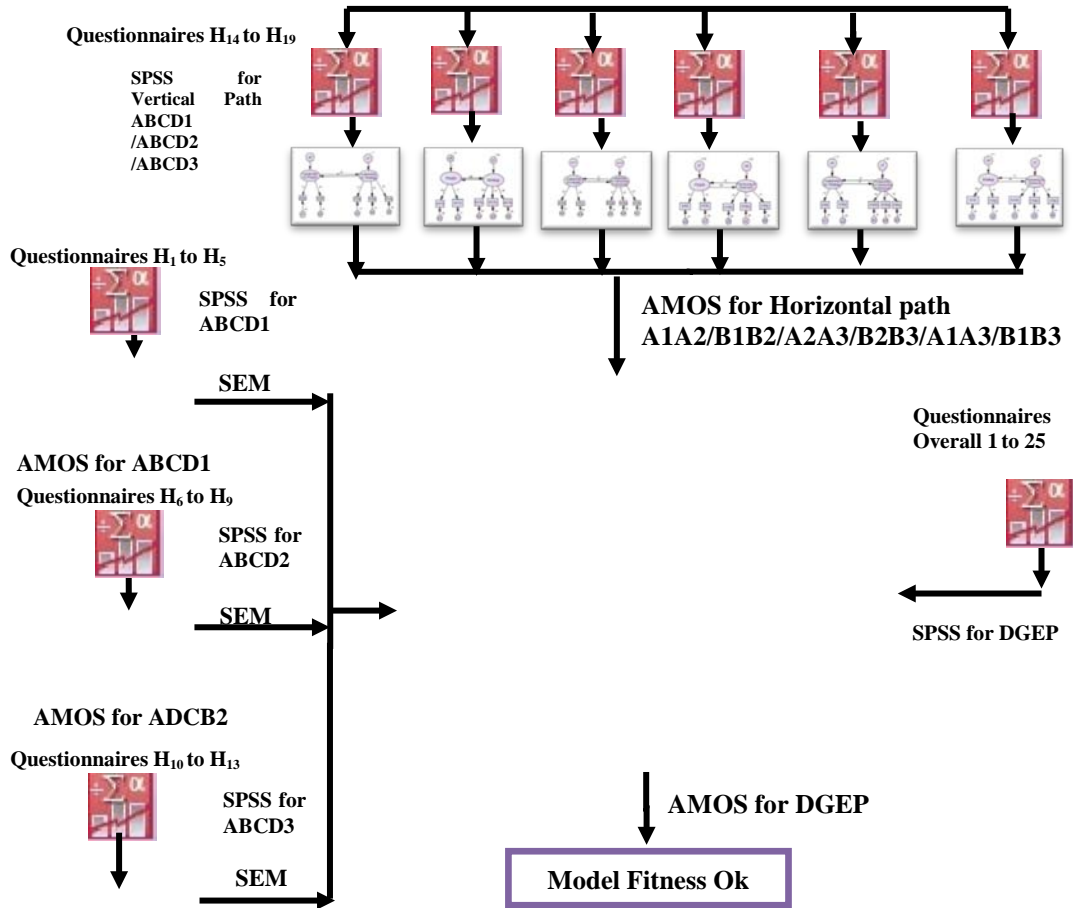
Figure 8 Flow chart of DGEP Process Validation

Table 1 ABCD path analysis Matrix

ABCD PATH ANALYSIS MATRIX (Direct and Indirect Cause-Effect Relation)												
	A1	B1	C1	D1	A2	B2	C2	D2	A3	B3	C3	D3
A1		Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No
B1	Yes		Yes	Yes	Yes	No	No	No	No	No	No	No
C1	Yes	Yes		Yes	Yes	No	No	No	No	No	No	No
D1	Yes	Yes	Yes		Yes	No	No	No	No	No	No	Yes
A2	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes
B2	Yes	No	No	No	Yes		Yes	Yes	Yes	No	No	No
C2	No	No	No	No	Yes	Yes		Yes	Yes	No	No	No
D2	No	No	No	Yes	Yes	Yes	Yes		Yes	No	No	Yes
A3	No	No	No	No	Yes	Yes	Yes	Yes		Yes	Yes	Yes
B3	No	No	No	No	Yes	No	No	No	Yes		Yes	Yes
C3	No	No	No	No	Yes	No	No	No	Yes	Yes		Yes
D3	No	No	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	
Direct and Indirect												

2.2 Questionnaire Distribution and Feedback

The Questionnaire was distributed through internet survey and more than 500 invitations were called for answering through email. The answering was limited to maximum 500 and capped at 500 respondents. The structure of the questionnaire was designed into two parts; the first part is the background verification where the second part was the main part of model validation. The background verification is to ensure the answers are given within the consideration of minimum knowledge of Business Excellence Model.

99% of the interviewees are having a good education background (see figure 9 and table 2) and approximately 80% having more than 5 years working experiences (see figure 10 and table 3). 98% of them were knowing business excellence model and 83% were involved in the implementation of EFQM or DGEP (see figure 11 and table 4). It can be concluded that the information received was reliable.

The feedback from interviewees in the second part was not perfectly covered. Missing values were occurred as the answers were not adequately filled by the interviewees. Majority of the participants (470) of total 500 were properly replied. In AMOS modeling, missing values in the data input will lead the data analysis with the explicitly intercepts and mean estimation. It will lead to the risk of unable to computation by the AMOS program. To resolve the problem of missing value, SPSS feature provide a solution- Replace missing value with estimates computed with one of several methods and it is applied to this situation. Method of "Linear Trend at point" in replacing missing value is used. Results Questionnaire Collection for Model ABCD1, ABCD2 and ABCD3 can be found in tables 5,6,7 and 8). Also figures 9 to 15, each figure has associated table to indicate and illustrate further details about the distribution of the answers in percentage.

Table 2 Education Background of Interviewees

What is the highest level of education you have completed?		
Answer Options	Response Percent	Response Count
High school or equivalent	0.0%	0
Some college	0.5%	3
Bachelor's degree	61.3%	305
Master's degree	37.7%	187
Doctoral degree	0.5%	3
Professional degree (MD, JD, etc.)	0.0%	0
	answered question	498
	skipped question	2

Figure 9 Education backgrounds of interviewees
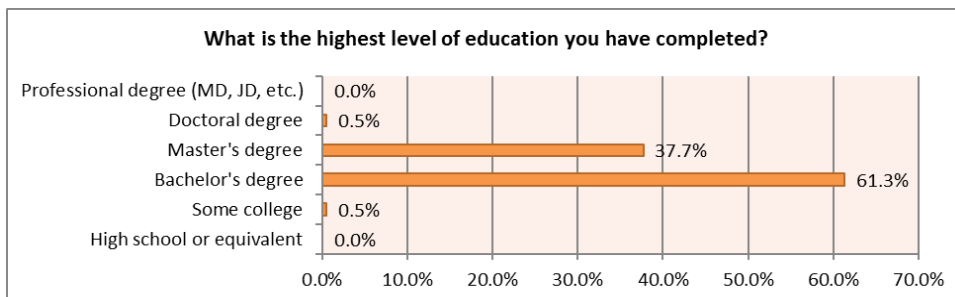
Table 3 Work Experience of Interviewees

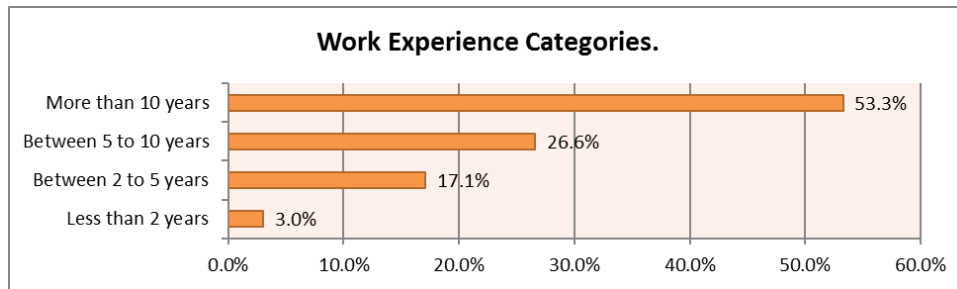| Please indicate your work experience with below categories.		
Answer Options	Response Percent	Response Count
Less than 2 years	3.0%	15
Between 2 to 5 years	17.1%	85
Between 5 to 10 years	26.6%	133
More than 10 years	53.3%	265
	answered question	498
	skipped question	2

Figure 10 Work experiences of interviewees

Table 4 Involvement of interviewees in EFQM or DGEP

| Have you been involved in EFQM or DGEP?		
Answer Options	**Response Percent**	**Response Count**
No. Never heard and never involved in any business excellence models	1.0%	5
No. Never heard but involved in other business excellence models.	1.0%	5
No. But I have learnt the knowledge before.	15.1%	75
Yes. I am involving in certain parts.	35.7%	178
Yes. I am involving in overall models.	47.2%	235
	answered question	**498**
	skipped question	**2**
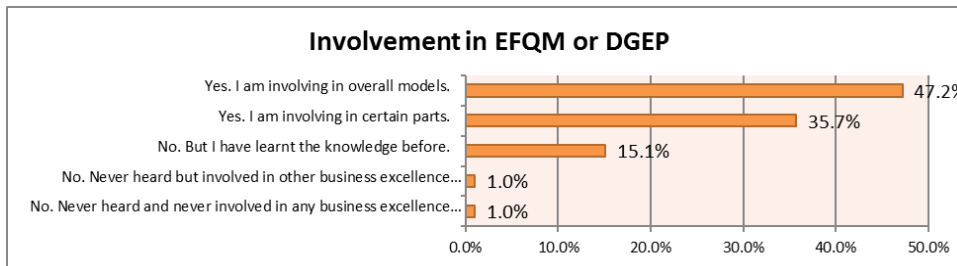
Figure 11 Involvement of interviewees in EFQM or DGEP

Table 5 Pre questionnaire result.

	Pre-Questionnaire - Your understanding						
	Answer Options	**Strongly Agree**	**Agree**	**I Don't Know**	**Dis-agree**	**Strong Disagree**	**Response Count**
1	RADAR logic is a self-assessment tool for sustaining excellence	390	70	40	0	0	500
2	Organizations shall identify important processes in each enabler with clear approach that provides the guidelines for deployment	400	60	40	0	0	500
3	The approach shall have specific target and an action plan and defined resources (sound) and linked with the strategy of the organization(integrated)	413	45	38	2	0	498
4	The approach shall be breaking down into mechanisms which take place in the deployment	403	50	45	0	0	498
5	The deployment consists of (implementation) phase of the action plan and shall be (systematic) and (measurable)	408	52	37	3	0	500
6	Refinement and assessment shall be linked with each approach and mechanisms	402	55	40	3	0	500
7	Refinement and assessment reflects in to learning growth, change management, continuous improvement, creativity and innovation	400	62	35	3	0	500
					answered question		**500**
					skipped question		**0**

Table 6 Result of Questionnaires for ABCD1, ABCD2 and ABCD3

Vertical ABCD: (Are the proposed relationship between the categories in the DGEP model is valid?)												
	Answer Options	Strongly Agree		Agree		I Don't Know		Disagree		Strong Disagree		Response Count
		Quantity	%	Quantity	%	Quantity	%	Quantity	%	Quantity	%	
H1	Leadership for people has strong influence on people (A1)	420	90.00%	50	10.00%	0	0.00%	0	0.00%	0	0.00%	470
H2	People has strong influence on people process (B1)	294	58.80%	134	32.80%	0	0.00%	42	8.40%	0	0.00%	470
H3	People process has strong influence on People results (C1)	418	89.60%	52	10.40%	0	0.00%	0	0.00%	0	0.00%	470
H5	People results has strong influence on key results (D1)	396	59.20%	132	32.40%	0	0.00%	42	8.40%	0	0.00%	470
H6	Leadership for strategy has strong influence on strategy (A2)	420	90.00%	50	10.00%	0	0.00%	0	0.00%	0	0.00%	470
H7	Strategy has strong influence on strategy process (B2)	248	49.60%	222	50.40%	0	0.00%	0	0.00%	0	0.00%	470
H8	Strategy process has strong influence on customer results (C2)	235	47.00%	193	44.60%	0	0.00%	42	8.40%	0	0.00%	470
H9	Customer results has strong influence on key results (D2)	287	57.40%	139	33.80%	2	0.40%	42	8.40%	0	0.00%	470
H10	Leadership for partnership & resources has strong influence on Partnership & Resources (A3)	374	80.80%	96	19.20%	0	0.00%	0	0.00%	0	0.00%	470
H11	Partnership & recourses has strong influence on Partnership & Resources Process (B3)	236	47.20%	192	44.40%	0	0.00%	42	8.40%	0	0.00%	470
H12	Partnership & Resources process has strong influence on Society results (C3)	194	38.80%	232	52.40%	2	0.40%	42	8.40%	0	0.00%	470
H13	Society results has strong influence on key results (D3)	292	58.40%	134	32.80%	2	0.40%	42	8.40%	0	0.00%	470
									answered question			470
									skipped question			30

Table 7 Result of Questionnaires for A1A2, A1A3, A2A3, B1B2, B1B3, B2B3

Horizontal ABCD: (Are the proposed relationship between the categories in the DGEP model is valid?)												
	Answer Options	Strongly Agree		Agree		I Don't Know		Disagree		Strong Disagree		Response Count
		Quantity	%	Quantity	%	Quantity	%	Quantity	%	Quantity	%	
H14	Leadership for people has exactly same sub criteria as leadership for strategy (A1 - A2)	2	0.40%	86	17.20%	0	0.00%	278	61.60%	104	20.80%	470
H15	Leadership for people has exactly same sub criteria as leadership for Partnership & Resources (A1 - A3)	0	0.00%	88	17.60%	0	0.00%	278	61.60%	104	20.80%	470
H16	Leadership for strategy has exactly same sub criteria as leadership for Partnership & Resources (A2 - A3)	0	0.00%	88	17.60%	0	0.00%	278	61.60%	104	20.80%	470
H17	Process for People can be used for process for strategy (B1 - B2)	0	0.00%	88	17.60%	0	0.00%	278	61.60%	104	20.80%	470
H18	Process for People can be used for process for partnership& Resources (B1 - B3)	0	0.00%	44	8.80%	2	0.40%	316	69.20%	108	21.60%	470
H19	Process for strategy can be used for process for partnership& Resources (B2 - B3)	0	0.00%	46	9.20%	2	0.40%	316	69.20%	106	21.20%	470
									answered question			470
									skipped question			30

Table 8 Result of Questionnaires for overall model

|	Answer Options	Strongly Agree		Agree		I Don't Know		Disagree		Strong Disagree		Response Count
		Quantity	%	Quantity	%	Quantity	%	Quantity	%	Quantity	%	
1	Does leadership require strategy to lead? (A2)	436	92.77%	34	7.23%	0	0.00%	0	0.00%	0	0.00%	470
2	Do we need strategy to design process? (B2)	348	74.04%	122	25.96%	0	0.00%	0	0.00%	0	0.00%	470
3	Do we need strategy to make a strategy? (ABCD)	192	40.85%	131	27.87%	99	21.06%	6	1.28%	42	8.94%	470
4	Do we need process to implement strategy ?(ABCD2)	305	64.89%	123	26.17%	0	0.00%	42	8.94%	0	0.00%	470
5	Do leadership involve in making the process? (ABCD)	256	54.47%	214	45.53%	0	0.00%	0	0.00%	0	0.00%	470
6	Do we need leadership to focus on people?(ABCD1)	430	91.49%	40	8.51%	0	0.00%	0	0.00%	0	0.00%	470
7	Do people need leadership to make a strategy (ABCD1)	428	91.06%	42	8.94%	0	0.00%	0	0.00%	0	0.00%	470
8	Do we need people to design process?(B1)	344	73.19%	126	26.81%	0	0.00%	0	0.00%	0	0.00%	470
9	Do we need leadership to focus on people?(A1)	428	91.06%	42	8.94%	0	0.00%	0	0.00%	0	0.00%	470
10	Do leadership need strategy to focus on people?(A1A2)	390	82.98%	80	17.02%	0	0.00%	0	0.00%	0	0.00%	470
11	Do leadership needs people to make strategy (A2A1)	204	43.40%	226	48.09%	0	0.00%	40	8.51%	0	0.00%	470
12	Do we need leadership to focus on partnership & resources?(A3)	204	43.40%	222	47.23%	2	0.43%	42	8.94%	0	0.00%	470
13	Do partnership & Resources needs leadership to make process?(ABCD3)	202	42.98%	224	47.66%	44	9.36%	0	0.00%	0	0.00%	470
14	Do leadership need people to focus on partnership & resources?(A3A1)	160	34.04%	266	56.60%	2	0.43%	42	8.94%	0	0.00%	470
15	Do partnership & resources need process to achieve society results?(ABCD3)	214	45.53%	254	54.04%	2	0.43%	0	0.00%	0	0.00%	470
16	Does process of partnership & recourse need leadership and strategy to obtain society results?(ABCD3)	246	52.34%	182	38.72%	0	0.00%	42	8.94%	0	0.00%	470
17	Does partnership & resources leads directly to society results?(ABCD3)	214	45.53%	256	54.47%	0	0.00%	0	0.00%	0	0.00%	470
18	Do leadership need strategy to focus on partnership & Resources?(A2A3)	202	42.98%	224	47.66%	2	0.43%	42	8.94%	0	0.00%	470
19	Do leadership need partnership & resources to focus on strategy?(A3A2)	160	34.04%	209	44.47%	59	12.55%	42	8.94%	0	0.00%	470
20	Do people need process of people to achieve people results?(C1)	204	43.40%	224	47.66%	0	0.00%	42	8.94%	0	0.00%	470
21	Do we need people results to obtain key results?(D1)	216	45.96%	250	53.19%	4	0.85%	0	0.00%	0	0.00%	470
22	Does strategy need dedicated process to achieve customer results?(C2)	342	72.77%	128	27.23%	0	0.00%	0	0.00%	0	0.00%	470
23	Do we need customer results to obtain key results?(D2)	164	34.89%	300	63.83%	6	1.28%	0	0.00%	0	0.00%	470
24	Do partnership & resources need dedicated process to achieve society results?(C3)	248	52.77%	178	37.87%	2	0.43%	42	8.94%	0	0.00%	470
25	Do we need society results to obtain key results?(D3)	206	43.83%	214	45.53%	50	10.64%	0	0.00%	0	0.00%	470
										answered question		470
										skipped question		30
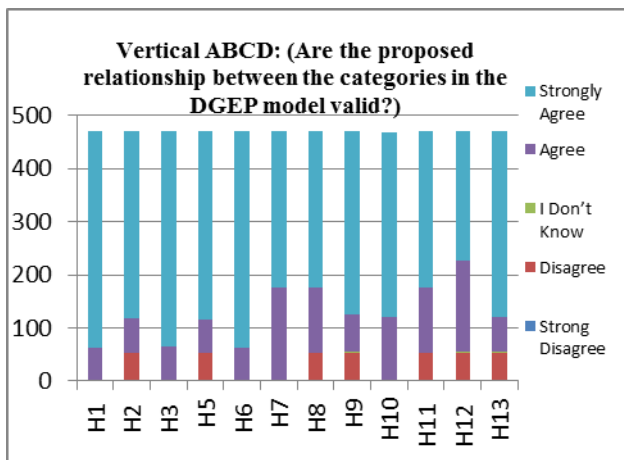
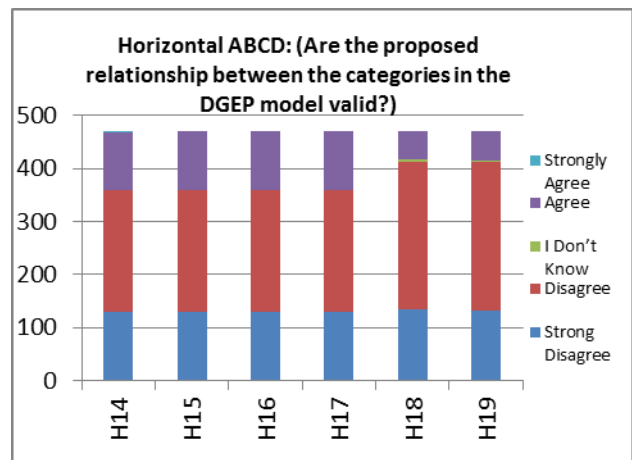Figure 12 Results of Questionnaires for ABCD1, ABCD2 and ABCD3

Figure 13 Results of Questionnaires for A1A2, A1A3, A2A3, B1B2, B1B3, B2B3
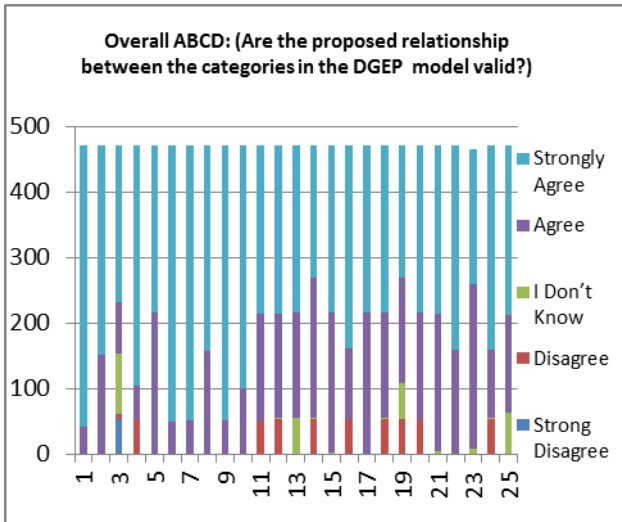
Figure 14 Results of Questionnaires for Overall Model.

2.3 Regression Analysis

The regression results determine and calculate the correlation between the variables considered in the model, the modification of the model is only required if the model need to be improved to obtain a better fitting model (table 9 and 10). It was clearly seen that the regression weight was improved in ABCD1, ABCD2 and ABCD3 modified versions.. Modifications in horizontal models were not significant because the allowance of changes between parameters were not enough.

Table 9 Regression Analysis-Vertical path

	Factors	Unmodified Regression		Modified Regression		
		Unstandardize Estimates	Standardize Estimates	Unstandardize Estimates	Standardize Estimates	
	Model ABCD1					
A1	Leadership for People / People	3.476	1	3.547	1	
B1	People / Process for People	0.296	1	0.290	1	
C1	Process for People / People Result	3.419	1	3.536	1	
D1	People Result / Key Result	0.116	0.098	0.088	1	
	Model ABCD2					
A2	Leadership for Strategy / Strategy	1.616	1	1.616	1	
B2	Strategy / Process for Strategy	2.232	1	2.232	1	
C2	Process for Strategy / Customer Result	0.952	1	0.952	1	
D2	Customer Result / Key Result	-17.189	-0.989	2.344	1	
	Model ABCD3					
A3	Leadership for Partnership & Resources / Partnership & Resources	2.896	1	2.871	1	
B3	Partnership & Resources / Process for Partnership & Resources	0.938	1	0.913	1	
C3	Process for Partnership & Resources / Society Result	1.078	1	1.062	1	
D3	Society Result / Key Result	0.113	1	0.115	1	
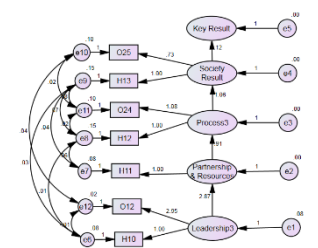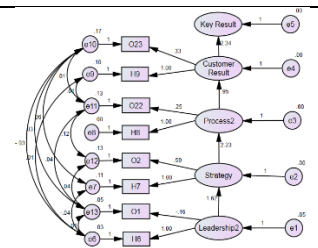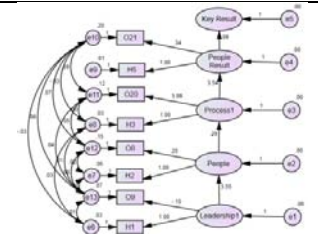
Table 10 Regression Analysis-Horizontal path

Factors	Unmodified Regression		Modified Regression		
	Unstandardize Estimates	Standardize Estimates	Unstandardize Estimates	Standardize Estimates	
Model A1A2					
Leadership for People→ Leadership for Strategy	0.398	0.397	0.397	0.397	
Leadership for Strategy→ Leadership for People	0.396	0.397	0.397	0.397	
Model A1A3					
Leadership for People→ Leadership for Partnership & Resources	0.430	0.430	0.429	0.430	
Leadership for Partnership & Resources→ Leadership for People	0.429	0.429	0.429	0.430	
Model A2A3					
Leadership for Strategy→ Leadership for Partnership & Resources	0.363	0.363	0.363	0.363	
Leadership for Partnership & Resources→ Leadership for Strategy	0.363	0.363	0.363	0.363	
Model B1B2					
People → Strategy	0.742	0.739	0.753	0.741	
Strategy→ People	0.734	0.737	0.723	0.735	
Model B1B3					
People → Partnership & Resources	0.495	0.490	0.490	0.489	
Partnership & Resources→ People	0.483	0.488	0.489	0.489	
Model B2B3					
Strategy → Partnership & Resources	0.741	0.739	0.740	0.736	
Partnership & Resources→ Strategy	0.735	0.737	0.738	0.738	

2.4 Analysis Methods

Questionnaires for the main project were formed based on the critical analysis that was carried out and will be addressed to experts in the field. First a questionnaire study was lunched with data population of 500 selected scientifically to test the model. The collected answers will be processed into the SPSS, in .which it will statistically verify the accurate values and the confidence level and the variance and fed to the built-in software AMOS in the validation stage. In the final part of the research methodology, there are two main terms latent variables and manifest variables, the latent variables describes the hidden or unobserved variables.
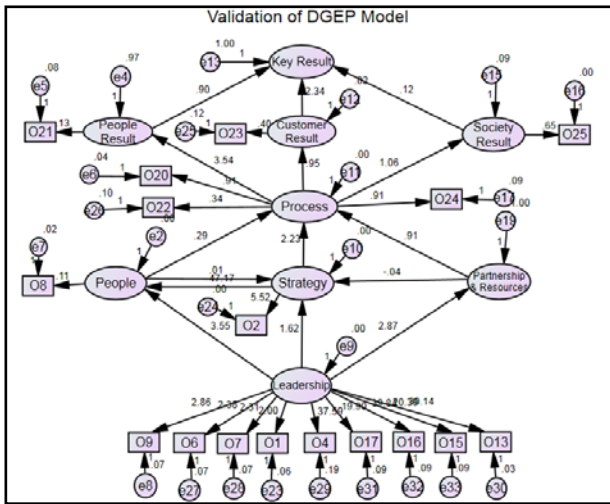
Figure 15 Flow chart of DGEP Process

2.5 The DGEP Criteria Excellence Model fit

At least 5 fitness criteria out of 7 listed in to be met in the test or else the model should be modified with theory justification. Decide model interpretation, it is the last step in the modeling stage.

The first criterion is the Chi Square or CMIN (see table 11) should be < 5. In AMOS, the chi-square value is called CMIN.which is the goodness of fit and it is sometimes called discrepancy function, the second criterion is the Chi Square/df it also should be < 5, which is the minimum discrepancy and it is divided by the degree of freedom df, the third criterion is the Root Mean Square (RMR) should be < 0.05. The fourth criterion is, Root Mean Square Error of Approximation (RMSEA) also < 0.05, the fifth criterion is the Goodness-of-Fit Index (GFI) should be < 0.9, the sixth criterion is Normed Fit Index (NFI) should be also <0.9and the seventh criterion is CFI should be also <0. The results from AMOS revealed a large variation of model fit indices and out of range of the model fit criteria which confirms with many published papers such as (Hu and Bentler, 1999) (Ahmed and Rafi2, 1998), (Badri et al, 2006), Bassioni, et al, 2008), (Bollen, 1998).

3.0 Discussion

Despite that the DGEP is not a model but a framework consists of many models and categories. One of these models is organisation excellence which is studied in this paper. The DGEP model "Organisational Excellence" can be considered in terms of structure only, similar to EFQM with several adoptions captured from the UAE culture and environment settings.

The model can be divided into three phases or parts; driver, system and results. As the DGEP is result

oriented, it is also a leadership focused; the successful of the model can be found with the amount of criteria attached to the leadership. The leadership has 45 sub criteria in addition to the 7 main sub criteria.

Table 11 Model Fit Index

Before Modification							
Model	Chi Square	CMIN/df	RMR	RMSEA	GFI	NFI	CFI
ABCD1	740.880	370.440	0.060	0.860	0.681	0.736	0.736
ABCD2	323.918	107.973	0.015	0.463	0.789	0.853	0.854
ABCD3	54.403	27.201	0.008	0.229	0.948	0.975	0.976
A1A2	997.412	166.235	0.168	0.575	0.583	0.705	0.706
A1A3	1541.142	256.857	0.220	0.716	0.542	0.593	0.594
A2A3	357.489	59.582	0.123	0.343	0.842	0.782	0.784
B1B2	884.034	147.339	0.071	0.542	0.755	0.810	0.811
B1B3	317.499	52.916	0.128	0.323	0.811	0.750	0.752
B2B3	428.648	71.441	0.070	0.376	0.811	0.888	0.889
After Modification							
Model	Chi Square	CMIN/df	RMR	RMSEA	GFI	NFI	CFI
ABCD1	0.008	0.008	0.000	0.000	1	1	1
ABCD2	59.501	29.750	0.008	0.240	0.947	0.973	0.974
ABCD3	0.175	0.175	0.000	0.000	1	1	1
A1A2	581.167	145.292	0.153	0.538	0.779	0.828	0.829
A1A3	834.374	166.875	0.193	0.577	0.741	0.780	0.780
A2A3	315.697	78.924	0.136	0.395	0.828	0.808	0.809
B1B2	154.888	38.722	0.075	0.275	0.899	0.967	0.967
B1B3	197.123	49.281	0.105	0.311	0.895	0.845	0.846
B2B3	46.903	11.726	0.024	0.147	0.965	0.988	0.989

The difference between the leadership in the west and in east is that the leadership prepare, submit, explain, present and finalize where in the west, the leadership only support and create the environment for people to do the work. The study conducted in vertical and horizontal paths analysis as mentioned before; there were some difficulties in arranging models in the software. Many errors and unknown results where foreseen during the design testing. Many or almost all published cases were presenting a 2 latent variables model which had difficulty to find out a similar 9 main latent variables if not more. However, this was overcome by dividing the model into vertical and horizontal path analysis. The vertical was tested by regression factor where the horizontal was analyzed by covariance factor.

4.0 Model Fit Indices Discussion

Reliability tests were carried out for the vertical models (ABCD1, ABCD2 and ABCD3) and horizontal models (A1A2, A1A3, A2A3, B1B2, B1B3, B2,B3) .The reliability of the data input to vertical models was positive i.e more than 0.8 (Kline, 1999). Horizontal models had acceptable reliability data input i.e. more than 0.7 (Nunnaly, 1978). Two sets data in the model A1A2 and A2A3 were showing less than 0.7. Chi Square, Chi Square/df, RMR, RMSEA, GFI, NFI, CFI for the evaluated model were chosen to identify the model fitness. It was found that the studied models revealed a large variation of model fit indices and out of range of the model fit criteria which confirms with many published papers (Hu and Bentler, 1999) (Ahmed and Rafiq, 1998), (Badri et al, 2006), Bassioni, et al, 2008), (Bollen, 1998).

Vertical Models ABCD1, ABCD2 and ABCD3 found to be meeting most of the model fitness indices after the model has been modified. The poor fitness indicated the model stability should be improved. Thus modifications are completed by inserting the covariance between the latent variables. This mean the relation between the variables must be closed enough to achieve the expected results. The horizontal models were showing poor fitness even after modification, which in this case trimming theory may need to be applied to achieve good fitness of the model.

5.0 Conclusion

In this paper a new techniques called ABCD Model Analysis was developed for validation purposes of the Dubai Government Excellence Program. The validation has been carried out in both vertical and horizontal paths analysis. The three vertical models ABCD1/2/3 can be considered fit model after necessary modification. However, the horizontal models should not be considered due to poor fitness. The objective of design a fit model is to standardise the model to evaluate future data with highly consistent and does not require further re-specification. The final models used in the existing study only focus on the explanation on casual effect and the correlation between the studied factors. The overall conclusion indicates that the DGEP model validation process was successful and can be used as a reference for further improvements. The importance of the validation process will determine and obtain the sensibility, feasibility and acceptability of the modified model to be introduced.

6.0 Acknowledgement

References:
[1] Ahmed, P. and Rafiq, M., (1998), *'Integrated benchmarking: a holistic examination of select techniques for benchmarking analysis'*, Benchmarking: An International Journal, Vol. 5 Iss: 3 pp. 225 – 242.
[2] Badri, M., Selim, H. Alshare, K, Grandon, E, Younis, H., Abdulla,M.(2006), *'The Baldrige Education Criteria for Performance Excellence Framework: Empirical test and validation'*, International Journal of Quality & Reliability Management, Vol. 23 Iss: 9 pp. 1118 – 1157
[3] Bassioni,H. A T.M. Hassan, T.M and. Price, A.D.F, (2008) *'Evaluation and analysis of criteria and sub-criteria of a construction excellence model'*, Engineering, Construction and Architectural Management, ISSN 0969-9988, 2008, Volume 15, Issue 1, pp. 21 - 41
[4] Bollen, K. (1989) *'Structural Equations with Latent Variables'*, Wiley, New York, NY.
[5] DGEP Power point, (2012), *'Dubai Government Excellence Program'*, The Executive Council, Govermnment of Dubai, www.dubaiexcellence.com last download on September 2012.
[6] EFQM Model, (2010) *'Excellence Organizations achieve and sustain superior levels of performance that meet or exceed the expectations of all their stakeholders'* Publication, Brussels, Belgium, 2009.
[7] Flynn, B. and Saladin, B. (2001) *'Further evidence on the validity of the theoretical models underlying the Baldrige criteria'*, Journal of Operations Management, Vol. 19 No. 6, pp. 617-52.
[8] HH Sheikh Mohammed bin Rashid Al Maktoum, *'My Vision'*, 2012, English version, Motivate Publishing.
[9] Hu, L.T. and Bentler, P.M. (1999) *'Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria Versus New Alternatives, Structural Equation Modeling,'* 6 (1), 1-55.
[10] Kahlout, Z. (2005) *'An Investigation into the effectiveness of Excellence Awards in the Government Sector'*, Quality & Excellence Advisor, Dubai Government Excellence Program, The

General Secretariat of the Executive Council of Dubai.

[11] Kline, R.B. (2005) *'Principles and Practice of Structural Equation Modeling'* (2nd Edition ed.). New York: The Guilford Press

[12] Meyer, S. and Collier, D. (2001) *'An empirical test of the causal relationships in the Baldrige Health Care Pilot Criteria'*, Journal of Operations Management, Vol. 19 No. 4, pp. 403-25.

[13] Nunnally, J. C. (1978) *'Psychometric theory'* (2nd ed.). New York: McGraw-Hill.

[14] Nuseirat, A. (2012), *'Achieving sustainable results'*, Coordinator General – Dubai Government Excellence Program (DGEP), The executive Council, Government of Dubai, Power Point Presentation.

[15] Pannirselvam, G. and Ferguson, L. (2001*) 'A study of the relationships between the Baldrige categories',* International Journal of Quality & Reliability Management, Vol. 18 No. 1, pp. 14-34

[16] Winn, B. and Cameron, K. (1998) *'Organizational quality: an examination of the Malcolm Baldrige quality framework'*, Research in Higher Education, Vol. 39 No. 5, pp. 491-512.