

Causal Relationship Model of IQ, AQ and Four Noble Truths

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Abstract

The population was 37,101 undergraduate student of Mahasarakham University in the second semester of academic year of 2012. The Multi-stage simple random sampling technique was employed to collect the sample for 400 undergraduate students. The research instrument was a questionnaire and it was used of data collecting. Structural Equation model (SEM) was used for model verification. The objective was to propose the structural model of Intelligence Quotient (IQ), Adversity Quotient (AQ) and Four Noble Truths (FNT) affecting environmental behavior via inspiration of public consciousness. The results revealed that when considering structural model confirmatory factors Intelligence Quotient (IQ), Adversity Quotient (AQ) and Four Noble Truths (FNT) were able to explain the variation of endogenous factors of Inspiration of Public Consciousness for Environmental Conservation (IPC) to cause Environmental Behaviors (BEH) with 86.00 percent and IPC was the highest effect to BEH with 0.54. Furthermore, confirmatory factors of Four Noble Truths (FNT), Intelligence Quotient (IQ), and Adversity Quotient (AQ), were able to explain the variation of confirmatory factors of Inspiration of Public Consciousness for Environmental Conservation (IPC) with 70.00 percent and FNT was the highest effect to IPC with 0.38.

Keywords: model, IQ, AQ, four noble truths, environmental behavior

Introduction

The intelligence quotient (IQ) questioned that people's intelligence originates from parents genetic heredity or condition of family nurturing. Some believe it is directly connected to biological parental intelligence quotient (IQ). However, the heritability of IQ has been investigated for more than a century, but it couldn't conclude which one is more influential. The diversity of ideas proposes that it depends on heritability and the mechanisms of inheritance^{15,14,3,2,30,6}. Afterward, Dickens and Flynn established a model for numerous doubtful conclusions regarding IQ. In their model, an environmental motivation can have numerous effects on IQ including adults, but this effect also decays over time except the stimulus persistence. The model could be modified to embrace possible factors, like nutrition during early childhood that may cause stable effects. Consequently, IQ adjustment can be elucidated by a generally motivating environment for all people. The

study involved that IQ scores do have high predictive strength for individual differences in school completion. They confirm the predictive validity of IQ for adult professional status, while variables such as education and family conditions have been statistically controlled. They recommended that individual variations in intelligence are remarkably influenced by both genetics and environment but it is still not known that which one has the foremost power.⁴

Adversity Quotient (AQ) is the capability to resolve problems and difficult tasks with intention to discover a method to alter the catastrophe. One who has good AQ will be a courageous person, has patience and good intentions lack easy failure, therefore in general, the person with this characteristic frequently accomplishes victory.

People who devote themselves to accomplishment will be inspired and have self-esteem because their

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insight has the power of problem solving and they believe that they can overcome the problem via continuous resolution and comprehension. A robust influence is a good struggle to lead them to success in their lives. AQ is the mainly reasonable and generally utilized technique.

Furthermore, people with superior AQ will be optimistic and they will change difficulties into opportunities. The elementary constituent of human competency is to manage how people must face life difficulties, or adversity. People with strong authentication are able to respond to life troubles: for instance, frustrations, irritations, and obstructions, even the most unacceptable trouble. That is the major role for all human efforts.^{18,20,21,22,5}

The teachings of Buddhism, Four Noble Truths are regarded as important to get over life's problems. These embrace 1) life means suffering, 2) the source of suffering is attachment, 3) the termination of suffering is attainable and 4) the path to the cessation of suffering (Middle Path or Eightfold Path). Taking into account on the first principle of life means suffering, refers to living with suffering for the reason that the people are not perfect and neither is the world stable. At some stage in people lifetime, they inevitably have to tolerate physical suffering such as tiredness, old age, pain, sickness, injury, and ultimately death; and they have to tolerate psychological distress like as sadness, fear, disappointment, dissatisfaction, and misery. Even though, there is also positive experiences in life that people recognize as pleasure such as ease, comfort and happiness but it is just for a while, not permanent or forever because life entirety is inadequate and incomplete, since the world is impermanent subject. Therefore humans are never able to maintain everlastingly what they try for, and just as happy minutes pass by, they themselves and their loved ones will pass away one day, too.¹⁷

The trail to the suffering eradication is the fourth noble truth through the middle path to finish the suffering. It is a regular mean of self-development that is explained in more detail with the Eightfold Path. The middle way is between the two extremes of excessive self-petty and extreme self-dignity; finally it directs to the end of the cycle of rebirth. The final quality separates it from other

paths that are only "wandering on the wheel of appropriate", because these do not have a final object. The mean to finish suffering can expand over many lifetimes. Wishing, unawareness, illusions, and its effects will progressively fade away, however the progress is made on the path. Noble Eightfold Path regards to right view, right intention, right speech, right action or behavior, right livelihood, right effort, right mindfulness and right concentration or meditation.⁷

Thiengkamol declared that if one is really understands Four Noble Truths, one would live with adequacy way of life by practicing their daily activities with cautious methods for pro-environmental behavior and natural resources maximization utilization containing of food consumption, energy conservation, waste management, recycling behavior, traveling behaviors and environmental knowledge transferring for others. Consequently, they also have concern for every step of living with right view, right thought, right speech, right behavior, right livelihood, right effort, right mindfulness, and right meditation. However, Thai people are generally Buddhists since the economic development together with consumerism pattern has caused them to be in the trap of an economic crisis since 1992 because of the 7th National Development Plan that the government accentuated for economic growth while environmental quality has been degraded unavoidably. Afterward, they realized the importance of sufficiency based on Middle Path of Four Noble Truths which has been their root of way of life for one thousand years. They reflect on their origin of Buddhist Principle of Four Noble Truths to use it to meet sustainable development.^{12,11,12,23}

Moreover, Sufficiency Economy Philosophy has been remarked by His Majesty King Bhumibol Adulyadej during his 58 years on the throne. This philosophy is a guideline of human living behavior of all classes starting from the family to the community to the Thai nation. It is able to be applied for local and nation development and administration. This philosophy is also indistinguishable from "Middle Path" of Four Noble Truths to finish live suffering for Buddhist people. Sufficiency refers moderation and rationality, accompanied by creating a practical

immune system against shocks from the outside or from the inside. All plans and every step of their action must be conducted based intelligence, thoughtfulness, extreme care and body of knowledge. The spiritual underpinning of all people in the nation, predominantly state officials, scholars, and business people must be constructed for all levels, therefore the moral integrity and honesty must be cultivated, and consequently they must effort for the appropriate wisdom to live with broadmindedness, carefulness, intelligence, and reflection. Finally, it should maintain the balance of physical, social, economic, environmental, and cultural changes of inside and from the outside world.

Environmental issues were generally unaware as inessential subject by people. Afterward, the beginning of the year 2011, Thai peoples have affected by the phenomenon in summer, they met with terrible cold weather. This made them aware on disaster of climate change or global warming.¹³

The inspiration to have public consciousness or public mind is a significant factor that has been proved by different studies of Thiengkamol and her colleagues. It was proposed by Thiengkamol that public mind inspiration arises from insight; therefore it is dissimilar from motivation because inspiration needs no rewards, admirations, and complements. Particularly, for pro-environmental behavior, it needs inspiration of public consciousness or public mind for environmental conservation and natural resources conservation because people who are devoted to conserve the environment will not require any admiration, rewards, money or incentives to do it, but they may be inspired by role model or idle, or impressive events, environment, and media receiving such as movies, book, magazine, and internet.^{7,16,9,1}

Currently, it is very seldom and there is no research that is holistically integrative conducted on intelligence quotient, adversity quotient, and Four Noble Truths affecting environmental behavior via inspiration of public consciousness. This research was designed to study by regarding all factors as mentioned above to attain a new body of knowledge to inspire the the young generation of undergraduate student to be a pro-environmentalist to practice as good idle for their generation and future generation.

Objective

The objective was to propose a structural model of Intelligence Quotient (IQ), Adversity Quotient (AQ), and Four Noble Truths (FNT) affecting environmental behavior via inspiration of public consciousness.

Methodology

The research design was implemented in steps as follows:

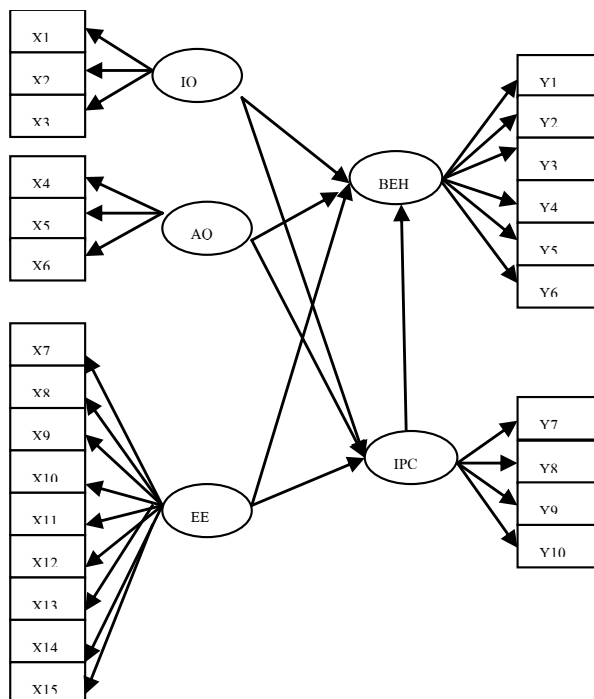
1. The population was 37,101 undergraduate students of the second semester inacademic year 2012 of Mahasarakham University. The Multi-stage random sampling was employed to collect 400 students from different faculties of Mahasarakham University.

2. The research instrument was a questionnaire, and it was used for data collecting. The content and structural validity were determined by Item Objective Congruent (IOC) with 5 experts in the aspects of environmental education, psychology, social science and social research methodology. The reliability was done by collecting the sample group from 50 undergraduate students of Rajabhat Mahasarakham University which is nearby Mahasarakham University. The reliability was determined by Cronbach's Alpha. The reliability of Intelligence Quotient (IQ), Adversity Quotient (AQ), FNT (Four Noble Truths) Inspiration of Public Consciousness (IPC), Behaviors for Global Warming Alleviation (BEH), and the whole questionnaire were 0.785, 0.919, 0.972, 0.977, 0.928 and 0.952 respectively.

3. The descriptive statistics used were frequency, percentage, mean and standard deviation. The inferential statistics used was LISREL by considering on Chi-Square value differs from zero with no statistical significant at 0.05 level or Chi-Square/df value with lesser or equal to 5, P-value with no statistical significant at 0.05 level and RMSEA (Root Mean Square Error Approximation) value with lesser than 0.05 including index level of model congruent value, GFI (Goodness of Fit Index) and index level of model congruent value, AGFI (Adjust Goodness of Fit Index) between 0.90-1.00.

Conceptual Framework

The exogenous latent variables of Intelligence quotient (IQ), Adversity Quotient (AQ) and Four Noble Truths (FNT) had direct and indirect effects to Inspiration of Public Consciousness for Environmental Conservation (IPC) and Environmental Behaviors for Global Warming Alleviation (BEH). IQ was measured by Conceptual Creation (X1), Talent Expression (X2), Relationship Perception (X3), AQ was measured by Personal Challenge (X4), Family Challenge (X5), and Social Challenge (X6). FNT was measured by Holistic View FNT (X7), Middle Path 1: Right View (X8 Middle Path 2: Right Thought (X9), Middle Path 3: Right Speech (X10), Middle Path 4: Right Behavior (X11), Middle Path 5: Right Livelihood (X12), Middle Path 6: Right Effort (X13), Middle Path 7: Right Mindfulness (X14), and Middle Path 8: Right Meditation (X15). The endogenous latent variable of BEH was measured by Consumption Behavior (Y1), Energy Conservation Behavior (Y2), Recycling Behavior (Y3), Waste Management Behavior (Y4), Traveling Behavior (Y5), Knowledge Transferring Behavior (Y6) and IPC was measured by Person as Role Model (Y7), Impressive Event (Y8), Impressive Environment (Y9), and Media Receiving (Y10).



Results

1. Results of Effect among Variables in Model in Terms of Direct Effect

1) Confirmatory factors of Intelligence Quotient (IQ) had direct effect to Inspiration of Public Consciousness for Environmental Conservation (IPC) and Environmental Behaviors (BEH) with statistically significant at level of 0.01 with effect 0.18 and 0.16. Moreover, Intelligence Quotient (IQ) had indirect effect to Environmental Behaviors (BEH) with statistically significant at level of 0.05 with effect of 0.10. IQ had the total effect to BEH with 0.26.

2) Confirmatory factors of Adversity Quotient (AQ) had direct effect to Inspiration of Public Consciousness for Environmental Conservation (IPC) and Environmental Behaviors (BEH) with statistically significant at level of 0.01 with effect of 0.27 and 0.26. Moreover, confirmatory factors in aspect of Adversity Quotient (AQ) had indirect effect to Environmental Behaviors (BEH) with statistically significant at level of 0.01 with effect of 0.15. AQ had the total effect to BEH with 0.41.

3) Confirmatory factors of Four Noble Truths (FNT) had direct effect to Inspiration of Public Consciousness for Environmental Conservation (IPC) and Environmental Behaviors (BEH) with statistically significant at level of 0.01 with effect of 0.38 and 0.30. Moreover, confirmatory factors in aspect of Four Noble Truths (FNT) had indirect effect to Environmental Behaviors (BEH) with statistically significant at level of 0.01 with effect of 0.21. FNT had the total effect to BEH with 0.51.

4) Confirmatory factors of Inspiration of Public Consciousness for Environmental Conservation (IPC) had direct effect Environmental Behaviors (BEH) with statistically significant at level of 0.01 with effect of 0.54.

5) Considering on structural model confirmatory factors Intelligence Quotient (IQ), Moral Quotient (MQ) and Four Noble Truths (FNT) were able to explain the variation of endogenous factors of Inspiration of Public Consciousness for Environmental Conservation (IPC) to cause Environmental Behaviors (BEH) with 86.00 percent as following in Equation (1).

$$BEH = 0.16 \cdot IQ + 0.26 \cdot AQ + 0.30 \cdot FNT + 0.54 \cdot IPC \dots \dots (1)$$

$$(R^2 = 0.86)$$

Equation (1) factors that had the most effect to Environmental Behaviors (BEH) was Inspiration of Public Consciousness for Environmental Conservation (IPC) with effect of 0.54 and subsequences were Four Noble Truths (FNT), Adversity Quotient (AQ) and Intelligence Quotient (IQ) with effect of 0.30, 0.26, and 0.16 respectively. These were able to explain the variation of Environmental Behaviors for Global Warming Alleviation (BEH) with 86.00 percent.

Consequently, confirmatory factors of Four Noble Truths (FNT), Intelligence Quotient (IQ), and Adversity Quotient (AQ), were able to explain the variation of confirmatory factors of Inspiration of Public Consciousness for Environmental Conservation (IPC) with 70.00

percent. Therefore, the equation can be written as following Equation (2).

$$IPC = 0.38 \cdot FNT + 0.27 \cdot AQ + 0.18 \cdot IQ \dots \dots \dots (2)$$

$$(R^2 = 0.70)$$

Equation (2) factors that had the most effect to Inspiration of Public Consciousness for Environmental Conservation (IPC) was Four Noble Truths (FNT) with effect of 0.38, and subsequences were Adversity Quotient (AQ) and Intelligence Quotient (IQ) with effect of 0.27 and 0.18. These were able to explain the variation of Inspiration of Public Consciousness for Environmental Conservation (IPC) with 70.00 percent.

The results of exogenous variables had effect to endogenous variables with direct and indirect effects are demonstrated in (Figure 1) and (Table 1).

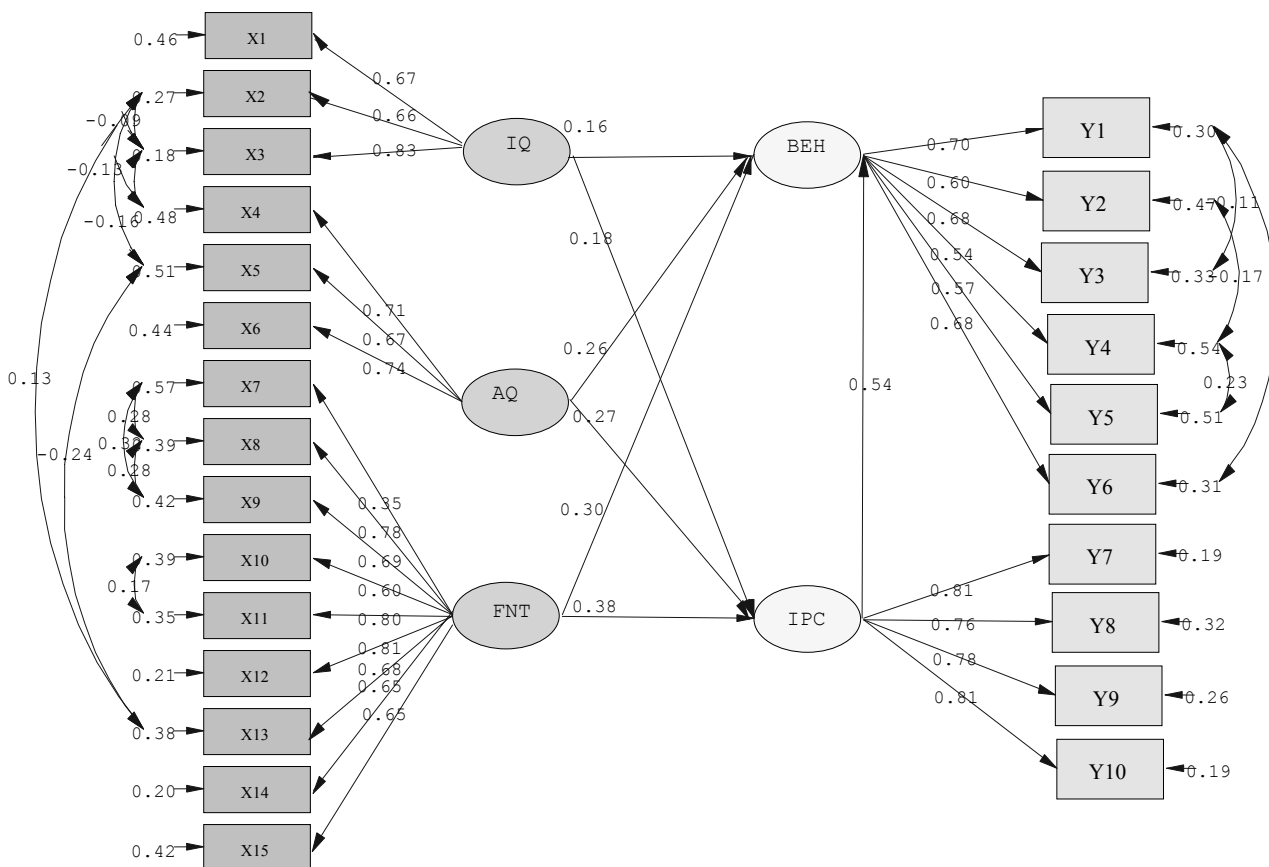


Figure 1 Model of Direct and Indirect Effect of IQ, AQ and FNT Affecting via IPC to BEH

Table 1 Direct and Indirect Effect of IQ, AQ and FNT Affecting BEH through IPC

Causal variable	Result variables					
	IPC			BEH		
	TE	IE	DE	TE	IE	DE
IQ	0.18* (0.055)	-	0.18* (0.055)	0.26* (0.037)	0.10* (0.032)	0.16* (0.044)
AQ	0.27* (0.042)	-	0.27* (0.042)	0.41** (0.045)	0.15** (0.030)	0.26* (0.034)
FNT	0.38** (0.065)	-	0.38** (0.065)	0.51** (0.065)	0.21** (0.033)	0.30** (0.054)
IPC	-	-	-	0.54** (0.042)	-	0.54** (0.042)

 $\chi^2 = 253.76$; df = 156

CN = 239.23

 $\chi^2/df = 1.627$

GFI = 0.94; AGFI = 0.91

RMSEA = 0.007

RMR = 0.0049

TE: Total Effect, IE: Indirect Effect, DE: Direct Effect

Discussion

The findings indicated that Intelligence Quotient (IQ), Adversity Quotient (AQ), and Four Noble Truths (FNT) had direct effect to Environmental Behaviors (BEH) at a statistically significant level of 0.01 with effect of 0.16, 0.26 and 0.30.

Considering, the observed variable of Talent Expression (X2) was the highest correlation for Intelligence Quotient (IQ) with 0.60, Family Challenge (X5) was the highest correlation for Adversity Quotient (AQ) with 0.76 and Middle Path 5: Right Livelihood (X12) was the highest correlation for Four Noble Truths (FNT) with 0.86.

Regarding Intelligence Quotient (IQ) contained Conceptual Creation (X1), Talent Expression (X2) and Relationship Perception (X3) were able to predict Intelligence Quotient (IQ) with effect of 0.27, 0.60 and 0.34 and had direct affecting Inspiration of Public Consciousness for Environmental Conservation (IPC) and Environmental Behaviors (BEH) with highly with statistically significant at level of 0.01 with effect of 0.18 and 0.16.

However, Adversity Quotient (AQ) comprised of Personal Challenge (X4), Family Challenge (X5), and Social Challenge (X6) were able to predict Adversity

Quotient (AQ) with effect of 0.44, 0.76 and 0.65 and had direct affecting Inspiration of Public Consciousness for Environmental Conservation (IPC) and Environmental Behaviors (BEH) at a statistically significant level of 0.01 with effect of 0.27 and 0.26. Moreover, Inspiration of Consciousness for Environmental Conservation (IPC) also had direct influencing to Environmental Behaviors (BEH) with highly statistically significant at level of 0.01 with effect of 0.54. Simultaneously, when considering prediction of correlation of observed variables of Impressive Environment (Y9), Impressive Event (Y8), Media Receiving (Y10), and Person as Role Model (Y7) rather high level with 0.92, 0.76, 0.76, and 0.70 respectively.

Concurrently, the result also indicated that Four Noble Truths (FNT) composed of the Holistic View FNT (X7), Middle Path 1: Right View (X8), Middle Path 2: Right Thought (X9), Middle Path 3: Right Speech (X10), Middle Path 4: Right Behavior (X11), Middle Path 5: Right Livelihood (X12), Middle Path 6: Right Effort (X13), Middle Path 7: Right Mindfulness (X14) and Middle Path 8: Right Meditation (X15) had direct affecting Inspiration of Public Consciousness (IPC) and Environmental Behaviors (BEH) with highly with statistically significant at level of 0.01 with effect of 0.38 and 0.30 respectively.

It might be concluded that the Adversity Quotient (AQ) and Four Noble Truths (FNT) composed are the significant exogenous latent variable that affect Environmental Behaviors (BEH) via Inspiration of Public Consciousness for Environmental Conservation (IPC) and Inspiration of Public Consciousness for Environmental Conservation (IPC) is the most essential variable to cause the Environmental Behaviors (BEH). Therefore whatever environmental behavior happens, it needs to inspire the people to realize their responsibilities to have pro-environmental behavior with their perception for person as role model, impressive event, impressive environment and various media receiving. These were congruent to Thiengkamol concept her different studies of Thiengkamol and her colleagues^{7,8,16,9,1,19} that the results illustrated that Intelligence Quotient (IQ), Adversity Quotient (AQ), and Four Noble truths (FTN) affecting via inspiration of public mind or public consciousness to perform better environmental behaviors whether consumption behavior, energy conservation, recycling behavior, waste management, traveling behavior and knowledge transferring and supporting for environmental conservation when they had real practice through environmental conservation with inspiration of public mind or public consciousness.

Particularly, Four Noble Truths Principle is the fundamental belief of Thai people as the national religion for more than thousand years. Furthermore its concept is relevant to the concept of sustainable development based on the reason of living with sufficiency way. Even though in recent decades, the Ministry of Education has withdrawn it from the curriculum of all levels of education, as such, the Four Noble Truths have faded from the young generations. It is urgent that the Ministry of Education should introduce the Four Noble Truths into curriculum again since the middle path concept or the eight folds in this principle is practical for everyone in the world to perform their daily life activities with concepts of pro-environmental behavior.

Conclusion

However, it might be concluded whether IQ, AQ, and FNT, and IPC latent variables are play important roles

to cause environmental behaviors of consumption behavior, energy conservation, recycling behavior, waste management, traveling behavior and knowledge transferring and supporting for environmental conservation through PM. Therefore, the model of IQ, AQ, and FNT affecting via IPC to BEH was verified the proposed model was fitted with all observed variables according to criteria of Chi-Square value differs from zero with no statistical significance at .001 level or Chi-Square/df value with lesser or equal to 5, RMSEA (Root Mean Square Error Approximation) value with lesser than 0.05 including index level of model congruent value, GFI (Goodness of Fit Index) and index level of model congruent value, AGFI (Adjust Goodness of Fit Index) between 0.90-1.00.

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