



## The IM Decision Making and Problem-Solving Model: A Unisex Context

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### Abstract

This paper The search paper aimed at introducing new development in decision-making and problem-solving models which will enable the decision-makers to have more options on the way of handling any give scenarios that might occur in the process of daily life or organizational activities, this will improve fast decision by individual or organization. Decision making is an acceptable part of human daily life. People have to make different important decisions nearly every day, hence the reason that often-making decisions can be a difficult action to take. However, a significant number of observational studies have shown that most individuals are much worse in decision-making in organizations. Thus, people started paying more attention to learning how to make an acceptable decision through the related hypotheses and models that fit their scenarios. Along with the line hundred (100) sample of the design developed model with a Likert-Scale from 1-5 was attached and sent to some prominent leaders who virtually make a decision and solved problems almost every day, for their assessment's/analysis in order to collect data to determine both input and output of the developed model which some accepted as it was designed while some make changes and other make a recommendation for future research work. The decision-making tools are needed at the critical time of Covid.

**Keywords:** Decision Making, Rational Decision Making, and Problem Solving



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### INTRODUCTION

Human beings are born to make decisions and problems can be solved virtually every day in their lifetime, as the weather is personal, other, or organizational. Decision-making and problem-solving have been part of our day-to-day activities, leading us to reach a sating objective we aim to achieve (Taylor, 2013). It was found that the output's on decision-support programs, often marketed as a decision support system and problem-solving, are not used in the way that was meant to help decision making too. It may suggest an inconsistency between the presumed or modeled decision-making process and the manner in which the decision-making is taken place in reality.

The development of methods and tools that enable the business owner to have a fast and reliable decision-making theory. Nonetheless, in other to test theories regarding decision making and the use of decision-making models, the literature on decision making was reviewed and compared with how in practice a variety of individuals and managers make decisions (Proctor, 2018). The decision-making and problem-solving IM MODEL UNISEX model describes the main elements that could be relevant to any decision-making and problem-solving strategies. Nevertheless, in the tough time of the first twenty century, the model was considerate as more decisions had to emerge. Cole (Martin, Donohoe, & Holdford, 2016) that decision making is a process of finding a

solution to some particular problems or option to be made, weighing alternatives, and selecting one of the better alternatives.

Throughout the process, people make the finest choice amongst multiple options based on the current state they may find themselves in. (Chen, Li, Liang, & Tsai, 2018) further measured that decision-making is the process of creating a solution to a known question or option. The decision-making and problem-solving tasks include three specific activities, which are knowledge operation, design activity, and options activity. Thus, decisions are taken based on these three core activities, and not all decisions are similar to 'www.bized.ac.uk'. Many are straightforward while others require a more nuanced collection of factors (Polka, Litchka, Mete, & Ayaga, 2016). Consequently, people usually need the education to understand the methods of decision making and problem-solving. A good decision-maker and problem solver can be a key skill for a career to overall achievement and effective direction.

The paper will begin with the implementation of various theoretical decision-making and problem-solving models. The results for the evaluation with few prominent decision-makers in some organizations and universities on the subject of decision making are then discussed concerning the newly developed model. A distinction is made between the

theoretical models and the degree to which they represent the current processes and the decision-makers' thought about the decision-making process as such, and how other decision-makers can affect the new theoretical model (Eide, Jenison, Mickelson, & Northrup, 2018).

### Problems

Decision-making and problem-solving have become a critical issue nowadays, where so many factors of lack of taking the correct decision by individuals are business owners in bettering the life or organizational structure that will help in improving the standard. Organizations are falling individuals who are losing control over a common thing that has the solution if a good decision was taken at the right time. The Key Problem lack of knowledge on the appropriate decision-making tools.

### Research question

1. Are decision making tools hard to understand?
2. Will the decision-making and problem-solving tools help in proper decision makings?

### REVIEW OF EXISTING DECISION MAKING AND PROBLEM-SOLVING MODELS

The literature presents various interpretations of decision-making frameworks and hypotheses. The following list of views, theories, and models to endorse is focused on (Ahn & Kim, 2018; Basu & Echenique, 2018; George & Dane, 2016) offering categorization. The list of Das and Teng is a meta-classification in and of itself. The last two things listed in the list below are also fairly recent, specifically naturalistic decision making and the multiple perspective approach.

#### Rational model's

The manager's view assumes decision-making is rational and fully informed, as described around the middle of the preceding century by neoclassical microeconomic theory. The sound decision-making process includes many stages, for example, those (Zhang, Essaid, Zanni-Merk, Cavallucci, & Ghabri, 2018) has certain:

- Astuteness: - Finding occasions for making a decision.
- Design: - Devising, developing, and analyzing the possible courses of action.
- Optimal: - Selecting a particular course of action from those available; and
- Examination: - Evaluating past choices.

Decision analysis methods are used in classical or total rationality during the "option" process to apply numerical or utility values to each of the alternatives. The alternative with the highest utility (or maximum subjective expected utility) is selected, and using the conceptual model in this way it is assumed that managers (knowing all possible alternatives know the consequences of implementing each alternative have a well-organized collection of expectations for these consequences and have the analytical capacity to compare and detect consequences.

#### Organizational procedure's and view

The viewpoint of organizational procedures tries to recognize decisions as to the implementation of standard operating procedures used by organizational sub-units. This theory was added by (Chia, 2017) calls this view the "application model," suggesting that the actions are pre-programmed in current processes as well as the people involver's routinized thinking. (Das & Teng, 1999) refer to it as the "mode of avoidance"

which views decision-making as a systematic process aimed at maintaining the status quo at the expense of innovation. (Krabuanrat & Phelps, 1998) on the other hand, interpret this view in a constructive light, namely as the use of codified organizational experience.

#### Realistic decision making

Realistic decision-making is about studying and understanding the real context of the decisions. The empirical basis of naturalistic decision-making differs from other descriptive models, such as organizational systems, garbage, or political ideologies. A recent contribution to the field of naturalistic decision-making is that of the Recognition-Primed Decision (RPD) model by (Klein & Wright, 2016). Over "600" decision's taken by people in life-or-death circumstances, such as firemen, nurses, and soldiers, Klein witnessed and/or evaluated. The decision-makers' ability to perceive a situation as similar to that of a prior encounter is central to the "RPD" model. The correct expectations associated with such a situation are part of what is known, as are essential indicators of what to assume. Decision-makers have approved a course of action which could be successful. A theoretical simulation decides the course of action, in which the decision-maker visualizes how the operation is being carried out. The script is revised before the decision-maker is at ease with the method it is then implemented. All of this will happen in a matter of seconds (Ahn & Kim, 2018). When a case is not known as normal, it will take more time to identify the situation and more information must be collected. One of the main factors that contribute to successful decisions, Klein notes, is practice. The RPD model promotes the idea that experience can improve the capacity of the individual to recognize a given situation.

#### The multiple perspectives approach

Mitroff & Storesund, (2020) in an effort to "sweep in" all possible viewpoints on a problem, proposed the multiple perspective approach to decision making and problem-solving are based on the idea of unbounded machine thought by (Callaos) which implies that every problem is an integral part of some other problem. The different viewpoints identify outlooks in nature as being either scientific, organizational, or individual. Analytical models that collect data will all fall as a basis for understanding the system under the technical perspective. Different analysts or project modeling will come up with different technical perspectives, even though these projects claim to present an objective or rational picture of the situation. Hence gaining more than one theoretical view of a device is desired. To protect the organizational and individual viewpoints the position players and stakeholders will be studied as much as possible. Data collection is also intended to take the "sweeping in" approach, and data must be collected in multiple modes and from as many sources as possible, particularly from the organizational and technical perspective. Besides the scientific, organizations and individual views (Mitroff & Storesund, 2020) suggest that ethical and aesthetic viewpoints should be taken into account as well. However, the decision may not be ethical if a decision makes sense from a technical point of view, even whether it is accepted by a wide group of organizations. Looking at the above examples, it is well understood that all examples/theories have their own individuality, and, on the other hand, both aim to accomplish an objective that places individuals or organizations in the best way to make better decisions or solve problems (Weinzimmer & Esken, 2017).

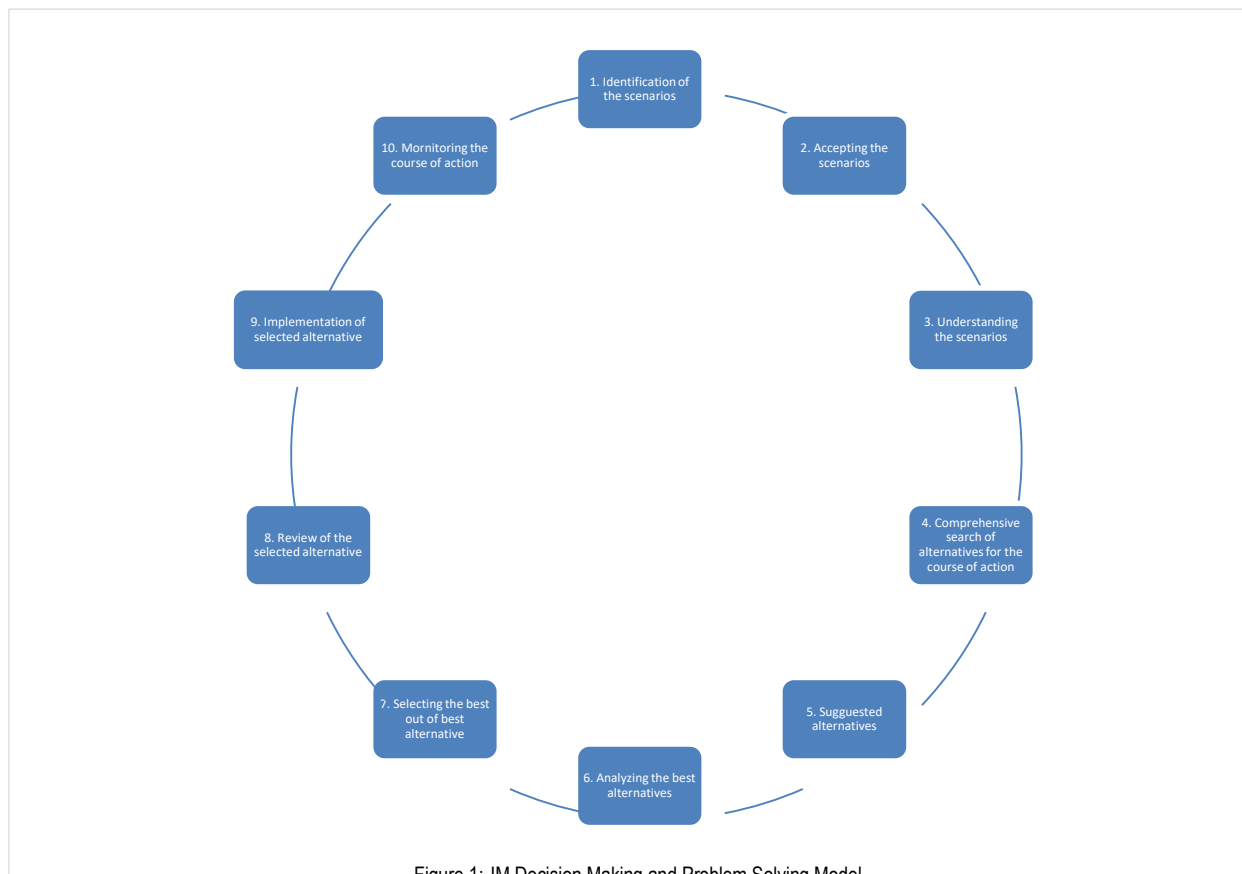


Figure 1: IM Decision Making and Problem Solving Model

### THE IM DECISION MAKING AND PROBLEM-SOLVING MODEL

The developed model of "IM" aimed at increasing the approach and understanding of individual or organizational decision-making and problem-solving which is based upon the use of the best model or theory. Satpathy, (2018) It starts with trying to ask the right questions, continues with the discovery of creative answers, and finishes by making sure the solution chosen is valuable and useful. According to Buchanan, D.A 2019 "Rationalism is equated with scientific reasoning, empiricism and positivism and the use of evidence, logical argument and reasoning criteria for decision-making." And rational decisions are decisions based on reasonableness. The model's advantage is to indicate a multi-stage, rational approach that can be used and applied to both personal and organizational decisions.

#### The framework of IM decision making and problem-solving model

The model has ten-step or procedure to undergo depending on the scenarios that one wants to apply the model for. However, each step has its potentiality to play, which all the stages from 1-10 steps need to be followed and also require a full understanding of each step for proper decision making or problem-solving. The following elements are the keys that were used to develop the theoretical model of "IM" decision making and problem-solving techniques (Woods & Osborne, 2016).

1. Identification of the scenarios.
2. Accepting the scenarios.
3. Understanding the scenarios.

4. A comprehensive search of an alternative for the course of action.

5. Suggested alternatives.

6. Analyzing the best alternatives.

7. Selecting the best alternative.

8. Reviewing selected alternatives.

9. Implementation of the selected alternative.

10. Monitoring the course of action

The above steps model was analyzed by some prominent decision-makers at the organizational level which includes CEOs, directors, Stakeholders, and some tertiary institution leaders such as the vice-chancellors, deans, professors, and Dr's who are handling some key aspect in the institution.

#### The Captured Design and flow ranges of the model

Following the analysis of the research through developing the theory/model, the following design was captured for the proper use of the model context form. However, the theory/model expands more additional steps for decision-makers compare to the other theories/models in order to be able to overcome decisional and problem Cromer, below is the design model structures.

#### Identification of the scenarios

The above step is the beginning of understanding that there is a scenario exiting in the complex area where the decisions need to be made and believing that the scenarios exit and needed to be handle weather is urgency or in a given time frame where applicable, be it personal or organizational levels, in some cases, the scenarios can be seen and identified before it happens.

### **Accepting the scenarios**

The accepting stage of the model is to make both individuals and leaders who are decision-makers understand that in any given scenario someone has to be accountable for the situation, so as to understand what direction to follow by fully accepting resolving the situation. However, fully accepting the scenario at it is that can ease the workload and a better chance of understanding.

### **Understanding the scenarios**

To fully solved given scenarios, one has to understand what kind of scenario is he/she dealing with from what angle should it begin and for this stage to be fully understood a question, survey, and information's need to ask and gathered for proper assessment in getting fast and easy direction to follow.

### **A comprehensive search of an alternative for the course of action**

This stage is one of the most critical stages to undergo, as the stage gives room to deployed additional ways of finding a solution and for any decision making and problem-solving to take place this stage must be included, if a given scenario is solved perfectly is within this stage which demands highly intelligence, brainstorming and mind game.

### **Suggested alternative**

This level can also be called or refer as "Divergent" where ideas are flow from different angles/direction, in this stage consultancy service can be deployed to play a very important row by providing additional suggestions/alternative to the solution or if the scenario is personal one can be able to take his/her time to figure out what could be the best in providing answers to the scenario. However, in an organizational setting, all concerned managers/directors and stakeholders need to be aware of the input.

### **Analyzing the best alternatives**

In this stage all possible solutions that were gathered and listed for the proposed of making the decision or solving the problems are carefully evaluated and each of the alternatives will be applied to the scenario and analyze the best alternatives that the managers or individual think will work perfectly, by this analysis two, three or more alternatives will be the pick, as showed in many cases we may tend to find more alternatives that suit our need; Furthermore, the stage also contrasting at the alternatives strengths and weakness.

### **Selecting the best alternative out of the best**

The stage is more of "Convergent thinking" which refers to figuring out a certain established solution to a given scenario, it is also often employed in a structured assessment such as multiple-choice alternatives, that are more than one, which can be two or three that was carefully analyzed. More so the quality of the choosing alternative has to be at list 97 and above percent, the percentage can be examining through pre-applying of the alternative to the given scenario. However, leaders/individuals can predict the outcome of the given alternative that was selected.

### **Reviewing selected alternative**

This stage has minimum workload as much has been done already in preview stages, meanwhile, all stage has its role to play in making sure that proper decision making and problem-solving has taken place and it won to the highest satisfaction. Reviewing the selected alternative stage gives room for cross-

checking with an extra carefree attitude toward the scenario which is more flexible, and less time consumed than the other.

### **Implementation of selected alternative**

The implementation stage is the finish line where the decision is allowed to take place in the given scenario that the alternative was created for, however, the given alternative most have its framework for how it should be implemented.

### **Morning the course of action**

This stage is the final and one of the challenging part as all activities of what has been undergoing from stage 1-9 are all monitored here for successes that will be much delighted and when it fails that is the saddest part for which the stages has to be repeated.

## **METHOD OF DATA COLLECTION AND SAMPLING SIZE**

The method of data collection used in this research was a questionnaire with was developed and administered by the authors using the decision making and problem-solving previous researchers and the theory of decision-making method, the first before the developing of the questionnaire many discussion has been taken by the authors and some business owners on what do they think about the concept decision making, other to know what knowledge they have in the research topic. Were many of the managers responded well base on their terminology.

### **Sampling and population size**

The population size is a hundred (100) both from business owners and institutions which is an academic environment as leaders of decision-makers. Base on the prediscussion with some managers and vice-chancellor on the understanding of decision making and problem-solving twenty (20) questionnaires were to distribute to 20 respondents which are the managers of they owned businesses and those managers holding the business on appointments, about five (5) of the sampling were vice-chancellors from different Universities as a plot testing, this able the researchers to understand it, sweet ability.

$$n = \frac{X^2 * N * P * (1-P)}{(ME^2 * (N-1)) + (X^2 * P * (1-P))}$$

Where:

n = sample size

X<sup>2</sup> = Chi -square for the specified confidence level at 1 degree of freedom

N = Population Size

P = population proportion (.50 in this table)

ME = desired Margin of Error (expressed as a proportion)

Figure 2. Sampling Size Formula (Park & Hwang, 2019)

The formula helps in determining the sample size to distribute in other to further with the administered questionnaires, all the twenty questionnaires send for sampling were returned. The research targeted business owners and high education leaders.

## **RESULT AND FINDING**

### **Assessment and analysis by the various organizational leaders**

In order to fully understand the work structure of the developed model one hundred (100) copies of the design model with Likert-scale style from 1-5 was distributed for assessment to various organizations and some tertiary institutions for the validation of the work and open for more discussion,



suggestion and recommendations, eighty-five (85) of the sample design of the model sent where return back while fifteen (15) was missing not returned.

Table 1: Profile of respondents

Profile		Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Male	52	61.2	61.2	61.2
	Female	33	38.8	38.8	38.8
	<b>Total</b>	<b>85</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Organizations	C.E.O's	15	17.7	17.7	17.7
	Stakeholders	7	8.2	8.2	8.2
	G. Managers	17	20	20	20
	Vice chancellors	9	10.6	10.6	10.6
Institutions	Deans	11	12.9	12.9	12.9
	Directors	13	15.3	15.3	15.3
	H.O.D's	13	15.3	15.3	15.3
	<b>Total</b>	<b>85</b>	<b>100</b>	<b>100.0</b>	<b>100.0</b>

The above table 1 explain the statistic of the questionnaires return from distribution, for the analysis. The male respondent is the highest with 61%.2 in total while the female respondent takes 38.8%. in the decision-making process the institution leads with the response instead of an organization, this came as the result of a high commitment by the C.E.O and Stakeholder. However, that did not show a good sign to the organizational part as much of the decision making and problem-solving involved highly in the business environment.

### Normal probability plot

This form the one way to test if the date fits the normal distribution, this graph which indicates a bell curve if the data is not normal or a straight line shows the normal probability plot indication below figure shows the normality probability testing in this paper.

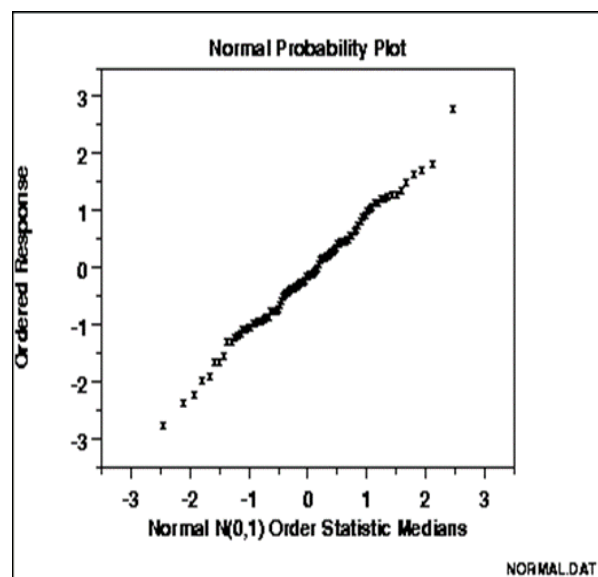


Figure 3. Normality of probability plot showing positive out nearly straight line

The point on the normal probability plot of a hundred normal random numbers forms a nearly linear pattern, which indicates that the normal distribution is a good model for this data set.

Table 2: The measurement of the variables

IM DM&PS	Understanding		Mean		Std. Deviation
	Coefficients				
	Statistic	Statistic	Statistic	Std. Error	Statistic
Model structure	-0.145	0.215	1.4944	0.03030	0.79681

Understandable	-0.161	-0.117	1.3880	0.01093	0.80780
Usability	-0.289	0.103	1.4952	0.03423	0.86432
Friendly	-0.261	-0.020	1.4112	0.04980	0.78737
Achievable	-0.137	-0.148	1.3616	0.05335	0.84348
Acquire	-0.204	-0.390	1.4480	0.04719	0.91270

This first instance data was analyzed to discover means, standard deviation, skewness, and kurtosis to measure the degree of the developed model base on the assessment displayed by the organizations (Hooshyar et al., 2016).

Normality is an important assumption and test in multivariate analysis, which does not differ too much from a normal distribution (ÖZDEMİR & OMAROV, 2017). It argued that too much deviation from normal distribution may have negative effects on the analysis of the results. There are two main areas where skewness is being checked in normality (normally indicates that the form is a balance like a bell-shaped). The second region is kurtosis, the curve being peaked or flat (ÖZDEMİR & OMAROV, 2017). The skewness of this set of data sites from -0.261 to -0.117 indicates that this range falls from -1 and +1 suggesting that the skewness of this collection of data is within a reasonable range. Also, because the kurtosis value falls on an appropriate scale, this implies that the collection of data is standard.

Table 3: Relations of Model with the decision-maker Analysis

Factor	Correlation Value, R	Significant Level, P
Model Structure	0.915**	0.000
Understandable	0.719**	0.000
Usability	0.634**	0.000
Friendly	0.749**	0.000
Achievable	0.830**	0.000

\*\*Correlation is significant at the 0.01 level (2-tailed)

Referring to the above table 4.3, the result shows that the model's ten stages are a strong relationship with the value of coefficient correlation, where  $r=0.830, 0.767, 0.634, 915$ , and  $0.719$  respectively. It is also found that model coefficient correlation values are correlated with the important decision-making phase (where  $P<0.05$ ).

As all ten stages in the model scored an average score of more than 0.7 which indicates the theory/model has a substantial and constructive role in an organization's decision-making and problem-solving.

Table 4: Regression analysis for predicting the level of DM understanding

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-0.109	0.149		-0.730	0.466
MS	0.103	0.066	0.090	1.563	0.119
UD	0.070	0.072	0.062	0.981	0.328
US	0.166	0.069	0.157	2.399	0.017
FD	0.479	0.079	0.413	6.039	0.000
AV	0.221	0.066	0.204	3.338	0.001

a. Dependent Variable: DM

The Table 4 summary in predicting the decision making and problem-solving model satisfaction level with the five variables design for a proper understanding of the model which shows R is 0.85, R square is 0.722, and adjusted R square is 0.716,

meaning that 71.6% of the variance in student satisfaction level can be predicted by independent variables of DM (model structure, understanding, usability, friendly and achievable).

The result of regression analysis shows that out of the five indicators of DM in influencing the leadership decision satisfactions, only three are significant as shown in Table 4. The three significant factors are usability with P-value =0.017 ( $P < 0.05$ ), friendly with a P value=0.000 ( $P < 0.05$ ), and achievable with P value=0.001 ( $P < 0.05$ ).

Therefore, the model can be written as:

Decision making level = 0.157 (US) + 0.413 (FD) + 0.204 (AV) -0.109.

This model suggests that when the most significant three factors in DM are not displayed, decision making and problem-solving satisfaction are negative (dissatisfaction exists), and displaying any of the three behaviors in the empirical model can increase the level of satisfaction when other things remain constant. The model above suggested that the changes in perceived practices of intellectual stimulation can have the biggest influence on the level of decision making satisfaction as its Beta coefficient is the most significant and highest and the factors were generated to better understand the model properly, applying the ten elements in the IM model will not fully give the proper idea of the logic behind the design.

### Results from the hypothesis

H<sub>1</sub>- Decision making and problem-solving theories contribute to the decision making and development processes in the organizational structure.

H<sub>0</sub>- Decision-making and problem-solving theories do not contribute to organizational development.

The above factors in both table 2 and 3 show how significant are the decision making and problem-solving has an impact on the decision taken by leaders in both business owners' managers and also the academic environment which are the University system and other educational institutions. However, this shows how important is to contribute toward the development of decision-making in today's business and educational leadership which indicates the H<sub>1</sub>, is accepted with high capacity.

### CONCLUSION

This study aimed to provide some insight into the decision-making style of individuals and decision-makers as well as that of organizations to the decision-support process. But only when such decision-making is known can one claim to be sincerely supportive. This also implies an emphasis on the logical elements of decision-making. Gathering all the information is impossible because of many external and internal variables around the organizations (Thomann, Trein, & Maggetti, 2019). The evolved theory/model still has limitations regarding people's knowledge. The emotional sections of people's brains also have a significant impact on actions and decisions in decision making (<http://cogsci.uwaterloo.ca>). Thus, making a realistic decision is not only about collecting as much knowledge as it is impractical to guess many of the considered implications. Most people are considered not to be aware that the techniques they used within their consciousness are restricted. The IM model has no implication when applying as it was repeated

method around and each stage will be analyzed be for applying to use.

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### DECLARATION

The authors declare that this manuscript has not been submitted elsewhere and to any journal for publication.

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