PSYCHOMETRIC PROPERTIES OF MORAL INTELLIGENCE AND PROACTIVE DECISION-MAKING INSTRUMENT

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PSYCHOMETRIC PROPERTIES OF MORAL INTELLIGENCE AND PROACTIVE DECISION-MAKING INSTRUMENT

by

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LIST OF ABBREVIATIONS

CTT	Classical Test Theory
CCC	Category Characteristic Curves
DIF	Differential Item Function
IRT	Item Response Theory
RSM	Rating Scale Model
SD	Standard Deviation
SE	Standard Error
PCA	Principal Component Analysis
PCM	Partial Credit Model
PDM	Proactive Decision-Making
MCI	Moral Competency Inventory
MI	Moral Intelligence
z	Standardized Fit Index
1P	Rasch Model, A One-Parameter

CIRI-CIRI PSIKOMETRIK KECERDASAN MORAL DAN INSTRUMEN PEMBUATAN KEPUTUSAN PROAKTIF

ABSTRAK

Ciri-ciri psikometrik yang baik untuk instrumen kecerdasan moral dan pembuatan keputusan proaktif adalah penting dalam mewujudkan ketepatan dan ketelitian dalam membuat kesimpulan yang tepat tentang pelajar universiti. Kajian ini bertujuan mengkaji ciri-ciri psikometrik instrumen kecerdasan moral dan pembuatan keputusan proaktif dari aspek kesahan. Kajian ini bersifat kuantitatif dan menggunakan reka bentuk penyelidikan tinjauan. Sampel terdiri daripada sembilan ratus sepuluh (910) orang pelajar. Analisis mencadangkan bahawa skala kecerdasan moral dan pembuatan keputusan proaktif (boleh dipercayai) sah dan secara keseluruhannya mengikut prinsip-prinsip Rasch. Hal ini memberikan sokongan empirikal yang kuat terhadap andaian utama kajian ini iaitu skala kecerdasan moral dan skala pembuatan keputusan proaktif adalah konstruk unidimensi, yang terdiri daripada kontinum berhierarki, dari tahap rendah hingga tahap tinggi. Kajian mendapati bahawa terdapat hubung kait secara langsung yang signifikan antara Kecerdasan Moral dengan proses membuat Keputusan secara Proaktif. Para penyelidik boleh menggunakan kecerdasan moral dan pembuatan keputusan proaktif untuk meneroka dan mengukur peranan kecerdasan moral dan pembuatan keputusan proaktif dalam kehidupan pelajar universiti, serta menilai keberkesanan pendidikan etika. Kajian ini menunjukkan terdapat beberapa batasan yang berkait dengan pemboleh ubah, sampel, instrumen dan teknik analisis.

PSYCHOMETRIC PROPERTIES OF MORAL INTELLIGENCE AND PROACTIVE DECISION-MAKING INSTRUMENT

ABSTRACT

Good Psychometric properties of moral intelligence and proactive decision-making are crucial in infusing accuracy and precision in drawing accurate conclusions about university students. This study aims at examining the psychometric properties of the validity of moral intelligence and proactive decision-making and the relationship. The research is quantitative, and it employs a survey research design. The sample consists of nine hundred and ten (910) university students in Iraq. Analyses suggest that the moral intelligence and proactive decision-making scales are reliable, valid and psychometrically sound according to Rasch principles. This lends strong empirical support to a major assumption of this study; that moral intelligence scale and proactive decision-making scales are one-dimensional constructs, consisting of a hierarchical continuum, ranging from low to high levels. A significant direct correlation was found between Moral Intelligence and Proactive Decision - Making. Researches can use moral intelligence and proactive decision-making to explore and quantify the roles played by them (moral intelligence and proactive decision-making) in the lives of university students and to assess the effectiveness of ethics education. The present study has reported some limitations that are related to variables, samples, instruments and analysis techniques.

CHAPTER 1

INTRODUCTION

1.1 Introduction

Moral Intelligence (MI) and proactive decision-making (PDM) are variables used across several disciplines and commonly applied in carrying out researches in psychology and education literature. Moral Intelligence (MI) measures the ability to understand right from wrong (Borba, 2001). The base of Moral Intelligence was on the possession of seven moral virtues that guide behaviour, empathy, tolerance, conscience, respect, kindness, self-control and fairness. It explains how human beings can understand right from wrong (Borba, 2001), while proactive decision-making (PDM) measures the ability to think and seek for alternatives, being able to look and search for guidance and information and make decisions without reacting to external stimuli. Individuals are prone to the reaction when they are under pressure or stressed, and their decision-making is not objective (Siebert, & Kunz, 2016). In examining MI and PDM in Iraq, the broader psychometric context, which plays significant roles in directing their development, should be considered. Psychometric research advanced into practice from the development of socio-political ideology. Socio-political ideology in the past legitimised the study of cultural segregation by employing MI and PDM measures that were cross-culturally biased, non-equivalent, and non-standard. This discriminatory use of MI and PDM produced assessment measures that were invalid and unreliable. This further means that MI and PDM measures which do not have appropriate support through a body of evidence to show their validity and unbiasedness, are not viable in reaching conclusions between people from varying backgrounds, no matter their culture, gender or other aspects.

More recently, the focus of this research discipline (psychometry) is basically to investigate the biasedness of test developments by studying varying levels of assessment results over several cultures or ethnicities. Considerable progress has already shown the applicability of several measures of assessment, including the scale of Moral Intelligence (Borba, 2001) and the scale of proactive decision-making (Siebert & Kunz, 2016). Irrespective of the above perspective, there still exist loopholes in studies which involve psychometric properties of MI and PDM tests.

The study was driven firstly by the situation regarding the first to ascertain the psychometric properties of the two instruments and the second to ascertain the relationship between the two variables (namely MI and PDM), according to the chosen model, the Rasch model. The applicability of this model is significant because it is an appropriate measurement for constructing objective scales in education and psychology. The Rasch model is also of more statistical and conceptual relevance than the CTT. Findings rendered through such research will indicate the degree to which this measure can assess the analytical tools (MI and PDM) in an invariant way across different peoples and gender groups.

1.2 Background of the Study

This research became necessary to tackle the justification and reasons encountered during the education of good morals and rational decision making in Iraq. First, the Ministry of education is given the task to develop a university education. This interest is reflected nationally as well as in regional activities related to university education. Secondly, the task to develop moral intelligence and proactive decision-making abilities among university students (Ministry of Education, 2015).

The primary objective of the Iraqi education reformation is to produce practical citizens with good morals. Changes in the social structures, economy, political and cultural arenas are affecting the moral standards, habits, and values among young adults. Undergraduate studies are a vital stage in every person's intellectual development that highlights personality and situations that require each of them to confront in the progress of their education. They also need to adhere to an ethical and societally acceptable approach among their lecturers, professors, and the overall university community (AlShammari, 2007; Ibrahim, & Almehsin, 2016; Siebert, & Kunz, 2016).

The prediction that students today would-be leaders of the future is particularly relevant in the case of university students. An essential factor in realising this belief is the influence of student's ethical values on the different choices they make and the measures they take in making them. According to Evans, Forney et al. (2009), humans adapt quickly and adjust their modes of living according to information they have on how their common attitudes and behavioural patterns can become helpful for the overall benefit of the society.

After the taking over of Iraq in the year 2003, the provisional coalition Authority was saddle with the task of reforming Iraq's education system. An immediate need was to remove the Baathist ideology and teachings and introduce new curricula. Teacher salaries were adjusted to recognise their role and importance as well as the introduction of more training programmes. Moreover, psychological guidance centres were open for the development of university students. These programmes formed the cornerstone of Iraqi society to help students behave ethically and make ethical decisions and have faith to partake in right decision-making processes.

Afterwards, postwar situations in Iraq may influence university student's moral development and rational decision-making processes. Studies have recognised the importance of moral Intelligence (MI) and proactive decision-making (PDM) leading to renewed assessments and treatment of problems in those areas (Borba, 2001; Siebert & Kunz, 2016). There are many principle domains within MI and PDM. Some researchers have measured different domains using MI and PDM, while others measured a specific subset of principles.

Borba (2001) gain a new understanding of moral Intelligence and a Step-by-Step Program for its achievement from moral intelligence, makes available variety of ways to comprehend the seven essential values which make up moral intelligence, while in another book, Dispensable Moral Intelligence for Parents, she comes forth with a recent finding in categorising and impacting attitudes, values and morals using MI as a measurement capacity.

From the results of these measurements, parents and teachers' ratings by Borba in Scale by Borba (2001) consists of seven dimensions which comprise moral intelligence as one of them. Items seventy and good validity applied the scale among children in the USA. Measurements from parent and teacher ratings are not adequate measurement tools because they are not objective and do not capture changes in behaviour over time and they cross over into different areas and contexts (Alnasser, 2009).

Siebert and Kunz (2016) also proposed their research in the area of proactive decision-making (PDM) mainly intending to build people. They are an area of psychology which aims for improving the quality of life. According to the PDM scale, as adopted from Siebert and Kunz (2016) in Germany, it is based on the six dimensions and 'using decision radar' and two proactive personality traits exposing

the presence of initiative and the struggle for advancement. It consists of 28 items and these items cover every dimension.

The moral intelligence and proactive decision-making assessments were done mainly in questionnaires without the involvement of any psychometric principles and theoretical models and analysed the data according to specific programs.

Measures can either be prognostic or analytical. Prognostic measures are:

1. In the Rasch model, calibrations of items and person measures are on a universal scale.
2. The Rasch model provides a theoretical framework that creates a linear and equal interval measurement instead of ordinal measurement.
3. The Rasch model can "predict" the probability of correct answers (Bond & Fox, 2015).

Analytical measures, on the other hand, are:

1. To understand or explain contexts
2. To identify or classify sample subgroups
3. To allow individuals to explore the related factors and to detect different changes within or between subgroups.

These functions are not highly accurate when used within the classical theory of measurement (CTT), (Bond & Fox, 2015). What becomes important is the responsiveness to an intervention when an outcome measure is used to evaluate changes in individuals over time. Without a doubt, researchers in psychology and education have focused their interest in response theory, and they want to have an objective measurement tool of human abilities. Therefore, the Rasch measurement model is preferred because it can measure educational preparedness as well as psychological attributes in an objective construct. (Bond & Fox, 2015).

When relationships are investigated and analysed between variables and results are obtained from valid and reliable instruments, the results can be trusted. Therefore, Rasch measurement is an objective model that examines the psychometric properties of the current instruments before investigating the relationships between moral intelligence and proactive decision-making.

1.3 Statement of the Problem

Moral Intelligence (MI) and Proactive Decision-making (PDM) are essential concepts in education and psychology literature. They have received considerable attention from psychologists and educators. Measuring MI and PDM is not an easy task (Lennick, 2011; Siebert & Kunz, 2016). Studies related to PDM and MI must have adequate instruments to measure them. However, such instruments have not yet developed in the Iraqi context.

The postwar environment had several impacts on university students' way of thinking and their moral development. Thus, it assumed that their moral intelligence and decision-making abilities are at a negatively alarming stage due to the traumatic events they have witnessed, and other mood disorders could accompany this. The researchers noted the lack of students' commitment toward university regulations and instructions, as evidenced by frequent cases of cheating with little or no ethics shown by students in institutions of higher learning. Misbehaviour and unethical decisions could adversely influence decision-making and perpetuate conflict. An incorrect decision can influence the lives of students, educational process and morals, for example, suicide bombings, misbehaviour, making unethical decisions and cheating in examinations (Shammari, 2007; AlMozani & AlKhafaji 2013; Ibrahim, &

Almehsin, 2016). Therefore, to achieve detailed exploration by Iraqi students, their MI and PDM should be put into consideration and investigated.

In doing so, MI is considered a right chain scale to measure moral developments. In the Iraqi context, however, there are issues, related mostly to the validity and reliability of MI. First, most of these standards derived from the classical theory of measurement (CTT) that contributes to unrealistic results. Second, there is a reduction in validity and reliability. Third, the non-observance of differences in cultures by considering a global standard is not applicable in the Iraqi context. Fourth, it is considered a comprehensive measure of the measurement of moral intelligence, even without applicability to adults (Shammari, 2007). Fifth, some researchers found the original scale, which is only applicable to specific contexts and relied on Borba (2001) theory of moral intelligence to build a scale of moral intelligence in different contexts (Shammari, 2007).

PDM, on the other hand, is reported to be a good measure of the ability to perform rational, positive decision making. Some PDM results derived from classical theory, thereby contributing to unrealistic results (Siebert & Kunz, 2016). However, PDM has limited records or documentation of failure on it. It possesses fitness and reliability of use across cultures. Siebert and Kunz (2016), therefore suggested an investigation to determine the psychometric properties of PDM to identify different cultural perspectives.

Psychometric properties of MI and PDM are crucial in guiding researchers towards infusing accuracy and precision in their studies of PDM and MI reliability and validity using CTT as a model of analysis. As mentioned earlier, CTT has certain limitations. Further limitations of CTT are as follows; First, in CTT, the parameter estimates are dependent upon computing of individual samplings (DeVellis, 2006),

where correlations are on the sampling and coefficient alpha scales computed, and these include item difficulties and item discrimination properties. As such, the parameter estimates may vary depending upon the ability of the sample. For example, in calibrating item difficulty level, for low-ability students, it will give the result "high", and for high-ability students, it will have the result "low" (Thorndike & Thorndike, 1991).

The second problem is the summative scoring of raw scores (Tesio, 2003). Summative scoring is on a principle where items under study are within the same category with not so obvious ideas and beliefs (construct), and the measurement is on similar scale intervals (Streiner, Norman & Cairney, 2014). Many tests and survey instruments add up raw data to produce a scale score and treat each item on an instrument as though it contributes equally to the measurement of the construct regardless of its difficulty level (Apple & Neff, 2012). Consequently, such summative scores ordered by rank, and this is not an accurate linear representation and interval measurement which used in a more mathematical context (Khan et al., 2013; Tesio, 2003).

However, the Rasch model assumes that the performance of the examinees can be predicted, or interpreted in a psychological or educational test. The characteristic of this performance is called a trait. Directly, observing the attribute is difficult but can be achieved using a set of scales or tests (Bond & Fox, 2015). Theoretically, moral intelligence will contribute to rational thinking, which is described by the component of proactive decision-making (Siebert & Kunz, 2016). This research also attempts to scrutinise the relationship between MI and PDM Purpose of the Study.

1.4 Justification for the Study

Two different approaches used for the justification. Investigating the psychometric properties of the measuring tools for moral intelligence and proactive decision-making using the Rasch model is first. Second, to study the relationship between moral intelligence and proactive decision-making among university students in Iraq.

1.5 Objectives of the Study

The objectives of this study are as follows:

1. To study the psychometric properties of the items and instruments by investigating the item fit statistics, response categories, dimensionality, differential item functioning, reliability and separation indices of the moral intelligence scale and proactive decision-making scale.

2. To explore the relationship between moral intelligence and proactive decision-making among university students in Iraq.

1.6 Research Questions

In line with the above objectives, this research seeks to find answers to the research questions that follow, thus;

1. Determining good psychometric properties of moral intelligence and proactive decision-making in terms of:

    a. Response scale categories
    b. Appropriateness of item difficulties for respondents based on person and item map
    c. Reliability and separation indices
    d. Unidimensionality (PCA)
    e. Fitness to rasch model expectation
    f. DIF
2. Are there any vital statistics showing direct relationships between moral intelligence and proactive decision-making?

1.7 Rationale and Motivation of the Study

The following researchers (AlShammari, 2007; AlMozani & AlKhafaji 2013) recommend the further study of different factors related to moral Intelligence (MI) because of the importance of MI among university students in Iraq, which will influence their decision-making processes. However, the emphasis on basic education is not on MI and PDM. Most schools teach students how to identify, describe, analyse and solve problems; how to have peaceful interactions with people; awareness of their rights and duties; how to assume responsibilities; how to communicate their feelings and respond in kind; how to build relationships with one another and achieve common goals as a team; and most of all how to appreciate one

another and be considerate to others. Therefore, there is a need for the education of good morals and rational decision among university students (Ministry of Education, 2015). As such, MI and PDM could be the factors that can improve students' quality of life. Previous studies have not combined both variables of MI and PDM and their relationship to prove this statement. In response, this research is to find the appropriate measuring tools to measure these variables among the university students in Iraq using the Rasch model.

As mentioned earlier, several studies carried out previously on MI and PDM using CTT has witnessed varying degrees of limitation. Research also shows that the use of the Rasch measurements can overcome such limitations affecting CTT. This study, therefore, designs structure to validate, analyse, and score academic tests using the Rasch measurement model.

1. Assist interested educators and researchers in generating a Rasch-based score for the tests without undertaking complicated Rasch analysis procedures;
2. Reduce the time required to generate a Rasch-based score report;
3. Find out the features of psychometry that make MI and PDM instruments acceptable.
4. Examine the relationship between Moral Intelligence (MI) and Proactive Decision-Making (PDM).

1.8 Research Contribution

The findings of the present study provided a reliable and valid instruments to measure both variables. These instruments should be particularly relevant to the context of Iraq. The findings formed the foundation of designing a training programme for assessment officers to increase their knowledge based on the Rasch model. Besides, more programmes initiated by this research.

The research understands the importance of MI and PDM as these cover the dimension of personal development. Research has shown that these dimensions can create a solid foundation for building stable communities. If MI and PDM are cultivated and preserved among university students, they become leaders with many potentials.

This study is of immense value to the decision-making processes of the education ministry of Iraq, especially on the importance of moral intelligence and proactive decision-making among university students. The findings in this research study provided current data that could better the transformation of universities across Iraq. Furthermore, the results showed that psychometry, particularly the Rasch model, is an effective and worthwhile technique. The study also provides support for moral intelligence and social cognitive theories as well as claims about the roles of moral intelligence and proactive decision-making among university students. Finally, the findings of this research are essential in becoming reference or study material. Furthermore, support research into other factors related to the achievement or further development of other instruments to measure cognitive abilities among students in different age groups and study areas.

1.9 Limitation and Delimitation

The study borders around research into the psychometric properties of moral Intelligence (MI) and proactive decision-making (PDM) using a Rasch measurement model. It investigates the relationship between MI and PDM. The information applied in this research are from two public universities in Iraq, while the private and bilingual universities were excluded. The study conducted among university students who started their courses in the 2017/2018 academic session.

1.10 Definitions of the Study

The following are the definitions of terminology used in the study:

1.10.1 Psychometric Properties

Psychometric properties defined as the characteristics of moral intelligence and proactive decision-making. It measured in terms of item fit, dimension and kinds of response category, gender differential functioning, and reliability and validity of the construct.

1. Fit Statistics - This involves a study of MI and PDM context data, fitting the model either accurately or predictably.
2. Infit - This is employed in the study of MI and PDM contexts to show varying degrees of importance of information.
3. Item Calibration - This involves a comparison process between the contexts of PDM and MI.
4. Item Map - In studying MI and PDM contexts, item maps are used to represent students' personal capabilities and their different levels of understanding on the same logit measurement scale.

5. Logit – The logit scale is a scale which shows how diversification of levels of understanding of participants are affected by linear, interval measurements.
6. Observed Score - Observed scores represent the addition of the real scores and mistakes attained in assessment tests.
7. Outfit - Simply refers to outlier-sensitive fit in the case study of MI and PDM context.
8. Person Ability – Here, the likelihood of success of a participant is the same as the possibility of failure as represented on the logit continuum.
9. Person Measure - Represents the probabilistic estimation of a person's ability to provide the right answers during an assessment.
10. Rasch Measurement Models – They are techniques which employ statistical models to assess tests and questionnaires for quality, and it has a true interval-scale measure.
11. Variable Map - Is similar to item map in the case study of MI and PDM context.
12. Misfitting items- - Items which fits statistics outside of 0.6 to 1.4 mean squares are misfitting items.items.

1.10.2 Moral Intelligence

Moral Intelligence it measures the ability to understand right from wrong (Borba, 2001). Moral Intelligence is based on the possession of seven moral virtues that guide behavior, namely empathy, tolerance, conscience, respect, kindness, self-control and fairness. It explains how human beings can understand right from wrong (Borba, 2001).

1.10.3 Proactive Decision-making

Proactive decision-making it measures the ability to think and seek for alternatives, being able to look and search for guidance and information and make decisions without reacting to external stimuli. Individuals are prone to the reaction when they are under pressure or stressed and their decision-making is not objective (Siebert, & Kunz, 2016).

1.10.4 University Students

The Ministry of higher education in Iraq considers any person who is enrolled in a course of study as being a student. To suit this particular research, a student could be referred to as someone who is still registered at a university. The age of students ranges between 18 and 22 years.

1.11 Conclusion

There is increased interest in education research to study the relationship between factors of moral intelligence and proactive decision-making among university students in Iraq. Since the existence of valid and reliable instruments is essential to investigate the relationships between these factors, this study seeks to examine the psychometric properties of the moral intelligence scale and proactive decision-making.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The primary concern of this chapter is the constructive study of kinds of literature relating to the study of moral intelligence dimensions and proactive decision making and Rasch measurement model as measurement theory. Preceded by a discussion of related studies and presents a review of the findings from previous research related to the theories and variables observed. At the end of this section, the conceptual framework and hypotheses explain the relationships between the variables.

2.2 Theoretical Framework

This section provides a discussion of the moral intelligence theory, previous studies of moral intelligence, the measure of moral intelligence and the proactive decision-making theory, previous studies on proactive decision-making, measure of proactive decision-making as a psychological trait. Theories address the variables associated with this research. It also discusses the Rasch measurement model as measurement theory, which is related to the objectives of this research paper.

2.2.1 Moral Intelligence

The following seven dimensions of MI; empathy, tolerance, conscience, respect, kindness, self-control and fairness by Borba (2001) form the primary point of discussion in this section.

Borba (2001) defined MI as people's ability to differentiate between right and wrong. Through education, a person can practice moral issues and thereby, built an

active virtue on the internal values of a human being. Moral intelligence is considered as an ability and not a trait in a human being. Therefore, through continuous education, this ability can be enhanced.

While culture can influence or condition people, but not considered an equivalent to the "status" on intelligence. Further to this, Borba brought up the topic of Nazis and Fascists or religious fanatics who live in a closed system of "values." In these kinds of environment, the influence of culture, religious thought patterns and "values" cause a shift and in most instances, a perceived downward shift, towards an un-intelligent and decline of moral standards (Borba, 2001).

Through cultural, religious beliefs and values system, moral intelligence in a society shaped. Theoretically, there are workings in metacognition, which gives rise to moral recognitions, actions and attitudes in individuals. While the external environment and circumstances can shape an individual, education can foster a newer understanding that other systems exist and that interreligious; intercultural practices can co-exist. Inside this pluralistic world, there can be fairness, considerateness, understanding between individuals and people groups of various backgrounds. In a nutshell, moral intelligence is to achieve co-existence between each other to help one another for good (Borba, 2001).

Borba further subcategorised MI into the following seven significant values: They are empathy, tolerance, conscience, respect, kindness, self-control and fairness (Borba, 2001).

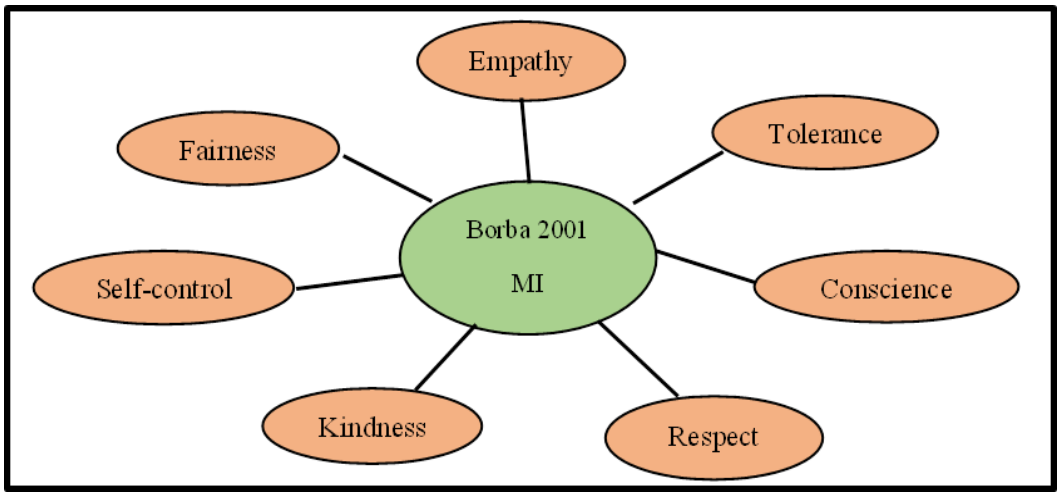

Figure 2.1. Moral Intelligence by Borba (2001)

Source: adapted from: Borba (2001)

Firstly, empathy is feeling the same thing with another person because of a similar experience, such as a traumatic loss as in being fired from a job, experiencing sorrow when a loved one passes away. At an early age, when children emotional needs are taking care off, they develop empathy through the nurture and care from their parents or caregivers. Young and growing children also experience empathic feelings through puberty and changes in their physiology. These empathic feelings intensified as they reach young adulthood. Females are attributed to emotional intelligence more than males because women in the Western world show more empathy than men. The critical significance of empathy lies in emotion and verbal communication. With the use of digital devices in this technological age, there is a loss in spiritual and soulish expression because of technical simplification. Face to face communication allows for feelings, empathy, and physical contact (Borba, 2001).

Second, tolerance is to overcome prejudices and biases. It is putting aside selfish interests to work and live together (Borba, 2001, p. 215).

Third, conscience is popularly known as in the inner voice, which speaks to human beings of what is right and what is wrong. Conscience is inherent in each person,

whether through cultural and religious activities or not. Conscience can also be external voices. The essence of moral intelligence is to be able to form moral perspectives and attitudes. Researchers indicate that education can help in moral development (Gibbs & Basinger & Grime 2019). Researchers think highly of school as an active formation of conscience in children. The age of conscience is related to those who are growing into adulthood (Borba, 2001).

Fourthly, respect is a virtue in moral intelligence. When a person learns to respect others, there will be respect for themselves (Borba, 2001, p. 155) — only based on respectful treatment. In this way, the first and most excellent step in the direction of strengthening moral intelligence in the area of instantaneous respect is when we respect ourselves (Borba 2001, 134).

Fifthly, kindness comes from empathy as well as respect. It is an aspect of practical intelligence linked to emotions. If someone is hurt, the action is to help, and this is an act of kindness (Borba, 2001, p. 188).

Sixth, Self-control. Borba classifies self-control as the third category of the "moral core". In simple terms, it means not to react. It is supposed to work in a non-aggressive way. Being aggressive shows lack of self-control because it is actions that come from an emotional outburst, may make a sane person insane. Angry people can take glass plates and throw them at another person, start shouting and may lead to fistfights. Thus, reacting to aggression results in social stress and furthermore, it is not an intelligent thing to do (Borba, 2001).

Seventh, fairness is a virtue which aims for a win-win situation for all parties. It looks for ways to work together without usurping control over another (Borba, 2001, p. 231).

It can be concluded, as seen in Figure 2.2, that moral intelligence contributes to individuals' life. With the descriptions above, individuals have different attributes of moral intelligence, and some values may be weaker or stronger than others. In Borba's discussion, there is a significant interrelationship between these values or dimensions of moral intelligence. The questionnaire includes understanding, guilty conscience, thought patterns, and feelings of satisfaction of students. Moral intelligence assumed to be a decisive factor for all individuals, and the assumption is on the postulation that by using value-focused attributes of moral intelligence, a university student's social and quality of life improved.

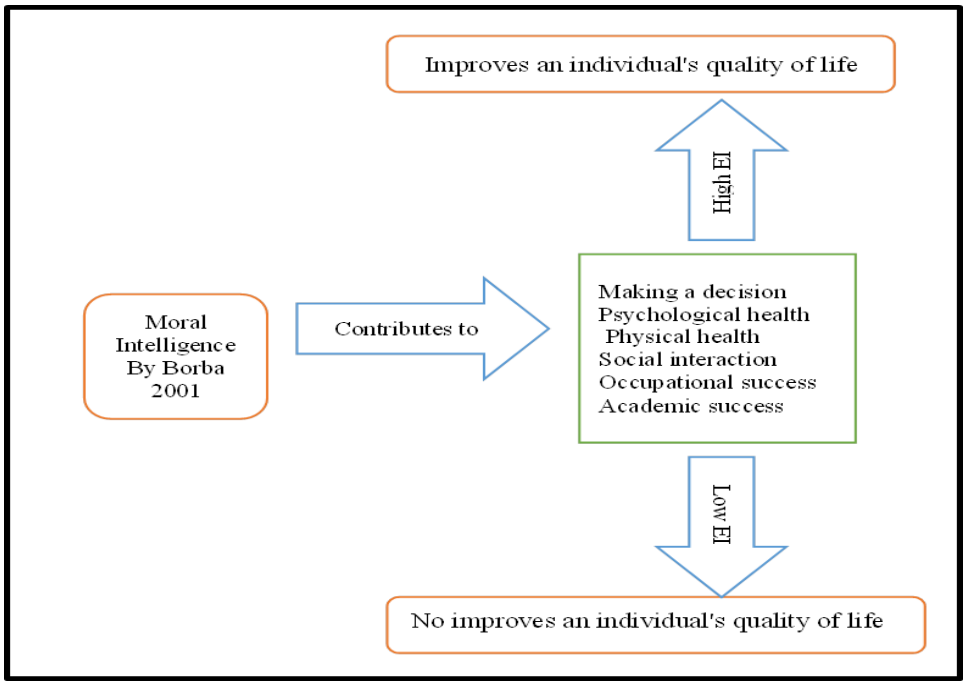

Figure 2.2. Moral intelligence theory by Borba (2001)

Source: adapted from: Borba (2001)

2.2.1(a) Previous Studies of Moral Intelligence

In a study conducted by Pakdel and Sharifi (2016) they studied in the areas of moral intelligence, deviant organisational behaviour, and job satisfaction in the offices of youths and sports in Fars Province, Iran. Deviant behaviour occurs in offices when

people do not come to work, steal items and cash, become aggressive, ignore the rules of the company, and so on. Their findings reveal that a relationship exists between moral intelligence with better job satisfaction. Furthermore, supported from data analysis which showed that between the moral intelligence dimensions of compassion, forgiveness, honesty, accountability and deviant behaviour there was a significant relationship just as there is a significant relationship with job satisfaction.

Pahlavani and Azizmalayeri (2016) indicated a linear relationship between the two variables of moral intelligence and organisational development among teachers of Khorramabad Iran. Furthermore, they pointed out that individuals with higher moral intelligence are more suitable for organisational development.

In the study by Aldarabah et al. (2015) they researched on the moral intelligence of children in a region of Jordan known as Karak. The findings from the study revealed that the size of families, genders of children or the differences in educational levels of parents does not affect the MI of children. The effect was noticeable based on the factors of children differing in age and having different parents and therefore, different parental upbringing.

In the study by Guiab et al. (2015), they made research on the moral intelligence of faculty and education students in Philippine Normal University-North Luzon. Their findings indicate that those in faculty have a self-perceived high moral intelligence, whereas, for students who are prospective teachers, their self-perception of moral intelligence is just average. Other findings indicate that for those in faculty, their moral intelligence has a significant relationship to gender and civil status while students' moral intelligence has a positive relationship with gender and ethnicity. In the study by Razak and Abdul (2011), their model of moral intelligence is in the development of Iraqi middle school using hypotheses.

Also, a considerable variation in MI to the level of 0.05 between the experimental groups in favour of the program. In the study by Tai (2010) conducted a study on the relationship between achievement, academic and moral intelligence. The sample for the research comprises of 400 students from Baghdad and Iraq. The results of this study reveal an increased rate of MI in students. Besides, the rate of MI of male students pointed towards a considerable amount of difference.

According to Obeidi and Ansari (2010), moral intelligence among students in Iraq. The sample size of 57 students came from the schools in Baghdad. In their findings, the results from these sample data show an appropriate level of coexistence between MI and scholastic ability while also pointing to the average presence of MI.

In the study by AlShammari (2007) the focus was on Building a scale of moral intelligence according to the theory of Borba 2001 and the relationship between moral intelligence and different levels of trust (mutual and social) in Iraq. Four hundred boys and girls from the University of Baghdad made up the samples for the study. The results exposed a medium level of MI of the study sample with no differences recorded in terms of differences in the field of study or differences in the gender of samples.

The main goal of this research is how to develop ethical standards to measure moral intelligence in the context of Iraq.

2.2.1(b) Measure of Moral Intelligence

From the literature, instruments can be used to measure moral intelligence. These instruments are, namely, the ability model (see Table 2.1). According to Mayer and Cobb, 2002, the ability model is applied to measure people's different abilities at carrying out tasks. However, the ability model uses the moral competency inventory

(MCI) by Lennick and Kiel, 2011, See appendix Q. It is a self-reporting method which has 40 units rated by points. The moral intelligence total score comes in the range of 20 – 100. Interpreted as follows: 100 – 90 points = high level, 89 – 80 = very good level, 79 – 70 = good level, 69 and less is gauged as a sufficient level of moral intelligence. There are ten individual moral competencies in the moral intelligence index, which will test the individual's moral intelligence when faced with a moral dilemma.

Alnasser (2009) designed a moral intelligence scale. He looked at Borba's virtues and used them in Jordan for sampling the Arab people, See appendix R. From Borba's seven virtues, and he expounded them into twelve virtues. These virtues are conscience, sympathy, respect, kindness, self-control, fairness and tolerance. Based on specialists' feedback, there are altogether 39 items to be distributed as the following: 1. Conscience virtue has five items. 2. Sympathy virtue has six items. 3. Respect virtue has six items. 4. Kindness virtue has six items. 5. Self-control virtue has five items. 6. Fairness virtue has five items. 7. Tolerance virtue has six items.

The researcher used the scale by Borba (2001) to measure moral intelligence among university students in Iraq because of the following reasons: Firstly, the scale, despite its importance to moral intelligence has not been developed in different cultures especially in the context of Iraq. Secondly, the scale is only suitable for children and has not for adults in the Iraqi context. Third, this inventory's reliability and validity are acceptable. Based on a recent analysis of the principal components of this inventory, moral intelligence explained by seven factors, and according to Cronbach's alpha values, these factors are as follows: 0.82, 0.83, 0.79, 0.77, 0.66, 0.60, 0.80.

Table 2.1

Studies in Moral Intelligence Scales

Instrument	Author	Model Used	Validity	Reliability
Moral Intelligence Questionnaire link	Zadeh (2017)	MCI	internal consistency coefficients were calculated equal to 0.75 and 0.90	Cronbach's alpha and reliability 0.75 and 0.67
moral intelligence provided by Lennick and Kiel	Pakdel and Sharifi (2016)	MCI	factor analysis moral intelligence indices showed that integrity with 0.83% factor loadings, 0.87% responsibility, 0.85% forgiveness and 0.88% compassion 88.0 place in a shared and common situation and this can be called moral intelligence	Cronbach's alpha 0.85
Moral Intelligence Scale (Mechile 2001	ALdarabah, and Almohtadi (2015)	MI	The needed modifications were made to the questionnaire in the light of the experts' opinions to prepare it in its final form, through omitting some of the clauses and replacing them by others, and modifying some words	Alpha used to test the reliability of the measurement tool, which was .88 for the 84
The MCI by Lennick's and Kiel (2005	Faramarzi, and Jahanian (2014)	MCI	remains constant through the forty-question instrument, reported an acceptable validity for MCI	Cronbach alpha varied 0.65 - 0.84
Lennick and Kiel (2005 cited in Kruger, 2012) on Moral Intelligence	Guiab, Sario and Reyes (2015)	MCI	The questionnaire was submitted to an expert	Cronbach's alpha coefficient and yielded with r=.098
AlMozani and AlKhafaji (2013) Measuring Moral Intelligence	AlMozani, and Al Khafaji (2013)	MI	The needed modifications were made 70 items to the questionnaire in the light of the experts' opinions to prepare it in its final form 44 items, through omitting (26) items	Cronbach's alpha 0.80
measure (Awsi 2010), Measuring Moral Intelligence	Razak and Abdul (2011)	MI	internal consistency coefficients were calculated equal to 0.80 and 0.80	Test-Retest 0.80
AlShammari, (2007) Measuring Moral Intelligence	AlShammari (2007)	MI	) Items were excluded. The scale items were subjected to analysis by the methods of two-extreme groups and the item relation with the total score of the scale. (3) Items were deleted; therefore, (62) items 5	The reliability coefficient of the scale was (0.91) by using internal consistent method
Arwa Alnasser (2009) Measuring Moral Intelligence	Alnasser 2009	MI	The needed modifications were made (45) items to the questionnaire in the light of the experts' opinions to prepare it in its final form (39) items, through omitting (6) items. And use DIF	Cronbach's alpha 0.79
Arwa Alnasser (2009) Measuring Moral Intelligence	Momani (2014)	MI	internal consistency coefficients were calculated equal 0.90	Cronbach's alpha 0.87
Arwa Alnasser (2009) Measuring Moral Intelligence test	Bsharah (2013)	MI	The questionnaire was submitted to an expert	Test-Retest 0.91