

Measurement invariance of the moral identity scale among adolescents, according to student gender

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Abstract

This study aim to identify the measurement invariance of the moral identity scale among adolescents, according to the student gender, and to achieve this goal the descriptive analytical method was used to analyze the results of moral identity scale among adolescents. In particular, the responses of 611 male and female adolescents have been analyzed on 12 items, after excluding one item from the internalization dimension. Data were analyzed using the Confirmatory Factor Analysis (CFA) and the Multiple Group Confirmatory Factor Analysis (MGCFA) through the statistical programs: (AMOS 25). To judge the suitability level of test factorial structure, the following four indexes were used for the goodness of fit test in the structural equation models (SEM): Chi-Square (χ^2), Comparative Fit Index (CFI), Root Mean Square Error of Approximation Index (RMSEA), Standardized Root Mean Residual Index (SRMR) and (Δ CFI, Δ RMSEA, Δ SRMR). Results show the suitability of proposed model, within its two dimensions (internalization, symbolism) of moral identity scale content among adolescents. Results also show the presence of configures, metric, and scalar invariance in the scale items, according to the student gender variable.

Keywords: Measurement invariance; Moral identity scale.

INTRODUCTION & BACKGROUND STUDIES

The educational psychologists have interests in the ethical behavior study by relying on the two moral psychology models: cognitive model, which dealt with the moral reasoning study, and the cognitive social model, which dealt with the self-regulation mechanisms study and based on these two models the moral identity concept was developed (Aquino et al., 2002). Hart et al. (1998) referred to it as an individuals' obligations that are consistent with their feelings, where individuals perform the behaviors that promote the mental and physical health of others, protect it, and use it to make their decisions and choices, to form a truthfulness aspect with

themselves, while (Reynolds et al., 2007) referred to it as a mechanism to organize the identity by developing a set of criteria that used by the individuals in their behaviors where it motivate the ethical or moral behaviors. Hardy et al. (2011) identified the moral identity as "individual level as a moral person and the moral significant level in their identity"; which means if individuals feel that moral values, such as honesty, compassion, justice, and generosity are essential values to identify their identity, this will be an indication that they own high levels of moral identity, and will be a clear indication to engage in the ethical behaviors. It's a concept that aligns with the self-sensation growth, and connects with the moral attributes and properties that are rooted in the personality of individuals, where it will be affected by the social contexts (Reimer et al., 2009). In this context, moral identity has been addressed in the previous psychosocial studies and literature, as one of the personal characteristics, and an important dimension of the individual growth (Hardy et al., 2011a; Walker, 2014; Jennings et al., 2015). The moral identity differ from any of the cognitive moral structures such as Kohlberg stages of ethical growth fund, as it doesn't assume any compatibility between owning this type of identity and the commitment to specific moral system, which indicate differences in individuals commitment level to the ethical values and incorporate it into their self-sensations, where some individuals feel that having the morals of integrity, justice, generosity, and compassion are important things in their lives and identity, while others see that immoral values, such as being someone who wishes to achieve tangible benefits will be the most important thing for them. It's possible to explain these differences in the developmental roadway; with the fact that some individuals are capable of achieving high levels of ethical values incorporated in them more than others (Aquino et al., 2002). According to the model that was developed by Aquino et al., (2009), individual who wishes to demonstrate the sequential ethical behavior, must possess a high level of internal moral identity based on the possession of cognitive moral structures, and moral self-concepts.

Despite the scarcity of studies that addressed the development and formation of moral identity, psychological literature provided indirect evidences that adolescence period and early maturity stage is one of the important developmental age stages in its development and formation (Damon et al., 1988; Blasi, 2005; Frimer et al., 2009; Hardy et al., 2011b). Ericsson who was referred to in Al-Dabie (2005) mentioned that crisis experienced by adolescents is an identity crisis, considering that identity is an indicator to determine the overall compatibility of adolescent, and a psychological and social requirement that distinguish the adolescence stage. Studies which adopted the scope theory indicate that multifaceted situations adolescents face, most of the time are the most important determinant of moral identity development (Krettenauer et al., 2013; Krettenauer et al., 2014), while Brenick et al. (2014) referred to the growth of moral emotions in adolescence stage indicate an increase in the moral motivation levels and the moral justification, which positively reflect the development of moral identity among adolescents. Kochanska et al. (2010) see that addressing the growth of moral identity, at earlier stages compose the normal track of moral identity growth of adolescence stage, and in the same context Robin (2010) refer to several factors that influence the development and formation of moral identity in adolescence stage, such as knowledge, ethical trends in the previous developmental stages, self-perceptions, moral emotions, personal style, the family effects, social relations, and the interaction with social institutions.

Given the importance of moral identity concept among individuals, in general the interest of educational and psychological measurement scientists came to study by conducting relational studies to identify the nature of relationship between the moral identity and many other psychological and emotional variables, and in specific build and develop scales, indicators, and metrics to measure it. One of the correlative studies, the study of

Hardy et al. (2010) that aimed to reveal the relationship between moral identity and the parenting style of (1059) male and female students from the American schools, where the results show a positive correlation between the parenting style that enhance autonomy and parental style that enhance the positive emotional responses style and between the moral identity dimensions (internalization, symbolization) (Appendix 1). The results also indicate non-existence of statistically significant difference in the moral identity level, due to the sex variable, and in favor of females. Taylor (2013) conducted a study that aim to reveal the relationship between moral identity and awareness of social justice among sample of adolescents in Canada. The study sample consisted of (58) adolescents from the (9-12) senior students where the study results indicate that adolescents enjoy a high level of moral identity, and the existence of statistically significant difference in the moral identity level, due to the sex variable, and in favor of females.

Murua (2015) perform a study that aim to detect the changes in moral identity among adulthoods and middle ages in Canada, where the study sample consist of (252) participants, their ages ranged between (14-65) and they were divided into four age groups: (14-18) years, (19-25) years, (26-45) years and (46-65) years. Study results show differences in the moral identity levels, according to age groups variable, and in favor of the older age group. Results also show that individuals realize an increase in the development of their moral identity with time, and that any growth of moral identity will lead to a change in the personal characteristics of individual. Tobias et al., (2016) held a study that aim to verify the moral identity levels within aging among a sample of adults in Canada, where the study sample consist of (102) male and (148) female participants, within ages ranged between (14-65). The results show that participants' moral identity level was medium, participants of the age group (25-30) got the highest level of moral identity, the differences in moral identity related to age didn't fully attribute to the changes in personality characteristics and also moral identity development is a lifelong process that begin in the adolescence stage and continue in middle age.

Researchers found a deficiency in the Arabic and foreign studies that have interest in building and developing metrics or scales to measure the moral identity, where Black et al. (2016) conducted a study that aim to verify the psychometric characteristics of moral identity scale, and detect the individual differences of the moral identity level, according to the age and gender variables. Study sample consist of (561) adults, (225) of those were from the department of psychology students in the state of Mohbalt, North of California and the remainder of sample were international from nationalities other than the United States. The study results indicate no statistically significant differences in the moral identity level, due to the sex variable, and the existence of medium correlation for the moral identity with age. Kendy et al. (2017) also conducted a study that aim to detect the differences between genders of moral identity in America. The study sample consist of (19000) male and female participants, and the results showed a statistically significant differences in the moral identity level, due to the sex variable and in favor of females.

It is noticed from the above background studies that moral identity topic has received the attention of researchers in the foreign environments, where the study of Hardy et al. (2010) examined the relationship between moral identity and the social nurturing pattern, while Taylor (2013) study examine moral identity relationship with the awareness of social justice, and the study of Hardy et al. (2014) examine moral identity relationship with the social behaviors and the antisocial behaviors. Some studies had interest in linking the moral identity of adults with the medium age, like Murua (2015) study, progress with aging, like the study of Tobias et al. (2016), detect the individual differences in moral identity according to the age and sex variables,

like the study of Black et al. (2016) and the differences between the moral identity of genders like the study of Kendy et al. (2017). It noticed also from the studies that focus on the difference in gender; despite the differences in their results are relatively few with the novelty and significance of the moral identity topic, and with the lack of Arabic studies and its scarcity locally; up to the knowledge of researchers which dealt with building and developing scale for moral identity that has an acceptable psychometric characteristics, where study came to detect the measurement invariance of a developed scale to measure the moral identity level through student gender, but didn't verify the factorial structure of scale, and didn't test the measurement invariance, and the results indicate that the comparisons may not be sincere or meaningful. Therefore, this study came as an attempt to provide evidences on the validity of those comparisons, which will enhance its legitimacy to study this problem.

The measurement invariance, or measurement equivalence consider one of the significant topics that educational and psychological measurement scientists started recently to pay attention to and address in the different studies, where it search for the differences between the various groups. Many studies have confirmed across different cultures, the need to examine the measurement invariance when making comparisons between the groups to make sure that such comparisons are interpreted with reliability (Vandenberg et al., 2000). The measurement invariance considers a statistical characteristic refers to the similarity of factorial structures, which will be measure across the groups, and their achievements consider an indication of validity when comparing between the different groups. Multiple groups Confirmatory Factor Analysis (MGCFA) will be used to test and examine the measurement invariance across the different groups (Widaman et al., 2010).

The measurement invariance have different types of measurement; first: configural invariance, which means the similarity of factorial structure for the scale in the two groups; or approximately achieve the confirmatory between the two groups; second: metric invariance, which means the equality of factors branches across the groups, and the inequality of it is an indication that items work differently in different groups and third measurement: scalar invariance, means equality of slope, intercept, and factorial structure (Byrne et al., 1989). Goodness-of-fit indices are used to verify the measurement invariance characteristic, which are statistical indicators or indexes that help to identify the confirmatory and quality level of the proposed model by comparing it with another model (Gadelrab, 2004), such as Chi-Square (χ^2) index which must has a statistically significant value, root mean square error approximation (RMSEA) index, where its value preferable to not be more than (0.08) (Hu et al., 1999), Comparative Fit Index (CFI) where its value preferable to not be less than (0.90) (Hair et al., 1995) and finally the standardized root mean residual (SRMR) index, where its value preferable to not be more than (0.09) (Hu et al., 1999).

STUDY PROBLEMS & QUESTIONS

The problem of current study arises from the importance of moral identity concept, as a personal characteristics and its impact on the growth and development of adolescents in general, and on their personality in particular. It is known that adolescence stage is accompanied by many changes, full of conflicts and emotional revolution, and most stage prone to crises, therefore adolescents become more than ever, unable to continue their roles and achieve their objectives, due to their lack of moral identity. After researchers review the researches and studies that dealt with the moral identity, it shows a scarcity in the studies that address the topic of moral

identity level measurement, as well as building or developing a scale to measure the moral identity level that has acceptable psychometric characteristics. Therefore, the current study seek to detect the measurement invariance of the moral identity scale developed by researchers, across the student gender, as an attempt to interpret the results in the secondary dimensions of the scale (internalization, symbolism), according to the student gender. The purpose of this study resides in examining the measurement invariance of the moral identity scale developed by researchers, across the student gender, and in specific this study seeks to answer the following two questions:

First: Is the proposed model for moral identity scale content among adolescents, with its dimensions of (internalization, symbolism) fits the data properly?

Second: Does the proposed factorial structure for the moral identity scale differ according to student gender?

STUDY IMPORTANCE

The significant of this study reside in two aspects; the theoretical importunacy aspect assimilate by dealing with the moral identity topic among adolescents, where it's expected that current study will add cognitive asset for researchers and interested people in this area, and help them to achieve academic objectives that fall outside the scope of current research, and it's also address two very important topics in the field of educational measurement and evaluation: factorial structure and measurement invariance, where the current study will provide for many researchers a cognitive framework to verify them. The applied practical significance aspect assimilate in the development of a scale to measure the moral identity level of adolescents that has an acceptable psychometric characteristics, where learners and researchers can use the developed scale which has an acceptable psychometric characteristics in conducting many different studies, in light of various psychological and emotional variables. The current study will also provide for many learners a procedural and cognitive framework for detecting the verification of measurement invariance characteristic across the different groups; by facilitating and simplifying the measurement invariance characteristic of other tests and scales for researchers and interested educators and psychologists.

STUDY METHODOLOGY AND PROCEDURES

Procedural and conventional definitions

- **Measurement Invariance:** Byrne et al. (2003) identify it as the constancy of processes or functions that are supposed to be actually measured by the measuring tool, across the different groups, which means that recognizing and interpreting the measurement tool items content will be equal if it were tested among different groups of testers on the scale. Procedurally, it defines by the (CFA) and (MGCFA) using the goodness-of-fit indexes or conformity indicators (CFI, RMSEA, SRMR, χ^2) for the moral identity measurement items, where it will have the same factorial structure between the different groups.
- **Moral Identity:** a personal or self-concept structure around a set of moral attributes or characteristics, such as attention, compassion, justice, and kindness (Aquino et al., 2002) and procedurally in the current study it's known as the degree that tester get on Aquino & Reed scale for moral identity.
- **Adolescence:** a stage of life span that stretch from (12-18) years, characterized by physical, mental, cognitive, psychological, emotional, and social growth that affect his life and behavior (Boschi et al., 2003).

Study limitations

This study was limited to amoral identity scale and a sample of adolescents with the ages (12-18) and was also limited to the use of goodness-of-fit indexes or conformity indicators, such as Chi-Square (χ^2), Comparative Fit Index (CFI), Root Mean Square Error of Approximation Index (RMSEA), and Standardized Root Mean Residual Index (SRMR), and the generalization of study results depend on the representation level of the sample to its population.

Study methodology

The analytical and descriptive method was used to prepare this study, which assimilate in analyzing the results of moral identity scale among adolescents ages (12-18) years, at Irbid second district schools of the directorate of education, for the second semester of (2017/2018) academic year.

Study population & sample

Study population consist of (4751) male and female adolescents, at Irbid second district schools of the directorate of education, for the second semester of (2017/ 2018) academic year. The study sample consist of (611: Male=307; Female=304) male and female adolescents, after distributing (750) questionnaires and excluding (77) due to incomplete information, and (62) questionnaires due to typical responses.

Study instrument

In order to achieve the objectives of the current study, the moral identity scale which was developed by (Aquino et al., 2002) was modified, and used after translating it and checking its spelling and grammar where the scale in its initial view contain (13) items; two items were negative, and (11) were positive, spread over two dimensions: the internalization which include the items with the numbers (1, 2, 3, 4, 5, 6, 7), and the symbolism dimension which include the items with the numbers (8, 9, 10, 11, 12, 13) and the responses to it will be according to the fifth Likert scale, which include the following categories: "Strongly agree" given a degree of (5), "Agree" given (4), "Not sure" given (3), "Disagree" given (2), and "Strongly disagree", given a degree of (1), for the items (1, 2, 3, 6, 7, 8, 9, 10, 11, 12, 13), while the scale was reversed for items (4, 5).

Scale validity

The moral identity scale in its original form, which was developed by (Aquino et al., 2002) has acceptable psychometric characteristics that made it possible to use it in future studies, where the validity of factorial structure, convergent, and discriminant verified. To verify the validity of the scale developed by researchers, it was translated from the English to Arabic language, represents its items on a proofreader, and was translated back into English to ensure the truthfulness of the translation into Arabic language and not change the content of items.

Subsequently, the content validity of the scale, as the study tool in its original form which contain (13) items was verified by representing it on (9) arbitrators from professors with expertise and competence in the field of educational psychology, measurement and evaluation, and counseling psychology, where they were asked to give their opinions about the accuracy and validity of tool content, in term of items degree of belonging and clarity, language correctness, and its appropriateness with what was intended to measure, and add, modify, or delete what they see appropriate for all items. The majority of arbitrators have express their perceptions about modifying only the wording of some item, where the standard that was depend on to accept the items or exclude it when the one item gets the agreement of (7) arbitrators, and didn't delete any item of the scale after

the arbitration. Corrected Item-total Correlation was also calculated for the item of the scale, after implementing it on an exploratory sample from outside the study sample members, which contain (79) male and female adolescents, where the corrected correlation coefficient values ranged between (0.43) and (0.71), and all of it are acceptable for the purposes of this study.

Scale reliability

The Reliability of the scale, in its initial form has been verified through the estimation of retest reliability coefficient after its implementation on a sample of (210) male and female adolescents, where the value of retest reliability coefficient, for the scale as a whole amounted to (0.71). The internal consistency reliability was also verified and its value reached (0.78), while for the dimensions ranged between (0.69-0.78). To verify the consistency of moral identity scale developed by researchers, it was implemented and re-implemented on a exploratory sample consisted of (79) male and female adolescents from the study sample and from outside its sample, with a two-week interval between the first and second implementations, where the retest reliability coefficient amounted to (0.89), while the internal consistency reliability coefficient (Cronbach's Alpha) for the scale as a whole amounted to (0.93).

Statistical analysis

After entering the study sample members' responses on the computer, the multivariate normality distribution assumption was validated for their responses, and also verify the normal distribution assumption for each item of the scale by using the Skewness index, where its value ranged between (-0.674) and (0.224), and the Kurtosis index, where its value ranged between (-1.109) and (0.759). In this context (West et al., 1995; Kim, 2013) indicate that for sample sizes greater than 300, it's preferable the absolute value of the Skewness coefficient not to exceed (2) and the absolute value of the Kurtosis coefficient not to exceed (7). Therefore, it turn out there's only one item (item number 7) that Skewness value in it exceed (2) and Kurtosis values exceed (7). To answer the study questions; researchers use Confirmatory Factor Analysis (CFA) and the Multiple Group Confirmatory Factor Analysis (MGCFA), and to judge the suitability level of data factorial structure, the statistical indexes were used for the goodness of fit test in the structural equation models (SEM): Chi-Square (χ^2), Comparative Fit Index (CFI), Root Mean Square Error of Approximation Index (RMSEA), and Standardized Root Mean Residual Index (SRMR).

STUDY RESULTS & DISCUSSIONS

Study results

Results related to the answer of first question: "Is the proposed model for moral identity scale content among adolescents, with its dimensions of (internalization, symbolism) fits the data properly? To verify and judge the suitability of data proposed model, the Confirmatory Factor Analysis (CFA) was used and the results shows in Table 1.

Table 1: Confirmatory Factor Analysis results for the items of the moral identity scale.

Before making adjustments

| Statistical index | | | χ^2 | df | Sig. | χ^2/df | CFI | RMSEA | SRMR |
|-------------------|-------|--------|----------|----|-------|-------------|-------|-------|--------|
| Test | value | before | 703.519* | 53 | 0.000 | 13.274 | 0.859 | 0.142 | 0.0893 |
| adjustment | | | | | | | | | |

| Test value after adjustment | 200.896* | 46 | 0.000 | 4.376 | 0.964 | 0.074 | 0.0438 |
|-----------------------------|----------|----|-------|-------|-------|-------|--------|
|-----------------------------|----------|----|-------|-------|-------|-------|--------|

*Significant at $\alpha=0.05$

It notices from Table 1 above a statistical significance of (χ^2) value but all the (CFI, RMSEA, SRMR) indexes values weren't within the acceptable range of the goodness of fit index (Hair et al., 1995; Hu et al., 1999). After the return to modification indices value it notice the existence of some correlations that should be taken into consideration in the proposed factorial structure, as shown in Figures 1a and 1b and after making the required adjustments, it notice that all the statistical indices indicate the suitability of data used model, where the results show a statistically significant value of (χ^2), and all the (CFI, RMSEA, SRMR) indices' values were within the acceptable range of the goodness of fit index, and all of these values indicate that the proposal factorial structure for testing is appropriate for the data (Hair et al., 1995; Hu et al., 1999).

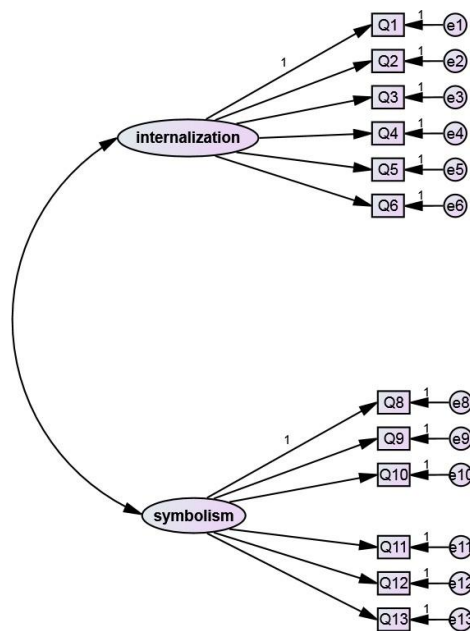


Figure 1a: Factorial model before adjustment for moral identity scale (12) items.

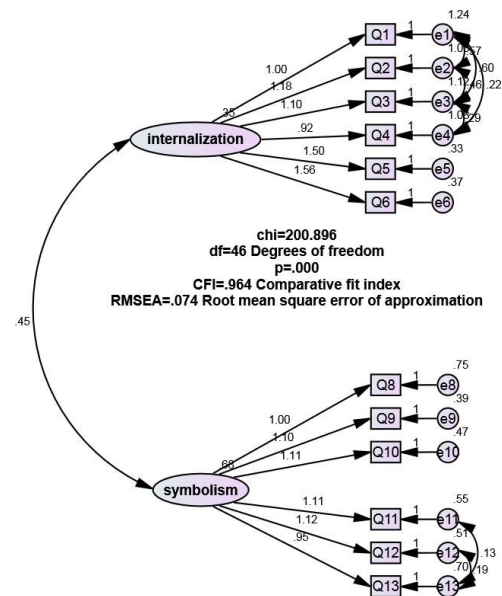


Figure 1b: Factorial model after adjustment for moral identity scale (12) items.

Results related to the answer of second question: "Does the proposed factorial structure for the moral identity scale differ according to student gender?" To answer the second question, the researchers use the Multiple Group Confirmatory Factor Analysis (MGCFA) to test the invariance in the proposed quadruple factorial structure of the moral identity scale through the student gender. The configural, metric, and scalar invariance has been tested for each student's gender, where first verify the suitability degree of the model for each gender (male, female) separately. After the return to modification indices value it notice the existence of some correlations that should be taken into consideration in the proposed factorial structure; The proposed model consider appropriate when there is statistical significance of the (χ^2) index, the (CFI) index value is greater than (0.90), (RMSEA) index value is less than (0.08), and (SRMR) index value is less than (0.09). Table 2 shows the results of proposed model suitability before and after the return to modification indices, according to the student gender (male, female) variable.

Table 2: Proposed model suitability results, according to student gender (male, female) variable.

| Statistical Index | | χ^2 | df | Sig | χ^2/df | CFI | RMSEA | SRMR |
|-------------------|--------|----------|----|-------|-------------|-------|-------|--------|
| Before modify | Male | 375.963* | 53 | 0.000 | 7.094 | 0.861 | 0.141 | 0.0903 |
| | Female | 390.980* | 53 | 0.000 | 7.377 | 0.829 | 0.145 | 0.1075 |
| After modify | Male | 79.550* | 45 | 0.000 | 1.768 | 0.985 | 0.050 | 0.0311 |
| | Female | 104.849* | 45 | 0.000 | 2.330 | 0.970 | 0.066 | 0.0356 |

*Significant at $\alpha=0.05$

It notices from Table 2 above a statistical significance of (χ^2) value for both males and females, but the (CFI, RMSEA, SRMR) indices' values-before perform the correlations between errors-not confirm the model suitability for both males and females. So after taking those correlations into consideration as in Figure 2, the model confirms suitability for both males and females (CFI_M=0.985, RMSEA_M=0.050, SRMR_M=0.0311; CFI_F=0.970, RMSEA_F=0.066, SRMR_F=0.0356) below:

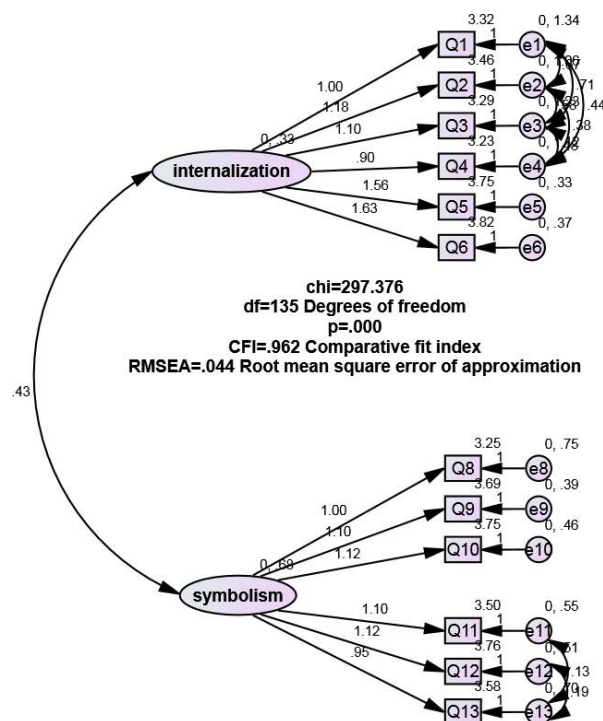


Figure 2: Modified factorial model of the moral identity scale in science according to student gender variable. After confirming the suitability of proposed model for both categories of the student gender variable (males, females), the Multiple Group Confirmatory Factor Analysis (MGCFA) was reused on data, as a whole to test the configural invariance that performed with no constraints, Table 3 below show the results of this analysis:

Table 3: Result of the configural invariance test, according to student's gender (males, females) as a whole.

| Statistical index | χ^2 | df | Sig | χ^2/df | CFI | RMSEA | SRMR |
|-------------------|----------|----|-------|-------------|-------|-------|--------|
| Student gender | 184.400* | 90 | 0.000 | 2.048 | 0.978 | 0.042 | 0.0409 |

*Significant at $\alpha=0.05$

It notice from Table 3 that all statistical indices or indicators indicate the suitability of data used model, where the results show a statistically significant value of (χ^2), all the values of (CFI=0.978, RMSEA=0.042, SRMR=0.0409) indices were within the acceptable range of appropriate quality; and all these values indicate

that the factorial structure of test is suitable for data, and there is configural invariance, according to the student gender variable (males, females).

It also verify the metric invariance, according to differences in student gender (males, females) through the use of (ΔCFI , $\Delta RMSEA$, $\Delta SRMR$), which show the difference in (RMSEA, CFI, SRMR) values between (M1: Configural Invariance Model) model, and (M2: Metric Invariance Model) in light of putting constraints on the loadings (i.e; loadings equality of both groups (males, females). Table 4 show the results related to (M2) model, show the metric invariance test results, according to the student gender variable (males, females).

Table 4: Results of the metric invariance model test, according to student gender (males, females).

| model | χ^2 | df | CFI | RMSEA | SRMR | $\Delta\chi^2$ | Δdf | ΔCFI | $\Delta RMSEA$ | $\Delta SRMR$ |
|-------|----------|-----|------|-------|--------|----------------|-------------|--------------|----------------|---------------|
| M1 | 184.400 | 90 | .978 | .042 | 0.0409 | 10.168 | 10 | 0.000 | -0.003 | 0.0002 |
| M2 | 194.568 | 100 | .978 | .039 | 0.0411 | | | | | |

It notice from Table 4 that the metric model is suitable for data, and that the difference in values of (ΔCFI , $\Delta RMSEA$, $\Delta SRMR$) indices between the unconditional configural model (M1) and the conditional metric model (M2) indicate the existence of metric invariance in the test.

Finally, the scalar invariance was verified, according to differences in student gender (males, females) through the use of(ΔCFI , $\Delta RMSEA$, $\Delta SRMR$), which show the difference in (RMSEA, CFI, SRMR) values between (M2: Metric Invariance Model) and (M3: scalar Invariance Model) in light of putting constraints on the correlations intercepts, in the two groups (males, females). Table 5 show the results related to (M3) model and show the scalar invariance test results, according to the student gender variable (males, females).

Table 5: Results of the scalar invariance model test, according to student gender (males, females).

| model | χ^2 | df | CFI | RMSEA | SRMR | $\Delta\chi^2$ | Δdf | ΔCFI | $\Delta RMSEA$ | $\Delta SRMR$ |
|-------|----------|-----|------|-------|--------|----------------|-------------|--------------|----------------|---------------|
| M2 | 194.568 | 100 | .978 | .039 | 0.0411 | 32.552 | 12 | -0.005 | 0.002 | 0.001 |
| M3 | 227.120 | 112 | .973 | .041 | 0.0421 | | | | | |

It notice from Table 5 that the scalar model is suitable for data, and that the difference in values of (ΔCFI , $\Delta RMSEA$, $\Delta SRMR$) indices between the metric model (M2) and the scalar model (M3) indicate the existence of scalar invariance in the test and what confirm the suitability of proposed factorial model for the moral identity scale of data; is the existence of a strong correlation and a statistical significant between the two assumed dimensions, where the correlation coefficient between them amounted to (0.43).

Discussion

Study results show the suitability of proposed factorial model to the adolescents moral identity scale content of the data obtained from a Jordanian sample, and this result indicate that these elements and dimensions clearly represent the content of moral identity scale. This may attribute to the fact that scale preparation was done, in accordance with good scientific basis, which were based on the analysis of moral identity with its dimensions that must be known by this age group of students. The scale dimensions have been identified under the supervision of experts and specialists in the field of educational psychology, and measurement and evaluation, and this result agree with the study results of (Aquino et al., 2002) which indicate and confirm the existence of

two dimensions for the moral identity scale; which mean the appropriateness of Confirmatory Factor Analysis (CFA) to detect the suitability of proposed factorial model for its related data.

Results also show the presence of configural, metric, and scalar invariance in the scale items, across the various groups of student gender (males, females), which indicate no difference or invariance in the proposal factorial structure and the factorial fullness of moral identity scale between males and females. This mean the scale measurement is the same at different categories of Jordanian students by gender and such result may attribute to the validity of scale, the commitment of scale developers to the criteria agreed on to build the scales and indices, and their commitment to procedures and instructions used to implement the scale. This result implies validity in the comparisons between the different arithmetic means of the various groups' performance on the scale. The differences or variations between these groups attribute to the differences between the characteristics of these groups and their capabilities, and don't attribute to the different characteristics of the scale from one group to another.

In the light of previous results that provide further evidence on the validity of moral identity scale for adolescents, which encourage researchers and other interested groups to return into the scale and benefit from it to measure the level of moral identity of adolescents. Researchers also recommend conducting the additional studies that deal with the psychometric characteristics of the scale, in accordance with the item response theory. It also recommends conducting other studies to reveal the level of moral identity among adolescents by selecting other variables, such as class, average, age, and other variables.

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