



Explaining the relationship between IQ and a variety of earnings management emphasizing managers' narcissism

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ABSTRACT

The present study aimed to explain the relationship between IQ and earnings management by considering managers' narcissism. The research method was applied in terms of objective and correlational-descriptive in terms of method. IQ was an independent variable and earnings management (accrual, real and scenario) was a dependent variable. In addition, narcissism was considered as a moderating variable. The statistical population included at least one member of the board of directors or financial managers of 112 companies on the Tehran Stock Exchange in 2017. Jones' modified model was used to measure accrual earnings management, three-part model of Roy Choudhury (2006) was used to measure real earnings management, and a questionnaire derived from Clikeman and Henning (2000) was used to measure scenario earnings management. The tool used for testing IQ was the 36-item adult IQ test of Raven. In addition, two methods of face width measurement and NPL 16 narcissistic personality inventory were used to measure narcissism. In order to analyze the results, a structural model with covariance-based pls software was used. The results indicated that the relationship between IQ and earnings management (real and accrual) considering narcissism had a significant coefficient, while this relationship with scenario-based earnings management was not significant. Based on the extracted results, IQ is an effective factor in earnings management provided that narcissism is not a trait of the manager.

Keywords:

Earnings management (accrual, real, scenario), IQ, narcissism.

1. Introduction

Earnings management has been always considered as one of the problems in the field of accounting and has been researched from different aspects. However, its behavioral dimension is a subject which has received less attention. Meanwhile, earnings management is the result of the process of judgment, decision-making, and intentional and pre-planned action in line with clear goals and certainly psychological issues are involved in its occurrence. (Mansour Zare, 2017). Thus, it is necessary to pay attention to the individual traits of individuals to solve the problem of earnings management and provide a solution. Because personal traits as the main effective factors in the process of judgment and decision-making, play a significant role in the occurrence of earnings management behavior. Earnings management occurs when managers use their personal judgments in financial reporting and manipulate the structure of transactions in order to change financial reporting. Such an action aims to mislead the owners of the company on the economic performance or affect the results of the contracts which are subject to certain earnings. In order to eliminate earnings management, first it is necessary to identify the factors which lead to earnings management. Numerous studies have been conducted to identify these factors, while most of them focused on earnings management in the capital market, as well as earnings management methods and failed to address the personal traits of those who manage earnings. Due to the above-mentioned definitions of earnings management and the motivation of managers, this question arises: what factors can affect this trait in managers? Based on the theoretical foundations of the study, ability, reasoning power, and problem analysis, which are among the components of IQ, are among the factors affecting behavior which should be studied in this interdisciplinary study in details.

2. Theoretical foundations and review of literature

2.1. Earnings management

Earnings management refers to the use of personal judgments in financial reporting and the manipulation of the structure of transactions in order to change the financial statements and mislead the owners of the company about the economic performance or affect the results of the contracts which are subject to

specific accounting figures. (Healy and Wahlen, 1999, p. 368). Scott (2009) defined earnings management as the selection of accounting policies to achieve some certain goals. According to him, the goal of the manager through this selection is to achieve specific goals such as receiving more rewards, reducing the debt ratio, reducing tax, and reducing political costs (cited in Dechow et al., 2012). Researchers divided earnings management measurement methods into three categories of scenario-based earnings management measurement, actual earnings management (e.g. affecting cash flows), and accruals management by changing the accounting estimates and policies. In addition, they stated that the expenditures of earnings management for these methods was different, so real earnings management was considered more expensive for the company. However, a research by Graham et al. (2005) suggested that managers want real earnings management rather than accrual management.

2.2. IQ

Different definitions of intelligence are available in psychology that psychologists have classified them into these four general categories: Intelligence refers to adaptation to the environment, enough ability and talent in learning, abstract thinking, and using one's abilities to achieve the desired goal in life and business. In fact, intelligence is an adaptive problem solving behavior which facilitates practical goals and adaptive growth (Sternberg, 1996).

The Western analytic concept of intelligence is more cognitive and includes the processing of information; While the Eastern synthetic approach to intelligence involves different components of human performance and experience, including cognition, intuition, and emotion in an integrated relationship (Boyatzis, 2011). In general, intelligence causes the adaptation to the environment and provides the ways to deal with problems. Furthermore, identifying the problem, suggesting solutions to different problems in life, and discovering effective ways to solve problems are among the traits of intelligent individuals.

2.3. Narcissism

Narcissism is one of the personality traits which can influence the process of judgment and decision (Barnett and Powell, 2016). Narcissism is derived from a Greek myth which states that Narcissus was a

beautiful young man who was so fascinated by the reflection of his image in the lake, so that he could no longer leave that place and thus died near the lake. The first person who raised the myth of narcissism in psychology was *Havelock Ellis*, who described narcissism as a clinical condition of self-love. However, the publication of Freud's monograph attracted the highest attention to narcissism. Freud (1914) considered narcissism as a disorder in the early stages of personality development and proposed three types of narcissism:

- 1) Primary narcissism which occurs in childhood and this narcissism refers to the natural state of the child that guides the whole instinctive energy in his direction and tends to be seen by everyone.
- 2) Secondary narcissism, which occurs when instincts are far from the outside world and are directed back to themselves, and may occur in diseases such as schizophrenia.
- 3) Normal narcissism, which is the most evolved form of narcissism. In this case, the narcissist person guides his instinctive energy in the direction of others and has too much attention and interest in himself (*Kohut, 2013*).

According to Freud (1914), narcissism is a stage of normal development which later turns into external love in the more developed stages and the child will be able to love others. Children have a great hauteur at an early age and consider their parents as idealistic people. When a child is raised by those who show no love to him, or if the parents do not praise their child, he may fail to feel being valuable (*Brunell & Campbell, 2011*). The two great thinkers of psychology who studied narcissism in the modern era are *Kernberg* and *Kohut*. They developed the theory of narcissism and introduced it as a personality disorder, but their opinions were somehow different.

In describing narcissists, *Kernberg* (1998) stated as these people have self-reference highly while confronting other people and have an obvious conflict. On the one hand, they have too much self-confidence and on the other hand, they need highly to be respected by others. In addition, he argued that the emotion of these people is superficial, they feel jealous, humiliate and exploit others, are apparently seductive, and have an active and intimate presence, which covers their cruelty and lack of empathy. Regarding the reasons of

narcissism, *Kernberg* believed that the arrogant behaviors of narcissists are a disease which indicates a sense of revenge-seeking, being created by the cold behaviors or strong rejection of the opposite sex, and acts as a defensive system for them against the behaviors of the opposite sex. *Kohut* (1966) raised an opposite opinion and believed that narcissists are not necessarily sick. It is an issue which has continued from childhood to adulthood. Healthy narcissists are creative and easy going but the disease occurs when the person cannot distinguish between the image of himself ideally in his mind and what he really is. *Kohut* emphasized the effect of mother-child chaotic relationships on the development of the child's understanding and argued that every child needs his or her parents to confirm and respond positively to his or her achievements. Children feel insecure without these things and such an insecurity leads to a false narcissism in the future, which is in fact an attempt to compensate for what they have not had in their lives (*Kohut, 1966*).

2.3.1. Narcissism theoretical models

Individual trait models: It considers narcissism as a individual trait which can be explained using a broader model such as the "five important individual traits" model. Based on this approach, the most common description for narcissism is that the narcissists of the arrogant type are extroverted people who are incompatible with others. Thus, these people gain a high score in terms of extraversion but a low score in terms of adaptability and narcissism. In addition, those with vulnerable narcissism are not only incompatible, but also neurotic (*Miller and Maples, 2011*).

Narcissism addiction model: There are other models of narcissism, such as addiction model, considering narcissism as an addiction to be at the center of attention. *Campbell et al.* (2011) raised that this model is appropriate for the situations where narcissists are successful and are also aware that such a public attention is addictive and will finally lead to their collapse. (*Campbell and Hoffman, 2011*). Self-regulation models: The self-regulation models of narcissism are based on three parts of narcissism, i.e. self, relationships, and self-regulation strategies. Such models emphasize how these three different parts can interact with each other to lead to narcissistic behaviors. In addition, these models are designed based on the narcissism of the arrogant type.

The part of self in narcissism means that narcissists think they are better than others and such a superiority manifests in the areas of power, physical attraction, and creativity, rather than in the areas of empathy and attention. The primary incentive for narcissistic behaviors is the striving for superiority, sense of entitlement, and need for power. This last incentive, i.e. the need for power, makes narcissists focus on success and avoid failure (Morf and Rhodewalt, 2001).

There is another model for narcissism called chocolate cake model, which is especially used in case of managers, colleagues, and employees. Campbell et al. (2011) explained that based on this model, having a relationship with narcissists is like having a chocolate cake which is very exciting. At first, this relationship is much better than a relationship with non-narcissists but these leaders, employees, colleagues, and narcissistic partners become dishonest, controlling, and indifferent people to the interests of others over time, just like having a chocolate cake after 20 minutes causes a feeling of laziness and heaviness (Campbell and Hoffman, 2011).

3. Hypotheses

Based on the theoretical foundations and review of literature, this study proposed and tested the following three hypotheses:

- There is a relationship between IQ and earnings management (accrual, real, and scenario).
- There is a relationship between IQ and earnings management (accrual, real, and scenario) by considering the narcissistic factor of face width.
- There is a relationship between IQ and earnings management (accrual, real, and scenario) by considering the narcissistic factor using questionnaire method.

4. Method

This study aimed to investigate the relationship between IQ and different methods of earnings management with an emphasis on managers' narcissism. The method was applied in terms of objective and correlational-descriptive in terms of method. The population included all of the managers of the companies listed on the Tehran Stock Exchange

in 2017. The total number of companies was 540. Finally, 112 companies were selected as a sample after screening and the managers of those companies were tested.

A number of two closed response tools were used to collect the required data and measure the research variables. Raven adult test was used to measure IQ. This test is the most valid global intelligence test and includes 60 visual questions, each of which has 6 - 8 options. The variable of narcissism has been through a standard questionnaire and face width measurements. In addition, quantifying the real and accrual earnings management variables was conducted through financial statement data based on the models of Jones and Roy Choudhury, as well as scenario design.

4.1. Research models and variables

Dependent variable: earnings management (accrual, real and scenario)

4.1.1. Accrual earnings management (Jones modified model)

Jones' model was modified by Dechow, Asmon and Sweeney (1995) by adding a variable and presented as follows:

$$TACC_t = \beta_0 + \beta_1 \frac{1}{TA_{t-1}} + \beta_2 (\Delta REV_t - \Delta REC_t) + \beta_3 PPE_t + \beta_8 EARN_{i,t} + \varepsilon$$

ΔREC_t indicates the changes in accounts and documents receivable this year than the previous year. Subtracting the changes in accounts receivable from sales revenue changes ($\Delta REV_t - \Delta REC_t$) results a new variable which is equivalent to changes in cash sales revenue.

Dechow et al. (1995) stated that Jones assumed in his model that the total revenue (REV_t) was optional because, the non-optional part of accruals is shown by changes in fixed revenues and assets ($\Delta REV_t + PPE_t$) while a large part of non-cash revenues is optional.

Thus, they used the phrase ($\Delta REV_t - \Delta REC_t$) instead of $\Delta \Delta REV_t$ to calculate the non-optional part of accruals more accurately. In this regard, the model error values will better represent the optional accruals (Bani Mahd, Arabi and Hasanpour, 2016).

4.1.2. Real earnings management

This type of earnings management is carried out by manipulating the real activities. For this reason, it is called real earnings management. Manipulating the actual activities is a deviation from normal operating methods and one of the incentives of managers to do so is misleading the stakeholders to believe that the goals of financial reporting have been realized through normal activities. Real earnings management was proposed for the first time by Roy Choudhury (2006). He introduced a three-part model to make real earnings management operational.

first model:

$$CFO_t = \beta_0 + \beta_1 Sales_t + \beta_2 \Delta Sales_t + \varepsilon$$

CFO_t : Operating cash flow

$Sales_t$: Total sales revenue

$\Delta Sales_t$:

Changes of sales revenue this year than the last year.

ε : error value

Second model:

$$CGS_t = \beta_0 + \beta_1 Sales_t + \beta_2 \Delta Sales_t + \beta_3 \Delta Sales_{t-1} + \varepsilon$$

CGS_t : Final cost of sold products

$\Delta Sales_{t-1}$:

Changes of sales revenue last year than two years ago.

Third model

$$DISE_t = \beta_0 + \beta_1 Sales_t + \varepsilon$$

: $DISE_t$

Total costs of distribution, sales, and general (operating).

Model theoretical foundations

Roy Choudhury believed that management manipulates real activities in three general ways as follows:

- 1) Actual activities for changing sales revenue, such as increasing sales by granting a whole cash discount;
- 2) Actual activities for changing the final cost of sold products, such as increasing the inventories at the end of the year by increasing production and reducing the wage of staff by reducing the overtime hours or payment

- 3) Actual activities for changing the operating costs (distribution, sales, and public) such as increasing (reducing) the advertising costs or staff training costs

Measurement criterion of real earnings management: The final size of applying actual earnings management is calculated through the error values of each of the above-mentioned models. Error values can be positive or negative (Bani Mahd, Arabi and Hasanpour, 2016).

4.1.3. Scenario earnings management

The scenario presented in this study was derived from a research by Clikeman and Henning (2000). Due to the local conditions, some changes were made in this scenario and it has become shorter to be responded more easily. In this questionnaire, the status of the company is stated as follows: You are the financial manager of a public production company. The costs of repairing the equipment in this company, which are very heavy in terms of amount and have a repetitive nature, have been always recorded as operating costs in the company accounts. The economic recession has led to a significant decrease in the company earnings in relation to the forecasted amount and has raised the concern that the non-realization of the forecasted earnings will reduce the value of the company shares and its stock price. Such an issue will cause many problems for the company in the future. In this scenario, if the financial manager takes the case which has been always the operating cost, it means that he has performed earnings the management (Mansour Zare, 2017).

Independent variable of IQ

Raven adult test was used to measure IQ. This test includes 60 visual questions, each of which contains 6 - 8 options to answer. The subject should find and check the correct option. The questions are arranged in order from easy to hard. At the end of the test, a number is obtained which is the IQ of the subject.

This test was conducted in a group way as described below and the key to answer the test questions is presented in the appendix. It should be noted that subjects are divided into seven classes by taking the Raven visual intelligence test based on the score or IQ they obtain. These seven classes in the Raven IQ test include genius (with an IQ higher than 127), very intelligent (with an IQ higher than 120),

intelligent (with an IQ higher than 110), moderate (with an IQ higher than 90), moderately weak (with an IQ higher than 80), borderline (with an IQ higher than 73) and retarded and borderline weak (with an IQ is lower than 73) (Ganji, 2018).

Moderator variable of narcissism

Cai, Kwan, and Sedikides (2012) defined narcissism as a sense of relatively stable individual differences involving magnification, self-love, pride, and self-expression. Narcissism represents extreme self-love and is an inflexible and fixed trait which includes exaggeration, arrogance, and a desire to be admired (American Psychiatric Association, 2014). Based on the definition of the American Psychiatric Association, narcissists fail to empathize with others but need to be praised regularly by them and have an exaggerated self-image. In addition, arrogance is one of the obvious traits of narcissism. The NPL 16 narcissistic personality inventory was used to evaluate narcissism. The NPL narcissistic personality inventory is the first self-assessment tool which was developed for measuring narcissism in non-clinical groups. This standard inventory, presented by Ruskin and Hall (1981), is the most practical inventory for measuring narcissism (Rosario and White, 2005).

The initial version of this inventory contained 80 questions and four components as follows: authority/leadership, arrogance/pride, self-praise/self-aggrandizement, entitlement/exploitation. Due to the large number of questions, Ruskin and Terry (1988) reduced the number of questions to 40, known as the NPI-40. Such questions report the seven components of authority, arrogance, superiority, entitlement, exploitation, self-efficacy, and self-praise, and are a tool for measuring narcissism of the arrogant type. The problem with Ruskin and Hall's questionnaire was that it was too long, making the respondent exhausted. That is why Amz et al. (2006) summarized it by raising the problem that in most studies, researchers require a general score of narcissism and the NPI-40 questionnaire is used in a one-dimensional manner despite separating the narcissistic dimensions and also presented the NPI-16 inventory to measure narcissism (cited in Mansour Zare, 2017).

This inventory is one-dimensional and standard and is used in the studies which only need to calculate the total score of narcissism. Validity of this inventory in the Iranian society was measured by

Mohammadzadeh (2009) and was introduced as an appropriate tool for calculating the total score of narcissism. Narcissism (face width): In order to measure managers' narcissism, similar to a study by Olson and Stockelberg (2015), the two criteria of managers' photos were used. It should be noted that in the present study, the size of the managers' photos being presented in the financial statements has been used in form of special scoring; However, since the photos of managers are not provided in financial statements in Iran, according to a research by Wong et al. (2011) and Jia et al. (2014), the alternative criterion of the CEO's testosterone index was used as follows: The ratio of managers' face width to their face length which is measured as the distance between the two temples (face width) divided by the distance between eyebrow to the upper lip (face length). The ratio of this measurement as width to length is expressed as WHR. Studies indicated that WHR is a main reason for the testosterone-related behaviors in men (Wong et al. 2011; Jia et al. 2014). Stirrat and Perrett (2010) indicated that measuring face width to e face length (face width to height ratio) is a characteristic of gender and testosterone and a factor for measuring the tendency to aggressive behavior in men. In addition, Lewis et al. (2012) indicated that face width to height ratio is related to some traits as aggression, immoral behavior, business profitability, and governance. Furthermore, recent studies showed that the level of testosterone in men is related to their level of narcissism (Pfattheicher, 2016). Ultimately, in this study, WHR is a two-dimensional variable which is measured as follows: If the WHR is bigger than the median of the sample industry (indicating high testosterone), it takes the number one; otherwise it takes the number zero. Since executive managers normally consider more rewards for themselves in organizations and thereby stabilize their status in the organization (Eriley et al., 2014), the cash reward index of managers will be obtained through dividing the cash reward approved in the general assembly meeting by the total salary paid in the fiscal year of the company.

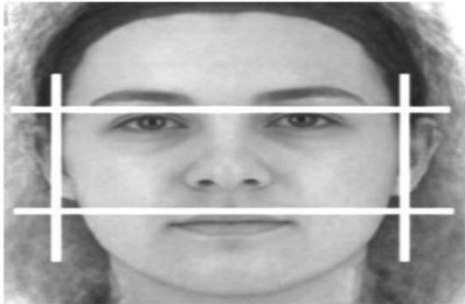


Fig. 1 Measurement of testosterone index
(derived from Jia et al., 2014: 1241, cited in by Khajavi, Dehghani and Gerami, 2016).

test, composite reliability test (CR), and communality test.

Cronbach's alpha test showed that the variables of IQ and narcissism had a Cronbach's alpha higher than 0.7, indicating the reliability of the model. Evaluating the communality showed that communality for IQ was 0.667, narcissism with face width had a coefficient of 0.684, and narcissism through a questionnaire had a coefficient of 0.653.

One of the conditions for confirming validity is that the AVE higher than 0.5 and another condition is that the composite validity is higher than the average variance extracted. The results of the above table show that both conditions are met. AVA involves variance. In fact, it is the ratio of the indirect effect to the total effect. This index was estimated using bootstrapping approach and the result can be explained as follows: the effect of each variable on earnings management is partial ($0.20 < AVF < 0.80$).

5. Model reliability

The first test is measuring the reliability of the Cronbach's alpha test model which evaluates the internal correlation of one-variable questions. The table below indicates the results of Cronbach's alpha

Table 1. Composite reliability, communality, and Cronbach's alpha

Cronbach's alpha	communality	Composite reliability	variables
0.0925415	0.66742	0.942545	IQ
0.874587	0.68454	0.924515	Narcissism- face width
0.915513	0.653284	0.927378	Narcissism – questionnaire

Table 2. Comparison of composite reliability and average variance extracted

Result	CR	AVE	
confirmed	0.922381	0.578336	IQ
confirmed	0.924515	0.552154	Narcissism-face width
confirmed	0.927378	0.553284	Narcissism- questionnaire

6. Findings

Since structural equations have several pre-fitting, the hypotheses have to be first examined. In the technique of eliminating indifferent subjects, since all of the questionnaires were answered desirably, none of the samples were eliminated from the statistical analysis. The second technique is error detection. In this study, first empty homes were identified and then managed.

6.1. Normality test (Skewness and Kurtosis)

Based on the above table, the amount of skewness and kurtosis is between ± 3 , indicating the normality of variables. Considering that all the hypotheses, the pls structural model was plotted and the related model was estimated in two states of standard coefficient estimation and significance coefficient estimation.

Table 3. Normality test

Narcissism	Scenario earnings management	Accrual earnings management	Real earnings management	IQ	Statistics
0.038	0.08	0.396	0.386	-0.325	Skewness
0.728	-0.297	-0.002	-0.241	-0.537	Kurtosis

6.2. Testing hypotheses

6.2.1. Inner structural model

The following model is related to the standard coefficients of variables. In the model below, IQ is shown as an independent variable, earnings

management as a dependent variable, and narcissism as a moderating variable with two states of measurement including significance and standard coefficient.

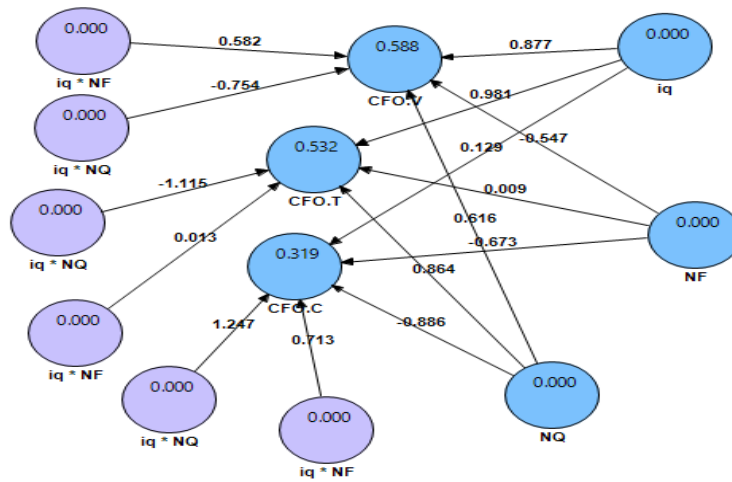


Fig. 1 Inner structural model in standard coefficient estimation

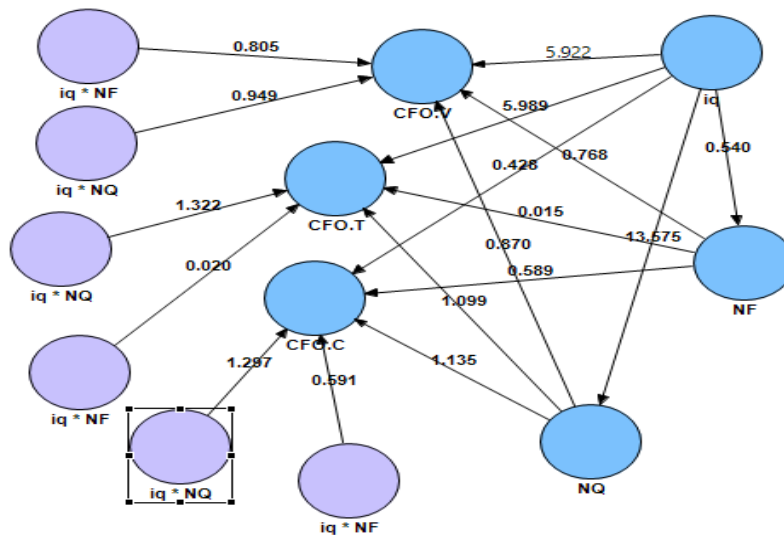


Fig. 2 Inner structural model in coefficients significant estimation

6.2.2. Testing the inner model

The main hypothesis is based on the relationship between IQ and accrual earnings management. The results indicated that the relationship between IQ and accrual earnings management is significant with a path coefficient of 0.972 since the t value is out of the range ± 1.96 at 95% confidence level. Thus, it is predicted that if the model is repeated in a bigger sample of the same population, the hypothesis will be confirmed.

The hypothesis based on the relationship between IQ and real earnings management with a path coefficient of 0.860 is significant since the t value is out of the range ± 1.96 at 95% confidence level. Thus, it is predicted that if the model is repeated in a bigger sample of the same population, the hypothesis will be confirmed.

The hypothesis based on the relationship between IQ and scenario earnings management with a path coefficient of 0.1125 is rejected since the t value is not out of the range ± 1.96 at 95% confidence level.

The first hypothesis of the study stated the relationship between IQ and accrual earnings management considering narcissism through face width with a path coefficient of 0.0124, considering that the t value is not out of the range 1.96%, thus the relationship between IQ and accrual earnings management is not significant considering narcissism at 95% confidence level. Thus, the above-mentioned hypothesis is rejected.

The second hypothesis of the study stated the relationship between IQ and real earnings management considering narcissism through face width with a path coefficient of 0.5769, considering that the t value is not out of the range 1.96%, thus the relationship between IQ and real earnings management is not rejected considering narcissism at 95% confidence level.

The third hypothesis of the study stated the relationship between IQ and scenario earnings management considering narcissism through face

width with a path coefficient of 0.7019, considering that the t value is not out of the range 1.96%, thus the relationship between IQ and accrual earnings management is not significant considering narcissism at 95% confidence level. Thus, the above-mentioned hypothesis is rejected.

The fourth hypothesis of the study stated the relationship between IQ and accrual earnings management considering narcissism through questionnaire with a path coefficient of 0.055, considering that the t value is not out of the range 1.96%, thus the relationship between IQ and accrual earnings management is not rejected considering narcissism at 95% confidence level.

The fifth hypothesis of the study stated the relationship between IQ and real earnings management considering narcissism through questionnaire with a path coefficient of 0.6491, considering that the t value is not out of the range 1.96%, thus the relationship between IQ and real earnings management is not rejected considering narcissism at 95% confidence level.

The sixth hypothesis of the study stated the relationship between IQ and scenario earnings management considering narcissism through questionnaire with a path coefficient of 0.3539, considering that the t value is not out of the range 1.96%, thus the relationship between IQ and scenario earnings management is not rejected considering narcissism at 95% confidence level.

The results of the above table indicate that IQ explains 53.22% of accrued earnings management, 58.78% of real earnings management, and 31.92% of scenario earnings management, which is evaluated by Chan (1998) for accrual and real earnings managements as red moderate, but is evaluated poor for scenario earnings management.

Table 4. Significance test of hypotheses

Result	T value	Path coefficient	hypotheses	Hypothesis
Confirmed	0/989090	0/972071	IQ-< Accrual earnings management	MAIN
Confirmed	0/922090	0/860018	IQ-< real earnings management	
Rejected	0/428173	0/112031	IQ-< scenario earnings management	
Rejected	0/020770	0/012031	Narcissism-face width* IQ-<accrual earnings management	First
Rejected	0/80080	0/057009	Narcissism-face width* IQ-<real earnings management	second

Result	T value	Path coefficient	hypotheses	Hypothesis
Rejected	0.040042	0.01980	Narcissism-face width* IQ-<scenario earnings management	Third
Rejected	1.078322	1.00768	Narcissism- questionnaire* IQ-<Accrual earnings management	fourth
Rejected	1.242.63	0.74914.	Narcissism- questionnaire* IQ-<real earnings management	Fifth
Rejected	1.29.002	0.303906	Narcissism- questionnaire* IQ-<scenario earnings management	Sixth

Table 5. Testing the coefficient of determination (R²)

R Square	Dependent variable
0.319226	accrued earnings management
0.032274	Real earnings management
0.087893	Scenario earnings management

7. Conclusion and suggestions

Based on to Figs. 1 and 2, there is a significant relationship between IQ and accrual and real earnings management while the relationship with scenario earnings management is not significant. The coefficient of determination indicates that IQ explains 53.22% of accrual earnings management, 58.78% of real earnings management, and 31.92% of scenario earnings management. This amount of explanation is evaluated by Chan (1998) for real and accrual earnings managements as moderate but evaluated as poor for scenario earnings management. The extracted model can be confirmed due to the composite reliability, commonality, and average variance extracted. In fact, the presented model has convergent and divergent validity and thus can be generalized.

The results of the first hypothesis indicated no significant relationship between IQ and accrual earnings management regarding the managers' narcissism through face width. In fact, the score of managers' narcissism obtained based on face width could not affect the manager's behavior at the time of accrual earnings management.

The results of the second hypothesis indicated no significant relationship between IQ and real earnings management regarding the managers' narcissism through face width. In fact, the score of managers' narcissism obtained based on face width could not affect the manager's behavior at the time of real earnings management.

The results of the third hypothesis indicated no significant relationship between IQ and scenario earnings management regarding the managers'

narcissism through face width. In fact, the score of managers' narcissism obtained based on face width could not affect the manager's behavior at the time of scenario earnings management.

The results of the fourth hypothesis indicated no significant relationship between IQ and accrual earnings management regarding the managers' narcissism through face width. In fact, the score of managers' narcissism obtained based on questionnaire could not affect the manager's behavior at the time of accrual earnings management.

The results of the fifth hypothesis indicated no significant relationship between IQ and real earnings management regarding the managers' narcissism through questionnaire. In fact, the score of managers' narcissism obtained based on questionnaire could not affect the manager's behavior at the time of real earnings management.

The results of the sixth hypothesis indicated no significant relationship between IQ and scenario earnings management regarding the managers' narcissism through questionnaire. In fact, the score of managers' narcissism obtained based on questionnaire could not affect the manager's behavior at the time of scenario earnings management.

Based on the extracted results and due to o the expressed views, narcissists are highly successful in business because of their desire for power-seeking, while this personality trait can lead to some problems in the long term. In this group of managers, some signs such as power-seeking, arrogance, superiority-seeking, pride, exploitation, entitlement, and self-sufficiency are obvious (Ruskin and Terry, 1988; Campbell, 2011).

Narcissistic managers are more willing to achieve big achievements in the company and thus they are inclined to the implementation of brave strategic-operating actions and risky works (Olsen et al., 2014; Olsen and Stockelberg, 2016), so that such decisions will lead to huge profits and losses at the end of the fiscal year (Charterjee and Hambrick, 2007). As a result, narcissistic managers are most likely to obtain the best performance for fraudulent activities (Regensblack and Kamandder, 2013).

In addition, since the above-mentioned managers have a high self-confidence, they consider many actions which are high risk and impossible according to people as optimistic and take such brave actions to attract the attention of others. (Wallas and Bamiter, 2002; Chen, 2010) In fact, ordinary laws do not apply to these managers (Nurberg, 2009). This belief can increase the probability of involvement in immoral activities, such as earnings management, and justify their activities. According to Wats and Zimmerman (1990) as well as Fields et al. (2001), earnings management includes both the selection of accounting policies and the real actions of managers. In this regard, Bamber (2010) presented some evidence that the personality traits of managers in the implementation of disclosure and accounting policies are in line with their fixed effects. In this regard, Olsen et al. (2015) realized that narcissistic managers attempt to increase the reported earnings by manipulating real activities. Furthermore, Ferino et al. (2015) mentioned that narcissism among managers is associated with the activities which lead to earnings management. Thus, based on the theoretical foundations presented in this study, it is expected that narcissism among managers affects the occurrence of earnings management phenomenon.

Another explanation is that narcissists have too much desire to be praised by others. Having a better financial status lets them satisfy this feeling. As many researchers raised, narcissists are always searching for opportunities to attract the attention of others by thinking that they are unique. In addition, they enjoy being respected and praised by others. Narcissists will feel good if they can attract the attention of others. In order to experience this feeling, they can do the things which ordinary people may refuse to do. For narcissists, having better financial resources can be a context to be considered as successful and be respected. On the other hand, narcissists consider

themselves beyond the law and it will be easier for them to break the law compared to ordinary people.

In line with the obtained results on the significant positive relationship between IQ and accrual and real earnings management, it is inferred that earnings management is a kind of manipulation and fraud, requiring an intelligence higher than average. Thus, the managers with real and accrual earnings management have naturally a high intelligence.

In general, higher intelligence helps the person with negative behaviors as much as it helps with positive behaviors. The more intelligent the person is, the easier it is for him to break the laws and learn contradictory strategies better. In this way, it is recommended that the shareholders of each company pay more attention to the behavior of their managers and use expert auditors to evaluate the works of managers and also regard training courses based on work ethic in accounting for their managers and employees.

The final interpretation of the results of the present study, which emphasizes the effect of psychological factors including IQ on real and accrued earnings management which is one of the classic aspects of accounting literature. In fact, this research can be a starting point for the development and implementation of combined research from a behavioral and accounting perspective.

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