An Investigation of the Effects of Perceived Justice, Verbal Aggression, and Burnout on Academic Achievement of University Students

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Submitted to the
Institute of Graduate Studies and Research
in partial fulfillment of the requirements for the Degree of

Doctor of Philosophy
in
Educational Sciences

Eastern Mediterranean University
February 2012
Gazimağusa, North Cyprus

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ABSTRACT

The current study has investigated the effects of justice, aggression, and burnout on academic achievement. The sample (n=1481) of the study consisted of undergraduate university students. The constructs used in the study have been utilized from the extant literature. In detail, perceptions of justice were operationalized as “distributive justice”, “procedural justice”, and “interactional justice”. Aggression was utilized as “verbal aggression”. Burnout was operationalized as “emotional exhaustion”, “cynicism”, and reduced professional efficacy”. Academic achievement was utilized as “GPA scores” of students. In regards to the aforementioned constructs, the study has developed and tested a research model with 22 hypothesized linkages. These 22 hypotheses were designed to provide assertions to the generic research questions of the study.

The results of the path analysis reveal that distributive justice was significantly related to verbal aggression. This finding depicted a positive relationship contrary to the negative prediction of the hypothesis. Procedural and interactional justice were not related to verbal aggression. In addition, interactional justice was negatively related to emotional exhaustion where distributive and procedural justice were not. Furthermore, distributive justice was negatively associated with cynicism where procedural and interactional justice were not. Additionally, distributive and procedural justice were negatively and interactional justice was positively related to reduced professional efficacy. Conjointly, only distributive justice was associated to academic achievement where procedural and interactional justice were not.

Path analytical results showed that verbal aggression was positively related to exhaustion and cynicism, however, verbal aggression was negatively related to reduced professional efficacy. Additionally, verbal aggression did not elicit any effect on academic achievement.

The results demonstrated that emotional exhaustion and cynicism were not related to academic achievement. However, reduced professional efficacy was found to be negatively associated to academic achievement.

In this dissertation, discussion of the findings, implications, limitations of the study, and avenues for future research are also presented.

Keywords: Perception of Justice, Verbal Aggression, Emotional Exhaustion, Cynicism, Reduced Professional Efficacy, Academic Achievement, Student, Higher Education.

ÖZ

Bu çalışma adalet algısının, sözel saldırının ve tükenmişlik sendromunun akademik başarı üzerindeki etkisini incelemiştir. Bu çalışmanın örneklemini (n=1481) üniversitede okuyan öğrenciler oluşturmuştur. Çalışma için kullanılan değişkenler daha önceki yapılmış görgül çalışmalardan alınmıştır. Bu doğrultuda, adalet algısının "dağıtım adaleti", "prosedür adaleti", ve "etkileşim adaleti" alt değişkenlerinden olduğu saptanmıştır. Saldırganlık ölçütünden "sözel saldırı" değişkeni kullanılmıştır. Tükenmişlik sendromunun "duygusal yorgunluk/tükenmişlik", "duyarsızlık", ve "yetersizlik" değişkenlerinden olduğu gözlemlenmiştir. Bu arada, örencilerin akademik başarıları almış oldukları not ortalamaları ile ölçülmüştür. Yukarıda belirtilen değişkenler ışığında, değişkenler arasındaki ilişkileri inceleyen 22 hipotezli bir model geliştirilmiştir. İlişkiler path analizi kapsamında ölçülmüştür.

Path analizi bulgularına göre, dağıtım adaleti, sözel saldırı düzeyi üzerinde bir etki yapmaktadır. Ancak, bu bulgu çalışmanın öngördüğünün aksine pozitif bir etki olarak saptanmıştır. Prosedür adaleti ve etkileşim adaleti boyutlarının sözel saldırı üzerinde bir etkileri bulunmamıştır. Bunun yanı sıra, etkileşim adaletinin duygusal yorgunluğu düşürdüğü görülmüştür. Fakat, dağıtım ve prosedür adaleti ile duygusal yorgunluk arasında bir ilişki bulunmamıştır. Diğer bir taraftan, dağıtım adaletinin duyarsızlığı düşürdüğü gözlemlenmektedir. Ancak, prosedür ve etkileşim adaleti ile duyarsızlık arasında bir ilişki bulunmamıştır. Ek olarak, sonuçlar dağıtım ve prosedür adaletinin yetersizliği düşürdüğünü fakat etkileşim adaletin yetersizliği arttırdığı bulgulanmıştır.

Buna bağlı olarak, sadece dağıtım adaleti akademik başarı üzerinde bir etki yaratmıştır. Prosedür ve etkileşim adaleti ile akademik başarı arasında bir ilişki bulunmamıştır.

Path analizi sonuçlarına göre sözel saldırının duygusal tükenmişlik ve duyarsızlığı arttırdığı gözlemlenmiştir. Ancak, sözel saldırı değişkeni ile yetersizlik arasında negatif bir ilişki ortaya çıkmıştır. Ek olarak, sözel saldırı boyutu ile akademik başarı arasında bir ilişki bulunmamıştır.

Çalışmanın sonuçları duygusal yorgunluğun ve duyarsızlığın akademik başarı üzerinde bir etkisi olmadığını göstermektedir. Fakat, yetersizliğin akademik başarıyı düşürdüğü bulgulanmıştır.

Bu tezde, analiz bulgularına ilişkin tartışma, belirlemeler, çalışmanın sınırları ve gelecek araştırmalar için öngörülere de yer verilmiştir.

Anahtar Kelimeler: Adalet Algısı, Sözel Saldırı, Duygusal Tükenmişlik, Duyarsızlık, Yetersizlik, Akademik Başarı, Öğrenci, Yüksek Öğrenim.

I dedicate this dissertation to the inspiration of my life…

ACKNOWLEDGMENT

I would like to thank Asst. Prof. Dr. Hüseyin Yaratan for his continuous support and guidance in the preparation of this study. His open vision and constructive criticisms has made this journey worthwhile.

I would like to show my deepest appreciation to Assoc. Prof. Dr. Osman Karatepe who educated me throughout my undergraduate, masters, and PhD studies. I can only hope that one day I would be half as good as him.

I also would like to thank friends and family members who always believed in me.

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Chapter 1

INTRODUCTION

This chapter presents information related to justice, aggression, burnout, and academic achievement. Theoretical reasoning is also provided. In addition, problem statement and purpose of the study is provided. Moreover, the contribution of the study to education literature is also depicted. Definitions of study variables are provided. Furthermore, hypothesized relationships among study variables are presented. Finally, the research model is provided.

1.1 Model Development

The purpose of this study is to develop and test a conceptual model of perception of justice, verbal aggression, burnout, and academic achievement using an undergraduate sample of university students. The model of the current study is developed via using and additive approach that stemmed from the prior empirical works (Chory-Assad & Paulsel, 2004a; Chory-Assad & Paulsel, 2004b; Chory-Assad, 2002; Uludag & Yaratan, 2010; Yang, 2004).

As a field of academic research, perceived justice (fairness), aggression, and burnout have received attention from the researchers of various disciplines. These disciplines are from marketing, organizational behavior to political science. Specifically, even though justice has been extensively studied in various contexts (Chory, 2007; Chory-Assad & Paulsel, 2004a; Chory-Assad & Paulsel, 2004b; Chory-Assad, 2002; Tyler, 1987) it has

found little attention in instructional context. Furthermore, student behavioral outcomes (e.g. aggression) in relation to justice perceptions need further attention (Chory-Assad, 2002). In addition, measuring burnout of individuals in a non-occupational setting (i.e. instructional setting / students) enhances the original theory of burnout (cf. Gan, Yang, Zhou, & Zhang, 2007). Examination of burnout as an antecedent of academic success is needed (Uludag & Yaratan, 2010). The current study will shed a light in understanding the complex dynamics and characteristics of the study variables in line with equity and conservation of resources theories. Hence, this thesis will develop and test a model of university students' perceived justice, aggression, and burnout on academic achievement (See figure 1).

1.1.2 Theoretical Rationale

Two theories provide underpinnings for the purpose of this study. These are Equity theory and Conservation of Resources (COR) theory. Equity theory is defined as the evaluations of individuals' contributions/inputs in comparison to benefits/outputs that they receive in their relationships (Adams, 1965). As institutions (i.e. universities) become more economically attuned, equity becomes more applicable in non-economic relations (Deutsch, 1985, as cited in Chory-Assad & Paulsel, 2004a, p. 101). Adams (1965) specifically denotes an equity existence in teacher-student relationship. For instance, equity rule is the benchmark for grade apportioning. Adams (1965) state that equity/justice exists when there is a counterbalance between contributions/inputs and benefits/outputs. However, if equity is blocked or deterred by injustice, individuals may encounter anger, defiance, frustration, and resentment. As a result, individuals may exhibit aggressive behaviors to restore the equity. Intrinsically, equity theory serves as a rationale of this study. On the other hand, the COR theory proposes that individuals will

have diminished resources when stress is encountered (Hobfoll, 1989). The COR theory underpins that the stress level of individuals increase when they lose resources. In this case, this might set a direction for lower levels of energy and motivation hence, hinders academic success.

1.2 Statement of the Problem

Student performance or achievement is one of the most important elements in instruction. Researching the problems in academic achievement of students may predict dropouts (Ekstrom, Goertz, Pollack, & Rock, 1986) and antisocial behaviors (Tremblay et al., 1992). It is, therefore, crucial to examine the possible determinants that may have potential impacts on student/academic achievement. For instance, investigating student burnout as an antecedent of academic achievement will yield an understanding of the relationship among variables (Uludag & Yaratan, 2010). Furthermore, assessment of justice and aggression dimensions in instructional settings is in infant stage (Chory, 2007; Chory-Assad, 2002) and it requires further investigation. In addition, relationships among abovementioned variables in an instructional setting have not been investigated. Moreover, the results of this study may provide the strategies and implications for faculty/administrators to improve achievement of students. Therefore, this study links justice, aggression, and burnout, in relation to academic achievement through a path analytical model using LISREL 8.30 (Joreskog & Sorbom, 1996) (see figure 1).

1.3 Purpose of the Study

The purpose of this study is to develop and test a conceptual model of justice, aggression, burnout and academic achievement utilizing a sample of undergraduate university students. In order to conceptualize the determinants of academic

achievement, latent constructs (justice, aggression, and burnout) has been equated (to academic achievement) into the research model. In the light of this model, research questions are posited as follows:

RQ1) How does dimensions of justice relate to aggression?

RQ2) How does dimensions of justice relate to dimensions of burnout?

RQ3) How does dimensions of justice relate to academic achievement?

RQ4) How does verbal aggression relate to dimensions of burnout?

RQ5) How does verbal aggression relate to academic achievement?

RQ6) How does dimensions of burnout relate to academic achievement?

1.4 Significance of the Study

The significance and the contributions of the study are as follows:

Measurement of perceived justice has received little attention in instructional context, hence, requires further investigation (Chory, 2007; Chory-Assad & Paulsel, 2004a; Chory-Assad & Paulsel, 2004b; Chory-Assad, 2002; Tyler, 1987).

Investigation of student aggression in general and in relation to perceived student justice has received little attention empirically (Chory-Assad, 2002).

Measurement of burnout of students is scanty (cf. Gan, Yang, Zhou, & Zhang, 2007). Assessing burnout will provide clear ways of understanding of student academic performance/achievement (Uludag & Yaratan, 2010).

According to the knowledge of the researcher, no empirical study exists that is based specifically on the relationship between justice, aggression, burnout and achievement using a sample of undergraduate university students.

1.5 Definition of Terms

1.5.1 Justice

As mentioned earlier, justice dimension has been developed and operationalized in organizational settings. Cropanzano and Greenberg (1997) define organizational justice as the "perceptions of fairness and the evaluations regarding the appropriateness of workplace outcomes or process" (as cited in Chory-Assad & Paulsel, 2004b, p. 254). Similar to the definition of organizational justice, classroom justice refers to the "perceptions of fairness and the evaluations regarding outcomes or processes that take place in an instructional context" (Chory-Assad & Paulsel, 2004b, p. 254). Perception of justice is known for its' three distinct dimensions. These are namely distributive justice, procedural justice, and interactional justice. Deutsch (1985) defines distributive justice as "the perceptions that the outcomes of a given transaction are fair" (as cited in Chory-Assad & Paulsel, 2004a, p. 101). In detail, the students assess and evaluate the fairness by comparing the actual grade to the deserved grade and/or the grades received by their peers. Procedural justice refers to the "perceptions of the fairness of the processes used to arrive at outcomes" (Byrne & Cropanzano, 2001, as cited in Chory-Assad & Paulsel, 2004a, p. 101). The procedures in an instructional context are instructors' method of conducting class, ways of marking or grading assignments, etc. Interactional justice, on the other hand, refers to the "perceptions of the fairness of the interpersonal conduct students receive when policies and procedures are executed" (Bies & Moag, 1986, as

cited in Chory-Assad & Paulsel, 2004a, p. 102). Interactional justice entails assessment of fairness of instructors' interpersonal communication with students in the classroom context (Chory-Assad & Paulsel, 2004a).

1.5.2 Aggression

The utilization of hostility, anger, and aggression are often confused in the extant literature. However, research has shown that these are distinct constructs and represented differently in the same multidimensional construct of cognitive, affective, and behavioral components (Buss & Perry, 1992). Hence, the construct could be viewed as three dimensions: i) Cognitive, it is comprised of negative thoughts of human temperament, resentment, and cynicism; ii) Affective, deals with emotions such as anger and loathing; iii) Behavioral, composed of aggressiveness such as verbal aggression (Buss & Perry, 1992). However, a careful review of the literature states that the aforementioned constructs have potential problems and leads to perplexity. Hence, the modified version of Aggression Questionnaire (AQ) by Garcia-Leon et al. (2002) used for the purpose of this study that was originally developed by Buss and Perry (1992). The dimensions of student aggression namely are; verbal aggression, anger with resentment, physical aggression, and suspicion. Verbal aggression is defined as "hurting or harming others verbally, represent the instrumental or motor component of the behavior" (Buss & Perry, 1992, p. 457). Anger with resentment (referred as anger by Buss & Perry, 1992) involves "physiological arousal and preparation for aggression, represents the emotional or affective component of behavior" (Buss & Perry, 1992, p. 457). Suspicion (referred as Hostility by Buss and Perry, 1992) consists of "feelings of ill will and injustice that represents the cognitive component of behavior" (Buss & Perry, 1992, p. 457). However, for the purpose of this study, verbal aggression has been

selected in order to investigate its possible connections among justice, burnout, and GPA. The assessment of verbal aggression in educational settings needs further empirical attention (Yaratan & Uludag, 2012). In parallel to this thought, other forms of aggression such as overt (e.g. physical aggressiveness) or covert (e.g. suspicion, obstructionism) have not been extensively validated across contexts. In addition, Chory-Assad (2002) suggest that the individuals working at a specific organization or students registered to a specific course do not usually use the other forms of aggression other than verbal aggressiveness. The compelling argument for the abovementioned statement could be that individuals or students are concerned with the negative outcomes (such as failing a course) of their behaviors. Furthermore, covert forms of aggression (i.e. verbal) are more related to perceptions of justice (Geddes & Baron, 1997) and more explained by the equity theory. Thus, verbal aggressiveness scale (VAS) developed by Garcia-Leon et al. (2002) is utilized for the purposes of the current study.

1.5.3 Burnout

Burnout has been well-known as a three-dimensional syndrome of emotional exhaustion, depersonalization, and lack of personal accomplishment. Emotional exhaustion refers to the "depletion of emotional resources owing to the demands of interpersonal contacts". Depersonalization is described as "cynical attitudes toward one's job". Lack of personal accomplishment is the "tendency to evaluate one's work negatively" (Maslach & Jackson, 1981, p. 99). In detail, according to Schaufeli, Salanova, Gonzales-Roma, & Bakker, (2002) burnout in instructional context and/or as of students refers to "the feelings of exhaustion due to study demands, cynical attitudes toward one's studies/courses, and feelings of ineptness as a student" (as cited in Uludag & Yaratan,

2010, p. 14). The dimensions of burnout are; emotional exhaustion, cynicism, and reduced professional efficacy (see figure 1).

1.5.4 Academic Achievement

Academic achievement refers to students' academic performance at a school. In order to measure achievement, students' GPA scores were used. Students' GPA scores at the end of the semester were taken into account. Same approach was utilized by Butler (2007). This study utilized the denotation of academic achievement of Brown, Lent, and Larkins (1989).

1.6 Hypotheses

This study surmises to find relationships among justice, aggression, burnout and academic achievement. The relationships among study constructs are depicted in the research model.

1.6.1 Justice, Aggression, Burnout, and Academic Achievement

It is evident in the literature that perceptions of justice are related to verbal aggression. For instance, Chory-Assad (2002) has demonstrated significant relationships on verbal aggression of distributive and procedural justice. Furthermore, Chory-Assad and Paulsel (2004a) has found a significant correlation between interactional justice and indirect aggressive (verbal) behavior. In addition, Chory-Assad and Paulsel (2004b) has denoted relationships on covert forms of aggression of distributive and procedural justice. Moreover, in an organizational context, Folger and Baron (1996) reported that the employees who perceive unfair treatment are more likely to show anti-social behaviors such as verbal aggression. Folger and Konovsky (1989) stated that distributive justice is an initiator of reactions when students evaluate perceptions of fairness.

Yang (2004) has proposed a model that examines the relationship between fairness and burnout. However, the results yielded no significant relationship among these constructs. More recently, Uludag and Yaratan (2011) has found that distributive justice, procedural justice, and interactional justice had a negative impact on students' burnout. Maslach and Leiter (1997) have stated that unfair (inequity) environment is a determinant of burnout. In addition, Maslach and Leiter (1997) proposed that unfairness is a source that triggers burnout. Moliner, Martinez-Tur, Peiro, Ramos, and Cropanzano (2005) also found significant correlations among the perceptions of justice and dimensions of burnout. In addition, empirical studies conducted in educational settings (Taris, Van Horn, Schaulefi, and Schreurs, 2004; Taris, Peeters, Le Blanc, Schreurs, and Schaufeli, 2001) have demonstrated significant relationships between inequity and dimensions of burnout.

According to the equity theory, Adams (1965) postulates that individuals who receive unfair treatments are likely to show low levels of performance. This finding also exists in the study of Moorman (1991). Recently, Yang (2004) has found a significant relationship between fairness perceptions and academic achievement. More recently, Uludag and Yaratan (2011) have posited that distributive and interactional justice positively influenced academic achievement. However, the effect of procedural justice on academic achievement was insignificant (Uludag & Yaratan, 2011).

Stemming from the abovementioned relationships the following research hypotheses are proposed:

H1: Distributive justice is negatively related to verbal aggression.

H2: Distributive justice is negatively related to emotional exhaustion.

H3: Distributive justice is negatively related to cynicism.

H4: Distributive justice is negatively related to reduced professional efficacy.

H5: Distributive justice is positively related to academic achievement.

H6: Procedural justice is negatively related to verbal aggression.

H7: Procedural justice is negatively related to emotional exhaustion.

H8: Procedural justice is negatively related to cynicism.

H9: Procedural justice is negatively related to reduced professional efficacy.

H10: Procedural justice is positively related to academic achievement.

H11: Interactional justice is negatively related to verbal aggression.

H12: Interactional justice is negatively related to emotional exhaustion.

H13: Interactional justice is negatively related to cynicism.

H14: Interactional justice is negatively related to reduced professional efficacy.

H15: Interactional justice is positively related to academic achievement.

1.6.2 Aggression, Burnout, and Academic Achievement

In an organizational context, Karatepe, Yorganci, and Haktanir (2009) and Karatepe, Haktanir and Yorganci (2010) have found a relationship between verbal aggression and emotional exhaustion. More recently, Yaratan and Uludag (2012) has found that verbal aggression was positively related to emotional exhaustion. In their empirical study, Yaratan and Uludag (2012) have also found a significant relationship among verbal aggression and cynicism. Additionally, the study also demonstrated a positive relationship between verbal aggression and reduced professional efficacy (Yaratan & Uludag, 2012).

Equity theory postulates that when individuals are treated unfairly they may demonstrate anti-social behaviors (i.e. anger, aggression). These types of behaviors may be

performed to restore equity in transactions. Additionally, conservation of resources (COR) theory states that when individuals lose resources, they are likely to exhibit stress (e.g. burnout) (cf. Hobfol, 1989).

Karatepe, Yorganci, and Haktanir (2009) have investigated the relationship between verbal aggression and performance specific to service industry. Their results yielded no significant relationship among these constructs. Equity theory points out that when individuals demonstrate aggressive behaviors their performance levels are likely to be decreased (Adams, 1965). According to the study of McLaughlin, Bonner, Mboche, and Fairlie (2010) verbal aggression leads to psychological distress and lower levels of performance. Furthermore, Xie, Farmer and Cairns (2003) stated that students who manifest aggressive behaviors have low academic performance.

In the light of the aforementioned facts, the following hypotheses are proposed:

H16: Verbal aggression is positively related to emotional exhaustion.

H17: Verbal aggression is positively related to cynicism.

H18: Verbal aggression is positively related to reduced professional efficacy.

H19: Verbal aggression is negatively related to academic achievement.

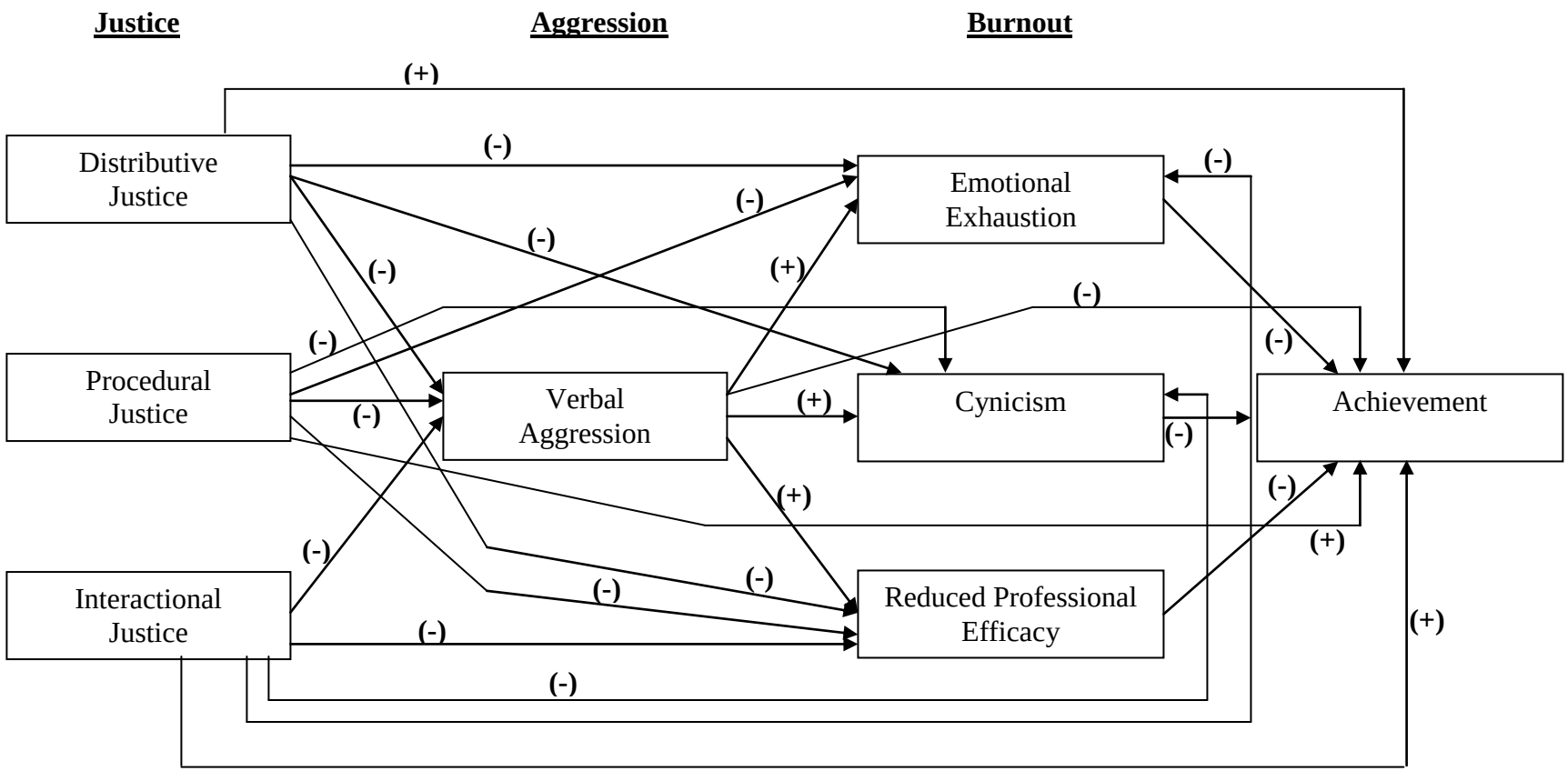


Figure 1. Research Model of Justice, Aggression, Burnout and Achievement

Control Variables:
Age
Gender
Class-size

(-) = Negative relationship

(+) = Positive relationship

1.6.3 Burnout and Academic Achievement

Research concerning the relationships of burnout and academic achievement/performance demonstrates that burnout was negatively related to academic achievement (McCarthy, Pretty, & Catano, 1990). Yang (2004) has also found a negative relationship between burnout and academic achievement in Taiwanese student sample. A very recent study conducted by Uludag and Yaratan (2011), burnout had a significant negative effect on academic achievements of undergraduate university students. Burnout and performance relationship has also received attention outside the educational settings. For instance, Karatepe and Uludag (2008) have investigated the relationship between burnout and work performance. Their results illustrated that only a single dimension of burnout (diminished personal accomplishment) was significantly related to work performance. Furthermore, according to the conservation of resources (COR) theory, when individuals feel frustrated and stressed their daily performance is likely to decrease (cf. Hobfol, 1989).

Accordingly, the following hypotheses are developed:

H20: Emotional exhaustion is negatively related to academic achievement.

H21: Cynicism is negatively related to academic achievement.

H22: Reduced professional efficacy is negatively related to academic achievement.

Chapter 2

LITERATURE REVIEW

This chapter presents more elaborated information regarding the theories and the study constructs. Specifically, theories of Equity and Conservation of Resources (COR) are explained in detail and links have been provided in relation to study constructs. In addition, dimensions of justice, verbal aggression, burnout, and academic achievement are also reviewed.

2.1 Equity Theory

The issue of making comparisons between ourselves and others has been questioned many times but the actual point is about in what circumstances, this comparison issue comes to the surface. It has been examined and analyzed by Festinger (1954) and concluded that when individuals face with hesitation in judging their own capabilities, they do this comparison and assess themselves. Later, Adams (1965) has taken this idea into 'a general theory of psychological equity' (p. 303). This theory suggests that the inputs and outputs of relations among individuals should be equally proportioned, thus, according to this; Adams (1965) defined inequity as "one being more than the other one". In other words, an imbalance occurs in relation to inputs and outputs. Adams (1965) additionally stated a formula to calculate the degree of equity which postulated as:

$$\frac{\text{OUTCOMES SELF}}{\text{INPUTS SELF}} \quad \_\_\_\_ \quad \frac{\text{OUTCOMES RECEIPENTS}}{\text{INPUTS RECEIPENTS}} \quad \begin{matrix} - \\ - \end{matrix} \text{ DEGREE EQUITY}$$

According to this formula, if the result comes out as zero, then there is inequity for the relationship. If the result comes out as below zero, then, it means there is a disadvantaged thought. And if the result is more than zero, it means there is an advantaged opinion. Van Dierendonck, Shaufeli and Buunk (2001) also discussed Adams formula and its importance in understanding individuals' fairness perceptions and their impact on behaviors and attitudes.

Adams (1963) discusses the Equity theory as it highlights people's justice perceptions for their relations with the other individuals around them because people do exchange what they put as efforts in return of an outcome from that relationship and the ratio of what has been put as input and what has been gained as output. Equity Theory explains the situation of inequity as the ratio between output and input. When the ratio is less than the ratio of the other person interacted, then the individuals' stress level increases. If the outcome/input ratio is greater than the perceived ratio, then the individuals' stress level decreases. More specifically, Equity Theory depicts that if the individuals perceive that there is unfairness, they are likely to be stressed depending on the "output/input ratio is less than or greater than what they perceive as the output/input ratio in comparison to the relationship with others.

The schematic view of the Equity Theory was also drawn as the following:

Equity formula by Glass and Wood (1996):

$$\frac{O}{I} < \frac{O}{I} \qquad \frac{O}{I} = \frac{O}{I} \qquad \frac{O}{I} > \frac{O}{I}$$

Benevolents Equity Sensitives Entitleds

Equity sensitivity continuum from Huseman, Hatfield, and Miles (1987, p. 224) and attributed as an adaptation from Adams. Note: O = output divided by I = Input. Individuals compare their output/input ratio to third parties. If the results are less, they are in the benevolent category. If the output is equal, they are referred as equity sensitives and if the outcome is greater, these are considered as entitleds.

Taris et al. (2001) stated that negative perceptions on equity lead to negative outcomes on several social interactions. Since Equity Theory is used to make clear the fairness logic among individuals and its relation with behaviors, the psychological and work-related outcomes can be examined in light of this (Adams, 1965; Blau, 1964). For example; Adams (1965) stated that the individuals' perceptions of being treated unfairly lead them to lower their performance and make them feel stressed. Moorman (1991) also supported this finding by coming up with results showing that when individuals confront inequity, they limit their behaviors and duties. Van Dierendonck, Schaufeli and Buunk (2001) stated that, according to Equity Theory individuals assess their relations with the other ones in terms of incentives, outlays, ventures, and returns. A critical suggestion with this theory that Adams (1965) holds is when individuals see their relationships as unequal, they would feel anxious. Yang (2004) used this suggestion to the students'

education atmosphere and found out that there is fairness in their environment they show improved academic achievements, hence, an increased performance. In addition, this would lead to have lower burnout when they feel they are being treated fairly but, if they perceive unfairness, burnout increases and their academic performance decreases (Yang, 2004). Just like abovementioned aspects of the Equity Theory, Taris et al. (2001) stated that individuals who have inequity in their environment, it means they devoted much of their attempt, vigor, concentration and their willingness for the people around them but obtained less than what they spend in return.

Of course, the level of equity around individuals would affect them either positively or negatively but it is not surprising that if there is inequity, individuals' psychological positions would be affected negatively (Taris et al., 2001).

2.2 Conservation of Resources Theory (COR)

The Conservation of Resource (COR) Theory is used to clarify burnout and its circumstances that are caused by it (Schaufeli, Maslach, & Marek, 1993). This theory has been built up to examine the conditions that create stress and the course of actions that people manifest as reactions to those actions (Hobfoll, Ritter, Lavin, Husizer, & Cameron, 1995). The base of this the COR Theory is that people look for significant issues, that are called as resources, to get and they try to preserve them (Yang, 2004). Hobfoll (1989) define resources as the "objects, personal characteristics, conditions, or energies that are valued by the individual or that serve as a means for attainment of these objects, personal characteristics, conditions, or energies" (p. 516).

When individuals cannot cope with the loss of resources, it may lead them to have higher levels of stress. Hobfoll additionally states that resources that individuals can try to retain can be under four headings with the following statement:

"COR delineates four basic categories of resources: (1) objects (e.g., car, house), (2) conditions (e.g., good marriage, job stability); (3) personal characteristics (e.g., social aplomb, high self-esteem); and (4) energies (e.g., credit, money, favors). According to COR theory, psychological stress occurs when individuals are (1) threatened with resource loss, (2) lose resources, or (3) fail to gain resources following resource investment" (Hobfoll, 1989, p. 517).

After positioning all these resources, Hobfoll defines each as the following:

> "***Object resources*** are valued because of some aspect of their physical nature or because of their acquiring secondary status value based on their rarity and expense. ***Conditions*** are resources to the extent that they are valued and sought after. Marriage, tenure, and seniority are examples of these. ***Personal characteristics*** are resources to the extent that they generally aid stress resistance. ***Energies*** are the last resource category and include such resources as time, money, and knowledge. These resources are typified not by their intrinsic value so much as their value in aiding the acquisition of other kinds of resources" (Hobfoll, 1989, p. 517).

Hobfoll (1989) discusses that when individuals try to obtain one or more of the following and they cannot obtain them, they face with stress and they try to lessen the failure of obtaining resources when they face with stress. This theory is emphasized when physical (e.g. burnout) or psychological stress (e.g. problems in social relations; Hobfoll, 1989; Yang, 2004) comes out when individuals can't obtain the resources they want to obtain. Yang (2004) stated that, according to the COR theory, workload positively and social support negatively influences burnout. Therefore, these two important issues must be considered and examined very carefully when investigating

burnout. In light of this theory, Yang (2004) analyzed the concept of burnout by checking the availability of the resources in individuals' environment and their reactions as burnout when they think they cannot obtain any resource in consistency with Meier and Schmeck's (1985) findings.

According to Lazarus and Folkman (1984), stress comes out in the form of emotional exhaustion. Emotional exhaustion will continue to be manifested as cynicism and cynicism will make individuals to assess themselves negatively which in turn will cause a negative impact on efficacy. Leiter and Maslach (1988) related the COR theory and this model of burnout with its three sub constructs in the form of stress theory which has been widely recognized and tested by many researchers (e.g. Byrne, 1994; Leiter & Maslach, 1988).

2.3 Justice

To date there have been many studies who attempted to define, conceptualize and analyze the perception of justice in different fields of economics, political sciences, social sciences, and psychology. One of the earliest studies concerning justice posits that "justice is the first virtue of social institutions, as truth is of systems of thought" (Rawls, 1971, p. 3). Moreover, justice has been a center of attention from the woks of Hume 'societal justice', to Marx 'political justice', and Nozick 'economical justice'. However, specifically justice in psychological terms refers to "an evaluative judgment about moral rightness of a person: that is to say a persons' treatment by others is perceived as just if it corresponds to some standards or criterion of what is morally right" (Furby, 1986, p. 153). The definition stated above clearly pinpoints that justice is not only the fair

treatment that is perceived, but also reflects the necessity as a need for respect. In addition, academics of psychological thought as well as educationalists are interested in acknowledgement and interpretation of justice and the responses that one produces when an individual encounters justice/injustice.

In addition, when perceptions of justice is perceived as unfairly treated, this might lead to antisocial behaviors and attitudes such as forms of aggression (e.g. verbal aggression) (Beugre, 2002; Horan & Myers, 2009). Although fairness perceptions are psychological subjects, they also have the potential to cause positive or negative effects on motivation which is one of the important work-related outcomes (Folger & Konovsky, 1989; McFarlin & Sweeney, 1992). When it comes to work-related outcomes, specific attention should be paid to these because they are directly related with the success of the organization. Therefore, it is extremely important to consider the perceptions of justice for any type of organization due to the fact that this concept gained a widespread acceptance in the existing literature (Wong, Ngo, & Wong, 2002). Yang (2004) stressed the importance of perceptions on fairness and the impact of fairness perceptions in some other outcomes such as burnout, academic achievement, motivation and commitment. For example, lack of fairness has been shown as an important source of burnout (Yang, 2004). It was strongly implied that if individuals believe they are being treated fairly, this would make them have lower burnout and increase the level of academic achievement (Yang 2004). In addition, burnout is a likely result for individuals who perceive themselves as they are being treated unequally (Buunk & Schaufeli, 1993; Taris et al., 2001). According to Moliner et al. (2005), perceptions of equity are very important because they show how one evaluates his/her position in an environment about their position either being positive or negative so, the individuals judge

themselves, see how fair they are being treated, and then decide on their positions to be positive or negative.

2.3.1 Perceptions of Justice

The research that focused on the notion of justice has produced three types of justice phenomena. These could be classified as: distributive justice, procedural justice and interactional justice. Adams (1965) defines distributive justice as the dissemination of resources inline with the doctrine of equity that constitutes the principle of distributive justice. The norm of equity entails that dissemination of goods is relative to the input. These inputs could be considered as effort or extrinsic motivation. As a consequence ability or achievement could be reflected.

Horan, Chory, and Goodboy (2010) discusses these three types within the context of a resource allocation. Distributive justice has been taken into consideration as the distribution of the results, procedural justice was taken as the justice perceptions on the methods used in resource allocation and interactional justice is considered as the personal behaviors that individuals get during the process of resource allocation (Horan, Chory, & Goodboy, 2010). Keeping the abovementioned definitions in mind; it can be said that distributive justice is related with the evaluation of the fairness concerning the outcomes, procedural justice refers to the evaluation of the procedures and policies in gathering those outcomes and interactional justice is related to the treatment that individuals get during the process or gathering the outcomes. The importance of each sub construct and the use might vary according to the industry. For example; Horan and Myers (2009) stated that interactional justice was the primary concern for the students. At this point, another issue that Equity Theory holds should be carefully concerned.

Taris et al. (2001) stated that negative perceptions on equity lead to negative outcomes on several social interactions. In light of this issue, it can be assumed that there would be a negative impact on interactional justice since the issue is closely linked with individuals' relationships and fairness perceptions.

Many researchers have studied the concept of justice and they all come to a conclusion that fairness perceptions, with its distinct constructs are strongly inter-correlated (Cohen-Charash & Spector, 2001), inevitably posit an impact on behaviors and/or attitudes such as motivation (Chory-Assad, 2002).

Chory (2007) stated that three sub constructs of justice perceptions, which are to be procedural, distributive, and interactional, are linked with each other but they are considered to be distinct (Cohen-Charash & Spector, 2001; Colquitt, 2001). Colquitt, Conlon, Wesson, Porter, and Ng (2001) consistently found that these separate constructs lead to different results. This may mean that distributive justice may have an association or impact with a certain construct, however, procedural and interactional justice may not have the same association or impact on that construct. This example could interchangeably be valid for all three sub-constructs of justice. Therefore, the concept of this research aims to find out the relationships between the three distinct dimensions of justice and verbal aggression, burnout, and academic achievement.

2.4 Aggression (Verbal Aggression)

Aggression as one of the antisocial and disruptive behaviors (Efrati-Virtzer & Margalit, 2009; Horan, Chory, & Goodboy, 2010) has been examined and analyzed with its sub

constructs by many researchers through the existing literature (Horan & Myers, 2009; Kikas, Peets, Tropp, & Hinn, 2009). Some of these studies discussed its effect on different variables as it has direct and indirect forms and some of them only taken one sub construct into consideration. As it can take several different forms (e.g. physical or verbal, relational, etc.), existing literature concluded that aggression exerts an influence on and/or can be triggered by many other concepts such as perceived justice (e.g. Horan & Myers, 2009), burnout (Uludag & Yaratan, 2011) gender differences (e.g. Buss & Perry, 1992; Kikas et al., 2009), etc.

Aggression is stated as an antisocial behavior (Horan et al. 2010) and as a disruptive behavior pattern (Efrati-Virtzer & Margalit, 2009). This concept has gained an international recognition due to its increasing importance (Abasiubong, Abiola & Udofia, 2011) and it is widely recognized in education field since the existing literature discusses its wide use during middle childhood and adolescence (Kikas et al., 2009). Due to the fact that it can take physical form, it has found to be an important subject to study because of its potential that it can lead to violence and criminal activities (Buss, 2005). It has also been found to be closely related with psychopathy (cf. Coyne & Thomas, 2008). The specific feature of aggression is that it is related to reflect pain or harm (Coie & Dodge, 1997). According to prior studies aggressive behaviors are triggered by the size of the individual's social network, relations with peers, efficiency in social skills. On the other hand, these are not the only reasons for individuals to be aggressive as stated by Lopez et al. (2006). By all these influences, aggression can take forms as physical, verbal, suspicion and resentment (Garcia-Leon et al.. 2002). As abovementioned, aggression is composed of two main forms: direct (physical and

verbal) and indirect (relational) (Kikas et al., 2009). The direct and indirect doctrines are also manifested as overt and covert behaviors. Overt behaviors may illustrate itself as a physical aggression and covert behaviors could be classified as verbal aggressiveness or obstructionism. Of course, these forms can be manifested by each individual differently so each individual may posit different behavioral outcomes (Kikas et al., 2009). Not only characteristics of individuals influence the form of aggression, gender differences also exert an impact on the form of aggression (Buss & Perry, 1992; Kikas et al., 2009). Men/boys use direct forms of aggression more commonly than women/girls (Archer, 2004; Buss & Perry 1992; Garcia-Leon et al., 2002). In addition, Bandura (1986) stated that behaviors are straightforwardly manipulated by the principles about social vices according to the social learning theory. Thus, it can be cogitated that the level of aggressiveness changes according to the acceptability of aggression which means the more tolerable the behavior or willingness to accept that behavior, the more the possibility for individuals to act aggressively, hence, this behavior becomes more like a habitual act (Kikas et al., 2009; McConville & Cornell, 2003). This means engagement in aggressive behaviors is possible when individuals think that it is tolerated by others.

Cohen (1980) illustrated that individuals having high levels of stress might manifest negative behaviors. Elovainio et al. (2002) believed that negative evaluations of fairness in workplace could influence the employees to possess increased levels of stress which could be speculated as aggression could be seen as the outcome of stress. However, the issue of causality is still unknown. The present study has taken the form of justice dimension with its sub constructs which refers to the assessment of fairness (Cohen-Charash & Spector, 2001) as an antecedent of aggression. When Cohen's (1980) finding

is considered, the situation of inequity or perceptions of unfairness can be a good source of being uncomfortable that would cause individuals show aggressive behaviors (Adams, 1965). Finn and Rock (1997) found out that students who perceive they are being treated unfairly or rudely, they avoid going to school which lead them to lower their academic achievement and it might make them have bad interpersonal relationships with individuals around them at the same time. Thus, it could be speculated that aggression could be an outcome derived from the individuals' perceptions on unfairness. Preliminary purpose of this dissertation was to examine the aggression questionnaire developed by Leon-Garcia et al. (2002). Single dimension (verbal aggression) of aggression construct has been selected. The rationale has been provided in the introduction section.

Verbal aggression has been stated as a "destructive form of communication" (stated in Myers & Knox, 199 9, p. 34). Infante and Wigley (1986) defined it as a 'message behaviour' that leads to 'psychological pain'. According to Infante, Riddle, Horvath, and Tumlin (1992), he found that verbally aggressive behaviors include exercising proficiency attacks, teasing, swearing or nonverbal signs. Since it is closely related with individuals' verbal ability (e.g. Giancola, 1994), age also gains an importance because verbal abilities and use of language build up as individuals grow older (Kikas et al., 2009).

Individuals who illustrate covert type of behaviors normally prefer thee use of verbal aggression. (Infante, Bruning & Martin, 1994; Martin, Anderson, & Horvath, 1996).

Many researchers have studied the aggression issue in light of justice and perceptions (e.g. Adams, 1965; Cropanzano & Greenberg, 1997; McFarlin & Sweeney, 1992).

Tyler (1988) linked this relational model of the psychology with procedural justice. Tyler (1994) stated that justice perceptions are related with the social network and social links individuals have around them. In light of this, behavioral reactions of individuals for their relations come out according to their interpersonal bonds with people in their environment. Thus, it can be cogitated that aggression can be triggered by the social experiences since aggression is one of those reactions.

Moreover, Chory-Assad and Paulsel (2004a) found that interactional justice triggers the individuals' indirect aggressive behaviors strongly. Their study was conducted on students and instructors and they stated that the act of indirect aggressiveness come forward when there is inequity from the instructor towards students. Consistently, West (1994) found that negative justice perceptions have negative impact on interpersonal relations with other individuals. More recently, Yaratan and Uludag (2012) has investigated the effect of verbal aggression on three dimensions of burnout. The results yielded significant relationships among verbal aggression, and the three distinct components of burnout.

2.5 Burnout

Earliest work on burnout was conducted by Freudenberger (1974) who defined the syndrome as "to fail, wear out, or become exhausted by excessive demands on energy, strength, or resources" (p. 159). Later, the concept of burnout was enhanced and dimensionalized (Maslach & Jackson, 1981). Burnout is characterized as "a syndrome of

emotional exhaustion and cynicism that occurs frequently among individuals who do 'people-work' of some kind" (Maslach & Jackson, 1981, p. 99). In their early works, Maslach and Jackson (1981) has developed the concept of burnout consisting of emotional exhaustion, depersonalization, and diminished personal accomplishment. According to Gaines and Jermier (1983) emotional exhaustion is considered as the first stage of the burnout syndrome. Emotional exhaustion refers to "lack of energy and depletion of ones' emotional resources" (Maslach & Jackson, 1981, p. 99). Depersonalization on the other hand refers to the "development of negative feeling and cynical attitudes towards one's customers, co-workers, or supervisors" (Maslach & Jackson, 1981, p. 99). The third component is diminished personal accomplishment which refers to an "assessing oneself negatively in regard to ones' work" (Maslach & Jackson, 1981, p. 99). It is reported that three components of burnout is positively related to reach other (Leiter & Masclash, 1988). Some studies consider or utilize burnout as a one (uni)-dimensional in nature (Low, Cravens, Grant, & Moncrief, 2001; Uludag & Yaratan, 2011) other studies have illustrated that burnout is a distinct construct measured by its three components (Karatepe & Uludag, 2008; Uludag & Yaratan, 2010).

Empirical and conceptual studies reflect that burnout syndrome has detrimental outcomes and may lead to alcohol, and drug abuse, elevated levels of stress, and fatigue. (Maslach & Jackson, 1981). Prior studies provided evidence of burnout decreasing performance of individuals (e.g., Cordes & Dougherty, 1993; Lee & Ashforth, 1996). A recent study has revealed that burnout decreases the engagement levels of university students (Uludag & Yaratan, 2010). Two very recent studies showed that (a) aggression elevates the three components of student burnout (emotional exhaustion, cynicism, and

reduced professional efficacy) (Yaratan & Uludag, 2012) and (b) justice dimensions lowered burnout and burnout had a negative impact on academic achievement (Uludag & Yaratan, 2011). In light of the abovementioned facts and the base provided in the introduction section, little is known about the effects of justice, aggression, burnout on academic achievements of undergraduate university students.

For the purpose of the current research new scale of burnout (MBI-SS: Maslach Burnout Inventory- Students Survey) was utilized (Schaufeli, Martinez, Pinto, Salanova, & Baker, 2002). This scale has received testing in Turkish educational setting (Uludag & Yaratan, 2010). In order to assess burnout three distinct dimensions of emotional exhaustion, cynicism, and reduced professional efficacy is used (Schaufeli, Martinez, et al., 2002; Uludag & Yaratan, 2010; Yaratan & Uludag, 2012). Specific to the case of students, burnout refers to "feelings of fatigue due to study demands, cynical attitudes towards ones' studies, and feelings of incompetency as a student" (as cited in Uludag & Yaratan, 2011, p. 14). Within the educational context, burnout was measured in relation to engagement (Schaufeli, Martinez et al., 2002; Schaufeli, Salanova et al., 2002; Uludag & Yaratan, 2010), aggression (Yaratan & Uludag, 2012), justice or fairness (Uludag & Yaratan, 2011; Yang, 2004), academic achievement (Uludag & Yaratan, 2011), personality and workload (Jacobs & Dodd, 2003), self-efficacy and proactive attitude (Schwarzer, Schmitz, & Tang, 2000), stress (Guthrie et al., 1998), school culture and well-being (Devos, Bouckenooghe, Engels, Hotton, & Aelterman, 2007), learning experience, commitment, and accomplishment (Neumann, Finaly-Neumann, & Reichel, 1990).

2.6 Student Academic Achievement (GPA/Performance)

According to Butler (2007) school performance is defined as "the involvement and demonstrated competence at school, including class attendance, effort, and grades" (p. 502). According to this definition, a success or achievement level, in this case, is related to the measurement of academic achievement of students via utilizing their GPA (Grade Point Average) scores (Uludag & Yaratan, 2011).

As mentioned earlier in Conservation of Resources Theory section, it is clear that individuals will try to do better to obtain values they care or are willing to get (Hobfoll, 1989). However, they will face with strains whenever they are not able or capable to get those resources they value. Farmer, Estell, Bishop, O'Neal, and Cairns (2003) proposed that when people's capabilities are challenged or their confidence levels are questioned, they illustrate antisocial (e.g. aggressive) behaviors.

Maslach (1993) stressed the importance of emotions in her study and stated that when emotions come into play, they disrupt the work routine and have a negative impact on performance. If individuals have high levels of emotional fatigue, then this makes them have low levels of performance which means decrease in achievement (Maslach & Jackson, 1981). Stress was found to be one of the factors that have negative effect on individuals' emotions and this would directly make them have low performance (Cohen, 1980). Yang (2004) also supported this finding with the study conducted on Taiwanese university students. Yang (2004) stated that if students are not stressed by the negative perceptions on fairness, they would feel comfortable and have steady emotions which

will lead them to higher achievements academically. Moreover, burnout was found to create a negative force on academic achievement (McCarthy et al., 1990). As mentioned before, Yang (2004) stated that the perceptions of individuals on fairness change the level of burnout and the level of achievement. This means that if individuals perceive fairness, this would lower burnout and increase achievement but, if they experience inequity, then, it increases burnout and has a negative impact on achievement level simultaneously.

Since student achievement is a critical factor (e.g. Guay, Boivin & Hodges, 1999; Keith & Keith, 1993) a special attention on parental interest, relations with teachers and other students (peers) are vital and pivotal issues for students' academic achievement. Yang (2004) consistently concluded that the more the support coming from the social network, the better the academic achievement and the lower levels of burnout.

Social exchange theory explains this situation in light of the two main matters that are really important for achievement: clearness and value (Yang, 2004). According to this theory, if there is clearness, meaning precision in policies and enacted procedures and if the individuals see value is given to them, then their satisfaction would increase and they would have more steady emotions which opens a path to reach better academic performance. However, if individuals perceive that they are being treated unequally and they do not feel valued, this would make them decrease their performance in reaching what was aimed, hence, their achievement level would decrease. Finn and Rock (1997) also states that this situation can make the individual have emotional instability and it might create an awful impact on interpersonal affairs.

Efrati-Virtzer and Margalit (2009) found that there is a necessity to understand the emotional needs of the individuals in order to deal with their behavioral problems that can lead to aggression. Certainly, these behavioral problems can be reactions to negative perceptions on fairness in the form of aggression and resistance (Chory-Assad & Paulsel 2004a, 2004b).

Morisano, Hirsh, Peterson, Pihl, and Shore (2010) stated the possible causes of low academic achievement as the following: "lack of goal clarity, decreased motivation, disorganized thinking, mood dysregulation, financial stress, and relationship problems" (p. 255). Additionally, Pendarvis, Howley and Howley (1990) discussed that low achievement can be manifested with obtaining low grades. Moroever, Watley (1965) discussed the importance of adjustment to the environment, emotional stability that causes the individuals to be predictable in achievement. According to Watley, maladjusted individuals show emotional instability and they are less predictable in terms of their achievement levels.

Elikai and Schuhmann (2010) stated that using marks to assess achievement is practiced often. Dincer and Uysal (2010) also found a relationship between achievement and family background characteristics and the support coming from the organizations that individuals work / study. In addition, they stated that the level of achievement is controlled by the type of program that the students select to study.

Chapter 3

METHODOLOGY

The present chapter is composed of the methods used in data collection and related statistical analyses. Specifically, information related to approach, setting and sample, context, data collection, survey instrument and measures along with the representation of psychometric properties are discussed.

3.1 Quantification

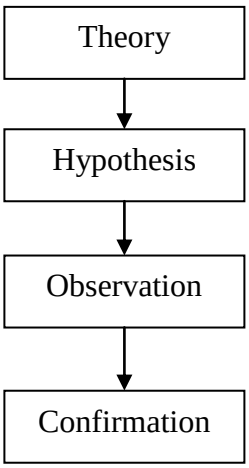
The baseline of this study is to use quantification method described by Nunnally and Bernstein (1994). According to their work on psychometric theory they put forward two advantages of utilizing quantification method. First, they identify the advantage as the "numerical indices can be reported in finer detail than personal judgments, allowing more subtle effects to be noted" (p. 7). The second advantage is "quantification permits the use of more powerful methods of mathematical analyses that are often essential to the elaboration of theories and the analysis of experiments" (p. 7).

3.2 Deductive Approach

According to Graziano and Raulin (1993) deductive approach or theory is "more traditional and formalized theory in which constructs are of major importance. The constructs guide the researcher in making and testing deductions from the constructs. The deductions are empirically tested through research, and thus support or lack of support for the theory obtained" (p. 37). The operationalization of the deductive

approach prevails itself from a more general to specific. This is sometimes referred as the ‘top-down’ approach. The diagram below postulates the direction of deductive approach.

Diagram 1. Deductive Approach



Source: http://www.socialresearchmethods.net/kb/dedind.php

The step begins with selecting a theory of interest that possesses a possible gap to be tested. Then the researcher designs specific hypothesis to test. The researcher collects data or employs experiments to evaluate or address the hypothesis. Finally, the collected data postulates a support or lack of support for the hypothesis under investigation.

As could be deduced from the aforementioned statement the hypothesized research model utilizes the deductive approach to investigate the linkages among study constructs. Specifically, this dissertation aims to investigate the effects of justice, aggression, burnout on students’ academic achievement.

3.3 Context

The context of the current dissertation was Eastern Mediterranean University, a higher education institute founded in 1979. Eastern Mediterranean University is accredited by higher education council (YÖK) in Turkey and provides a wide range of undergraduate and post-graduate degree programs. At present, Eastern Mediterranean University has 68 undergraduate programs and 57 master and doctoral programs that meet the needs of national and international students. Students enrolled to programs at Eastern Mediterranean University have students from 68 different countries which provide a multicultural character to study. In order to enhance teaching and research, the university is accredited by various external boards/bodies which provide internationally recognized degrees/diplomas. Currently, Eastern Mediterranean University has over 13000 registered/enrolled students and to date, there are over 32000 graduates.

3.4 Sample

The sample of the current research consisted of undergraduate university students at Eastern Mediterranean University in Turkish Republic of Northern Cyprus. The rationale for selecting undergraduate students as sample for this dissertation has four underpinnings: First, as evident, burnout syndrome subsists in higher educational context (Uludag & Yaratan, 2010) and excavating the potential determinants of burnout in higher educational setting needs more empirical research (Uludag & Yaratan, 2010). Furthermore, examination of burnout in educational settings will contribute to the expansion and utilization of the original theory of burnout (cf. Gan, Yang, Zhou, & Zhang, 2007). Second, assessment of justice perception in educational context is in its' infant stage (Chory, 2007; Chory-Assad, 2002). Third, addressing students' antisocial

behaviors (aggression) in relation to aforementioned variables is needed. Finally, investigation of potential determinants (justice, aggression, and burnout) will yield a better understanding of the factors that has a direct or indirect influence on academic achievement (Uludag & Yaratan, 2010).

Convenience sampling procedure (sometimes referred to as opportunity or accidental sampling) was utilized in order to collect data. Convenience sampling is defined as "selecting the items from the population based on accessibility and ease of selection" (Groebner, Shannon, Fry, & Smith, 2005). Convenience sampling is a subset of non-probability sampling technique and is used to draw data from the section of the population which is easily accessible to the researcher. Although the data collected for the current study utilized convenience for the ease of accessibility, this is not the sole rationale behind using the convenience sampling. The main rationale is that the population under consideration was too large to include each individual in the process; hence convenience sampling procedure was employed. There are several criticisms for the utilization of convenience sampling procedure. First of all, it is claimed that convenience sampling produces systematic bias which can be described as the sample not being able to represent the entire population. Second issue is that of generalizability (Castillo, 2009). Researchers further claim that convenience sampling has problematic issues when generalizing the results to whole population. In order to overcome these two issues, the current study collected a large number of data (n=1481) to eliminate the issue of generalizability problems. In addition, in order to reduce systematic error, current research included control variables and early/late remarks into equations to test the issue. Early/late dichotomous variable tests the variations across responses that may predict

variations in the sample to reflect to population. Moreover, in order to test the variations in the data the Mahalonobis distance test was employed to purify the outlier effects within the data set. The accepted cut-off value for Mahalonobis test was ± 2.5. The results yielded no outliers within the data set.

3.5 Data Collection

Since the focus of the current dissertation was a field study (survey), self-administered questionnaires has been prepared and distributed to respondents. As depicted in earlier section, convenience sampling procedure under non-probability sampling technique was used to collect data from undergraduate students. The aim was to reach 2000 students at the research location. The time of data collection began in February, 2010 and ended in May, 2010. Participants voluntarily participated in this research and they were not promised any grade, extra credit, or incentives for completion of the survey instrument. The researcher assured the anonymity of the participants. By the cut-off date 1750 respondents were reached at the most populated area of the university. However, 200 of these participants rejected to fill out the questionnaire. Hence, 1550 questionnaires were collected during the specified time-frame. Additional screening to questionnaires was conducted to ensure that there was no missing information. After further examination, 45 of the questionnaires had missing data; hence, they were eliminated from further analysis. In addition, 24 of these respondents were registered in English preparatory school. Students who are in English preparatory school does not possess the grade of GPA (GPA – Grade Point Average) related to academic achievement. Therefore, these students were also eliminated. After all necessary screening the total number of useful

questionnaires were 1481. This has produced a high level of acceptable response rate which amounts to 84.6%.

3.6 Questionnaire and Measures

There were two sets of questionnaire prepared for the current study. First, original version was designed for the international students at the research location. Second, Turkish version was prepared for the Turkish students. For the Turkish sample the items in the survey instrument was first prepared in English and then back translated into Turkish by utilizing the back translation method suggested by Mullen (1995). A support for the above approach is clearly defined in the study of Hui and Triandis (1985) where measuring scalar equivalency of variables under two cultural contexts could be achieved in the same metric. Faculty members who were experts (fluent in both languages) in their field have tested the cross-linguistic comparability of the questionnaire. This approach was necessary to produce similar meaning to the original version (English) instead of just focusing on the literal meaning in Turkish.

A pilot sample was conducted to 50 students to check the understandability of the survey items. Respondents who filled out the questionnaire had no problems in understanding the survey questions. Hence, no changes were made to the original questionnaire. According to the feedback obtained from the faculty members and the pilot study, questionnaire had no understandability issues and further provided face validity. The constructs/measures used for the current research is depicted below:

Distributive, Procedural, and Interactional Justice. 14 items were utilized for distributive justice (sample item: Your grade on the last exam compared to other

students' grades on the exam) and 17 items (sample item: The instructor's ways of grading exams, etc.) for procedural justice were utilized from Chory-Assad & Paulsel, (2004b). Eight items were adapted from Chroy (2007) for interactional justice (sample item: The instructor's communication with students). All items of justice are represented in the Likert scale as follows: (1=Extremely unfair; 2= Unfair; 3=Neutral; 4=Fair; 5=Extremely fair).

Verbal Aggression. In order to measure verbal aggression the Aggression Questionnaire (AQ) was utilized that was originally developed by Buss and Perry, (1992). Items for verbal aggression were adapted from Garcia-Leon et al. (2002). Eight items for verbal aggression (sample item: My friends say that I'm somewhat argumentative) were utilized. All items of verbal aggression are represented in the Likert scale as follows: (1=Strongly disagree; 2= Disagree; 3=Neither agree nor disagree; 4=Agree; 5=Strongly agree).

Burnout. To measure burnout MBI-SS (Maslach Burnout Inventory – Student Survey) developed by Schaufeli, Martinez, et al. (2002) was employed. It has five items for exhaustion (sample item: I feel emotionally drained by my studies), four items for cynicism (sample item: I have become more cynical about the potential usefulness of my studies), and six items for professional efficacy (sample item: I have learned many interesting things during the course of my studies). All items of burnout are represented in the Likert scale as follows: (1=Strongly disagree; 2= Disagree; 3=Neither agree nor disagree; 4=Agree; 5=Strongly agree).

Academic Achievement. Academic achievement was measured by the achievement scores of the students at the end of the semester. The score referred here is the grade point average (GPA).

Control Variables. According to the education and psychology literature, some control variables are useful to include to test the confounding effects among demographic variables and study variables in the data set. These are age, gender, and class-size.

3.7 Psychometric Properties: Validity and Reliability

In order to examine the psychometric properties of the scales used for the current research, the issues of discriminant, convergent validity and reliabilities were taken into consideration. According to Carmines and Zeller (1979) reliability is:

> "the extent to which an experiment, test, or any measuring procedure yields the same results on repeated trials. The more consistent the results given by repeated measurements, the higher the reliability of the measuring procedure; conversely the less the consistent the results, the lower the reliability" (p. 11).

The cut-off value suggested by Nunnally (1978) and Nunnally and Bernstein (1994) is 0.70 deemed acceptable. These tests are conducted by LISREL 8.30 (Joreskog & Sorbom, 1996) and SPSS 15.0.

Convergent and discriminant validity is considered to represent the construct validity. If a study provides both discriminant and convergent validity, it is assumed to have evidence for the construct validity. However, if one of the validity tests fails to illustrate evidence, it is difficult to assume that the scales possess construct validity. Convergent validity focuses on "the correlation between responses obtained by maximally different methods of measuring the same construct" (Peter, 1981, p. 136). Convergent validity illustrates how measures that are supposed to be related is related in real terms. In detail,

theory proposes some measures or items are related. If this relation is proved under observation/test, (when items converge under a specific construct) we could assume that the measure provides convergent validity. Discriminant validity is defined as "the extent to which the measure is indeed novel and not simply a reflection of some other variable" (Churchill, 1979, p. 70). Discriminant validity illustrates how measures are discriminant (not related to each other). Specifically, discriminant validity should posit low (or none) associations among constructs under study.

In order to test the convergent and discriminant validity of the scales confirmatory factor analysis was employed (Joreskog & Sorbom, 1996). Items possessing factor loadings under 0.40 and/or making no significant contributions were eliminated from the model fit statistics. The measurement criterion which indicates "confidence interval in relation to correlation estimate among two factors that did not compass 1.0 was utilized for the issue of discriminant validity" (Anderson & Gerbing, 1988).

In order to investigate the model fit statistics, chi-square test, GFI, AGFI, NFI, NNFI, CFI, RMR, RMSEA were used. These tests are defined below. The psychometric tests are defined as:

Chi-square: Chi-square compares "the means of responses in independent groups of multiple variables. Since chi-square test is sensitive to large sample sizes ($n \geq 200$), other fit statistics are to be taken into account" (Kelloway, 1998, p. 26).

GFI-Goodness of Fit Index: The goodness-of-fit index is based "on a ratio of the sum of the squared discrepancies to the observed variances (for generalized least squares, the

maximum likelihood version is somewhat more complicated). The GFI ranges from 0 to 1, with values exceeding .90 indicating a good fit to the data" (Kelloway (1998, p. 27).

AGFI-Adjusted Goodness of Fit Index: The adjusted goodness of fit index "adjusts the GFI for degrees of freedom in the model. The AGFI ranges from 0 to 1, with values above .90 indicating a good fit to the data" (Kelloway (1998, p. 28).

NFI-Normed Fit Index: The NFI ranges "from 0 to 1, with values exceeding .90 indicating a good fit. The NFI indicates the percentage improvement in fit over the baseline independence model" (Kelloway (1998, p. 30).

NNFI-Non-Normed Fit Index: The NNFI results in "numbers with a lower bound of 0 but an upper bound greater than 1. Higher values of the NNFI indicate a better fitting model, and it is common to apply the .90 rule as indicating a good fit to the data" (Kelloway, 1998, p. 31).

CFI-Comparative Fit Index: The comparative fit index is based on "the non-central chi-square distribution. The CFI also ranges between 0 to 1, with values exceeding .90 indicating a good fit to the data" (Kelloway, 1998, p. 31).

IFI-Incremental Fit Index: "Values that exceed 0.90 is a good fit to the data in Incremental Fit Index". Incremental Fit Index is not sample sensitive and it is calculated as "first, the difference between the chi square of the independence model in which variables are uncorrelated and the chi-square of the target model is calculated. Next, the

difference between the chi-square of the target model and the df for the target model is calculated. The ratio of these values represents the IFI" (Bollen, 1990, p. 256-259).

RMSR-Root Mean Square Residual: This is the "square root of the mean of the squared discrepancies between the implied and observed covariance matrices. Generally for this index, values less than .05 are interpreted as indicating a good fit to the data" (Kelloway, 1998, p. 27).

RMSEA-Root Mean Square Error of Approximation: The RMSEA is based on the "analysis of residuals, with smaller values indicating a better fit to the data. The values below .10 indicate a good fit to the data and values below .05 a very good fit to the data" (Kelloway, 1998, p. 27).

The methodology used in this current study is pure quantitative. Hence, the study provides information related to sample, data collection, context, questionnaire design, measures, and psychometric properties such as reliability and validity. Some data monitoring tests (i.e. Mahalonobis distance test) and data configuration test (i.e. scale purification) are conducted to ensure the collected data was free of errors.

Chapter 4

ANALYSES & FINDINGS

This chapter illustrates the related statistical analyses utilized for the purpose of the current study. Descriptive statistics and frequency analysis is presented. Hierarchical regression analysis is conducted to examine relationships among control variables and study constructs. Collinearity diagnostics (VIF: Variance Inflation Factors) were also assessed through hierarchical regression analyses. The results of psychometric properties such as reliabilities, validities are depicted (for each separate construct). In detail, results of confirmatory factor analysis, correlations among study constructs, and path coefficients among dimensions are presented. The hypothesized relationships are investigated through LISREL 8.30 (Joreskog & Sorbom, 1996) utilizing path analysis method.

4.1 Sample

As discussed in the methodology section, during the survey period a total of 1750 students were reached. However, 200 students did not wish to participate in the study. Hence, the number of students who participated in this study was 1550. Forty five of these responses were eliminated because of missing data in the survey instrument. In addition, 24 of these students were registered in the English Preparatory school who did not hold a valid GPA score; hence these questionnaires were also taken out of the data

set. After this data screening and elimination process, a total of 1481 questionnaires remained which provided a response rate of 84.6%.

As depicted in Table 1, there is an even distribution of age and gender of the collected sample. Majority of the students (48.6%) ranged between the ages of 22-26. 702 students (47.4%) were in the age category of 17-21. Furthermore, 58 students (3.9%) ranged between the ages of 27-31 and only 1 student (0.1%) was in the age category of 32 and above. 737 (49.8%) of the respondents were female and the rest of the respondents (744) were male (50.2%). Educational status of the students investigated if students were registered in the two-year (associate) or four-year (degree) programs. The findings related to educational status was somewhat dispersed. Overwhelming majority of the students (1429, 96.5%) were registered in the four-year degree programs. Only 52 students (3.5%) were registered in the two-year associate programs. Marital status of the respondents was elicited on three different categories. These were single, married and 'other'. The 'other' category specifically did not include terms like "divorced or living with a partner in order not to violate the privacy of the respondents" where same approach is utilized by Uludag and Yaratan (2010, p. 17). According to the results, 1352 (91.3%) of the students were single. 45 of these students (3.0%) were married and 85 students (5.7%) were in the other category. Class-size variable was assessed if students were in an ideal classroom or overcrowded classroom environment. Majority of the students (969, 65.4%) reported that the class-size was ideal. However, 512 of the students (34.6%) reported that the class-size was overcrowded. Moreover, the collected data represented nine different faculties. Most of the respondents (622, 42.0%) were studying in Faculty of Education. Students who were from the Faculty of Law added up

to 191. Students who were studying in the Faculty of Engineering totaled 149. There were 141 students from the Faculty of Business and Administration. Moreover, students who were in the Faculty of Arts and Sciences amounted to 132. There were 92 students from Faculty of Communication. Faculty of Architecture was represented by 58 students. Finally, CSIT (Computer Science and Information Technology) and Tourism and Hospitality departments represented with 48 students in each department.

Table 1. Demographic breakdown of the sample (n=1481)

Age	Frequency	Percent
17-21	702	47.4
22-26	720	48.6
27-31	58	3.9
32 and above	1	.1
Total	1481	100.0
Gender		
Female	737	49.8
Male	744	50.2
Total	1481	100.0
Educational status		
Two year program	52	3.5
Four year program	1429	96.5
Total	1481	100.0
Marital status		
Single	1352	91.3
Married	45	3.0
Other	84	5.7
Total	1481	100.0

Table 1. Demographic breakdown of the sample (n=1481) (*continued*)

Class size		
Ideal classroom	969	65.4
Over crowded classroom	512	34.6
Total	1481	100.0
Faculty/Department		
CSIT	48	3.2
Education	622	42.0
Arts & sciences	132	8.9
Law	191	12.9
Communication	92	6.2
Business	141	9.5
Architecture	58	3.9
Engineering	149	10.1
Tourism	48	3.2
Total	1481	100.0

4.2 Reliability

In order to assess the Cronbach alpha values of the variables in the current study reliability analysis was conducted. Each study variable was analyzed item-by-item to provide the acceptable level of alpha value. Covariance matrix for each study construct was prepared to provide evidence for shared variance in items. As known heterogeneous items in covariance matrix create low alpha values for a construct. In detail, items under consideration in a construct should be composed of a homogenous set (Duhachek, Coughlan, & Iacobucci, 2005). Table 2 depicts the details of the reliability analysis for distributive justice.

Table 2. Reliability test for distributive justice

Reliability Statistics

Cronbach's Alpha	N of Items
.801	8

Item Statistics

	Mean	Std. Deviation
q42-dsjus	2.9480	1.20500
q46-dsjus	3.3167	1.12420
q48-dsjus	3.0250	1.14846
q49-dsjus	3.2208	1.11828
q51-dsjus	3.5287	1.12917
q52-dsjus	3.3504	1.06832
q54-dsjus	3.2411	1.18177
q55-dsjus	3.4112	1.14271

Inter-Item Correlation Matrix

	q42-dsjus	q46-dsjus	q48-dsjus	q49-dsjus	q51-dsjus	q52-dsjus	q54-dsjus	q55-dsjus
q42-dsjus	1.000							
q46-dsjus	.309	1.000						
q48-dsjus	.374	.315	1.000					
q49-dsjus	.290	.365	.490	1.000				
q51-dsjus	.189	.296	.251	.361	1.000			
q52-dsjus	.302	.362	.314	.403	.410	1.000		
q54-dsjus	.297	.384	.313	.336	.248	.384	1.000	
q55-dsjus	.281	.330	.315	.383	.273	.326	.517	1.000

Table 2. Reliability test for distributive justice (*continued*)

Inter-Item Covariance Matrix

	q42-dsjus	q46-dsjus	q48-dsjus	q49-dsjus	q51-dsjus	q52-dsjus	q54-dsjus	q55-dsjus
q42-dsjus	1.452	.419	.518	.391	.257	.389	.423	.386
q46-dsjus	.419	1.264	.406	.459	.376	.434	.510	.424
q48-dsjus	.518	.406	1.319	.629	.326	.385	.424	.413
q49-dsjus	.391	.459	.629	1.251	.456	.482	.444	.489
q51-dsjus	.257	.376	.326	.456	1.275	.494	.331	.352
q52-dsjus	.389	.434	.385	.482	.494	1.141	.485	.398
q54-dsjus	.423	.510	.424	.444	.331	.485	1.397	.699
q55-dsjus	.386	.424	.413	.489	.352	.398	.699	1.306

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.255	2.948	3.529	.581	1.197	.037	8
Item Variances	1.301	1.141	1.452	.311	1.272	.009	8
Inter-Item Covariances	.436	.257	.699	.442	2.724	.008	8
Inter-Item Correlations	.336	.189	.517	.329	2.744	.005	8

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q42-dsjus	23.0939	27.788	.438	.215	.791
q46-dsjus	22.7252	27.485	.514	.269	.779
q48-dsjus	23.0169	27.283	.517	.319	.778
q49-dsjus	22.8211	26.854	.578	.372	.769
q51-dsjus	22.5132	28.347	.431	.231	.791
q52-dsjus	22.6914	27.527	.547	.322	.774
q54-dsjus	22.8008	26.776	.542	.358	.774
q55-dsjus	22.6307	27.175	.531	.337	.776

A revised 8 items were analyzed for the issue of reliability for distributive justice. The Cronbach alpha value for this construct is 0.801 which surpasses the criterion value of

‘0.70’ stated by Nunnally (1978). The covariance matrix displays a rather homogenous set, hence no problems were observed for this construct. As could be cogitated from the covariance matrix, there are no outliers in the distribution, hence, yields sets of homogeneity that provides a composition among items.

Table 3. Reliability test for procedural justice

Reliability Statistics

Cronbach's Alpha	N of Items
90	7

Item Statistics

	Mean	Std. Deviation
q61-prjus	3.1161	1.11137
q62-prjus	3.2201	1.15614
q64-prjus	3.2600	1.12973
q65-prjus	3.1600	1.22559
q66-prjus	3.1506	1.14237
q67-prjus	3.0169	1.20656
q68-prjus	3.0824	1.17748

Inter-Item Correlation Matrix

	q61-prjus	q62-prjus	q64-prjus	q65-prjus	q66-prjus	q67-prjus	q68-prjus
q61-prjus	1.000						
q62-prjus	.488	1.000					
q64-prjus	.319	.335	1.000				
q65-prjus	.242	.241	.406	1.000			
q66-prjus	.283	.311	.382	.392	1.000		
q67-prjus	.307	.339	.287	.377	.448	1.000	
q68-prjus	.281	.287	.327	.314	.407	.574	1.000

Table 3. Reliability test for procedural justice (*continued*)

Inter-Item Covariance Matrix

	q61-prjus	q62-prjus	q64-prjus	q65-prjus	q66-prjus	q67-prjus	q68-prjus
q61-prjus	1.235	.627	.400	.329	.360	.412	.368
q62-prjus	.627	1.337	.437	.342	.411	.473	.391
q64-prjus	.400	.437	1.276	.562	.493	.392	.435
q65-prjus	.329	.342	.562	1.502	.549	.557	.453
q66-prjus	.360	.411	.493	.549	1.305	.617	.548
q67-prjus	.412	.473	.392	.557	.617	1.456	.815
q68-prjus	.368	.391	.435	.453	.548	.815	1.386

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.144	3.017	3.260	.243	1.081	.007	7
Item Variances	1.357	1.235	1.502	.267	1.216	.009	7
Inter-Item Covariances	.475	.329	.815	.485	2.474	.014	7
Inter-Item Correlations	.350	.241	.574	.332	2.378	.007	7

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q61-prjus	18.8899	23.210	.466	.286	.773
q62-prjus	18.7860	22.737	.486	.306	.769
q64-prjus	18.7461	22.723	.505	.282	.766
q65-prjus	18.8460	22.351	.482	.268	.771
q66-prjus	18.8555	22.179	.553	.320	.757
q67-prjus	18.9892	21.451	.584	.421	.750
q68-prjus	18.9237	22.031	.545	.377	.758

Table 3 posits the reliability details for procedural justice. A revised 7 items used to test the alpha value for procedural justice. The Cronbach Alpha value for this construct is 0.790. Again, this construct exceeds the cut-off point of 0.70. Covariance matrix reports a set of homogenous items. Furthermore, no further item deletion is necessary since all values exceed the cut-off point of 0.70 when item-total statistics are concerned Nunnally (1978).

Table 4. Reliability test for Interactional justice

Reliability Statistics

Cronbach's Alpha	N of Items
.886	6

Item Statistics

	Mean	Std. Deviation
q71-injus	3.1695	1.20877
q73-injus	3.2080	1.19400
q74-injus	3.2154	1.18044
q75-injus	3.2066	1.15804
q76-injus	3.2525	1.15066
q77-injus	3.1654	1.17992

Inter-Item Correlation Matrix

	q71-injus	q73-injus	q74-injus	q75-injus	q76-injus	q77-injus
q71-injus	1.000					
q73-injus	.594	1.000				
q74-injus	.543	.606	1.000			
q75-injus	.521	.581	.643	1.000		
q76-injus	.518	.535	.612	.610	1.000	
q77-injus	.511	.513	.523	.580	.599	1.000

Inter-Item Covariance Matrix

	q71-injus	q73-injus	q74-injus	q75-injus	q76-injus	q77-injus
q71-injus	1.461	.857	.775	.729	.721	.729
q73-injus	.857	1.426	.854	.804	.735	.722
q74-injus	.775	.854	1.393	.879	.831	.728
q75-injus	.729	.804	.879	1.341	.813	.793
q76-injus	.721	.735	.831	.813	1.324	.814
q77-injus	.729	.722	.728	.793	.814	1.392

Table 4. Reliability test for Interactional justice (*continued*)

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.203	3.165	3.253	.087	1.028	.001	6
Item Variances	1.390	1.324	1.461	.137	1.104	.003	6
Inter-Item Covariances	.786	.721	.879	.158	1.220	.003	6
Inter-Item Correlations	.566	.511	.643	.132	1.258	.002	6

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q71-injus	16.0479	22.820	.660	.450	.873
q73-injus	16.0095	22.535	.701	.506	.867
q74-injus	16.0020	22.376	.728	.548	.862
q75-injus	16.0108	22.528	.731	.546	.862
q76-injus	15.9649	22.754	.713	.524	.865
q77-injus	16.0520	22.940	.670	.466	.872

Table 4 illustrates the reliability value for interactional justice construct. A revised 6 items were used for interactional justice. The Cronbach Alpha value for this construct is 0.886. This value also exceeds the benchmark value of 0.70. In addition, the covariance matrix provides evidence of homogenous distribution among items representing interactional justice. Item-deletion was not deemed necessary in order to improve the alpha value of interactional justice.

Table 5. Reliability test for verbal aggression

Reliability Statistics

Cronbach's Alpha	N of Items
.691	3

Item Statistics

	Mean	Std. Deviation
q19-vagg	2.6941	1.33569
q20-vagg	3.2795	1.25533
q21-vagg	3.4180	1.20760

Inter-Item Correlation Matrix

	q19-vagg	q20-vagg	q21-vagg
q19-vagg	1.000		
q20-vagg	.390	1.000	
q21-vagg	.280	.628	1.000

Inter-Item Covariance Matrix

	q19-vagg	q20-vagg	q21-vagg
q19-vagg	1.784	.654	.451
q20-vagg	.654	1.576	.953
q21-vagg	.451	.953	1.458

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.131	2.694	3.418	.724	1.269	.148	3
Item Variances	1.606	1.458	1.784	.326	1.223	.027	3
Inter-Item Covariances	.686	.451	.953	.502	2.113	.051	3
Inter-Item Correlations	.433	.280	.628	.349	2.248	.025	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q19-vagg	6.6975	4.940	.372	.154	.771
q20-vagg	6.1121	4.144	.629	.445	.435
q21-vagg	5.9737	4.669	.538	.396	.561

Table 5 reports the Cronbach Alpha details for the construct of verbal aggression. A revised three items were incorporated into the reliability analysis to produce alpha value and covariance matrix. The Cronbach Alpha value for verbal aggression is 0.69. This result may seem in the lower bound of the acceptable reliability level of 0.70, however, previous empirical studies from various disciplines have stated that this value is acceptable. When considering item-total statistics, deletion of question 19 (q19-vagg) would increase the reliability coefficient to 0.77. However, deletion of this item (q19-vagg) would create problems in terms of relying on two factors rather than three when measuring verbal aggression. Hence, no deletion deemed necessary. Furthermore, covariance matrix provides support for the homogenous invariance among items under study.

Table 6. Reliability test for emotional exhaustion

Reliability Statistics

Cronbach's Alpha	N of Items
.812	4

Item Statistics

	Mean	Std. Deviation
q2-ee	2.9345	1.29882
q3-ee	2.9122	1.27835
q4-ee	3.0770	1.28747
q5-ee	3.1540	1.31594

Inter-Item Correlation Matrix

	q2-ee	q3-ee	q4-ee	q5-ee
q2-ee	1.000			
q3-ee	.594	1.000		
q4-ee	.446	.525	1.000	
q5-ee	.527	.487	.533	1.000

Table 6. Reliability test for emotional exhaustion (*continued*)

Inter-Item Covariance Matrix

	q2-ee	q3-ee	q4-ee	q5-ee
q2-ee	1.687	.986	.746	.901
q3-ee	.986	1.634	.864	.820
q4-ee	.746	.864	1.658	.902
q5-ee	.901	.820	.902	1.732

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.019	2.912	3.154	.242	1.083	.013	4
Item Variances	1.678	1.634	1.732	.098	1.060	.002	4
Inter-Item Covariances	.870	.746	.986	.241	1.323	.006	4
Inter-Item Correlations	.519	.446	.594	.148	1.332	.002	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q2-ee	9.1431	10.194	.635	.431	.761
q3-ee	9.1654	10.175	.655	.447	.752
q4-ee	9.0007	10.467	.603	.380	.776
q5-ee	8.9237	10.169	.625	.399	.766

The reliability value and the details of covariance distribution are presented in Table 6. Revised four items were considered when examining reliability for the construct of emotional exhaustion. Reliability test produced a Cronbach Alpha value of 0.812 for emotional exhaustion. This again surpasses the set value of 0.70. Covariance matrix is also illustrated a set of close variances among four items that represent emotional exhaustion. Moreover, item deletion was not necessary since all values exceeded the benchmark level.

Table 7. Reliability test for cynicism

Reliability Statistics

Cronbach's Alpha	N of Items
.826	4

Item Statistics

	Mean	Std. Deviation
q6-cy	2.7677	1.33003
q7-cy	2.8535	1.30312
q8-cy	2.8460	1.28896
q9-cy	2.7806	1.30479

Inter-Item Correlation Matrix

	q6-cy	q7-cy	q8-cy	q9-cy
q6-cy	1.000			
q7-cy	.672	1.000		
q8-cy	.512	.593	1.000	
q9-cy	.434	.460	.582	1.000

Inter-Item Covariance Matrix

	q6-cy	q7-cy	q8-cy	q9-cy
q6-cy	1.769	1.164	.878	.754
q7-cy	1.164	1.698	.996	.781
q8-cy	.878	.996	1.661	.979
q9-cy	.754	.781	.979	1.702

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	2.812	2.768	2.853	.086	1.031	.002	4
Item Variances	1.708	1.661	1.769	.108	1.065	.002	4
Inter-Item Covariances	.925	.754	1.164	.410	1.544	.021	4
Inter-Item Correlations	.542	.434	.672	.237	1.546	.007	4

Table 7. Reliability test for cynicism (*continued*)

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q6-cy	8.4801	10.574	.646	.479	.782
q7-cy	8.3943	10.355	.701	.538	.756
q8-cy	8.4018	10.568	.681	.481	.766
q9-cy	8.4673	11.205	.576	.369	.813

Table 7 elaborates on the issue of reliability concerning the construct of cynicism. The Cronbach Alpha value for cynicism is 0.826 which provides evidence of reliable construct. Four items were used to assess the reliability for this dimension. There was no need to eliminate any items since all items under cynicism have provided internal consistency in accordance to item-to-item correlations. The inter-item correlations show moderate relationships which yields an understanding of items are not too close to each other. This attests that items are separate and distinct. Covariance matrix also showed consistency in terms of homogeneity among items that represent cynicism.

Table 8. Reliability test for reduced professional efficacy

Reliability Statistics

Cronbach's Alpha	N of Items
.690	3

Item Statistics

	Mean	Std. Deviation
q11-preff	2.6718	1.19076
q12-preff	2.5091	1.20476
q13-preff	2.2357	1.25115

Table 8. Reliability test for reduced professional efficacy (*continued*)

Inter-Item Correlation Matrix

	q11-preff	q12-preff	q13-preff
q11-preff	1.000		
q12-preff	.446	1.000	
q13-preff	.323	.510	1.000

Inter-Item Covariance Matrix

	q11-preff	q12-preff	q13-preff
q11-preff	1.418	.639	.481
q12-preff	.639	1.451	.768
q13-preff	.481	.768	1.565

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	2.472	2.236	2.672	.436	1.195	.049	3
Item Variances	1.478	1.418	1.565	.147	1.104	.006	3
Inter-Item Covariances	.630	.481	.768	.288	1.598	.017	3
Inter-Item Correlations	.426	.323	.510	.187	1.580	.007	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q11-preff	4.7448	4.554	.441	.211	.675
q12-preff	4.9075	3.945	.588	.348	.487
q13-preff	5.1810	4.148	.490	.271	.617

Reliability test for reduced professional efficacy is presented in Table 8. Assessment of this construct is positive in nature which means that the original construct is named professional efficacy. However, burnout syndrome is negative in nature. Hence, scores obtained for this construct is reverse coded when making further analysis. This approach is evident in a recent empirical study (Uludag & Yaratan, 2010). A revised three items were used to assess the Cronbach Alpha value. The reliability score with these three

items reached 0.690. Similar to the case of verbal aggression mentioned above, 0.69 is an acceptable level of reliability score. Covariance matrix provided a support for homogenous set of distribution among three set of items. In addition, no item elimination was necessary to intensify the reliability score of reduced professional efficacy. Due to the uni-dimensional nature of academic achievement (GPA), no further reliability test was conducted.

4.3 Confirmatory Factor Analysis

Confirmatory factor analysis is conducted via LISREL 8.30 (Joreskog & Sorbom, 1996) to assess the dimensionality, discriminant and convergent validity of the study constructs (Anderson & Gerbing, 1988).

Scale purification: Distributive justice had 14 and Procedural justice had 17 items. Due to cross loading problems in confirmatory factor analysis, 6 items from distributive justice and 10 items from procedural justice were removed. Interactional justice had 8 items. Again due to the cross-loading issues, 2 items were removed from interactional justice.

Confirmatory factor analysis revealed that verbal aggression construct had convergent and discriminant validity problems. Verbal aggression had factor loading and cross loading issues. Verbal aggression construct originally had 8 items. Due to inter-item issues this number was reduced to 3.

Burnout dimension also had number of inter-item and cross-loading problems. Therefore, 1 item was deleted from emotional exhaustion, and 3 items were deleted from reduced professional efficacy. Cynicism had no problems so no items were removed from this construct.

All constructs used in this study were adapted from the reliable sources which had high validity scores. However, in this study there was a need to eliminate unreliable and invalid items that did not meet the standard cut-off value. For instance, items representing perceptions of justice were retrieved from Chory-Assad & Paulsel, (2004b) and Chory (2007). These items were tested for reliability and validity measures. Items representing verbal aggression were acquired from Garcia-Leon et al. (2002) which originally was developed and tested of reliability and validity by Buss and Perry (1992). Furthermore, burnout inventory was utilized from Schaufeli, Martinez, et al. (2002). All the above constructs have established reliabilities and validities in many empirical researches. However, within the scope of this study, some items were removed. This might be due to the fact of sampling procedure. In addition, cross-sectional nature of the survey may also have contributed to item elimination. This is not surprising since variability in cultures and perceptions in a specific context at a given time could lead to these results. The similar examples could be observed in previous empirical studies (Uludag, 2004; Van Dierendonck, Schaufeli and Buunk (2001); Yang, 2004; Yaratan & Uludag, 2012).

After the model was revised there were no problems in terms of discriminant and convergent validity. The model fit indices were also increased to an acceptable level.

4.3.1 Discriminant Validity

The definition and scope of the validity is discussed in the preceding chapter. After conducting a series of reliability tests, discriminant and convergent validities are assessed in this section.

The assessment of discriminant validity was based on a series of chi-square (χ^2) difference test utilizing measures for each pair of dimensions. Specifically, two-dimensional model for each pair of constructs was first fit. After conducting this fit, items that symbolize each construct were forced into a single factor solution. The χ^2 test provided significant outcomes for each pair of measures. All chi-square difference tests were equal to 1 degrees of freedom. Chi-square bigger than 10.83 and significance level 0.001 were considered. Parameter estimates equal or above 0.40 is acceptable (Anderson & Gerbing, 1988). Discriminant validity test for distributive justice is shown in Figure 2.

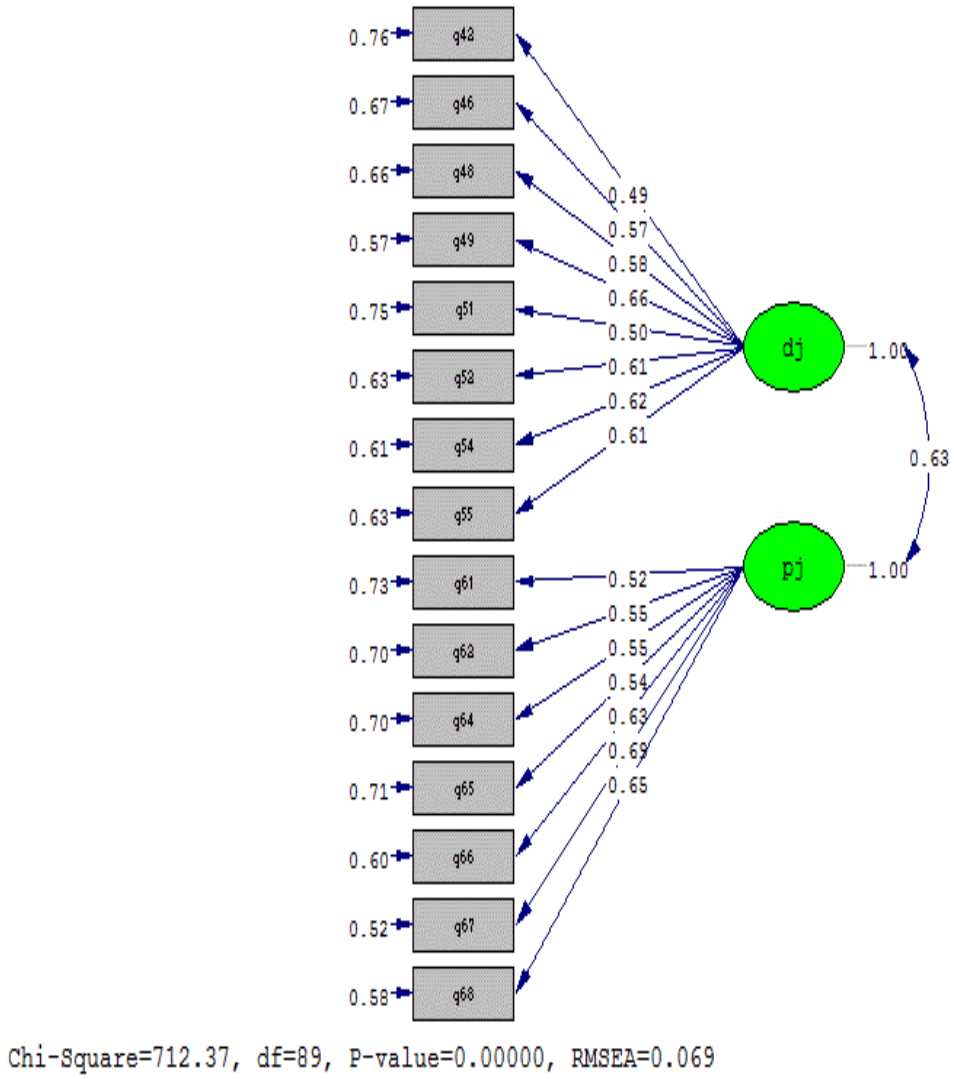


Figure 2. Two-dimensional model of distributive justice and procedural justice

For each degree of freedom chi-square is calculated. Chi-square difference test for distributive justice and procedural justice is presented above. According to the value of the chi-square this two-dimensional model is significant. The figure of single factor solution is provided below.

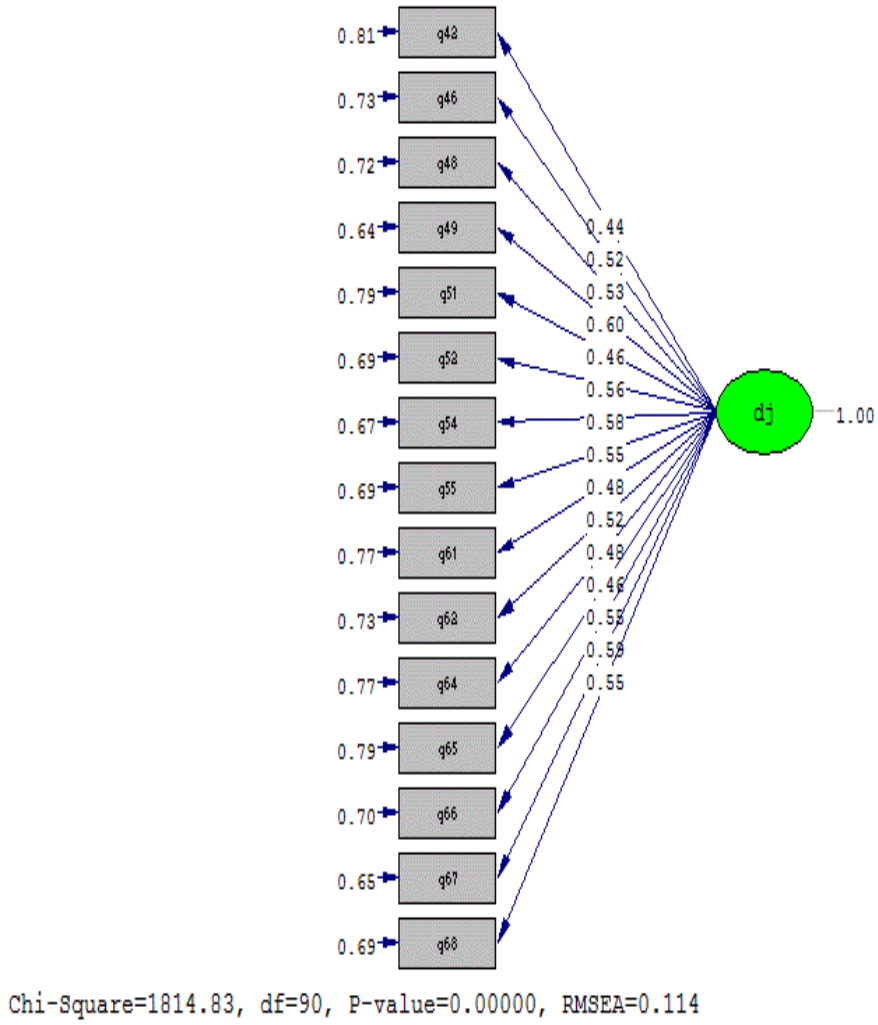


Figure 3. Single factor solution of distributive justice and procedural justice

Items representing procedural justice (pj) were forced into a single factor solution. As could be cogitated from the above figure, the model has been significantly deteriorated in relation to an increase in degrees of freedom. In addition, root mean square error in approximation (RMSEA) has also increased. Hence, two-dimensional model provides a better fit to the model.

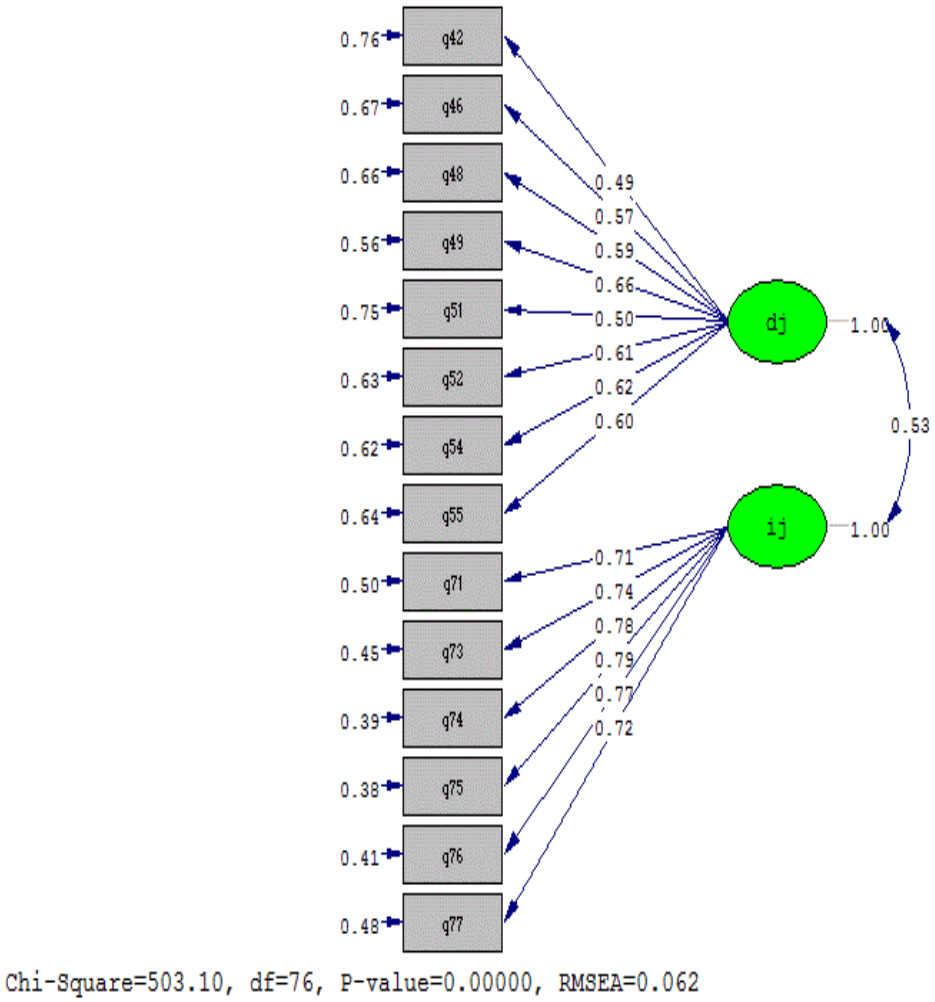


Figure 4. Two-dimensional model of distributive justice and interactional justice

The chi-square difference test is calculated among distributive justice and interactional justice. According to result of the χ^2 the two-dimensional model for distributive justice and interactional justice is significant. The single factor solution for distributive justice and interactional justice is provided below.

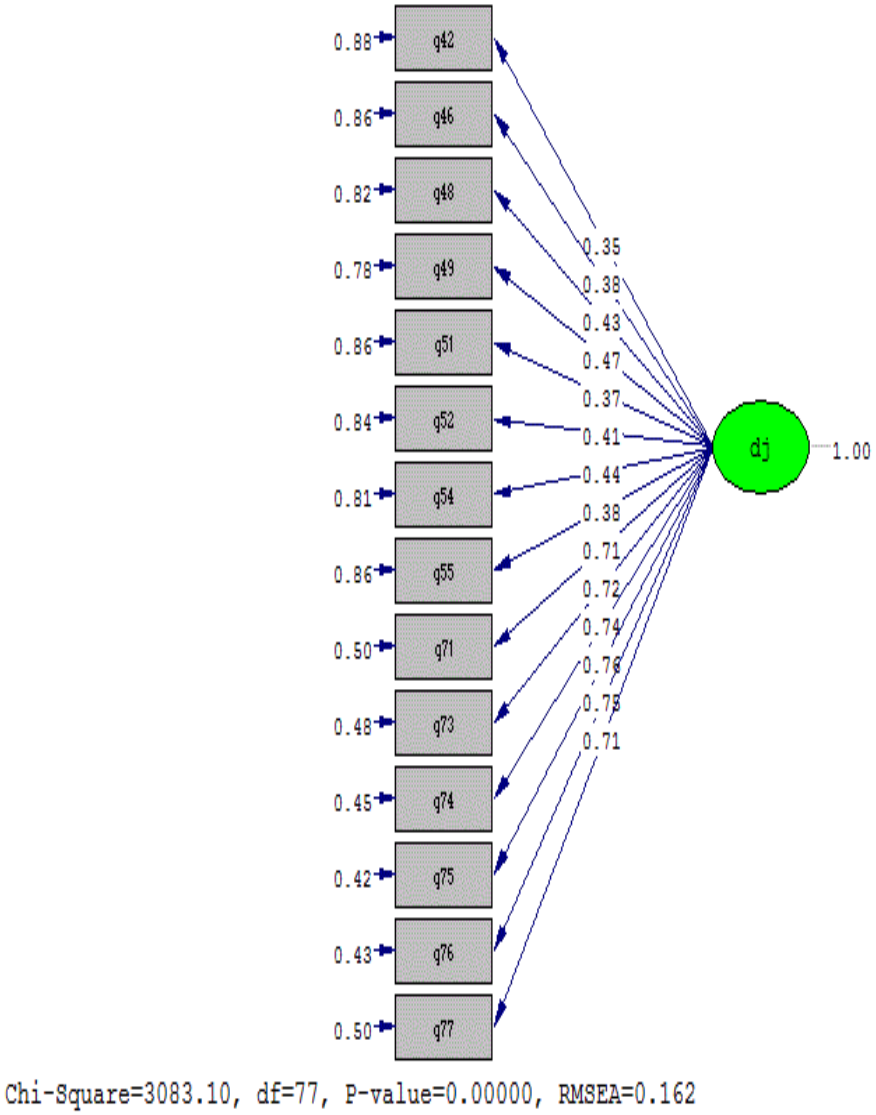


Figure 5. Single factor solution of distributive justice and interactional justice

Items representing interactional justice (ij) were forced into a single factor solution under distributive justice. The figure above clearly reports that the model has deteriorated in relation to single increase in degrees of freedom. RMSEA is also increased. Two-dimensional model provides a better fit.

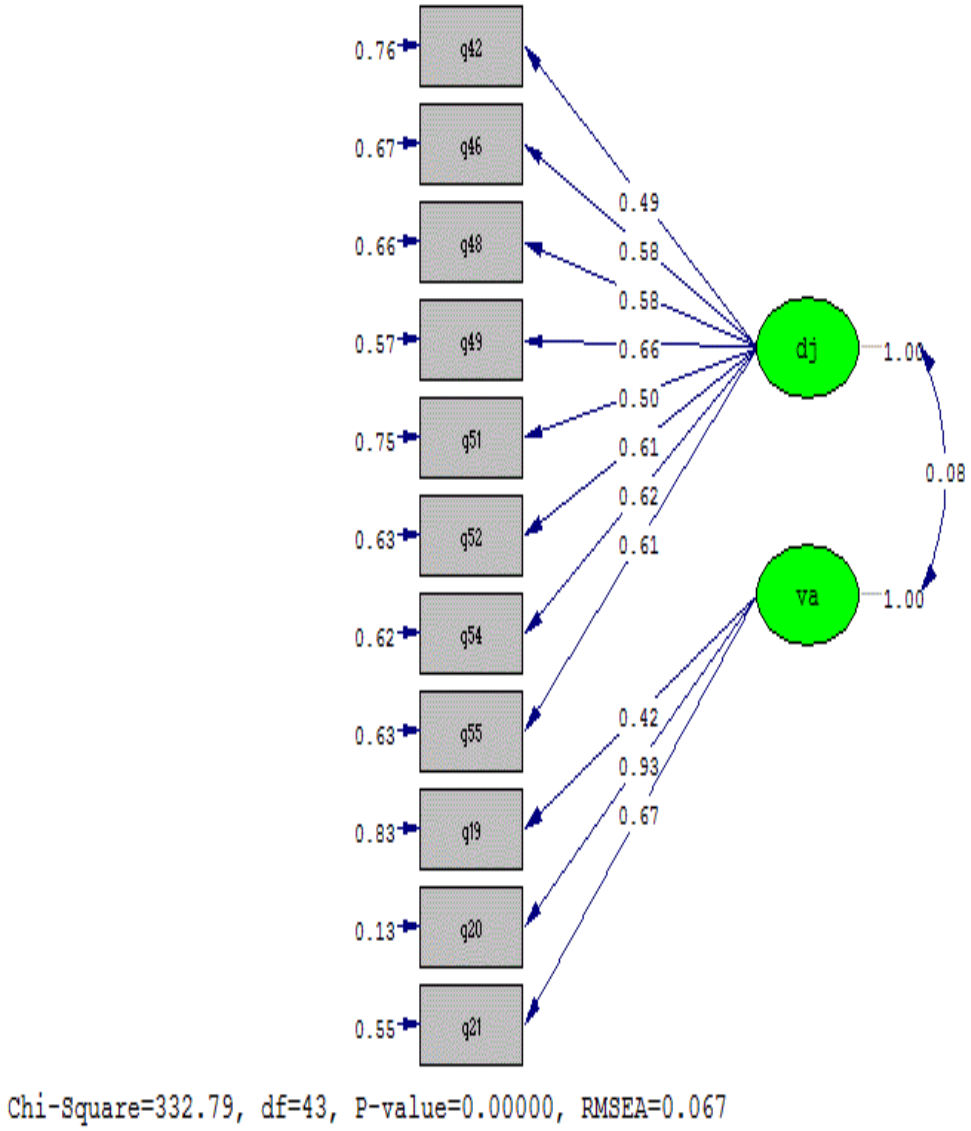


Figure 6. Two-dimensional model of distributive justice and verbal aggression

The χ^2 difference test is conducted between the constructs of distributive justice and verbal aggression. According to the outcome of this assessment the two-dimensional model is significant. Single factor solution of distributive justice and verbal aggression is illustrated below.

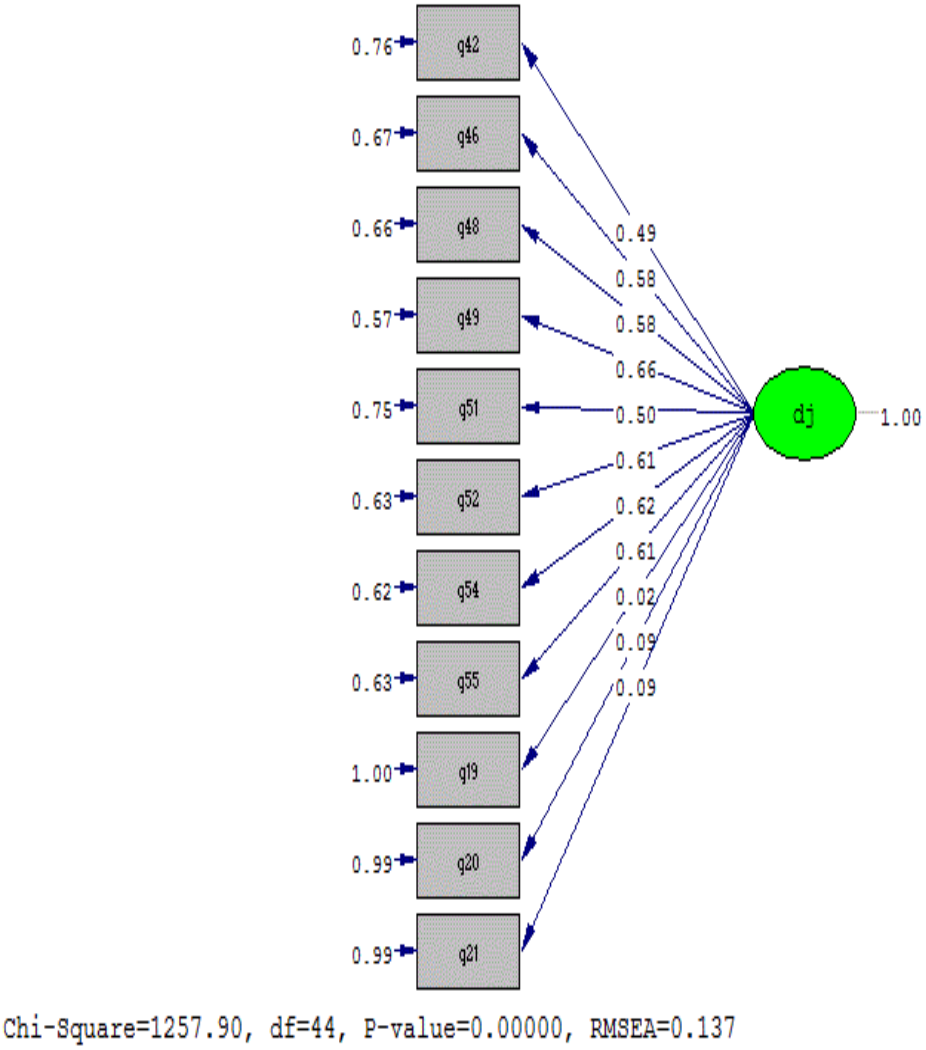


Figure 7. Single factor solution of distributive justice and verbal aggression

Items measuring verbal aggression (va) were forced into a single factor solution of distributive justice. The result of this model indicates that the single factor model has deteriorated. The estimates also prove that these items (verbal aggression) do not belong to distributive justice. Hence, two-dimensional model is a better fit.

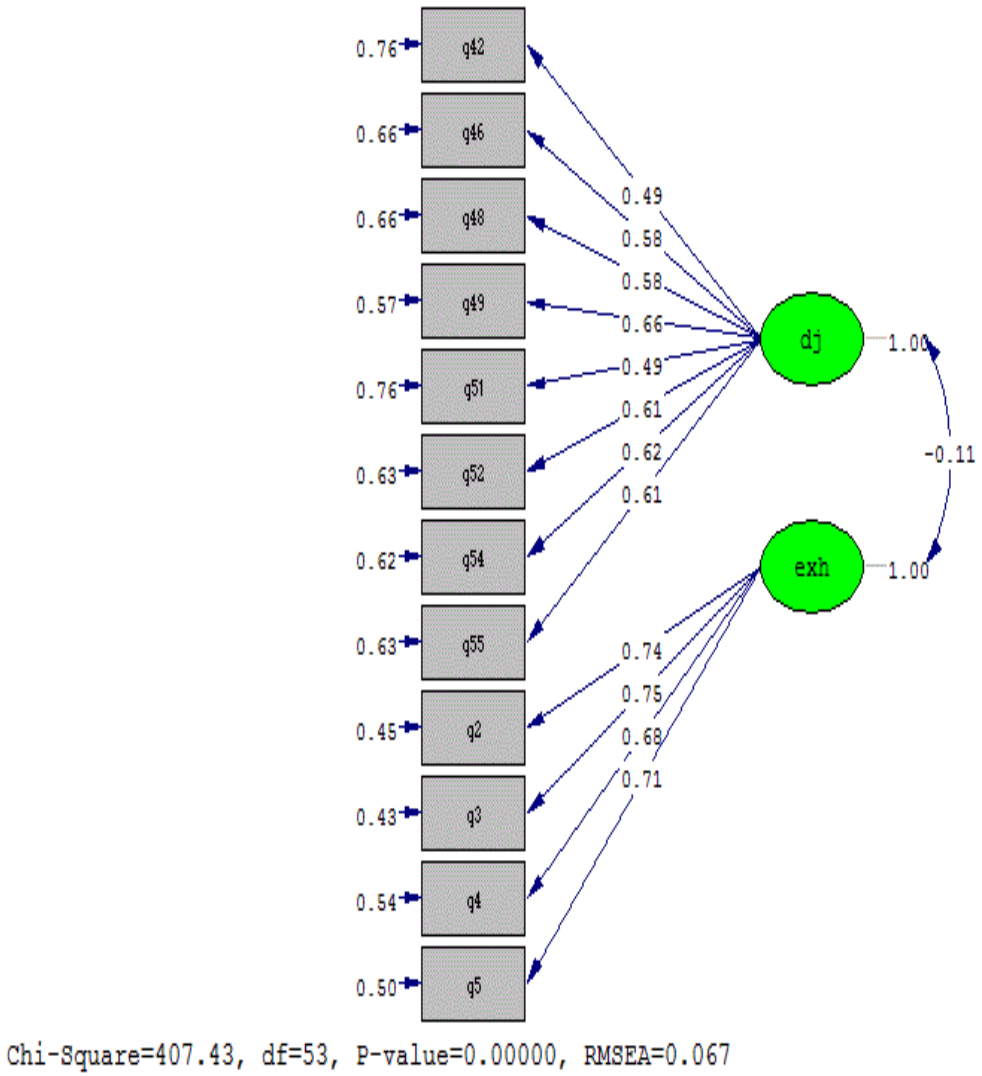


Figure 8. Two-dimensional model of distributive justice and emotional exhaustion

Emotional exhaustion was paired with distributive justice in order to test the discriminant validity. The χ^2 difference test reported that the two-factor model is significant. In detail, parameter estimates fit under each construct. Single factor solution of distributive justice and emotional exhaustion is depicted below.

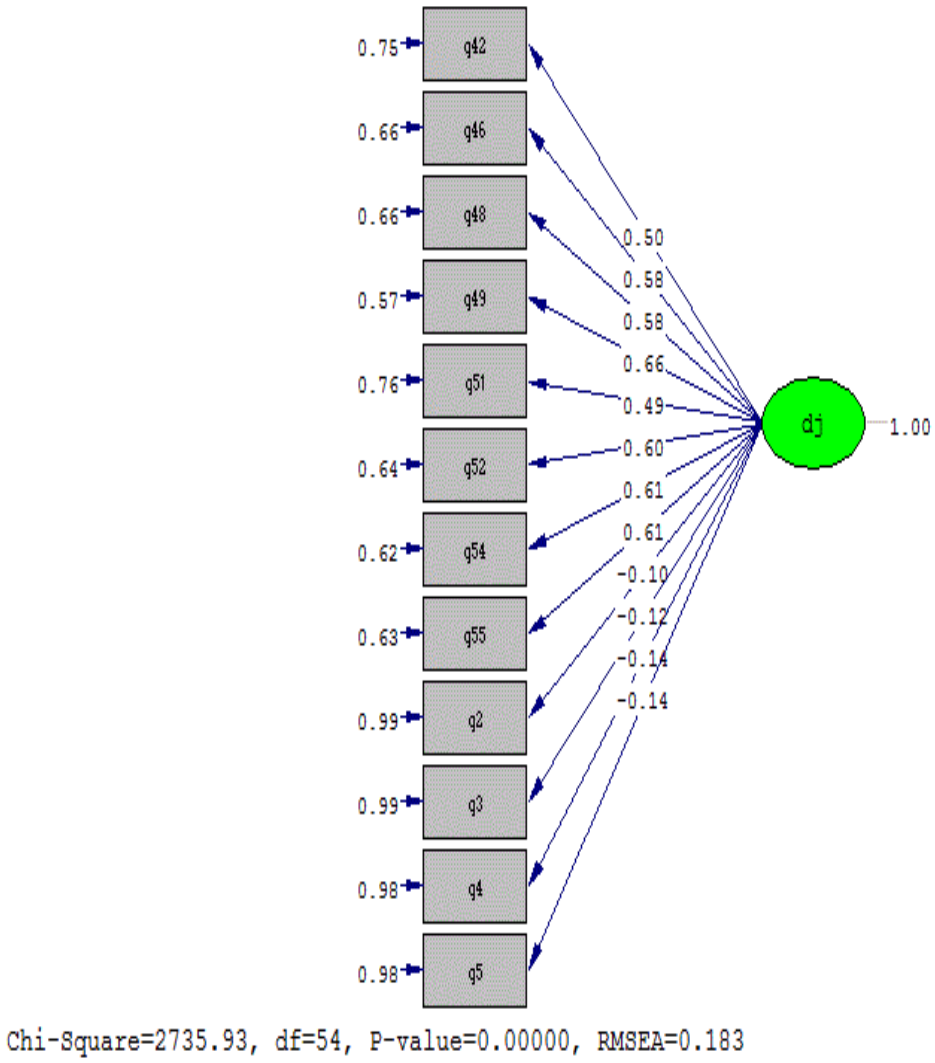


Figure 9. Single factor solution of distributive justice and emotional exhaustion

Questions measuring emotional exhaustion were forced under the distributive justice construct. A single increase in the degrees of freedom has collapsed the model. Items belonging to emotional exhaustion provided a negative parameter estimate. Therefore, it could be reported that the two-factor model provides a better fit.

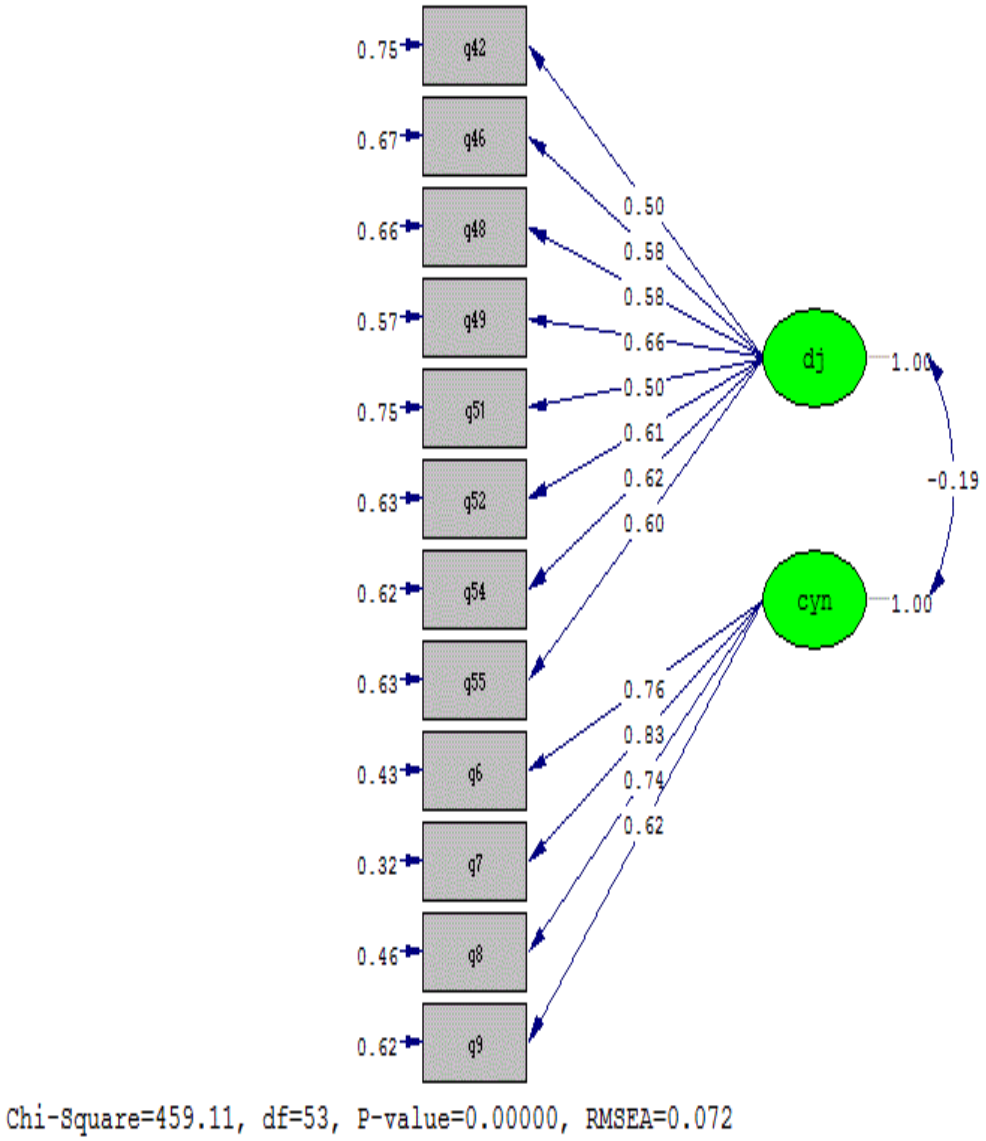


Figure 10. Two-dimensional model of distributive justice and cynicism

Distributive justice was paired with cynicism (cyn) to assess the discriminant validity of distributive justice. The outcome of the chi-square difference test of a two-dimensional model is significant. In addition, parameter estimates underlie each specific construct. Single factor solution of distributive justice and cynicism is given below.

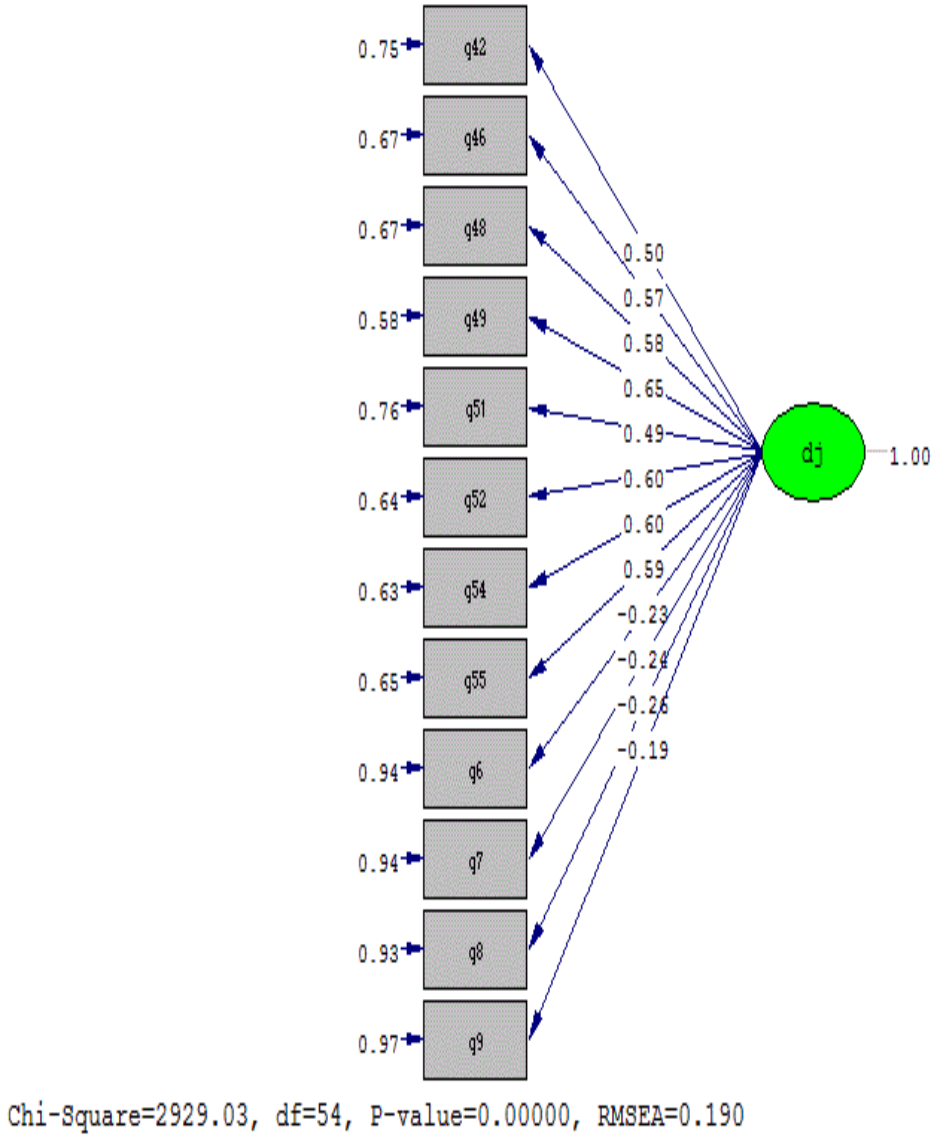


Figure 11. Single factor solution of distributive justice and cynicism

Items representing cynicism were forced into a single factor solution to test the discriminant validity of distributive justice. The χ^2 difference test yielded a deterioration of the model considering single factor solution. Parameter estimates also produced a negative outcome. Hence, two-dimensional model postulates a better fit.

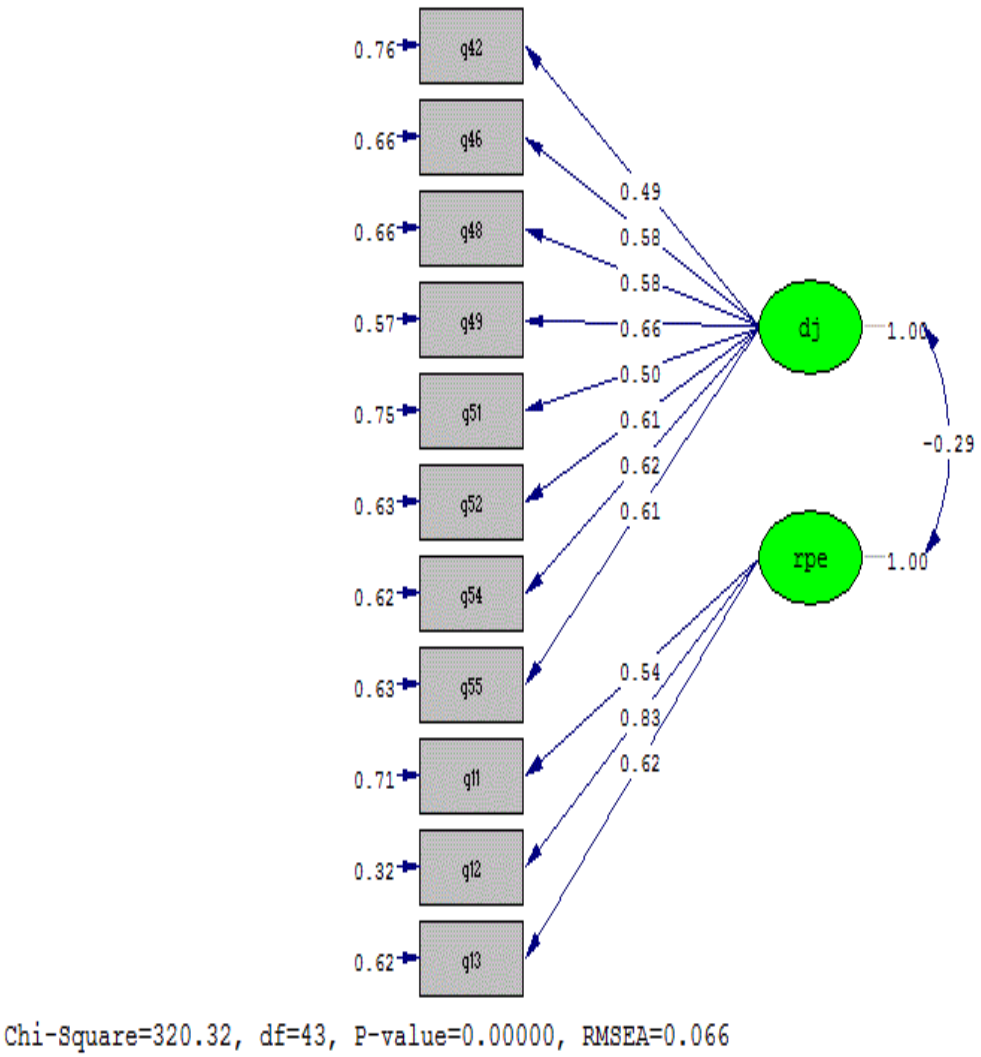


Figure 12. Two-dimensional model of distributive justice and reduced professional efficacy

Two-dimensional model has been created to examine the discriminant validity of distributive justice. In this model, distributive justice and reduced professional efficacy was assessed. The findings posit that two-factor model is significant. Single factor solutions among these constructs are illustrated below.

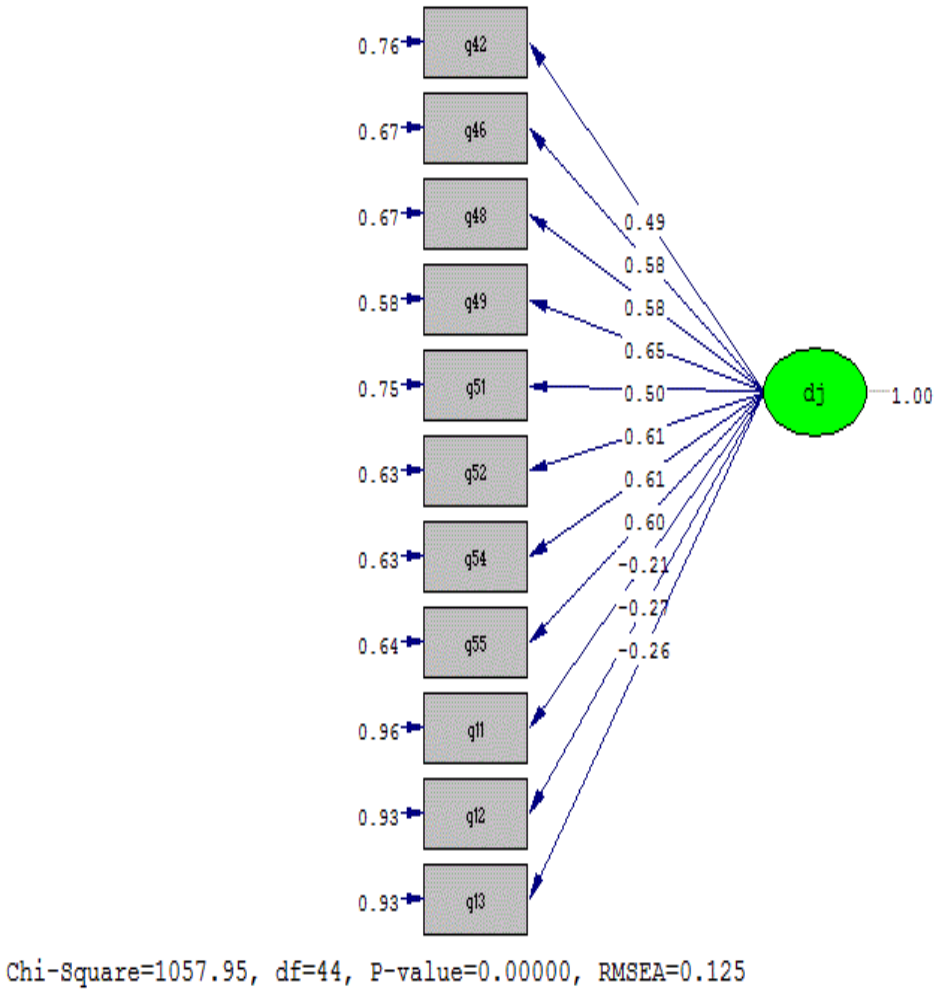


Figure 13. Single factor solution of distributive justice and reduced professional efficacy

Items that construct reduced professional efficacy were forced into a single factor solution in order to assess the discriminant validity of distributive justice. Considering the parameter estimates and the single increase in degrees of freedom, the model became insignificant. Accordingly, two-factor model accommodates a better fit.

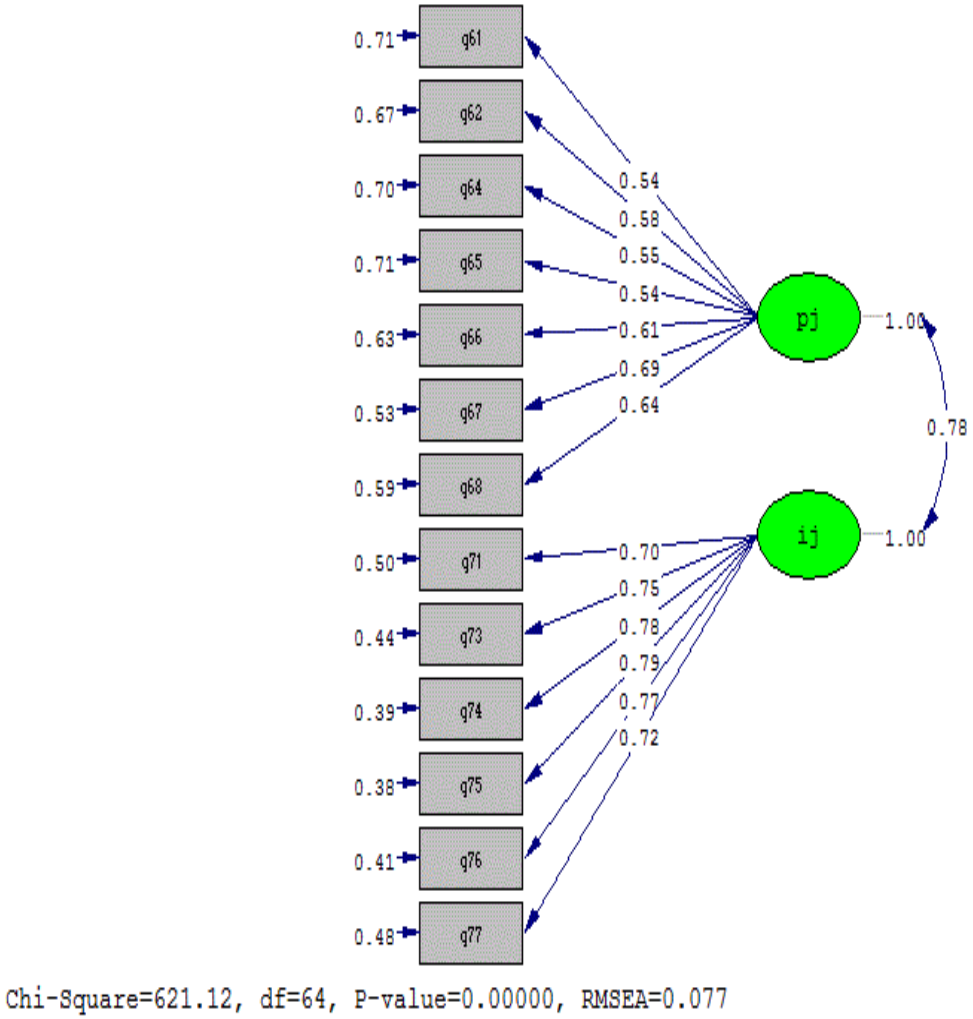


Figure 14. Two-dimensional model of procedural justice and interactional justice

In order to investigate the discriminant validity of procedural justice, two-factor model has been deployed. Procedural justice and interactional justice were incorporated into this model. The χ^2 difference test reveals that the model is significant. Additionally, parameter estimates is higher than the stated level of 0.40. Single factor solution is displayed below.

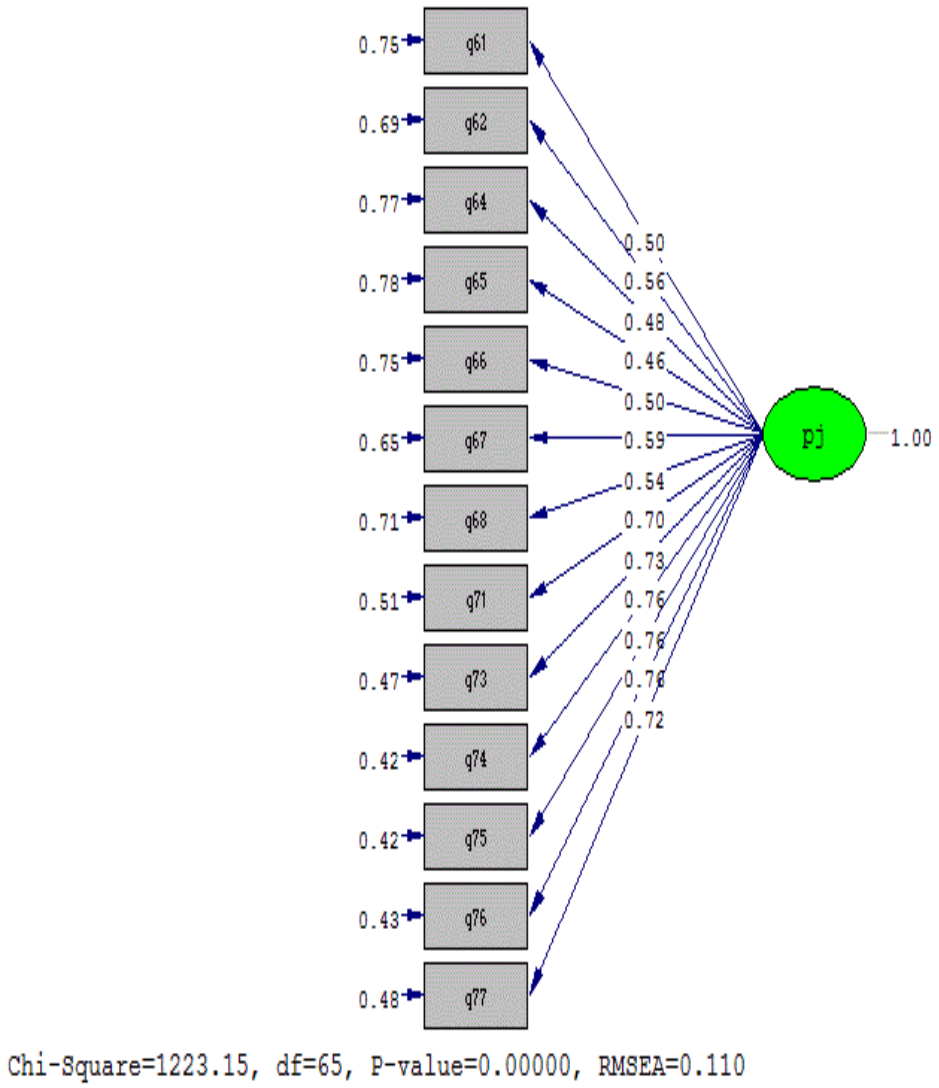


Figure 15. Single factor solution of procedural justice and interactional justice

With a single increase in the degrees of freedom the single factor solution for procedural justice has been created. As could be acknowledged from the findings of this test the model has deteriorated. As a result, two-factor model postulates a better fit.

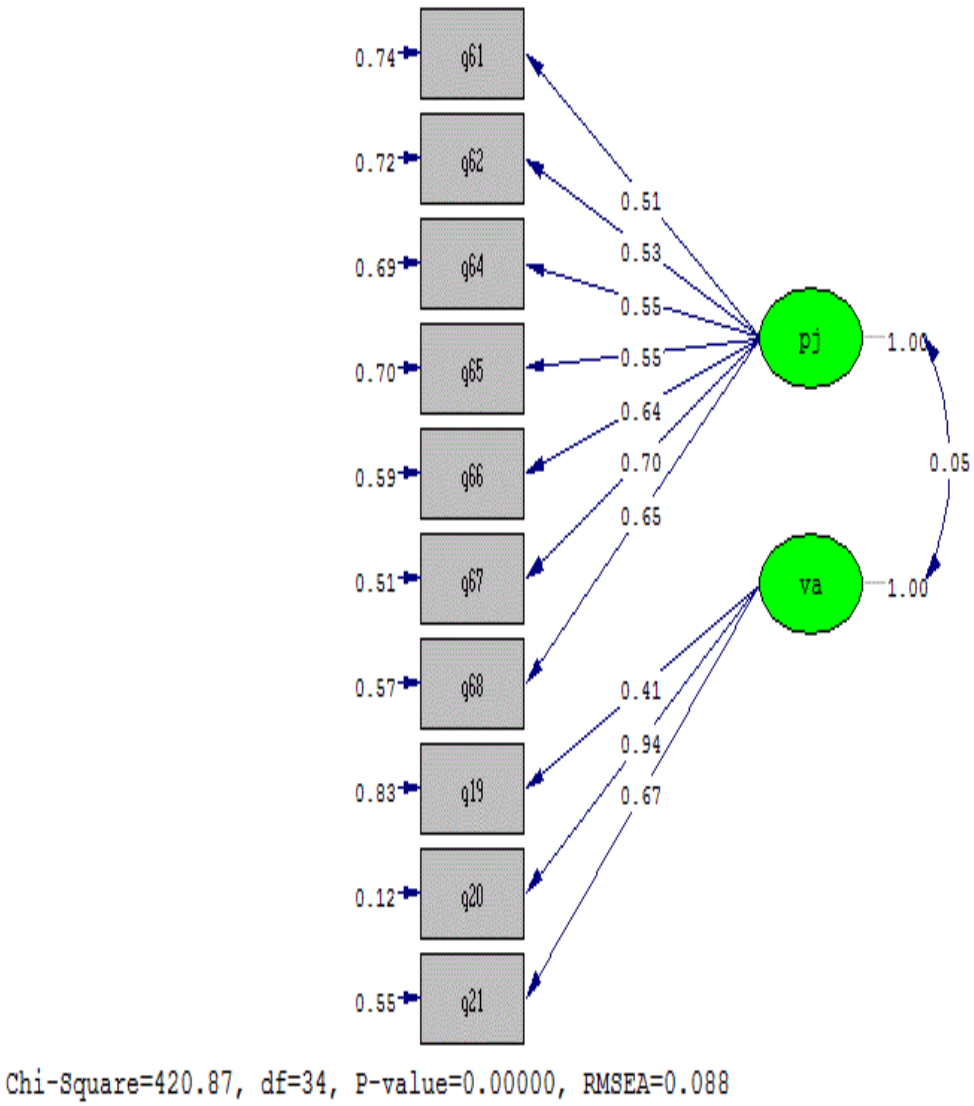


Figure 16. Two-dimensional model of procedural justice and verbal aggression

The χ^2 difference test was employed in order to test discriminant validity for procedural justice. Verbal aggression was included in the two-factor model. The results manifest that two-factor model is significant. Items representing each construct underlie the constructs separately. Single factor solution is posited below.

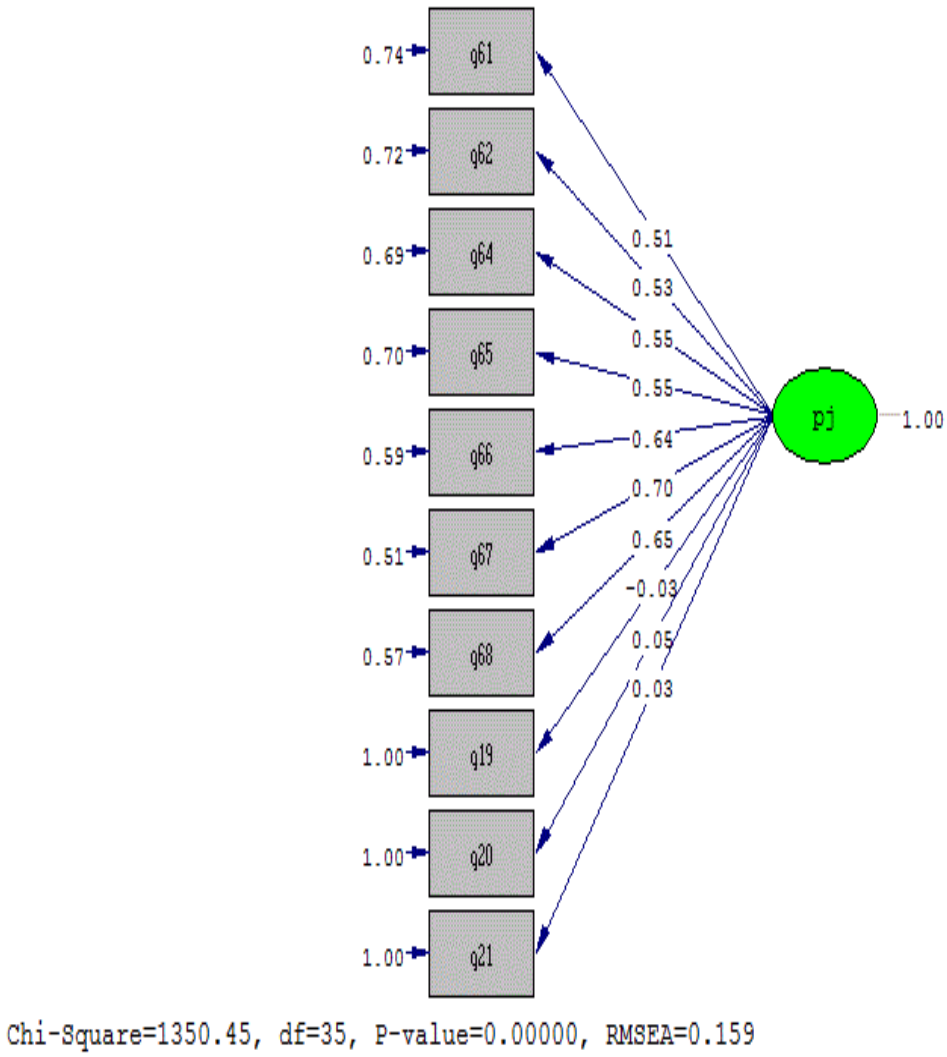


Figure 17. Single factor solution of procedural justice and verbal aggression

Items representing verbal aggression were forced into the equation of single factor solution. The results manifested that the model has lost its' significance with a single increase in degrees of freedom. In addition, inclusion of verbal aggression into procedural justice has distorted the parameter estimates. Hence, the two-factor model provides a better fit.

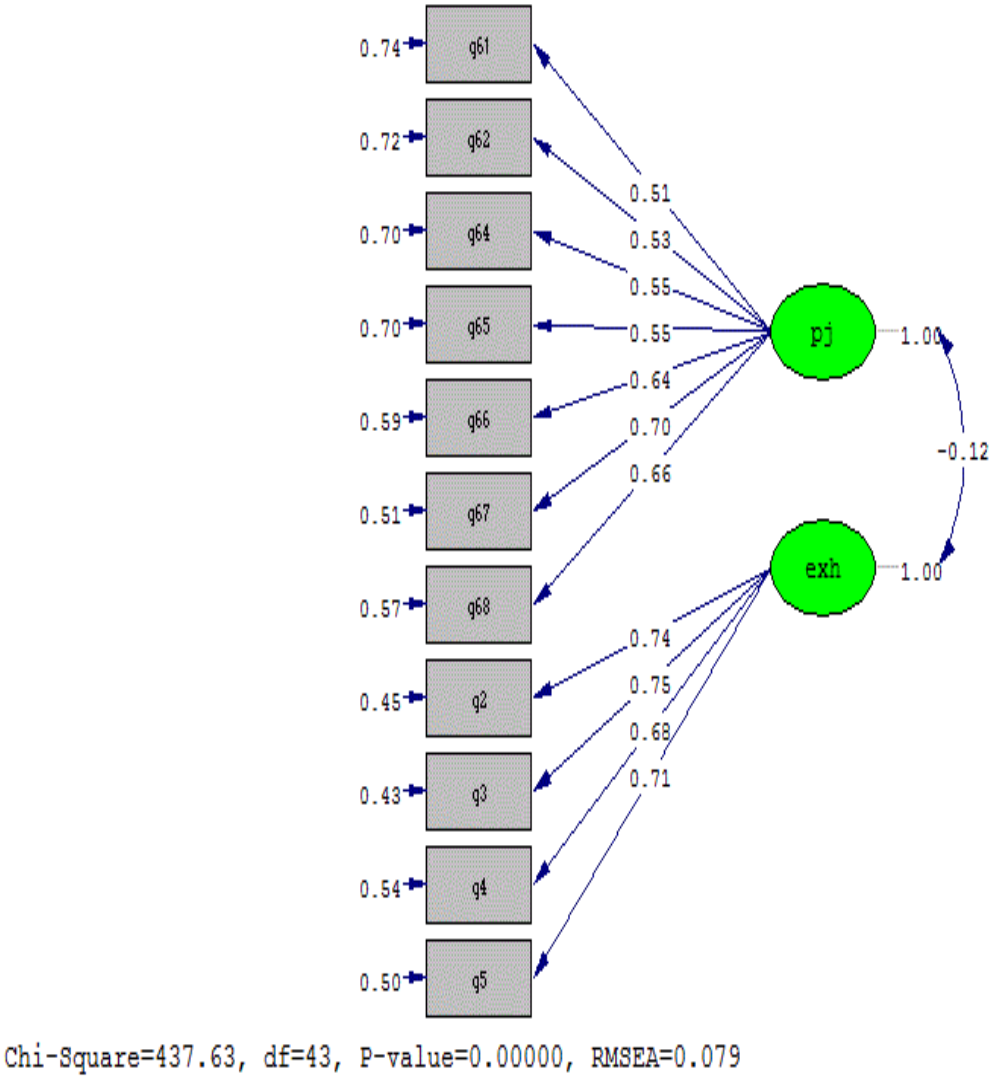


Figure 18. Two-dimensional model of procedural justice and emotional exhaustion

In order to measure the discriminant validity of procedural justice, chi-square difference test was conducted among procedural justice and emotional exhaustion. The χ^2 difference test revealed that two-factor model is significant. Below, the single factor solutions for the aforementioned constructs are presented.

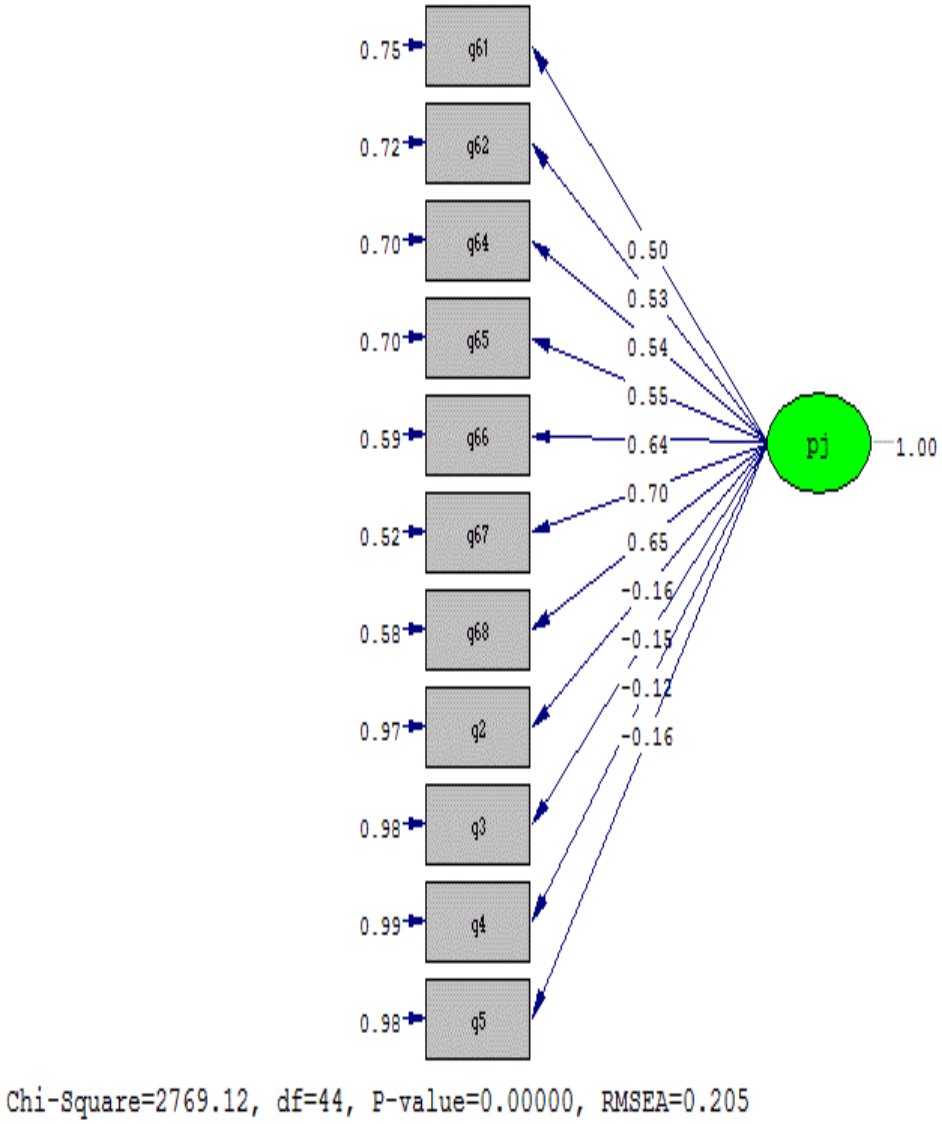


Figure 19. Single factor solution of procedural justice and emotional exhaustion

Questions that represent emotional exhaustion were forced into the single solution factor of procedural justice. The results revealed that the model has been deteriorated with one increase in degrees of freedom. Parameter estimate results were also distorted. For that reason, two-factor model is a better fit.

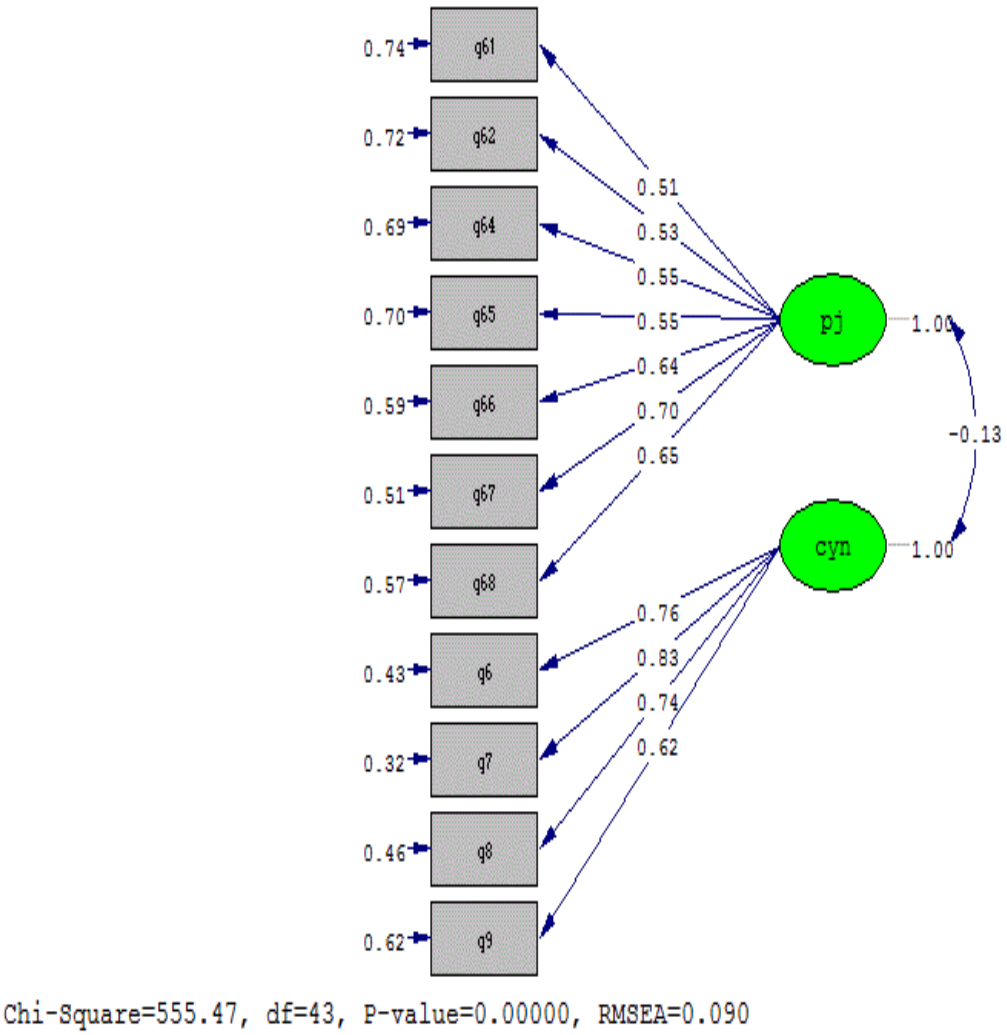


Figure 20. Two-dimensional model of procedural justice and cynicism

Investigation of discriminant validity of procedural justice leaded to conduct a two-factor model among procedural justice and cynicism. The results of the chi-square difference test affirm that the two-factor model is significant. Items representing each construct do not have a low estimate. Thus, single factor solution of procedural justice and cynicism is illustrated below.

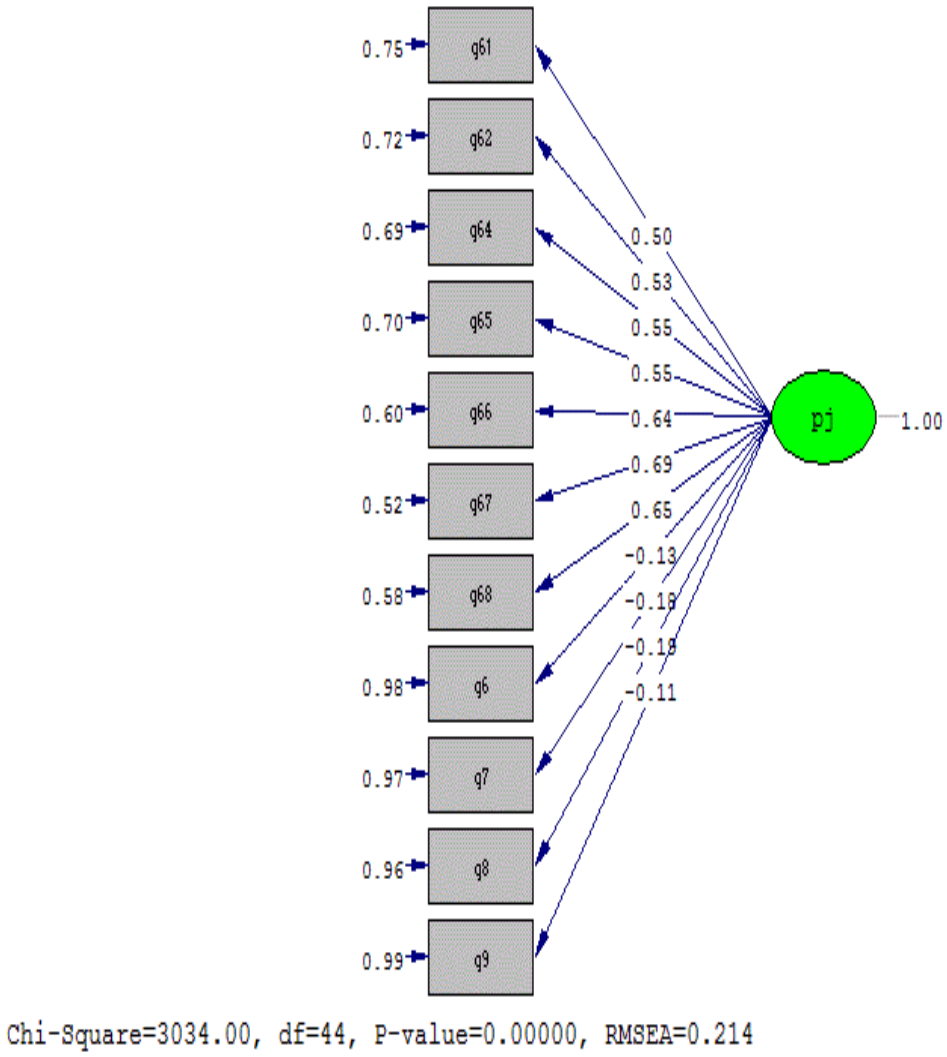


Figure 21. Single factor solution of procedural justice and cynicism

Items belonging to the construct of cynicism were incorporated into the single factor equation. The findings disclose that the model has become insignificant. Parameter estimates were also distorted. Root mean square error in approximation was also increased. Thus, a better fit is provided by the two-factor model.

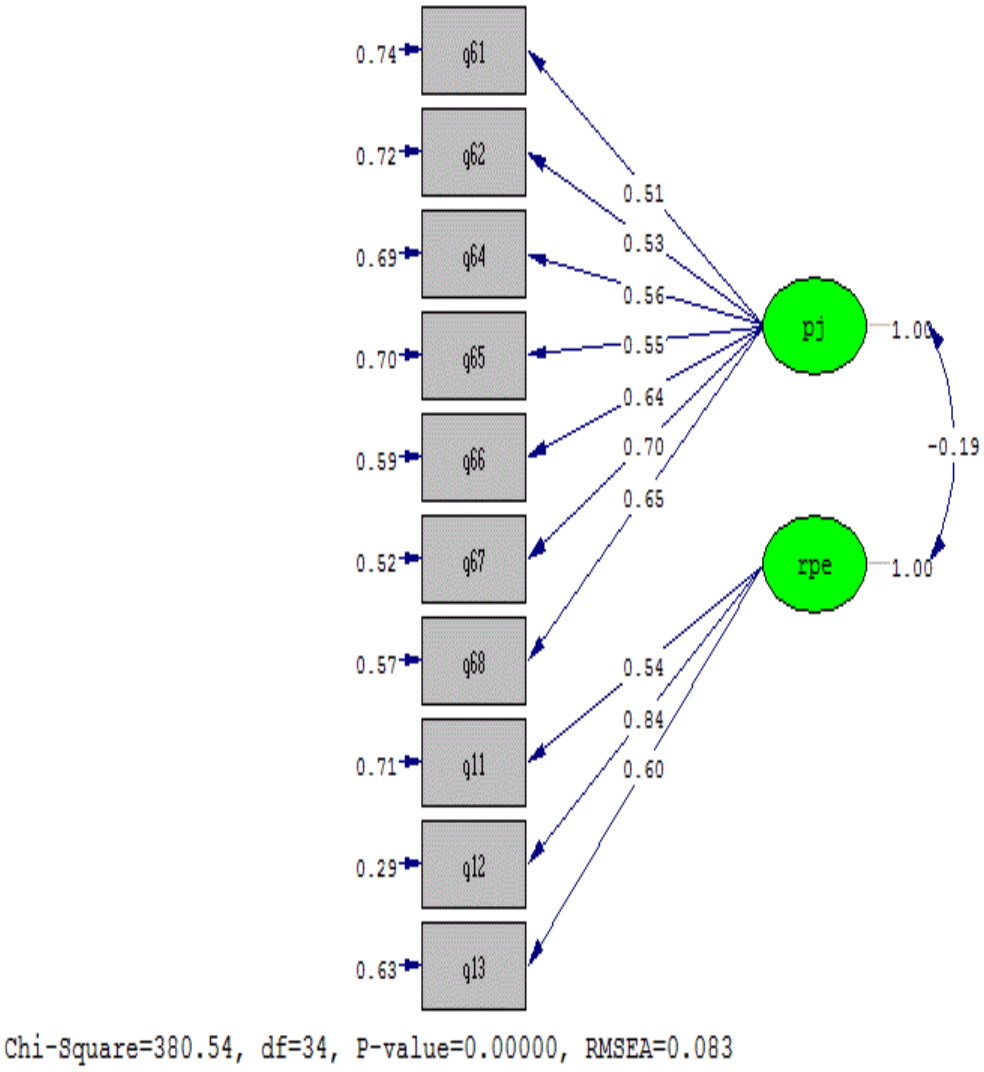


Figure 22. Two-dimensional model of procedural justice and reduced professional efficacy

In order to assess the discriminant validity procedural justice was paired with reduced professional efficacy. The χ^2 difference test results reveal that the two-factor model is significant at 0.001 level. Each item and construct is separately observed. Single factor solution model is depicted below.

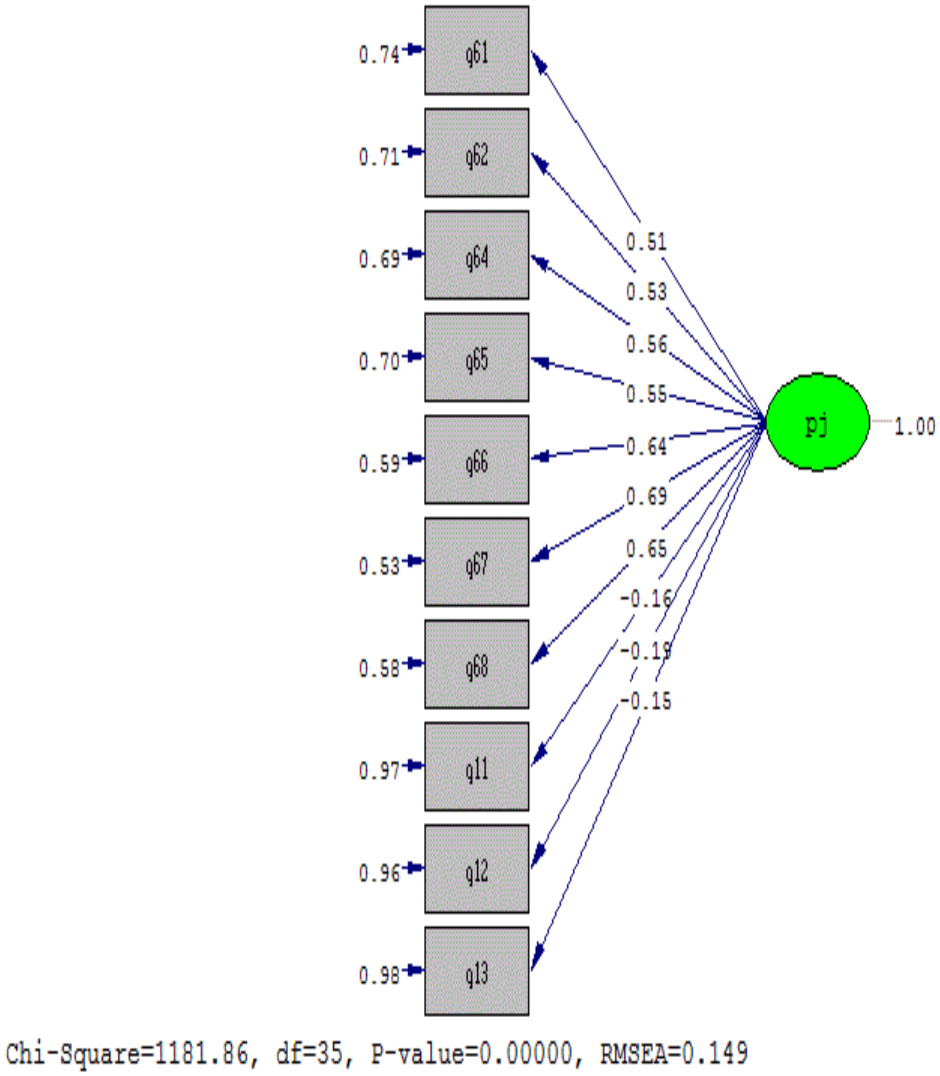


Figure 23. Single factor solution of procedural justice and reduced professional efficacy

This was the final step to measure the single factor solution for procedural justice. As repeated in above single factor solution models, items representing reduced professional efficacy were forced into a single dimension. As a result, the model has deteriorated and lost its significance. Therefore, two-factor model yields a better fit.

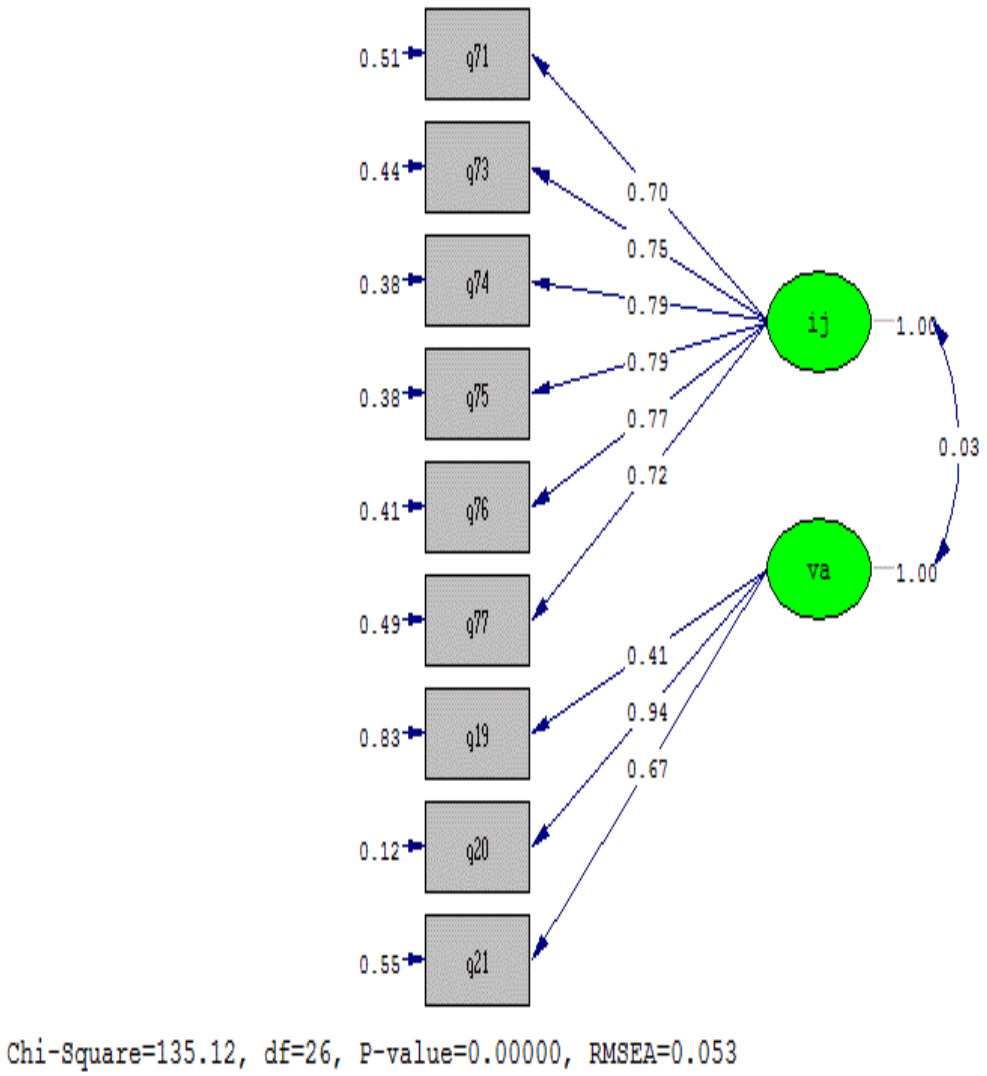


Figure 24. Two-dimensional model of interactional justice and verbal aggression

Concerning the discriminant validity of interactional justice, a two-factor model was employed in relation to verbal aggression. The chi-square difference test manifested that the two-factor model was significant at 0.001 level. Items representing each construct had no issue regarding the parameter estimates. Below, the single factor solution model for interactional justice and verbal aggression is provided.

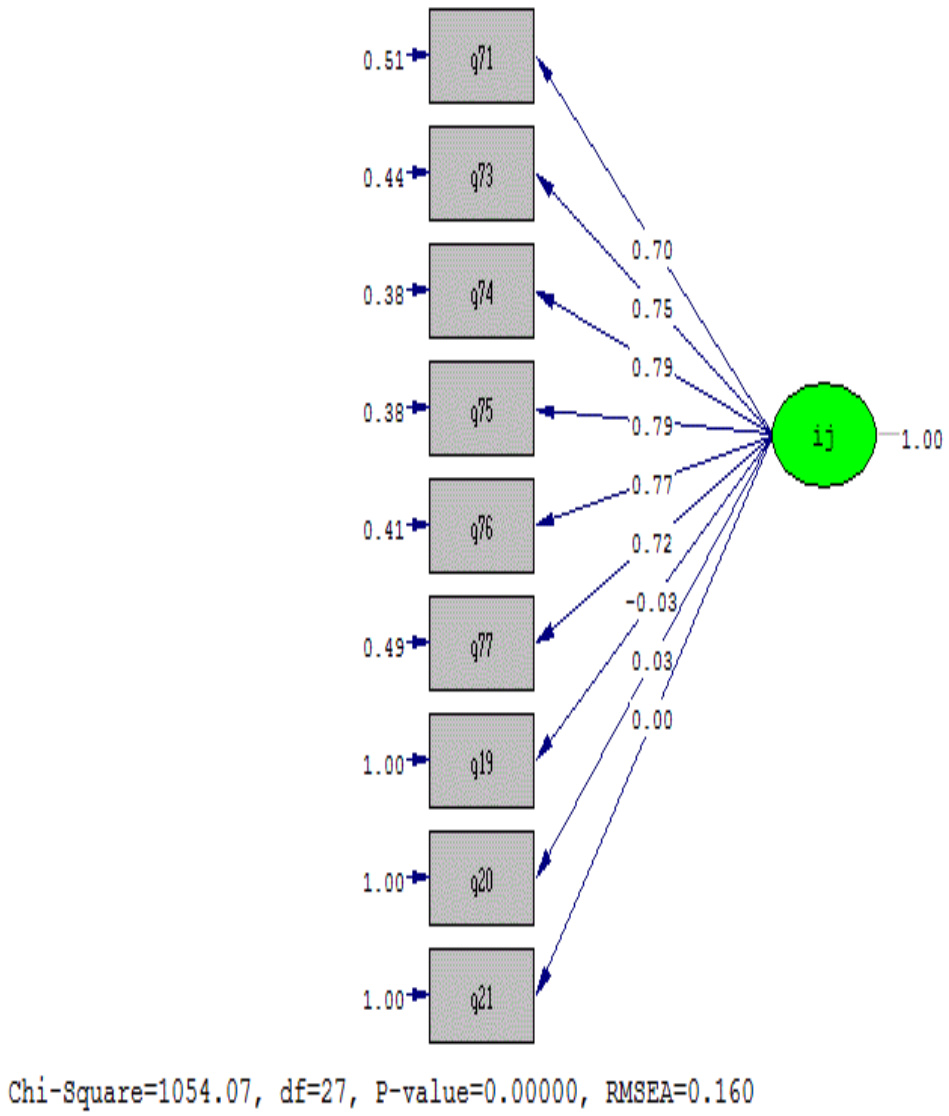


Figure 25. Single factor solution of interactional justice and verbal aggression

Forcing items belonging to verbal aggression into the single factor solution has made the model insignificant. Parameter estimates were also inconsistent in relation to the two-factor model created among interactional justice and verbal aggression. The χ^2 difference test, hence, posits that the two-factor model is a better fit.

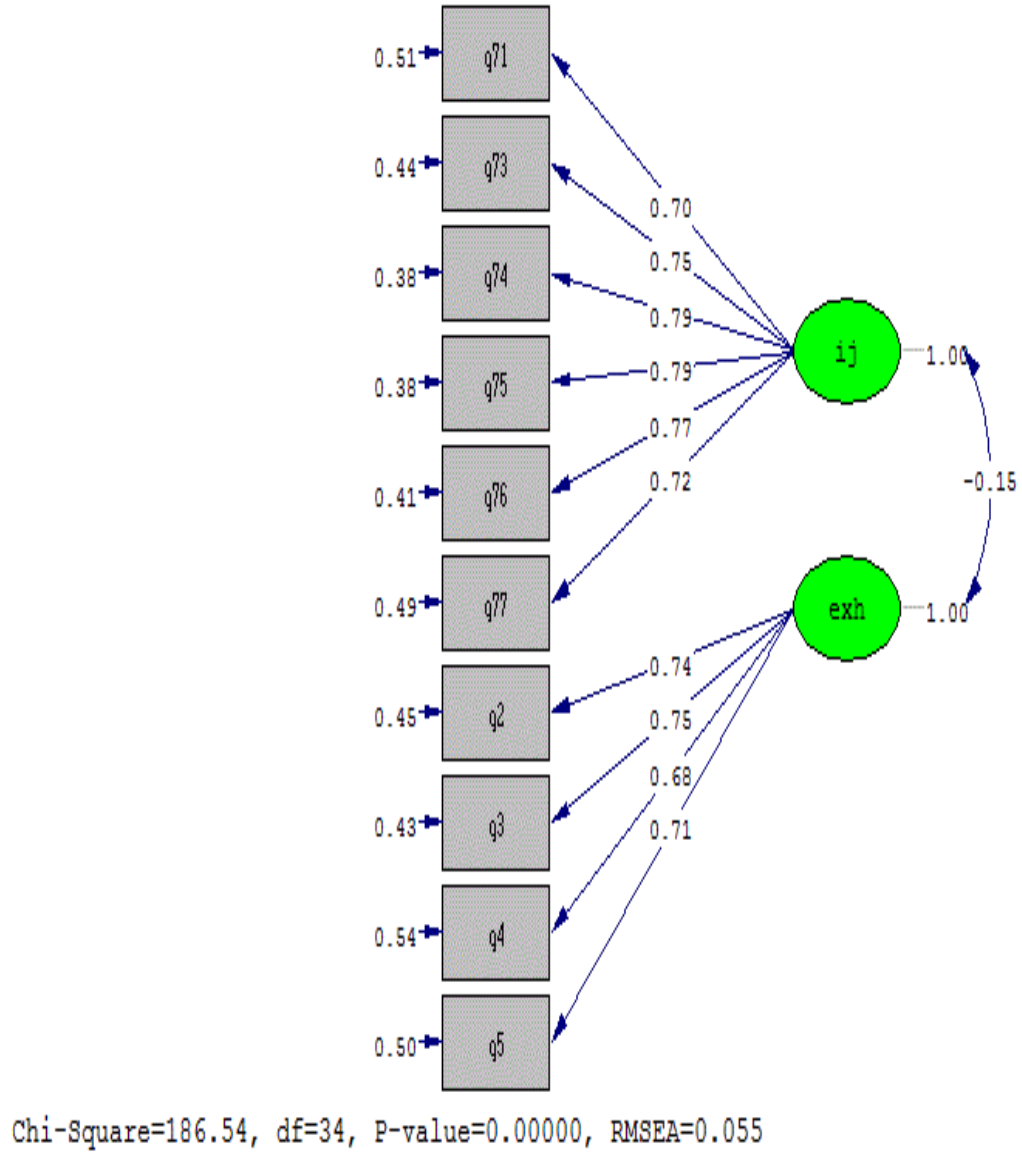


Figure 26. Two-dimensional model of interactional justice and emotional exhaustion

With respect to investigate the discriminant validity of interactional justice, emotional exhaustion was paired to calculate the chi-square difference. The χ^2 difference test revealed that the two-factor model of interactional justice and emotional exhaustion is significant at 0.001 level. Single factor solution is provided beneath.

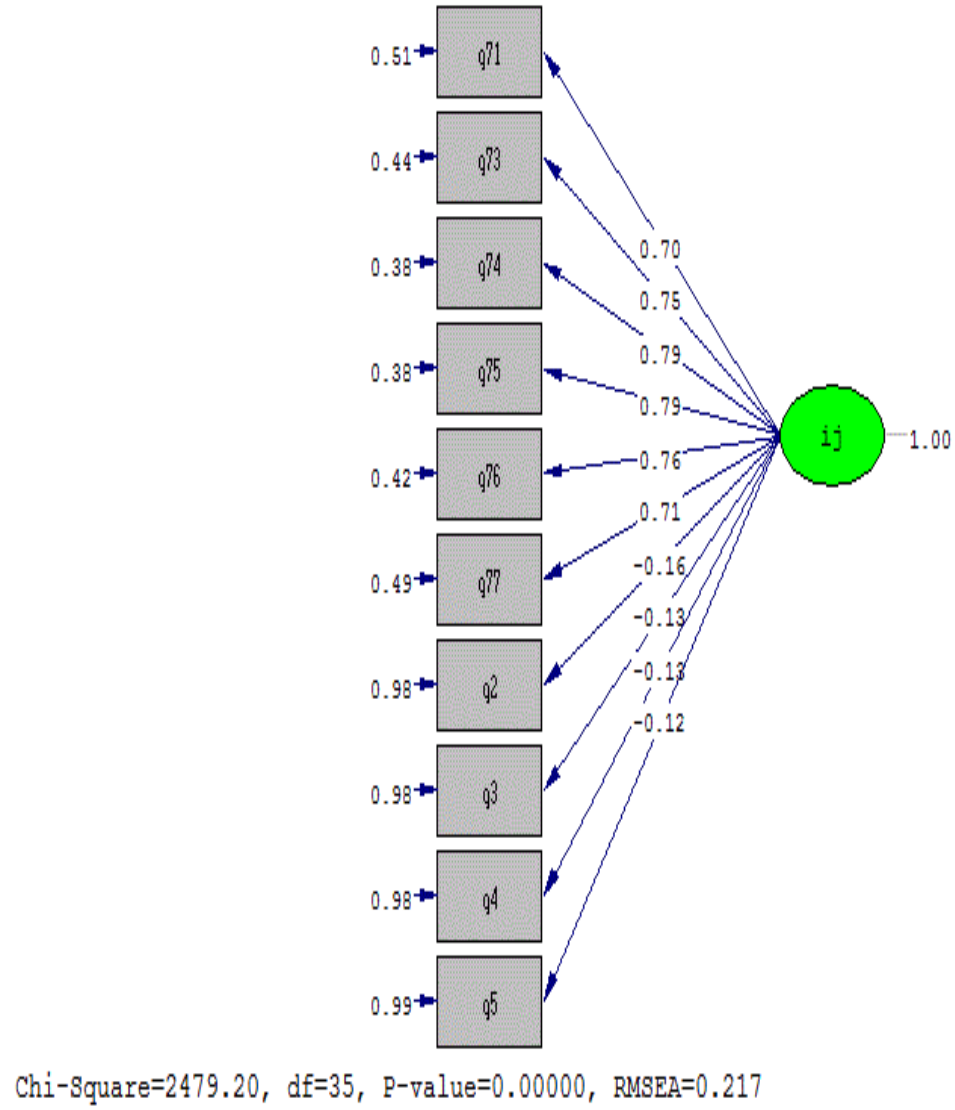


Figure 27. Single factor solution of interactional justice and emotional exhaustion

Items that represent emotional exhaustion were forced into the single factor model of interactional justice. Single factor model produced insignificant results, hence, the model deteriorated. Chi-square/df (χ^2 / df) has produced over the acceptable level of 10.83 at 0.001 level. Thus, the two-factor model postulates a better fit.

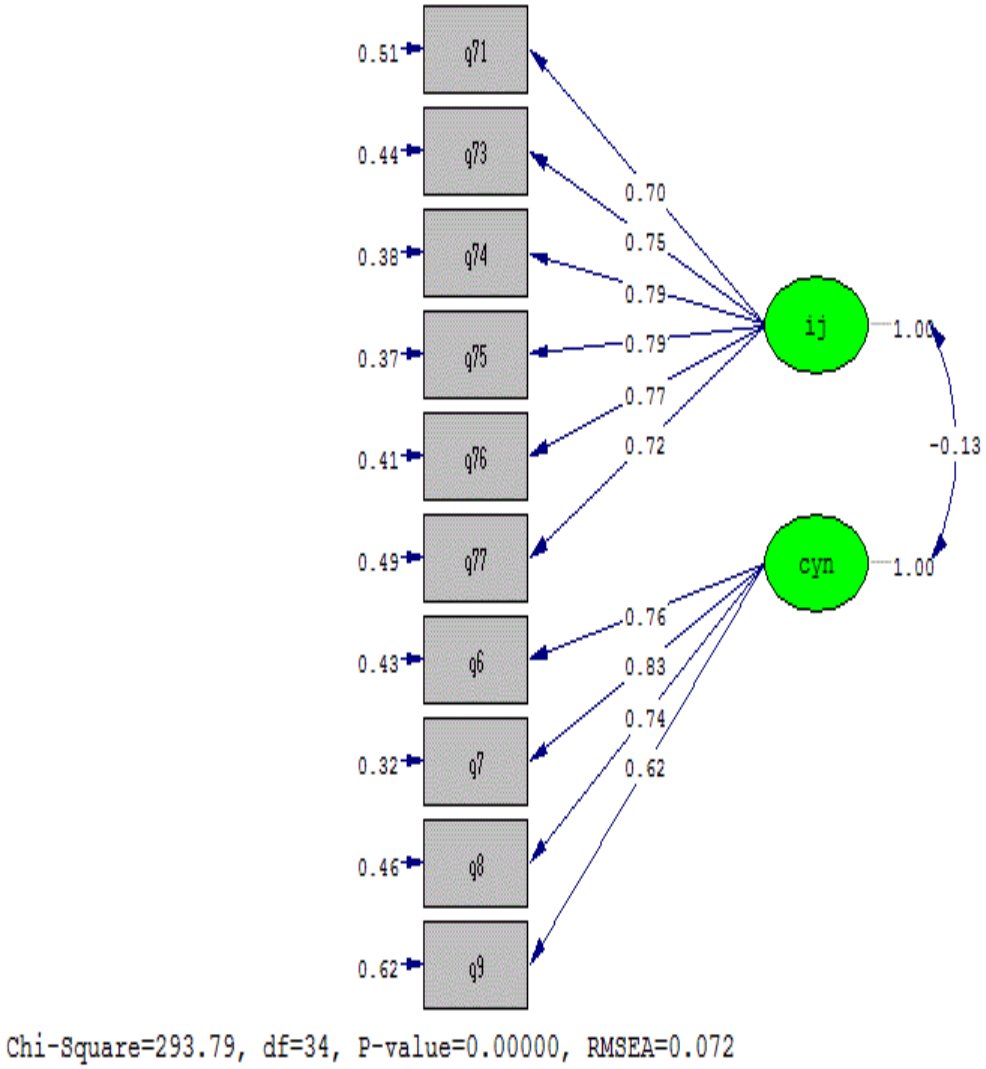


Figure 28. Two-dimensional model of interactional justice and cynicism

Interactional justice was paired with cynicism in order to evaluate the discriminant validity via using chi-square difference test. The results reveal that the two-factor model illustrates a significant outcome. Parameter estimates are above the acceptable level of 0.40. Single factor solution model for interactional justice and cynicism is illustrated underneath.

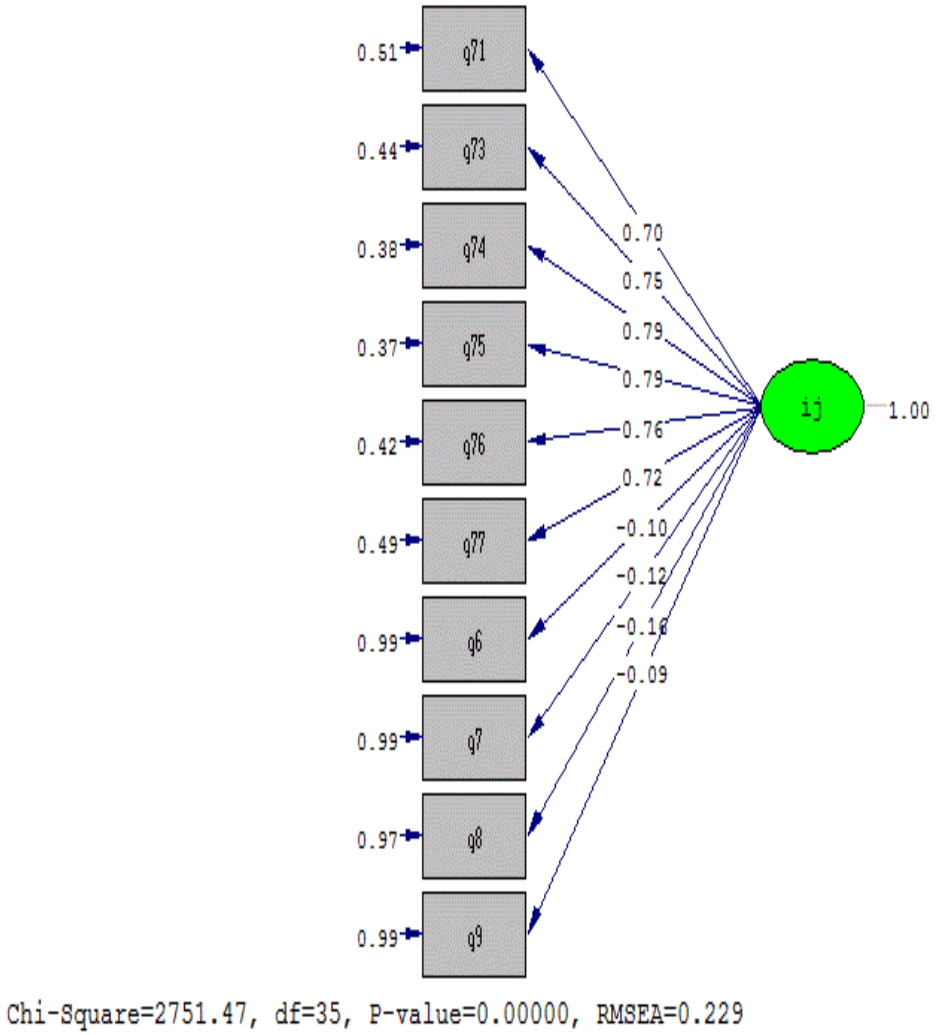


Figure 29. Single factor solution of interactional justice and cynicism

The chi-square difference test produced insignificant outcome after including the items that represent cynicism into the single factor solution. As could be cogitated from the figure above the model has deteriorated. RMSEA has increased immensely and parameter estimates of cynicism are distorted. Hence, two-factor model yields a better fit.

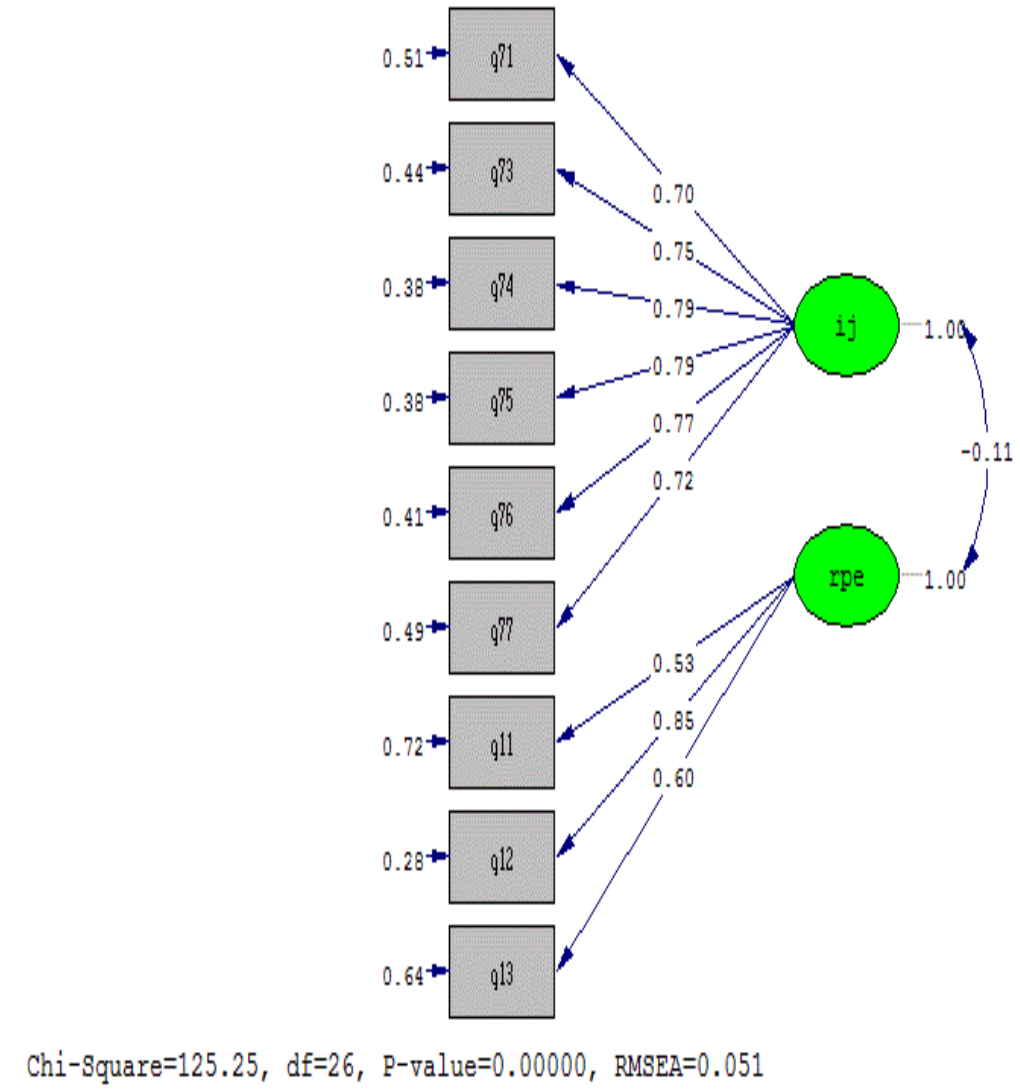


Figure 30. Two-dimensional model of interactional justice and reduced professional efficacy

Interactional justice was paired with reduced professional efficacy to test the discriminant validity via utilizing the χ^2 difference method. As could be seen from the figure above the two-factor model is significant at 0.001 level. Parameter estimates are also significant at 0.40. Below, the single factor model of interactional justice is given.

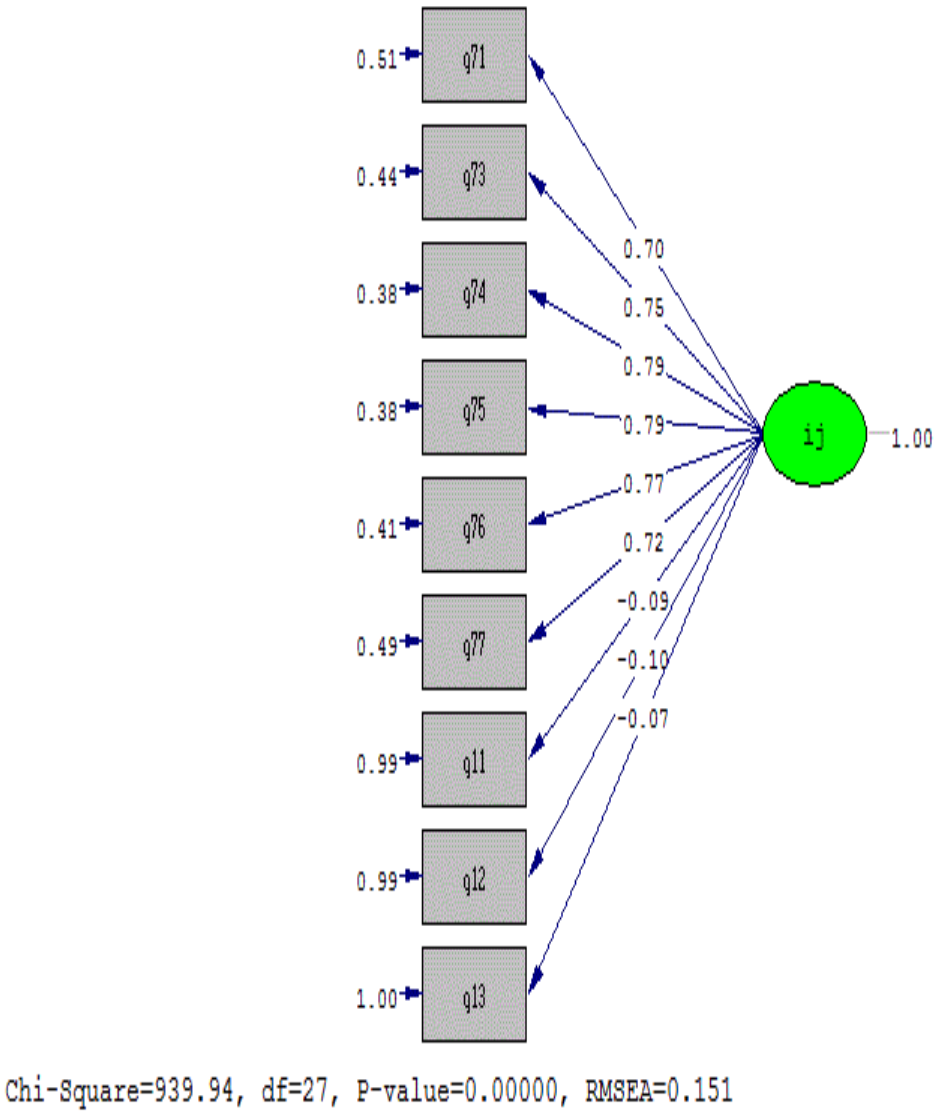


Figure 31. Single factor solution of interactional justice and reduced professional efficacy

Single factor model under the chi-square difference test failed to produce significant results, hence, yielding a deteriorated model. χ^2 / df has produced unacceptable level of significance. In addition, parameter estimates were also distorted. This proves that the two-factor model manifests a better fit.

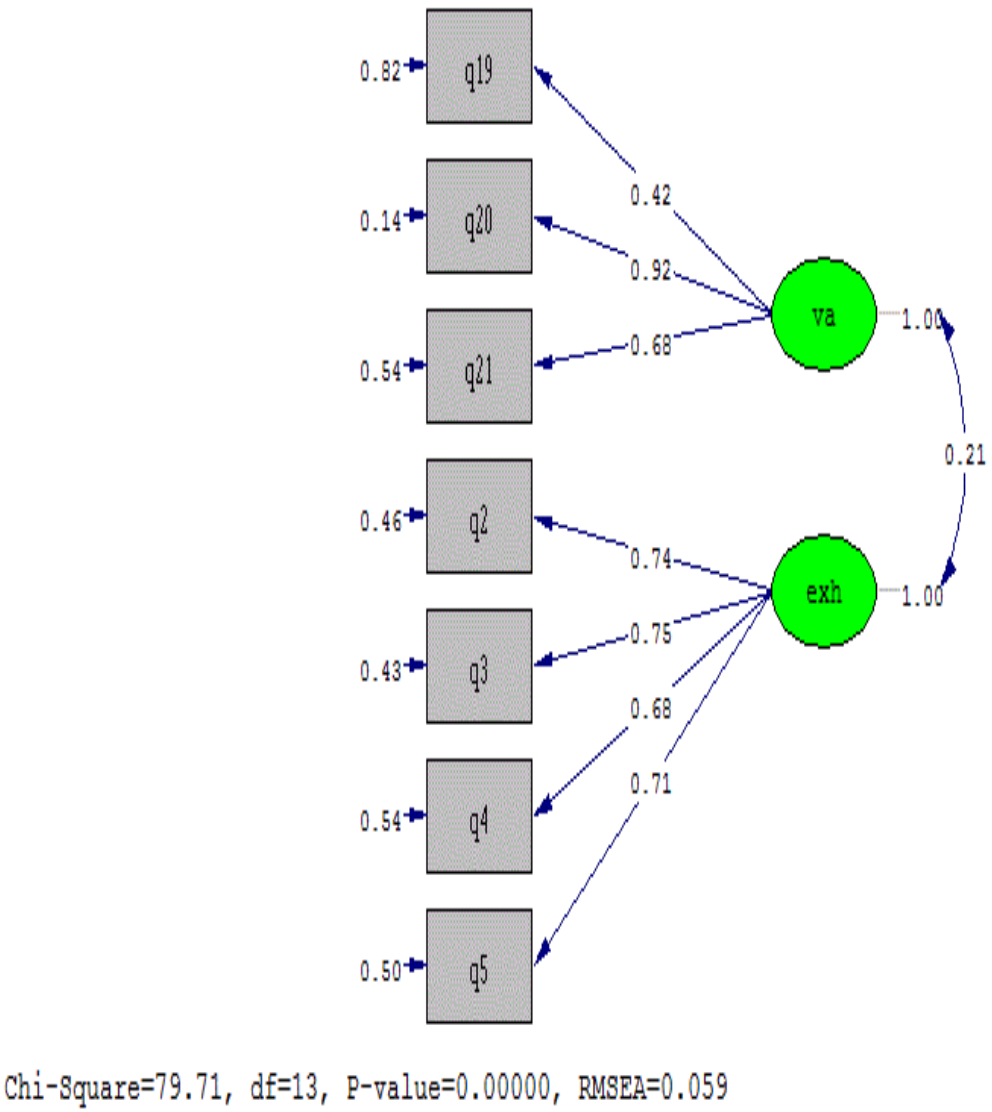


Figure 32. Two-dimensional model of verbal aggression and emotional exhaustion

Verbal aggression was paired with emotional exhaustion in order to test the discriminant validity utilizing the chi-square difference test. The result of the chi-square manifest that the two-factor model is significant at 0.001 level. Parameter estimates also exceeds the benchmark value. Single factor model is depicted below.

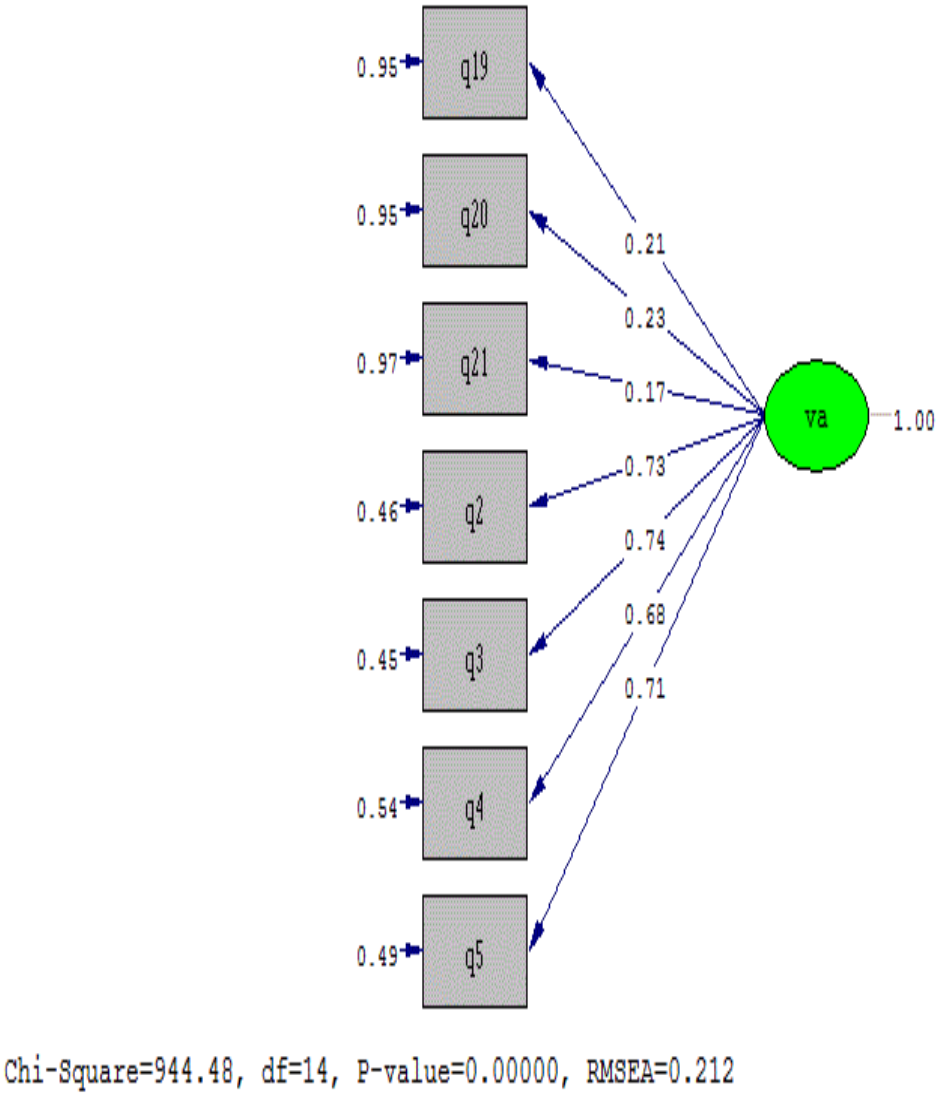


Figure 33. Single factor solution of verbal aggression and emotional exhaustion

Items representing emotional exhaustion were forced into a single solution equation. The result showed that the model deteriorated and became insignificant. Estimates were distorted and RMSEA has increased dramatically. Therefore, two-factor model predicts a better fit.

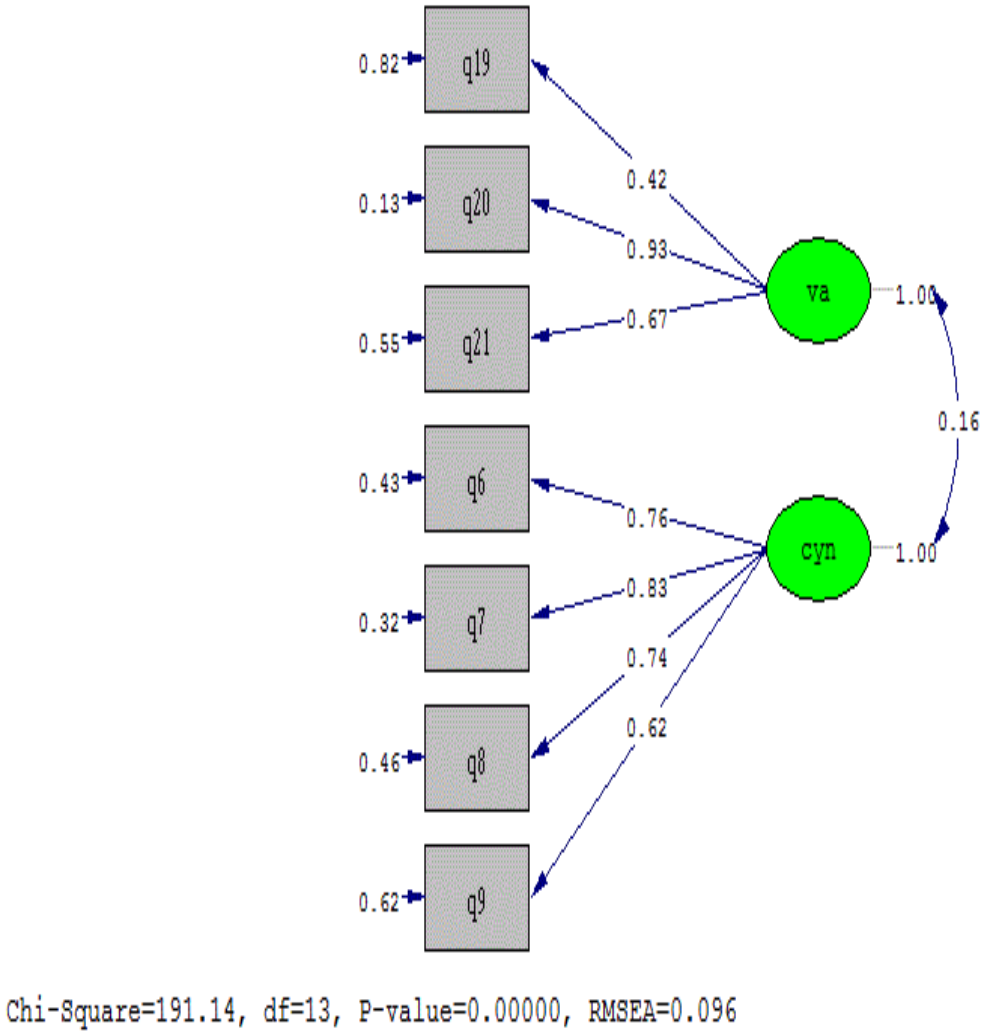


Figure 34. Two-dimensional model of verbal aggression and cynicism

Parameter estimates for each construct exceeds the cut-off value of 0.40. Discriminant validity was assessed using χ^2 difference test. Chi-square test postulates that the model is significant. According to the model verbal aggression and cynicism are distinct variables providing evidence of discriminant validity. Single factor model explained beneath.

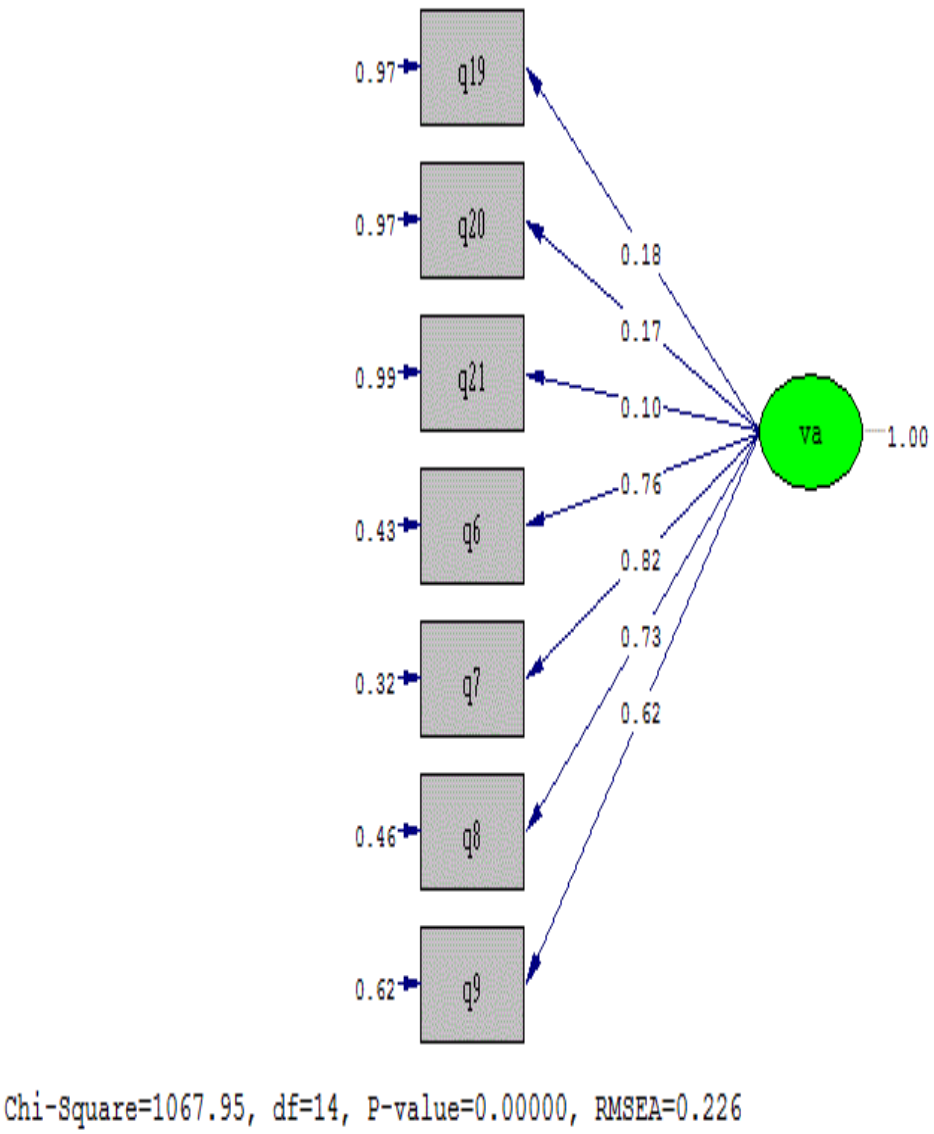


Figure 35. Single factor solution of verbal aggression and cynicism

Considering the single factor model against the two-factor model yields an understanding of a deteriorated model. This outcome is apparent when analyzing the outcome of chi-square / degrees of freedom. RMSEA increased drastically and estimates also make insignificant contributions. Thus, two-factor model has a better fit.

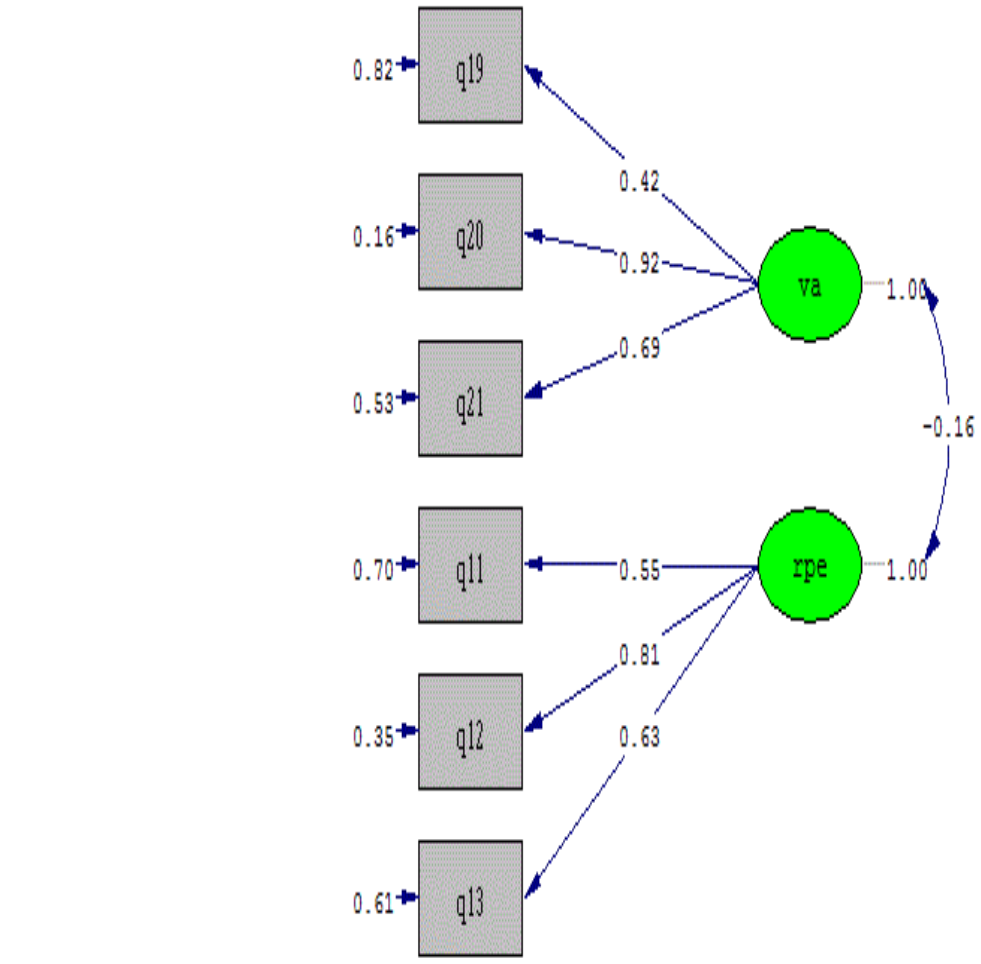


Figure 36. Two-dimensional model of verbal aggression and reduced professional efficacy

In order to investigate the discriminant validity of verbal aggression against reduced professional efficacy, constructs were paired. The chi-square difference test advocate that the model is significant. Also, each item is over the cut-off value of 0.40. Unpaired single solution model is provided below.

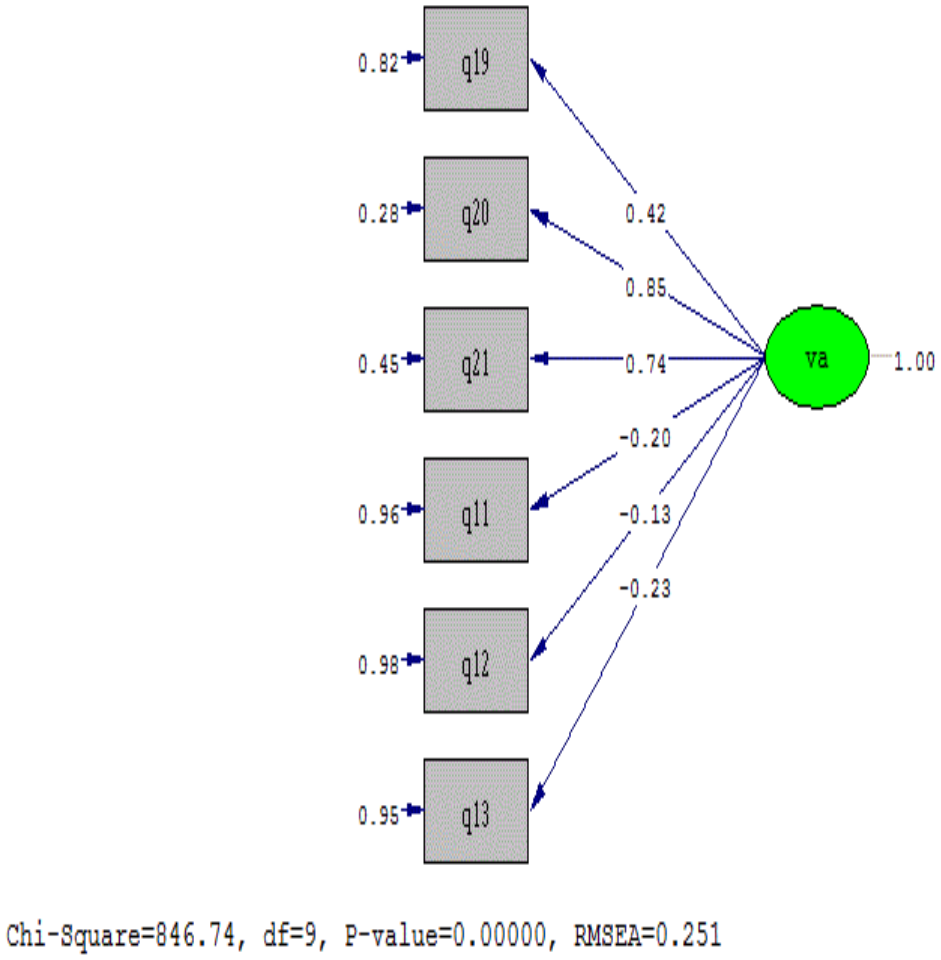


Figure 37. Single factor solution of verbal aggression and reduced professional efficacy

According to the figure displayed above, the model produced inconsistent and insignificant results. This provides evidence for the discriminant validity of the two-factor model reporting a better fit.

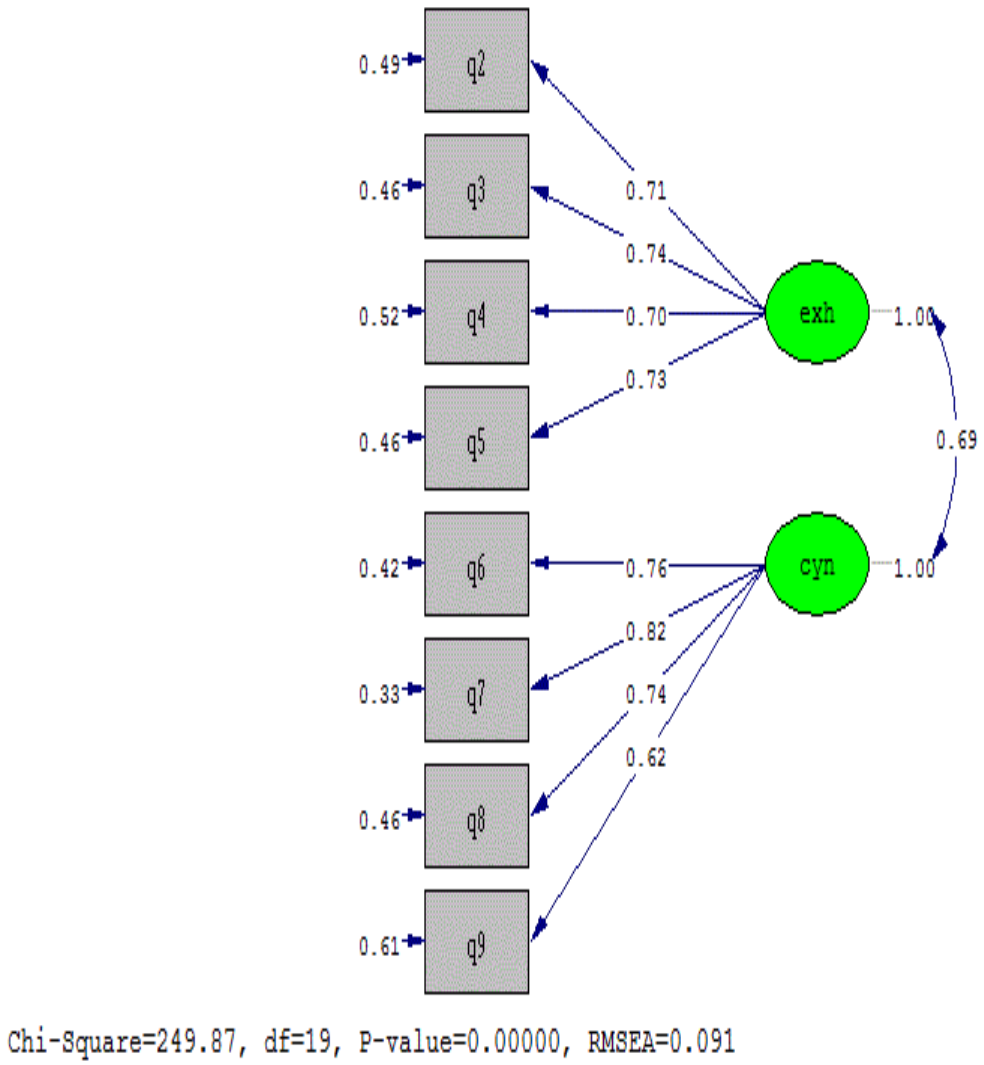


Figure 38. Two-dimensional model of emotional exhaustion and cynicism

Chi-square difference test was deployed in order to measure the discriminant validity of emotional exhaustion paired with cynicism. The χ^2 difference test reveals that the two-factor model is significant. Division of χ^2 to df has produced a value within the acceptable zone of 10.83. Unpaired single factor model is manifested below.

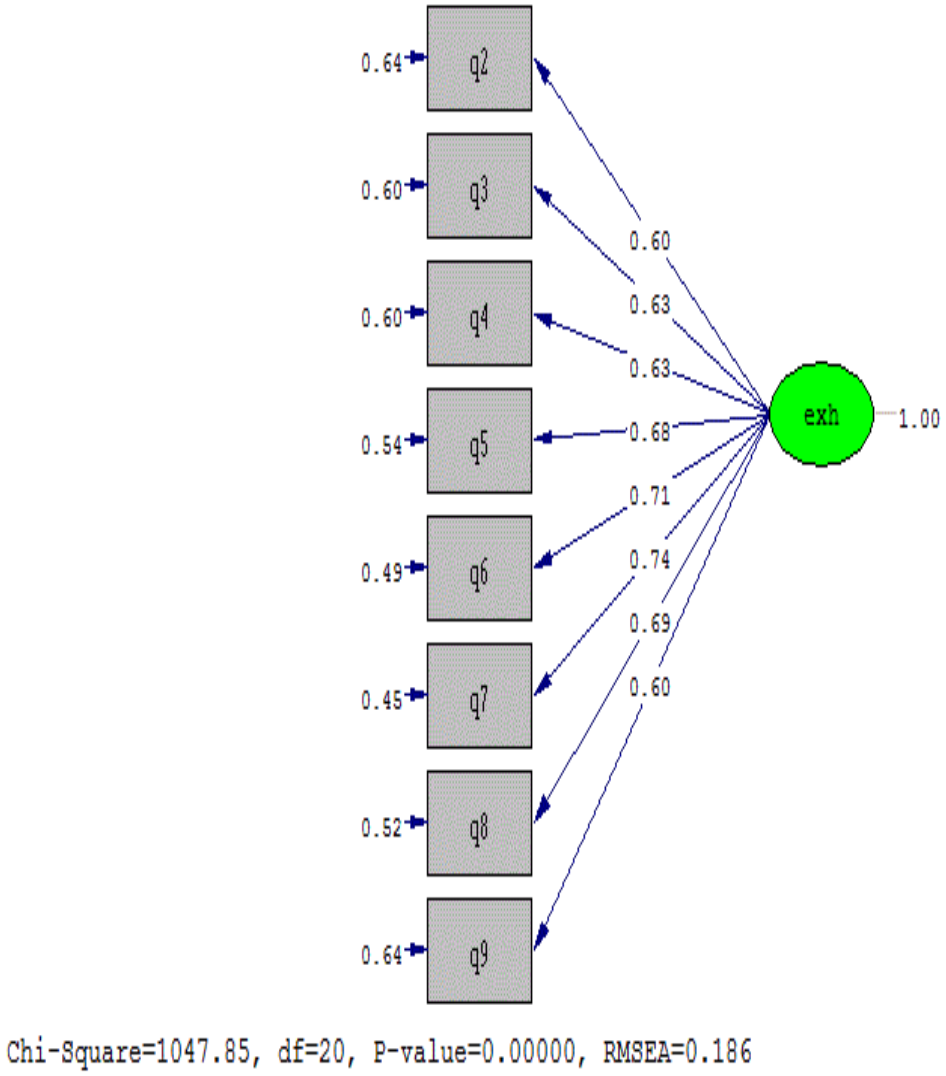


Figure 39. Single factor solution of emotional exhaustion and cynicism

Single increase in the degrees of freedom has postulated an immense increase in the χ^2 value. The figure above clearly underpins that the outcome value is insignificant which provides further evidence that the two-factor model yields a better fit.

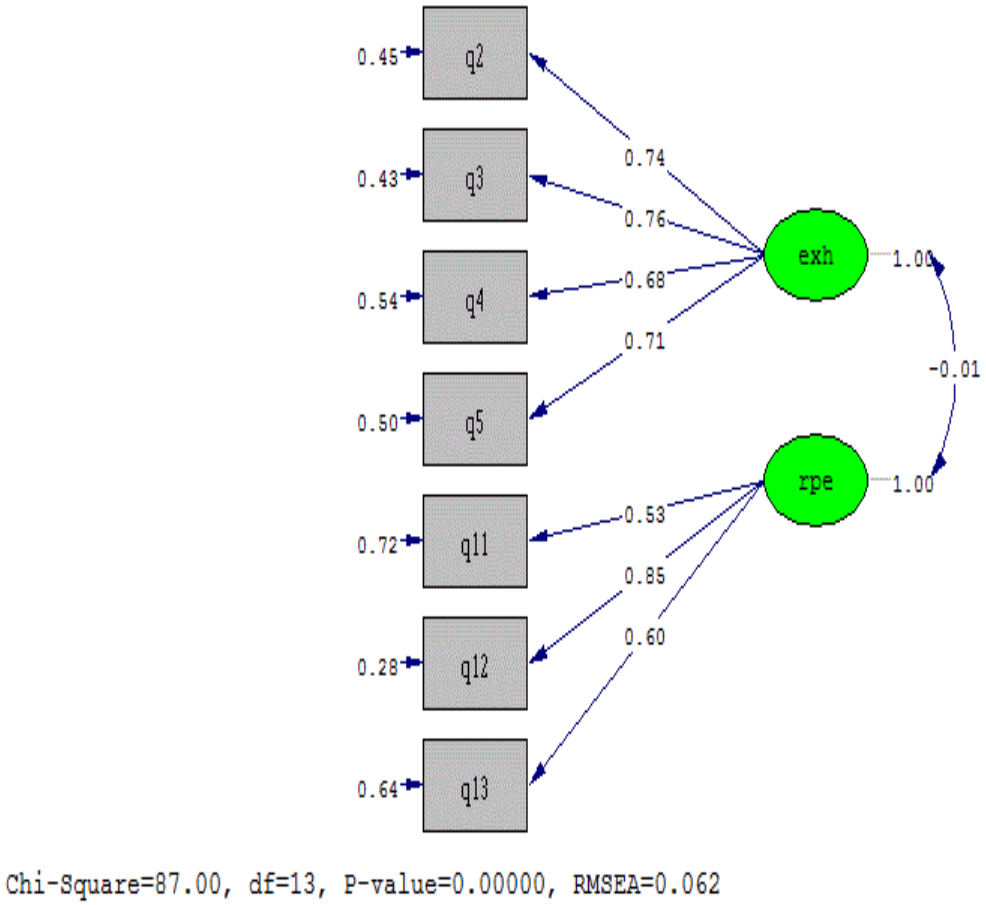


Figure 40. Two-dimensional model of emotional exhaustion and reduced professional efficacy

Emotional exhaustion and reduced professional efficacy was paired to test the discriminant validity using chi-square analysis. The findings manifest that the two-factor model is significant. Items that constitute the constructs possess the value of 0.40 or above in terms of parameter estimates. Single solution against this model is supplied below.

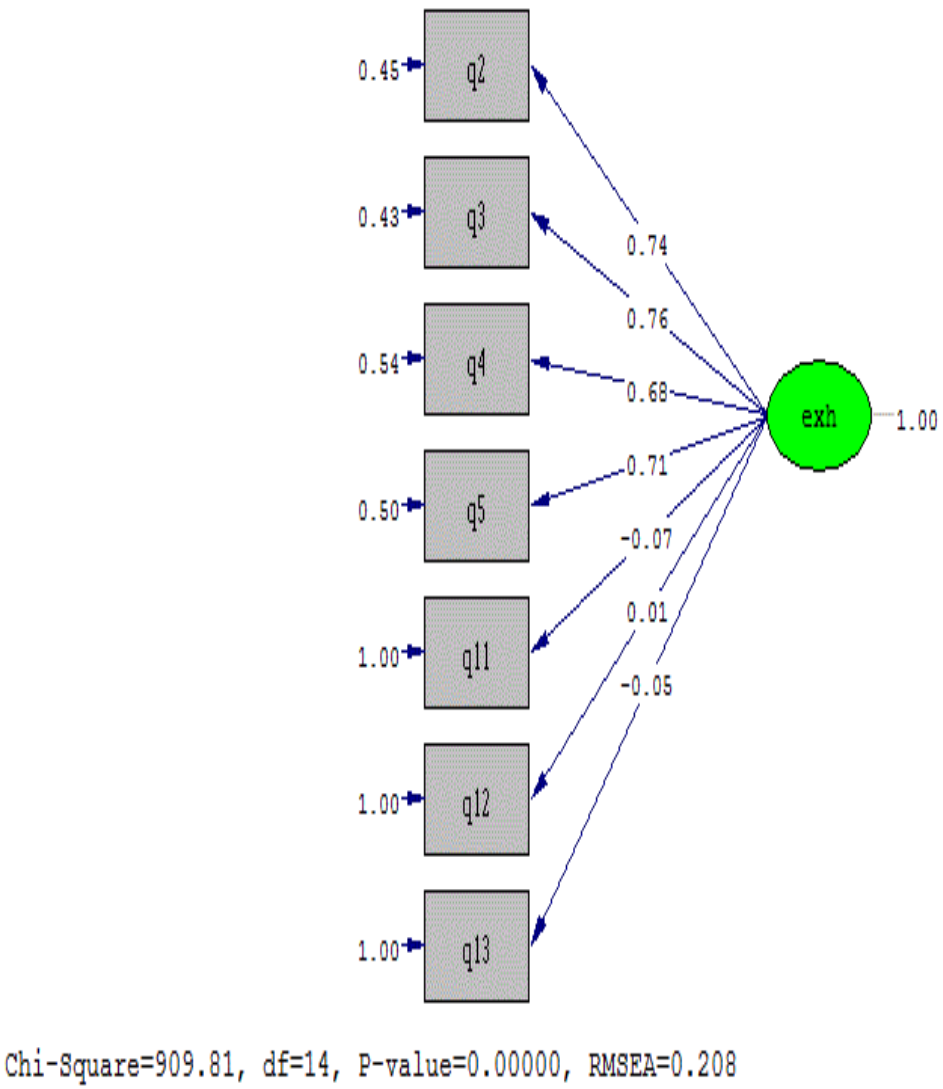


Figure 41. Single factor solution of emotional exhaustion and reduced professional efficacy

Items underlying reduced professional efficacy were forced into a single solution model to test the validity of emotional exhaustion. The chi-square test reveal that the model lost its' significance and became deteriorated. Hence, this evidence supports the notion of better fit of the two-factor model.

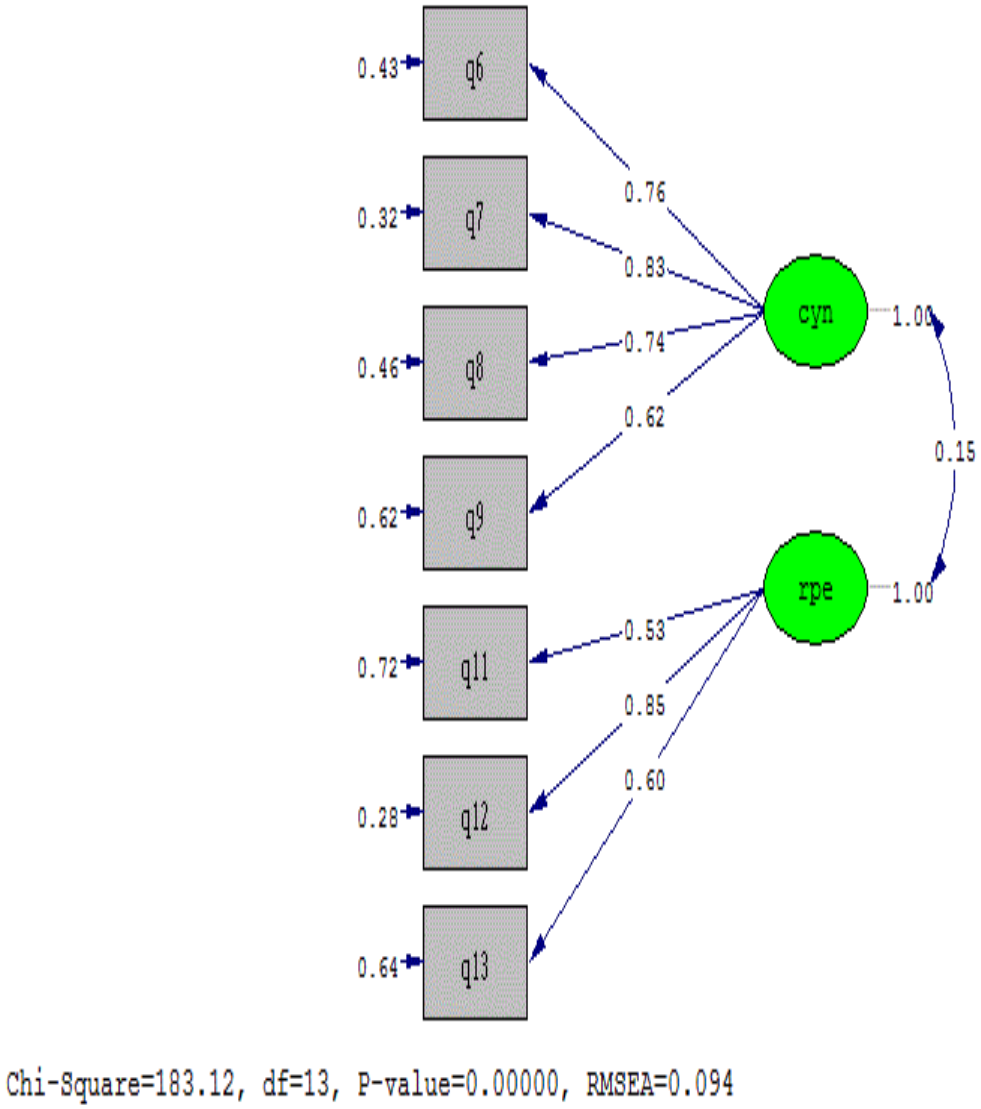


Figure 42. Two-dimensional model of cynicism and reduced professional efficacy

As a final discriminant analysis of discriminant validity two-factor model was created among cynicism and reduced professional efficacy. The χ^2 difference test reveals that the two-factor model is significant. All items under consideration have surpassed the lower bound of the parameter estimate value. Unpaired single solution model is depicted below.

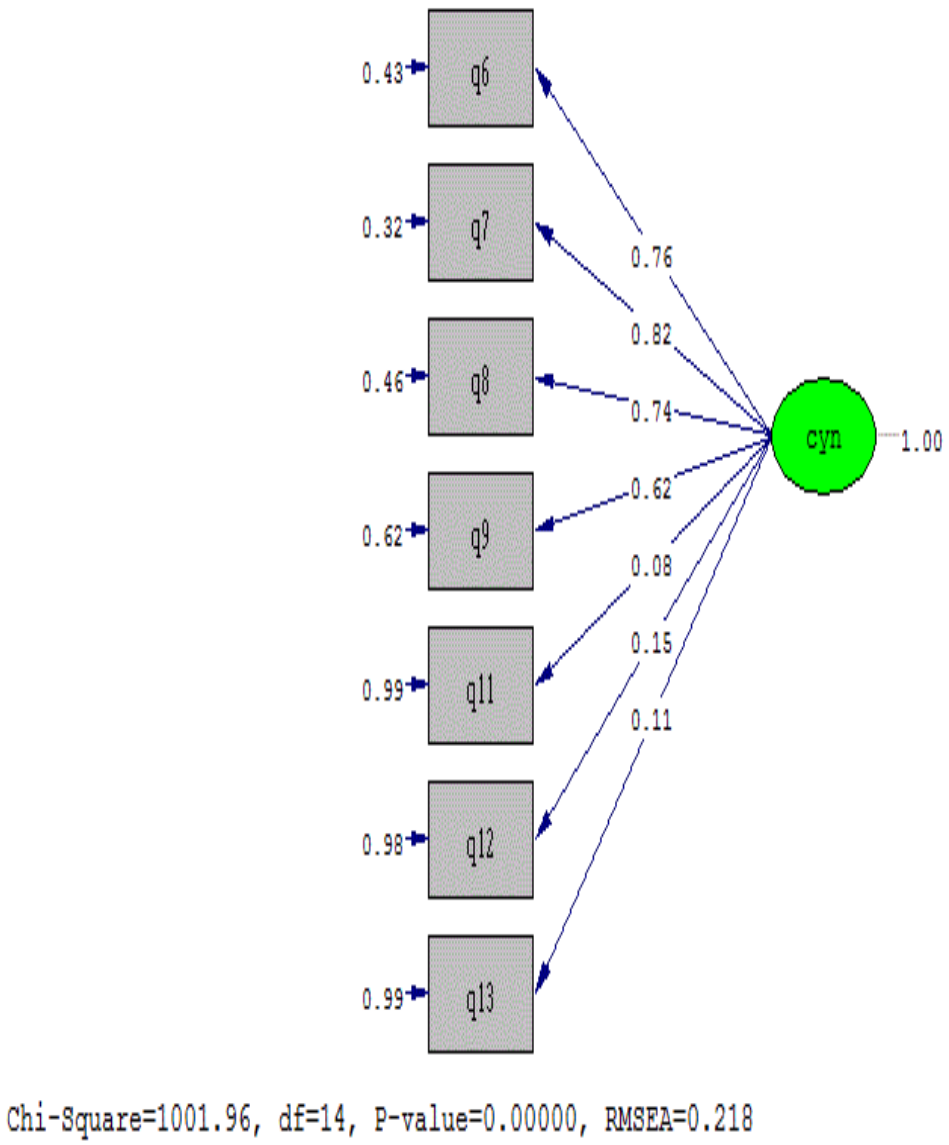


Figure 43. Single factor solution of cynicism and reduced professional efficacy

Questions representing reduced professional efficacy were forced into the single solution model of cynicism. The results manifested that the model has deteriorated after equating all items under single construct. This provides an evidence of better fit of the two-factor model.

Overall the two-factor models for each pair of constructs are significant in relation to combination of all constructs used within this study. As depicted in each single factor solution models, none made significant model, therefore, proving that the two-factor model provides a better fit. Academic achievement was not included in the equation since single item is used to measure academic achievement (GPA). The analyses of chi-square tests for all constructs reveal that there is discriminant validity.

4.3.2 Convergent Validity

Convergent validity was assessed via evaluating the factor loadings and *t*-values from the LISREL output. Items having higher factor loadings than 0.40 prove that the construct has convergent validity (Anderson & Gerbing, 1988). In addition, *t*-values equal to or higher than 2.00 also manifests that the constructs have convergent validity (Anderson & Gerbing, 1988). Figure 44 and 45 below illustrates the factor loadings (parameter estimates) and *t*-values of the study constructs.

There are two major approaches of conducting convergent validity. First, due to sample size each variable is assessed factor by factor separate from other dimensions being in the same equation (cf. Uludag, 2004). Although this approach is sometimes used, it is not advised for large samples. Second, all item indicators are used simultaneously in the equation. Accordingly, each multiple-item indicators was utilized to provide fullest test of convergent and discriminant validity (Babin & Boles, 1998). Two approaches are provided below.

Approach 1. Convergent validity factor by factor

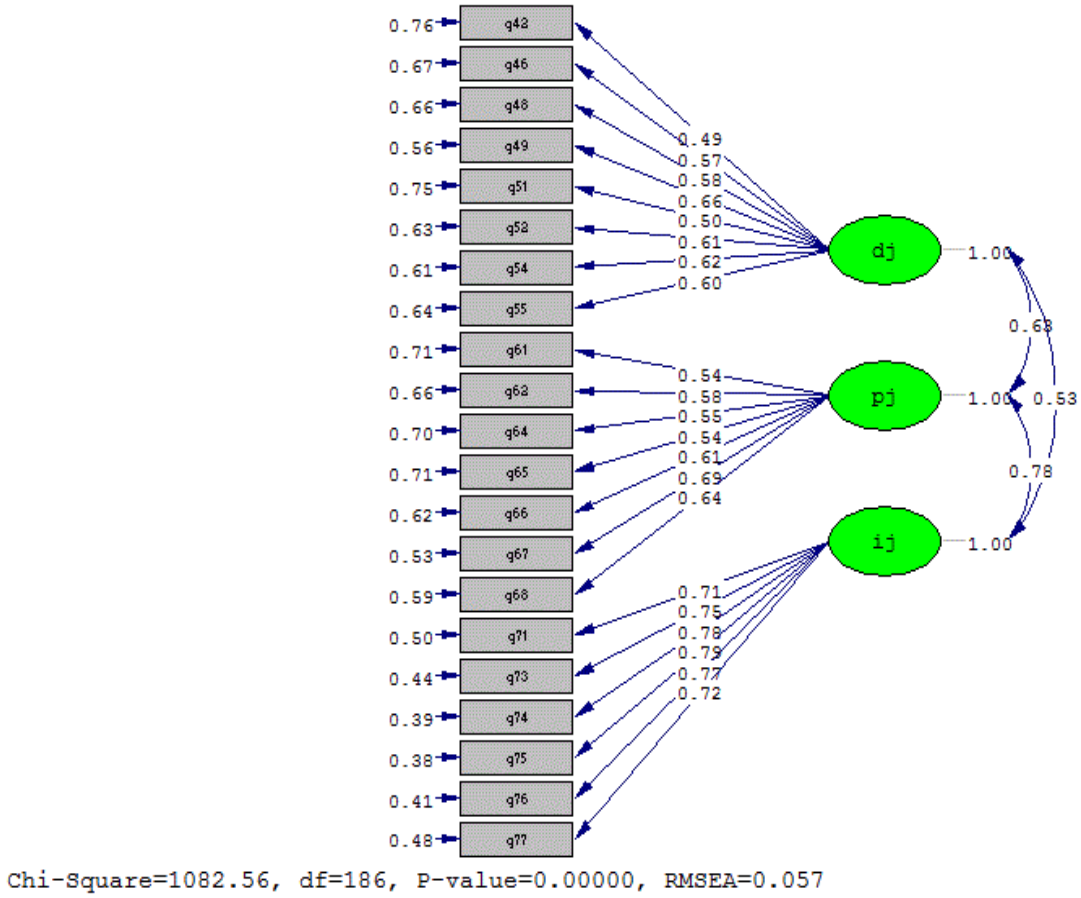


Figure 44. Factor by factor solution of distributive, procedural, and interactional justice

In order to measure the convergent validity of justice dimensions (distributive, procedural, and interactional) items were forced into factor by factor solution. Although factor loadings are sufficient, the χ^2 / df value is greater than (5.82) expected value of 3-5 (Marsh & Hocevar, 1985) hence, yielding no convergence.

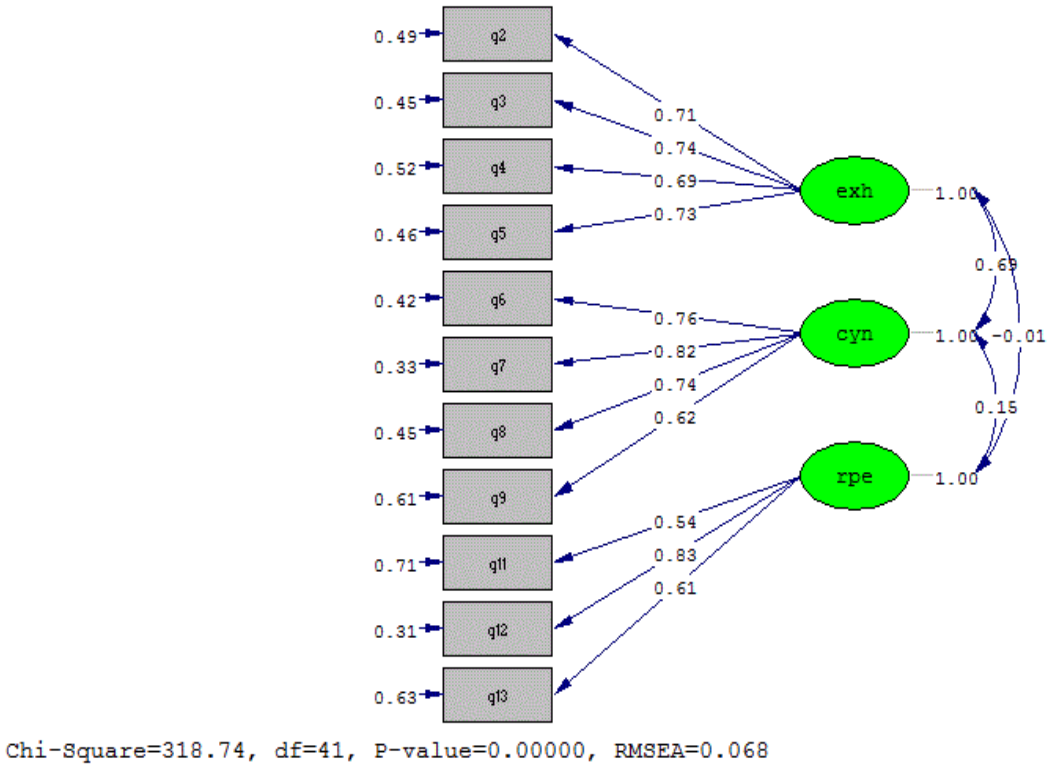


Figure 45. Factor by factor solution of emotional exhaustion, cynicism and reduced professional efficacy

Emotional exhaustion, cynicism and reduced professional efficacy were equated into factor by factor solution to assess the convergent validity of burnout dimension. The results yielded outcomes similar to the justice dimension. The χ^2 / df value is greater than (7.77) expected value of 3-5 (Marsh & Hocevar, 1985) hence, yielding no convergence.

Approach 2. Full test of multiple-item indicators

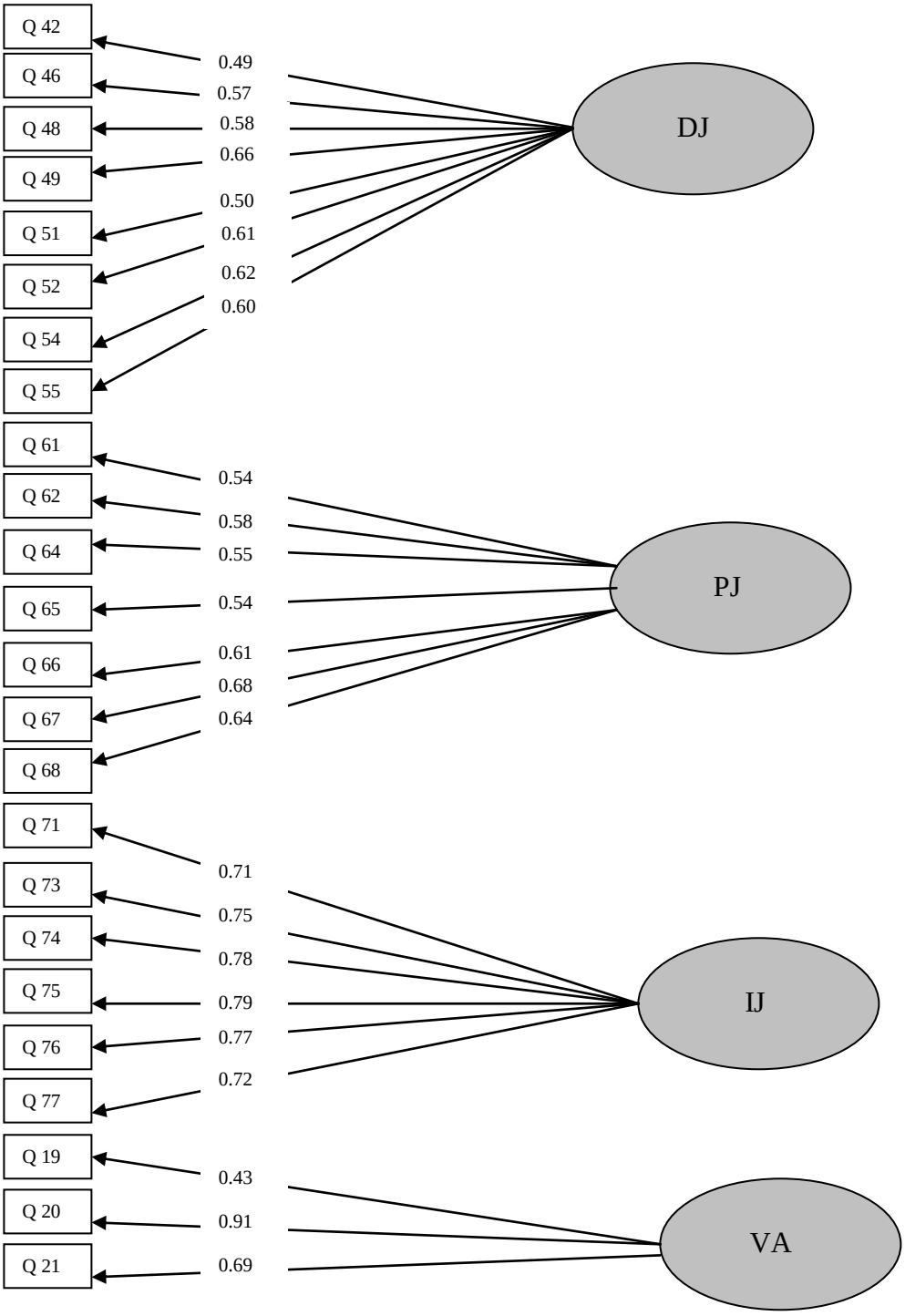


Figure 46. Confirmatory Factor Analyses (Standardized Parameter Estimates - Factor Loadings)[†]

[†] DJ=Distributive justice, PJ= Procedural Justice, IJ= Interactional Justice, VA= Verbal aggression, EXH= Emotional exhaustion, CYN= Cynicism, RPE= Reduced professional efficacy

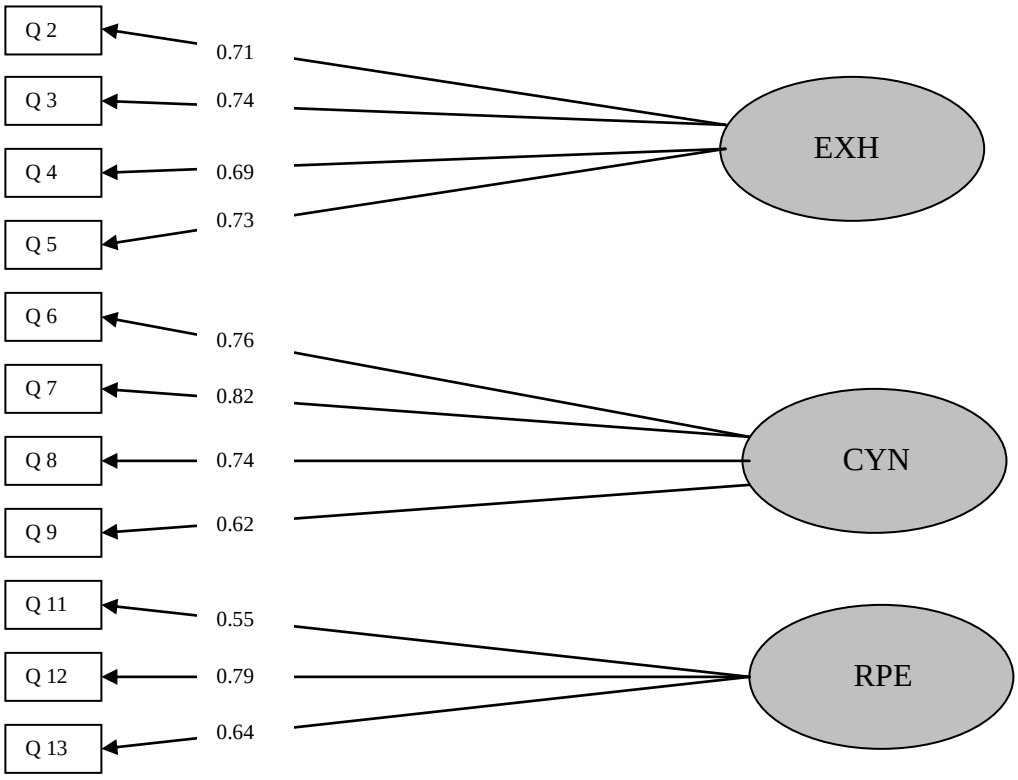


Figure 46. Confirmatory Factor Analyses (Standardized Parameter Estimates - Factor Loadings) (*continued*)

Figure 46 depicts the factor loadings for each construct. All values are above 0.40 providing evidence of convergent validity (Anderson & Gerbing, 1988). Figure 45 is provided below.

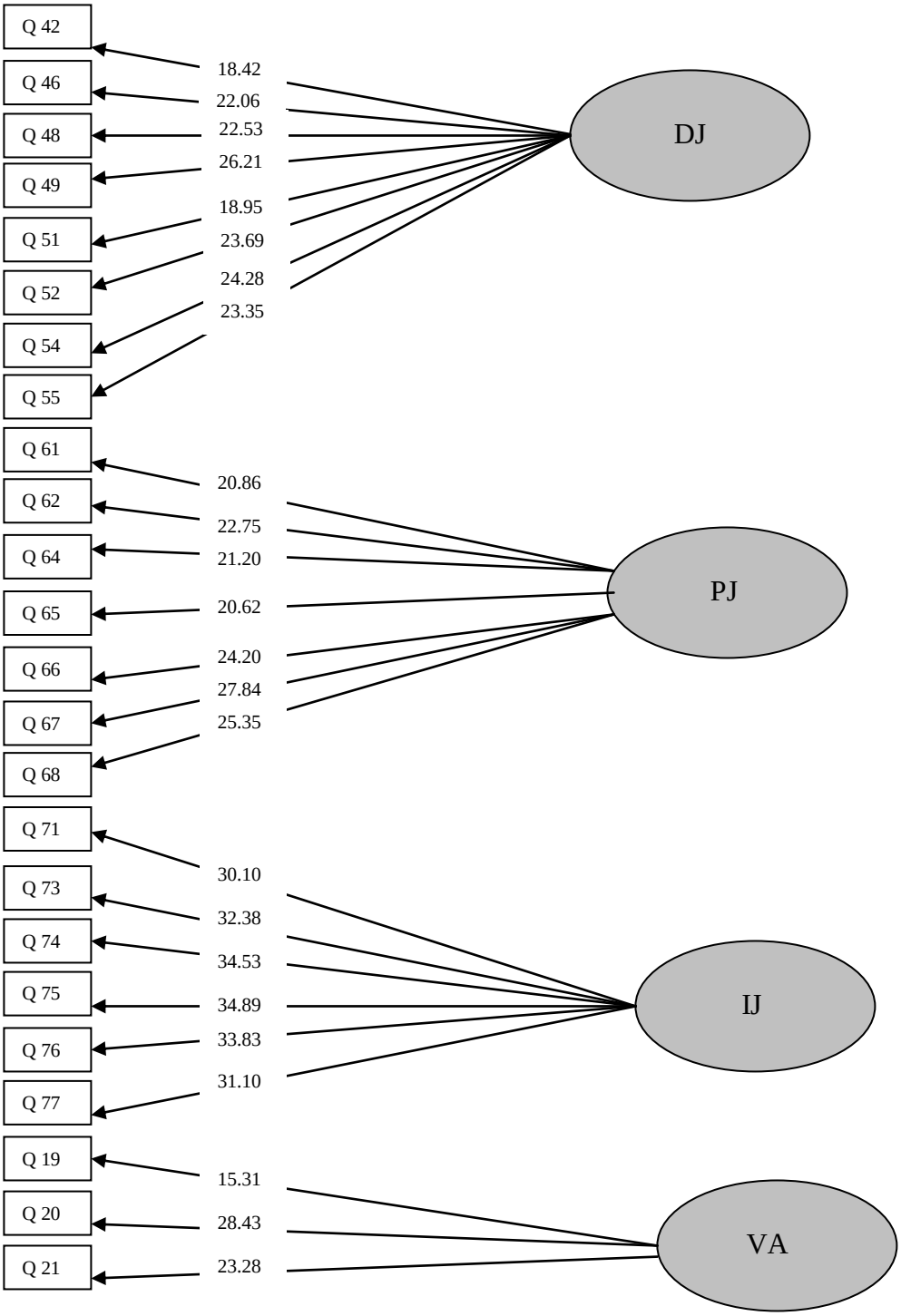

Q 42
Q 46
Q 48
Q 49
Q 51
Q 52
Q 54
Q 55
Q 61
Q 62
Q 64
Q 65
Q 66
Q 67
Q 68
Q 71
Q 73
Q 74
Q 75
Q 76
Q 77
Q 19
Q 20
Q 21
18.42
22.06
22.53
26.21
18.95
23.69
24.28
23.35
20.86
22.75
21.20
20.62
24.20
27.84
25.35
30.10
32.38
34.53
34.89
33.83
31.10
15.31
28.43
23.28
DJ
PJ
IJ
VA

Figure 47. Confirmatory Factor Analyses (*t*- values) †

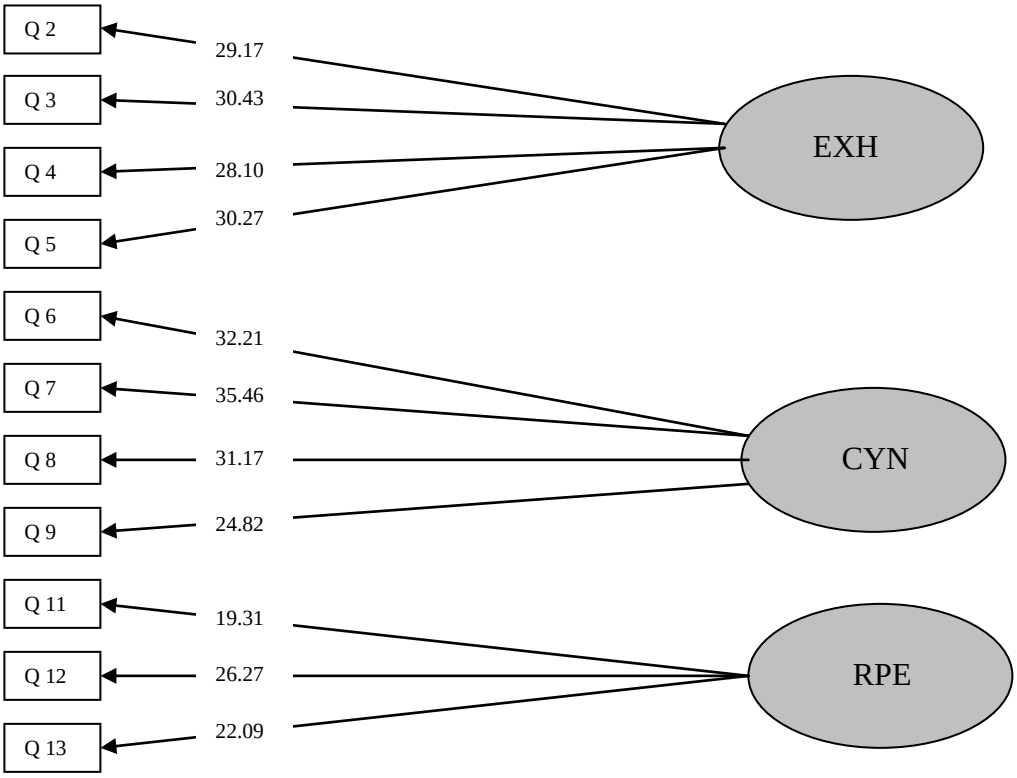


Figure 47. Confirmatory Factor Analyses (*t*- values) (*continued*)

Figure 47 provides the *t*-values for each construct. The magnitudes of t-values are above 2.00. This finding also provides evidence of convergent validity (Anderson & Gerbing, 1988).

Confirmatory fit statistics were also measured to assess the acceptability of overall fit. Hence, χ^2 (chi-square), df (degrees of freedom), NFI (Normed Fit Index), NNFI (Non-Normed Fit Index), CFI (Comparative Fit Index), IFI (Incremental Fit Index), GFI

† DJ=Distributive justice, PJ= Procedural Justice, IJ= Interactional Justice, VA= Verbal aggression, EXH= Emotional exhaustion, CYN= Cynicism, RPE= Reduced professional efficacy

(Goodness of Fit Index), AGFI (Adjusted Goodness of Fit Index) Standardized RMR (Root Mean Square Residual), and RMSEA (Root Mean Square Error of Approximation) were calculated. Accordingly, χ^2 = 1994.54, df = 539, NFI = 0.89, NNFI = 0.91, CFI = 0.92, IFI = 0.92, GFI = 0.93, AGFI = 0.92, RMR = 0.034, and RMSEA = 0.043. The results of the confirmatory fit statistics yield an overall satisfactory fit. According to Marsh and Hocevar (1985), the χ^2 / df value is 3.7 which falls within the range of acceptable value (2-5). Additionally, SRMR is also acceptable since the value is less than 0.10.

4.4 Hierarchical Regression Analysis of Control Variables

Hierarchical regression analysis is conducted to examine the effects of control variables on study variables through SPSS 15.0. Each control variable (early-late responses, age, gender, educational status, marital status, and class-size) was treated as an independent variable and study constructs (components of perceived justice, verbal aggression, components of burnout, and academic achievement) were treated as dependent variables. Cut-off point for significance level is 0.05. Similar approach was used in the previous empirical studied of Uludag and Yaratan (2010) and Yaratan and Uludag (2012).

Table 9 below shows the hierarchical regression analysis of study variables and control variables. Control variables such as early-late responses, age, gender, educational status, marital status, and class-size was entered as an independent variable in to the hierarchical linear regression equation. Then study variables such as components of perceived justice, verbal aggression, and components of burnout were entered as

intervening variables. As a dependent variable, academic achievement was entered into the hierarchical regression equation.

Table 9. Hierarchical Regression analysis of demographic variables and study variables

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.205	.042	.038	.6173
2	.241	.058	.054	.6123
3	.248	.061	.056	.6114
4	.248	.061	.056	.6117
5	.249	.062	.056	.6116
6	.251	.063	.056	.6117
7	.252	.063	.056	.6116
8	.290	.084	.076	.6050

a Predictors: (Constant), class size, gender, marital status, educational status, Early/Late, age
b Predictors: (Constant), class size, gender, marital status, educational status, Early/Late, age, DJ
c Predictors: (Constant), class size, gender, marital status, educational status, Early/Late, age, DJ, PJ
d Predictors: (Constant), class size, gender, marital status, educational status, Early/Late, age, DJ, PJ, IJ
e Predictors: (Constant), class size, gender, marital status, educational status, Early/Late, age, DJ, PJ, IJ, VA
f Predictors: (Constant), class size, gender, marital status, educational status, Early/Late, age, DJ, PJ, IJ, VA, EXH
g Predictors: (Constant), class size, gender, marital status, educational status, Early/Late, age, DJ, PJ, IJ, VA, EXH, CYN
h Predictors: (Constant), class size, gender, marital status, educational status, Early/Late, age, DJ, PJ, IJ, VA, EXH, CYN, RPE

Model summary output depicts the correlation coefficients among produced 8 models, explained variance, delta explained variance and standard error of the estimate of each produced model. When R^2 (explained variance) is considered, model 1 (a) explains the least amount of variance in academic achievement. As the model size incremented to 8, the explained variance on academic achievement has also increased. Model 8 (h) explained 8% of the variance explained in the academic achievement.

Table 9. Hierarchical Regression analysis of demographic variables and study variables *(continued)*

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.666	6	4.111	10.787	.000
	Residual	561.722	1474	.381		
	Total	586.388	1480			
2	Regression	34.174	7	4.882	13.022	.000
	Residual	552.214	1473	.375		
	Total	586.388	1480			
3	Regression	36.049	8	4.506	12.053	.000
	Residual	550.338	1472	.374		
	Total	586.388	1480			
4	Regression	36.055	9	4.006	10.708	.000
	Residual	550.333	1471	.374		
	Total	586.388	1480			
5	Regression	36.447	10	3.645	9.742	.000
	Residual	549.940	1470	.374		
	Total	586.388	1480			
6	Regression	36.802	11	3.346	8.943	.000
	Residual	549.585	1469	.374		
	Total	586.388	1480			
7	Regression	37.215	12	3.101	8.290	.000
	Residual	549.172	1468	.374		
	Total	586.388	1480			
8	Regression	49.363	13	3.797	10.373	.000
	Residual	537.025	1467	.366		
	Total	586.388	1480			

a Predictors: (Constant), class size, gender, marital status, educational status, Early/Late, age
b Predictors: (Constant), class size, gender, marital status, educational status, Early/Late, age, DJ
c Predictors: (Constant), class size, gender, marital status, educational status, Early/Late, age, DJ, PJ
d Predictors: (Constant), class size, gender, marital status, educational status, Early/Late, age, DJ, PJ, IJ
e Predictors: (Constant), class size, gender, marital status, educational status, Early/Late, age, DJ, PJ, IJ, VA
f Predictors: (Constant), class size, gender, marital status, educational status, Early/Late, age, DJ, PJ, IJ, VA, EXH
g Predictors: (Constant), class size, gender, marital status, educational status, Early/Late, age, DJ, PJ, IJ, VA, EXH, CYN
h Predictors: (Constant), class size, gender, marital status, educational status, Early/Late, age, DJ, PJ, IJ, VA, EXH, CYN, RPE
i Dependent Variable: achievement

Analysis of variance as a part of hierarchical regression analysis shows that the produced 8 models significant at .001 level.

Table 9. Hierarchical Regression analysis of demographic variables and study variables *(continued)*

COEFFICIENTS

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.749	.101		27.092	.000		
	Early/Late	**9.470E-02**	**.033**	**.075**	**2.899**	**.004**	**.974**	**1.026**
	age	-2.085E-02	.030	-.019	-.700	.484	.885	1.130
	gender	**-.219**	**.033**	**-.174**	**-6.618**	**.000**	**.942**	**1.062**
	educational status	.113	.088	.033	1.285	.199	.980	1.020
	marital status	-6.106E-02	.034	-.047	-1.795	.073	.940	1.064
	class size	-5.029E-02	.034	-.038	-1.470	.142	.972	1.029
2	(Constant)	2.401	.122		19.658	.000		
	Early/Late	**9.477E-02**	**.032**	**.075**	**2.925**	**.003**	**.974**	**1.026**
	age	-2.395E-02	.030	-.022	-.811	.418	.885	1.130
	gender	**-.211**	**.033**	**-.167**	**-6.415**	**.000**	**.940**	**1.064**
	educational status	.102	.087	.030	1.174	.241	.980	1.021
	marital status	-6.207E-02	.034	-.048	-1.840	.066	.940	1.064
	class size	-3.606E-02	.034	-.027	-1.059	.290	.965	1.036
	DJ	.109	.022	.128	5.036	.000	.990	1.010
3	(Constant)	2.328	.126		18.453	.000		
	Early/Late	**9.099E-02**	**.032**	**.072**	**2.808**	**.005**	**.972**	**1.029**
	age	-2.536E-02	.030	-.023	-.860	.390	.884	1.131
	gender	**-.209**	**.033**	**-.166**	**-6.361**	**.000**	**.939**	**1.065**
	educational status	.101	.087	.030	1.157	.247	.980	1.021
	marital status	-6.169E-02	.034	-.048	-1.831	.067	.940	1.064
	class size	-3.475E-02	.034	-.026	-1.022	.307	.965	1.037
	DJ	8.127E-02	.025	.095	3.251	.001	.743	1.345
	PJ	5.323E-02	.024	.066	2.240	.025	.745	1.343
4	(Constant)	2.329	.126		18.415	.000		
	Early/Late	**9.091E-02**	**.032**	**.072**	**2.804**	**.005**	**.971**	**1.030**
	age	-2.527E-02	.030	-.023	-.856	.392	.884	1.131
	gender	**-.209**	**.033**	**-.166**	**-6.359**	**.000**	**.939**	**1.065**
	educational status	.101	.087	.029	1.155	.248	.979	1.021
	marital status	-6.163E-02	.034	-.048	-1.828	.068	.940	1.064
	class size	-3.495E-02	.034	-.026	-1.026	.305	.962	1.039
	DJ	8.183E-02	.025	.096	3.218	.001	.719	1.392
	PJ	5.516E-02	.029	.068	1.926	.054	.513	1.950
	IJ	-2.760E-03	.023	-.004	-.121	.904	.546	1.831

Table 9. Hierarchical Regression analysis of demographic variables and study variables *(continued)*

5	(Constant)	2.367	.132		17.958	.000		
	Early/Late	**9.205E-02**	**.032**	**.073**	**2.838**	**.005**	**.970**	**1.031**
	age	-2.480E-02	.030	-.023	-.840	.401	.884	1.132
	gender	**-.207**	**.033**	**-.165**	**-6.314**	**.000**	**.937**	**1.067**
	educational status	.108	.087	.031	1.229	.219	.974	1.027
	marital status	-6.067E-02	.034	-.047	-1.799	.072	.939	1.065
	class size	-3.455E-02	.034	-.026	-1.014	.311	.962	1.039
	DJ	8.338E-02	.025	.098	3.273	.001	.716	1.397
	PJ	5.540E-02	.029	.068	1.934	.053	.513	1.950
	IJ	-3.413E-03	.023	-.005	-.149	.881	.546	1.832
	VA	-1.646E-02	.016	-.026	-1.024	.306	.985	1.015
6	(Constant)	2.414	.140		17.190	.000		
	Early/Late	**9.308E-02**	**.032**	**.074**	**2.868**	**.004**	**.969**	**1.032**
	age	-2.411E-02	.030	-.022	-.816	.414	.883	1.132
	gender	**-.207**	**.033**	**-.165**	**-6.320**	**.000**	**.937**	**1.067**
	educational status	.103	.088	.030	1.173	.241	.971	1.030
	marital status	-5.882E-02	.034	-.045	-1.742	.082	.936	1.068
	class size	-3.371E-02	.034	-.025	-.989	.323	.962	1.040
	DJ	8.224E-02	.026	.096	3.225	.001	.715	1.399
	PJ	5.511E-02	.029	.068	1.924	.055	.513	1.950
	IJ	-5.002E-03	.023	-.007	-.218	.827	.543	1.842
	VA	-1.332E-02	.016	-.021	-.813	.416	.947	1.055
	EXH	-1.547E-02	.016	-.025	-.974	.330	.935	1.069
7	(Constant)	2.446	.144		17.036	.000		
	Early/Late	**9.258E-02**	**.032**	**.073**	**2.852**	**.004**	**.969**	**1.032**
	age	-2.379E-02	.030	-.022	-.806	.421	.883	1.132
	gender	**-.205**	**.033**	**-.163**	**-6.220**	**.000**	**.932**	**1.073**
	educational status	9.727E-02	.088	.028	1.108	.268	.967	1.034
	marital status	-5.895E-02	.034	-.046	-1.745	.081	.936	1.068
	class size	-3.304E-02	.034	-.025	-.969	.333	.961	1.040
	DJ	7.896E-02	.026	.093	3.073	.002	.704	1.420
	PJ	5.557E-02	.029	.068	1.940	.053	.513	1.951
	IJ	-4.934E-03	.023	-.007	-.215	.830	.543	1.842
	VA	-1.224E-02	.016	-.019	-.745	.456	.944	1.060
	EXH	-4.562E-03	.019	-.008	-.240	.810	.655	1.526
	CYN	-1.950E-02	.019	-.033	-1.051	.294	.655	1.528
8	(Constant)	2.811	.156		18.073	.000		
	Early/Late	**8.083E-02**	**.032**	**.064**	**2.512**	**.012**	**.965**	**1.036**
	age	-2.469E-02	.029	-.022	-.845	.398	.883	1.133
	gender	**-.189**	**.033**	**-.151**	**-5.797**	**.000**	**.926**	**1.080**
	educational status	9.244E-02	.087	.027	1.064	.287	.967	1.034
	marital status	-5.305E-02	.033	-.041	-1.587	.113	.935	1.069

Table 9. Hierarchical Regression analysis of demographic variables and study variables *(continued)*

class size	-2.126E-02	.034	-.016	-.629	.529	.958	1.044
DJ	5.467E-02	.026	.064	2.122	.034	.685	1.459
PJ	4.661E-02	.028	.057	1.642	.101	.511	1.957
IJ	1.114E-04	.023	.000	.005	.996	.542	1.844
VA	-2.477E-02	.016	-.039	-1.511	.131	.927	1.079
EXH	-1.522E-02	.019	-.025	-.807	.420	.649	1.541
CYN	-5.796E-03	.019	-.010	-.313	.754	.644	1.553
RPE	-.100	.017	-.152	-5.760	.000	.895	1.117

a Dependent Variable: achievement
Significant relationships are in bold

Hierarchical regression analysis provided the effect size of control variables on the dependent variable of academic achievement. Some of these control variables were not included in the path analysis section (see model test results) since it created to many parameters to estimate. The regression analysis has provided 8 models. Early/late responses and gender variables was coded as a binary variable. Among produced 8 models, only early/late responses and gender was significant in each step. In each step (through 8 models) early/late responses had a positive effect on academic achievement. This means that late respondents to the questionnaire had higher levels of academic achievement. In addition gender was negatively related to academic achievement in all models. This means that female students had higher levels of academic achievement throughout in all the produced models. None of the other control variables has produced significant relationships.

To conclude, regression analysis regarding all control variables posited above, multi-collinearity was not an issue since VIF factors were below 5 (Groebner, Shannon, Fry, & Smith, 2005).

4.5 Correlations among Study Constructs

Pearson Product Moment correlation is conducted to measure the relationships among study constructs. Table 15 depicts the relationships among study constructs. Results having ** is significant at 0.01 level and * is significant at 0.05 level. Correlations without any asterisks (*) are insignificant. Each item was averaged to yield a composite score that represents the construct. Significant correlations ranged from -0.052* (between class-size and GPA) to 0.657** (between procedural justice and interactional justice).

Correlations among control variables were not taken into consideration. Significant correlations among control variables and study variables were considered. Additionally, significant correlations among study constructs are analyzed. Early/late response variable was negatively related to reduced professional efficacy and positively related to GPA. This may indicate that early respondents who participated in this survey may have higher reduced professional efficacy. In addition, late respondents may have higher levels of academic achievement. Age was negatively correlated with GPA. This may manifest that younger students may have higher levels of academic achievement. Gender was positively related to cynicism and reduced professional efficacy. This may indicate that males may have higher levels of cynical attitudes towards their studies and have higher levels of reduced professional efficacy. Gender was also related to GPA negatively. This may illustrate that females have higher levels of academic achievement. Moreover, educational status was positively related to verbal aggression. This may mean that students in four-year programs may have a tendency to illustrate higher levels of

verbal aggressiveness. Educational status was also correlated with cynicism negatively. This may indicate that students enrolled in two-year programs may possess higher levels of cynical attitudes towards their studies. Marital status was positively related to emotional exhaustion and negatively related to GPA. This result could indicate that higher scores in marital status (towards married and other) may lead to have higher levels of emotional exhaustion. In addition, lower scores in marital status (towards single) may lead to have higher GPA scores. Class-size was negatively related to all sub-dimensions of justice and GPA. This may indicate that students studying in ideal classroom environment tend to have higher perceptions of distributive, procedural, and interactional justice. In addition, students in ideal classroom environment may have higher levels of academic achievement. Class-size was also positively correlated with reduced professional efficacy. This finding may mean that students in overcrowded classrooms may have higher reduced professional efficacy than the ones who are in ideal classrooms.

Distributive justice was positively correlated with procedural justice, interactional justice, verbal aggression, and GPA. This may indicate that students with higher distributive justice perceptions may have higher procedural and interactional perceptions of justice as well.

Furthermore, students who perceive distributive justice may have higher verbal aggression. This is a surprise finding, where distributive justice is positively related to verbal aggression. The data in the current study does not explain causality however there might be other factors influenced distributive justice to have a positive correlation with

verbal aggression. This may provide new insights to existing knowledge base. Additionally, students possessing higher distributive justice perceptions may have higher levels of academic achievement.

Table 10. Means, standard deviations and correlations among study constructs

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Early-Late	1													
2. Age	.020	1												
3. Gender	.080**	.225**	1											
4. Ed-Status	-.091**	.061*	-.028	1										
5. Mrt-Status	.044	.241**	.050	.004	1									
6. Class-Size	-.102**	.104**	.031	.092**	.039	1								
7. DJ	.003	.005	-.049	.019	.006	-.081**	1							
8. PJ	.046	.015	-.041	.013	.003	-.058*	.502**	1						
9. IJ	.018	.027	-.030	-.001	.016	-.082**	.451**	.657**	1					
10. VA	.031	.038	.043	.075**	.037	.016	.057*	.022	.001	1				
11. EXH	.041	.041	.022	-.040	.069**	.037	-.093**	-.097**	-.126**	.192**	1			
12. CYN	.020	.045	.086**	-.068**	.041	.044	-.160**	-.096**	-.110**	.150**	.569**	1		
13. RPE	-.067**	.021	.093**	-.021	.025	.083**	-.231**	-.150**	-.093**	-.139**	-.032	.108**	1	
14. GPA	.059*	-.070**	-.177**	.026	-.059*	-.052*	.139**	.125**	.091**	-.024	-.051	-.079**	-.192**	1
Mean	.5503	1.5665	.5024	.9649	1.1438	.3457	3.2552	3.1437	3.2029	3.1305	3.0194	2.8120	2.4722	2.6804
SD	.49763	.57287	.50016	.18412	.48655	.47576	.73745	.77509	.94139	.99635	1.03523	1.05875	.95523	.62945

Remarks: Early/late = signifies the early and late recordings in data collection process; Ed-status = Educational status refers to two-year or four-year program of study; Mrt-status = Marital status; DJ = distributive justice; PJ = procedural justice; IJ = interactional justice; VA = verbal aggression; EXH = emotional exhaustion; CYN = cynicism; RPE = reduced professional efficacy; GPA = grade point average (academic achievement); SD = Standard deviation.

** Correlations are significant at the 0.01 level (2-tailed).

* Correlations are significant at the 0.05 level (2-tailed).

Procedural justice is positively correlated with interactional justice and GPA. This may indicate that students having higher procedural justice may also have higher levels of interactional justice perceptions. In addition, students who perceive procedural justice may have higher levels of academic achievement in comparison to ones who does not. Procedural justice was also negatively related to emotional exhaustion, cynicism, and reduced professional efficacy. This finding may suggest that students who have higher levels of procedural justice perceptions may have lower levels of emotional exhaustion, cynicism, and reduced professional efficacy.

Interactional justice was negatively related to emotional exhaustion, cynicism, and reduced professional efficacy and positively related to GPA. This may indicate that students perceiving higher interactional justice may have lower emotional exhaustion, cynicism, and reduced professional efficacy. In addition, students possessing higher interactional justice perceptions may also have higher levels of academic achievement.

Verbal aggression is positively correlated with emotional exhaustion and cynicism. This finding may posit that students with verbally aggressive behaviors may also have higher levels of emotional exhaustion and cynicism. Verbal aggression was also negatively related to reduced professional efficacy. This finding is also surprising since verbal aggressiveness should be negatively correlated with reduced professional efficacy. This finding may suggest that students who are verbally aggressive may possess lower levels of reduced professional efficacy. This is a new addition to the existing knowledge base.

Emotional exhaustion was positively correlated to cynicism. This result may indicate that students with higher levels of emotional exhaustion may have higher levels of cynical attitudes to their studies.

Cynicism was positively related to reduced professional efficacy and negatively related to GPA. This finding may mean that students who have cynical attitudes about their studies also have higher levels of reduced professional efficacy. In addition, students with higher cynicism may have lower levels of academic achievement.

Reduced professional efficacy was negatively related to academic achievement. This may indicate that students with higher reduced professional efficacy may have lower levels of academic achievement.

4.6 Model Fit Statistics

In order to test how the model fits to the data, model fit statistics have been calculated through LISREL 8.30 (Joreskog & Sorbom, 1996). Accordingly, NFI (Normed Fit Index), NNFI (Non-Normed Fit Index), CFI (Comparative Fit Index), IFI (Incremental Fit Index), GFI (Goodness of Fit Index), AGFI (Adjusted Goodness of Fit Index) Standardized RMR (Root Mean Square Residual), and RMSEA (Root Mean Square Error of Approximation) were calculated. The table below postulates the indices and the values.

Table 11. Model fit statistics

Index	**Value**
NFI	1.00
NNFI	0.99
CFI	1.00
IFI	1.00
GFI	1.00
AGFI	0.99
RMR	0.0040
RMSEA	0.014

Remarks: NFI=Normed fit index; NNFI=Non-Normed fit index; CFI=Comparative fit index; IFI=Incremental fit index; GFI=Goodness of fit index; AGFI=Adjusted goodness of fit index; RMSEA=Root mean square error of approximation; RMR=Root mean square residual.

All fit indices exceed the value of .90. This indicates that the model fits the data well. RMR and RMSEA values are under .05 which further manifests a good fit.

Table 12. Model test results

Paths	Standardized parameter estimates	*t*-values
Age → DJ	0.02	0.75
Gender → DJ	-0.05	-1.96*
Class-size → DJ	-0.08	-3.09**
R^2= 0.01		
Age → PJ	0.04	1.38
Gender → PJ	-0.05	-1.75*
Class-size → PJ	-0.06	-2.39**
R^2= 0.01		
Age → IJ	0.05	1.76*
Gender → IJ	-0.04	-1.44
Class-size → IJ	-0.08	-3.21**
R^2= 0.01		
Age → VA	0.03	1.15
Gender → VA	0.04	1.32
Class-size → VA	0.02	0.74
DJ → VA	0.08	2.49**
PJ → VA	0.01	0.27
IJ → VA	-0.04	-1.11
R^2= 0.01		
Age → EXH	0.03	1.30
Gender → EXH	0.00	-0.08
Class-size → EXH	0.02	0.79
DJ → EXH	-0.05	-1.63
PJ → EXH	-0.01	-0.40
IJ → EXH	-0.10	-2.86**
VA → EXH	0.19	7.55**
R^2= 0.06		
Age → CYN	0.03	1.06
Gender → CYN	0.07	2.63**
Class-size → CYN	0.02	0.67
DJ → CYN	-0.15	-4.89**
PJ → CYN	0.00	0.03
IJ → CYN	-0.04	-1.24
VA → CYN	0.15	6.09**
R^2= 0.06		
Age → RPE	0.00	-0.01
Gender → RPE	0.08	3.20**
Class-size → RPE	0.06	2.55**
DJ → RPE	-0.20	-6.81**
PJ → RPE	-0.08	-2.30**
IJ → RPE	0.06	1.79*
VA → RPE	-0.13	-5.24**
R^2=0.08		

Table 12. Model test results *(continued)*

Paths	Standardized parameter estimates	*t*-values
Age → GPA	-0.03	-1.10
Gender → GPA	-0.15	-5.82**
Class-size → GPA	-0.02	-0.77
DJ → GPA	0.07	2.18**
PJ → GPA	0.05	1.52
IJ → GPA	0.00	0.05
VA → GPA	-0.03	-1.26
EXH → GPA	-0.03	-0.82
CYN → GPA	-0.01	-0.38
RPE → GPA	-0.16	-5.89**
R^2= 0.08		

Model fit statistics:
χ^2=1.29, df=1, *p*=0.26; NFI=1.00; NNFI=0.99; CFI= 1.00; IFI= 1.00; GFI= 1.00; AGFI= 0.99; RMSEA=0.014; RMR=0.004

Remarks: Age was coded as categorical variable. Higher scores indicated older age. Gender and Class-size were coded as a dichotomous variable (0=female and 1=male. DJ=Distributive justice; PJ=Procedural justice; IJ=Interactional justice; VA=Verbal aggression; EXH=Emotional exhaustion; CYN=Cynicism; RPE=Reduced professional efficacy; GPA=Grade point average (academic achievement). NFI=Normed fit index; NNFI=Non-Normed fit index; CFI=Comparative fit index; IFI=Incremental fit index; GFI=Goodness of fit index; AGFI=Adjusted goodness of fit index; RMSEA=Root mean square error of approximation; RMR=Root mean square residual.
** The *t*-values illustrate a statistically significant relationship at the 0.01 level (two-tailed).
* The *t*-values illustrate a significant relationship at the 0.05 level (one-tailed). The t-values without any * or ** are insignificant.

Path analytical method is utilized through LISREL 8.30 (Joreskog & Sorbom, 1996) in order to examine the hypothesized relationships. As discussed earlier the model fits the data well and significant at .01 level. The results of the path analysis are elaborated below.

Control variables (age, gender, and class-size) were included in the path analytical method to investigate any confounding effects among study variables. Rest of the control variables (marital status, educational status, and faculty/department) was not included in path analysis since it creates multitudinous parameters. The overall results manifests that control variables do not confound any relationships. However, some

control variables had an effect on study constructs which deserves further explanation. Gender was significantly related to distributive justice. This indicates that males possess higher levels of distributive justice than females. Class-size was negatively related to distributive justice. This shows that students taking courses in an ideal classroom environment have higher levels of distributive justice. Gender and class-size was negatively related to procedural justice. This illustrates that females have higher levels of procedural justice than males. In addition, students in ideal classroom environment possess higher levels of procedural justice. Furthermore, age had a positive and class-size had a negative association to interactional justice. This finding indicates that elder students have higher levels of interactional justice perceptions. Additionally, students in ideal classrooms (class-size environment) have higher perceptions of interactional justice than the ones in overcrowded classrooms. None of the control variables were related to verbal aggression or emotional exhaustion. Moreover, path analytical results illustrate that gender was positively related to cynicism. This finding suggests that males have higher levels of cynical attitudes towards their studies. Furthermore, gender and class-size was positively related to reduced professional efficacy. This result suggests that males have higher levels of reduced efficacy in their studies. In addition, students in overcrowded classrooms have higher levels of reduced efficacy. Finally, gender had a negative effect on GPA (academic achievement). This means that females have higher levels of academic achievements in their studies.

Hypothesis 1 proposed that distributive justice is negatively associated to verbal aggression. The outcome of the path analysis indicates that this result is positively significant but not supported. This finding is contrary to what was predicted which was

further explained in the discussion chapter. Hypothesis 2 suggested that distributive justice is negatively related to emotional exhaustion. The path analytic results pinpoint that the relationship is negative however, not significant. Hence, H2 is not supported. Hypothesis 3 was set out to predict negative relationship between distributive justice and cynicism. The result of the path analysis reveals that this finding is negative and significant. Therefore, H3 is supported. Hypothesis 4 proposed that distributive justice is negatively related to reduced professional efficacy. The findings of the path analysis indicate a negative significant relationship, hence, supporting this hypothesis. Hypothesis 5 suggested that distributive justice was positively related to GPA (academic achievement). The results indicate that there is a significant positive relationship among these constructs. Hence, H5 is supported.

Hypothesis 6 proposed that procedural justice is negatively related to verbal aggression. The results indicate that this finding is not significant. Therefore, H6 is not supported. Furthermore, Hypothesis 7 suggested a negative relationship between procedural justice and emotional exhaustion. Although the result is negative it is not significant. Hypothesis 7 is therefore, is not supported. According to the study design hypothesis 8 proposed a negative relationship among procedural justice and cynicism. The results reveal that this finding is insignificant, hence, yielding no support for this relationship. Hypothesis 9 predicted a negative relationship between procedural justice and reduced professional efficacy. Path analytical results demonstrate that this prediction is significant. Thus, H9 is supported. Hypothesis 10 was related to predicting a positive relationship between procedural justice and GPA. Although the result is positive, it is not significant. Therefore, H10 is not supported.

Hypothesis 11 was set out to predict a negative relationship between interactional justice and verbal aggression. The result of the path analysis indicates that this finding is negative but not significant. Thus, H11 is not supported. Moreover, hypothesis 12 proposed a negative relationship between interactional justice and emotional exhaustion. The findings indicate that there is a significant negative relationship. Therefore, H12 is supported. Hypothesis 13 was related to find out a negative relationship among interactional justice and cynicism. Although the finding is negative it is not statistically significant. Thus H13 is not supported. Hypothesis 14 suggested that interactional justice exerted a negative relationship on reduced professional efficacy. The results of the path analysis revealed that there is a significant relationship but positive (at 0.05 level). This finding is contrary to what was predicted in hypothesis section. Details are discussed in the discussion section. Finally, hypothesis 15 proposed a positive relationship between interactional justice and GPA. The findings suggest that this relationship is insignificant yielding no support for H15.

Hypothesis 16 proposed that verbal aggression is positively related to emotional exhaustion. The path analytical findings depict that this relationship is significant. Hence, this finding supported H16. Hypothesis 17 suggested a positive relationship between verbal aggression and cynicism. The results demonstrate that this relationship is significant. This result yielded a support for H17. Furthermore, hypothesis 18 was related to a positive relationship among verbal aggression and reduced professional efficacy. Although the result of the path analysis significant the outcome, however, is negative. This is a contrary finding of what was predicted. Hence, H18 is not supported.

Elaboration on this outcome is provided in discussion section. Hypothesis 19 on the other hand depicted a negative relationship between verbal aggression and GPA. The results demonstrate that the finding is negative but insignificant. Thus, H19 is not supported.

Hypothesis 20 proposed that there is a negative relationship between emotional exhaustion and GPA. Path analytic results reveal that the result is negative but insignificant. Thus, H20 is not supported. Furthermore, hypothesis 21 was related to a negative relationship between cynicism and GPA. The results indicate that there is a negative outcome however, it is insignificant. Hence, the findings did not yield a support for H21. Finally, hypothesis 22 proposed that reduced professional efficacy is associated to GPA negatively. The result of the path analysis indicates that this relationship is significant. Thus, H22 is supported. Revised model in regards to significant relationships is depicted below.

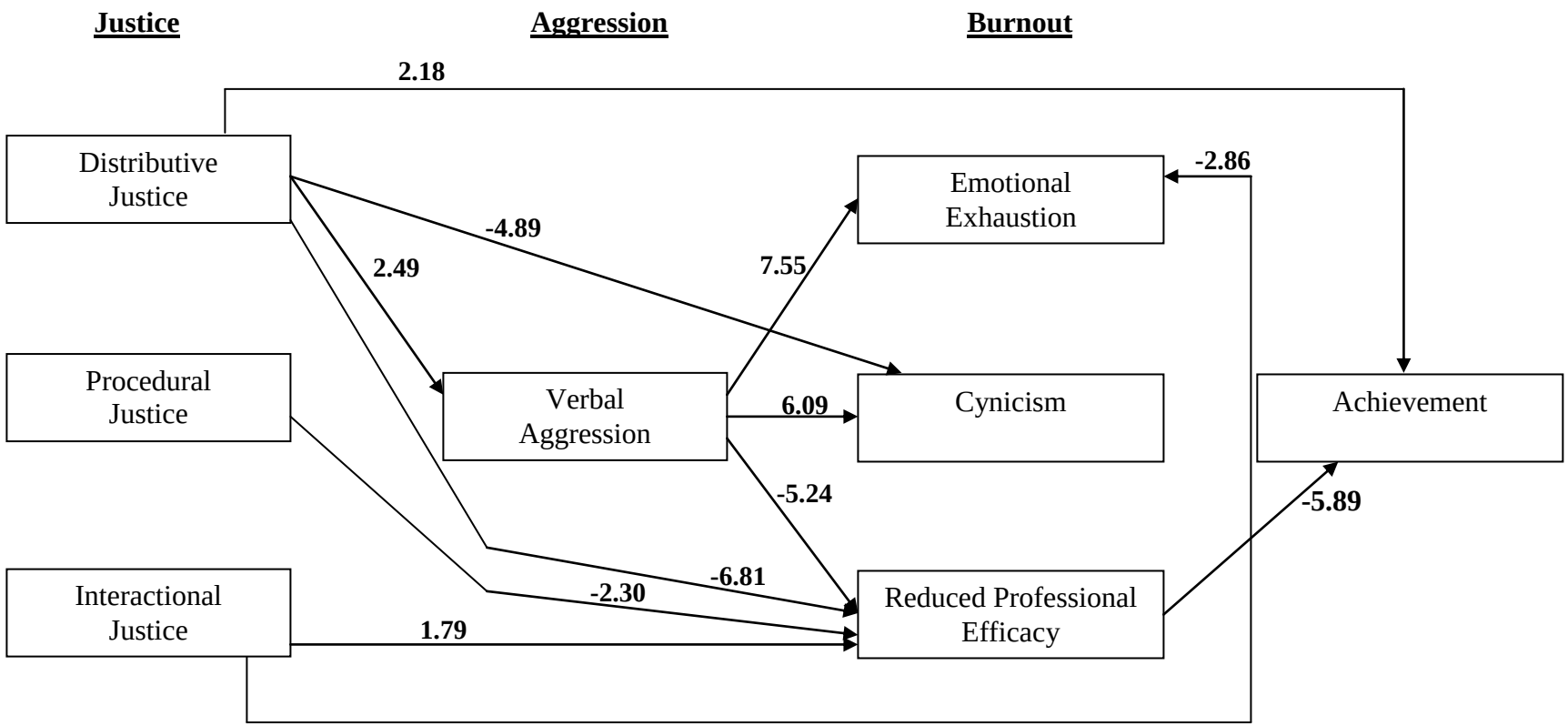


Figure 48. Revised Model of Justice, Aggression, Burnout and Achievement

Control Variables:
Age
Gender
Class-size

→ = Significant

Chapter 5

DISCUSSION & CONCLUSION

This chapter presents information related to the discussion of the findings and its' consistencies, inconsistencies, and unexpected findings in relation to prior research. The chapter also provides implications for the practitioners/administrators. In addition, limitations of the study are illustrated in line with avenues for future research.

5.1 Discussion and Concluding Remarks

The current dissertation has investigated the effects of justice, verbal aggression, and burnout on academic achievement of utilizing a sample of undergraduate university students in Turkish Republic of Northern Cyprus. As stated in preceding sections, using convenience sampling method the total sample for this study consisted of 1481 students studying at the largest university in Northern Cyprus.

The path analytical results demonstrated that distributive justice was positively related to verbal aggression. Normally, distributive justice should have alleviated the level of verbal aggression. This result is contrary to the findings of Chory-Assad and Paulsel (2004a; 2004b). Equity Theory explains that when a person perceives unfairness, that individual may seek to alter or restore the equity (Adams, 1965). Parallel to the theory, when distributive justice is in place and it is not communicated clearly, it may create communication failure (cf. Ince & Gul, 2011). Communication failure could lead to

unwanted anti-social behaviors like hostility or aggression. Hence, it could be speculated that distributive justice may influence verbal aggression positively if all levels of justice are not satisfied simultaneously. Inline with this thought, the outcome could be interpreted as an attenuation or mediation of other unobserved covariance or procedural and interactional justice within the same equation of path analysis. This is an interesting finding and it may add further light into our understanding of the relationship between distributive justice and verbal aggression. This concludes that distributive justice positively influences verbal aggression and there is a need to investigate this relationship in different context, with a different sample, and a longitudinal study design to excavate the causality among distributive justice and verbal aggression. Furthermore, the study depicted that distributive justice was negatively related to emotional exhaustion. The path analytic results revealed that this finding was negative but insignificant. This finding is similar to the study that was conducted in an educational context to measure the relationship between justice perception and stress (cf. Judge & Colquitt, 2004; Yang, 2004). In addition this result is consistent with the findings of Moliner et al. (2005) regarding the relationship between the strength of distributive justice on emotional exhaustion. However, this finding is contrary to the findings of Uludag and Yaratan (2011). This concludes that under normal circumstances there should be a negative relationship among distributive justice and emotional exhaustion. Sampling method could have produced this outcome, hence, random sampling techniques should be utilized in future studies. Moreover, the current study predicted a negative relationship between distributive justice and cynicism. The path analytical solution supports this finding. This finding is similar to the results of prior empirical studies (Moliner et al., 2005; Taris et al., 2004; Taris et al., 2001; Uludag & Yaratan, 2011). From the

significant result depicted above, one could deduce that distributive justice lowers the level of cynical attitudes of students towards their studies. In conjunction, distributive justice was predicted a negative relationship between reduced professional efficacy. Path analysis demonstrated that this finding is significant. This result shows similar patterns to the outcomes of previous research (Moliner et al., 2005; Taris et al., 2004; Taris et al., 2001; Uludag & Yaratan, 2011). In detail, distributive justice lessens the magnitude of reduced professional efficacy of students. This certainly concludes that students should perceive justice in distribution of all transactions that takes place in the educational context. Conjointly, this study has predicted that distributive justice was positively related to academic achievement (GPA). The path analytic results confirm this prediction. This is consistent with the results of Yang (2004) and Uludag and Yaratan (2011). Specifically, perceiving distributive justice in all transactions influences the level of academic achievements of students. This finding ascertains that distributive transactions between instructor and students should be clear and concise to elevate the academic achievements of students.

Procedural justice predicted to have a negative relationship with verbal aggression. The path analysis did not lend any significant support for this prediction. The finding is contrary to the prior empirical research (Chory-Assad & Paulsel, 2004a; Chory-Assad & Paulsel, 2004b). One reason for this insignificant result might be due to the positive effect of distributive justice on verbal aggression. Distributive justice could have confounded the effect of procedural justice on verbal aggression. Second rationale for this finding could be due to the fact that students may not value or perceive the procedures as an important source of justice. As depicted before, investigation of the

relationship among justice perceptions and aggression was in infant stage (Chory, 2007; Chory-Assad, 2002). Hence, it could be concluded that more replication studies are necessary to underline the effect size (magnitude) and direction. Moreover, procedural justice was hypothesized to have a negative relationship with emotional exhaustion. Although the result of the path analysis illustrate a negative relationship, however, it is insignificant. The result is congruent with the past research concerning these relationship (Cole, Bernerth, Walter, & Holt, 2010; Yang, 2004) however, prior research has also confirmed significant relationships between justice perceptions and burnout (Moliner et al., 2005; Taris et al., 2004; Taris et al., 2001; Uludag & Yaratan, 2011). As a result one can conclude that the results provide mix and inconsistent findings. Stemming from the aforementioned findings and facts more replication studies are needed to confirm the effect of procedural justice on emotional exhaustion. Furthermore, this study has predicted that procedural justice was negatively related to cynicism. Path analytical results depicted that this prediction is was insignificant. This finding is similar to the results of prior empirical studies (Moliner et al., 2005; Yang, 2004). In contrast, Uludag and Yaratan (2011) has found a significant relationship among procedural justice and burnout. According to Uludag and Yaratan (2011) further measurement and confirmation of justice as an antecedent of burnout is a necessity. Thus, more empirical research is needed to understand the details of the relationships among these constructs. Conjointly, it was the prediction of this study to demonstrate a negative relationship between procedural justice and reduced professional efficacy. The results demonstrated that this prediction is significant. This means that students with high perceptions of procedural justice are likely to have lower levels of reduced professional efficacies in their studies. This finding is congruent with the recent study of Uludag and Yaratan

(2011). This finding also consistent with the past research (Taris et al., 2004; Taris et al., 2001). This concludes that students with higher levels of procedural justice will have lower levels of reduced professional efficacy. Although the relationship between procedural justice and reduced professional efficacy seems established, longitudinal study designs might assist us in understanding the directionality of these constructs. Additionally, it was the purpose of this study to demonstrate a positive relationship between procedural justice and academic achievement. The results of the path analysis reveal that this relationship is positive however, insignificant. This finding is consistent with the recent study of Uludag and Yaratan (2011) where procedural justice did not have any significant effect on academic achievement. However, prior studies have illustrated a significant relationship between fairness and academic achievement/performance (Moorman, 1991; Yang, 2004). Hence, it could be speculated that the relationship between procedural justice and academic achievement/performance is inconclusive. Replicating this specific interaction would provide better understanding and contribution to the Equity Theory.

This study has predicted that interactional justice exerted a negative relationship on verbal aggression. The path analysis results reveal that this finding is negative but insignificant. This result is contrary to the findings of prior research (Chory-Assad & Paulsel, 2004a). This result may suggest that verbal aggressiveness of students is not influenced negatively by the perceptions of interactional justice. This concludes that more testing is necessary to establish this negative connection among interactional justice and verbal aggression. This will also provide support to the Equity Theory in relation to equity restoration efforts. In conjunction, interactional justice was posited to

illustrate a negative influence on emotional exhaustion. Path analytical results reveal that this relationship is significant. The finding is consonant of the findings of Moliner et al. (2005) where level of interactional justice negatively influenced emotional exhaustion. Recently, Uludag and Yaratan (2011) have found that interactional justice was the strongest predictor on burnout in contrast to distributive and procedural justice. This concludes that students with higher interactional justice perceptions would have lower levels of emotional exhaustion. Furthermore, it was predicted that interactional justice was negatively related to cynicism. Path analysis results provide a negative insignificant outcome. This finding is similar to the studies of prior empirical research (Moliner et al., 2005; Yang, 2004). In contrast, Uludag and Yaratan (2011) have found a negative effect of interactional justice on students' burnout. Findings from different empirical studies demonstrate unsettled and inconsistent outcomes. Hence, further investigation of the relationship between interactional justice and cynicism is necessary. Using diverse samples, time-lagged, and longitudinal studies may shed a further light in encompassing the aforementioned relationship. Moreover, this study has suggested that interactional justice was negatively related to reduced professional efficacy. Path analysis results illustrate that this finding is significant, however positive. This is an unexpected finding where students with higher levels of interactional justice have higher levels of reduced professional efficacy. This finding is similar to the study of Moliner et al. (2005) where strength of interactional justice was positively correlated with strength of lack of efficacy. A reasonable argument for this outcome might be that students may feel inadequate when encountering interpersonal or interactional relations with their instructors. They may feel that talking or communicating to the instructor related to execution of polices and procedures will not achieve them anything. Thus, they may feel

inept as a student. Equity Theory underpins this fact as to unfair treatment → more distress and dissatisfaction. This finding may provide addition to the existing body of knowledge. Therefore, more empirical studies are needed to excavate the cause and the directionality of this relationship. Conjointly, interactional justice predicted to influence academic achievement positively. The path analytic results provide positive but insignificant outcome. This result is contrary to the findings of Uludag and Yaratan (2011) and Yang (2004). Equity Theory postulates that when individuals receive fair treatments their performance/achievement levels increase, hence, this finding is not consonant with the theory of Equity. A supporting rationale for this outcome could be drawn from the possible mediating effects of verbal aggression and burnout dimensions on academic achievement. Replication studies would provide more grounded evidence for this relationship.

The current study predicted that verbal aggression was positively related to emotional exhaustion. The results of the path analysis posit that this outcome is significant. This means that students having higher verbally aggressive behaviors are likely to have higher levels of emotional exhaustion. This finding is congruent to the very recent study of Yaratan and Uludag (2012). This result also confirms the relationship between verbal aggression and emotional exhaustion in the service industries (Karatepe, Haktanir, & Yorganci, 2010; Karatepe, Yorganci, & Haktanir, 2009). This finding is also consonant with the 'Conservation of Resources Theory' (COR). COR Theory postulates that individuals try to attain, stabilize, and protect certain resources. Losing resources will lead individuals to have higher levels of stress. In detail, students under heavy study loads (Uludag & Yaratan, 2010) may lose these scarce resources (i.e. energy) to cope

with the demands. The study of Uludag and Yaratan (2010) suggests that students undergo heavy study loads as well as intensive work-based trainings. To overcome this issue, curriculum designers should design programs at an optimum level of course loads and theoretical knowledge rather than trying to incorporate as much as theory into the programs as possible. As known verbal aggression diminishes or drains these resources (Karatepe, Yorganci & Haktanir, 2009). Thus, it could be cogitated that students illustrating anti-social behaviors (aggression) is likely to have higher levels of emotional exhaustion. Conjointly, the study predicted that verbal aggression was positively related to cynicism. The results reveal that this prediction was significant. This means that students with higher levels of verbal aggression are likely to have higher levels of cynical attitudes towards their studies. This result is consistent with the recent study of Yaratan and Uludag (2012) where students with higher verbal aggression influenced cynicism positively. Similar to the interpretations made earlier for the relationship between verbal aggression and emotional exhaustion, COR Theory suggests that individuals' level of stress increases when they encounter stress (i.e. burnout). Hence, it could be concluded that when individuals lose resources under heavy workloads (study loads) and they are not able to cope with the pressure, they may illustrate higher levels of burnout (Uludag & Yaratan, 2010). Furthermore, it was the prediction of this study to demonstrate a positive relationship between verbal aggression and reduced professional efficacy. The path analytic results reveal that the finding is significant however, negative. This explains that students with higher verbal aggressive behaviors tend to have lower levels of reduced professional efficacy. This is another surprise finding and new addition to our existing literature. This result is contrary to the findings of Yaratan and Uludag (2012) where verbal aggression influences reduced professional efficacy

positively. In addition, this outcome is not consistent with the underpinnings of COR Theory. In contrast, Kim, Shin, and Swanger (2009) has found a positive but insignificant relationship between aggression and the positive nature (when professional efficacy is not reverse coded) professional efficacy. Thus, it could be speculated that the relationship between verbal aggression and reduced professional efficacy is scanty and needs further development and investigation. Replicating this study with diverse samples and cross-cultural data collection rather than cross-sectional will yield better understanding of the relations among these concepts. Moreover, this study has predicted to have a negative relationship between verbal aggression and academic achievement. Although the result of the path analysis is negative, it is insignificant. This means that students with high levels of verbal aggressiveness do not alleviate the level of academic achievement. This finding is similar to the study of Karatepe, Yorganci, and Haktanir (2009). A strong rationale for this outcome could be drawn as verbal aggressive behaviors could be inherent in educational settings and students have found ways to cope with this anti-social behavior. It could be due to this reason why verbal aggression does not influence academic achievement negatively. Nevertheless, this finding is not definite. More empirical investigations are needed to explain the underlying cause among these constructs.

Emotional exhaustion was predicted to have a negative relationship on academic achievement. Path analysis shows a negative but insignificant result. This indicates that students with higher levels of emotional exhaustion do not lead to alleviated levels of academic achievement. This finding is similar to the study of Karatepe and Uludag (2008) where they found an insignificant negative correlation among emotional

exhaustion and performance. In contrast, this result is contrary to the findings of prior empirical investigations (McCarthy, Pretty, and Catano, 1990; Uludag & Yaratan, 2011; Yang, 2004). Additionally, this outcome does not support the concept of COR Theory where stressed individuals are likely to illustrate low levels of achievement/performance (cf. Hobfoll, 1989). Specifically, this result may stem from the effect of reduced professional efficacy on academic achievement which was demonstrated as the dominant predictor. Hence, the effect of emotional exhaustion could have been alleviated by the dominant effect of reduced professional efficacy on academic achievement. In conjunction to this, the current study has proposed a negative relationship between cynicism and academic achievement. The result of the path analysis reveals that this prediction is negative, however, insignificant. This means that students with cynical attitudes towards their studies are not likely to lead students to have lower levels of academic achievements. This result is similar to the study of Karatepe and Uludag (2008) where an insignificant correlation was found among these constructs. In contrast, this result is the antipode to the findings of prior empirical investigations (McCarthy, Pretty, and Catano, 1990; Uludag & Yaratan, 2011; Yang, 2004). Similar to the interpretations on the relationship between emotional exhaustion and academic achievement, this finding is not consonant with the assumptions of the Theory of Conservation of Resources. A strong argument towards the insignificant relationship between cynicism and academic achievement could be drawn from the dominant effect of reduced professional efficacy on academic achievement. The result of reduced professional efficacy on academic achievement may have alleviated the effect size of cynicism on achievement. Finally, the current study has predicted a negative relationship between reduced professional efficacy and academic achievement. The

conclusions of the path analysis reveal that this extrapolation was significant. This indicates that students with higher levels of reduced professional efficacy are likely to have lower levels of academic achievement. This finding is congruent with the recent empirical study of Uludag and Yaratan (2011) and prior empirical investigations (Karatepe & Uludag, 2008; McCarthy, Pretty, & Catano, 1990; Yang, 2004). This finding is also consistent with the COR Theory. Hobfoll (1989) suggests that when individuals lose scarce recourses they will illustrate frustration and stress (i.e. burnout). This leads them to have lower performance/achievement levels.

5.2 Interpretations on Research Questions

The current study has developed and tested specific hypotheses in order to provide answers concerning the relationships depicted in research questions. Research questions of the study with their explanations are provided below.

RQ1) How dimensions of justice is related to aggression?

Distributive justice predicted to have a negative relationship with verbal aggression. Results showed that distributive justice was positively related to verbal aggression. This was contrary to the study prediction. Procedural justice predicted a negative relationship with verbal aggression. Results revealed that procedural justice was not related to verbal aggression. Interactional justice was supposed to exert a negative relationship on verbal aggression. The results manifested a negative but insignificant outcome. Overall, two insignificant relationships and one unexpected finding was observed for research question one.

RQ2) How dimensions of justice is related to dimensions of burnout?

Distributive, procedural, and interactional justice predicted to illustrate negative relationships with emotional exhaustion. The results reveal that all relationships were negative but only interactional justice was significantly related to emotional exhaustion. Furthermore, this study has predicted negative relationships between dimensions of justice (distributive, procedural, and interactional justice) and cynicism. The results demonstrated that only distributive justice was significantly related to cynicism. The rest did not have a significant impact on cynicism. Moreover, distributive, procedural, and interactional justice was predicted to demonstrate a negative relationship with reduced professional efficacy. The results yielded that distributive and procedural justice were negatively related to reduced professional efficacy. Interactional justice however, displayed a positive impact on reduced professional efficacy. Overall, five significant relationships were found among these constructs.

RQ3) How dimensions of justice is related to academic achievement?

This study has predicted that distributive justice was positively related to academic achievement (GPA). The results yielded a significant positive relationship. Procedural justice predicted to have a positive relationship with academic achievement. The results revealed a positive but insignificant outcome. Interactional justice was suggested to exert a negative relationship on academic achievement. The results illustrated a positive but insignificant relationship among this two constructs. Overall, one significant relationship was found between the dimensions of justice and academic achievement.

RQ4) How aggression is related to dimensions of burnout?

The current study has predicted that verbal aggression was positively related to emotional exhaustion, cynicism, and reduced professional efficacy. The results

manifested that verbal aggression was positively related to emotional exhaustion and cynicism. However, results demonstrated that verbal aggression was negatively related to reduced professional efficacy. This finding was contrary to the study prediction. Overall, three significant results derived from the study findings; however, one of them was contrary to the prediction of this study.

RQ5) How aggression is related to academic achievement?

The study has predicted a negative relationship between verbal aggression and academic achievement. The results manifested an insignificant negative relationship between verbal aggression and academic achievement.

RQ6) How dimensions of burnout is related to academic achievement?

Emotional exhaustion was predicted to influence academic achievement negatively. The results illustrated an insignificant negative relationship among these constructs. Cynicism was suggested to impact academic achievement negatively. Similar to the findings of emotional exhaustion and academic achievement, the outcome for this relationship was negative but insignificant. Finally, the current work has anticipated that reduced professional efficacy was negatively related to academic achievement. The results indicated that this prediction was significant. Overall, one significant relationship was found among these constructs.

5.3 Implications

Useful implications are surfaced from the findings of this dissertation. As known providing fairness in classroom elicits lower levels of aggression (Chroy-Assad, 2002) and burnout (Uludag & Yaratan, 2011) and higher levels of academic achievement (Uludag & Yaratan, 2011). In practice, students perceive the procedures, distributions of grades, and communication among teacher-student is problematic. In order to minimize or eliminate these problematic areas, instructors should have clear and concise rule/hand book to follow guidelines set out by the university administrators. Hence, policies should be designed by the administrative units to underline and guide instructors. These policies should be accompanied by procedures to show how each justice/fairness perceptions should be conducted and conveyed. In order to achieve this, instructors should undertake continuous training programs and seminars to improve their communicative methods in order to manage the classroom. These programs or seminars should focus on classroom management and communication strategies (see Chory-Assad & Paulsel, 2004a). Furthermore, instructors should avoid exerting power or full control of the classroom and students. Some level of control is necessary however, instructors should avoid in deploying 'coercive and legitimate' use of power to gain control of the classroom (see Chory-Assad & Paulsel, 2004a). Conjointly, instructors' decision making process in regard to student centered approach is known to be related to the perceptions of justice/fairness (see Chory & McCroskey, 1999). Parallel to this thought administrators should foster the approach of student-centeredness to engage students more into their studies and to lead them to have higher levels of justice perceptions. Fostering this idea will help students to avoid anti-social behaviors (aggression) and this

may lead to more engagement and satisfaction in their studies. Inevitably this may elevate the level of academic achievements of students. Furthermore, there still is a dearth in understanding what is fair? And what is unfair? However, it is proven that students having multiple grading opportunities rather than relying on a single method that is embedded into the curriculum augments the perceptions of justice (cf. Chory-Assad & Paulsel, 2004a). Embedding such policies and procedures which will guide the instructors or practitioners to allocate better grading opportunities for students under the framework of curricular system to yield higher perceptions on justice/fairness.

The current study proposes that verbal aggression may be inherent in the educational context. Although the results are cannot yield causality among constructs, the findings are warranted. Recent study by Yaratan and Uludag (2012) has suggested that verbal aggression elevates the burnout levels of students. Granting the buffering effects of justice are not tested within the scope of this study, it is believed that justice policies and procedures will help in reducing the level of burnout of students. Additionally, motivating students externally will help them to avoid anti-social behaviors which in turn may reduce the burnout levels of students hence, increasing their achievement levels (cf. Uludag & Yaratan, 2011). Furthermore, according to Cehrnow and Chernow (1989), instructors should not be pulled into the conflict cycle that arouse from the aggressive behaviors from students. Particularly, instructors should assess if the aggressive behaviors are temporal or momentary. After the analysis of the behavior condition, instructors could utilize different strategies that are used to overcome the conflict. These strategies could be listed as reflection, collaboration, assertive commands, redirection and even humor.

As known, burnout syndrome subsists within the educational context (see Uludag & Yaratan, 2010). Students get burned-out for various reasons. These could be due to anti-social behaviors, lack of motivation, low engagement, heavy course loads, teacher-student relations, etc. Administrators or curriculum designers should incorporate methods or guidelines that will reduce factors increasing stress or burnout and make students more satisfied and engaged in their studies. In detail, as known engagement approaches (vigor, dedication and absorption) are considered as the antipode (opposite pole) of burnout syndrome (Uludag & Yaratan, 2010). Hence, providing students an environment that allows them to be more engaged in their studies will help them to have lower levels of burnout. More specifically, mentoring and counseling guidance will assist students to possess lower levels of burnout. This strategy is evident in the recent study of Uludag and Yaratan (2010).

5.4 Limitations and Avenues for Future Research

The current study possesses some limitations that should be noted. First, self-report measure is utilized to assess the academic achievements of students. This may lead to biased results. Although literature on this topic argues that (Churchill, Ford, Hartley, & Walker, 1985) self-report measure of performance does not lead to any bias, future studies should aim to collect achievement/performance indicators from the registrar of the institution or instructor evaluation. This may reduce the level of possible inflated results. Second, collection of cross-sectional data may possess the bias of common-method. Future studies should aim to obtain data with the use of cross-cultural, longitudinal designs or time-lagged methods to eliminate this issue.

Third, the data was collected at a single institution. This may create problems for the issue of generalizability. Although the sample size is sufficient, future studies should gather data from heterogeneous contexts like other higher institutions to eliminate or lower the problems associated with generalizability.

Fourth, convenience sampling procedure under the non-probability sampling technique was utilized for the purpose of data collection. Future studies should employ probability sampling procedure (i.e. random sampling method) to provide equal chance for students to be selected.

Fifth, important elements in education such as motivation, course-load, and instructor-student relations were not investigated within this study. Future research should incorporate these elements into this research model in order to shed a further light into our understanding and the relationships among the constructs examined in this study.

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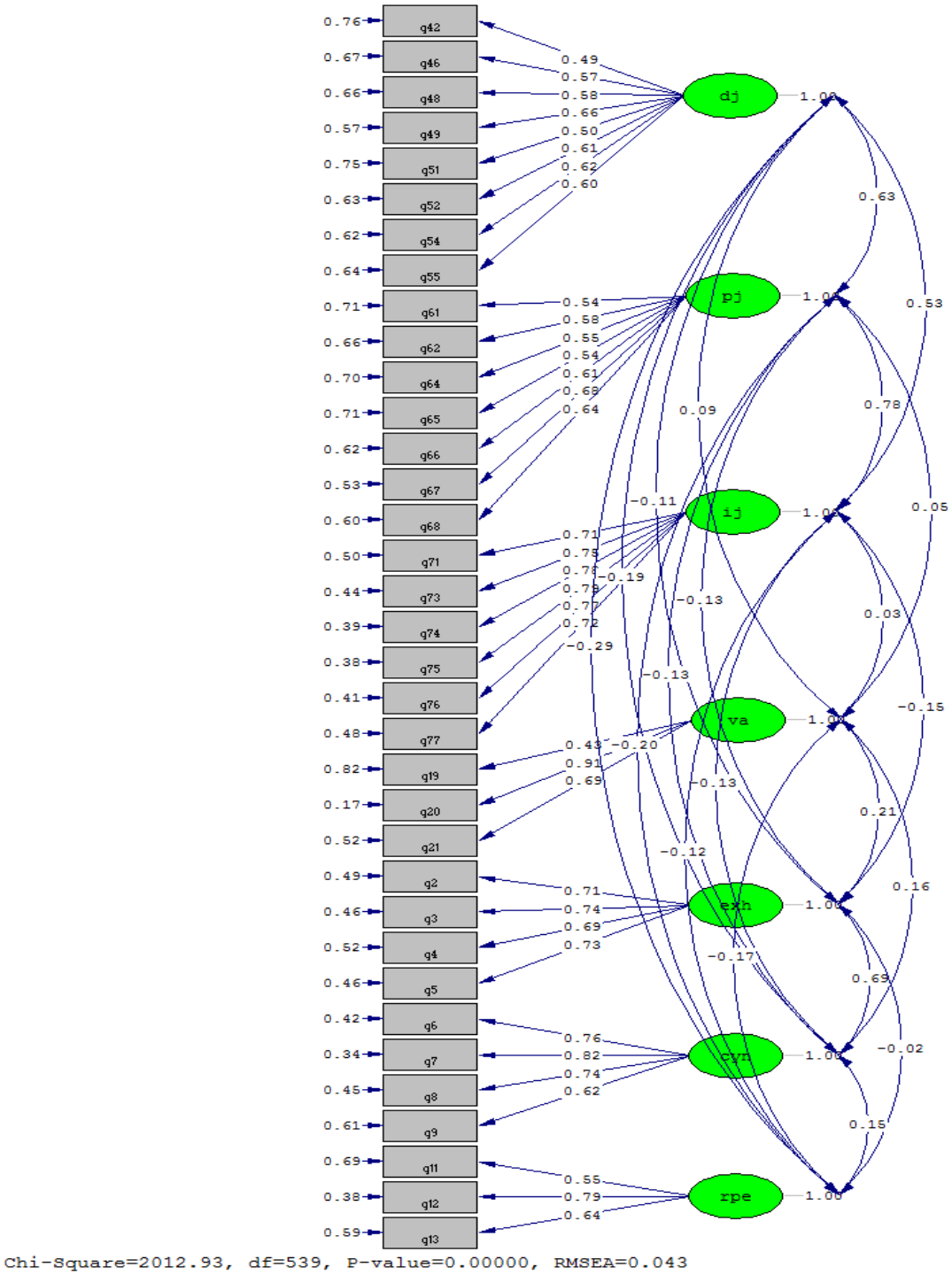
APPENDICES

Appendix A: LISREL Output for Confirmatory Factor Analysis (Parameter Estimates)



Chi-Square=2012.93, df=539, P-value=0.00000, RMSEA=0.043

Appendix B: LISREL Output for Confirmatory Factor Analysis (*t*-values)