

# A Meta-analytic for the Relationship between Personality Traits and Marital Adjustment

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## *Abstrak*

*Artikel ini menyajikan meta-analisis terkait hubungan antara tipe kepribadian berdasar five factors model (FFM) dan penyesuaian pernikahan. Studi ini mereview 17 kajian yang terdiri dari 12 artikel, 2 tesis, dan 3 disertasi. Hasil analisis menunjukkan hubungan yang lemah antara tipe kepribadian dan penyesuaian pernikahan. Koefisien korelasi berkisar antara 0,0006 hingga 0,099 pada tiap faktor kepribadian (-0.005 pada neuroticism, 0,021 pada extraversion, 0,0006 pada openness, 0,099 pada agreeableness, dan 0,045 pada conscientiousness).*

*Kata kunci: lima model faktor, meta-analisis, penyesuaian pernikahan*

## **Introduction**

Spousal relationships have long been an object of interest for psychologists. However, given the high divorce and separation rates that currently prevail as well as their consequences on individuals, their families and society at large (Ambert, 2005).

Intimate personal relationships play a central role in the lives of most people. Indeed, the quality and stability of these relationships have extremely important implications for psychological health and well-being, satisfying intimate relationships are associated with substantially elevated levels of general well-being and life satisfaction (Myers & Diener, 1995). For instance, married respondents are much more likely to describe themselves as "very happy" than are those who have never married (Lee, Seccombe, & Shehan, 1991; Veroff, Douvan, & Kulka, 1981). On

the other hand there are some experts estimate that roughly 50% of marriages ultimately end in separation or divorce (Amato, 2004). Divorce rates have increased precipitously in several societies in the last several decades (Cherlin, 1992; Goode, 1993; Popenoe, 1988; Jones, 1994).

Moreover, marital distress and instability lead to increased psychological and physical problems in both spouses and children (e.g., Bloom, Asher, & White, 1978; Emery, 1982; Glenn, 1990; Grych & Fincham, 1990). It is not surprising, therefore, that researchers have been interested in identifying factors that may influence the level of adjustment, satisfaction and stability in close interpersonal relationships.

One prominent intrapersonal factor is personality traits; the emotional, relational, experiential, attitudinal, and motivational styles of an individual that are assumed to be stable over time (Costa & McCrae, 1992). Many studies suggest that specific personality factors can predict marital out-

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comes. For example, personality factors were better predictors of marital instability measured 4 years later than demographic variables, such as the age, the educational level, or the history of previous divorces of the individual (Bentler & Newcomb, 1978).

The study of personality and close romantic relationships dates back to 1932 when Schiller published a paper on similar mating on mode and emotional traits. This paper was soon followed by other papers on assortative mating on personality characteristics (e.g., Hoffeditz, 1934; Willoughby, 1934; Terman & Bittenweiser, 1935a), and then in 1935 by the first papers linking an aspect of personality to marital satisfaction (Bernard, 1935; Terman & Bittenweiser, 1935b). Since that time, research in this area has grown rapidly. So for more than 70 years, personality variables have been a major focus of research studying couples' relationships to explain and predict relationship quality and stability including happiness, satisfaction and adjustment. Relationships between personality factors and marital outcomes have been observed using cross-sectional designs (e.g., Hjemboe & Butcher, 1991; Long & Andrews, 1990; Miller, Lefcourt, Holmes, Ware, & Saleh, 1986; Russell & Wells, 1994; Snyder & Regts, 1990) and longitudinal designs (Bentler & Newcomb, 1978; Karney & Bradbury, 1995; Kelly & Conley, 1987; Kurdek, 1991; Shaver & Brennan, 1992). The criterion variable was marital relationship.

#### *Basic Concepts, Definitions and the Ambiguity in Marital Constructs*

Many researchers labeled marital outcomes as marital adjustment instead of the marital satisfaction, quality, stability and success (e.g., Bouchard, Lussier & Sabourin, 1999), or by interchangeably way without specifying unique definitions

and conceptualizations. Also, some researchers have used marital quality and marital satisfaction interchangeably (e.g., Pittman & Lloyd, 1988). While a study of marital adjustment is not the same as a study of marital quality or satisfaction although the concepts may be closely related (Sabatelli, 1988). For as long as marital relationship has been assessed, there has also been considerable confusion and disagreement about the differences among the terms like marital adjustment, marital satisfaction, and marital quality (Snyder, Heyman, & Haynes, 2005; Heyman, Sayers, & Bellack, 1994).

#### *Marital adjustment and marital satisfaction*

Burgess and Cottrell (1939) defined marital adjustment as "the integration of the couple in a union in which the two personalities are not merely merged, or submerged, but interact to complement each other for mutual satisfaction and the achievement of common objectives", here adjustment expression includes; interaction paths (healthy or unhealthy, quality and quantity), communication patterns (effective or ineffective) and dealing with problems and conflicts, so marital adjustment like a process based on different social behavioral strategies, therefore when one spouse contact with his/her partner the result or outcome of that (marital adjustment) is marital satisfaction in general, and at the best situation reach to marital happiness. In addition to prior, marital adjustment construct suggests that it has been used most consistently to refer to "those processes that are presumed to be necessary to achieve a harmonious and functional marital relationship" (Locke, 1951; Spanier, 1976; Spanier and Cole, 1976). Also according to these researchers marital satisfaction is considering as a component of marital adjustment. There-

fore marital adjustment as the "process of adaptation of the husband and the wife in such a way as to avoid or resolve conflicts sufficiently so that the mates feel satisfied with the marriage and each other, develop common interests and activities, and feel that the marriage is fulfilling their expectations" (Locke, 1951). Marital Adjustment is also defined as a "process, the outcome of which is determined by the degree of trouble-some dyadic differences, interpersonal tensions and personal anxiety, dyadic satisfaction, dyadic cohesion and consensus on matters of importance to dyadic functioning" (Spanier and Cole, 1976). In this regard, then, Spanier's definition of adjustment is consistent with Locke and Wallace's in that it is "a process where insight into the level of adjustment achieved by a couple at a particular point in time is derived from information obtained from individuals about selected aspects of their marital relationship that are assumed to be important". Those aspects are dyadic satisfaction, dyadic cohesion, dyadic consensus and the affectional expression.

In general scientists treat marital satisfaction as a factor of marital adjustment; there exist possibly major differences between these two concepts about the unit of analysis. Because satisfaction is a subjective property of spouse, there are two kinds of marital satisfaction in a marriage, the husband's and the wife's, and they are conceptually distinct. As Jessie Bernard (1972) suggested, there are always two marriages in a family; the husband's marriage and the wife's marriage. Then, do these two marital satisfactions go hand in hand, or are they independent of each other?. Research has produced mixed findings. In general, the more satisfied one spouse is with the marriage, the more satisfied is the other, but the correlation between the husband's and the wife's

marital satisfactions is far from perfect (Spanier & Cole 1976). Thus in this context the researcher used the unit of analysis to determine the marital construct because there is intermixing of labels and marital outcome measures, so to solve that problem the scholars focused on the unit of analysis. For example, marital satisfaction refers to an individual's subjective impression of the relationship (Roach, Frazier & Bowden, 1981; Sabatelli, 1988). Thus, the appropriate unit of analysis is the individual's perception. Marital adjustment, however, has been used to refer to those processes that are presumed to be necessary to achieve a harmonious and fundamental marital relationship (Spanier, 1976; Sabatelli, 1988). Thus, the unit of analysis is the couple or relationship, therefore the current study interests in marital adjustment by finding the studies which used the couple or spouses as unit of analysis.

#### *The personality traits and marital adjustment*

Among the personality variables measured, introversion-extraversion and neuroticism are the most prominent. Whereas studies of introversion and extraversion yielded mixed results in predicting marital adjustment and quality (e.g., Bentler & Newcomb, 1978; Nemecek & Olson, 1996), more consistent results were found using emotional stability versus instability (i.e., neuroticism) as predictors (e.g., Eysenck & Wakefield, 1981; Kelly & Conley, 1987; Kurdek, 1998; Buss, 1991; Geist & Gilbert, 1996). For instance, the results of a broad longitudinal study conducted over 50 years on a sample of 300 couples revealed that the level of neuroticism of both spouses was a key determinant of their marital adjustment (Kelly & Conley, 1987). Neuroticism is similar to what some authors refer to as negative affectivity (e.g., Watson & Clark, 1984).

Furthermore, some evidence suggests that neuroticism has a strong genetic component and increases a couple's risk of divorce (e.g., Jockin, McGue, & Lykken, 1996). More specifically, results of a meta-analytic review (Karney & Bradbury, 1995) the spouses who divorced and the spouses who were dissatisfied with their union scored higher on neuroticism that was measured before their marriage; both researchers found the mean effect size for the predictive power of neuroticism for marital duration to be  $r=-0.22$  (seven studies) for women and  $r=-0.20$  (six studies) for men. In view of these effect sizes that, according to conventional criteria, are small to medium (e.g., Rosenthal, 1991), a recent prospective longitudinal study (Karney & Bradbury, 1997) of the development of marital (dis)satisfaction emphasized that, considering the huge predictive power of neuroticism, the influence of other personality traits in marital outcomes remains to be investigated, after controlling for the level of neuroticism. Significant relationships also were observed between marital adjustment and particular personality traits, such as psychoticism, agreeableness, and internal locus of control. A high level of psychoticism was negatively associated with marital adjustment, and the other two personality factors were positively associated (Russell & Wells, 1994; Smolen & Spiegel, 1987). Furthermore, personality factors such as perspective taking (the tendency to put oneself in another person's place), emotional expressiveness, and ambivalence in emotional expressiveness also were significant predictors of marital adjustment. The first two related positively to marital adjustment, and the last one related negatively (King, 1993; Long & Andrews, 1990).

While, outcomes of the personality factor of extraversion offered mixed re-

sults; a high level of extraversion was positively related (Richmond, Craig, & Ruzicka, 1991), negatively related (Bentler & Newcomb, 1978; Geist & Gilbert, 1996), and unrelated (Russell & Wells, 1994) to marital adjustment scores.

Some authors (e.g., Gottman, 1994) have argued that the impact of personality variables on relationships is tiny or insignificant. A study of Karney and Bradbury (1997) indicates that neuroticism is associated with initial levels of marital adjustment and had no additional effects on the rates of change in marital adjustment. Contrary to Karney and Bradbury's findings, which suggest that the influence of personality variables disappear over the time, the model of Schneewind and Gerhard (2002) presented an evidence that the personality traits still play a role over the time by a mediator variable (conflict resolution style) which links between personality traits and marital adjustment.

In sum, the results of many studies indicate that personality traits are related to self-reported marital relationship. However, few of these studies have used a comprehensive model of the personality (Kurdek, 1997). In many studies, only one or two personality traits were measured. Moreover, specific personality traits, like conscientiousness, were studied less frequently than others, like neuroticism. This situation creates problems for between-study comparisons and has led to an incomplete understanding of personality influences on marital adjustment. So the current study contributes to the understanding of the relationship between personality and marital adjustment by using the five-factor model of personality or the Big Five because many researchers believe this model is a comprehensive framework for organizing personality traits (Borkenau & Ostendorf, 1990; Digman, 1990; McCrae,

1991; Montag & Levine, 1994), also this model perhaps the current most prominent model of personality. The five-factor model assumes that normal personality is a multidimensional concept composed of five dimensions: (a) Neuroticism is the dimension underlying the chronic experience of distressing emotions; (b) extraversion measures energy and sociability; (c) openness implies imagination, curiosity, and liberal attitudes; (d) agreeableness measures trust, sympathy, and cooperation; and (e) conscientiousness encompasses a sense of competence, a sense of duty, a need for achievement, and organization (McCrae, 1991).

#### *The problem of study*

The inconsistencies in the bodies of research about couple outcomes and personality, lead to believe that more needs are required to better understand how the personality traits associate with marital relationship. Little is known about how personality could exert its influence on marital outcomes (Donnellan, Conger, & Bryant, 2004; Watson, Hubbard, & Wiese, 2000). So in this article, I examine the ability of general personality traits to predict the marital relationship focusing on marital adjustment. Therefore the current study has a main goal which it is; verifying the magnitude and direction of any existing effect of personality traits on marital adjustment, so the current study will examine the following hypothesis:

There is a relationship between personality traits and marital adjustment.

### **Method**

*Sample of Studies:* the current study searched for studies using these databases websites (EBSCO, PROQUEST, SAGE, SPRINGERLINK, PSYCLIT & JSTOR)

which included articles, thesis and dissertations, using the keywords personality traits, Big five factors and marital adjustment, satisfaction and quality, also the researcher used reference sections of all studies for additional relevant studies; the current study did not search for conference papers. Thus the sample of data points includes journal articles, masters' theses, and dissertations.

*Criteria for inclusion:* These studies included a total of 30,300 respondents with (15150 couples). The current study used several criteria for deciding which articles or study to include in the meta-analysis. First, study needed to have a sample that included both of spouses as subjects, the second; the subjects must be normal or not suffering from any mental illness. The third; the subjects must be married not dating or cohabiting.

*Meta-analysis procedures:* Hunter and Schmidt (1990) states there are eleven artifacts, but in the current study, only three artifacts will be correct; the errors of sampling, measurement error and direct range restriction. The steps undertaken in conducting the analysis and interpretation of data is as follows: (a) the process of coding of each study. General characteristics as the basis for encryption is the number of subjects, year of study, as well as the characteristics of the context of the subject, (b) transforming the values of  $F$ ,  $t$  and  $d$  to values of  $r$ , (c) Bare Bone meta-analysis to make corrections for errors of sampling, conducted by calculating the mean population correlation, calculating the variance of population correlation ( $\sigma^2r$ ), calculating the sampling error variance ( $\sigma^2e$ ), calculating the impact of sampling error, (d) correcting the errors of measurement, which is done by calculating the mean combined, calculating the real correlation of the population ( $\rho$ ), counting the sum of

the squared coefficients of variation ( $V$ ), calculating the amount of variance which refers to variations in artifacts, calculating the variance of correlations, and getting the value of the confidence interval and calculating the impact of variations in reliabilities.

#### *Data analysis and the results*

*Characteristics of study sample:* The samples that were examined in this study of meta-analysis had the characteristics as listed in Table 1.

Table 1  
Characteristics of study sample

The Year	The Author	The Sample Size	Unit of Analysis	The mean of length of marriage by years	Marital outcome
2005	Norm O'Rourke	208	Couple	40	Satisfaction
2010	Portia S. Dyrenforth, Deborah A. Kashy, M. Brent Donnellan, and Richard E. Lucas	5278	Couple	25	Satisfaction
2010	Portia S. Dyrenforth, Deborah A. Kashy, M. Brent Donnellan, and Richard E. Lucas	6554	Couple	21.4	Satisfaction
2008	Todd K. Shackelford, Avi Besser and Aaron T. Goetz	214	Couple	2	Satisfaction
2004	Krista S. Gattis and Sara Berns	180	Couple	10.28	Quality
2011	Hummara Akram and Najma I. Malik	60	Couple	15.2	Adjustment
1999	James Galezewski	200	Couple	15	Adjustment
2005	Meredith Marie Zoby	334	Couple	4	Adjustment
2006	Erik E. Nofle and Phillip R. Shaver	285	Couple	2	Quality
1999	Marie Therse Rogers	112	Couple	8	Satisfaction
2006	Abdallah Jad Mahmoud	344	Couple	-	Adjustment
2005	Diane B. Cook , Alex Casillas , Steven B. Robbins and Linda M. Dougherty	117	Couple	-	Adjustment
2008	Ashley S. Holland and Glenn I. Roisman	40	Couple	33	Quality
2009	Suvarna Joshi and Nutankumar S. Thingujam	60	Couple	2	Adjustment
2005	Dick P. H. Barelds	564	Couple	22	Quality
2011	Narges Razeghi, Masume Nikiju, Adis Kraskian Mujembari and Arine Zohrabi Masihi	200	Couple	-	Satisfaction
2009	Waleed mouhammad Eshehree	400	Couple	15.5	Adjustment
<b>Total</b>	30300 individual with 15150 couples	Mean = 1782 (891 couples) Sd = 3819 (1909 for couples)		Weighted mean for length of marriage = 21 years SD = 11 years	

According to table above the researcher could collect (17) studies that interested in the relationship between personality traits (which were measured by five-factor model) and marital adjustment, the sum of samples sizes for individuals was (30300) with (15150) couples, the mean was=891 couples (sd=1909), the weighted mean for length of marriage was 21 years (sd=11 years). In addition to that the sample of studies contained (7) studies which the marital construct was adjustment (41%), (6) for satisfaction (35%) and (4) for quality (24%), in this context the researcher used the unit of analysis to determine the marital construct.

#### *Transformation F values to t, d, and r values*

The researcher used the following equation to suitable transformation for studies which used *F* values, however all studies in the current sample contained (*r*) values expect two studies that contained (*F*) values, so to convert (*F*) value to (*r*) value, the researcher used the following equations

$$t = \sqrt{F}$$

$$d = 2t/\sqrt{N}$$

$$d = 2r/\sqrt{(1-r^2)}$$

$$r = d/\sqrt{(4+d^2)} \quad (1)$$

Gattis and Berns (2004) and Galezewski (1999) used simple regression for each personality factor to discover the role of personality traits in marital adjustment, and both of them got five values for (*F*), the transformation for (*F*) values to (*r*) values are shown in the following table 2.

And the following table presents the correlation coefficients between five factor model and marital outcomes for the samples' studies (Table 3).

#### *Sampling Error Correction (Bare Bone Meta Analysis)*

If the population is assumed as constant correlation between some studies, the best estimation for the correlation is not a simple average of correlation across studies, but it is a weighted average (Hunter & Schmidt, 1990). The best estimation for the population correlation by following equation:

The average of population correlation ( $\check{r}$ )

$$\check{r} = \frac{\sum (N_i r_i)}{\sum N_i} \quad (2)$$

The results of these calculations are in Table 4.

Table 2  
Transformation for (*F*) values to (*r*) values

The Year	The Author	Sample size	Personality Factors	<i>F</i>	<i>t</i>	<i>D</i>	<i>r<sub>xy</sub></i>
1999	James Galezewski	200	Neuroticism (N)	96.89	9.8433	1.5564	0.1549
			Extraversion (E)	1.345	1.1597	0.1834	0.0793
			Openness (O)	0.043	0.2074	0.027	0.0134
			Agreeableness (A)	124.93	11.177	2.8622	0.2521
			Conscientiousness (C)	25.07	5.007	1.0498	0.1947
2004	Krista S. Gattis and Sara Berns	180	Neuroticism (N)	17.99	4.2415	0.6926	0.1477
			Extraversion (E)	0.08	0.2828	0.0462	0.0229
			Openness (O)	1.53	1.2369	0.3248	0.1381
			Agreeableness (A)	11.65	3.4132	0.9752	0.2465
			Conscientiousness (C)	18.77	9.8433	1.5564	0.1549

Table 3  
r values for studies

The Year	The Author	Sample size	N	E	O	A	C
2008	Norm O'Rourke	208	-0.31	0.18	-0.05	n.a*	n.a
2010	Portia S. Dyrenforth, Deborah A. Kashy, M. Brent Donnellan, and Richard E. Lucas	5278	-0.176	0.121	-0.085	0.199	0.115
2010	Portia S. Dyrenforth, Deborah A. Kashy, M. Brent Donnellan, and Richard E. Lucas	6554	0.106	0.077	0.05	0.206	0.157
2008	Todd K. Shackelford, Avi Besser and Aaron T. Goetz	214	n.a	n.a	n.a	0.198	0.408
2004	Krista S. Gattis and Sara Berns	180	0.1477	0.0229	0.1381	0.2465	0.1549
2011	Hummara Akram and Najma I. Malik	60	n.a	0.24	0.09	n.a	0.28
1999	James Galezewski	200	0.1549	0.0793	0.0134	0.2521	0.1947
2005	Meredith Marie Zoby	334	-0.18	-0.02	0.17	0.44	0.01
2006	Erik E. Noffle and Phillip R. Shaver	285	-0.08	0.16	0.1	0.04	0.21
1999	Marie Therse Rogers	112	-0.26	-0.004	0.027	0.017	0.155
2006	Abdallah Jad Mahmoud	344	-0.185	0.223	0.006	0.05	0.218
2005	Diane B. Cook , Alex Casillas , Steven B. Robbins and Linda M. Dougherty	117	-0.44	0.39	0.17	0.44	0.34
2008	Ashley S. Holland and Glenn I. Roisman	40	-0.17	0.18	0.13	0.16	0.07
2009	Suvarna Joshi and Nutankumar S. Thingujam	60	-0.2	0.18	0.14	0.34	0.33
2005	Dick P. H. Barelds	564	-0.35	0.42	0.34	0.15	0.15
2011	Narges Razeghi, Masume Nikiju, Adis Kraskian Mujembari and Arine Zohrabi Masihi	200	-0.2	0.009	0.023	0.199	0.208
2009	Waleed mouhammad Eshehree	400	-0.39	0.283	0.158	0.556	0.384

\* n.a: the data not available.

Table 4  
Sampling Error Corrections

The Year	Sample size (S)	r <sub>N</sub>	r <sub>E</sub>	r <sub>O</sub>	r <sub>A</sub>	r <sub>C</sub>	S r <sub>N</sub>	S r <sub>E</sub>	S r <sub>O</sub>	S r <sub>A</sub>	S r <sub>C</sub>
2008	208	-0.31	0.18	-0.05	n.a*	n.a	-64.48	37.44	-10.4	n.a	n.a
2010	5278	-0.176	0.121	-0.085	0.199	0.115	-928.93	638.638	-448.63	1050.322	606.97
2010	6554	0.106	0.077	0.05	0.206	0.157	694.724	504.658	327.7	1350.124	1028.978
2008	214	n.a	n.a	n.a	0.198	0.408	n.a	n.a	n.a	42.372	87.312
2004	180	0.1477	0.0229	0.1381	0.2465	0.1549	26.586	4.122	24.858	44.37	27.882
2011	60	n.a	0.24	0.09	n.a	0.28	n.a	14.4	5.4	n.a	16.8
1999	200	0.1549	0.0793	0.0134	0.2521	0.1947	30.98	15.86	2.68	50.42	38.94
2005	334	-0.18	-0.02	0.17	0.44	0.01	-60.12	-6.68	56.78	146.96	3.34
2006	285	-0.08	0.16	0.1	0.04	0.21	-22.8	45.6	28.5	11.4	59.85
1999	112	-0.26	-0.004	0.027	0.017	0.155	-29.12	-0.448	3.024	1.904	17.36
2006	344	-0.185	0.223	0.006	0.05	0.218	-63.64	76.712	2.064	17.2	74.992
2005	117	-0.44	0.39	0.17	0.44	0.34	-51.48	45.63	19.89	51.48	39.78



The Year	Sample size (S)	$r_N$	$r_E$	$r_O$	$r_A$	$r_C$	$S r_N$	$S r_E$	$S r_O$	$S r_A$	$S r_C$
2008	40	-0.17	0.18	0.13	0.16	0.07	-6.8	7.2	5.2	6.4	2.8
2009	60	-0.2	0.18	0.14	0.34	0.33	-12	10.8	8.4	20.4	19.8
2005	564	-0.35	0.42	0.34	0.15	0.15	-197.4	236.88	191.76	84.6	84.6
2011	200	-0.2	0.009	0.023	0.199	0.208	-40	1.8	4.6	39.8	41.6
2009	400	-0.39	0.283	0.158	0.556	0.384	-156	113.2	63.2	222.4	153.6
<b>Total</b>	15150	-2.532	2.5412	1.4205	3.4936	3.3846	-880.47	1745.812	285.026	3140.152	2304.604
<b>Average</b>	891.18						-0.0581	0.115235	0.018814	0.207271	0.152119

According to Table 4., the estimations of population correlation average for the relationship between personality traits and marital adjustment are; (-0.058) for neuroticism (N), (0.115) for extraversion (E), (0.019) for openness (O), (0.207) for agreeableness (A) and (0.152) for conscientiousness (C).

The results of these calculations in table 5.

The variance of correlation across studies  $r_{xy}(\sigma^2r)$  is; (0.047) with ( $Sd=0.218$ ) for neuroticism, (0.023) with ( $Sd=0.152$ ) for extraversion, (0.041) with ( $Sd=0.201$ ) for openness, (0.019) with ( $Sd=0.139$ ) for agreeableness and (0.023) with ( $Sd=0.152$ ) for conscientiousness.

Variance of correlations across studies  $r_{xy}(\sigma^2r)$

$$\sigma^2r = \sum [N_i(r_i - \bar{r})^2] / \sum N_i \quad (3)$$

Table 5  
Variance of  $r_{xy}(\sigma^2r)$

The Year	$N(r_{xy} - \bar{r})^2$ neuroticism	$N(r_{xy} - \bar{r})^2$ extraversion	$N(r_{xy} - \bar{r})^2$ openness	$N(r_{xy} - \bar{r})^2$ agreeableness	$N(r_{xy} - \bar{r})^2$ conscientiousness
2008	13.19653	0.872454	0.984945	n.a	n.a
2010	447.6688	55.1132	450.8584	0.361044	7.272165
2010	49.82003	111.2245	68.34712	19.02727	161.5495
2008	9.19369	4.952006	n.a	8.389656	35.6233
2004	0.003515	0.094394	3.43289	10.93721	4.318922
2011	n.a	3.456	0.486	n.a	4.704
1999	4.798802	1.257698	0.035912	12.71088	7.581618
2005	10.8216	0.1336	9.6526	64.6624	0.0334
2006	1.824	7.296	2.85	0.456	12.5685
1999	7.5712	0.001792	0.081648	0.032368	2.6908
2006	11.7734	17.10678	0.012384	0.86	16.34826
2005	22.6512	17.7957	3.3813	22.6512	13.5252
2008	1.156	1.296	0.676	1.024	0.196
2009	2.4	1.944	1.176	6.936	6.534
2005	69.09	99.4896	65.1984	12.69	12.69
2011	8	0.0162	0.1058	7.9202	8.6528
2009	60.84	32.0356	9.9856	123.6544	58.9824
<b>Total</b>	720.8088	354.0855	617.2649	292.3126	353.2709
<b>Mean</b>	0.047578	0.023372	0.040744	0.019295	0.023318
<b>SD</b>	0.218124	0.152879	0.20185	0.138905	0.152703

*Variance of sampling error ( $\sigma^2e$ )*

The variance of correlation across studies  $r_{xy}$  ( $\sigma^2r$ ) contain two components these are; the variance of correlation in population ( $\sigma^2\rho$ ) and the variance of correlation in samples due to sampling error ( $\sigma^2e$ ), estimation of population correlation variance can be simply obtained by correcting the observed variance ( $\sigma^2r$ ) via removing variance of sampling error (Hunter & Schmidt, 1990). Sampling error variance can be calculated using the following equation:

$$\sigma^2e = (1 - \check{r}^2)/(\check{N} - 1) \quad (4)$$

Thus the values of variance for correlation due to sampling error are; (0.0011) for neuroticism, (0.0010) for extraversion, (0.0011) for openness, (0.0010) for agreeableness and (0.0011) for conscientiousness.

*Estimation of population correlation variance ( $\sigma^2\rho$ )*

We can estimate the population correlation variance ( $\sigma^2\rho$ ) or true variance by correcting observed variance or variance across studies ( $\sigma^2r$ ) via subtracting the variance of sampling error ( $\sigma^2e$ ). Population correlation variance can be calculated using the following equation:

$$\sigma^2\rho = \sigma^2r - \sigma^2e \quad (5)$$

So the values of population correlation variance ( $\sigma^2\rho$ ) are; (0.046) with ( $Sd=0.216$ ) for neuroticism, (0.022) with ( $Sd=0.149$ ) for extraversion, (0.039) with ( $Sd=0.199$ ) for openness, (0.018) with ( $Sd=0.135$ ) for agreeableness and (0.022) with ( $Sd = 0.149$ ) for conscientiousness.

*Confidence interval and nature of population correlation*

The confidence intervals for  $\check{r}$  (-0.058, 0.115, 0.019, 0.207 and 0.152) with  $\sigma_Q$

(0.216, 0.149, 0.199, 0.135 and 0.149) is:  $\check{r} \pm z \sigma_Q$ , so the confidence interval for neuroticism ( $0.364 \geq \check{r} \geq -0.481$ ), for extraversion ( $0.407 \geq \check{r} \geq -0.177$ ), for openness ( $0.408 \geq \check{r} \geq -0.371$ ), for agreeableness ( $0.472 \geq \check{r} \geq -0.058$ ) and for conscientiousness ( $0.444 \geq \check{r} \geq -0.140$ ).

The corrected standard deviations of (0.216) for neuroticism, (0.149) for extraversion, (0.199) for openness, (0.135) for agreeableness and (0.149) for conscientiousness can be compared with the means (-0.058, 0.115, 0.019, 0.207 and 0.152), according to the following:

For neuroticism:  $-0.058/0.216 = -0.27$ . That is, the mean correlation is nearly below zero of standard deviations. Thus, if the study population correlations are normally distributed, the probability of a zero or above-zero correlation is existence. So the qualitative nature of the relationship is near to zero or very weak: so the relationship between neuroticism and marital adjustment is very weak and negative according to criteria of Rosenthal (1991).

For extraversion:  $0.115/0.149 = 0.77$ . That is, the mean correlation is nearly one above zero of standard deviations. Thus, if the study population correlations are normally distributed, the probability of a zero or below-zero correlation is existence. So the qualitative nature of the relationship is weak to small: so the relationship between extraversion and marital adjustment is weak to small and positive.

For openness:  $0.019/0.199 = 0.09$ . That is, the mean correlation is nearly above zero of standard deviations. Thus, if the study population correlations are normally distributed, the probability of a zero or below-zero correlation is existence. So the qualitative nature of the relationship is near to zero or very weak: so the relationship between openness and marital adjustment is very weak and positive.

For agreeableness:  $0.207/0.135=1.53$ . That is, the mean correlation is nearly below two of standard deviations. Thus, if the study population correlations are normally distributed, the probability of a zero or below-zero correlation is unlikely. So the qualitative nature of the relationship is more than zero or small to medium: so the relationship between agreeableness and marital adjustment is small to medium and positive.

For conscientiousness:  $0.152/0.149=1.02$ . That is, the mean correlation is nearly one above zero of standard deviations. Thus, if the study population correlations are normally distributed, the probability of a zero or below-zero correlation is less likely. So the qualitative nature of the relationship is small to weak: so the relationship between conscientiousness and marital adjustment is small to weak and positive.

#### *The impact of sampling error*

The impact of sampling error can be determined by using the following equation:

$$\sigma^2\rho/\sigma^2r \quad (6)$$

Thus the study reliability for neuroticism is (0.98), for extraversion (0.95), for openness (0.97), for agreeableness (0.95) and for conscientiousness (0.95), so the percentages of variance refer to sampling error are;  $(1 - 0.98 = 0.02 = 2\%)$  for neuroticism,  $(1 - 0.95 = 0.05 = 5\%)$  for extraversion,  $(1 - 0.97 = 0.03 = 3\%)$  for openness,  $(1 - 0.95 = 0.05 = 5\%)$  for agreeableness and  $(1 - 0.95 = 0.05 = 5\%)$  for conscientiousness.

#### *Measurement error correction*

Correction of artifacts other than sampling error is measurement error. To make estimation of measurement error, the Table 6 presents measurement error

estimation worksheet including reliabilities of independent variables ( $r_{xx}$ ) that are neuroticism, extraversion, openness, agreeableness and conscientiousness, and dependent variable ( $r_{yy}$ ) which it is the marital adjustment.

#### *Average of attenuation factor ( $\tilde{A}$ )*

To correct for the artifacts, we first compute the mean compound artifact attenuation factors, by the following equation:

$$\tilde{A} = Ave(a) Ave(b) \quad (6)$$

So the attenuation factors ( $\tilde{A}$ ) for neuroticism ( $\tilde{A}_N=0.787684$ ), for extraversion ( $\tilde{A}_E=0.763347$ ), for openness ( $\tilde{A}_O=0.756860$ ), for agreeableness ( $\tilde{A}_A=0.636306$ ) and for conscientiousness ( $\tilde{A}_C=0.681154$ ).

#### *Population correlation after correcting by measurement error ( $\rho$ )*

Calculation of the true population correlation after the correction of measurement errors was performed by the following equations.

$$\rho = Ave(\rho_i) = \check{r}/\tilde{A} \quad (7)$$

Therefore, the actual population correlation ( $\rho$ ) when corrected by measurement error in both dependent and independent variables are; for neuroticism ( $\rho_N=-0.074$ ), for extraversion ( $\rho_E=0.151$ ), for openness ( $\rho_O=0.025$ ), for agreeableness ( $\rho_A=0.326$ ) and for conscientiousness ( $\rho_C=0.223$ ).

#### *The sum of the squared coefficients of variation (V)*

It is performed by the following equations:

$$V = SD^2(a)/Ave^2(a)+SD^2(b)/Ave^2(b) \quad (8)$$

So the sum of the squared coefficients of variation (V) are; for neuroticism ( $V_N=$

0.008631), for extraversion ( $V_E=0.007641$ ), for openness ( $V_O=0.013384$ ), for agreeableness ( $V_A=0.015553$ ) and for conscientiousness ( $V_C=0.012696$ ).

*The variance due to artifact variation ( $S^2_2$ )*

It is computed by the following equations:

$$S^2_2 = \rho^2 \tilde{A}^2 V \quad (9)$$

So the variances due to artifact variation ( $S^2_2$ ) are; for neuroticism ( $S^2_{2N}=0.00003$ ), for extraversion ( $S^2_{2E}=0.0001$ ), for openness ( $S^2_{2O}=0.000005$ ), for agreeableness ( $S^2_{2A}=0.0007$ ) and for conscientiousness ( $S^2_{2C}=0.0003$ ).

The variance in true score correlations ( $\text{Var}(\rho)$ )

$$\text{Var}(\rho) = \text{Var}(\rho_{xy}) - \rho^2 \tilde{A}^2 V / \tilde{A} \quad (10)$$

For neuroticism:  $\text{Var}(\rho)_N = 0.00004$ ,  
 $Sd = \sqrt{0.00004} = 0.006083$ .

For extraversion:  $\text{Var}(\rho)_E = 0.00013$ ,  
 $Sd = \sqrt{0.00013} = 0.01153$ .

For openness:  $\text{Var}(\rho)_O = 0.000006$ ,  
 $Sd = \sqrt{0.000006} = 0.002502$ .

For agreeableness:  $\text{Var}(\rho)_A = 0.00105$ ,  
 $Sd = \sqrt{0.00105} = 0.032405$ .

For conscientiousness:  $\text{Var}(\rho)_C = 0.00043$ ,  
 $Sd = \sqrt{0.00043} = 0.020768$ .

Thus the real population correlations ( $\rho$ ) were estimated to be (-0.074) for neuroticism with standard deviation (0.0061), (0.151) for extraversion with standard deviation (0.011), (0.025) for openness with standard deviation (0.0025), (0.326) for agreeableness with standard deviation (0.0324) and (0.223) for conscientiousness with standard deviation (0.0208).

*Confidence interval and nature of population correlation*

The confidence intervals for  $\check{r}$  (-0.074, 0.151, 0.025, 0.326 and 0.223) with  $\sigma\rho$  (0.0061, 0.011, 0.0025, 0.0324 and 0.0208) is:  $\check{r} \pm z \sigma\rho$ , so the confidence intervals for neuroticism ( $-0.062 \geq \check{r} \geq -0.086$ ), for extraversion ( $0.173 \geq \check{r} \geq -0.128$ ), for openness ( $0.030 \geq \check{r} \geq 0.020$ ), for agreeableness ( $0.389 \geq \check{r} \geq 0.262$ ) and for conscientiousness ( $0.264 \geq \check{r} \geq 0.183$ ).

The corrected standard deviations of (0.0061) for neuroticism, (0.011) for extraversion, (0.0025) for openness, (0.0324) for agreeableness and (0.0208) for conscientiousness can be compared with the means  $\check{r}$  (-0.074, 0.151, 0.025, 0.326 and 0.223), according to following:

For neuroticism:  $-0.074/0.0061 = -12.13$ . That is, the mean correlation is more than two standard deviations, below and far very well from zero. Thus, if the study population correlations are normally distributed, the probability of a zero or above-zero correlation is not existence. So the qualitative nature of the relationship is far from zero and weak: therefore the relationship between neuroticism and marital adjustment is weak and negative according to Rosenthal (1991).

For extraversion:  $0.151/0.011=13.1$ . That is, the mean correlation is more than two standard deviations, above and far very well from zero. Thus, if the study population correlations are normally distributed, the probability of a zero or below-zero correlation is not existence. Therefore the qualitative nature of the relationship is far from zero and small: so the relationship between extraversion and marital adjustment is small and positive.

For openness:  $0.025/0.0025=10$ . That is, the mean correlation is more than two standard deviations, above and far very well from zero. Thus, if the study population correlations are normally distributed, the probability of a zero or below-zero correlation is not existence. So the qualitative nature of the relationship is far from zero and weak: therefore the relationship between openness and marital adjustment is weak and positive.

For agreeableness:  $0.326/0.0324=10.05$ . That is, the mean correlation is more than two standard deviations, above and far very well from zero. Thus, if the study population correlations are normally distributed, the probability of a zero or below zero correlation is not existence. Therefore the qualitative nature of the relationship is more than zero or small to medium: therefore the relationship between agreeableness and marital adjustment is small to medium and positive.

For conscientiousness:  $0.223/0.0208=10.8$ . That is, the mean correlation is more than two standard deviations, above and far very well from zero. Thus, if the study population correlations are normally distributed, the probability of a zero or below-zero correlation is not existence. So the qualitative nature of the relationship is small to medium: therefore the relationship between conscientiousness and marital adjustment is small to medium and positive.

#### *The impact of measurement error*

The impact of measurement error can be determined by using the following equation:

$$\rho^2 \tilde{A}^2 V / \sigma^2 (\rho_{xy}) \times 100\% \quad (11)$$

For neuroticism = 0.06%, for extraversion = 0.43%, for openness = 0.011%, for

agreeableness = 3.46% and for conscientiousness = 1.26%.

#### *Direct range restriction correction*

To obtain the values of population correlation ( $r_p$ ) after removing the effect of direct range restriction, I will use the following equation:

$$r_p = \rho \sqrt{[(U^2 + \check{r}^2)(1 - U^2)]} \quad (13)$$

(Card, 2011, p. 141)

But  $U = \sigma\rho / \sigma_s$

So the population correlations ( $r_p$ ) after removing the effect of direct range restriction are; for neuroticism ( $r_{pN} = -0.0048$ ), for extraversion ( $r_{pE} = 0.0207$ ), for openness ( $r_{pO} = 0.0006$ ), for agreeableness ( $r_{pA} = 0.099$ ) and for conscientiousness ( $r_{pC} = 0.045$ ).

The values of ( $\check{r}$ ) generally are small and existence between the accepted area of null hypothesis and accepted area of alternative hypothesis, so the relationship between personality traits and marital adjustment is very weak (-0.005, 0.021, 0.0006, 0.099 and 0.045) for neuroticism, extraversion, openness, agreeableness and conscientiousness respectively, therefore the relationship between each of these traits and marital adjustment is very weak.

## **Discussion**

The purpose of this study was to examine the relationship between personality traits and marital adjustment. Meta analysis for (17) studies Findings indicate that there is a weak relationship between these variables. So this study partially support the main hypothesis of the current study and this consists with Gottman (1994) idea who has argued that the impact of personality variables on relationships is tiny or insignificant.

The findings of studies in this article were heterogeneous, we can notice that the range of  $r$  was from (-0.44 to 0.15 for  $N$ ), (-0.004 to 0.42 for  $E$ ), (-0.09 to 0.34 for  $O$ ), (0.02 to 0.56 for  $A$ ) and (0.01 to 0.41 for  $C$ ), so the studies in this article were heterogeneous, because; the characteristics of couples in samples of the studies are dissimilar and some data for these characteristic is not available; for example the age, gender, number of children, the income level and education level may be play a role in the relationship between personality traits and marital adjustment as a mediator variables, in addition to another demographic and psychological variables. Moreover the number of primary studies in this field still few especially which take in the considerations the mediator variables, in addition to that, the studies which were included in this article come from different countries (USA, Netherlands, Canada, Germany, India, Iran and Saudi Arabia) so the cultural settings not similar; that play an important role in the marital adjustment process, in this regard some researches has analyzed the relationships among gender roles (which related to interaction between culture and personality traits) and marital adjustment, most studies address personality traits such as masculinity, femininity and androgynous characteristics in relation to marital adjustment and satisfaction (Campbell & Snow, 1992; Cooper, Chassin, Braver, Zeiss & Khavari, 1986; Juni & Grimm, 1993; Zammichieli, Gilroy & Sherman, 1988). In general, an increase in the husband's femininity (similar to agreeableness), being more expressive and nurturant (providing physical and emotional care), is related to increase in the wife's marital satisfaction and his own (Campbell & Snow, 1992). However, the personality traits might be affect marital

adjustment by indirect ways such as via communication patterns and solving problems styles.

## Conclusion

The values of sampling error variance showed that the percentage of variance due to sampling error is small (2%, 5%, 3%, 5% and 5%) for neuroticism, extraversion, openness, agreeableness and conscientiousness respectively, so these percentage suggests the small possibility of bias due to error in sampling. While the values of measurement error variance in both independent and dependent variables is equal to (0.00003, 0.0001, 0.000005, 0.0007 and 0.0003) and the values of population variance were estimated to (0.046, 0.022, 0.039, 0.018 and 0.022), for neuroticism, extraversion, openness, agreeableness and conscientiousness respectively, thus when the variance of measurement error compared with the population variance due to measurement error variance (0.06%, 0.43%, 0.011%, 3.46% and 1.26%) they are small, and smaller than the impact of sampling error (2%, 5%, 3%, 5% and 5%), but although these percentages (0.06%, 0.43%, 0.011%, 3.46% and 1.26%) are very small they suggest the possibility of bias due to measurement error. Moreover, the values of population correlation before direct range restriction correction were (-0.074) for neuroticism, (0.151) for extraversion, (0.025) for openness, (0.326) for agreeableness and (0.223) for conscientiousness, and after correction were (-0.005, 0.021, 0.0006, 0.099 and 0.045) so the percentages of direct range restriction artifacts are (6.75%, 13.90%, 2.4%, 30.36% and 20.17%) they are small and big values, so we can consider the relationship between personality traits and marital adjustment is very weak.

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