

MSP Research Note

RDQ Reliability, Validity and Norms

Introduction

This research note describes the technical properties of the RDQ. Evidence for the reliability and validity of the RDQ is presented against some of the key criteria in the EFPA Review Model for the Description and Evaluation of Psychological Tests (Bartram, 2002). The EFPA Review Model was produced to support and encourage the process of harmonising the reviewing of tests. It provides a standard set of criteria to assess the quality of tests. These cover the common areas of test review such as norms, reliability, and validity.

Reliability

Internal consistency reliabilities

Table 1 presents internal consistency estimates based on Cronbach's Coefficient Alpha together with raw and Sten score SEMs for RDQ. The sample is the standardisation group of over 30,000 respondents described in the norms section below.

The RDQ can be described as having excellent internal consistency reliability based on the EFPA Review Model criteria. The RDQ has a median scale reliability of 0.83 which is defined as excellent in the EFPA Review Model. The reliabilities range from 0.68 to 0.86. One scale falls into the category defined as adequate, two scales are in the category defined as good, and the remaining nine scales are in the category defined as excellent.

Table 1. RDQ internal consistency reliabilities (N = 30,496)

Scale	Alpha	Mean	SD	Raw Score SEM	Sten Score SEM
Autonomy	0.83	18.79	6.88	2.84	0.80
Control	0.81	14.28	6.73	2.93	0.84
Commitment	0.81	20.55	6.27	2.73	0.84
Relatedness	0.77	18.08	6.21	2.98	0.94
Responsibilities	0.86	17.61	7.68	2.87	0.75
Communication	0.85	17.60	7.19	2.78	0.82
Disagreements	0.68	13.78	5.57	3.15	1.13
Conflict Resolution	0.83	16.38	7.00	2.89	0.81
Attraction	0.86	21.16	7.14	2.67	0.80
Affection	0.86	20.02	7.34	2.75	0.77
Romance	0.75	17.46	5.52	2.76	0.95
Sex	0.85	21.99	7.17	2.78	0.85

The RDQ scale raw score SEMs range from 2.67 to 3.15 with a mean SEM of 2.84. This is equivalent to a Sten score SEM of approximately 1. In other words, there is a 68% likelihood that the person's true score on one of the relationship scales will lie one Sten either side of the observed score.

Construct Validity

Scale intercorrelations

Table 2 shows the intercorrelations of the RDQ scales. The sample is the standardisation group of over 30,000 respondents described in the norms section below.

The intercorrelations range from 0.83 to -0.87 with a median scale intercorrelation of 0.53. About one third of the correlations range from -0.54 to 0.54. This suggests a moderate degree of independence between the scales. The strongest correlations are within the two statistical factors – Interacting and Supporting and Sex and Romance – that were identified by factor analysis (See Table 4).

Table 2. Intercorrelations of RDQ scales (N = 30,496)

	Control	Commitment	Relatedness	Responsibilities	Communication	Disagreements	Conflict Resolution	Attraction	Affection	Romance	Sex
Autonomy	-0.87	0.57	0.62	0.52	0.69	-0.63	0.69	0.41	0.54	0.44	0.27
Control	1.00	-0.58	-0.64	-0.53	-0.71	0.62	-0.70	-0.43	-0.55	-0.45	-0.27
Commitment		1.00	0.73	0.54	0.77	-0.59	0.69	0.65	0.76	0.70	0.43
Relatedness			1.00	0.63	0.83	-0.67	0.68	0.65	0.76	0.71	0.48
Responsibilities				1.00	0.63	-0.56	0.52	0.48	0.58	0.58	0.32
Communication					1.00	-0.66	0.77	0.69	0.80	0.72	0.47
Disagreements						1.00	-0.58	-0.51	-0.60	-0.54	-0.41
Conflict Resolution							1.00	0.50	0.63	0.54	0.33
Attraction								1.00	0.79	0.71	0.70
Affection									1.00	0.77	0.56
Romance										1.00	0.51
Sex											1.00

Standard Error of Difference

The Standard Error of Difference (SEd) helps us determine the size of the gap that you need to see between a person’s scores on any two scales before you can conclude that the difference is real – for example, a person is more satisfied with his or her partner’s behavior in one area than another area.

The SEd depends on the reliability of the scales – the higher the reliability the smaller the SEd is. If there are two full SEds between the scores on two scales, then there is a 95% likelihood that there is a real difference.

The SEds for the scales range from 1.07 to 1.51 with a mean of 1.23. So a sten score difference of 3 is necessary before you can infer that a person is more satisfied with their partner’s behavior in one area than another.

Table 3. SEd of RDQ scales (N = 30,496)

	Control	Commitment	Relatedness	Responsibilities	Communication	Disagreements	Conflict Resolution	Attraction	Affection	Romance	Sex
Autonomy	1.16	1.16	1.23	1.10	1.15	1.38	1.14	1.13	1.11	1.24	1.17
Control		1.19	1.26	1.13	1.17	1.41	1.17	1.16	1.14	1.27	1.20
Commitment			1.26	1.13	1.17	1.41	1.17	1.16	1.14	1.27	1.20
Relatedness				1.20	1.25	1.47	1.24	1.23	1.22	1.34	1.27
Responsibilities					1.11	1.36	1.10	1.10	1.07	1.21	1.13
Communication						1.40	1.15	1.15	1.12	1.25	1.18
Disagreements							1.39	1.38	1.37	1.48	1.41
Conflict Resolution								1.14	1.12	1.25	1.17
Attraction									1.11	1.24	1.17
Affection										1.22	1.15
Romance											1.27

Factor analysis

Principal factors extraction with oblique rotation was performed on the RDQ scales on the RDQ standardisation sample of over 30,000 respondents. Two factors were extracted for the combined sample of men and women, and the same two factors emerged when the extraction was performed separately for men and women. The two extracted factors with eigenvalues over 1 accounted for 75% of the variance.

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.94, well above 0.6 required for a good factor analysis. Communalities ranged from 0.52 to 0.85 with a median value of 0.76 indicating that the scales were well-defined by the factor solution.

With a cut of 0.45 for inclusion of a scale in the interpretation of a factor, all the scales loaded on one of the two factors. It was decided to use oblique rotation because of the relatively high correlations between the scales.

Table 4 shows the loadings of the RDQ scales on the factors, communalities, and percents of variance and covariance. The scales have been ordered and grouped by size of loading to facilitate interpretation, and loadings under 0.45 (20% of variance) are not shown.

In the RDQ computer-generated report, the first factor is labelled Interaction and Support, and the second factor is labelled Sex and Romance.

Table 4. Rotated matrix for RDQ scales principal factors extraction, oblique rotation (N = 30,496)

Scale	Factor ₁	Factor ₂	Communality
Autonomy	0.99		0.83
Control	-0.99		0.83
Conflict Resolution	0.81		0.72
Communication	0.67		0.85
Disagreements	-0.66		0.62
Relatedness	0.58		0.78
Responsibilities	0.57		0.52
Commitment	0.52		0.72
Sex		0.89	0.67
Attraction		0.87	0.83
Romance		0.70	0.74
Affection		0.67	0.83
Percent of variance	63.78	10.81	
Percent of covariance	85.50	14.50	

Note. Loadings under 0.45 are omitted.

RDQ Scales and Demographics

Tables 4 - 5 show some statistically significant differences in relationship satisfaction related to age, gender, education, number of children, and income, but the magnitude of these differences is very small. These correlations are based on respondents from the USA in the standardisation sample.

On age, the data suggests that a person's satisfaction with their partner's behaviors declines with age. However, the highest correlation between age and one of the RDQ variables is -0.18.

On gender, men tend to be more satisfied with the amount of work women do in the relationship ($r = 0.18$) but tend to be less satisfied with the sexual side of the relationship ($r = -0.19$).

Table 4. Correlations of respondent's age, gender, education, number of children and income with RDQ scales (N = 11,204)

Scale	Age (Sig.)		Gender (Sig.)		Educ. (Sig.)		Children (Sig.)		Income (Sig.)	
RDQ Total Score	-0.18	0.00	-0.02	0.01	0.04	0.00	0.20	0.00	-0.04	0.00
Factor ₁	-0.11	0.00	0.01	0.29	0.06	0.00	0.21	0.00	0.01	0.24
Factor ₂	-0.18	0.00	-0.08	0.00	0.04	0.00	0.18	0.00	-0.05	0.00
Autonomy	-0.04	0.00	-0.04	0.00	0.08	0.00	0.15	0.00	0.03	0.00
Control	0.07	0.00	0.02	0.03	-0.08	0.00	-0.14	0.00	-0.03	0.00
Commitment	-0.14	0.00	-0.03	0.00	0.04	0.00	0.16	0.00	-0.04	0.00
Relatedness	-0.17	0.00	-0.01	0.12	0.02	0.01	0.19	0.00	-0.04	0.00
Responsibilities	-0.09	0.00	0.18	0.00	0.05	0.00	0.21	0.00	0.05	0.00
Communication	-0.13	0.00	0.01	0.16	0.05	0.00	0.19	0.00	-0.02	0.10
Disagreements	0.00	0.88	0.00	0.69	-0.08	0.00	-0.18	0.00	-0.08	0.00
Conflict Resolution	-0.09	0.00	-0.04	0.00	0.04	0.00	0.15	0.00	-0.02	0.05
Attraction	-0.17	0.00	-0.07	0.00	0.05	0.00	0.18	0.00	-0.05	0.00
Affection	-0.15	0.00	0.00	0.98	0.05	0.00	0.21	0.00	-0.02	0.08
Romance	-0.14	0.00	0.02	0.02	0.05	0.00	0.16	0.00	-0.01	0.48
Sex	-0.18	0.00	-0.19	0.00	-0.01	0.46	0.07	0.00	-0.09	0.00

Gender was coded 1 for female and 2 for male
Sample based on USA respondents, Sig. (2-tailed)

On education, individuals who are more educated appear to give their partners more autonomy and freedom ($r = 0.08$), and also appear to handle disagreements better ($r = -0.08$).

On children, the median correlation between the RDQ variables and education level shows that couples who have children are more satisfied with their partner's behaviors than childless couples (median $r = 0.18$).

On income, the data suggests that people who have higher incomes have slightly fewer disagreements ($r = -0.08$) but are less satisfied with the sexual side of the relationship ($r = -0.09$).

Table 5. Correlations of partner's age, gender, education, number of children, and income with RDQ scales (N = 10,575)

Scale	Age		Gender		Education		Children		Income	
RDQ Total Score	-0.19	0.00	0.02	0.03	0.05	0.00	0.21	0.00	0.00	0.66
F1 Support	-0.13	0.00	-0.01	0.30	0.08	0.00	0.21	0.00	0.03	0.00
F2 Desirability	-0.18	0.00	0.07	0.00	0.04	0.00	0.18	0.00	0.01	0.61
Autonomy	-0.04	0.00	0.04	0.00	0.08	0.00	0.15	0.00	0.07	0.00
Control	0.08	0.00	-0.02	0.03	-0.07	0.00	-0.14	0.00	-0.03	0.00
Commitment	-0.16	0.00	0.04	0.00	0.04	0.00	0.17	0.00	0.00	0.86
Relatedness	-0.18	0.00	0.01	0.26	0.03	0.00	0.20	0.00	-0.01	0.13
Responsibilities	-0.11	0.00	-0.19	0.00	0.09	0.00	0.21	0.00	0.01	0.52
Communication	-0.15	0.00	-0.02	0.11	0.06	0.00	0.20	0.00	0.00	0.99
Disagreements	0.01	0.44	0.00	0.99	-0.09	0.00	-0.18	0.00	-0.12	0.00
Conflict Resolution	-0.11	0.00	0.05	0.00	0.05	0.00	0.15	0.00	0.02	0.07
Attraction	-0.16	0.00	0.07	0.00	0.04	0.00	0.18	0.00	0.00	0.74
Affection	-0.15	0.00	-0.01	0.50	0.05	0.00	0.22	0.00	0.01	0.36
Romance	-0.15	0.00	-0.03	0.01	0.06	0.00	0.16	0.00	0.02	0.02
Sex	-0.16	0.00	0.20	0.00	-0.02	0.07	0.08	0.00	-0.01	0.44

Gender of partner was coded 1 for female and 2 for male
Sample based on USA respondents, Sig. (2-tailed)

Norms

The RDQ normative sample is based on an international sample of over 30,000 respondents who took the RDQ online test over a 2 year period at the website www.relatebetter.com.

Table 6 shows the gender and age characteristics of the sample. Seventy one percent of the sample was women and 21% was men. The normative sample includes respondents from 16 to over 65 years of age. Nearly two thirds of the sample was between the ages of 21 and 40.

Table 6. Gender and age characteristics of RDQ standardisation sample (N = 30,497)

Age	Female	Percent	Male	Percent	Total	Percent
16-20	3,325	10.9	708	2.3	4,033	13.2
21-30	9,808	32.2	2,068	6.8	11,876	38.9
31-40	6,281	20.6	1,836	6.0	8,117	26.6
41-50	3,661	12.0	1,250	4.1	4,911	16.1
51-65	1,012	3.3	476	1.6	1,488	4.9
65+	31	0.1	41	0.1	72	0.2
Total	24,118	79.1	6,379	20.9	30,497	100.0

Table 7 shows the country of origin of the respondents. The majority of the respondents were from the United Kingdom and the United States. Forty percent of respondents were from the United Kingdom and Ireland, 37% from the United States of America, 12% from Australia and New Zealand, 7% from Canada, and the remainder from the rest of the world.

The relationship status of respondents in the normative sample is shown in Table 8. The majority of the sample (70%) described themselves as with a partner, 18% said they were married, 5% said they were single, and 1% said they were divorced.

Table 7. Country origin of respondents in RDQ international standardisation sample (N = 30,497)

Country	Frequency	Percent
UK and Ireland	12,187	40.0
USA	11,204	36.7
Australia and New Zealand	3,662	12.0
Canada	2,100	6.9
Rest of the world	1,344	4.4
Total	30,497	100

Table 8. Relationship status of respondents in RDQ international standardisation sample (N = 30,497)

Relationship Status	Frequency	Percent
With a Partner	21,445	70.3
Married	5,615	18.4
Single	1,700	5.6
Separated	1,376	4.5
Divorced	320	1.0
Widowed	41	.1
Total	30,497	100.0

Table 9 shows how long respondents had been in a relationship. Nearly 40% had been with their partner for between one and five years, and about 30% had been with their partner for up to one year.

Table 9. Length of relationship of respondents in RDQ international standardisation sample (N = 30,497)

Length of relationship	Frequency	Percent
0-3 Months	1,376	4.5
Over 3 Months and up to 1 year	8,343	27.4
Over 1 year and up to 5 years	11,841	38.8
Over and up to 10 years	4,640	15.2
Over 10 and up to 15 years	2,000	6.6
Over 15 and up to 25 years	1,618	5.3
Over 25 years	679	2.2
Total	30,497	100.0

The majority of respondents (61%) in the normative sample reported that they had no children, 28% of the sample had one or two children, the remainder had three or more children.

Table 10. Size of families of respondents in RDQ international standardisation sample (N = 30,497)

Number of children	Frequency	Percent
0	18,638	61.1
1	4,386	14.4
2	4,306	14.1
3	1,919	6.3
4	757	2.5
More than 4	491	1.6
Total	30497	100.0

Norms for the RDQ are shown in Tables 11 - 13.

Table 11. RDQ general population norms (N = 30,497)

Scale	1	2	3	4	5	6	7	8	9	10	Mean	SD
Autonomy	0-3	4-7	8-10	11-14	15-18	19-22	23-25	26-28	29-30	31-32	18.79	6.87
Control	0-1	2-4	5-6	7-9	10-13	14-17	18-20	21-24	25-27	28-32	14.28	6.73
Commitment	0-6	7-10	11-13	14-16	17-20	21-23	24-26	27-29	30-31	32	20.55	6.27
Relatedness	0-5	6-8	9-11	12-14	15-17	18-21	22-24	25-27	28-29	30-32	18.08	6.21
Responsibilities	0-1	2-4	5-8	9-13	14-18	19-21	22-24	25-27	28-30	31-32	17.61	7.68
Communication	0-3	4-5	6-8	9-12	13-16	17-20	21-24	25-27	28-30	31-32	17.00	7.19
Disagreements	0-2	3-4	5-7	8-10	11-13	14-16	17-18	19-21	22-24	25-32	13.78	5.57
Conflict Resolution	0-2	3-5	6-8	9-12	13-15	16-19	20-23	24-26	27-29	30-32	16.38	7.00
Attraction	0-5	6-9	10-13	14-16	17-20	21-25	26-28	29-30	31	32	21.16	7.14
Affection	0-4	5-7	8-11	12-15	16-19	20-24	25-27	28-30	31	32	20.02	7.34
Romance	0-6	7-8	9-11	12-14	15-16	17-19	20-22	23-25	26-28	29-32	17.46	5.52
Sex	0-5	6-9	10-13	14-18	19-22	23-26	27-28	29-30	31	32	21.99	7.17

Table 12. RDQ female population norms (N = 24,118)

Scale	1	2	3	4	5	6	7	8	9	10	Mean	SD
Autonomy	0-3	4-7	8-11	12-15	16-19	20-22	23-25	26-28	29-30	31-32	18.99	6.93
Control	0-1	2-3	4-6	7-9	10-13	14-17	18-20	21-24	25-27	28-32	14.19	6.81
Commitment	0-6	7-10	11-13	14-17	18-20	21-23	24-26	27-29	30-31	32	20.69	6.26
Relatedness	0-5	6-7	8-10	11-14	15-17	18-21	22-24	25-27	28-29	30-32	18.08	6.31
Responsibilities	0-1	2-3	4-7	8-12	13-17	18-21	22-24	25-27	28-30	31-32	16.83	7.90
Communication	0-2	3-5	6-8	9-12	13-16	17-20	21-24	25-28	29-30	31-32	16.98	7.30
Disagreements	0-2	3-4	5-7	8-10	11-13	14-16	17-19	20-21	22-24	25-32	13.80	5.62
Conflict Resolution	0-2	3-5	6-8	9-12	13-16	17-19	20-23	24-26	27-29	30-32	16.55	7.08
Attraction	0-5	6-9	10-13	14-17	18-21	22-25	26-28	29-30	31	32	21.47	7.09
Affection	0-4	5-7	8-11	12-15	16-20	21-24	25-27	28-30	31	32	20.05	7.39
Romance	0-5	6-8	9-11	12-14	15-16	17-19	20-22	23-25	26-28	29-32	17.37	5.64
Sex	0-6	7-10	11-14	15-19	20-23	24-26	27-29	30	31	32	22.70	6.85

Table 13. RDQ male population norms (N = 6,379)

Scale	1	2	3	4	5	6	7	8	9	10	Mean	SD
Autonomy	0-3	4-6	7-10	11-14	15-17	18-21	22-24	25-27	28-29	30-32	18.04	6.59
Control	0-2	3-4	5-7	8-10	11-13	14-17	18-20	21-24	25-27	28-32	14.64	6.42
Commitment	0-6	7-9	10-13	14-16	17-19	20-23	24-26	27-28	29-30	31-32	20.04	6.26
Relatedness	0-6	7-8	9-11	12-14	15-17	18-20	21-23	24-26	27-28	29-32	18.12	5.79
Responsibilities	0-5	6-10	11-14	15-17	18-20	21-23	24-25	26-28	29-30	31-32	20.57	5.90
Communication	0-3	4-6	7-9	10-12	13-16	17-20	21-24	25-27	28-29	30-32	17.05	6.77
Disagreements	0-2	3-4	5-7	8-10	11-13	14-15	16-18	19-21	22-23	24-32	13.74	5.38
Conflict Resolution	0-2	3-5	6-8	9-11	12-15	16-18	19-22	23-25	26-28	29-32	15.71	6.66
Attraction	0-4	5-8	9-11	12-15	16-19	20-23	24-27	28-30	31	32	19.95	7.21
Affection	0-4	5-8	9-11	12-15	16-19	20-23	24-27	28-29	30-31	32	19.90	7.17
Romance	0-7	8-10	11-12	13-14	15-16	17-19	20-22	23-25	26-27	28-32	17.78	5.04
Sex	0-2	3-6	7-10	11-14	15-19	20-23	24-27	28-29	30-31	32	19.31	7.72

References

Bartram, D. (2002). *EFPA Review Model for the Description and Evaluation of Psychological Tests: Notes for Reviewers*. www.efpa.be: European Federation of Psychologists' Associations.

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