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The Revised Turkish Francis Psychological Type Scales: testing the factor structure, internal consistency reliability and test–retest reliability among university students

Mustafa Tekke [a], Leslie J. Francis [b,c], Ursula McKenna [c] and Andrew Village [d]

[a]Department of Psychology and Counseling, Dŭzce University Turkey, Orhangazi, Turkey; [b]Centre for Research in Intellectual and Developmental Disabilities (CIDD), University of Warwick, Coventry, UK; [c]World Religions and Education Research Unit, Lincoln Bishop University, Lincoln, UK; [d]School of Humanities, York St John University, York, UK

ABSTRACT

This study was designed to test the factor structure, internal consistency reliability and test–retest reliability of the Revised Turkish Francis Psychological Type Scales among a sample of 110 university students. These data supported the four-factor structure (with one-item cross-loading) and demonstrated satisfactory internal consistency reliability (with room for further improvement on the perceiving process). The test–retest data supported the reliability of the instrument for generating group profiles.

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Francis Psychological Type Scales; test–retest reliability; factor structure; psychometrics

Introduction

Conceptualising psychological-type theory

Unlike the Eysenckian three-dimensional model of personality (Eysenck and Eysenck 1975, 1976) and the big five-factor model of personality as proposed by Costa and McCrae (1985), psychological-type theory does not purport to offer a summary or a wide overview of human individual differences. Rather, psychological-type theory is tightly focused on cognitive functioning. If psychological-type theory is construed as a model of personality, this view of personality avoids contamination with two other distinct constructs conceptualised as psychopathology and character. On the other hand, the Eysenckian three-dimensional model of personality intentionally conflates personality with psychopathology as suggested deliberately by two of the personality constructs (neuroticism and psychoticism). The big five-factor model (openness, conscientiousness, extraversion, agreeableness and neuroticism) perhaps unintentionally conflates personality with character (Lloyd 2015).

At its core, as originally developed by Jung (1971), psychological-type theory distinguishes between two core psychological processes (characterised as perceiving and as judging) and between two core orientations (characterised as extraversion and as

CONTACT Leslie J. Francis leslie.francis@warwick.ac.uk Centre for Research in Intellectual and Developmental Disabilities (CIDD), The University of Warwick, Coventry CV4 8EE, UK

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introversion). Each of these terms needs careful nuancing within the classic formulations of Jung (1971) to avoid confusion with more general colloquial usage. In psychological-type theory, the perceiving process concerns the way in which the human psyche gathers information (it is the irrational process), while the judging process concerns the way in which the human psyche evaluates information (it is the rational process). In psychological-type theory, introversion and extraversion are concerned with the source of psychological energy rather than with social engagement.

In terms of the perceiving process, Jung (1971) identified two contrasting approaches or functions that he styled sensing and intuition, and he observed that individuals tend to prefer and to develop one of those functions more strongly than the other. A psychological preference for sensing is recognised in the following characteristics. Sensing types develop a keen awareness of the present experience. They have acute powers of observation, good memory for facts and details, the capacity for realism and the ability to see the world as it is. They rely on experience rather than theory. They put their trust in what is known and in the conventional. A psychological preference for intuition is recognised in the following characteristics. Intuitive types develop insight into complexity. They have the ability to see abstract, symbolic and theoretical relationships, and the capacity to see future possibilities. They put their reliance on inspiration rather than on past experience. Their interest is in the new and untried. They trust their intuitive grasp of meanings and relationships.

In terms of the judging process, Jung (1971) also identified two contrasting approaches or functions that he styled thinking and feeling, and again he observed that individuals tend to prefer and to develop one of these functions more strongly than the other. A psychological preference for thinking is recognised in the following characteristics. Thinking types develop clear powers of logical analysis. They develop the ability to weigh facts objectively and to predict consequences, both intended and unintended. They develop a stance of impartiality. They are characterised by a sense of fairness and justice. A psychological preference for feeling is recognised in the following characteristics. Feeling types develop a personalised emphasis on values and standards. They appreciate what matters most to themselves and what matters most to other people. They develop an understanding of people, a wish to affiliate with people and a desire for harmony. They are characterised by their capacity for warmth and by qualities of empathy and compassion.

In terms of orientations, a psychological preference for extraversion is recognised in the following characteristics. Extraverts prefer to focus their attention on the outer world of people and things and draw their energy from that outer world. When extraverts are tired and need energising they look to the outer world. Extraverts like variety and action. They want to be able to shut off the distractions of the inner world and turn outward. A psychological preference for introversion is recognised in the following characteristics. Introverts prefer to focus their attention on the inner world of ideas and draw their energy from that inner world. When introverts are tired and need energising they look to the inner world. Introverts like quiet for concentration. They want to be able to shut off the distractions of the outer world and turn inwards.

Jung's close observation of human behaviour also noted the interaction between the two orientations and the two processes (as expressed through the four functions). In particular, Jung noted the differences in behaviour between the operation of the judging

functions in the outer world and the operation of the perceiving functions in the outer world. This differentiation became more clearly formulated in later work to distinguish between two attitudes (see Francis 2005, 64–65), the attitude of judging that extraverts one of the judging functions (thinking or feeling) and the attitude of perceiving that extraverts one of the perceiving functions (sensing or intuition). A psychological preference for extraverted judging is recognised in the following characteristics. Judging types present a planned and orderly approach to life. They prefer to have a settled system in place and display a preference for closure. Judging types schedule projects so that each step gets done on time. They like to get things finished and settled and to know that the finished product is in place. They work best when they can plan their work in advance and follow that plan. A psychological preference for extraverted perceiving is recognised in the following characteristics. Perceiving types present a flexible and spontaneous approach to life. They prefer to keep plans and organisations to a minimum and display a preference for openness. Perceiving types adapt well to changing situations. They make allowances for new information and for changes in the situation in which they are living or acting. They work best under pressure and get a lot accomplished at the last minute.

Conceptualising the notion of typology provides an attractive and fertile way to explore and to discuss individual differences in preferences and performance. Alongside, discussion of the four binary preferences, psychological-type theory affords discussion of the four dominant-type preferences: dominant sensing shapes a practical approach to life, dominant intuition an imaginative approach to life, dominant thinking a logical approach and dominant feeling a humane approach. The 16 complete types afford a discussion of characteristic strengths: for example, the INTJ emerges as the conceptual planner, while the ENTJ emerges as the decisive strategist (see further, Ross and Francis 2020). Drawing on the building blocks of psychological-type theory, Keirsey and Bates (1978) distinguished among four distinctive temperaments that they characterised as follows: Epimethean (SJ), Promethean (NT), Apollonian (NF) and Dionysian (SP),

Measuring psychological type

While the notion of typology may be conceptually attractive, empirically it is more elusive and problematic. Pragmatically, the instruments developed to measure psychological types have needed to propose and to operationalise underlying continua and then to suggest ways for deriving clear-cut categories from these continua. Within the range of measures designed to operationalise psychological-type theory, the two best-known and long-established measures are the Myers–Briggs type Indicator (MBTI; Myers and McCaulley 1985) and the Keirsey Temperament Sorter (KTS; Keirsey and Bates 1978). In particular, the MBTI remains subject to ongoing scientific critique (see, for example, Stein and Swan 2019), while attempts to reconcile the typology allocations proposed by the MBTI and KTS have demonstrated that the methods proposed by these two instruments failed to assign individuals in a reliable manner to the same type among the 16 complete types (see, for example, Francis, Robbins, and Craig 2007). At this point, it may be important to recall that neither the MBTI nor the KTS were originally designed for research purposes. The MBTI was designed primarily for clinical practice, while the KTS was designed for self-assessment.

It is against this background that the Francis Psychological Type Scales (Francis 2005) were developed specifically for research purposes with two primary intentions: to offer reliable measures of the four underlying continua (extraversion–introversion, sensing–intuition, thinking–feeling and judging–perceiving) and a robust mechanism for generating type categories in full awareness that such categories are unlikely to be without reasonable margins of error. Since their initial publication in 2005, the FPTS have been used extensively within the fields of clergy studies, congregation studies and the psychology of religion (for overview, see Village and Francis 2023). Generally, in these studies, the four underlying scales (orientation, E and I; perceiving process, S and N; judging process, T and F; attitude, J and P) have generated alpha coefficients (Cronbach 1951) in excess of the threshold recommended by DeVellis (2003). For example, in an Australian study, Robbins, Francis, and Powell (2012) reported alpha coefficients of .84 for the EI scale, .79 for the SN scale, .71 for the TF scale and .81 for the JP scale. In an English study, Village (2011) reported alpha coefficients of .85 for the EI scale, .77 for the SN scale, .72 for the TF scale and .81 for the JP scale.

Francis, Laycock and Brewster (2017) tested the factor structure of the FPTS among a sample of 722 Anglican clergy in England. Confirmatory factor analysis demonstrated that 74 of the 80 items were located within the hypothesised four-factor structure of the instrument with loadings of or above .38 on the hypothesised factors. In a second study, Payne, Lewis and Francis (2021) replicated the analysis in a sample of 364 Anglican clergy in Wales and found that 78 of the 80 items were located within the hypothesised four-factor structure of the instrument with loadings of or above .38 on the hypothesised factors. In a third study, Village (2021) examined the factor structure of the FPTS employing structural equation modelling and confirmatory factor analyses among samples of 1522 clergy and 2474 laity from the Church of England. Although most items loaded satisfactorily on their intended dimension, a few loaded less well. In a fourth study, Francis and Village (2022) replicated the analyses among two samples of 185 and 392 adult ministry candidates. In both samples, 39 of the 40 items were located within the hypothesised structure of the instrument with loadings of or above .30 on the hypothesised factors, with few cross-loadings. This study also tested the concurrent validity of the FPTS alongside the 126-item Form G (Anglicised) of the MBTI (Myers and McCaulley 1985). The two measures aligned well.

The Turkish adaptation of the Francis Psychological Type Scales

Güleryüz-Erken and colleagues have worked on an integrated research programme designed to facilitate empirical research in Turkey rooted in psychological-type theory by proposing a Turkish translation and adaptation of the FPTS. They have recognised that the translation and adaptation of psychological measures for use within other languages and cultures needs to be an iterative process. In an initial paper İpek and Güleryüz-Erken (2025) outlined their process involving two preliminary studies and a subsequent main study. The first preliminary study among 130 participants recorded satisfactory alpha coefficients for the attitude ($\alpha = .73$) and for the orientation ($\alpha = .78$). The alpha coefficients were less satisfactory for the judging process ($\alpha = .54$) and for the perceiving process ($\alpha = .35$). After further refinement of these measures, the second preliminary study conducted among 259 religious education teachers recorded the following alpha coefficients: the attitude ($\alpha = .71$), the orientation ($\alpha = .83$), the judging process ($\alpha = .62$) and the perceiving process ($\alpha = .45$), indicating that further refinement

was still required. After further refinement, the main study among 441 religious education teachers recorded the following alpha coefficients: the attitude ($\alpha = .81$), the orientation ($\alpha = .82$), the judging process ($\alpha = .79$) and the perceiving process ($\alpha = .64$). Confirmatory factor analysis confirmed the four-factor structure of the instrument.

In a second paper, Güleryüz-Erken et al. (2026) conducted a further study among 743 university students that led to the publication of the Revised Turkish adaptation of the Francis Psychological Type Scales. In this study, the following alpha coefficients were reported: the attitude ($\alpha = .84$), the orientation ($\alpha = .84$), the judging process ($\alpha = .86$) and the perceiving process ($\alpha = .66$). Again, a confirmatory factor analysis confirmed the four-factor structure of the instrument, locating 39 of the 40 items on the hypothesised factors with weightings above .30 and without any significant cross loadings. This factor solution explained 38.9% of the variance.

Going beyond the scope of the first paper, in the second paper, Güleryüz-Erken et al. (2026) tested the generation of type categories on the assumption that the weightings developed for the original English language version of the FPTS to assign individuals to the 16 complete types remained valid for the Turkish adaptation. Then, type tables were constructed to compare the psychological-type profiles of the 170 male participants and the 573 female participants. The Selection Ratio Index, as developed by McCaulley (1985), was employed to test the statistical significance of differences between the male and female participants. The most important finding to emerge from these comparisons concerns the sex differences reported on the judging function. While 63% of male students preferred thinking, the proportion fell to 41% of female students; while 37% of male students preferred feeling, the proportion rose to 59% of female students. This finding reflects the well-attested sex difference in the judging process (see, for example, Kendall 1998). This finding is important since it affords evidence for the construct validity of the Revised Turkish adaptation of the FPTS.

Research question

It is against this background that the present study was designed to build on the work of İpek and Güleryüz-Erken (2025) and Güleryüz-Erken et al. (2026) in order to test the psychometric properties of the Revised Turkish Francis Psychological Type Scales (RTFPTS) among a different sample of university students and within a context that facilitated examining test–retest reliability. In this context, the present study has four specific aims:

- to examine the factor structure of the RTFPTS
- to examine the internal consistency reliability of the underlying continuous scale scores
- to examine the test-retest reliability of the underlying scale scores
- to examine the test–retest allocation of individuals to type categories.

Method

Procedure

A group of students participated in a 10-week programme concerned with examining the effectiveness of a spiritual counselling course implemented within an undergraduate

psychology curriculum. As part of the programme, they completed a battery of tests both at the beginning and the end of the programme. A total of 110 students participated in both surveys. Participation was entirely voluntary; participants were free to withdraw from the study at any point without penalty, and no monetary cost or financial incentive was involved. All procedures were conducted in accordance with established ethical standards, and informed consent was obtained from all participants prior to data collection.

Participants

The 110 students comprised 94 females and 16 males; the majority (88) of the students were aged 20, 7 were aged 19 and 15 were aged 21 or above.

Measure

The revised Turkish adaptation of the Francis Psychological Type Scales (RTFPTS) was employed in this study (Güleryüz-Erken et al. 2026). The RTFPTS comprises four sets of 10 pairs of items to distinguish between the two orientations (extraversion and introversion), the two perceiving functions (sensing and intuition), the two judging functions (thinking and feeling) and the two attitudes (judging and perceiving). Each item presents two contrasting characteristics, and participants are invited to pick the one that best matches their personal preference. The RTFPTS uses a forced-choice format.

Analysis

The data were analysed by the SPSS statistical package employing the frequency, reliability and factor routine. Confirmatory factor analysis (varimax rotated solution with Kaiser normalisation) was employed, with the solution constrained to four factors. The research literature concerning the empirical investigation of psychological type has developed a highly distinctive method for analysing, handling and displaying statistical data in the form of 'type tables'. This convention has been adopted in the following presentation in order to integrate these new data within the established literature and to provide all the detail necessary for secondary analysis and further interpretation within the rich theoretical framework afforded by psychological type. Type tables have been designed to provide information about the 16 discrete psychological types, about the four dichotomous preferences, about the six sets of pairs and temperaments, about the dominant types and about the introverted and extraverted Jungian types. Commentary on these tables will, however, be restricted to those aspects of the data strictly relevant to the research question. In the context of type tables, the statistical significance of the difference between two groups is established by means of the selection ratio index (I), an extension of chi-square (McCaulley 1985).

Results

The first step in testing the psychometric properties of the Revised Turkish Francis Psychological Type Scales employed confirmatory factor analysis using principal

component extraction followed by varimax rotation constrained to four factors. Table 1 presents the four factor solution that accounted for 49.1% of the variance. In this table, all factor loadings of .30 and below have been suppressed for clarity of presentation. These data show that confirmatory factor analysis located all 40 items on the hypothesised factors, but there was strong cross loading on one item.

Given the clear recovery of the factor structure of the proposed four scales intended to operationalise psychological-type theory, the second step in data analysis examined the psychometric properties of these scales. These data are presented in Table 2 in terms of

Table 1. Rotated factors (varimax).

	Component			
	1	2	3	4
Attitude				
Happy with routine–Unhappy with routine	.78			
Structured–Open-ended	.76			
To act on decisions–To act on impulse	.62			
Like to be in control–Like to be adaptable	.82			
Orderly–Easygoing	.75			
Organised–Spontaneous	.79			
Punctual–Leisurely	.47			
Like detailed planning–Dislike detailed planning	.58			
Happier with certainty–Happier with uncertainty	.62			
Systematic–Casual	.78			
Orientation				
Active–Reflective		.69		
Sociable–Private		.85		
Having many friends–A few deep friendships		.71		
Like parties–Dislike parties		.63		
Energised by others–Drained by too many people		.71		
Happier working in groups–Happier working alone		.44		
Socially involved–Socially detached		.81		
Talkative–Reserved		.74		
An extravert–An introvert		.80		
Speak before thinking–Think before speaking		.45		
Judging (evaluating) process				
Concerned for justice–Concerned for harmony			.57	
Analytic–Sympathetic			.68	
Thinking–Feeling			.83	
Tend to be firm–Tend to be gentle			.77	
Critical–Affirming			.62	
Logical–Humane			.75	
Truthful–Tactful			.61	
Sceptical–Trusting			.72	
Seek for truth–Seek for peace			.54	
Fair-minded–Warm-hearted			.65	
Perceiving process				
Interested in theories–Interested in facts				.65
Inspirational–Practical				.63
The abstract–The concrete				.66
Prefer to design–Prefer to make				.42
Inventive–Conventional				.43
Concerned for meaning–Concerned about details				.54
Imaginative–Sensible				.54
Future possibilities–Present realities	−.48			.48
Improve things–Keep things as they are				.51
Up in the air–Down to earth				.48

Note: All loadings below .30 have been suppressed for clarity of presentation.
$N = 110$.

Table 2. Internal consistency reliability and descriptive statistics for scales.

	Means	*SD*	Alpha	N items
Extraversion	5.39	3.08	.84	10
Introversion	4.61	3.08	.84	10
Sensing	4.96	2.45	.67	10
Intuition	5.04	2.45	.67	10
Thinking	5.27	3.30	.86	10
Feeling	4.73	3.30	.86	10
Judging	6.60	2.99	.84	10
Perceiving	3.40	2.99	.84	10

Note: $N = 110$.

the alpha coefficients (as proposed by Cronbach 1951) and the means and standard deviations. All eight scales recorded an alpha coefficient in excess of the threshold of .65 proposed by DeVellis (2003), although the two scales operationalising the perceiving process functioned with lower reliability than the scales operationalising the judging process, the orientations and the attitudes. As scales computed from forced choice binary options, the alpha coefficients are identical for both instruments within each pair, and the two mean scores for each pair sum to 10. The mean scale scores identify a group of students who score more highly on extraversion than introversion, on intuition than sensing, on thinking than feeling and on judging than perceiving.

The third step in data analysis examines the test–retest reliabilities of the continuous scales proposed by the Francis Psychological Type Scales. Table 3 presents the full set of correlations between these four scales at time one and time two. Two conclusions can be drawn from these data. First, there are strong correlations between time one and time two for each of the four scales. The lowest correlation is reported by the perceiving process (sensing and intuition) and this is consistent with the poorer performance of internal consistency reliability for the scale. Second, the independence of these four scales is confirmed by low correlations between each of these scales and the other three scales.

A second way of looking at the correspondence of the four scales is to consider the scores recorded at time one and time two by means of paired *t*-tests. The data presented in Table 4 confirms that there were no significant differences in these scores.

The fourth step in data progresses beyond the underlying scale scores and examines the reliability of assignment to type categories. This step assumes that the weightings developed for the original English language version of the FPTS to assign individuals to the 16 complete types remain valid for the Revised Turkish adaptation. Table 5 presents contingency tables for the four components of psychological-type theory assigned at time one and time two, tested by the *kappa* statistic. Landis and Koch (1977) described the strength of agreement for the range .61–.80 as 'substantial': the agreement for the

Table 3. Correlations of scores time 1 and time 2.

	Time 2			
Time 1	Extraversion	Sensing	Thinking	Judging
Extraversion	.80***	−.01	−.02	−.15
Sensing	.02	.62***	−.07	.02
Thinking	.06	−.01	.74***	.06
Judging	−.02	−.02	.19	.78***

Note: $N = 110$; ***$p < .001$.

Table 4. Paired *t*-tests for scores in time 1 and time 2.

	Mean difference	95% CL Lower	95% CL Upper	*t*	*p*
Extraversion	−0.21	−0.59	0.18	−1.08	.283
Sensing	−0.06	−0.48	0.37	−0.26	.799
Thinking	0.00	−0.46	0.46	0.00	1.000
Judging	−0.13	−0.52	0.27	−0.64	.524

Note: $df = 109$, p = two-sided probability.

Table 5. Contingency tables for components.

	Time 1	Time 2		% Agree	Kappa
		Extraversion	Introversion		
Orientation	Extraversion	50	9	84.7	
	Introversion	10	41	80.4	.65
		Sensing	Intuition		
Perceiving	Sensing	49	15	76.6	
	Intuition	13	33	71.7	.48
		Thinking	Feeling		
Judging	Thinking	53	10	84.1	
	Feeling	9	38	80.9	.65
		Judging	Perceiving		
Attitude	Judging	84	10	89.4	
	Perceiving	2	14	87.5	.64

Note: % Agree = percentage of each row count where there was agreement between time 1 and time 2.

orientations (extraversion and introversion), the judging process (thinking and feeling) and the attitudes (judging and perceiving) fall within this range. The perceiving process (sensing and intuition) performed less well falling within the range .41–.60 described by Landis and Koch (1977) as 'moderate'.

Table 6 takes the analysis two further steps forward. First, it presents the proportions of participants assigned to the same binary category across each of the four indices. These data show that in terms of attitudes, 89% of participants were assigned to the same category (judging or perceiving) at time one and time two; in terms of orientations, 83% were assigned to introversion and extraversion on both occasions; in terms of the judging process, 83% were assigned to thinking or feeling on both occasions; and in terms of the perceiving process 75% were assigned to sensing or intuition on both occasions. Second, Table 6 presents the cumulative picture as the four components of type are pieced together. When all four components are considered together to create the 16 discrete types, 47% of the participants are assigned to the same type.

Table 6. Levels of agreement in type classification for time 2 versus time 1.

	Agreement %
Orientation	82.7
Perceiving	74.5
Judging	82.7
Attitude	89.1
Orientation	82.7
Orientation and perceiving	61.8
Orientation, perceiving and judging	51.8
Orientation, perceiving, judging and attitude	47.3

The final step in data analysis presents the two-type tables generated from data provided at time one (Table 7) and at time two (Table 8). Table 8 also employs the selection ratio index as proposed by McCaulley (1985) to compute the statistical significance of differences between the two sets of data. Read side-by-side these statistics show that there are no significant differences between the two sets of data. In terms of the dichotomous preference: 54% presented as extraverts at time one and so did 55% at time two; 58% presented as sensing types at time one and so did 56% at time two; 57%

Table 7. Type table for participants at time one.

The Sixteen Complete Types				Dichotomous Preferences		
ISTJ	ISFJ	INFJ	INTJ	E	*n* = 59	(53.6%)
n = 11	*n* = 14	*n* = 4	*n* = 14	I	*n* = 51	(46.4%)
(10.0%)	(12.7%)	(3.6%)	(12.7%)			
+++++	+++++	++++	+++++	S	*n* = 64	(58.2%)
+++++	+++++		+++++	N	*n* = 46	(41.8%)
	+++		+++			
				T	*n* = 63	(57.3%)
				F	*n* = 47	(42.7%)
				J	*n* = 94	(85.5%)
				P	*n* = 16	(14.5%)
ISTP	ISFP	INFP	INTP			
n = 2	*n* = 4	*n* = 1	*n* = 1	Pairs and Temperaments		
(1.8%)	(3.6%)	(0.9%)	(0.9%)	IJ	*n* = 43	(39.1%)
++	++++	+	+	IP	*n* = 8	(7.3%)
				EP	*n* = 8	(7.3%)
				EJ	*n* = 51	(46.4%)
				ST	*n* = 32	(29.1%)
				SF	*n* = 32	(29.1%)
				NF	*n* = 15	(13.6%)
ESTP	ESFP	ENFP	ENTP	NT	*n* = 31	(28.2%)
n = 2	*n* = 2	*n* = 4	*n* = 0			
(1.8%)	(1.8%)	(3.6%)	(0.0%)	SJ	*n* = 54	(49.1%)
++	++	++++		SP	*n* = 10	(9.1%)
				NP	*n* = 6	(5.5%)
				NJ	*n* = 40	(36.4%)
				TJ	*n* = 58	(52.7%)
				TP	*n* = 5	(4.5%)
				FP	*n* = 11	(10.0%)
				FJ	*n* = 36	(32.7%)
ESTJ	ESFJ	ENFJ	ENTJ			
n = 17	*n* = 12	*n* = 6	*n* = 16	IN	*n* = 20	(18.2%)
(15.5%)	(10.9%)	(5.5%)	(14.5%)	EN	*n* = 26	(23.6%)
+++++	+++++	+++++	+++++	IS	*n* = 31	(28.2%)
+++++	+++++	+	+++++	ES	*n* = 33	(30.0%)
+++++	+		+++++			
+				ET	*n* = 35	(31.8%)
				EF	*n* = 24	(21.8%)
				IF	*n* = 23	(20.9%)
				IT	*n* = 28	(25.5%)

Jungian Types (E)			Jungian Types (I)			Dominant Types		
	n	%		*n*	%		*n*	%
E-TJ	33	30.0	I-TP	3	2.7	Dt.T	36	32.7
E-FJ	18	16.4	I-FP	5	4.5	Dt.F	23	20.9
ES-P	4	3.6	IS-J	25	22.7	Dt.S	29	26.4
EN-P	4	3.6	IN-J	18	16.4	Dt.N	22	20.0

Note: *N* = 110 (NB: + = 1% of *N*).

Table 8. Type table for participants at time two compared with time one.

The Sixteen Complete Types				Dichotomous Preferences			
ISTJ	ISFJ	INFJ	INTJ	E	*n* = 60	(54.5%)	*I* = 1.02
n = 12	*n* = 8	*n* = 5	*n* = 14	I	*n* = 50	(45.5%)	*I* = 0.98
(10.9%)	(7.3%)	(4.5%)	(12.7%)				
I = 1.09	*I* = 0.57	*I* = 1.25	*I* = 1.00	S	*n* = 62	(56.4%)	*I* = 0.97
+++++	+++++	+++++	+++++	N	*n* = 48	(43.6%)	*I* = 1.04
+++++	++		+++++				
+			+++	T	*n* = 62	(56.4%)	*I* = 0.98
				F	*n* = 48	(43.6%)	*I* = 1.02
				J	*n* = 86	(78.2%)	*I* = 0.91
				P	*n* = 24	(21.8%)	*I* = 1.50
ISTP	ISFP	INFP	INTP				
n = 3	*n* = 4	*n* = 3	*n* = 1	Pairs and Temperaments			
(2.7%)	(3.6%)	(2.7%)	(0.9%)	IJ	*n* = 39	(35.5%)	*I* = 0.91
I = 1.50	*I* = 1.00	*I* = 3.00	*I* = 1.00	IP	*n* = 11	(10.0%)	*I* = 1.38
+++	++++	+++	+	EP	*n* = 13	(11.8%)	*I* = 1.63
				EJ	*n* = 47	(42.7%)	*I* = 0.92
				ST	*n* = 35	(31.8%)	*I* = 1.09
				SF	*n* = 27	(24.5%)	*I* = 0.84
				NF	*n* = 21	(19.1%)	*I* = 1.40
ESTP	ESFP	ENFP	ENTP	NT	*n* = 27	(24.5%)	*I* = 0.87
n = 3	*n* = 4	*n* = 6	*n* = 0				
(2.7%)	(3.6%)	(5.5%)	(0.0%)	SJ	*n* = 48	(43.6%)	*I* = 0.89
I = 1.50	*I* = 2.00	*I* = 1.50	*I* = 0.00	SP	*n* = 14	(12.7%)	*I* = 1.40
+++	++++	+++++		NP	*n* = 10	(9.1%)	*I* = 1.67
		+		NJ	*n* = 38	(34.5%)	*I* = 0.95
				TJ	*n* = 55	(50.0%)	*I* = 0.95
				TP	*n* = 7	(6.4%)	*I* = 1.40
				FP	*n* = 17	(15.5%)	*I* = 1.55
				FJ	*n* = 31	(28.2%)	*I* = 0.86
ESTJ	ESFJ	ENFJ	ENTJ				
n = 17	*n* = 11	*n* = 7	*n* = 12	IN	*n* = 23	(20.9%)	*I* = 1.15
(15.5%)	(10.0%)	(6.4%)	(10.9%)	EN	*n* = 25	(22.7%)	*I* = 0.96
I = 1.00	*I* = 0.92	*I* = 1.17	*I* = 0.75	IS	*n* = 27	(24.5%)	*I* = 0.87
+++++	+++++	+++++	+++++	ES	*n* = 35	(31.8%)	*I* = 1.06
+++++	+++++	+	+++++				
+++++			+	ET	*n* = 32	(29.1%)	*I* = 0.91
+				EF	*n* = 28	(25.5%)	*I* = 1.17
				IF	*n* = 20	(18.2%)	*I* = 0.87
				IT	*n* = 30	(27.3%)	*I* = 1.07

Jungian Types (E)				Jungian Types (I)				Dominant Types			
	n	%	*Index*		*n*	%	*Index*		*n*	%	*Index*
E-TJ	29	26.4	0.88	I-TP	4	3.6	1.33	Dt.T	33	30.0	0.92
E-FJ	18	16.4	1.00	I-FP	7	6.4	1.40	Dt.F	25	22.7	1.09
ES-P	7	6.4	1.75	IS-J	20	18.2	0.80	Dt.S	27	24.5	0.93
EN-P	6	5.5	1.50	IN-J	19	17.3	1.06	Dt.N	25	22.7	1.14

Note: *N* = 110 (NB: + = 1% of *N*).

presented as thinking types at time one and so did 56% at time two; 86% presented as judging types at time one and the proportion fell to 78% at time two, but given the sample size this difference did not reach statistical significance. In terms of the dominant-type preferences, the same hierarchy emerged at time one and time two: dominant thinking types (33% and 30%), dominant sensing types (26% and 25%), dominant feeling types (21% and 23%) and dominant intuitive types (20% and 23%). In terms of the four

temperaments, the same pattern applied: Epimethean (SJ; 49% and 44%), Promethean (NT; 28% and 25%), Apollonian (NF; 14% and 19%) and Dionysian (SP; 9% and 13%). In terms of the 16 complete types, the three most evident types emerged as ESTJ (16% and 16%), INTJ (13% and 13%) and ENTJ (15% and 11%).

Discussion and conclusion

The present study was designed to address four specific research questions concerning the performance of the Revised Turkish Francis Psychological Type Scales as proposed by Güleryüz-Erken et al. (2026). The first research question concerned the factor structure of the RTFPTS. Confirmatory factor analysis recovered the clear four-factor solution: all items loaded on the hypothesised factor with weightings above .40. Only one item reported a cross loading above .30. This is related to an item within the perceiving process. In future developmental work on the RTFPTS, further attention needs to be given to this item. However, it is worth noting that some studies on the original English language version of the FPTS have noted cross loadings on the perceiving process (Francis and Village 2022; Village and Francis 2023).

The second research question examined the internal consistency reliabilities of the underlying continuous scale scores of the RTFPTS in terms of the alpha coefficient (Cronbach 1951). These data demonstrated strong reliabilities for the orientations (α = .84), the attitudes (α = .84) and the judging process (α = .86), but less satisfactory reliabilities for the perceiving process (α = .67). These data closely replicate the findings of Güleryüz-Erken et al. (2026) who reported for the orientations (α = .81), the attitudes (α = .85), the judging process (α = .81) and the perceiving process (α = .66). However, it is worth noting that some studies on the original English language version of the FPTS have noted poorer internal consistency reliabilities for the perceiving process (Village and Francis 2023).

The third research question examined the test–retest reliabilities of the underlying continuous scale scores. This is the first study to access test–retest data on the FPTS. These test–retest correlations for orientations (r = .80), attitudes (r = .78), judging process (r = .78) and perceiving process (r = .62) closely match the findings for the internal consistency reliabilities and confirm the view that further attention needs to be given in future research to the items comprising the perceiving process. The paired t-tests for scores recorded at time one and time two demonstrate basic stability in the levels of scores recorded at these two points in time. While the correlations confirm patterns within the scores, the t-tests add to this information confirmation that the scores are not subject to consistent fluctuations in the second administration. Taken together, these two measures support not only the reliability of the scales but also the construct validity of the assumption that they assess a stable underlying construct.

The fourth research question examined the test–retest allocation of individuals to type categories. This is the controversial aspect of type theory and needs to be navigated with care. The present study approached this question in two ways. The first way assessed the proportion of participants who were assigned to the same one of the 16 discrete type categories on both occasions. The data reported this to be the case for under half of the participants (47%). Context for this finding can be given by earlier studies that have addressed this same question to the MBTI. The proportion of subjects classified with

identical categorisations at the retest varies considerably from one study to another. For example, Levy, Murphy and Carlson (1972), in a study among 433 undergraduates, found that after a 2-month period, 53% were assigned the same type on both occasions. Howes and Carskadon (1979), in a study among 117 undergraduates, found that after a 5-week period, 49% were assigned the same type on both occasions. McCarley and Carskadon (1983) found that after a 5-week period, 47% of their subjects retained their specific dichotomous-type preferences across all four scales. Silberman, Freeman and Lester (1992) administered the MBTI to 161 dental students before the beginning of their first year and again near the end of their fourth year. They found that 24% were assigned the same type on both occasions. Bents and Wierschke (1996) administered the MBTI to 40 adults twice over a six-week period. They found that 68% were assigned the same type on both occasions. Tsuzuki and Matsui (1997) administered the MBTI to 88 students twice over a three-month period. They found that 33% were assigned the same type on both occasions. Cumulatively, these studies raise important questions about the reliability of the assignment of *individuals* to the 16 complete types.

The second way in which the present study approached the fourth research question was to focus on the reliability of group profiling rather than on the profiling of individuals. This way examined the extent to which significant differences emerged in the construction of type tables for the same *group* profiled on two occasions, employing the Selection Ratio Index proposed by McCaulley (1985). The data demonstrated that for this group of 110 students there were no significant differences in the two-type tables. In other words, as a research tool, the FPTS is a more reliable instrument for providing the psychological type profile for groups than for individuals. It was precisely for this purpose the FPTS was developed.

Three main conclusions emerge from these new data relevant both for an evaluation specifically of the Revised Turkish Francis Psychological Type Scales and for the wider research application of the FPTS in empirical research shaped by psychological-type theory. The first conclusion is that the continuous scale scores are reliable measures that can be appropriately used in correlational studies. The second conclusion is that the FPTS has not been designed to provide a reliable profile for individuals, but that it can be trusted to provide a reliable profile for groups (the purpose for which it was originally developed). The third conclusion is that the RTFPTS as proposed by Güleryüz-Erken et al. (2026) provides an adequate adaptation of the parent instrument for application in research in Turkey, although further work would be beneficial in improving the performance of the measure designed to operationalise the perceiving process (sensing and intuition).

Disclosure statement

No potential conflict of interest was reported by the author(s).

Notes on contributors

Mustafa Tekke is an Associate Professor in the Department of Psychology and Counselling at the Faculty of Education, Düzce University, Turkey. His research interests focus on spiritual psychology, personality, and counselling. He has a particular interest in the psychosocial determinants of

behaviour, dream analysis, and the integration of spiritual frameworks—specifically spiritual psychology and Sufi-oriented psychotherapy—into psychological practice and spiritual care.

Leslie J. Francis is Professor Emeritus of Religions and Psychology within the Centre for Research in Intellectual and Developmental Disabilities at the University of Warwick, England; Professor of Religions, Psychology and Education and Co-Director of the World Religions and Education Research Unit at Lincoln Bishop University, Lincoln, England; and Canon Theologian at Liverpool Cathedral, UK. His research engages empirical theology, psychology of religion, and theological education and formation.

Ursula McKenna is Senior Research Fellow within the Edward Bailey Centre for the Study of Implicit Religion and World Religions and Education Research Unit at Lincoln Bishop University, Lincoln, England. Her research engages with both qualitative and quantitative methods, and she has published widely as part of the research group concerned with religion, psychology, and education. Her recent research has focused on clergy and congregation wellbeing, cathedral studies, and the testing of research instruments within Muslim societies.

Andrew Village is Professor Emeritus at York St John University, England. His research interests include congregational studies, clergy studies, empirical theology, and the psychology of religion.

ORCID

Mustafa Tekke http://orcid.org/0000-0003-0412-4353
Leslie J. Francis http://orcid.org/0000-0003-2946-9980
Ursula McKenna http://orcid.org/0000-0002-2625-7731
Andrew Village http://orcid.org/0000-0002-2174-8822

Data availability statement

Data are available from the corresponding author upon reasonable request.

Ethical approval

Ethical approval for this study was obtained from the Duzce University Scientific Research and Publication Ethics Committee, Approval No.: E-78187535-050.04-554844.

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