MBTI® Step I instrument

European Data Supplement

Polish

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unlocking potential

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Introduction

The Polish language version of the MBTI Step I questionnaire was developed and trialled during 2007/8. Due to the fact that it is so new, the amount of data collected so far is limited.

However, this chapter contains details of the main analyses conducted during the development process. A brief description of the sample is given below.

- The sample consisted of 271 individuals who completed the MBTI Step I instrument in Polish via the OPPassessment system between June 2007 and April 2008.[1] This sample was gathered by potential users of the instrument in Poland, and contained the kinds of people with whom the Polish MBTI instrument will be used when it is launched.

The results of the analyses are outlined below.

[1] OPPassessment allows personality questionnaires such as the MBTI instrument to be administered via email and/or completed online.

Type distribution

Type tables are a way of illustrating the proportion of each type within a particular group. Opposite are type tables for the Polish sample described on the previous page.

For each of the 16 different types, the number of cases, the percentage of the total that this represents and the self-selection ratio (SSR) are shown. The SSR (Myers et al., 1998) is a way of demonstrating whether a given type appears more or less often in a particular group than would be expected given its frequency in a reference group. An SSR of greater than 1 indicates that a type is over-represented, and an SSR of less than 1 denotes that it is under-represented. Asterisks are used to denote whether the over- or under-representations are statistically significant, based on the results of chi-square analysis[2].

Ideally, the type distribution from a large representative sample of the Polish population would be used to calculate SSRs in this data supplement. However, such a sample does not currently exist. In its place, SSRs have been calculated using type data from the UK general population (Kendall, 1998). Evidence (eg Hackston and Kendall, 2004; Quenk et al., 2004; Kirby, Kendall and Barger, 2007) does suggest that although type-related behaviours vary a good deal from country to country and from culture to culture, the frequencies of underlying MBTI types do not.

[2] Chi-square analysis (often abbreviated to χ^2) is a technique used to explore whether observed frequency distributions differ significantly from other, predefined, distributions. In this case, the UK general population group is used as the reference group, and the chi-square analysis indicates whether the proportion of people of each type within a particular sample differs significantly from the proportion of people reporting the same type within the reference group.

Questionnaire development sample

Table 10.1: Type table for questionnaire development data

Reported type (n=271)

ISTJ	ISFJ	INFJ	INTJ
n=35 12.9% SSR=0.94	n=4 1.5% SSR=0.12**	n=7 2.6% SSR=1.51	n=14 5.2% SSR=3.67**
ISTP	**ISFP**	**INFP**	**INTP**
n=7 2.6% SSR=0.40*	n=2 0.7% SSR=0.12**	n=5 1.8% SSR=0.58	n=9 3.3% SSR=1.36
ESTP	**ESFP**	**ENFP**	**ENTP**
n=17 6.3% SSR=1.08	n=6 2.2% SSR=0.25**	n=19 7.0% SSR=1.11	n=16 5.9% SSR=2.14**
ESTJ	**ESFJ**	**ENFJ**	**ENTJ**
n=68 25.1% SSR=2.41**	n=6 2.2% SSR=0.18**	n=19 7.0% SSR=2.55**	n=37 13.7% SSR=4.65**

Type	n	%
E	188	64.9%**
I	83	30.6%**
S	145	53.5%**
N	126	46.5%**
T	203	74.9%**
F	68	25.1%**
J	190	70.1%**
P	81	29.9%**

Best-fit type (n=271)

ISTJ	ISFJ	INFJ	INTJ
n=40 16.1% SSR=1.17	n=14 5.6% SSR=0.44**	n=5 2.0% SSR=1.17	n=11 4.4% SSR=3.14**
ISTP	**ISFP**	**INFP**	**INTP**
n=10 4.0% SSR=0.62	n=15 6.0% SSR=0.98	n=7 2.8% SSR=0.88	n=9 3.6% SSR=1.48
ESTP	**ESFP**	**ENFP**	**ENTP**
n=12 4.8% SSR=0.83	n=15 6.0% SSR=0.69	n=29 11.6% SSR=1.85**	n=25 10.0% SSR=3.65**
ESTJ	**ESFJ**	**ENFJ**	**ENTJ**
n=43 17.3% SSR=1.66**	n=7 2.8% SSR=0.22**	n=14 5.6% SSR=2.04*	n=15 6.0% SSR=2.05*

Type	n	%
E	160	59.0%*
I	111	41.0%*
S	156	57.6%**
N	115	42.4%**
T	165	60.9%
F	106	39.1%
J	149	55.0%
P	122	45.0%

For both tables above: *Difference significant at p<0.05, based on chi-square results.
**Difference significant at p<0.01, based on chi-square results.

Looking at reported type, the most frequent type preference is quite clearly ESTJ (25% of the total). Overall, the group tends to have a preference for Thinking and Judging, and to a lesser extent for Extraversion and Sensing.

In terms of best-fit type, ESTJ (17%) is also the most frequently occurring type preference. However, the proportion is lower than for reported type, and is closely followed by ISTJ (16%) in terms of frequency. The general pattern is similar to that found with reported type, with the group tending to have a preference for Extraversion, Sensing, Thinking and Judging. A notable difference, however, is that for all dimensions except Sensing–Intuition, the proportion of people with preferences for each pole are more evenly balanced than they are for reported type.

It should be noted that the wider applicability of these type distributions should not be overstated as the samples on which they are based cannot be considered to be representative of any wider group. Further type distribution data will be added to this supplement as it becomes available.

Internal consistency reliability

The reliability of a test or questionnaire relates to how consistent and precise it is. Internal consistency reliability addresses the question of whether all the questions in a scale measure the same construct. A common measure of internal consistency reliability is coefficient alpha (Cronbach, 1951). The alpha coefficients for the Polish questionnaire development sample are shown in Table 10.2.

Table 10.2: Internal consistency reliability

Dimension	Coefficient alpha
E–I	0.86
S–N	0.77
T–F	0.82
J–P	0.80

It is generally agreed that internal consistency reliability should achieve a value of at least 0.7 for a test to be considered to be reliable.[3] On this basis, all of the dimensions of the questionnaire show good reliability.

[3] For example, see Nunnally (1978) or Kline (2000).

Intercorrelations between MBTI dimensions

One of the original aims of developing the MBTI questionnaire was to see if dimensions could be produced that were independent of each other. Results from other language versions have shown that this was achieved with all dimensions except Sensing–Intuition and Judging–Perceiving. This shows up despite the fact that questions were carefully chosen to sort on only one dimension. The author of the questionnaire hypothesised that the S–N/J–P relationship may simply be a reflection of reality rather than a failing in the construction of the questionnaire.

The intercorrelations between dimensions amongst the OPPassessment sample are shown in Table 10.3. In order to be able to calculate the correlations, scores on each dimension were converted to continuous scores.[4]

Table 10.3: Intercorrelations between dimensions

	E–I	S–N	T–F	J–P
E–I		–0.10	–0.16**	–0.06
S–N			0.36**	0.32**
T–F				0.23**
J–P				

**Significant at p<0.01.

The S–N/J–P relationship that has been found with other language versions has been replicated, showing that a preference for Sensing is likely to be associated with a preference for Judging, and that a preference for Intuition is likely to be associated with a preference for Perceiving.

In addition, for this sample, S–N has also been shown to correlate reasonably highly with T–F, suggesting that a preference for Sensing is likely to be associated with a preference for Thinking, and that a preference for Intuition is likely to be associated with a preference for Feeling. At present, we do not have sufficient data to know whether this reflects a true relationship amongst people who take the Polish questionnaire, or whether the finding is sample-specific. This will be explored once more data become available.

[4] Continuous scores (Myers and McCaulley, 1985, p. 9) place an individual's score on each dimension onto a continuous scale with a mid-point of 100. To calculate continuous scores, Preference Clarity Index (PCI) scores for each dimension are either subtracted or added to 100, depending on which direction the overall preference is. PCI scores in the direction of E, S, T or J are subtracted from 100. PCI scores in the direction of I, N, F or P are added to 100.

Validity: the accuracy of the Polish MBTI Step I instrument in predicting best-fit type

The purpose of the MBTI instrument is to help individuals to establish their validated or 'best-fit' psychological type. A key measure of the validity of the instrument is, therefore, how well the results relate to best-fit (validated) type. These data are useful to practitioners in knowing how typically accurate the reported result is likely to be.

Best-fit data are available for a sample of MBTI practitioners who took part in a research study to look at the relationship between MBTI reported type and best-fit type.

Table 10.4 presents the results of the analysis comparing best-fit with reported type. The Polish questionnaire performs in a similar way to other language versions for which best-fit data are available, and there is good evidence for the accuracy of the instrument. In nearly 50% of cases, a respondent's reported type will match their best-fit type, and in nearly 80% of cases at least three of the four preferences will match.

Table 10.4: Match of reported and best-fit type

	Polish questionnaire development sample (n=271)	
Agrees with all four letters	48.3%	78.9%
Agrees with three letters	30.6%	
Agrees with two letters	16.2%	21.1%
Agrees with one letter	4.1%	
Agrees with no letters	0.8%	

Dimension	Percentage agreement
E–I	84.5%
S–N	81.2%
T–F	79.3%
J–P	76.8%

Further analysis was carried out to investigate the validity and accuracy of the questionnaire. MBTI qualifying training course delegates and MBTI practitioners were asked how confident they felt about their results on each type dichotomy (on a scale from 1 to 5, where 5 indicated the highest degree of confidence). For every dimension, more than two-thirds of the group were confident about their type.

All these figures provide further support for the validity of the MBTI approach. Detailed results are shown in Table 10.5.

Table 10.5: Degree of confidence in results

Degree of confidence	Percentage of group			
	E–I	S–N	T–F	J–P
5 (highest)	44%	31%	38%	40%
4	31%	38%	34%	30%
3	18%	26%	22%	22%
2	6%	4%	4%	7%
1 (lowest)	1%	1%	2%	1%
Percentage at 4 or above	*75%*	*69%*	*72%*	*70%*

In summary, there is good evidence for the validity of the Polish MBTI Step I instrument. Specifically:

- There is a high level of agreement between best-fit and reported type, comparable with results for other European language versions.
- Respondents are confident about their results.

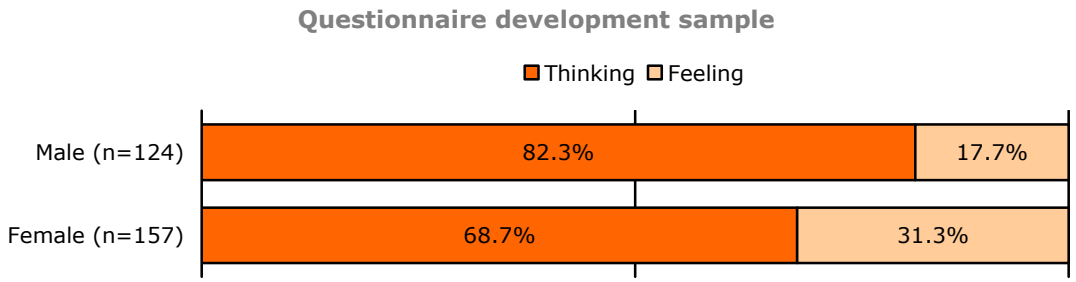
Group differences in type

Various types of demographic information were collected for the Polish questionnaire development sample. The relationship of MBTI type to each of these factors is described below.

Gender

Most groups who take the MBTI questionnaire show a significant gender difference on the Thinking–Feeling dimension, and this is the case for the group in this study, as shown in Figure 10.1.[5]

Figure 10.1: Gender differences on the T–F dimension



Thinking preferences are over-represented amongst men and Feeling preferences are over-represented amongst women (although even amongst women in this group there are more people with a preference for Thinking than Feeling). This effect has been found many times with many different versions of the instrument in a number of different cultures.

Age

Previous research using UK Step I continuous scores has shown significant correlations between age and three of the four dimensions (Warr, Miles and Platts, 2001). Older people were more likely than younger people to have preferences for Introversion, Sensing and Judging.

The data in this supplement were analysed in a slightly different way, by looking for differences in average age between people with preferences for Extraversion versus those with preferences for Introversion, for Sensing versus Intuition, for Thinking versus Feeling and for Judging versus Perceiving. The sample showed statistically significant relationships between age and two of the dimensions,[6] as shown in Table 10.6. The mean age of people with a preference for Sensing was approximately three and a half years higher than of those

[5] χ^2=6.57; significant at p<0.01.
[6] Independent-samples t-tests; SN significant at p<0.01, JP significant at p<0.001.

with a preference for Intuition. The mean age of those with a preference for Judging was approximately four and a half years higher than of those with a preference for Perceiving.

Table 10.6: Significant mean age differences

	Sensing	Intuition	Difference	Significance
Mean age (years)	32.56	29.19	3.37	**

	Judging	Perceiving	Difference	Significance
Mean age (years)	32.20	27.82	4.38	***

Difference significant at: *p<0.05, **p<0.01, ***p<0.001.

Occupational level

Previous research in other countries has demonstrated that individuals in higher level jobs in organisations are more likely to have preferences for Intuition and for Thinking than those in lower level jobs (Quenk, Hammer and Majors, 2004).

The sample used in the development of the Polish questionnaire was not large enough to explore this fully. Although many of the respondents did describe their occupational level, the number of individuals in each category was too small for a full analysis. Therefore, the categories were recoded into two broader groups, namely 'employee' (containing 55 people) and 'supervisory or above' (72 people). However, when these two groups were compared, no significant differences were found for any of the dimensions. A further analysis when more data become available will allow us to explore this further.

Education

Specific educational qualifications were not available for the sample; however, the age at which individuals left full-time education was. There was found to be a link between the Thinking–Feeling dimension and the age at which individuals left full-time education. On average, people with preferences for Thinking left education approximately two and a half years later than those with a preference for Feeling.

Work area

Previous research into MBTI type suggests that an individual's type influences their choice of career (Hammer, 1998). However, the number of different work areas covered by this sample was so broad that the number of people in each category was too small for analyses

to be conducted. This is another example of where further analysis will be conducted when more data become available.

Nationality

Nationality was disclosed by 76% of the sample. Of these, 97% were Polish. No other nationality was represented in sufficiently large numbers for an analysis of type differences by nationality to be conducted.

Employment status

Employment status (ie whether a person works full-time, part-time, is self-employed, etc) was found to show no significant relationship with type preferences amongst this sample.

Appendix 1: Sample description

Sample 1: Questionnaire development sample

This sample consists of 271 individuals who completed the MBTI Step I questionnaire in Polish via the OPPassessment system between June 2007 and April 2008. Of these individuals, 54% were female and 46% were male. Age ranged from 16 to 60 years, with a mean of 31 and a median of 29.

Nationality was disclosed by 76% of respondents. Of these, 97% were Polish. No other individual nationality was represented in large numbers.

Nationality	Percentage
Polish	97.1%
Other	2.9%

The majority of those who disclosed their employment status were in full-time employment:

Employment status	Percentage
Full-time	44.0%
Part-time	5.5%
Self-employed	6.6%
Unemployed	5.5%
Retired	0.4%
Homemaker	0.0%
Not disclosed	38.0%

Of those who disclosed their occupational level, many were of managerial level or above, although the largest single group was employee level (20.3%):

Occupational level	Percentage
Top level	3.7%
Senior executive	9.2%
Upper middle management	0.4%
Middle management	4.8%
First-level management/supervisor	8.5%
Employee	20.3%
Other	12.2%
Not disclosed	40.9%

A range of work areas were represented:

Work area (job type)	Percentage
Sales, customer service	12.2%
Finance	11.4%
HR, training, guidance	5.2%
Admin or secretarial	3.3%
Health, social services, etc	1.8%
IT	1.8%
Education	1.8%
Science, engineering	1.5%
Research and development	1.1%
Military, police, prison, fire	0.4%
Skilled operative	0.4%
Land, sea or air transport	0.4%
Unskilled operative	0.0%
Business services	0.0%
Leisure, personal service	0.0%
Other public sector	0.4%
Other private sector	4.4%
Other	10.0%
Not disclosed	38.7%