MBTI® MANUAL GLOBAL SUPPLEMENT SERIES

# Portugal (European Portuguese) Supplement to the MBTI® Manual for the Global Step I™ and Step II™ Assessments

Nancy A. Schaubhut
Richard C. Thompson
Michael L. Morris
Justin J. Arneson

The Myers-Briggs Company
+1 800 624 1765 | www.themyersbriggs.com

# **Portugal (European Portuguese)** Supplement to the MBTI® Manual for the Global Step I™ and Step II™ Assessments

## CONTENTS



## INTRODUCTION

As steward of the Myers-Briggs Type Indicator® (MBTI®) assessment, The Myers-Briggs Company had two overarching goals in undertaking its revision to create global Step I™ and Step II™ forms: (1) preserve the integrity of the Step I and Step II assessments and (2) improve the reliability and validity of the MBTI assessment overall. More specifically, the company sought to update existing representative samples and compile new representative samples in additional countries based on translations (or adaptations) of the assessment into additional languages, use a statistical model consistent with type theory, and, if supported by data analysis, use the same scoring method globally, so that scores could be compared across all those countries and languages.

Broadening and compiling new representative samples was a high priority. The previous revision of the MBTI assessment culminated in 1998 in the publication of MBTI Form M (Step I), which replaced the earlier Form G. Form Q (Step II) was subsequently published in 2001 and replaced Form K. In the United Kingdom, the European Step I assessment was published in 1997. The European Step II assessment was published in 2003 based on pan-European samples compiled by OPP Ltd. Although all these forms of the MBTI assessment served their audiences well, no additional representative samples in the United States or the UK had been compiled subsequent to their publication. It was therefore important to update the US and UK representative samples as well as expand the number of representative samples to include additional countries and languages, reflecting the increasingly global reach of the MBTI assessment.

To address this need, data were collected in targeted countries (see table 1), with specific demographic targets set by experts for all samples except those from Brazil and South Africa. A consistent data collection effort

yielded samples that responded to a common 230-item MBTI research form containing all items on then-current forms of the assessment (i.e., MBTI Form M and Form Q, and European Step I and Step II); common demographic items; and other validation assessments. Respondents who completed North American English or European English versions of the assessment also completed an online interpretation session through The Myers-Briggs Company's MBTI®Complete website, making their verified, or "best-fit," type available for analysis.

In brief, the revision of the MBTI assessment provided the opportunity to collect a wealth of data, resulting in national representative samples that had not existed previously. These samples served the global research effort for the revised assessments themselves and also provided 4 new large and 19 new moderate-size samples. (Please note: In this manual supplement series, a particular sample may be referred to by either country or language for convenience in a particular context. Refer as needed to the sample names listed in table 1 when considering the results presented.)

Two different categories of samples were collected for this global project. Table 1 lists the 4 "large" samples—United States, Canada, and Australia (all North American English), and the United Kingdom (European English)—and the 19 "moderate-size" samples from around the world, which were all combined to form the global sample. Large samples were targeted to have 1,000 or more respondents, to exceed the sample size of an existing representative sample (specifically, in the US and the UK), and to reflect the size of the market for the MBTI assessment. The moderate-size samples for the most part included targets to ensure that they were nationally representative; only 3 of these samples—Brazil (Brazilian Portuguese), South Africa (Afrikaans), and South Africa (North American English)—due in part to their smaller markets for the MBTI assessment, were distributor led and nonrepresentative.

The MBTI global sample consists of 16,773 individuals, as detailed and summarized in chapter 7 of the *MBTI® Manual for the Global Step I™ and Step II™ Assessments* (Myers, McCaulley, Quenk, & Hammer, 2018). The global sample was used to develop the Global Step I and Step II assessments. It is critical to keep in mind that while analyses were conducted for each country/language sample used in this supplement series, the focus of the analyses was on the global sample reported in the 2018 MBTI manual.

This supplement to the 2018 manual summarizes results obtained from responses of the Portugal (European Portuguese) sample—hereafter, *Portuguese* sample—to the Global Step I and Step II assessments translated into the European Portuguese language. Included in this supplement are a description of the sample and data collection efforts, type distribution tables specific to the sample, analyses of Step I and Step II scales, and the results of reliability and validity studies conducted on the Portuguese sample.

Table 1 | **List of large and moderate-size country/language samples in the MBTI® global sample**

| Country/language sample | *N* |
|---|---|
| ***Large samples*** | |
| Australia (North American English) | 776 |
| Canada (North American English) | 939 |
| United Kingdom (European English) | 2,831 |
| United States (North American English) | 3,578 |
| ***Moderate-size samples*** | |
| Brazil (Brazilian Portuguese)* | 839 |
| Canada (Canadian French) | 176 |
| China (Simplified Chinese) | 521 |
| China (Traditional Chinese) | 477 |
| Denmark (Danish) | 468 |
| Finland (Finnish) | 524 |
| France (European French) | 472 |
| Germany (German)† | 440 |
| Greece (Greek) | 277 |
| Ireland (European English) | 383 |
| Italy (Italian) | 458 |
| Mexico (Latin American Spanish) | 359 |
| Netherlands (Dutch) | 506 |
| Norway (Norwegian) | 493 |
| Portugal (European Portuguese) | 503 |
| South Africa (Afrikaans)* | 505 |
| South Africa (North American English)* | 189 |
| Spain (European Spanish) | 564 |
| Sweden (Swedish) | 495 |

*Note:* Global sample, *N* = 16,773.
*Data collection for this sample was distributor led; it is not a representative sample.
†Germany sample includes one individual residing in Switzerland.

## TRANSLATION PROCESS

The Myers-Briggs Company's translation process for the Global Step I and Step II assessments was based on industry-standard methods for assessment translation (International Test Commission, 2005).[1] Because each of the languages included in this project has a different history of translation and use, the process varied somewhat for different languages.

The original European Portuguese translations of the MBTI European Step I and Step II assessments were developed using the standard translation processes but were not evaluated statistically due to the fact that the research on the Step II assessment had shown consistent results in other European languages (Quenk, Hammer, & Majors, 2004). Regardless, the European Step II items

were used as a starting point for the development of the 230-item research version of the MBTI assessment used in this global project.

OPP's original Portuguese translation was created by a professional linguist; it was evaluated by in-country expert reviewers and iterated until a satisfactory version of the translation was developed. For this global project, the Portuguese version was again evaluated by a professional linguist as well as in-country expert reviewers; modifications were made to item wordings to further improve the quality and accuracy of the translation. All changes were reviewed by the linguist as well as in-country expert reviewers, iteratively, until an agreed-upon translation was developed.

## DATA COLLECTION

Data for this revision of the assessment were collected almost exclusively online through two Myers-Briggs Company websites. The first site, built by the company's Research Division, accommodated the administration of the MBTI research form and other validity assessments, which were used for non-English-speaking research participants. The second site, for English-speaking participants, was a special modification of MBTI®Complete created for this research project using the 230-item MBTI research form, followed by MBTI®Complete's online interpretation session yielding respondents' best-fit type results. (For details on best-fit type, see chapter 7 in the 2018 MBTI® manual.) As MBTI®Complete was not used in collecting the Portuguese sample, best-fit type data for the sample are unavailable.

For the MBTI research form, specific sampling targets were set for each sample. The targets for the Portuguese sample are shown in table 2. Local MBTI distributors helped determine the final targets for samples in their respective countries or regions by selecting appropriate official sources. In general, sampling targets were designed to mirror the working-age population.

Once the websites were prepared and the sampling targets were set, data collection began. For most samples, the majority of participants were provided incentives by an external market research firm. Such firms maintain panels of participants who have expressed willingness to participate in research. These participants were compensated for completing some combination of demographic items, the MBTI research form, and/or other validity assessments. For some samples—for example, Brazil (Brazilian Portuguese)—the locally based MBTI distributor led the data collection effort. Once data were collected, all cases were thoroughly examined, and invalid cases (e.g., those with too many response omissions or where a participant had selected only the "A" response option across 230 items) were removed.

Table 2 | **Demographic summary: Portuguese sample**

| Demographic | Target % | Actual % |
|---|---|---|
| ***Age group*** | | |
| 15–24 years | 14 | 21 |
| 25–44 years | 36 | 46 |
| 45–64 years | 30 | 31 |
| 65+ years | 21 | 1 |
| Mean age: 38 years | — | — |
| ***Gender*** | | |
| Female | 52 | 56 |
| Male | 48 | 44 |
| ***Employment status*** | | |
| Working full-time | 48 | 60 |
| Working part-time | 6 | 9 |
| Student | 10 | 11 |
| Looking after family/home | 14 | 4 |
| Long-term sick | 12 | 1 |
| Retired / not working for income / none of the above | 10 | 16 |
| ***Self-employed*** | | |
| Yes | 10 | 12 |
| No | 90 | 56 |
| No response | — | 32 |
| ***Country of residence*** | | |
| Portugal | — | 100 |

*Note: N* = 503. Percentages in a given category may not total 100% due to the rounding of decimals.

This cleaning step, while reducing final sample sizes, was required to ensure that only the highest-quality data remained for analysis.

A representative sample of individuals in Portugal who read European Portuguese was obtained from a market research firm. Targets provided by OPP Ltd were set based on the population of Portugal. Table 2 shows the demographic target and actual percentages obtained. The resulting Portuguese sample consists of 503 individuals, 56.3% women and 43.7% men. The age range is 15–76, with an average of 38 years (standard deviation = 12.4). All individuals reported residing in Portugal.

## MBTI® GLOBAL STEP I™ ASSESSMENT RESULTS FOR THE PORTUGUESE SAMPLE

The Global Step I assessment contains 92 items used to help determine individuals' personality type by identifying their preferences on four pairs of opposites (Extraversion–Introversion, Sensing–Intuition, Thinking–Feeling, and Judging–Perceiving). Combining

Table 3 | **Reported MBTI® type distribution: Portuguese sample**

| Sensing | | Intuition | | | |
|---|---|---|---|---|---|
| **Thinking** | **Feeling** | | **Thinking** | | |
| **ISTJ**<br>*n* = 69<br>13.7% | **ISFJ**<br>*n* = 28<br>5.6% | **INFJ**<br>*n* = 5<br>1.0% | **INTJ**<br>*n* = 7<br>1.4% | Judging | Introversion |
| **ISTP**<br>*n* = 43<br>8.5% | **ISFP**<br>*n* = 35<br>7.0% | **INFP**<br>*n* = 42<br>8.3% | **INTP**<br>*n* = 19<br>3.8% | Perceiving | |
| **ESTP**<br>*n* = 47<br>9.3% | **ESFP**<br>*n* = 50<br>9.9% | **ENFP**<br>*n* = 39<br>7.8% | **ENTP**<br>*n* = 32<br>6.4% | | Extraversion |
| **ESTJ**<br>*n* = 52<br>10.3% | **ESFJ**<br>*n* = 22<br>4.4% | **ENFJ**<br>*n* = 7<br>1.4% | **ENTJ**<br>*n* = 6<br>1.2% | Judging | |

*Note:* *N* = 503.

Table 4 | **Reported MBTI® preference and preference combination distributions: Portuguese sample**

| Preferences | | | Orientation pairs | | | Process pairs | | | Orientation of energy and perceiving pairs | | | Judging and external orientation pairs | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *n* | % | | *n* | % | | *n* | % | | *n* | % | | *n* | % |
| **E** | 255 | 50.7 | **EJ** | 87 | 17.3 | **ST** | 211 | 41.9 | **ES** | 171 | 34.0 | **TJ** | 134 | 26.6 |
| **I** | 248 | 49.3 | **EP** | 168 | 33.4 | **SF** | 135 | 26.8 | **EN** | 84 | 16.7 | **TP** | 141 | 28.0 |
| **S** | 346 | 68.8 | **IJ** | 109 | 21.7 | **NF** | 93 | 18.5 | **IS** | 175 | 34.8 | **FJ** | 62 | 12.3 |
| **N** | 157 | 31.2 | **IP** | 139 | 27.6 | **NT** | 64 | 12.7 | **IN** | 73 | 14.5 | **FP** | 166 | 33.0 |
| **T** | 275 | 54.7 | | | | | | | | | | | | |
| **F** | 228 | 45.3 | | | | | | | | | | | | |
| **J** | 196 | 39.0 | | | | | | | | | | | | |
| **P** | 307 | 61.0 | | | | | | | | | | | | |

*Note:* *N* = 503. Percentages may not total 100% due to the rounding of decimals.

an individual's four preferences yields 1 of 16 possible MBTI types. The Global Step I assessment replaces the Form M assessment and the European Step I assessment.

## MBTI® Type and Preference Distributions

MBTI type was computed for all participants in the Portuguese sample. Type, preference, and preference combination distributions for this sample are presented in tables 3 and 4.

Table 3 shows that the most common types for this representative sample are ISTJ and ESTJ. The least common types are INFJ and ENTJ. Table 4 shows the distributions of preferences as well as four two-preference combinations: (1) *orientation* pairs, (2) *process* pairs, (3) *orientation of energy* and *perceiving process* pairs, and (4) *judging process* and *external orientation* pairs. The table shows that of the judging and external orientation pairs, TJ, TP, and FP occur more frequently than FJs. In addition, Ss are more prevalent than Ns, and Ps more than Js, while the other preferences are more evenly distributed.

Tables 5–8 show type and preference distributions by gender. For men, as seen in table 5, the most common MBTI types are ISTJ (15.5%) and ESTJ (14.5%), and the least common type is ENFJ (0.9%). For women, as seen

Table 5 | **Reported MBTI® type distribution for men: Portuguese sample**

| Sensing | | Intuition | | | |
|---|---|---|---|---|---|
| **Thinking** | **Feeling** | | **Thinking** | | |
| **ISTJ**<br>*n* = 34<br>15.5% | **ISFJ**<br>*n* = 8<br>3.6% | **INFJ**<br>*n* = 3<br>1.4% | **INTJ**<br>*n* = 4<br>1.8% | Judging | Introversion |
| **ISTP**<br>*n* = 21<br>9.5% | **ISFP**<br>*n* = 14<br>6.4% | **INFP**<br>*n* = 11<br>5.0% | **INTP**<br>*n* = 14<br>6.4% | Perceiving | |
| **ESTP**<br>*n* = 24<br>10.9% | **ESFP**<br>*n* = 18<br>8.2% | **ENFP**<br>*n* = 12<br>5.5% | **ENTP**<br>*n* = 14<br>6.4% | | Extraversion |
| **ESTJ**<br>*n* = 32<br>14.5% | **ESFJ**<br>*n* = 6<br>2.7% | **ENFJ**<br>*n* = 2<br>0.9% | **ENTJ**<br>*n* = 3<br>1.4% | Judging | |

*Note:* *n* = 220. Percentages may not total 100% due to the rounding of decimals.

Table 6 | **Reported MBTI® preference and preference combination distributions for men: Portuguese sample**

| Preferences | | | Orientation pairs | | | Process pairs | | | Orientation of energy and perceiving pairs | | | Judging and external orientation pairs | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *n* | % | | *n* | % | | *n* | % | | *n* | % | | *n* | % |
| **E** | 111 | 50.5 | **EJ** | 43 | 19.5 | **ST** | 111 | 50.5 | **ES** | 80 | 36.4 | **TJ** | 73 | 33.2 |
| **I** | 109 | 49.5 | **EP** | 68 | 30.9 | **SF** | 46 | 20.9 | **EN** | 31 | 14.1 | **TP** | 73 | 33.2 |
| **S** | 157 | 71.4 | **IJ** | 49 | 22.3 | **NF** | 28 | 12.7 | **IS** | 77 | 35.0 | **FJ** | 19 | 8.6 |
| **N** | 63 | 28.6 | **IP** | 60 | 27.3 | **NT** | 35 | 15.9 | **IN** | 32 | 14.5 | **FP** | 55 | 25.0 |
| **T** | 146 | 66.4 | | | | | | | | | | | | |
| **F** | 74 | 33.6 | | | | | | | | | | | | |
| **J** | 92 | 41.8 | | | | | | | | | | | | |
| **P** | 128 | 58.2 | | | | | | | | | | | | |

*Note:* *n* = 220.

in table 7, the most common MBTI types are ISTJ (12.4%) and ESFP (11.3%). The least common type for women is INFJ (0.7%).

## Relationships Between MBTI® Global Step I™, Form M, and European Step I™ Preference Pair Results

Correlations between MBTI Global Step I, Form M, and European Step I preference pair results for the Portuguese sample are shown in table 9.[2] The overall agreement rate of whole types between the Global Step I and Form M assessments was 73%, while between the Global Step I and European Step I assessments it was 50%. The agreement rate between the Global Step I and Form M assessments is higher than the 60% agreement rate between Form G and Form M reported in the 1998 MBTI® Manual (Myers, McCaulley, Quenk, & Hammer).

## Global Step I™ Preference Pair Intercorrelations

Intercorrelations of Global Step I preference pair continuous scores in the Portuguese sample are shown in table 10 below the diagonal. The highest correlation is between the S–N and J–P preference pairs. The next

Table 7 | **Reported MBTI® type distribution for women: Portuguese sample**

| Sensing | | Intuition | | | |
|---|---|---|---|---|---|
| **Thinking** | **Feeling** | | **Thinking** | | |
| **ISTJ**<br>*n* = 35<br>12.4% | **ISFJ**<br>*n* = 20<br>7.1% | **INFJ**<br>*n* = 2<br>0.7% | **INTJ**<br>*n* = 3<br>1.1% | Judging | Introversion |
| **ISTP**<br>*n* = 22<br>7.8% | **ISFP**<br>*n* = 21<br>7.4% | **INFP**<br>*n* = 31<br>11.0% | **INTP**<br>*n* = 5<br>1.8% | Perceiving | |
| **ESTP**<br>*n* = 23<br>8.1% | **ESFP**<br>*n* = 32<br>11.3% | **ENFP**<br>*n* = 27<br>9.5% | **ENTP**<br>*n* = 18<br>6.4% | | Extraversion |
| **ESTJ**<br>*n* = 20<br>7.1% | **ESFJ**<br>*n* = 16<br>5.7% | **ENFJ**<br>*n* = 5<br>1.8% | **ENTJ**<br>*n* = 3<br>1.1% | Judging | |

*Note:* *n* = 283. Percentages may not total 100% due to the rounding of decimals.

Table 8 | **Reported MBTI® preference and preference combination distributions for women: Portuguese sample**

| Preferences | | | Orientation pairs | | | Process pairs | | | Orientation of energy and perceiving pairs | | | Judging and external orientation pairs | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *n* | % | | *n* | % | | *n* | % | | *n* | % | | *n* | % |
| **E** | 144 | 50.9 | **EJ** | 44 | 15.5 | **ST** | 100 | 35.3 | **ES** | 91 | 32.2 | **TJ** | 61 | 21.6 |
| **I** | 139 | 49.1 | **EP** | 100 | 35.3 | **SF** | 89 | 31.4 | **EN** | 53 | 18.7 | **TP** | 68 | 24.0 |
| **S** | 189 | 66.8 | **IJ** | 60 | 21.2 | **NF** | 65 | 23.0 | **IS** | 98 | 34.6 | **FJ** | 43 | 15.2 |
| **N** | 94 | 33.2 | **IP** | 79 | 27.9 | **NT** | 29 | 10.2 | **IN** | 41 | 14.5 | **FP** | 111 | 39.2 |
| **T** | 129 | 45.6 | | | | | | | | | | | | |
| **F** | 154 | 54.4 | | | | | | | | | | | | |
| **J** | 104 | 36.7 | | | | | | | | | | | | |
| **P** | 179 | 63.3 | | | | | | | | | | | | |

*Note:* *n* = 283. Percentages may not total 100% due to the rounding of decimals.

highest is between T–F and J–P. These correlations are very similar to those found for the global sample, shown in table 10 above the diagonal. The Portuguese sample findings are likewise consistent with those reported for Form M in the 1998 MBTI® Manual (Myers et al.).

## Reliability of Global Step I™ Results

This section covers the measurement properties for the European Portuguese translation of the MBTI Global Step I assessment. For full Step I reliability and validity information for the global sample, refer to chapters 8 and 9 of the *MBTI® Manual for the Global Step I™ and Step II™ Assessments* (Myers et al., 2018).

*Reliability* refers to consistency of measurement. A measure is said to be reliable when it produces a consistent, though not necessarily identical, result. Scores, not assessments, are either reliable or unreliable for a particular population of respondents, as reliability is affected by both the sample and the items contained in the assessment (Capraro & Capraro, 2002). Because reliability hinges at least partially on total score variability, samples that are homogeneous on the characteristic being measured will likely yield a low total score variance, and the reliability of the scores regarding the characteristic may be poor. Conversely, participants in a sample that is heterogeneous with respect to the characteristic will likely score differently from each other,

Table 9 | **Relationships between MBTI® Global Step I™, Form M, and European Step I™ preference pair results: Portuguese sample**

| | Global Step I™ and Form M | | Global Step I™ and European Step I™ | |
|---|---|---|---|---|
| Preference pair | Correlation between continuous scores | Agreement rate (%) | Correlation between continuous scores | Agreement rate (%) |
| **E–I** | .97 | 92 | .92 | 85 |
| **S–N** | .96 | 91 | .90 | 86 |
| **T–F** | .98 | 93 | .85 | 85 |
| **J–P** | .96 | 94 | .89 | 78 |
| *Overall agreement rate for whole types* | | *73* | | *50* |

*Note:* $N = 503$.

Table 10 | **Intercorrelations of Global Step I™ preference pair continuous scores: Portuguese and global samples**

| Preference pair | E–I | S–N | T–F | J–P |
|---|---|---|---|---|
| **E–I** | — | –.20 | –.15 | –.15 |
| **S–N** | –.10 | — | .27 | .48 |
| **T–F** | –.13 | .28 | — | .23 |
| **J–P** | –.14 | .49 | .30 | — |

*Note:* Correlations for the Portuguese sample ($N = 503$) are below the diagonal; those for the global sample ($N = 16,773$) are above the diagonal.

thereby increasing variability and providing stronger reliability (Dawis, 1987).

Internal consistency reliability measures the consistency of responses across items in a particular measure for a particular sample. The most commonly used estimator of internal consistency reliability is Cronbach's alpha (Cronbach, 1951). Table 11 shows the Cronbach's alphas for Global Step I preference pairs in the Portuguese sample and for the global sample for comparison purposes. The Portuguese sample alphas range from .85 to .87.

Another form of reliability is test-retest, which estimates how stable a measure is over time. Test-retest reliability correlations of Global Step I continuous scores in the Portuguese sample are also presented in table 11. The test-retest interval was ≤15 weeks. This table also shows the rate of test-retest agreement for each preference pair. Additionally, test-retest correlations and test-retest agreement rates for the global sample are shown in this table for comparison purposes.

Table 12 shows the percentage of individuals in the Portuguese sample who reported zero, one, two, three, or four preferences the same upon retest. Seventy-nine percent of individuals reported having either three or four preferences the same at time of retest.

Table 11 | **Internal consistency and test-retest reliabilities of Global Step I™ preference pair continuous scores: Portuguese and global samples**

| | | Cronbach's alpha | | | |
|---|---|---|---|---|---|
| Sample | *N* | E–I | S–N | T–F | J–P |
| **Portuguese** | 503 | .87 | .85 | .86 | .85 |
| **Global** | 16,773 | .89 | .87 | .89 | .88 |
| | | **Test-retest correlation** | | | |
| Sample (interval) | *n* | E–I | S–N | T–F | J–P |
| **Portuguese** (≤15 weeks) | 87 | .86 | .85 | .79 | .81 |
| **Global** (≤15 weeks) | 1,721 | .86 | .83 | .82 | .81 |
| | | **Test-retest agreement rate (%)** | | | |
| Sample (interval) | *n* | E–I | S–N | T–F | J–P |
| **Portuguese** (≤15 weeks) | 87 | 82 | 80 | 75 | 77 |
| **Global** (≤15 weeks) | 1,721 | 84 | 86 | 79 | 79 |

Table 12 | **Percentage of individuals with preferences the same at retest: Portuguese sample**

| | | Number of preferences the same at retest (%) | | | | |
|---|---|---|---|---|---|---|
| Sample (interval) | *n* | 4 | 3 | 2 | 1 | 0 |
| **Portuguese** (≤15 weeks) | 87 | 43 | 36 | 16 | 5 | 1 |

## MBTI® GLOBAL STEP II™ ASSESSMENT RESULTS FOR THE PORTUGUESE SAMPLE

The Global Step II assessment contains all 92 Global Step I items plus an additional 51 items needed to score the Step II facets, for a total of 143. Step II results expand on descriptions of the four preference pairs by providing information about five facets of each pair (see table 13). The Global Step II assessment replaces the Form Q assessment and the European Step II assessment.

### Relationships Between MBTI® Global Step II™, Form Q, and European Step II™ Facet Results

Table 13 presents the relationships between MBTI Global Step II, Form Q, and European Step II facet results for the Portuguese sample. Most facet scales are highly correlated, as the table shows. The lower correlation on the Questioning–Accommodating scale reflects changes made to that scale when creating the Global Step II assessment.

Table 13 | **Correlations between Global Step II™, Form Q, and European Step II™ continuous scores: Portuguese sample**

| Global Step II™ facet | Form Q correlation | European Step II™ correlation |
|---|---|---|
| ***E–I facets*** | | |
| Initiating–Receiving | .97 | .96 |
| Expressive–Contained | .98 | .93 |
| Gregarious–Intimate | .97 | .98 |
| Active–Reflective | .82 | .84 |
| Enthusiastic–Quiet | .98 | .97 |
| ***S–N facets*** | | |
| Concrete–Abstract | .95 | .94 |
| Realistic–Imaginative | .99 | .99 |
| Practical–Conceptual | .85 | .86 |
| Experiential–Theoretical | .94 | .97 |
| Traditional–Original | .96 | .96 |
| ***T–F facets*** | | |
| Logical–Empathetic | .94 | .95 |
| Reasonable–Compassionate | .91 | .94 |
| Questioning–Accommodating | .47 | .71 |
| Critical–Accepting | .68 | .67 |
| Tough–Tender | .96 | .94 |
| ***J–P facets*** | | |
| Systematic–Casual | .93 | .96 |
| Planful–Open-Ended | .97 | .98 |
| Early Starting–Pressure-Prompted | .92 | .94 |
| Scheduled–Spontaneous | .92 | .90 |
| Methodical–Emergent | .96 | .91 |

*Note: N* = 503.

### Global Step II™ Facet Intercorrelations

Intercorrelations of Global Step II facets are presented in table 14. Facets within each preference pair correlate more highly with other facets of the same preference pair than with facets of different preference pairs.

### Reliability and Validity of Global Step II™ Results

This section covers measurement properties for the European Portuguese translation of the MBTI Global Step II assessment, including reliability and validity. For full Step II reliability and validity information for the global sample, refer to chapters 8 and 10 of the *MBTI® Manual for the Global Step I™ and Step II™ Assessments* (Myers et al., 2018).

#### RELIABILITY

Internal consistency and test-retest reliabilities for Global Step II facets in the Portuguese sample are presented in table 15.

#### VALIDITY

Reported here as evidence of the validity of the European Portuguese translation of the MBTI Global Step II assessment are the percentage of out-of-preference facet scores for each preference pair as well as correlations between facets and preference pairs.

The five facets within each preference pair do not represent the entire conceptual domain of the preference pair. Further, it is not uncommon for individuals to have a facet score on the side opposite that of their preference in a given preference pair. For example, an Extravert may score toward the Intimate pole. This apparent inconsistency is referred to as an out-of-preference score and defined as a facet score from –2 to –5 when a respondent has preferences for I, N, F, or P; or from 2 to 5 when a respondent has preferences for E, S, T, or J. While it is not unusual to have a number of out-of-preference scores, it is relatively rare to have three or more facets out-of-preference for any preference pair. The percentage of out-of-preference facet scores for each preference pair in the Portuguese sample is shown in table 16.

Correlations between facets and preference pairs are presented in table 17. The correlation between each facet and its corresponding preference pair is significantly higher than those between the facet and the other three preference pairs. This is "compelling evidence for the theoretical hierarchical structure of the Step II facets in relation to the Step I scales" (Quenk, Hammer, & Majors, 2001, p. 104). The Portuguese sample correlations are

Table 14 | **Intercorrelations of Global Step II™ facets: Portuguese sample**

| Global Step II™ facet | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. | 13. | 14. | 15. | 16. | 17. | 18. | 19. | 20. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***E–I facets*** | | | | | | | | | | | | | | | | | | | | |
| 1. Initiating–Receiving | — | | | | | | | | | | | | | | | | | | | |
| 2. Expressive–Contained | .61 | — | | | | | | | | | | | | | | | | | | |
| 3. Gregarious–Intimate | .62 | .53 | — | | | | | | | | | | | | | | | | | |
| 4. Active–Reflective | .69 | .55 | .57 | — | | | | | | | | | | | | | | | | |
| 5. Enthusiastic–Quiet | .52 | .46 | .55 | .60 | — | | | | | | | | | | | | | | | |
| ***S–N facets*** | | | | | | | | | | | | | | | | | | | | |
| 6. Concrete–Abstract | .05 | .05 | .01 | .01 | –.18 | — | | | | | | | | | | | | | | |
| 7. Realistic–Imaginative | –.03 | –.04 | –.12 | –.12 | –.33 | .63 | — | | | | | | | | | | | | | |
| 8. Practical–Conceptual | .01 | .04 | –.02 | .00 | –.19 | .57 | .59 | — | | | | | | | | | | | | |
| 9. Experiential–Theoretical | .17 | .16 | .10 | .12 | .02 | .48 | .39 | .34 | — | | | | | | | | | | | |
| 10. Traditional–Original | –.12 | –.05 | –.09 | –.14 | –.34 | .54 | .54 | .56 | .20 | — | | | | | | | | | | |
| ***T–F facets*** | | | | | | | | | | | | | | | | | | | | |
| 11. Logical–Empathetic | –.10 | –.19 | –.07 | –.15 | –.28 | .29 | .26 | .12 | .12 | .11 | — | | | | | | | | | |
| 12. Reasonable–Compassionate | –.01 | –.13 | –.01 | –.09 | –.20 | .34 | .29 | .14 | .26 | .10 | .69 | — | | | | | | | | |
| 13. Questioning–Accommodating | .11 | .01 | .00 | .02 | –.05 | .12 | .11 | –.15 | .08 | –.18 | .43 | .44 | — | | | | | | | |
| 14. Critical–Accepting | –.09 | –.13 | –.11 | –.13 | –.27 | .32 | .30 | .13 | .09 | .17 | .59 | .49 | .58 | — | | | | | | |
| 15. Tough–Tender | –.01 | –.10 | .00 | –.05 | –.13 | .24 | .19 | .06 | .09 | .03 | .61 | .57 | .64 | .60 | — | | | | | |
| ***J–P facets*** | | | | | | | | | | | | | | | | | | | | |
| 16. Systematic–Casual | –.11 | –.10 | –.09 | –.20 | –.37 | .52 | .46 | .31 | .20 | .52 | .37 | .35 | .13 | .34 | .25 | — | | | | |
| 17. Planful–Open-Ended | –.10 | –.06 | –.05 | –.14 | –.21 | .35 | .27 | .20 | .17 | .39 | .17 | .18 | .03 | .20 | .09 | .60 | — | | | |
| 18. Early Starting–Pressure-Prompted | .03 | .07 | .01 | –.05 | –.19 | .35 | .28 | .21 | .21 | .26 | .08 | .16 | .00 | .08 | .04 | .50 | .46 | — | | |
| 19. Scheduled–Spontaneous | –.06 | –.06 | –.04 | –.15 | –.27 | .44 | .39 | .27 | .22 | .44 | .23 | .26 | .08 | .22 | .14 | .70 | .69 | .56 | — | |
| 20. Methodical–Emergent | –.03 | .04 | –.05 | –.07 | –.11 | .14 | .14 | .06 | .06 | .17 | .09 | .14 | .05 | .06 | .07 | .46 | .49 | .52 | .50 | — |

*Note:* $N = 503$.

Table 15 | **Internal consistency and test-retest reliabilities of Global Step II™ facet continuous scores: Portuguese sample**

| Global Step II™ facet | Cronbach's alpha | Test-retest correlation |
|---|---|---|
| ***E–I facets*** | | |
| Initiating–Receiving | .82 | .81 |
| Expressive–Contained | .68 | .73 |
| Gregarious–Intimate | .60 | .67 |
| Active–Reflective | .59 | .77 |
| Enthusiastic–Quiet | .69 | .82 |
| ***S–N facets*** | | |
| Concrete–Abstract | .74 | .77 |
| Realistic–Imaginative | .64 | .76 |
| Practical–Conceptual | .64 | .72 |
| Experiential–Theoretical | .72 | .67 |
| Traditional–Original | .73 | .80 |
| ***T–F facets*** | | |
| Logical–Empathetic | .81 | .82 |
| Reasonable–Compassionate | .64 | .71 |
| Questioning–Accommodating | .57 | .65 |
| Critical–Accepting | .39 | .77 |
| Tough–Tender | .70 | .71 |
| ***J–P facets*** | | |
| Systematic–Casual | .75 | .77 |
| Planful–Open-Ended | .77 | .72 |
| Early Starting–Pressure-Prompted | .69 | .74 |
| Scheduled–Spontaneous | .72 | .72 |
| Methodical–Emergent | .60 | .58 |

*Note: N* = 503; test-retest, *n* = 87.

Table 16 | **Percentage of reported out-of-preference Global Step II™ facet scores: Portuguese sample**

| Preference pair | Number of out-of-preference facet scores (%) | | | | | |
|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 |
| **E–I** | 71 | 23 | 6 | <1 | 0 | 0 |
| **S–N** | 61 | 32 | 7 | <1 | 0 | 0 |
| **T–F** | 70 | 22 | 7 | 2 | 0 | 0 |
| **J–P** | 63 | 28 | 9 | 1 | 0 | 0 |

*Note: N* = 503. Percentages may not total 100% due to the rounding of decimals.

comparable to those reported in the *MBTI® Step II™ Manual* (Quenk et al., 2001) and the *MBTI® Step II™ Manual, European Edition* (Quenk, Hammer, & Majors, 2004). The lowest correlation between a facet and its corresponding preference pair is between Experiential–Theoretical and S–N.

Table 17 | **Correlations between Global Step II™ facets and preference pairs: Portuguese sample**

| Global Step II™ facet | Preference pair | | | |
|---|---|---|---|---|
| | E–I | S–N | T–F | J–P |
| ***E–I facets*** | | | | |
| Initiating–Receiving | .86 | .00 | –.04 | –.07 |
| Expressive–Contained | .75 | .01 | –.15 | –.04 |
| Gregarious–Intimate | .76 | –.05 | –.05 | –.04 |
| Active–Reflective | .81 | –.05 | –.12 | –.15 |
| Enthusiastic–Quiet | .74 | –.28 | –.24 | –.29 |
| ***S–N facets*** | | | | |
| Concrete–Abstract | –.01 | .85 | .35 | .48 |
| Realistic–Imaginative | –.17 | .82 | .30 | .41 |
| Practical–Conceptual | –.05 | .76 | .12 | .27 |
| Experiential–Theoretical | .14 | .55 | .17 | .23 |
| Traditional–Original | –.19 | .74 | .12 | .46 |
| ***T–F facets*** | | | | |
| Logical–Empathetic | –.18 | .24 | .90 | .26 |
| Reasonable–Compassionate | –.10 | .29 | .83 | .30 |
| Questioning–Accommodating | .03 | .02 | .61 | .08 |
| Critical–Accepting | –.18 | .27 | .69 | .26 |
| Tough–Tender | –.06 | .17 | .79 | .16 |
| ***J–P facets*** | | | | |
| Systematic–Casual | –.20 | .54 | .39 | .81 |
| Planful–Open-Ended | –.13 | .37 | .20 | .84 |
| Early Starting–Pressure-Prompted | –.01 | .32 | .11 | .65 |
| Scheduled–Spontaneous | –.13 | .47 | .26 | .91 |
| Methodical–Emergent | –.05 | .15 | .13 | .61 |

*Note: N* = 503.

## Global Step II™ Facet Distributions

Determining whether a particular score is in-preference, midzone, or out-of-preference provides the basis for recognizing and understanding individual differences among people of the same type. When practitioners give feedback to respondents, the most important verification issue is the accuracy with which the scores reflect respondents' placement at either pole or in the midzone. If a respondent disagrees with results on a facet, interpretation will be affected. For example, a respondent may judge a facet score that was reported as midzone to be actually out-of-preference or in-preference. In such an instance, statements in the report will be incorrect for that facet, so the practitioner must provide appropriate interpretive information that corresponds to the respondent's verified placement. Practitioners may refer to *Understanding Your MBTI® Step II™ Results* (Kummerow & Quenk, 2018) and *MBTI® Step II™ User's Guide* (Quenk & Kummerow, 2019) for interpretations of all possible Step II facet results.

Table 18 | **In-preference, midzone, and out-of-preference percentages and rankings for the Global Step II™ facets: Portuguese sample**

| | In-preference | | Midzone | | Out-of-preference | |
|---|---|---|---|---|---|---|
| Global Step II™ facet | % | Rank | % | Rank | % | Rank |
| ***E–I facets*** | | | | | | |
| Initiating–Receiving | 64.21 | 2 | 31.01 | 17 | 4.77 | 16 |
| Expressive–Contained | 53.68 | 16 | 39.76 | 4 | 6.56 | 13 |
| Gregarious–Intimate | 56.86 | 11 | 32.60 | 14 | 10.54 | 5 |
| Active–Reflective | 53.08 | 17 | 42.54 | 2 | 4.37 | 17 |
| Enthusiastic–Quiet | 61.23 | 4 | 29.62 | 18 | 9.15 | 8 |
| ***S–N facets*** | | | | | | |
| Concrete–Abstract | 63.42 | 3 | 32.41 | 15 | 4.17 | 18 |
| Realistic–Imaginative | 59.24 | 8 | 34.00 | 10 | 6.76 | 12 |
| Practical–Conceptual | 61.23 | 4 | 33.20 | 12 | 5.57 | 15 |
| Experiential–Theoretical | 60.24 | 6 | 23.46 | 19 | 16.30 | 2 |
| Traditional–Original | 46.92 | 19 | 39.56 | 5 | 13.52 | 3 |
| ***T–F facets*** | | | | | | |
| Logical–Empathetic | 65.81 | 1 | 31.21 | 16 | 2.98 | 19 |
| Reasonable–Compassionate | 53.88 | 14 | 38.97 | 7 | 7.16 | 10 |
| Questioning–Accommodating | 45.13 | 20 | 42.35 | 3 | 12.52 | 4 |
| Critical–Accepting | 50.89 | 18 | 39.17 | 6 | 9.94 | 7 |
| Tough–Tender | 58.65 | 9 | 33.80 | 11 | 7.55 | 9 |
| ***J–P facets*** | | | | | | |
| Systematic–Casual | 56.06 | 12 | 38.17 | 8 | 5.77 | 14 |
| Planful–Open-Ended | 60.04 | 7 | 32.80 | 13 | 7.16 | 10 |
| Early Starting–Pressure-Prompted | 57.26 | 10 | 19.48 | 20 | 23.26 | 1 |
| Scheduled–Spontaneous | 53.88 | 14 | 44.93 | 1 | 1.19 | 20 |
| Methodical–Emergent | 54.87 | 13 | 34.59 | 9 | 10.54 | 5 |

*Note:* $N = 503$.

Table 18 shows the percentages and rank order of in-preference, midzone, and out-of-preference scores for the 20 Global Step II facets for the Portuguese sample. Interpreters may find this table useful because it shows which facets are more or less likely to yield scores in these three categories. There are wide variations in the frequency with which facet scores are likely to be out-of-preference. Here, the facet with the highest percentage of out-of-preference scores is Early Starting–Pressure-Prompted at 23.26%, followed by Experiential–Theoretical at 16.30%. The Scheduled–Spontaneous facet (1.19%) and the Logical–Empathetic facet (2.98%) appear least likely to elicit out-of-preference responses.

Gender differences on the Step II facets in the Portuguese sample are presented in table 19. Cohen's *d* (Cohen, 1992; mean differences expressed in units of standard deviation[3]) shows the magnitude of the difference in mean scores and standard deviations for men and women.

Table 19 | **Means, standard deviations, and Cohen's *d* of the Global Step II™ facets by total sample and gender: Portuguese sample**

| | Total sample ($N$ = 503) | | Men ($n$ = 220) | | Women ($n$ = 283) | | Gender difference |
|---|---|---|---|---|---|---|---|
| **Global Step II™ facet** | ***M*** | ***SD*** | ***M*** | ***SD*** | ***M*** | ***SD*** | **Cohen's *d*** |
| ***E–I facets*** | | | | | | | |
| Initiating–Receiving | −0.12 | 0.87 | −0.14 | 0.84 | −0.10 | 0.89 | −0.05 |
| Expressive–Contained | 0.08 | 0.81 | 0.05 | 0.78 | 0.10 | 0.83 | −0.06 |
| Gregarious–Intimate | −0.17 | 0.73 | −0.26 | 0.77 | −0.10 | 0.69 | −0.22 |
| Active–Reflective | −0.02 | 0.74 | −0.01 | 0.67 | −0.03 | 0.79 | 0.02 |
| Enthusiastic–Quiet | 0.10 | 0.82 | 0.25 | 0.76 | −0.02 | 0.85 | 0.34 |
| ***S–N facets*** | | | | | | | |
| Concrete–Abstract | −0.37 | 0.87 | −0.53 | 0.86 | −0.25 | 0.86 | −0.32 |
| Realistic–Imaginative | −0.16 | 0.80 | −0.24 | 0.79 | −0.09 | 0.80 | −0.20 |
| Practical–Conceptual | −0.27 | 0.78 | −0.30 | 0.79 | −0.24 | 0.78 | −0.07 |
| Experiential–Theoretical | −0.52 | 0.76 | −0.50 | 0.73 | −0.54 | 0.78 | 0.06 |
| Traditional–Original | 0.11 | 0.85 | −0.01 | 0.80 | 0.20 | 0.88 | −0.24 |
| ***T–F facets*** | | | | | | | |
| Logical–Empathetic | 0.03 | 0.87 | −0.21 | 0.83 | 0.22 | 0.85 | −0.52 |
| Reasonable–Compassionate | −0.42 | 0.64 | −0.51 | 0.61 | −0.35 | 0.66 | −0.24 |
| Questioning–Accommodating | −0.47 | 0.68 | −0.57 | 0.71 | −0.39 | 0.66 | −0.26 |
| Critical–Accepting | −0.37 | 0.64 | −0.55 | 0.62 | −0.23 | 0.63 | −0.51 |
| Tough–Tender | −0.11 | 0.81 | −0.31 | 0.80 | 0.04 | 0.78 | −0.45 |
| ***J–P facets*** | | | | | | | |
| Systematic–Casual | 0.15 | 0.82 | −0.04 | 0.81 | 0.29 | 0.80 | −0.42 |
| Planful–Open-Ended | 0.08 | 0.84 | 0.05 | 0.81 | 0.11 | 0.87 | −0.06 |
| Early Starting–Pressure-Prompted | 0.02 | 0.84 | −0.08 | 0.80 | 0.10 | 0.86 | −0.22 |
| Scheduled–Spontaneous | 0.22 | 0.72 | 0.16 | 0.66 | 0.26 | 0.76 | −0.15 |
| Methodical–Emergent | 0.27 | 0.75 | 0.29 | 0.75 | 0.25 | 0.75 | 0.05 |

*Note:* For information on Cohen's *d*, see note 3, below.

## CONCLUSION

Initial analyses of the European Portuguese translations of the MBTI Global Step I and Step II assessments demonstrate that they each have good internal consistency and test-retest reliabilities and are consistent with those of prior forms of the MBTI assessment (i.e., Form M and Form Q, European Step I and Step II).

Validity was established by showing the proportion of out-of-preference facet scores. While more research should be conducted, all these analyses show that the European Portuguese translations of the MBTI Global Step I and Step II assessments are appropriate for use with individuals in Portugal who read and understand European Portuguese.

## NOTES

1. The terms *translation* and *adaptation* are often used interchangeably in the testing and measurement literature. Historically, *translation* has been used to describe the process by which an assessment is converted to a language other than the one in which it was originally constructed. However, the term *adaptation* is increasingly being used to reflect the fact that an effective conversion of assessment items from one language to another often requires not a word-for-word translation but rather a modification intended to maintain the general sense or purpose of those items in a particular language. Nevertheless, as the more readily understood term, *translation* is used here.
2. Correlation coefficients (typically identified by *r*) range from –1 to 1 and can be squared and used as effect sizes (measures of the practical significance of the relationship between the two variables in question). Cohen's guidelines regarding effect sizes indicate that $r^2$ = .10 is a small effect size, $r^2$ = .30 is medium, and $r^2$ = .50 is large (Cohen, 1988, 1992).
3. Cohen's *d* is an estimate of an effect size computed by taking the difference between the means of two groups and dividing by their pooled standard deviations. Because the metric is in standard deviation units, effect sizes can easily be compared to evaluate the magnitude of a difference. Cohen (1992) provides an overview of the computation of a variety of effect sizes, along with guidance on interpretation. Cohen proposed that *d* = .20 be considered small, *d* = .50 be considered medium, and *d* = .80 be considered large. In psychological research, small to medium effect sizes are typical.

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