Spanish Translation of the MBTI® for Puerto Rico and its Implications for Education, Counseling, and Institutional Research

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MBTI®’s Dichotomous Dimensions

<table>
<thead>
<tr>
<th>Attitudes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Extraversion (E)</strong></td>
</tr>
<tr>
<td><strong>Introversion (I)</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mindset</th>
<th>Orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Judging</strong> (J)</td>
<td></td>
</tr>
<tr>
<td><strong>Perceiving</strong> (P)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thinking (T)</th>
<th>Feeling (F)</th>
<th>Sensing (S)</th>
<th>Intuition (N)</th>
</tr>
</thead>
</table>

Objectives

1. Translation and adaptation for Puerto Rico of the Myers-Briggs Type Indicator (MBTI®), Form M
2. Evaluation of psychometric properties in terms of internal reliability and construct validity
3. Comparison of translation’s properties with those documented in studies using the MBTI®
4. Describe the conceptual typology and learning styles of a sample UPRM students
5. Discuss the implications of the study’s results for institutional research and the potential use of the theory of psychological types and the MBTI® for education

Hypotheses

1. Reliability:
   a. Moderately high or high internal reliability coefficient for the MBTI®
   b. Moderately high or high internal reliability coefficients for the items that form the four scales of the MBTI®
2. Validity:
   a. Items will be grouped on the four factors that correspond to Briggs & Myers’ interpretation of Carl Jung’s theory of psychological types
Hypotheses

2. Validity (cont.):
   b. Low intercorrelations amongst four scales’ continuous scores, except for S-N & J-P where it will be moderate
   c. Preferences for the dimensions of the scales will be negatively correlated
   d. Significant differences amongst the continuous scores of each scale as a function of gender, major, and year of study

Sample: 366 UPRM Students

- Academic Level:
  - 89.6% undergraduates
  - 3.0% graduates
  - 7.4% unidentified
- Gender:
  - 60.9% ♀
  - 39.1% ♂
- Age:
  - 46.7% ≤ 20 yrs
  - 53.3% ≥ 21 yrs
- Year of Study:
  - 1st: 14.2%
  - 2nd: 24.7%
  - 3rd: 14.8%
  - ≥ 4th: 46.3%

Sample Distribution by Academic College

Instrument and Scales’ Internal Reliability Coefficients

<table>
<thead>
<tr>
<th>Scale</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBTI®</td>
<td>.85</td>
</tr>
<tr>
<td>E-I</td>
<td>.88</td>
</tr>
<tr>
<td>S-N</td>
<td>.81</td>
</tr>
<tr>
<td>T-F</td>
<td>.87</td>
</tr>
<tr>
<td>J-P</td>
<td>.89</td>
</tr>
</tbody>
</table>

Scree Plot of the MBTI®, Form M, Spanish Translation’s Exploratory Factor Analysis

Alpha Coefficients of the Factors Produced by the Spanish Translation of the MBTI®

<table>
<thead>
<tr>
<th>Factor</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.66</td>
</tr>
<tr>
<td>2</td>
<td>.88</td>
</tr>
<tr>
<td>3</td>
<td>.88</td>
</tr>
<tr>
<td>4</td>
<td>.72</td>
</tr>
<tr>
<td>5</td>
<td>.63</td>
</tr>
</tbody>
</table>
Intercorrelations Amongst Scales’ Continuous Scores

<table>
<thead>
<tr>
<th>Scale</th>
<th>S-N</th>
<th>T-F</th>
<th>J-P</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-I</td>
<td>-.02</td>
<td>-.15**</td>
<td>-.06</td>
</tr>
<tr>
<td>S-N</td>
<td>-.17**</td>
<td>.30**</td>
<td></td>
</tr>
<tr>
<td>T-F</td>
<td></td>
<td>.17**</td>
<td></td>
</tr>
</tbody>
</table>

**p < 0.01.

Intercorrelations of the Eight Dimensions’ Preference Scores

<table>
<thead>
<tr>
<th>Pole</th>
<th>I</th>
<th>S</th>
<th>N</th>
<th>T</th>
<th>F</th>
<th>J</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>-.16**</td>
<td>-.003</td>
<td>-.15**</td>
<td>-.16**</td>
<td>-.05</td>
<td>-.05</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>.02</td>
<td>-.03</td>
<td>.15**</td>
<td>-.15**</td>
<td>-.06</td>
<td>-.06</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>-.97**</td>
<td>-.15**</td>
<td>.19**</td>
<td>.30**</td>
<td>-.30**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>.17**</td>
<td>-.15**</td>
<td>-.29**</td>
<td>.29**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>-.97**</td>
<td>.18**</td>
<td>-.18**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td></td>
<td>-.16**</td>
<td>.16**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.100**</td>
</tr>
</tbody>
</table>

**p < .01.

Some Significant Differences:

- Females preferred S and F significantly more (p < .001; p < .05) than males
- Men were significantly more perceptive (P) than females (p < .01)
- Students from Agricultural Sciences more perceptive (S) than Science students (p < .05)
- 2nd year students less sensing than 4th, 5th, 6th year students (p < .01)

Comparison of the Documented Preferences of Engineers

Arts & Engineering Students’ Preference for Thinking (T)

Preferences on the S-N Scale of “Talented” vs. UPRM Students
### UPRM Students’ Conceptual Profile

- **Female learners (ESFJ):**
  - Enjoy organizing and structuring situations prior to handling them in a timely fashion
  - Prefer to do things in a more traditional way
  - Not attracted to learning styles that require dominating abstract ideas or impersonal analysis.
  - Enjoy learning through practice
  - Require clear and precise instructions and prefer professors who demonstrate support and individual recognition

- **Male learners (ESFP):**
  - Rarely make plans in advance
  - Enjoy being part of immediate experiences
  - Easygoing individuals
  - Prefer learning through practice and environmental interactions
  - Lack of interest in theories and written explanations
  - Traditional teaching methods would result highly difficult for them to grasp

### Conclusions

- **Reliable Instrument:**
  - MBTI® alpha = .80
  - Scales’ alpha = .81 - .89

- **Valid Instrument for Measuring Preferences:**
  - Independent scales
  - Bipolarity of the scales
  - Significant differences between groups
  - Homogeneous grouping of items on each factor

- Differences found between this study’s preferences and those documented are indicative of importance of developing norms for the Puerto Rican population

### Limitations

- Sample not representative of the UPRM student body (3%)
- IRT could not be used as a result of using the self scorable form
- Despite the aspiration of cultural adaptation, it was not carried out to the extent outlined by Bravo, et al., (1993) and the ITC (2000)

### Strengths

- One of the first studies in PR with the MBTI®
- Provides evidence of the need to develop norms for different populations, along with any translation and adaptation process
- It serves as a reference for future studies about the MBTI® and psychological types due to its abundance of references on the matter
Future Studies

- Development of a databank of results from previous administrations of the MBTI® in PR and submit it to similar analysis as those performed in this study
- If permission were granted, administer the instrument developed to a larger sample
- Development of an instrument for Puerto Rico to measure Carl Jung’s concepts of psychological preferences in a “non-forced choice” format