Psychometric Properties of the Motivation Towards English Scale in University Students

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Abstract

Motivation is one of the necessary components for learning and mastering English as a foreign, second, or additional language in places where English is not the native language. For this reason, a review of the instruments used to assess motivation towards English has been carried out, which shows that only a few instruments have good psychometric tests. Therefore, the main objective of the present study was to assess the validity and reliability of the Motivation towards English Scale. The total sample size was 541 undergraduate students, of whom 41.4% (n = 224) were male and 58.6% (n = 317) were female. Analyses indicated that the internal structure of the scale provided a good fit to the two-dimensional model with RMSEA = .06; GFI = .98; CFI = .97, TLI = .95, and SRMR = .07, and factor loadings ranging from .643 to .797. Reliability for the first factor Alpha and Omega was .835 and for the second factor a coefficient of .77 for Alpha and Omega. The study demonstrated adequate psychometric properties of the Motivation towards English Scale, making this instrument reliable, useful, and concise.

Keywords: motivation towards English, psychometrics, validity, reliability, undergraduate students

1. Introduction

International relations and cooperation as part of a globalized world have influenced new skills in people's actions, including the learning of a new foreign language (Zorlu & Ünver, 2022). Concerning the English language, of the approximately 7.8 billion people in the world, 1.35 billion speak English, and of these, only 360 million people speak English as their first language (Lyons, 2021). English language is an indispensable asset in the future life of students (Zulfikar et al., 2019) and is a means of
self-improvement, which helps students feel more confident, enhances their cultural awareness, and broadens their cultural horizons (Mahmoodi & Narafshan, 2020). Among the examples of the use of English for academic purposes include social networks and various applications which are used as modern technological learning tools (Abdalgane, 2022).

The development of linguistic competence in a new language enables geographic mobility within and outside the student’s home country (Findlay et al., 2012). Moreover, in the context of immigration, the acquisition of a second language is essential for survival, adaptation, and usefulness in the new society (Jaekel et al., 2022). Sosa et al. (2018) affirm that greater importance should be given to English language instruction in the curriculum so that students will have more and better job opportunities.

According to Education First (2022), Peru ranks 51st out of 111 countries in terms of English proficiency. The current English proficiency of Peruvian students is at an intermediate level, ranking 10th out of 20 Latin American countries. This reality leads to the need for assessment tools that measure motivation towards English with a reliable instrument. In Peru, through the Ministry of Education (MINEDU, 2016), it is emphasized that students should be able to communicate in a foreign language (English) by the end of their schooling. In addition, according to Ley N.º 30220 - Ley Universitaria (2014), a law enacted to improve the quality of education in university institutions, article 45 emphasizes that to obtain undergraduate and graduate degrees and diplomas, it is essential to know another language, preferably English. For these reasons, motivation towards English plays a very important role at the moment of teaching and learning in the classroom.

Another important detail is that in the classroom students not only acquire the language to communicate, but also develop the mind and skills required in the acquisition of the new language (Diachkova et al., 2021). However, the act of teaching English to students is related to the presence of difficulties such as low motivation, inadequate exposure to the language, and deteriorated classrooms, among others (Jeya Gowri & Ilankumaran, 2019). It is necessary to recognize that motivation is a variable involved in the development of language learning (Dunn & Iwaniec, 2022). Motivation is the combination of effort plus the desire to achieve the goal of language learning with a positive attitude towards language learning (Ulf & Bania, 2019; Usman et al., 2016). Motivation is the foundation and ingredient of every goal set by people in all fields and disciplines of study, it is a human drive that varies from person to person to achieve an aspiration (Ugla, 2021). When it comes to learning English, it is fundamental to be motivated in order to achieve mastery of the English language that is predominant in the world today. Motivation in language learning is a vital factor in the success of language learning (Markova & Tarkini, 2022; Kita, 2021; Oñate, 2015).

In reviewing the instruments that assess motivation towards English language learning, it is noted that few instruments present good psychometric evidence. For example, the Motivation towards English Scale developed by Oñate (2015) does not present evidence of construct validity through factor analysis. In this sense, psychometric analysis is essential in a validation study. An exploratory factor analysis (EFA) requires a confirmatory factor analysis (CFA) to ensure the internal structure of a scale (Ferrando & Anguiano-Carrasco, 2010), and due to the importance of English language acquisition as a foreign language, it is necessary to provide a valuable resource for educators considering the construct of motivation towards English language learning (Segura, 2021). Therefore, the objective of this research is to evaluate the validity and reliability of the Motivation towards English Scale in Peruvian university students.

### 2. Literature Review

#### 2.1 Motivation in language learning

The concept of motivation is associated with the desire to learn a language (Jodai et al., 2013). Gardner (1985) identified four aspects of motivation such as goal, effort behavior, desire to achieve the goal, and favorable attitudes toward the activity. Motivation is the term most often used to
explain the failure or success of a language learner (Yu & Watkins, 2008; Cheng & Dörnyei, 2007; Yang, 2003; Gardner, 1985). Motivation is understood as a matter of increased effort, as seen in a typical class where some students are highly motivated and others are poorly or not at all motivated (Ortega, 2013). Motivation towards second language learning is the main component to prevent fatigue and dropout (Cocca & Cocca, 2019).

Motivation in language learning is of interest because it is a powerful factor in the process of helping or hindering students’ academic performance (Lee et al., 2020; Omar et al., 2020). It cannot be said that a student enjoys learning a second language without being motivated, but if he or she is committed to learning a second language and works hard to do so, it can be said that he or she is motivated to learn foreign languages (Gardner, 1985). Teachers, students, and researchers emphasize that the presence of high motivation and a positive attitude towards learning cooperates in the study of a second language (DeBot & Verspoor, 2006).

2.2 Motivation studies and their instruments

Several researchers have conducted studies on motivation towards English, using different instruments (Vacha-Haase et al., 2000; Merino-Soto & Calderón-De la Cruz, 2018). In the first group of studies found are those that present an induction of reliability and validity: Markova & Tarkini (2022) conducted a study on the motivation of expatriate students to learn English in Belgium, using a questionnaire with 73 items. Yang & Wu (2022) conducted a study on language learning motivation and its role in the production of complaints in China, using a 40-item questionnaire. Ugla (2021) conducted their study on students’ motivation towards English language learning in Iraq and applied a questionnaire with 26 items. Azar & Tanggaraju (2020) conducted their study on motivation in second language acquisition in Malaysia. Dincer (2018) researched motivational factors in additional language learning in Turkey and used a questionnaire with 26 items. Choomthong & Chaichompoo (2015) conducted their research on students’ motivation to learn English, they used a questionnaire with 14 items. And Choosri & Intharaksa (2011) in their study employed the questionnaire on students’ motivation in learning the English language in Thailand, the questionnaire presents 25 items.

In the second group, it was found that there are studies that do not describe the validity or reliability of the instruments, as in the case of Dang et al. (2021) who investigated the factors affecting motivation in English language learning and used a 21-item questionnaire. Magfirah & Arridha (2019) conducted a study on student motivation towards English in Indonesia, using a 20-item questionnaire, and Assavanadda & Tangkiengsirisin (2018) in their work on students’ motivation to learn English, applied a questionnaire with 20 items.

Given the above, the present study has the following objective: to evaluate the validity and reliability of the Motivation towards English Scale in Peruvian university students to provide evidence of structural validity and internal consistency reliability. These findings would allow having a scale with appropriate psychometric properties to measure motivation towards English.

3. Methodology

3.1 Study

This research applied a quantitative, non-experimental cross-sectional design methodology (Cohen et al., 2018). This study is a psychometric research (Price, 2017).

3.2 Participants

A sample of 541 undergraduate students from a private university in Peru were selected for this study. Of these, 41.4% (n = 224) were male and 58.6% (n = 317) were female. The students belonged to the different undergraduate cycles from cycle one to cycle ten: cycle I = 209 students, cycle II = 6
students, cycle III = 117 students, cycle IV = 21 students, cycle V = 69 students, cycle VI = 7 students, cycle VII = 71 students, cycle VIII = 11 students, cycle IX = 22 students and cycle X = 8 students. All participants completed the motivation scale in Spanish. Sampling was non-probabilistic and convenience-based, allowing researchers and collaborating teachers to access students (Cohen et al., 2018).

3.3 Instrument

For this research, the Motivation towards English Scale was used. It was constructed in Chile by Oñate (2015. The author originally constructed the instrument, taking into account the most important aspects of the study variable. The method used to develop the instrument was Likert-type scaling. The content validation was carried out by five professors of the Language Coordination of the Universidad de la Frontera of Chile (team of experts), who analyzed and verified the questions corresponding to the motivation towards English, then made observations regarding the wording and deletion of some items. A second version of the scale was then structured to carry out the pilot test (5 people for each item). Finally, the reliability of the instrument in the study sample had a Cronbach’s Alpha value = .70 in 113 students. The scale presents 10 items, questions 1, 2, 3, 4, 5, and 6 were assigned the values: strongly agree (5), agree (4), neither agree nor disagree (3), disagree (2), and strongly disagree (1). However, questions 7, 8, 9, and 10 were assigned different values because the items were written in negative form: strongly agree (1), agree (2), neither agree nor disagree (3), disagree (4), and strongly disagree (5).

3.4 Data Collection Procedure

An online survey was chosen for data collection in this study because Internet-based questionnaires tend to be more widely distributed, faster, more environmentally friendly, and less expensive than paper and pencil questionnaires (Cohen et al., 2018). The Motivation towards English Scale was written in Google form, and the students were informed about the main purpose of the research. They were informed that the information obtained from the study would be kept in strict confidentiality to support the respect and dignity of the participants. The students gave informed consent to participate in the survey. It took them approximately ten to fifteen minutes to complete the scale. It is worth mentioning that the support and approval of an ethics committee was obtained to conduct this research, as well as a pilot test was conducted to determine the understanding of the content of the items, and then the reliability of the instrument was analyzed and its value was acceptable. Next, the link to the virtual survey was sent to the students to realize the purpose of this study for one month (May 2022) in coordination with the teachers working at the university, who shared the link with their students through their WhatsApp groups.

3.5 Data Analysis Procedure

An item analysis was performed to evaluate the behavior of the questions of the scale to observe the contribution of each item. For this purpose, the items were correlated with the total score. Exploratory and confirmatory factor analyses were performed to demonstrate internal validity. Barlett’s test and KMO were performed, and parallel analysis was used to determine the number of factors and the percentage of variance explained. As goodness of fit indicators for the confirmatory factor analysis, we used the following goodness of fit indices: GFI>.90, TLI>.90, CMIN<.5, CFI>.90, RMSEA<.06, SRMR<.08. Convergent and discriminant validity were carried out under the structural equation model, using the criteria of Average Variance Extracted (AVE). The reliability of the scale was calculated with Cronbach’s Alpha, Omega, ordinal Alpha, and composite reliability of each of the subscales. The software used was JASP 16, Amos 24, and SPSS 26.
4. Results

4.1 Item Analysis

A response frequency analysis was performed showing that all alternatives were marked by the respondents. Table 1 shows the statistical indicators for each item in terms of mean, standard deviation, skewness, and kurtosis. The lowest mean score (2.8) was obtained by item 9 (I have studied English only because it is compulsory). While the highest score (4.3) was obtained by item 5 (Speaking and reading English is useful for my professional and personal development). Regarding the skewness indices and the kurtosis coefficient, both show a normal distribution, as the values are between [-2, +2], except for item 5, whose kurtosis exceeds the established cut-off point. Regarding the homogeneity index, it was found that all items have correlations above .20, therefore they contribute to the measurement of the construct, and item 9 should be evaluated. The commonalities have values above .50, which indicates the amount of information that variable shares with the other factors in the model for each variable, except for item 10, which is below this value and probably does not contribute to the model.

Table 1. Descriptive characteristics of the Motivation towards English Scale.

<table>
<thead>
<tr>
<th>Items</th>
<th>Frequency</th>
<th>M</th>
<th>DE</th>
<th>g1</th>
<th>g2</th>
<th>IHC</th>
<th>h2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>1.0</td>
<td>3.1</td>
<td>20.7</td>
<td>52.0</td>
<td>23.3</td>
<td>3.9</td>
<td>.80</td>
</tr>
<tr>
<td>A2</td>
<td>.50</td>
<td>2.1</td>
<td>16.2</td>
<td>51.1</td>
<td>30.2</td>
<td>4.0</td>
<td>.76</td>
</tr>
<tr>
<td>A3</td>
<td>3.8</td>
<td>18.1</td>
<td>35.5</td>
<td>29.5</td>
<td>10.2</td>
<td>3.2</td>
<td>.98</td>
</tr>
<tr>
<td>A4</td>
<td>7.0</td>
<td>1.0</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B5</td>
<td>7.0</td>
<td>1.0</td>
<td>8.1</td>
<td>46.1</td>
<td>44.4</td>
<td>4.3</td>
<td>.71</td>
</tr>
<tr>
<td>B6</td>
<td>1.2</td>
<td>1.9</td>
<td>17.6</td>
<td>46.3</td>
<td>33</td>
<td>4.0</td>
<td>.82</td>
</tr>
<tr>
<td>B7</td>
<td>7.6</td>
<td>23.5</td>
<td>36.6</td>
<td>24</td>
<td>8.3</td>
<td>3.0</td>
<td>1.0</td>
</tr>
<tr>
<td>C9</td>
<td>6.9</td>
<td>24.5</td>
<td>28.5</td>
<td>29.7</td>
<td>10.5</td>
<td>31</td>
<td>1.1</td>
</tr>
<tr>
<td>C9</td>
<td>12.8</td>
<td>28.5</td>
<td>28.7</td>
<td>22.1</td>
<td>7.8</td>
<td>2.8</td>
<td>1.1</td>
</tr>
<tr>
<td>C10</td>
<td>3.8</td>
<td>12.4</td>
<td>25.2</td>
<td>37.8</td>
<td>20.9</td>
<td>3.5</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: FR: frequency of response; M: mean; SD: standard deviation; g1: skewness coefficient; g2: kurtosis coefficient; IHC: homogeneity index; h2: commonalities.

4.2 Factor Analysis

The exploratory factor analysis showed for the data set that the Kaiser-Meyer-Olkin (KMO) test was: .79 and Bartlett’s test of sphericity was significant ($X^2=1345.868$, p<.000), indicating that the data matrix is correlated, that the sample selected for the study is appropriate and therefore the application of factor analysis can continue. Similarly, the results find two factors that explain 55.1% of the variance (Factor 1 = 33.38%, Factor 2 = 21.78%). The factor loadings show that questions 1, 2, 4, 5, and 6 probably belong to factor 1, called "Autonomous motivation to learn English", according to the correlation strength of the items. Questions 7, 8, and 9 are strongly related to Factor 2, named "Demotivation to learn English". The retention of the factors was decided by parallel analysis, the eigenvalue of the random data was much higher (eig = 2.790) than the eigenvalue of the second factor (1.739).

The proposed two-factor model with five variables for the first factor and three for the second factor, extracted from the exploratory factor analysis, was subjected to a confirmatory factor analysis. Parameter estimation followed the unweighted least squares (ULS) method. Figure 1 shows the standardized estimated parameters obtained after the analysis, where it can be seen that the factorial weight of the items reaches high values, between 0.63 and 0.78.
The model fit statistics show its adequacy for model 2 (Table 2). As a general rule, and following the recommendation that several indices should be checked to ensure the fit of the proposed model, two parsimony fit indices are provided, the chi-square normalized by degrees of freedom (CMIN/df) and the root mean square error of approximation (RMSEA) and comparative fit indices (CFI). As for the CMIN/df index, values below 5 indicate a good model fit, so the value obtained advises the acceptance of the proposed model. The RMSEA value obtained also indicates the adequacy of the model, since any value below 0.05 indicates a good model fit. Both CFI and NFI usually take values between 0 and 1, with values above .90 considered acceptable, with better-fit indices observed in Model 2, where items 3 and 10 were removed.

### Table 2. The goodness of fit indices of the models of the Motivation towards English Scale.

<table>
<thead>
<tr>
<th>Model</th>
<th>χ²</th>
<th>df</th>
<th>CMIN</th>
<th>CFI</th>
<th>TLI</th>
<th>RMSEA</th>
<th>GFI</th>
<th>SRMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>116.21</td>
<td>34</td>
<td>3.41</td>
<td>0.92</td>
<td>0.90</td>
<td>0.07</td>
<td>0.97</td>
<td>0.08</td>
</tr>
<tr>
<td>Model 2</td>
<td>47.94</td>
<td>19</td>
<td>2.5</td>
<td>0.97</td>
<td>0.95</td>
<td>0.06</td>
<td>0.98</td>
<td>0.07</td>
</tr>
</tbody>
</table>

### 4.3 Convergent and Discriminant Validity

Likewise, regarding convergent and discriminant validity (Table 3), the two factors presented acceptable values, and all the values of average variance extracted (AVE) were greater than .50. Correspondingly, the maximum shared variance (MSV) is less than the indicated value, and the maximum correlation between the errors (MaxR(H)) of measurement of the latent variables is less than .70. Moreover, no correlation was greater than .85, so that, in general, these results support the convergent and discriminant validity of the instrument.
Table 3. Convergent and Divergent Validity Scores

<table>
<thead>
<tr>
<th>Factors</th>
<th>AVE</th>
<th>MSV</th>
<th>MaxR(H)</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1</td>
<td>0.521</td>
<td>0.014</td>
<td>0.849</td>
<td>0.721</td>
<td></td>
</tr>
<tr>
<td>Factor 2</td>
<td>0.546</td>
<td>0.014</td>
<td>0.789</td>
<td>0.119*</td>
<td>0.739</td>
</tr>
</tbody>
</table>

4.4 Reliability Analysis

The results of the reliability analysis showed acceptable Cronbach’s Alpha values, as well as omega and composite reliability, as shown in Table 4. The internal consistency value for the entire scale showed an Alpha value of .71 (95%CI=.65-.76).

Table 4. Reliability Coefficients for the Motivation towards English Scale

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha</td>
<td>.83</td>
<td>.77</td>
</tr>
<tr>
<td>Omega</td>
<td>.83</td>
<td>.77</td>
</tr>
<tr>
<td>Compound reliability</td>
<td>.83</td>
<td>.77</td>
</tr>
</tbody>
</table>

5. Discussion

Gardner & Lambert (1959) emphasized that motivation is of great attention and importance in the language learning process. Motivation is a factor that contributes to or hinders students’ learning (Dunn & Iwaniec, 2022; Lee et al., 2020; Omar et al., 2020). Moreover, the priority of English learning is determined by motivation (Jiao et al., 2022). Thus, motivation becomes a key aspect in English learning performance or achievement (Setiawan & Wiedarti, 2020). Therefore, the main purpose of the present research was to evaluate the validity and reliability of the Motivation towards English Scale in Peruvian university students.

The questionnaire presented evidence of its internal structure through exploratory and confirmatory factor analysis, which means that the data set is correlated, identifying two factors that were named: Factor 1, “Autonomous motivation to learn English” and Factor 2, “Demotivation to learn English”. The proposed two-factor model presents 8 items, different from the original 10-item questionnaire, by eliminating items 3 and 10. This two-factor result is similar to studies conducted by Lee et al. (2022); Magfirah & Arridha (2019); Assavanadda & Tangkiengsirisin (2018); Choomthong & Chaichompoo, 2015; Choosri & Intharaksa (2011). However, studies by Markova & Tarkini (2022); Dang et al. (2021); Ugla (2021) present more than two dimensions.

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The parameter estimation followed the Unweighted Least Squares (ULS) method, which is very suitable for application to instruments whose response requires the use of Likert-type scales. This is a parameter estimation method that does not require the observed variables to follow a particular distribution, which is recommended for categorical variables and is based on the correlation matrix.

In terms of reliability, the data establish adequate values, as noted by Ofate (2015), who reported a Cronbach’s Alpha for the total scale of 0.86. This means that the scores are consistent. This result on the reliability of the instrument through the Cronbach’s value above .8 is similar to the
study of Choosri & Intharaksa, (2011); Choomthong & Chaichompoo (2015); Lee et al. (2022), and Yang & Wu (2022).

Concerning the theoretical implications of this study, the two original dimensions are given different names due to the way the items were grouped. The first dimension has been named: autonomous motivation to learn English, according to self-determination theory, when people attend to their psychological needs such as autonomy, competence, and relatedness, they maintain autonomous motivation (Ryan & Deci, 2000). In this sense, autonomous motivation in the educational context involves engagement in learning (Hafen et al., 2012), drives and directs behavior (Deci & Ryan, 2008), leads to effort (Mouratidis & Michou, 2011), involves self-governance and being the initiator of actions to achieve high grades (Soenens & Vansteenkiste, 2005), and leads to second language proficiency (Joe et al., 2017). Autonomous motivation enables students to achieve the best academic quality through high performance, problem-solving skills, and mastery of conceptual content (Ražienė et al., 2018). Similarly, autonomous motivation plays an important role in English language learning because it automatically influences students’ learning engagement (Wang & Liu, 2022).

The second dimension has been referred to as demotivation to learn English. Demotivation weakens motivational support (Jahedizadeh et al., 2016). In the field of learning English as a foreign language, demotivation towards learning English leads to negative attitudes and behaviors of learners (Falout et al., 2009). Demotivation is related to low grades, the experience of failure in the learning process, and the imposition of what is learned, among other factors (Falout & Maruyama, 2004).

This research involves the educational agents responsible for the learning of English as a foreign, second or additional language, considering that the motivation to learn a language is key for each student, for teachers, and for the educational system in general. In Peru, the learning of English as a foreign language is carried out, and therefore those who are interested in knowing the motivation towards English of Peruvian or foreign students in different institutions or geographical areas of this world, in different levels of education from primary to higher education, with different methods of translation, could use this tool. The use of this tool is a great contribution to making decisions for the continuous improvement of the teaching-learning of English as a universal language. Motivation towards learning a second language is the main component for students to have a willingness to learn and to maintain a high commitment to their learning (Cocca & Cocca, 2019).

On the other hand, lack of motivation towards learning English negatively affects the dynamic process, especially in the development of the four English skills: speaking, listening, reading, and writing (Iftanti et al., 2023).

This research has some limitations, firstly, although it can be considered an adequate sample, the data were not collected in different geographical regions of Peru, so it is necessary to develop similar studies considering this aspect. Also, the data were collected online, so there are likely some biases due to the way they were collected. Finally, convergent and divergent validity analyses were not performed with other instruments, so it is recommended to develop studies with these types of validity.

6. Conclusions

The validity and reliability of the Motivation towards English Scale were analyzed in a sample of 541 male and female university students. The results showed internal structure validity with two dimensions called "Autonomous motivation to learn English" and "demotivation to learn English". The instrument presented eight items. In terms of convergent and discriminant validity, the factors showed acceptable values. Also, the internal consistency of the scores was determined, with adequate values for MacDonald’s Omega and Cronbach’s Alpha coefficients. Finally, the practical implication of the study allows the scientific community to consider an instrument with adequate psychometric properties to assess motivation towards English. This instrument is reliable, useful, and concise.
References


