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The Interplay of Iranian EFL Learners' Tolerance of Ambiguity and their Reading Performance Encountering Unknown Vocabularies: Taking their L2 Reading Anxiety into Account

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Abstract

The interplay of Iranian EFL learners' tolerance of ambiguity and their performance encountering unknown vocabularies in reading comprehension while considering their L2 reading anxiety was investigated in this study. A sample of 70 intermediate-level EFL learners from a language institute in Shiraz, Iran participated in the study. The Second Language Tolerance of Ambiguity Scale (SLTAS) and the Foreign Language Reading Anxiety Scale (FLRAS) were used to measure participants' ambiguity tolerance and L2 reading anxiety, respectively. To assess students' performance in dealing with new words in reading comprehension, two vocabulary tests and two reading tests were given to them. The data were analyzed by both SPSS and PLS 4 software using Pearson correlation and structural equation modeling (SEM). The findings revealed significant relationships between ambiguity tolerance and reading comprehension performance encountering unknown vocabularies, between L2 reading anxiety and reading comprehension performance encountering unknown vocabularies, and between ambiguity tolerance and L2 reading anxiety. Additionally, L2 reading anxiety was found to play a significant mediating role in the relationship between ambiguity tolerance of Iranian language learners and their performance in dealing with unknown vocabularies in reading comprehension. Moreover, the study provides evidence that reading anxiety does not play a moderating and significant role in the relationship between ambiguity tolerance of Iranian language learners and their performance in dealing with unknown vocabularies in reading comprehension. The study suggests that ambiguity tolerance and L2 reading anxiety are important factors that influence Iranian EFL learners' performance encountering unknown vocabularies in reading comprehension. This study highlights the importance of fostering ambiguity tolerance and reducing L2 reading anxiety in both language teaching and learning. In addition, it provides insights for syllabus designers to develop effective reading comprehension curricula for EFL learners.

Keywords: tolerance of ambiguity, L2 reading anxiety, unknown vocabularies, reading comprehension, EFL learners

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1. Introduction

The process of learning a foreign language has always been accompanied by many challenges for both students and teachers. Many variables affect the quality of learning of language learners, and it is better for learners and teachers to be aware of them. To be most effective, second or foreign language teachers must know their pupils. Therefore, teachers should be aware of the variations among their pupils' individual differences, including age, gender, motivation, anxiety, self-esteem, tolerance of ambiguity, risk-taking, cooperation, competition, and language learning strategies and styles (Oxford, 1992). The effect of individual differences on language learning has always been interesting for linguists. Ambiguity tolerance and L2 reading anxiety can be considered as essential examples of individual differences.

One of the most challenging parts of learning another language is reading. Reading can be assumed as an essential part of teaching as it offers learners a wider range of vocabulary knowledge. Learners get acquainted with new vocabularies through reading. This will provide them rich language input for further application. In addition, reading in a foreign language can be assumed as an ambiguous process that forces readers to process unknown linguistic input. This process may lead learners to confusion (Salehpoor Yousefi, 2018). Reading is known as a receptive skill which provides a basis for productive skills. Based on the research, Sreena and Ilankumaran (2018) argued that if learners develop their receptive skills (listening and reading) through certain practice, they will enhance their confidence to speak.

It is worth mentioning that while facing new vocabularies can be interesting and exciting for some students, it can be extremely intimidating for others. According to Fresh (2008), the main source of difficulty for students is to understand the meaning of the words. Wilson (2003) claimed that many learners have difficulties in reading and most of the teachers are struggling with this problem.

Vocabulary is known as the building block of language which makes it crucial and one of the important parts of language teaching (Knight, 1995). In addition, without sufficient amount of vocabulary, there cannot be an effective communication (Min, 2013). Moreover, knowing the meaning of the words is vitally important for comprehension. According to Beck and McKeown (1991), to ensure that pupils can understand what they read, it is essential to introduce new words to them both directly and indirectly. Zimmerman (1997), based on the result of his research, suggests that combining interactive vocabulary instruction and reading should be taken into account by teachers. Qian (2002, as cited in Moghadam et al., 2012) mentioned that vocabulary skills make decoding easier, which is a crucial aspect of reading. One aspect of this study is to show the importance of knowing the meaning of words in a text in comprehension. Besides, it seeks to find out whether students are able to guess the meaning of the unknown words from content.

As it is mentioned before, being successful in acquiring a new language can be affected by some individual characteristics, such as ambiguity tolerance and L2 reading anxiety. According to Chappelle and Roberts (1986), ambiguity tolerance (AT) is “a person’s ability to function rationally and calmly in a situation in which interpretation of all stimuli is not clear” (p.30). Additionally, Sa'dabadi and Sarkhosh (2014) suggest that learners with different level of ambiguity tolerance have different performance in learning. This shows that ambiguity tolerance (AT) can have great impact on individual’s learning and performance.

Almost all students experience anxiety while studying. "Anxiety is a mental disorder, normally depicted by analysts as a condition of worry, an obscure dread that is just in a roundabout way connected with an item" (Hilgard, Atkinson, & Atkinson, 1971, as cited in Scovel, 1991, p. 18). Getting anxious can prevent students from being their best. They may fail in communication, although they may be advanced students. Al-Dubaisi (2020, p. 20) claimed that “Anxiety is one of the most essential predictors of L2 achievement”. A student could experience anxiety as a result of being required to respond to a question in a foreign language class, and anxiety breeds worry and frustration (Kuru-Gonen, 2007). Consequently, this study aims to determine whether there is a significant relationship between students’ level of ambiguity tolerance, level of L2 reading anxiety and their performance in guessing the meaning of new words in the content.

1.1 Statement of the Problem

Many pieces of research have been carried out regarding the investigation of the relationship between ambiguity tolerance and reading comprehension, listening comprehension and performance of students in speaking skills (Marzban, 2012; Shahrokhi Mehr, 2016; Soodman Afshar & Khasemy, 2019). In addition, learners' vocabulary knowledge can undeniably effect reading comprehension. What is more, high level of ambiguity tolerance can be considered as a barrier to have a prosperous performance in comprehension in different skills (McLain, 2009). Besides,

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there are studies which have examined the effect of anxiety on learners' performance in reading comprehension, listening or speaking (Al-Dubaisi, 2020; Pae, 2013; Tran, 2022).

To the best of the researchers' knowledge, no previous research has been conducted to study the relationship between EFL learners' ambiguity tolerance, and their performance encountering unknown vocabularies in reading comprehension while considering L2 reading anxiety in a single study especially in an Iranian context. Therefore, due to the scarcity of such research and the importance of the related issues, the current study is an endeavor to fill the existing gap. Hence, it seeks to explore the interplay of Iranian EFL learners' ambiguity of tolerance, and their performance encountering unknown vocabularies in reading comprehension affected by L2 reading anxiety. Moreover, this study seeks to examine the relationship between tolerance of ambiguity and L2 reading anxiety.

1.2 Objectives of the Study

It is believed that higher level of ambiguity tolerance in students can affect their performance in cloze tests (Atef-Vahid et al., 2011). In addition, the effect of anxiety on learners' performance is undeniable (Al-Dubaisi, 2020). Making a friendly learning environment may facilitate learners' vocabulary learning and reduce their anxiety which can boost their language learning in general and reading comprehension in particular. According to what has been presented previously, this study aspires to investigate Iranian EFL learners' ambiguity tolerance and L2 reading anxiety in relation to their performance encountering unknown words in reading comprehension. In addition, the researcher seeks to explore the possible relationship between L2 reading anxiety and ambiguity tolerance. Moreover, the interplay of the stated variables is investigated.

1.3 Significance of the Study

Based on the existing gap in the literature regarding the scarcity of research on language learners' tolerance of ambiguity and anxiety in relation to reading comprehension specially in the EFL context of Iran, the present study aims at investigating the relationship among Iranian EFL learner' ambiguity tolerance, and their reading anxiety, and their reading performance encountering unknown vocabularies. This research is significant since the results of this study may help EFL teachers find effective ways to improve learners' vocabulary knowledge through reading. Furthermore, being aware of the relationship between ambiguity tolerance, and L2 reading anxiety, and learners' performance encountering unknown vocabularies in reading comprehension may lead teachers to help students in order to overcome the psychological barriers and difficulties that learners have in reading comprehension.

Additionally, the study's findings can significantly benefit EFL students by improving their vocabulary comprehension, reducing reading anxiety, enhancing metacognitive skills, increasing flexibility of thinking, and developing effective coping mechanisms. These benefits can contribute to students' overall academic success and language proficiency. It can be inferred that the results of the present study may be helpful for language teachers, EFL learners and material developers in the sense that teaching vocabularies occurs in contexts. Therefore, the problem under investigation in the present study is to examine EFL learners' tolerance of ambiguity, and L2 reading anxiety in relation to learners' performance facing new words in reading comprehension.

1.4 Research Questions

Based on the scopes and objectives of this study, the following research questions were posed:

RQ1: Is there a significant relationship between Iranian EFL learners' level of ambiguity tolerance and their performance encountering unknown vocabularies in reading comprehension?

RQ2: Is there a significant relationship between Iranian EFL learners' L2 reading anxiety and their performance encountering unknown vocabularies in reading comprehension?

RQ3: Is there a significant relationship between ambiguity tolerance and L2 reading anxiety of Iranian EFL learners?

RQ4: How do the Iranian EFL learners' tolerance of ambiguity, L2 reading anxiety and their reading performance encountering unknown vocabularies interplay with one another?

2. Literature Review

Over the past few years, the research on reading comprehension has garnered significant attention and popularity (Abedini, 2020; Brooks, Clenton, & Fraser, 2021; Dengah & Islama, 2022). Reading is an absolute necessity when it comes to both teaching and learning. It is believed that developing strong reading skills is crucial for achieving academic success. It is important to note that reading proficiency is not limited to decoding alone, but also entails text comprehension (Zaccoletti et al., 2020). Lack of vocabulary knowledge is likely to have serious implications for proficiency in different language skills. Reading comprehension is one of these areas in which learners' academic

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success may influence as a result of lack of vocabulary knowledge (Murphy & Unthiah, 2015 as cited in Brooks et al., 2021). According to Najafnejad Atbatan (2018), "good vocabulary knowledge supports good comprehension (p. 20).

The use of particular language learning strategies can be influenced by learners' level of tolerance for ambiguity. High numbers of the ambiguous conditions are common in language learning. Second Language Tolerance of Ambiguity (SLTA) has been referred to as a characteristic of the "good language learner" since it indicates that the learner is "comfortable with uncertainty... and willing to try out his guesses" (Rubin, 1975, p. 45 as cited in Irankhah, 2021).

Anxiety is one of the most prevalent and influential elements that affect learners in a learning environment. Nearly all individuals have experienced some degree of anxiety in their personal and educational life. Several research has identified a number of variables that are associated with FL reading anxiety, including unfamiliar culture, gender identity, topic familiarity, foreign language experience, and number of foreign languages learned (Ahmad et al., 2013; Joo & Damron, 2015; Saito et al., 1999; Zhao et al., 2013).

Jiang (2023) carried out research to probe into the relationship between EFL learners' tolerance of ambiguity and reading strategies considering their foreign language anxiety. The results of the study revealed that

> First, the level of learners' tolerance of ambiguity is related to factors such as their vocabulary, grammar knowledge level, reading ability and language background; secondly, learners' reading strategies are closely related to factors such as their reading speed, vocabulary, grammar knowledge level and reading purpose; finally, foreign language anxiety negatively affects learners' language learning outcome (p. 8).

In order to investigate the relationship between L2 anxiety, reflective thinking, and listening comprehension in the context of EFL learners, Mgasr Al Ghbashi (2021) conducted a study on a sample of 60 male and female English language learners in Iraq. The study included the distribution of both the reflective thinking and anxiety questionnaires which were given to the participants. As a second step, the students were provided with an IELTS listening section (commonly referred to as a standard general proficiency test) to assess their listening comprehension ability. The findings of the study indicated that, in general, EFL learners' reflective thinking was significantly and positively correlated with their listening comprehension. However, the correlation of L2 anxiety with the listening comprehension of Iraqi EFL learners was significantly negative.

In a study conducted by Al-Dubaisi (2020) which aimed to investigate the role of ambiguity tolerance and L2 anxiety in reading achievement, 100 Iraqi university students were examined. The major of all students was English language. Their level of ambiguity tolerance and L2 anxiety were measured through two different questionnaires. In addition, reading achievement was measured by the score of the reading comprehension course. Based on the results, a negative relationship was seen between ambiguity tolerance and L2 anxiety. Reading achievement was negatively associated with L2 anxiety as well. On the other hand, the results showed a positive and moderate relationship between reading achievement and ambiguity tolerance.

A master thesis submitted by Abedini (2020) sought to explore the relationship between L2 motivational self-system and learners' reading proficiency and reading anxiety. In order to conduct the study, a group of 150 high school students (both male and female) were selected. They were asked to fill out two questionnaires that measured their motivation to learn a second language (L2) and their anxiety levels while reading. Additionally, they were given a reading comprehension exam. The results illustrated that the learners' experience in learning a second language had the greatest impact in reducing their reading anxiety.

In addition, Dashti Khavidaki (2019) studied a sample of 20 individuals from Yazd University English Academy to investigate the relationship between ambiguity tolerance and learners' language learning strategies. Learners were chosen from both high and low intermediate level. For this purpose, the Second Language Tolerance of Ambiguity Scale and the reading comprehension test were used. According to the results of this study, a low relationship between ambiguity tolerance and proficiency level in reading comprehension, and no obvious difference between ambiguity tolerance and gender were seen. In addition, based on the findings, there was a low relationship between the ambiguity tolerance and inferencing strategy in the process of reading comprehension. The researcher of this study concluded that teachers must guide their students in order to find the best language learning strategies which suit them to overcome difficulties they have in reading comprehension.

The variety of previous studies indicates the importance of this issue. Thus, this study aims to delve into the relationship between Iranian EFL learners' ambiguity tolerance, L2 reading anxiety, and their performance in comprehending unknown words encountered during reading tasks. Additionally, the researcher seeks to uncover the potential association between L2 reading anxiety and ambiguity tolerance. Furthermore, the study explores the intricate interplay of these variables. The findings of this study hold potential benefits for language educators, EFL learners, and material developers.

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3. Methodology

3.1 Research Design

This study used a quantitative research design in terms of the type of data collected and analyzed in the research. Quantitative research is a kind of research that uses numerical data to answer research questions. As all the gathered data in this study was numerical, quantitative design was chosen for the current study. This study is correlational in nature and explanatory. Correlation research is an analytical technique for studying the relationships between two or more variables to determine if they are related and, if so, the strength and direction of the relationship. In other words, this study is considered correlational with respect to the relationship between variables.

3.2 Participants

This study included a sample of 70 intermediate language learners. The sample comprised of 47 female participants and 23 male participants. Their ages ranged between 15 and 20. All participants were recruited from a language institute in Shiraz, Iran, using convenient sampling. Convenient sampling is a sampling method in which participants are selected because they are easily accessible to the researcher. In this case, the participants were selected because they were enrolled in language courses at the institute. In addition, they all shared the same L1, that is Persian and all of them were learning English as a foreign language.

Table 1. Participants' demographic information

Demographic Information							
Participants	Number	Age	Gender	Native Language	City	Level/Grade	Context
EFL Learners	70	15-20	Male Female	Persian	Shiraz	Intermediate	Language Institute

3.3 Instruments

This study utilized six instruments to collect quantitative data. The Second Language Tolerance of Ambiguity Scale from Ely's (1995) was employed to measure participants' ambiguity tolerance. The Persian version of this questionnaire was adapted from Alef-Vahid et al. (2011). The questionnaire has a five-point Likert scale format and consists of 12 items. Cronbach's alpha coefficients for the SLTAS have been reported to range from 0.77 to 0.90, indicating high internal consistency. The Foreign Language Reading Anxiety Scale (Saito et al., 1999) was used to measure participants' level of reading anxiety. This 20-item Likert scale questionnaire was adapted from Abedini (2020) for the Persian version. To assess students' performance facing new words in reading comprehension, two vocabulary tests and two reading tests were given to them.

Each vocabulary test consisted of 10 items that would be assessed in the reading comprehension test to ensure that the words were new to participants and that they did not know their meanings. The vocabulary tests were administered primarily to identify suitable participants for the study. The researchers aimed to select learners who would genuinely encounter unfamiliar vocabulary during the reading comprehension tasks. Therefore, the participants who demonstrated a high level of prior knowledge, as evidenced by correctly answering more than 30% of the vocabulary test items, were excluded. This ensured that the study focused on learners who would face a genuine challenge in dealing with unknown words within the reading passages. While the vocabulary test scores were not directly used in the data analysis, they played a crucial role in ensuring the validity of the study by selecting participants who would benefit most from the investigation into their performance with unfamiliar vocabulary. The readings were selected from "Top Notch 1A." Each text was followed by 10 vocabulary questions which were the same as those in the vocabulary tests. The reliability and validity of all the instruments were assured.

3.4 Data Collection Procedures

The required data for the current study was collected in summer 2023. As the first step, permission was sought from the administration of the institute and time was negotiated with the instructors. To collect the data, in the first session, the Persian versions of the SLTAS and FLRAS questionnaires were administered to the participants separately to measure their levels of ambiguity tolerance and reading anxiety. To obtain more reliable and accessible responses, the questionnaires were given together in a single session. In the second session, the first vocabulary test was administered to the participants. They had approximately five minutes to review the words and write the English or Persian meaning

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of each word they knew. The vocabulary test was then collected, and the first reading was administered. The participants had to read the text and then answer 10 multiple-choice vocabulary questions on the answer sheet. The words in the reading comprehension test were the same as those in the vocabulary test. The purpose of this was to determine whether the participants could infer the meaning of unfamiliar words from the context. The same steps were repeated in the third session for the second vocabulary test and the second reading comprehension test.

In the second and third sessions, all data related to the first and second vocabulary tests and reading comprehension tests were collected in a single session to ensure that the participants would not check the meaning of the new words in the dictionary. It is worth noting that, as participants were intended to answer less than 30% of each vocabulary test, indicating that the vocabulary items were new to them, the researcher excluded those who had answered more than 30% of each vocabulary test after grading the tests. Their reading tests were consequently not graded. An initial sample of 76 participants was recruited for the study. However, six participants were excluded due to their high performance on the vocabulary test, indicating prior knowledge of the words. This left a final sample of 70 participants. The vocabulary test scores ranged from 0 to 8 out of 10, demonstrating a spread in vocabulary knowledge among the participants.

To ensure the reliability of the results and to provide participants with another opportunity in case they did not feel comfortable with one of the texts, two readings were prepared, and the participant's average score in the two readings was considered as their performance in reading comprehension. This allowed for a more accurate assessment of participants' vocabulary knowledge.

3.5 Data Analysis

In order to analyze the data for the purpose of this study, the collected numerical data were subjected to statistical analysis using Statistics Package for the Social Science (SPSS) Software (version 26) and Smart PLS 4. Statistical Package for the Social Sciences (SPSS) is a software package used for statistical analysis. It is widely used in social science research to analyze quantitative data. SPSS offers a variety of features for data analysis, including Descriptive statistics (such as mean, median, mode, standard deviation, and frequency tables), Inferential statistics (such as t-tests, ANOVA, and regression analysis) and Data visualization (such as charts and graphs). Smart PLS 4 is a partial least squares (PLS) SEM software that is particularly well-suited for studies with smaller sample sizes or complex models.

4. Findings

To pursue the objectives of the present study, first, the descriptive statistics for all scales used in the study are presented, then, the results of correlations and Structural Equation Modeling (SEM) are presented so as to understand the relationship and interplay among variables under study. Table 2 presents descriptive statistics for ambiguity tolerance, L2 reading anxiety, and learners' performance on the reading comprehension tests.

Table 2. Descriptive statistics of ambiguity tolerance, L2 reading anxiety, and learners' performance

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
Ambiguity tolerance	70	12	55	35.28	11.3	-0.186	0.790
Reading anxiety	70	21	94	57.65	18.1	0.089	1.14
Performance	70	0.5	8.5	4.53	2	0.066	0.819

The results of the measurement model test using the SMART-PLS software reported in Table 3 showed that the Cronbach's alpha values for reading anxiety were 0.95, for ambiguity tolerance was 0.91, and for reading performance was 0.72. Also, the composite reliability values for reading anxiety were 0.95, ambiguity tolerance was 0.92, and performance was 0.74.

Table 3. Cronbach's alpha and composite reliability

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Variable	Cronbach's alpha	Composite Reliability	AVE
L2 reading anxiety	0.95	0.95	0.51
Ambiguity tolerance	0.91	0.92	0.55
Performance	0.72	0.74	0.78

Figure 1 shows the scatterplots of the research variables. As it can be seen, there are linear relationships between reading anxiety, ambiguity tolerance, and reading performance. Therefore, the linear relationships between the research variables are established and all variables have the necessary conditions to enter the model.

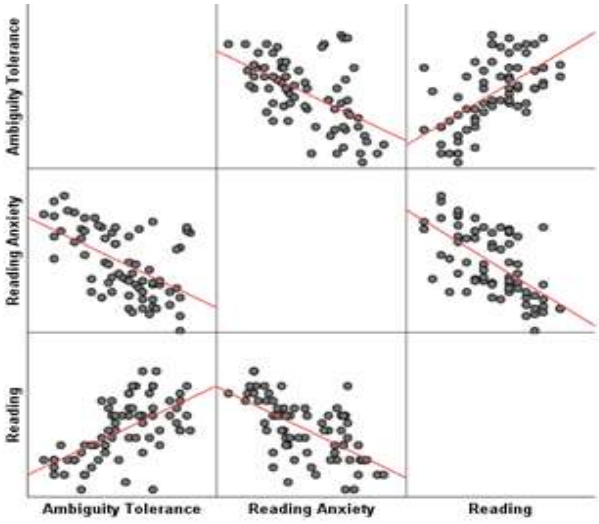


Figure 1. Scatterplots of research variables

Table 4. Correlation between variables

Correlations			
		Performance	Sig. (2-tailed)
Reading Anxiety	Pearson Correlation	-.626**	.000
	N	70	
Ambiguity Tolerance	Pearson Correlation	-.547**	.000
	N	70	70

**. Correlation is significant at the 0.01 level (2-tailed).

RQ1: Is there a significant relationship between Iranian EFL learners' level of ambiguity tolerance and their performance encountering unknown vocabularies in reading comprehension?

According to Table 4, the Pearson correlation coefficient of 0.611 and the significance level of 0.000 obtained in the SPSS analysis suggest that there is a positive and significant relationship between the level of ambiguity tolerance of Iranian language learners and their performance in dealing with unknown vocabularies in reading comprehension.

RQ2: Is there a significant relationship between Iranian EFL learners' L2 reading anxiety and their performance encountering unknown vocabularies in reading comprehension?

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Based on Table 4, the Pearson correlation coefficient of -0.626 and the significance level of 0.000 obtained in the SPSS analysis suggest that there is a strong and negative relationship between the level of reading anxiety of Iranian language learners and their performance in dealing with unknown vocabularies in reading comprehension.

RQ3: Is there a significant relationship between ambiguity tolerance and L2 reading anxiety of Iranian EFL learners?

As shown in Table 4, the Pearson correlation coefficient of -0.547 and the significance level of 0.000 obtained in the SPSS analysis suggest that there is a strong and negative relationship between the level of ambiguity tolerance of Iranian language learners and their reading anxiety in dealing with unknown vocabularies in reading comprehension.

RQ4: How do the Iranian EFL learners' tolerance of ambiguity, L2 reading anxiety and their reading performance encountering unknown vocabularies interplay with one another?

The results of the path analysis using the PLS software reported in Table 5. showed that reading anxiety plays a significant mediating role in the relationship between ambiguity tolerance of Iranian language learners and their performance in dealing with unknown vocabularies in reading comprehension (P=0.003, T=2.97, b=0.24). In other terms, ambiguity tolerance significantly reduced the level of reading anxiety of language learners, which led to a significant increase in their performance in dealing with unknown vocabularies in reading comprehension.

Table 5. Coefficients and values of the structural model for the indirect path

Indirect Effects				
Path	P	T	SE	b
Ambiguity Tolerance-Reading Anxiety-Performance	0.003	2.97	0.083	0.24

Moreover, results of the path analysis using the PLS software presented in Table 6. showed that reading anxiety does not play a moderating and significant role in the relationship between ambiguity tolerance of Iranian language learners and their performance in dealing with unknown vocabularies in reading comprehension (P=0.699, T=0.386, b=-0.03).

Table 6. Coefficients and values of the structural model for the moderating variable

Moderating Effects					
Path	f^2	P	T	SE	b
Reading anxiety × Ambiguity Tolerance-Performance	0.002	0.699	0.386	0.083	-0.03

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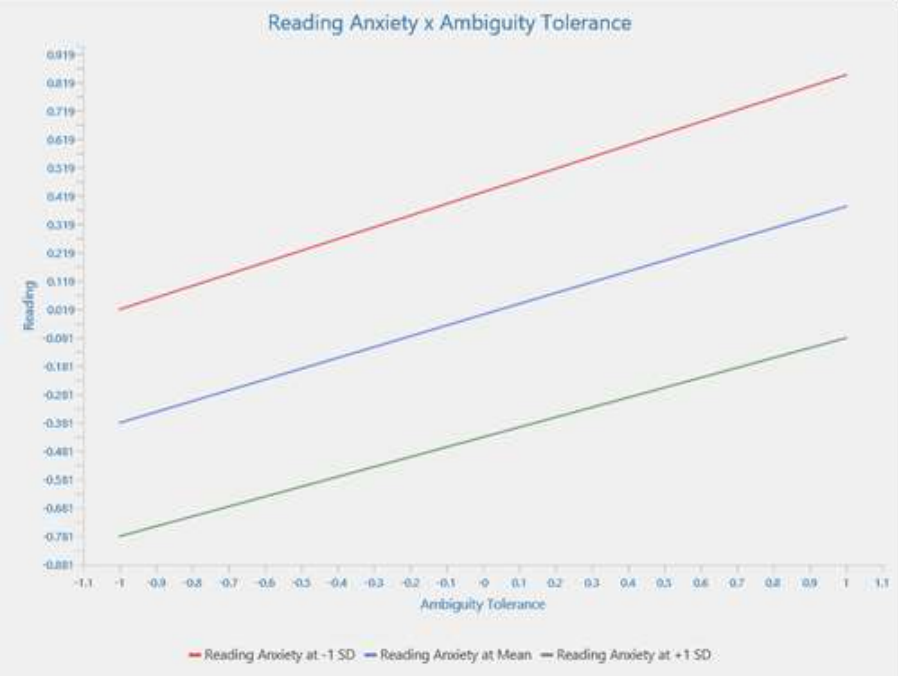


Figure 2. Simple effects analysis plot for the moderating variable of anxiety

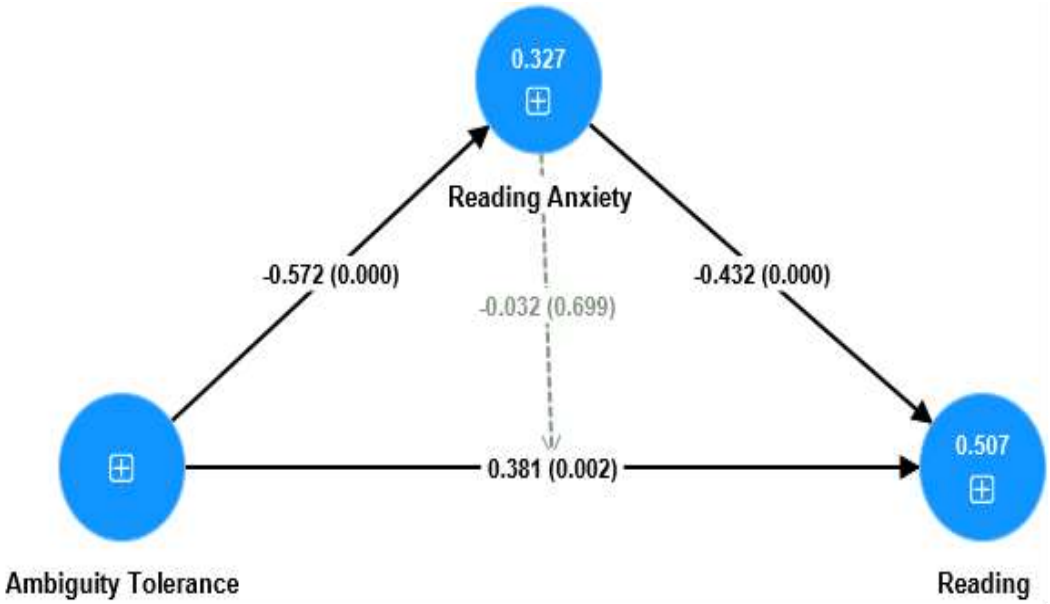


Figure 3. Standardized path coefficients with significant value

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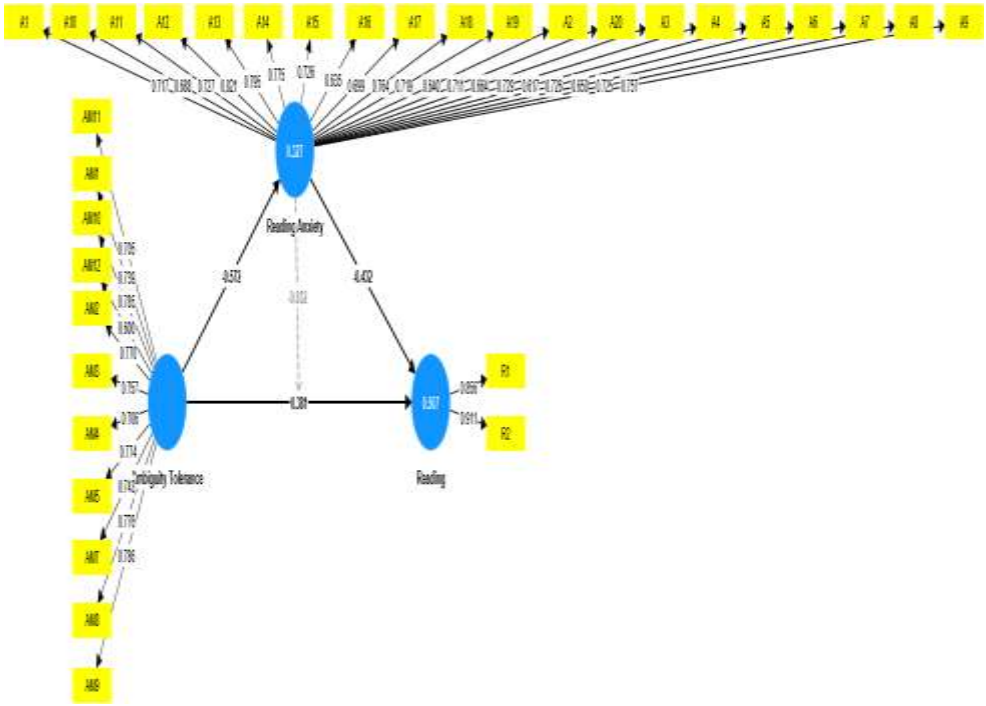


Figure 4. Standardized path coefficients with significant value

5. Discussion

Based on both PLS and SPSS analysis of data reported and analyzed in the presented tables and figures, this section compares the findings of this research with the findings of other studies. According to the results reported in Table 4, there is a significant relationship between Iranian EFL learners' level of ambiguity tolerance and their performance encountering unknown vocabularies in reading comprehension. The finding that learners with higher levels of ambiguity tolerance perform better in reading comprehension is consistent with the results of some other studies. For example, Irankhah (2021) found that students with high ambiguity tolerance experience greater comfort when encountering unfamiliar cases and doubts in various learning situations. Moreover, Salehpoor Yousefi (2018) found a significant positive relationship between ambiguity tolerance and reading comprehension performance in a sample of Iranian EFL learners. Similarly, Seidi (2018) found that Iranian EFL learners with high ambiguity tolerance outperformed learners with average and low ambiguity tolerance on a reading comprehension task. The findings of these studies suggest that ambiguity tolerance plays an important role in reading comprehension. Language learners who are more tolerant of ambiguity are better able to deal with the uncertainties that arise in reading, such as unknown vocabularies. This is likely because they are less likely to be anxious when they encounter unfamiliar words and structures, and they are more likely to use effective strategies for dealing with them.

The result of data analysis also revealed that there is a negative and significant relationship between the reading anxiety of Iranian language learners and their performance in dealing with unknown vocabularies in reading comprehension. This finding suggests that learners with higher levels of reading anxiety are more likely to experience difficulty in dealing with unknown vocabularies in reading comprehension. The finding that reading anxiety is negatively correlated with reading comprehension performance is consistent with a growing body of research. For example, a recent study by Li (2022) found that there is a moderate negative correlation between foreign language reading anxiety and reading performance, and this correlation is stronger for children and low-proficiency learners. Also, Mardianti

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et al. (2021) claimed that learners with high levels of reading anxiety had lower reading comprehension scores than learners with low levels of reading anxiety. Similarly, a study by Al-Dubaisi (2020) found that Iraqi EFL learners with high levels of L2 anxiety had lower reading achievement scores than learners with low levels of L2 anxiety.

The results also imply a negative and significant relationship between the ambiguity tolerance of Iranian EFL learners and their anxiety in dealing with unknown vocabularies in reading comprehension. This means that Iranian EFL learners with higher levels of ambiguity tolerance are less likely to experience anxiety when dealing with unknown vocabularies in reading comprehension. Jiang (2023) found that improving tolerance of ambiguity can reduce foreign language anxiety, and the higher the tolerance of ambiguity is, the more anxiety can be reduced. Al-Dubaisi (2020) also found a negative relationship between ambiguity tolerance and L2 anxiety, consistent with the findings of this study.

In addition, the findings reported in Table 5 indicate a complex interplay between ambiguity tolerance, L2 reading anxiety, and performance encountering unknown vocabularies in Iranian EFL learners. Specifically, the study found that reading anxiety plays a significant mediating role in the relationship between ambiguity tolerance and performance encountering unknown vocabularies. This means that ambiguity tolerance indirectly affects performance encountering unknown vocabularies through its effect on reading anxiety. The study also found that reading anxiety does not play a moderating role in the relationship between ambiguity tolerance and performance encountering unknown vocabularies. This means that the strength and direction of the relationship between ambiguity tolerance and performance encountering unknown vocabularies is the same at all levels of anxiety (high, medium, and low) .

In research by Allahdadi and Ghanizadeh (2017), the researchers studied the dynamic interplay among EFL learners' ambiguity tolerance, adaptability, cultural intelligence, learning approach, and language achievement. Utilizing structural equation modeling (SEM), the study revealed a strong connection among these variables, highlighting their interplay in promoting language acquisition. The findings indicated that all factors except adaptability directly impacted language proficiency, with deep approach playing the most significant role, followed by ambiguity tolerance. Moreover, ambiguity tolerance emerged as a strong predictor of deep approach adoption. On the other hand, cultural intelligence was found to be dependent on both ambiguity tolerance and adaptability. These findings shed light on the dynamic interaction of these factors and underscore their critical role in enhancing language proficiency.

6. Conclusion

In accordance with the research goals of this study and the findings of the data analysis, the relationships among the three variables of ambiguity tolerance, L2 reading anxiety, and learners' performance encountering unknown vocabularies in reading comprehension were elucidated. The findings of the current investigation opened new horizons on the intricate interplay between these variables, shedding light on the complex mechanisms underlying learners' ability to navigate unknown vocabularies in reading comprehension tasks.

The study revealed a significant positive relationship between ambiguity tolerance and reading comprehension performance encountering unknown vocabularies, indicating that learners with higher levels of ambiguity tolerance are better equipped to cope with the inherent uncertainty of reading texts containing unfamiliar words. Conversely, a significant negative relationship was found between L2 reading anxiety and performance encountering unknown vocabularies, suggesting that learners with higher levels of reading anxiety experience greater difficulty in dealing with unfamiliar vocabularies, potentially hindering their overall comprehension. Furthermore, the study uncovered a significant mediating role played by L2 reading anxiety in the relationship between ambiguity tolerance and performance encountering unknown vocabularies.

The results of this study imply that reading anxiety serves as an intermediary mechanism through which ambiguity tolerance exerts its influence on performance. In other words, ambiguity tolerance indirectly affects performance encountering unknown vocabularies through its influence on reading anxiety. These findings provide valuable insights into the factors that influence learners' ability to successfully navigate unknown vocabularies in reading comprehension. The intricate interplay between ambiguity tolerance, L2 reading anxiety, and performance highlights the importance of considering these variables in both language teaching and learning. The findings of the current investigation opened new horizons on the intricate interplay between these variables, shedding light on the complex mechanisms underlying learners' ability to navigate unknown vocabularies in reading comprehension task. Future research could delve deeper into specific components of reading comprehension, such as vocabulary acquisition, inference making, and text summarization. Examining how ambiguity tolerance and L2 reading anxiety interact with each of these components could provide valuable insights into the specific mechanisms underlying learners' reading comprehension abilities.

6.1 Pedagogical Implications

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This study underscores the importance of addressing ambiguity tolerance and L2 reading anxiety in language teaching. Teachers can foster ambiguity tolerance by encouraging flexible thinking and creating a supportive environment. Learners can enhance their ambiguity tolerance by actively engaging with challenging texts and practicing metacognitive strategies. By addressing both factors, teachers can create a more effective reading comprehension curriculum that empowers EFL learners to navigate unknown vocabulary with greater confidence and success. The present study aligns with existing research on the relationship between ambiguity tolerance, L2 reading anxiety, and reading comprehension. Previous studies (Irankhah, 2021; Salehpoor Yousefi, 2018; Seidi, 2018) have consistently found a positive association between ambiguity tolerance and reading comprehension. Similarly, the negative correlation between L2 reading anxiety and reading comprehension has been documented in multiple studies (Li, 2022; Mardianti et al., 2021; Al-Dubaisi, 2020). Additionally, the mediating role of L2 reading anxiety on the relationship between ambiguity tolerance and reading comprehension is supported by existing research (Allahdadi & Ghanizadeh, 2017). These findings collectively highlight the importance of both ambiguity tolerance and anxiety management in enhancing EFL learners' reading comprehension.

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