

Verifying Self-Determination Theory in EFL Context: Considering the Relationship between Innate Needs and Motivation

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Abstract

Self-Determination Theory (SDT) is a hot topic in the field of applied linguistics, and it is getting more and harder to downplay the significance of the so-called theory in the growth of second-language learners (Deci and Ryan, 1985, 2000, 2002). The current study tried to test the theory in the Iranian EFL setting by throwing light on the relationship between innate or basic psychological requirements of competence, relatedness, and autonomy and (intrinsic) motivation. This was done as a commentary on other research findings. 324 EFL university students from Iran were contacted to take part in the study. A standard questionnaire created by Agawa and Takeuchi (on the students' motivation for learning a second language and their innate needs fulfillment) was used to collect data for the survey-style study (2016). SEM, or structural equation modeling, was used to determine how well actual data matched hypothetical expectations. According to the SEM model suggested, there was a strong positive correlation between Iranian EFL learners' motivation and their competency demands. However, relatedness needs appeared to have less of an impact on students' motivation, while the satisfaction of autonomy needs was found to have either adverse or demotivating impacts on Iranian L2 learners' motivation. These findings can be applied to improve second language learners' motivation by posing engaging questions about the nature of the students' demands for autonomy, relatedness, and competence.

Keywords:

EFL Learns' Motivation, Self-Determination Theory, Innate Psychological Needs, Structural Equation Modeling (SEM).

INTRODUCTION

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Maybe the concept that has been studied the most in the context of learning a second or foreign language is motivation. In order to learn a second language successfully, motivation has been identified as a key element (Lamb, 2017). According to Ryan and Deci (2000), motivation is recognized as a stimulant for reaching a specific goal. There is a ton of research that has been reviewed in the literature to investigate the function and nature of motivation in second language acquisition. The bulk of academics initially concentrated primarily on two elements of motivation (i.e., integrative and instrumental motivation). Integrative motivation is characterized as the propensity of the learners to internalize the target language. Under the Socio-educational framework, on the other hand, instrumental motivation is characterized by learners' aim to acquire a new language in order to obtain external rewards. The assumption that the dichotomy of integrative/instrumental motivation may be the predictor of L2 learning has since been questioned by some researchers (e.g., Lamb, 2004; Gardner, 2000; Yahima, 2000; Dörnyei, 1990; Gardner, Lalonde, & Moorcroft, 1985). Hence, the self-determination theory (SDT) was put up as a general theory of human motivation (Deci & Ryan, 1985, 2000, 2002). It is well understood that treating psychological concerns in educational problems is essential for achieving a good teaching and testing process (Farsi, 2014). When it comes to education, SDT is primarily concerned with inspiring students' desire to further their learning, the value of their education, and confidence in their abilities and traits. The alleged results are evidence of internalizing the values and regularizing the process, as well as being organically motivated (Deci, Vallerand, Pelletier and Ryan, 2011). Self-determination theory has received significant attention in L2 research over the past few decades, and various studies have been done using this theory in EFL and non-EFL settings. To comprehend the motivation behind language learning better In their book, Noels, et al. (2019), gave a summary of the self-determination theory (SDT) and reviews of how it has been used to the study of second language acquisition. The lack of demographic diversity, however, hurt the bulk of earlier studies in the educational framework that looked at the connection between motivation and innate requirements. A wider population should be included in psychology-related ideas in order to support their external validity as well, given the complex and chaotic character of human beings. Although there is a wealth of literature on the evaluation of SDT in the field (e.g., Noels, 2003; Hiromori, 2006; Sugita McEown et al., 2014; Agawa and Takeuchi, 2016; Dincer and Yeşilyurt, 2017; Noels et al., 2019; Alamer and Almulhim, 2021), the application of the so-called theory in an Iranian EFL setting has received little attention. In order to improve the theory's generalizability to the aforementioned setting and population, it seems vital to inquire about the theory's application in the Iranian EFL context. The goal of this study is to clarify this path by examining the connection between (intrinsic) motivation and the basic needs of Iranian EFL learners.

For example, self-regulation, learning objectives, fundamental psychological requirements, personality development, the influence of learning environments on learning, the energy/vitality dichotomy, wellbeing, etc. are all topics covered by STD (Deci & Ryan, 2000; Rahmanpanah, 2017). Three fundamental psychological requirements of people—relatedness, competence, and autonomy—are further considered by SDT to be natural motivational qualities (Deci & Ryan, 2000; Jang et al., 2016). It claims that internalized orientation for language learning is linked to feeling our intrinsic (basic) psychological demands for relatedness, competence, and autonomy (ability to select and take responsibility for our behavior) (to interact and be connected to others in the society). These inborn psychological requirements are described as essential nutrients for increasing well-being and psychological

development (Ryan and Deci, 2008). The best growth and operation of language learners depends on the satisfaction of the so-called needs (Dice & Ryan, 2012; Ryan & Deci 2017). Agawa and Takeuchi (2016) contend that greater underlying psychological need satisfaction leads to better intrinsic motivation in people. Yet, the satisfaction of autonomy requirements does not have a favorable impact on intrinsic or even extrinsic motivation.

Mason (2012) revealed a favorable correlation between drive to continue and autonomy, competence, and relatedness among empirical investigations that examined the conceivable association between motivation and innate psychological requirements. In terms of learning a second language, substantial research has demonstrated that intrinsic drive results in less anxiety and a greater sense of self-determination (Noels, 2005; Noels, Pelletier and Clement 1999; Ryan and Neimiec, 2009; Rahmanpanah, 2017).

Given that it places more focus on the types of motivation than the quantity of motivation, the concept of motivation has been clarified (Dincer and Yesilyurt, 2017).

Motivating pupils to participate in the learning process, which is a precondition, is fueled by self-determination theory (Chiu,2021).

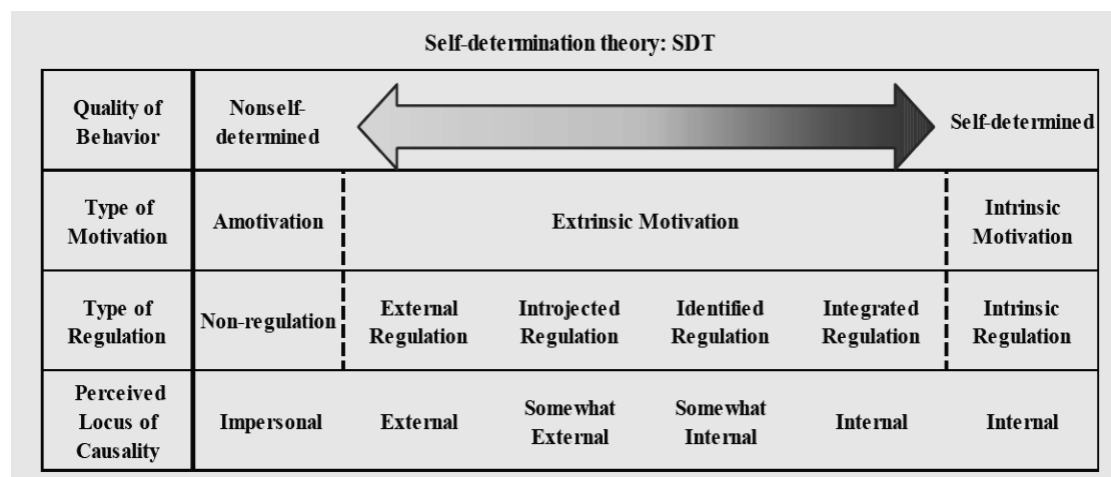


Figure 1 Self-Determination Continuum, with types of motivation and regulation. Adapted from Deci, E. L., and Ryan, R. M., (Eds.), 2002, *Handbook of Self-Determination Research*, p.16

As was already indicated, the ability of SDT to represent human motivation has attracted significant educational appeal in light of a variety of theoretical and psycholinguistic backgrounds (e.g., Mynard, 2021; Deci & Ryan, 2017; Dincer, 2017; Haya Kaplan, 2017; Agawa and Takeuchi, 2016; Edward Barr, 2016; Mc Eown et al, 2014; M.Mason, 2012). In addition, many researchers in North America are aware of the importance of including a cross-cultural perspective in SDT (Sugita Mc Eown et al., 2014), and they recommend using motivational constructs from the so-called theory to be investigated in a variety of social and cultural contexts to confirm its generalizability. The present study is a pure effort to examine the self-determination theory in the Iranian EFL setting with the goal of determining the extent to which it is related to the motivation of university students because little research has been done to look for the external validity of the SDT within the Iranian EFL context (e.g., Ahmadi, 2013; Rahmanpanah, 2017; Alibakhshi & Nezakatgoo, 2019; Sardari & Ghajarieh,2023). In

light of this, the current study examined self-determination theory and looked at how the aforementioned model was adjusted to the real data by utilizing samples that were more typical of the prior population. The first focus was on researching the tangential connections between intrinsic psychological requirements for competence, relatedness, and autonomy and motivation. To this purpose, the current study has concentrated on the following stated research topics in order to meet the aforementioned niche:

Hypothesis 1: There is a significant relationship between Iranian EFL students' competence and their motivation.

Hypothesis 2: There is a significant relationship between Iranian EFL students' relatedness and their motivation.
Hypothesis 3: There is a significant relationship between Iranian EFL students' autonomy and their motivation.

METHODS

Participants

324 EFL university students who were in their first, second, or third year of academic study at the university comprised the participants in the current study. Agawa and Takechi (2016) used the power analysis method developed by Faul et al. (2009) to determine the lowest number of participants needed for their study while taking SEM into account. The outcome demonstrated that such correlational investigations would require a minimum of 231 individuals. The researcher was determined to collect data from at least 300 subjects in order to increase the safety margin; 324 participants were ultimately recruited (148 females and 176 males). Most of the students spoke Azari as their mother tongue. All of them, who were between the ages of 20 and 29, had never had the chance to live abroad. At three academically diverse universities, data were gathered via clustered random sampling from several departments, including English, Medicine, Psychology, Law, Management, and Persian Literature (i.e., a high-level university: University A; a middle-range university: university B; and an easy-to-enter university: university C). There were 91 participants from university C, 134 participants from university B, and 99 participants from university A. The three universities' EFL learners' English scores varied, with University A's average GPA of 17.2 being the highest, followed by University B's average GPA of 14.4 and University C's average GPA of 11.7. The samples of students were homogenized in terms of age, mother tongue, English proficiency, and English background using a demographic questionnaire created by the researcher.

Instruments and Materials

Self-Determination Questionnaire

In order to accomplish the purpose of the present study, Agawa and Takeuchi's questionnaire (2016) was utilized with three different scales.

Scales of SDT Questionnaire

The questionnaire was divided into three sections: demographic data, a scale measuring motivation for learning English, and a scale measuring psychological need. The alpha values for each construct received an acceptable predicted level, demonstrating the questionnaire's internal consistency (Cronbach's $\alpha = .74-.89$).

English Learning Motivation Scale

Following the demographic section of the questionnaire, the second section asked students to indicate their propensity for learning English. According to the self-determination continuum,

it sought information on the level of learners' motivation with reference to five rules (intrinsic, identifiable, introjected, external, and amotivation). The scale had 20 questions, and students had to rate each one on a five-point Likert scale (1 being strongly disagree, and 5 being strongly agree), choosing the one they liked the most. The regulations and sample goods are described in the section after that.

Psychological Needs Scale

The final section of the survey asked questions about the satisfaction of the English learners' innate psychological requirements.

Twelve questions and three subscales were included in this section (i.e., competence, relatedness, and autonomy). Participants were given a five-point Likert scale (1=strongly agree; 5=strongly disagree), which was analogous to the English learning motivation scale.

Procedure

The learners were requested to respond to the back-translated version of the questionnaire (See appendix B), which was pilot-tested by 30 students, after the participants had been homogenized using the demographic questionnaire and the learners' GPA. Three questionnaire scales were included in the back translation (Demographic Information motivational scale and psychological needs scale). The study supervisor verified the validity of the Persian (translated) questionnaire and found that its reliability was 0.82. Also, the questionnaire had a 15-minute time limit for responses. The gathered information was entered into the LISREL software (version 8.8) and SPSS (version 25) programs for processing and analysis in order to show the level of significance for the acceptance or rejection of the research hypothesis developed at the start of the investigation.

RESULTS

Descriptive Statistics

Descriptive statistics shown in Table 1 include mean, standard deviation, skewness, kurtosis, and Alpha Cronbach's alpha coefficient. Skewness and Kurtosis values should be within the range of ± 2 to accept the shape of the normal distribution of data in order to guarantee a reasonable level of normalcy of variables.

Table 1: Descriptive Statistics of Research Variables

Variables	Mean	SD	Skewness	Kurtosis	α
Competence	4.25	.76	-1.28	1.66	.80
Relatedness	4.00	.75	-.66	-.20	.72
Autonomy	3.68	.49	-1.50	3.06	.83
Intrinsic	4.01	.83	-1.06	1.24	.82
Identified	4.03	.74	-.84	.66	.70
External	3.07	.76	.24	-.32	.71
Amotivation	1.71	.86	1.38	1.33	.84

According to Table 1, All in all, the mean for all dimensions of basic psychological needs including competence (4.25), relatedness (4.00), Autonomy (3.68), are higher than the average score (3.00) of scale. In Addition, the mean for dimensions of motivational orientation including intrinsic (4.01), identified (4.03), and external (3.07) are higher than the average score (3.00) of scale, except for amotivation (1.71) that is lower than the average score (3.00) of scale.

Cronbach's alphas coefficients indicate good internal consistency (reliability) for all study variables in a way that both dimensions of basic psychological needs and dimensions of motivation were higher than .70.

According to Table 1, all skewness and Kurtosis values are located in a range between ± 2 . Therefore, the shapes of data distribution for all items are normal and univariate normality is achieved in the present study.

Bivariate Correlations

In Table 2, a bivariate correlation matrix of variables including dimensions of basic psychological needs and motivation has been reported.

Table2. Bivariate Correlation Matrix of the Research Variables

According to table 2, the correlation between basic needs and dimensions of motivation were

	1	2	3	4	5	6	7
1- Competence	1	.66**	.57**	.49**	.50**	-.08	-.34**
2- Relatedness		1	.53**	.41**	.42**	-.05	-.29**
3- Autonomy			1	.38**	.42**	-.11	-.30**
4- Intrinsic				1	.71**	.10	-.53**
5- Identified					1	.003	-.54**
6- External						1	.18**
7- Amotivation							1

consistent with the hypothesized relations and direction, with the exception of external motivation. As expected, all three basic psychological needs including competence, relatedness, and autonomy were positively correlated with intrinsic motivation and identified dimensions. Besides, it was negatively correlated with amotivation dimension of motivation. However, there was not any significant correlation between the three basic needs and the external dimension of motivation.

Discriminant Validity CFA

CFA for Basic Psychological Needs Questionnaire

Maximum likelihood estimate was used during the analytical phase to test the model and look into the research ideas. To put the theoretical model to the test, Gefen, Straub, and Boudreau's (2000) suggested criteria were used. These criteria include the indices χ^2/df , which must have acceptable values lower than 3, Comparative Fit Index (CFI), Goodness of Fit Index (GFI), which must have acceptable values higher than 0.9, Adjusted Goodness of Fit Index (AGFI), which must have acceptable values higher than 0.8, and Root Mean Square Error of Approximation (RMSEA), which must have acceptable values higher than 0.08.

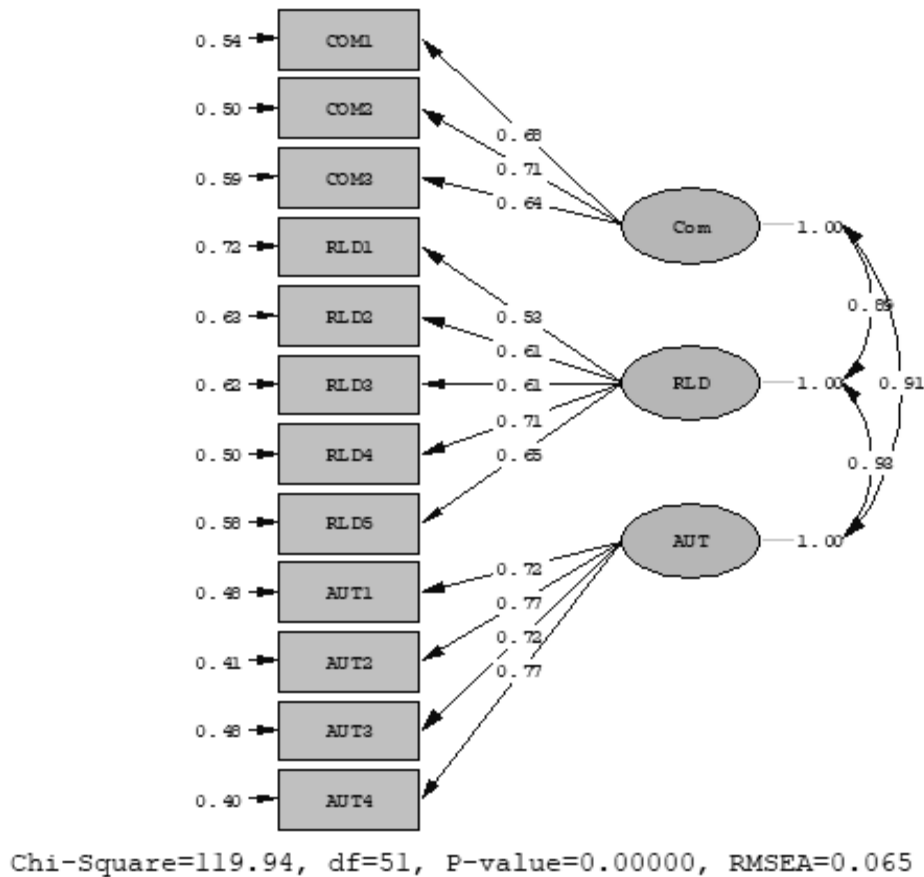
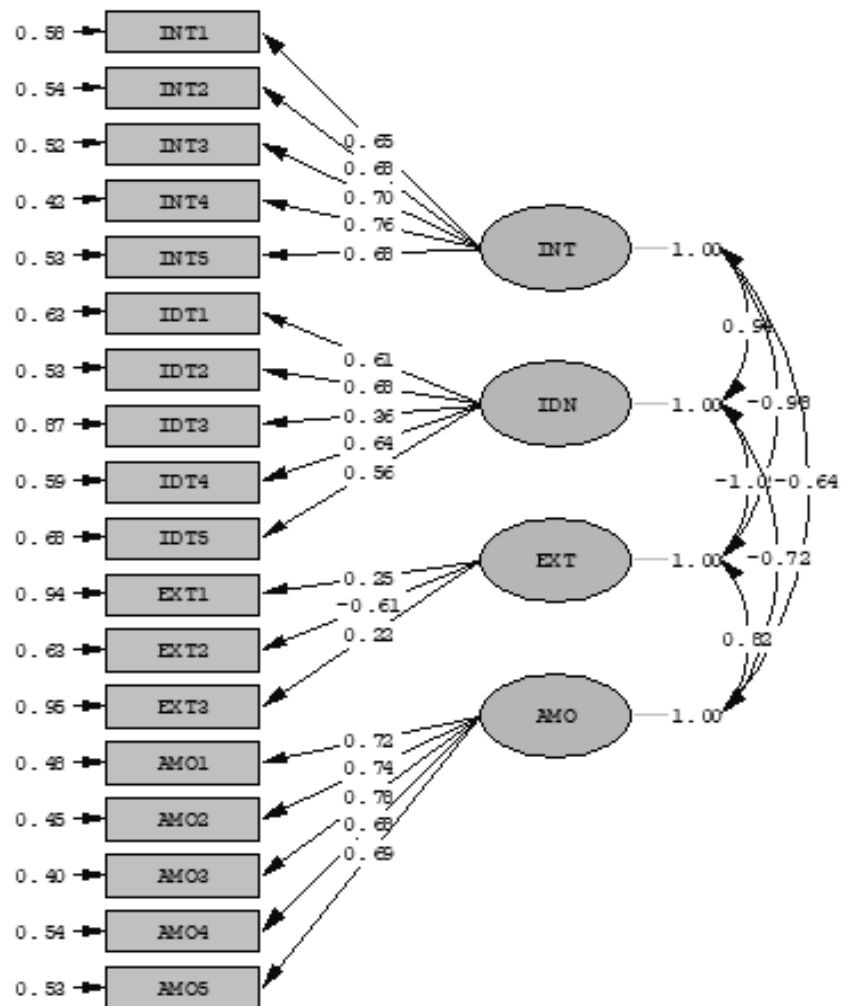


Figure 1 CFA Model for Basic Needs Questionnaire

First, the discriminant validity CFA model for the basic psychological needs with 3 latent factors and 12 items (model 1) could meet the criteria for good fit and was greater than the proposed values by Gefen, et al (2000). The CFA model exhibited adequate fit ($\chi^2= 119.94$, $df= 51$, $RMSEA= .06$, $CFA=.98$, $GFI= .94$, $AGFI=.91$).

CFA for Motivation Questionnaire

Second, the modified motivation CFA model (model 2) with discriminant validity could fulfill the criterion for excellent fit and was greater than the values suggested by Gefen, et al (2000). ($\chi^2=352.44$, $df=129$, $RMSEA=.07$, $CFA=.96$, $GFI=.91$, $AGFI=.90$) The CFA model showed a good match.



Chi-Square=352.44, df=129, P-value=0.00000, RMSEA=0.074

Figure 2 CFA Model for Motivation Questionnaire

The validity of discrimination The CFA model for the Modified motivation, which included 18 items and 4 latent components, satisfied the requirements for excellent fit and outperformed the prior values. The CFA model showed a good fit.

Main Analysis

A SEM was utilized in order to examine a model with direct paths from the dimensions of perceived competence, relatedness, and autonomy to motivational orientations of intrinsic, identified, external, and motivation.

The structural model demonstrated a mild fit with the data. The fit indices are presented in Table 3, the standardized coefficients are presented in fig. 3, and t values are presented in Fig 3.

Table 3 The goodness of Fit Indices for Tested Model

RMSEA	AGFI	GFI	CFI	X2/d.f	X2	D.f
.07	.83	.86	.97	2.08	808.52	390

Table 4 designates goodness of fit indices for the tested model that demonstrated greater values than the proposed values by Gefen, et al (2000) exception with GFI and AGFI.

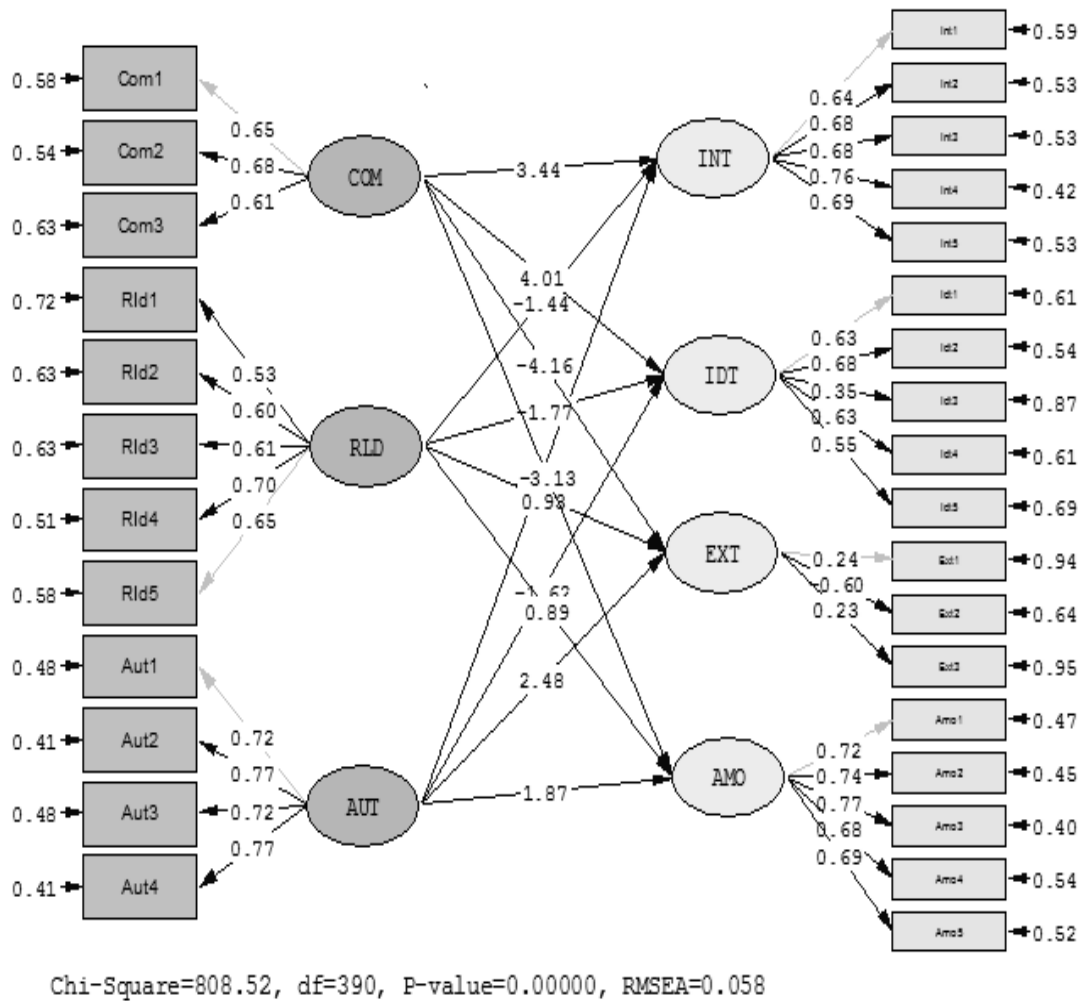


Figure 3 Standardized Coefficients of Each Path

The results of the correlation between autonomy and learner motivation demonstrated to be startling. Although there has been a negative and statistically significant path from autonomy toward intrinsic motivation, the values were relatively small. This fact suggests that Iranian EFL learners' intrinsic motivation could negatively be affected by autonomy needs. Furthermore, the second path from autonomy has demonstrated a negative and statistically significant value, which implies the fact that through identification, autonomy support may essentially impede the learners' regulation. Finally, the path autonomy to amotivation has been revealed a positive and statistically significant value. This is the indicator of the fact that discretion to Iranian EFL learners might further act as a demotivator factor for them.

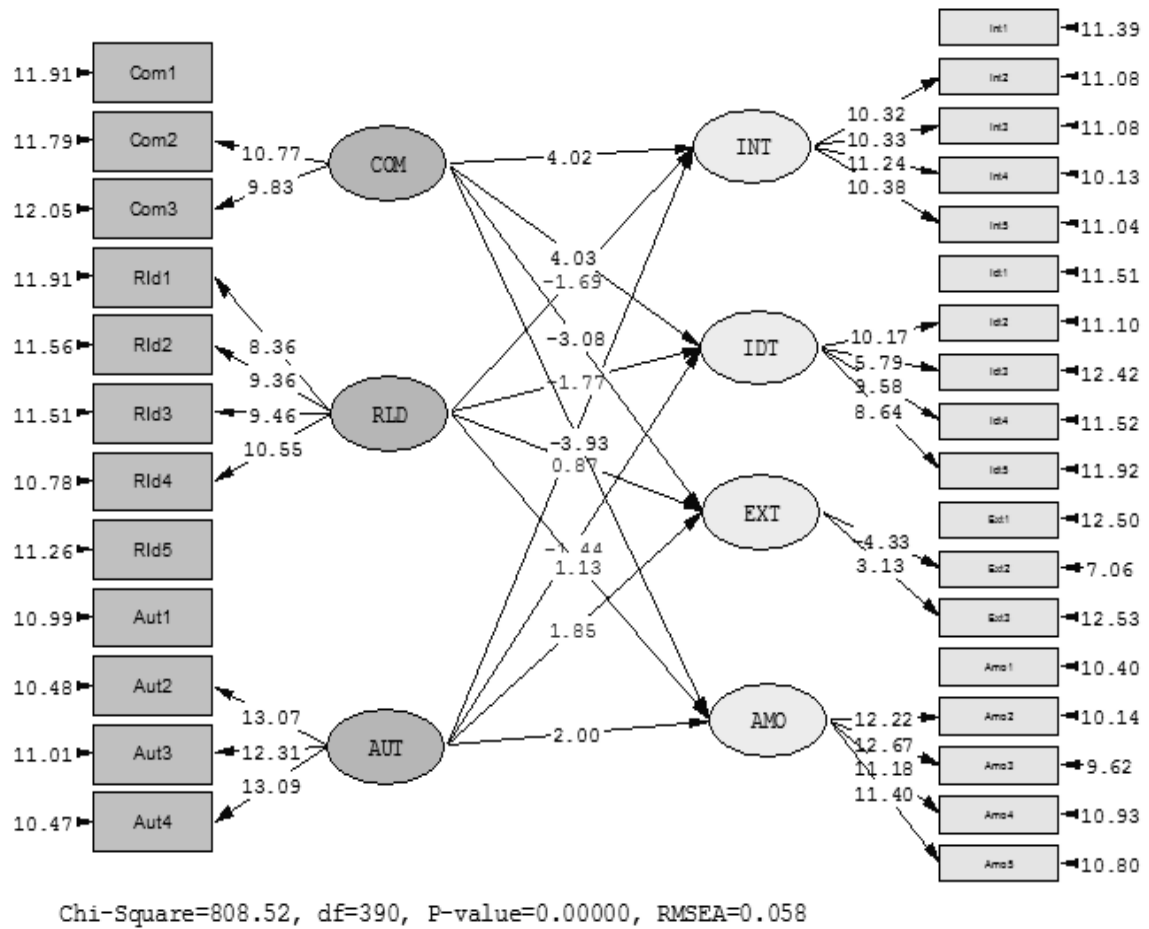


Figure 4 T- Values for Each Path

SEM analysis was used to address a few problems with the self-determination theory (SDT) model. First off, the expected values did not fairly correlate to the observations, based on the theory (table 3). Second, the external regulation component of the model could be eliminated because it did not significantly correlate with the other three basic psychological demands.

Outcomes of Altered Model

The chosen fit indices of the model without outside incentive are shown in Table 4. In contrast to the old model, the results show that all of the indicators in the current model were adequate, proving that the modified model provides a good representation of the data gathered for the current experiment. The modified model is depicted in Figures 6 and 7 using standardized path coefficients and t-values, respectively.

Table 4 The goodness of Fit Indices for Altered Model

RMSEA	AGFI	GFI	CFI	X2/d.f	X2	D.f
.06	.83	.86	.97	2.20	686.74	312

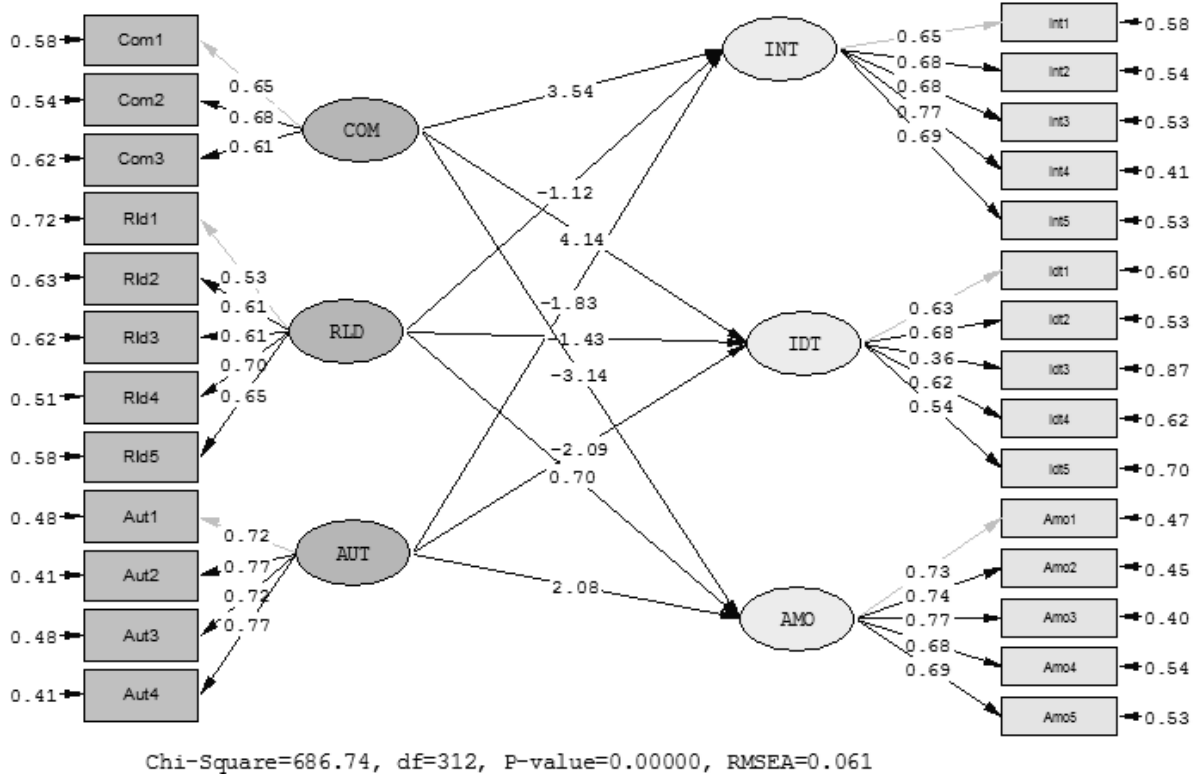


Figure 5 Standardized Coefficients of Each Path

All pathways beginning with competence have shown a significance of .005 or below. This shows that meeting learners' competency demands has a significant, positive impact on their ability to regulate their behavior and feel motivated internally as well as externally. Similar patterns were found for relatedness as well, with the difference that the coefficient values showed that need fulfillment had only a negligible impact on identified regulation, intrinsic motivation, and amotivation.

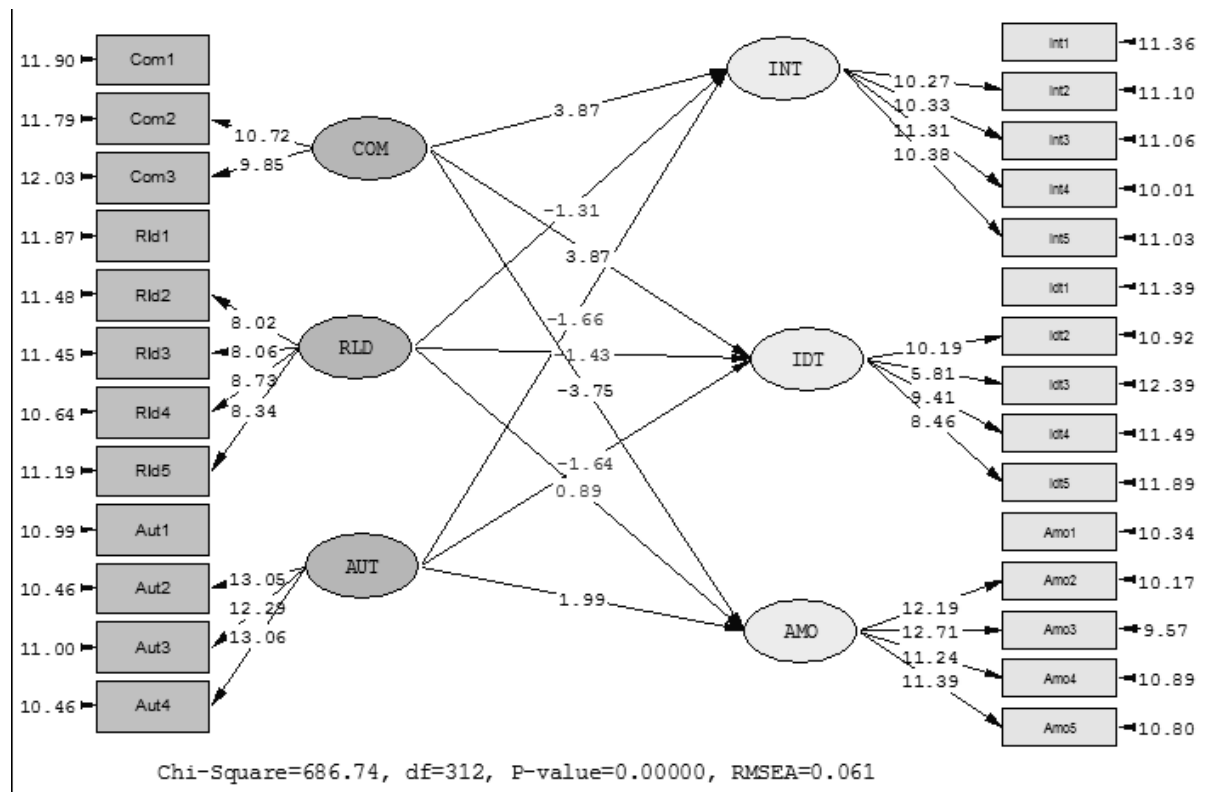


Figure 6 T-values for Each Path

Figures 6 and 7 display the model's outcomes after being put to the test. In light of these data, hypothesis 1 has received strong support, while hypothesis 2 has received weak support. The current study, however, does not support theory 3. Iranian EFL learners' motivation and competency demands showed a substantial positive link, according to structural equation modeling (SEM). The impact of relatedness demands on students' motivation was less pronounced. The satisfaction of autonomy requirements, however, had negative or demotivating impacts on the motivation of Iranian L2 learners.

Table 5 Results of Examining Research Hypothesis

Hypothesis	Causal direction	Beta	t	Result
1	competence>> intrinsic	3.54	3,87	supported
	competence>> identified	4.14	3,87	
	competence>> amotivation	-3.14	-3.75	
2	relatedness>> intrinsic	1.12	1.31	Weakly support
	relatedness >> identified	1,43	1.43	
	relatedness >> amotivation	-.70	.89	
3	Autonomy>> intrinsic	-1,83	-1.66	Not supported

Autonomy >> identified	-2,09	-1,64
Autonomy >> amotivation	2,08	1.99

As described hitherto and according to table 5, only autonomy needs satisfaction was not in line with what self-determination theory postulates.

Discussion & Conclusion

The overall goal of the study was to confirm SDT's assertions about the connection between fundamental psychological needs and intrinsic motivation in the context of Iranian EFL. The goal of the study was to determine whether or not SDT is appropriate in this teacher-centered environment. Notwithstanding its shortcomings, the SDT has the potential to be used in a teacher-centered framework, according to the study's findings.

The first research question of the current study attempted to explore the connection between motivation and the satisfaction of competence needs in the context of Iranian EFL. According to the findings, which were consistent with earlier studies (such as Dei, 2011 and Elliot, McGregor, and Thrash, 2002), Iranian EFL students' motivation is positively and significantly impacted by the satisfaction of their competence demands. So, being able to comprehend and speak English would motivate EFL students more. Several strategies to increase understudies' sense of competence have been suggested by this field of research. For instance, according to Elliot et al. (2000), receiving favorable feedback significantly increased people's feelings of competence, which in turn favorably impacted intrinsic motivation.

The relationship between motivation and relatedness needs was examined in the second research question of the current study. The outcomes of the data analysis revealed that there was little correlation between these two factors. Although the findings confirmed the applicability of self-determination theory, they lagged behind earlier research done in other global contexts (e.g., Coccia, 2019; Jang et al., 2016; Ryan & Deci, 2017). As Hiromori (2006) found a negative relationship between relatedness and intrinsic motivation among highly driven students, his findings are at odds with those of the current study. According to him, highly driven students' propensity to learn English may be adversely affected by the fulfilling of their relatedness demands in regard to their classmates. Hiromori asserts that pupils who have already increased their drive can learn on their own without needing to work with others. The third study topic attempted to examine the connection between motivation and the need for autonomy. Surprisingly, the conclusions of the research differed from what self-determination admits. The findings showed that Iranian L2 learners' motivation is negatively or demotivatingly impacted by the satisfaction of their autonomous requirements.

The results of this section were consistent with the majority of studies in the literature, including those by Uebuchi (2004), Azuma's (1994), Ahmadi (2013), Hashemian and Heidari (2011), Wen (2009), and Puteh-Behak (2013), all of which used East Asian students in their research. So, it is understandable that university students in the majority of Asia may not be aware of how to practice autonomous behavior or autonomous behavior that is proactive. It follows that it is clear that pupils in this area favor the "spoon-feeding" method of instruction, also known as "jug and mug" or "bank account," in which the teacher determines what is to be taught. According to SDT, fulfilling the three fundamental demands of competence, autonomy, and relatedness helps to produce favorable results, one of which is intrinsic motivation. Many researchers believe that these basic psychological demands are the foundation of SDT, and that satisfying them boosts intrinsic motivation (See Agawa & Takeuchi, 2016; Edward Barr, 2016;

Rahmanpanah, 2017; Zainudding & Perera, 2019). In actuality, with the exception of the satisfaction of autonomy requirements, the study's findings are consistent with the principles of SDT. This suggests that other factors besides the satisfaction of psychological requirements described in self-determination theory, such as educational policies, learner cultures, and even their attitudes toward learning, may result in different conclusions.

Despite the fact that the outcomes of the current attempts have been encouraging, a number of restrictions must be considered before making any conclusions. The process of filling out the questionnaires was the main drawback of the current undertaking. Due to the fact that the questionnaires were completed at home or during class, there was some potential for participants, just like in any questionnaire-based study, to fill in the columns randomly without reading the questions. There were also a number of participants who for a variety of reasons did not return the questionnaire papers to the researcher. The research also had certain limitations because the idea of SDT could be quite culturally sensitive. One of these limitations was that it was only possible to generalize the results to EFL students in the northwest of Iran. Also, the researcher had to omit the second section of the questionnaire because there wasn't enough time to complete it. In addition, only university students were included in the study, and other learning venues like schools or institutes were not considered. Last but not least, the study was conducted regardless of the gender of the participants as a potential moderator or intervening variable.

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