

Innate Needs and Motivation: Self-Determination Theory in EFL Context

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Abstract

This study attempted to investigate the Determination Theory in the Iranian EFL context by shedding light on the relationship between EFL learners' basic psychological needs of autonomy, competence, and relatedness, and (intrinsic) motivation. To conduct the study, 324 Iranian EFL university students participated in the study. The design of the present study was quantitative. A standard questionnaire (on the students' innate needs fulfilment and their second language motivation) developed by Agawa and Takeuchi (2016) was administered to the participants. Structural Equation Modeling (SEM) was employed to assess the proportion between hypothetical expectance and factual data. The model indicated that there was a substantial positive relationship between competence needs and Iranian EFL learners' motivation. On the other hand, relatedness needs indicated a weaker influence on students' motivation, and the autonomy needs fulfilment revealed to hold either negative or demotivating effects on Iranian L2 learners' motivation.

Keywords: Determination theory, EFL learners' motivation, innate psychological needs, -, , structural equation modeling

Introduction

Motivation is possibly the notion that has been extensively examined in the realm of second/foreign language learning. Successful second language learning has been cogitated to comprise motivation as a vital component (Lamb, 2017). Motivation, according to Ryan and Deci (2000), is acknowledged as a stimulant for achieving a particular target. There is a pile of research in the literature that has been conducted to explore the role of motivation in second language learning. Initially, the majority of researchers predominantly focused on two general components of motivation (i.e. integrative & instrumental motivation). Integrative motivation is defined as the learners' tendency toward internalization of the target language. In contrast, instrumental motivation is characterized by learners' intention to learn a new language in order to achieve external rewards in the Socio-educational framework. Subsequently, there have been discrepancies over the corroboration for the idea that the dichotomy of integrative/instrumental motivation could

be the predictor of L2 acquisition (e.g. Dörnyei, 1990; Gardner, 2000; Gardner, Lalonde, & Moorcroft, 1985, Lamb, 2004; Yahima, 2000). Therefore, the self-determination theory (SDT) was proposed as a macro theory of human motivation (Deci & Ryan, 1985, 2000, 2002). In order to achieve a successful teaching and testing process, the significance of addressing psychological issues in educational problems is widely acknowledged (Farsi, 2014). Once it is applied to the scope of education, SDT is chiefly focused on encouraging students' interest to enhance their learning, the significance of their education, and conviction in their capacities and attributes. The so-called outcomes are the manifestations of being intrinsically motivated, internalizing the values along regularizing the process (Deci et al., 2011).

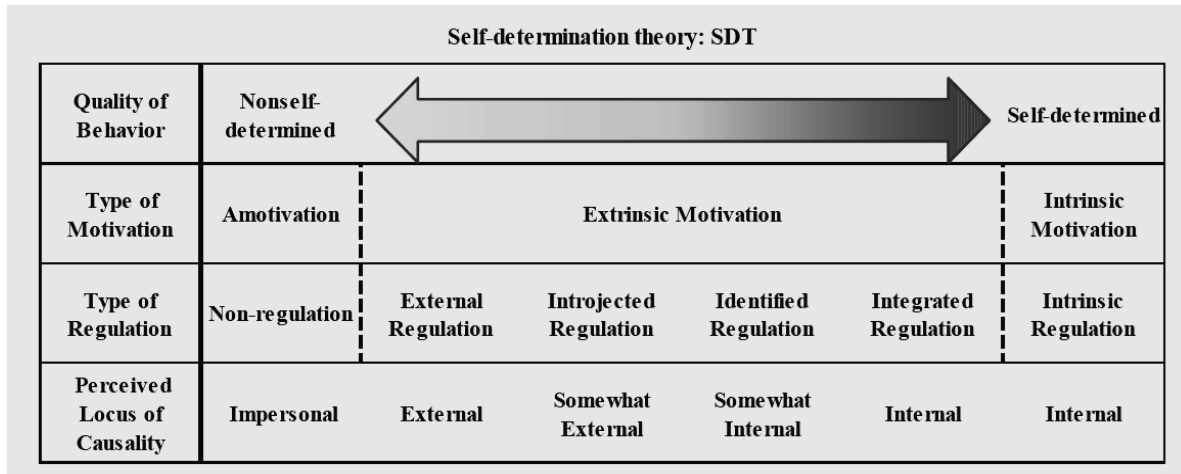
Over the past few decades, self-determination theory has been the center of attention in L2 researches, and numerous studies have been conducted applying this theory in both EFL and non-EFL settings. However, the majority of the previous studies in the educational framework, which considered the relationship between motivation and innate needs, suffered from the limited population diversity. Besides, due to the complex-chaotic nature of human beings, it is of extra importance to involve the psychology-related theories in a wider population in order to substantiate the external validity of the theory. Despite the available ample and extensive literature on the appraisal of SDT in the field (e.g. Agawa, & Takeuchi, 2016; Alamer & Almulhim, 2021; Dincer & Yeşilyurt, 2017; Hiromori, 2006; Noels, 2003; Sugita McEown et al., 2014), little attention has been paid to the application of the so-called theory in an Iranian EFL setting. Thus, querying about the applicability of the theory in the Iranian EFL context seems necessary and further research is required to enrich the generalizability of the theory to the aforementioned context and population. Consequently, the purpose of this study is to shed light on this route by investigating the relationship between (intrinsic) motivation and Iranian EFL learners' innate needs.

Among empirical studies that sought the plausible relationship between motivation and innate psychological needs, Mason (2012) found a positive relationship between motivation to carry on and autonomy, competence, relatedness. Concerning L2 learning, extensive research has shown that intrinsic motivation presents lower anxiety and a higher sense of self-determination in language learning (Noels, 2005; Noels, Pelletier & Clement 1999; Rahmanpanah, 2017; Ryan & Neimiec, 2009).

Specified the concept of motivation given its emphasis on the types of motivation rather than the amount of motivation (Dincer & Yesilyurt, 2017).

Figure 1

Self-Determination Continuum, with Types of Motivation and Regulation. (Deci, & Ryan, 2002, p.16)



As mentioned earlier, in light of a plethora of theoretical and psycholinguistic backgrounds, SDT has gained substantial pedagogical appeal for its potential to describe human motivation (e.g. Agawa & Takeuchi, 2016; Deci & Ryan, 2017; Dincer, 2017; Edward Barr, 2016; Haya Kaplan, 2017; Komiyama & McMorris, 2017; Mason, 2012; Mc Eown et al., 2014;). Furthermore, the significance of including a cross-cultural perspective SDT is recognized by investigators in North America (Sugita Mc Eown et al., 2014) and they stated that motivational constructs of the so-called theory are recommended to be explored in various social and cultural settings to validate its generalizability. Since infrequent research has been conducted to seek for the external validity of the SDT within the Iranian EFL context (e.g. Ahmadi, 2013; Alibakhshi & Nezakatgoo, 2019; Azizi, 2014; Rahmanpanah, 2017), the present research is a pure endeavor to examine the self-determination theory in the Iranian EFL setting with the intention of figuring out the amount of its relation to the university students' motivation. Accordingly, the present study scrutinized self-determination theory and investigated the adjustment of the model to the actual data by using a more representative population than previous samples. The starting point was studying the casual relationship between motivation and innate psychological needs (i.e. competence, relatedness, & autonomy). To this end, in order to address the above-mentioned niche, the present study has focused on the following posed research questions:

1. Is there any significant relationship between Iranian EFL students' competence and their motivation?
2. Is there any significant relationship between Iranian EFL students' relatedness and their motivation?
3. Is there any significant relationship between Iranian EFL students' autonomy and their motivation?

Methods

Participants

The Participants of the present study involved 324 EFL university students which were in the first, second, or third year of their university studies. Considering SEM, Agawa and Takechi (2016) conducted a power analysis to ascertain the minimum number of participants required in their study using Faul et.al's (2009) G' power. The result showed that at least 231 participants

would be needed in such correlational studies. In order to maximize the safety margin, the researcher was determined to collect data from at least 300 participants; and the final number set out to be 324 (148 females and 176 males). The native language for most of the students was Azari. Their age ranged from 20 to 29 and none had the opportunity to live in a foreign country before. Using clustered random sampling, the data were collected from several departments (i.e. English, Medicine, psychology, law, management, & Persian Literature) at three academically varied universities (i.e. a high-level university: University A; a middle-range university: university B; and an easy-to-enter university: university C) 99 participants were from university A, 134 were from university B, and 91 were from university C. University A EFL learners' English scores were the highest of the three, with an average GPA of 17.2, followed by that of University B, with an average GPA of 14.4, and finally University C with an average GPA of 11.7. Through a researcher-made demographic questionnaire, the samples of students were homogenized in terms of English proficiency, English background, mother tongue, and age.

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 included three parts: the demographic information part, the English learning motivation scale, and the scale of the psychological need. As for the internal consistency of the questionnaire, the alpha values in all constructs reached an acceptable level (Cronbach's alpha = .74 – .89).

English Learning Motivation Scale

The second part of the questionnaire, right after the demographic part, inquired students to show their tendency toward learning English. It aimed to seek information over the degree of learners' motivation regarding five regulations (i.e. intrinsic, identified, introjected, external, amotivation) according to the self-determination continuum. The scale contained 20 questions in which students should rate each question on a five-point Likert scale by choosing the point that they preferred more (from 1 = strongly disagree to 5 = strongly agree). In the following section, regulations and sample items are described.

Psychological Needs Scale

The third part of the questionnaire probed information concerning innate psychological needs' fulfillment of the English learners. This section involved 12 questions with three subscales (i.e. competence, relatedness, & autonomy). Similar to the English learning motivation scale, a five-point Likert scale (1=strongly agree; 5=strongly disagree) was administered to participants

Procedure

After homogenizing the participants using the demographic questionnaire and learners' GPA, the learners were asked to answer to the back-translation of the questionnaire which was

pilot-tested by 30 students. The back-translation included three scale of the questionnaire (Demographic Information motivational scale and psychological needs scale). The reliability of the Persian (translated) questionnaire was 0.82 and also the validity was checked by the research supervisor. And the allotted time to answer to the questionnaire was 15 minutes. The collected data were fed into SPSS (version25) and LISREL software (version 8.8) to be processed and analyzed in order to demonstrate the degree of significance for the acceptance or rejection of the research hypothesis formulated at the beginning of the study.

Results

Descriptive Statistics

Table 1 presents descriptive statistics including mean, standard deviation, skewness, kurtosis, and Alpha Cronbach. To ensure a fair level of normality of variables, Skewness and Kurtosis values should be within the range of ± 2 to accept the shape of the normal distribution of data.

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

Table 2

Bivariate Correlation Matrix of Variables

	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

Bivariate Correlation Matrix of the Research Variables

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

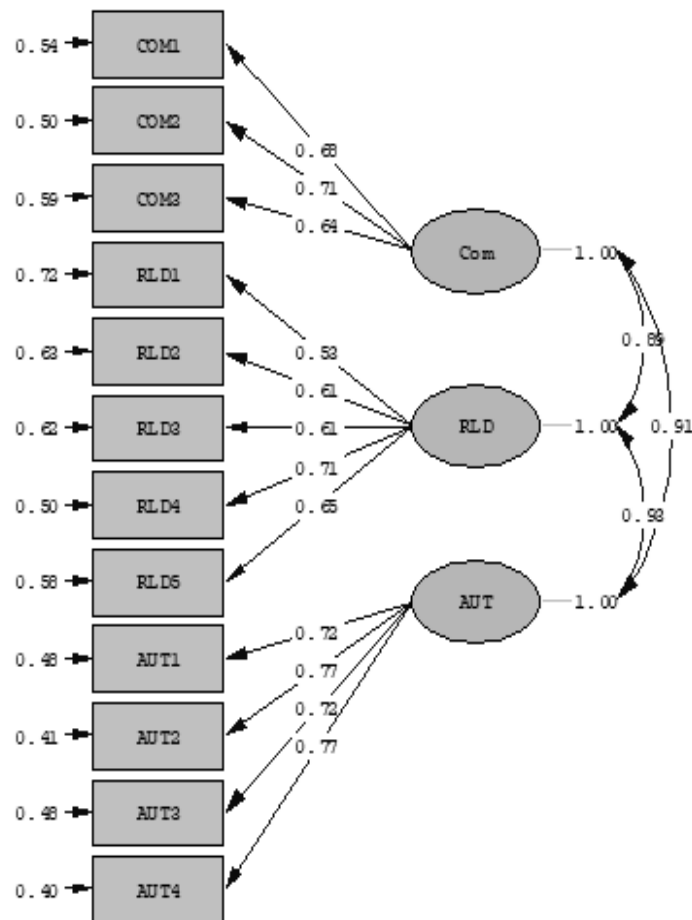
Discriminant Validity CFA

CFA for Basic Psychological Needs Questionnaire

In order to test the model and examine the research hypotheses, maximum likelihood estimation was employed in the analytical process. The proposed criteria by Gefen, Straub, and Boudreau (2000) were utilized in order to test the theoretical model. These criteria comprise the following indices: χ^2/df with acceptable values that are lower than 3; Comparative Fit Index (CFI), and Goodness of Fit Index (GFI) with values higher than 0.9 being the indicator of model fitness; Adjusted Goodness of Fit Index (AGFI) with acceptable values that are higher than 0.8; and Root Mean Square Error of Approximation (RMSEA) with values higher than 0.08 being the indicator of fitness of the model.

Figure 1

CFA Model for Basic Needs Questionnaire



Chi-Square=119.94, df=51, P-value=0.00000, RMSEA=0.065

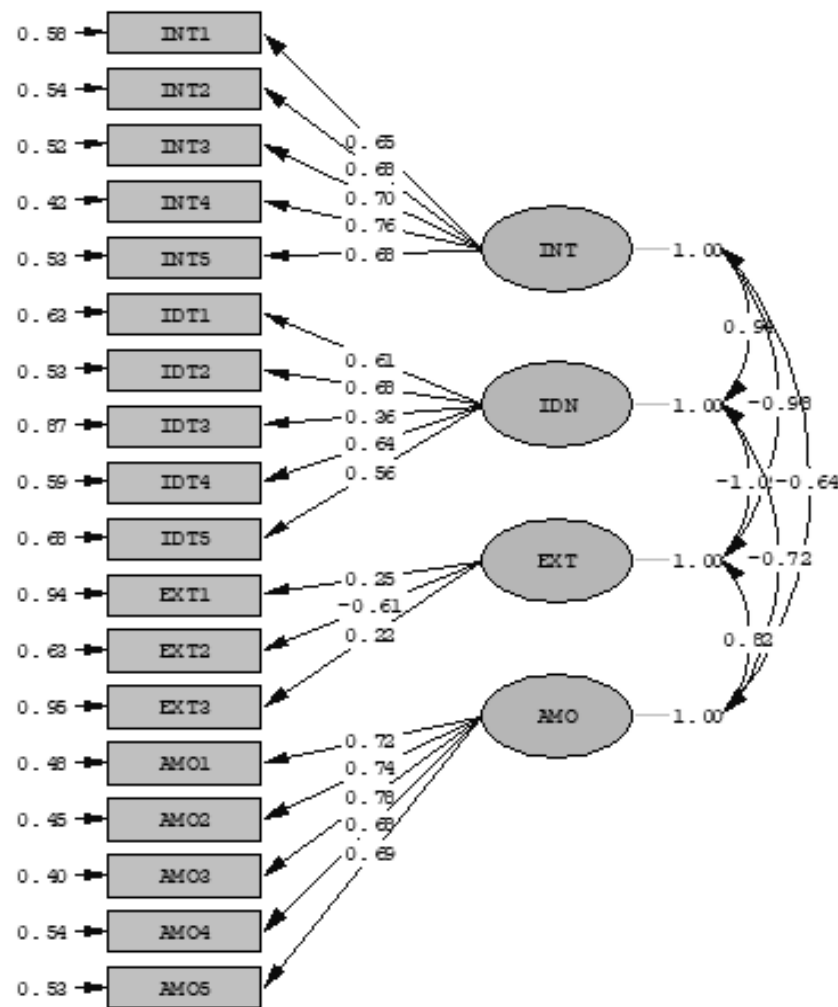
First, the discriminant validity CFA model for the basic psychological needs with 3 latent factors and 12 items (model 1) could meet the criteria for good fit and was greater than the proposed values by Gefen, et al (2000). The CFA model exhibited adequate fit ($\chi^2= 119.94$, $df= 51$, $RMSEA= .06$,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

CFA for Motivation Questionnaire

Second, the discriminant validity CFA model for the Modified motivation with 4 latent factors and 18 items (model 2) 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 ($\chi^2= 352.44$, $df= 129$, $RMSEA= .07$, $CFA=.96$, $GFI= .91$, $AGFI=.90$).

Figure 2

CFA Model for Motivation Questionnaire



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

The discriminant validity CFA model for the Modified motivation with 4 latent factors and 18 items met the criteria for good fit and was greater than the previous values. The CFA model exhibited adequate fit.

Main Analysis

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

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 4.

Table 3

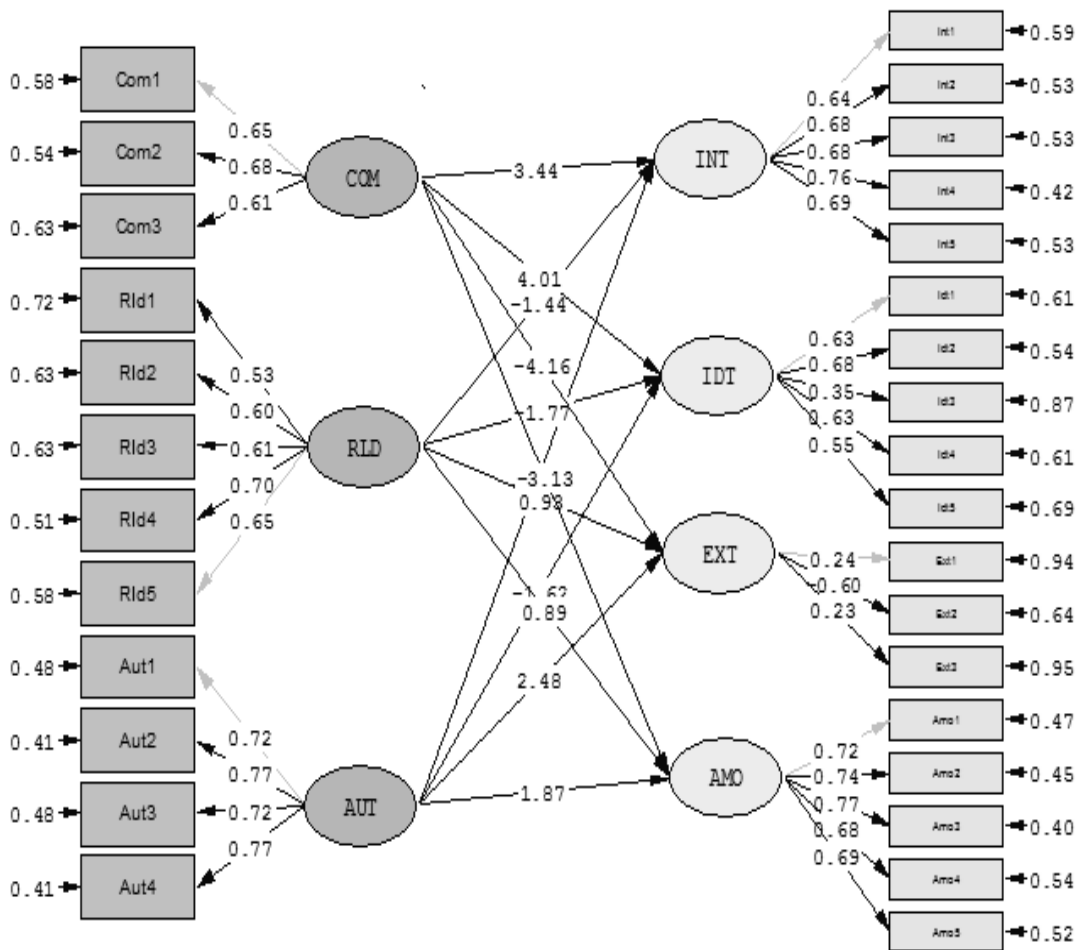
The Goodness of Fit Indices for Tested Model

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

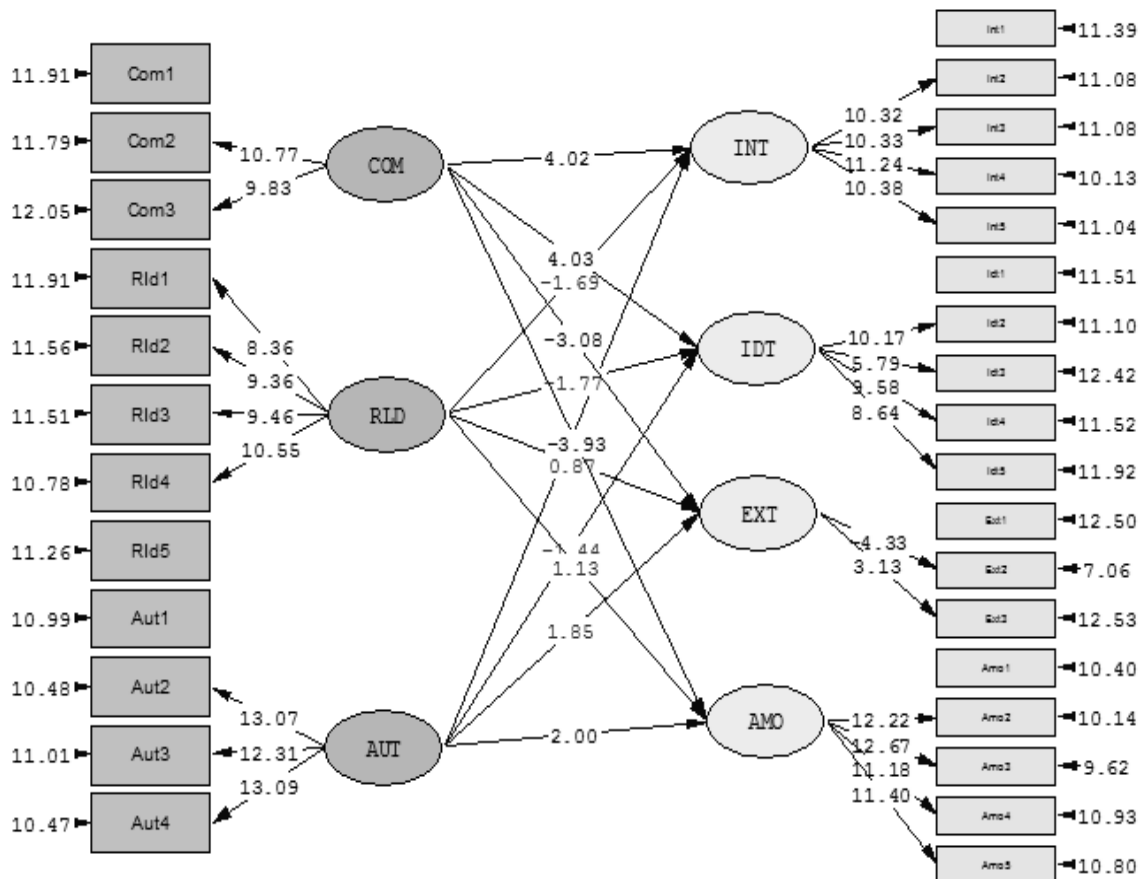


Chi-Square=808.52, df=390, P-value=0.00000, RMSEA=0.058

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



Chi-Square=808.52, df=390, P-value=0.00000, RMSEA=0.058

The SEM analysis of the SDT model revealed a handful of issues. First, the expected values based on the theory and the actual data did not justifiably correspond (table 3). Second, external regulation might be deleted in the model as its correlations with three basic psychological needs were not significant.

Outcomes of Altered Model

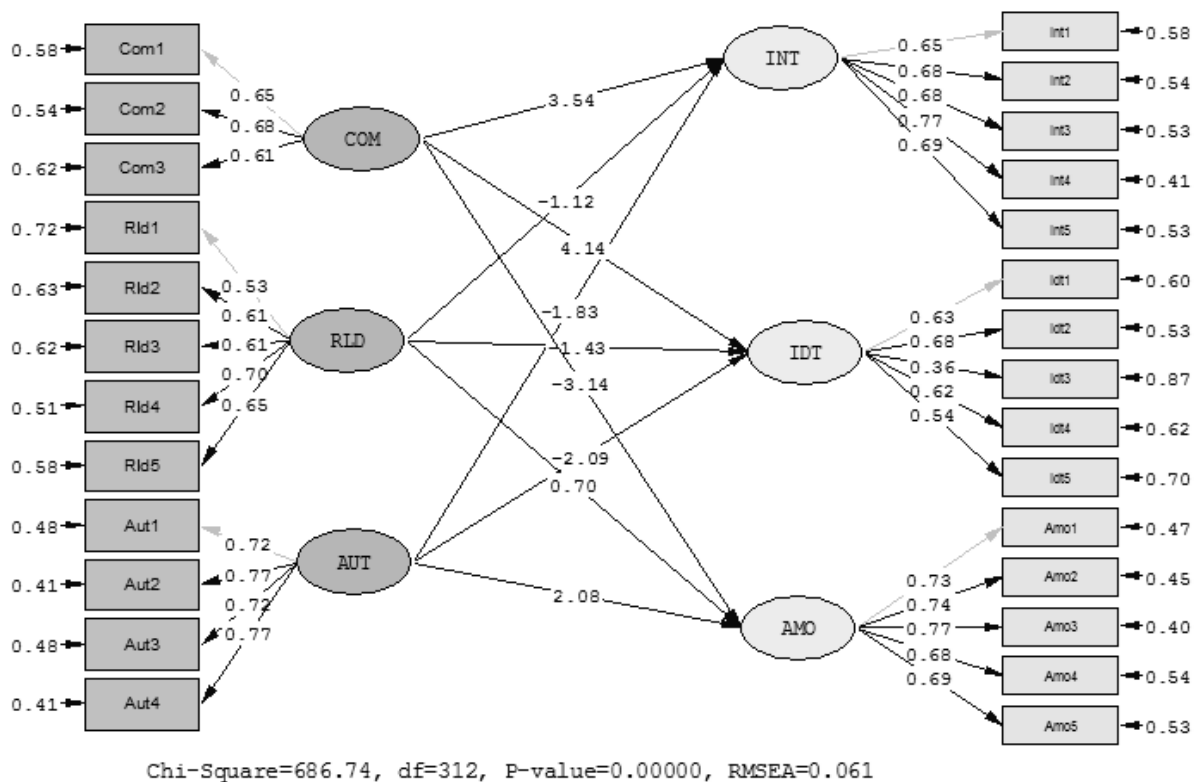
Table 4 illustrates the selected fit indices of the model without external motivation. Contrasting to the original model, the results indicate that all indices in the present model were acceptable, which indicates the fact that the altered model is a satisfactory representation of the collected data for the present experiment. Figures 5 and 6 render the altered model with standardized path coefficients and t-values, respectively.

Table 4

The Goodness of Fit Indices for Altered Model

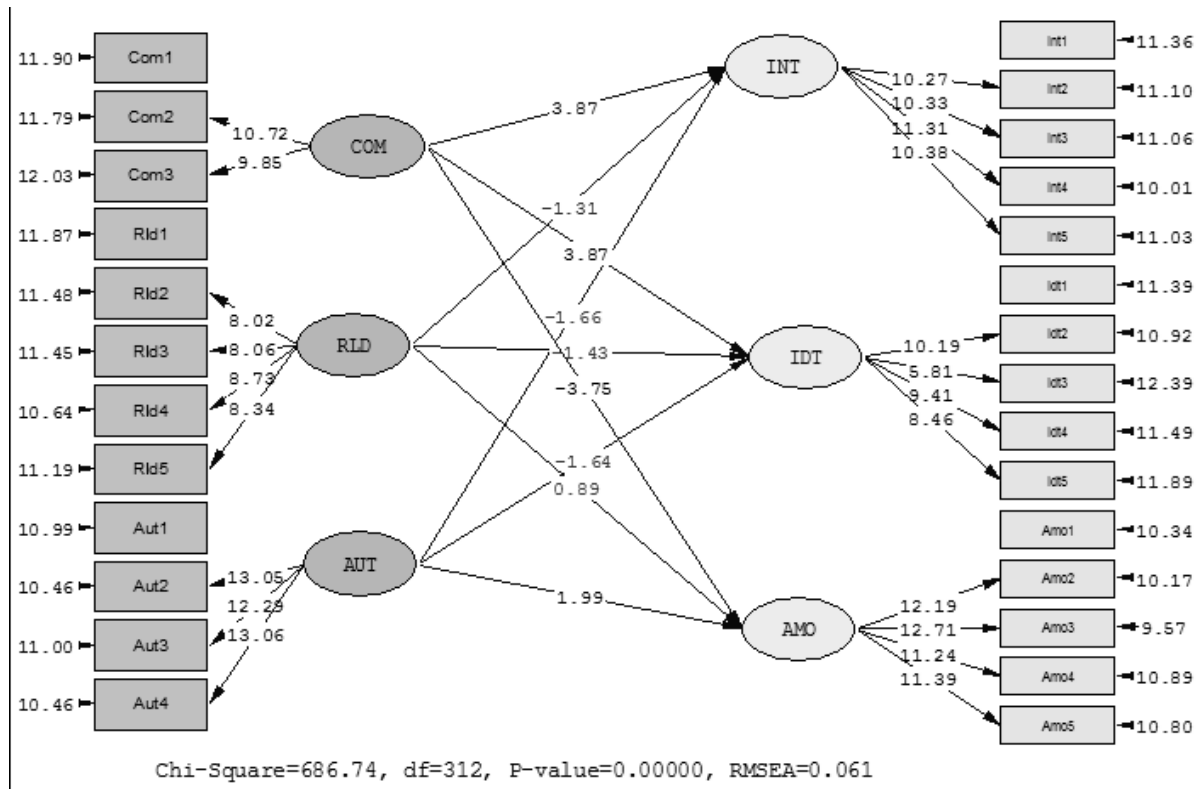
RMSEA	AGFI	GFI	CFI	X ² /d.f	X ²	D.f
.06	.83	.86	.97	2.20	686.74	312

Figure 5
Standardized Coefficients of Each Path



A significance of .005 or below has been demonstrated by all paths starting from competence. This is the indicator of the fact that the satisfaction of the needs for competence holds a substantial desirable influence on identified regulation, intrinsic motivation, and amotivation of English learners. A similar tendency was located for relatedness as well with the exception of the coefficient values being an indicator of a relatively small influence of need satisfaction on identified regulation, intrinsic motivation, and amotivation.

Figure 6
t-values for Each Path



The results of the tested model are shown in Figures 5 and 6. Considering these figures, hypothesis 1 strongly and hypothesis 2 weakly have been supported. However, question 3 has not been supported in the present research. Structural Equation Modelling (SEM) indicated that there was a significant positive relationship between competence needs and Iranian EFL learners' motivation. Relatedness needs had a weaker influence on students' motivation. However, the fulfilment of autonomy needs had either negative or demotivating effects on Iranian L2 learners' motivation.

Table 5

Results of Examining Research Hypothesis

Hypothesis	Causal direction	Beta	t	Result
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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

The general purpose of the study was to verify SDT in the Iranian EFL context, focusing on the relationship between basic psychological needs and motivation. The study aimed to examine whether SDT is applicable in such a teacher-centered context or not. Despite the limitations, the results of the present study indicated that the SDT has the potential to be applied in the teacher-centered context.

The first research question of the present study tried to investigate the relationship between motivation and fulfillment of competence needs in the Iranian EFL context. The results were in line with previous research studies (e.g. Dei, 2011; Elliot, McGregor & Thrash, 2002) and the outcomes affirmed that the fulfillment of competence needs has a considerable positive impact on Iranian EFL students' motivation. Thus, being able to understand and use English would increase EFL students' motivation. Research on this area has recommended a few different ways to improve understudies' feeling of competence. For instance, Elliot et al. (2000) claimed that positive feedback had a great influence in raising individuals' feeling of competence, which positively affected intrinsic motivation.

The second research question of the present study investigated the relationship between motivation and relatedness needs. The results of the data analysis showed a weak relationship between these two variables. Although the results supported self-determination theory's applicability, they were not as strong as previous studies conducted in other contexts around the world (e.g. Coccia, 2019; Jang et al., 2016; Ryan & Deci, 2017). Hiromori's (2006b) work is in contrast with the findings of the present study since he indicated a negative correlation between relatedness and intrinsic motivation among highly motivated students. He stated that relatedness needs' satisfaction in relation to other classmates might negatively affect highly motivated students' tendency to learn English. Hiromori claimed that students who have already developed motivation can learn themselves without the need to collaborate with others.

The third research question tried to investigate the relationship between motivation and autonomy needs. The results that emerged from analyses surprisingly were different from what self-determination accepts. The results indicated that the fulfillment of autonomy needs has either negative or demotivating effects on Iranian L2 learners' motivation. The findings of this section were in line with a bulk of studies in the literature such as Uebuchi (2004), Azuma's (1994), Ahmadi (2013), Hashemian and Heidari (2011), Wen (2009), and Puteh-Behak (2013) whom all conducted their research with East Asian students. Accordingly, it can be understood that university students in most parts of Asia might not be aware of the ways to practice autonomy or what Littlewood (1999) called proactive autonomy. Thus, it is obvious that students of this region prefer spoon-feeding (also called jug and mug or bank account) type of learning in which their teacher is responsible to choose what to learn. SDT suggests that satisfaction of three basic needs for competence autonomy and relatedness contribute to positive outcomes; one of which is intrinsic motivation. Numerous researchers consider these innate psychological needs as the building blocks of SDT which their fulfillment increases intrinsic motivation (e.g., Agawa & Takeuchi, 2016; Edward Barr, 2016; Rahmanpanah, 2017; Zainudding & Perera, 2019). In fact, the outcomes of the present study are in line with the tenets of SDT except for the fulfillment of autonomy needs. This indicates that some other factors such as educational policies, learners' culture, and even their attitudes toward learning can lead to different findings rather than the satisfaction of psychological needs mentioned in self-determination theory.

Conclusion

The present study tried to investigate self-determination theory in the Iranian EFL context to figure out whether and how SDT can account for university students' motivation. In other words, this research attempted to validate SDT in the Iranian EFL setting trying to figure out the relationship between motivation and three innate psychological needs of autonomy, competence, and relatedness. The results of Structural Equation Modelling (SEM) indicated that there was a significant positive relationship between competence needs and Iranian EFL learners' motivation. Relatedness needs had a weaker influence on students' motivation. However, the fulfillment of autonomy needs had either negative and demotivating effects on Iranian L2 learners' motivation. Thus, the results of the current study call for further investigations in the SDT realm especially considering autonomy and relatedness factors that could not signify a strong and positive correlation with motivation. Furthermore, there are rooms for other investigations for interested researchers could be the exploration of the motivational process in different educational and cultural environments in which SDT is available.

Although the results of the present attempts have been demonstrating to be promising, a series of limitations must be taken into account before any generalizations. The major limitation of the present endeavor was the process of questionnaire filling. Just like any questionnaire-based study, there was some room for the participants to answer the questionnaire inattentively and fill the columns by chance without reading the questions due to the fact that the questionnaires were filled out during class time or at home. There were also series of participants that did not return the questionnaire papers to the researcher due to various reasons. Besides, as the concept of SDT could be severely culture-sensitive, the research experienced some delimitation among which was the unfeasibility of generalizing the findings to other geographical settings since it was limited to

EFL learners in the northwest part of Iran. Furthermore, due to lack of time, the second part of the questionnaire was left unanswered and thus researcher had to exclude those parts. In addition, the study was done only on university students, and other learning environments such as schools or institutes were excluded from the research. Finally, the study was carried out regardless of participants' gender as a possible moderator or intervening variable.

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