

## A Correlation Analysis of Taiwanese University Students' Motivations and Their Motivational Behaviors

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### Abstract

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Motivation has an influential role in language teaching and learning, and has been the main focus in many studies, aiming at revealing its effects on students' learning gains or performance. This study investigated eight components of motivation to see how they related to and predicted students' motivational behaviors. Participants included 832 students at four universities in Taipei City, Taiwan, and by adopting a questionnaire as the instrument, Pearson correlation and multiple regressions were used for data analysis. The results showed that there was an individual correlation among the study variables, and most variables can significantly contribute to the prediction of students' motivational behaviors. Finally, the study highlights some instructional implications for enhancing students' motivation so as to have the greatest impacts on students' learning and achievements.

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**Key Words:** Correlation analysis, motivation, motivational behaviors

### 1. Introduction

It is widely believed that motivation is one of the most important contributors to English as a second language or foreign language (ESL/EFL) learning (Garner & MacIntyre, 1991; Noels, 2001; Vandergrift, 2005), influencing not only students' behaviors during the learning process (Dörnyei, 1994, 2001; Oxford & Shearin, 1994), but also their achievement outcomes (Belmechri & Hummel, 1998; Wesely, 2009). That is, if students consider learning with little or no motivation, there is not much hope that they will utilize all their abilities to reach the best possible outcomes. By contrast, learners with high motivation appear to work harder and learn faster than those with low motivation, and thus a high level of motivation is more likely to promote students' language proficiency (Dörnyei & Clément, 2002; Tremblay & Gardner, 1995).

Since "attitudes toward learning the second language, desire to learn the language, and effort expended in learning the language" (Gardner, Lalonde & Pierson, 1983, p.2) are fundamental components of motivational behaviors, empirical research in various L2 and FL contexts has viewed motivation from two different perspectives. One is focused on a social psychological approach (Gardner, 1985), dividing motivation into integrative motivation and instrumental motivation (Garner & Lambert, 1972; Kouritzin, Piquemal & Renaud, 2009). The former reflects learners' positive opinions on the target language and its culture, to the extent that learners may want to integrate themselves into the target language culture and become similar to the target language group (Csizer & Dörnyei, 2005), and is composed of integrative orientation, a positive attitude toward English speaking countries and an interest in foreign languages (Dörnyei, 2001; Gardner & Lambert, 1972). The latter involves reasons that are more functional or pragmatic benefits for learning a language, such as getting a better job or a promotion, and pertains to the potential pragmatic gains of L2/FL proficiency. It reflects that the usefulness of L2/FL proficiency provides the greatest driving force for many language learners (Csizer & Dörnyei, 2005; Dörnyei, 1990; Tremblay & Gardner, 1995).

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The other perspective is based on self-determination theory (Deci & Ryan, 1985), considering motivation as intrinsic orientation and extrinsic orientation (Ryan & Deci, 2000). These two types of motivation depend on how much a learner engages in an activity "with a full sense of wanting, choosing, and personal endorsement" (Deci, 1992, p.44). Intrinsic orientation refers to participation in an activity based on anticipation of having internal rewards, e.g. learning something new, taking challenges, satisfying curiosity, and developing expertise (Deci & Ryan, 1985; Dörnyei, 1998; MacIntyre, MacMaster & Baker, 2001). Extrinsic motivation is the desire to be involved in an activity in anticipation of rewards that are external to the activity per se, such as having good grades or higher pay, and comparing one's performance to that of others (Deci, Vallerna, Pelletier & Ryan, 1991). This motivation has been classified into three levels (Vallerand, 1997): external regulation (i.e. involving activities determined by means external to the person, such as tangible benefits or punishments), introjected regulation (e.g. performing an activity because of externally imposed rules or pressure that an individual has incorporated into the self, including shame, guilt and anxiety), and identified regulation (i.e. performing an activity out of personal choice for self-related reasons or based on the importance ascribed to the outcome, rather than the activity itself).

Empirical studies using causal modeling procedures have indicated the relationship between both perspectives and motivational behaviors as models of language learning and acquisition (Gardner & MacIntyre, 1993; Tremblay & Gardner, 1995; Ushioda, 2008). In fact, it appears that each individual component of both integrative motivation and extrinsic orientation play a certain role independently in influencing students' motivational behaviors, and both should not be taken into account together as a whole as previous studies did. Moreover, the eight components of both perspectives are often defined independently, and it is true that a learner has them in operation individually while learning, resulting in them influencing the three types of motivation behaviors respectively (Lepper & Henderlong, 2000). Consequently, the eight components of motivation can serve as predictors to his/her motivational behaviors. Thus, it was proposed in the present study that the eight components of motivation correlated directly with the three types of motivational behaviors, respectively. In addition, the study also intended to investigate the causal relationship between the eight components of motivation and each type of motivational behaviors so as to predict the possible influences of motivation on EFL learners' motivational behaviors.

## **2. Method**

### **2.1 Subjects**

The subjects in the study were 832 students at four universities in Taipei City, Taiwan. All have studied English as a school subject for at least 9 years, and all were between the ages of 19 and 22. Their English language proficiency was at the B level, or an intermediate level, in the Common European Framework of Reference for Languages (CEFR). The demographics of the respondents are described as follows. The number of females (62.6%) was higher than males (38.4%), which parallels the normal gender ratio of undergraduate students in universities in Taiwan. 31% of the respondents were freshmen, 28% sophomores, 24% juniors, and 17% seniors. Finally, with regard to their majors, 37% of the respondents were Humanities and Arts, 32% from Education, and 31% from Science. A total of 900 questionnaires were sent to students via email and 832 respondents were replied, with a reply rate of 92.4%.

### **2.2 Instrument**

A learning motivation and behavior questionnaire written in Chinese was used as the instrument for data collection (Dörnyei, 1990; Gardner, 1985; Gardner, Tremblay & Masgoret, 1997; Noels, Clément & Pelletier, 2001). A total number of 65 question items were included and divided two parts, listed below, and the subjects were given 30 minutes to respond to a 1 to 4-point scale with choices ranging from strongly disagree to strongly agree.

- Learning motivation (45 items): identified regulation (13), introjected regulation (3), external regulation (3), intrinsic orientation (6), instrumental orientation (5), integrative orientation (3), attitude toward English speaking countries (5), and interest in foreign languages (7).
- Motivational behaviors (20 items): motivational intensity (8), attitude toward learning English (6), and desire to learn English (6).

The original questionnaire written in Chinese was validated in terms of its content, criterion, and wording by one professor and two English teachers. Based on their comments, some question items were revised to make them appropriate to the context and subjects in the study.

After that, the revised questionnaire was given to a group of 30 students to complete, and then the data was analyzed to examine its reliability. The results showed that the value of Cronbach's alpha ( $\alpha$ ) was .857, and therefore the study can be considered as having good internal consistency (George & Mallery, 2003). Then, 900 questionnaires were dispatched to an English teacher at each of the four universities respectively, and 832 completed questionnaires were returned, which accounted for a 92.5% response rate.

### 2.3 Data Analysis

First, the mean scores and standard deviations of each variable were calculated. After that, the Pearson correlation was run to investigate the relationship between students' motivations and their motivational behaviors. Then, each type of motivation served as dependent variables was compared with the eight components of motivation presented as independent variables; multiple regression analysis was used as the main statistical procedure for the purpose of investigating the causal relationship and the predictive power of the variables.

## 3. Results

### 3.1 Descriptive Statistic

As shown in Table 1, the results indicate that the mean of all three types of behaviors was less than 3, and the MI is the highest ( $\chi = 2.919$ ). As far as the eight components of motivation are concerned, only the ITO ( $\chi = 2.807$ ) and ITR ( $\chi = 2.689$ ) had the same results. Among the others, the mean is approximately between 3.00 and 3.20, and the IFL is the highest with a mean of 3.286.

**Table 1: Descriptive statistics of the Main Variables**

<i>n</i> =832	Mean	Std. Deviation
Motivation Intensity (MI)	2.919	.468
Attitude toward Learning English (ALE)	2.752	.526
Desire to Learning English (DLE)	2.666	.465
Identified Regulation (IDR)	3.244	.571
Introjected Regulation (ITR)	2.689	.649
External Regulation (ER)	3.006	.606
Intrinsic Orientation (IO)	2.807	.627
Instrumental Orientation (ISO)	3.237	.513
Integrative Orientation (ITO)	3.201	.587
Attitude toward English Speaking Countries (AEC)	3.236	.503
Interest in Foreign Languages (IFL)	3.286	.524

### 3.2 Correlation Analysis

The results of the Pearson correlation analysis are shown in Table 2, and it should be noted that the ER has the lowest degree of correlation with the three motivational behaviors, and did not reach a significant level. Moreover, it also reveals a low degree of correlation ( $r < .333$ ) between the IDR and the three motivational behaviors, and between the ITO and the DLE. Apart from these, the relationships between other motivation components and the three motivational behaviors were at an average degree of correlation ( $r = .333 \sim .666$ ), reaching a significant level ( $p < .01$ ).

**Table 2: Correlation of the Main Variables**

	MI	ALE	DLE	ITO	AEC	IFL	ISO	IO	ER	INR	IDR
ITO	.584**	.538**	.565**	1							
AEC	.531**	.499**	.522**	.652**	1						
IFL	.625**	.593**	.584**	.660**	.633**	1					
ISO	.376**	.357**	.325**	.447**	.627**	.540**	1				
IO	.552**	.557**	.535**	.544**	.590**	.599**	.473**	1			
ER	.049	.037	.039	.114**	.259**	.209**	.562**	.221**	1		
ITR	.248**	.226**	.256**	.340**	.382**	.408**	.453**	.472**	.415**	1	
IDR	.510**	.475**	.476**	.553**	.649**	.687**	.616**	.602**	.363**	.527**	1

\*\* $p < .01$

With regard to relationships among motivation components, the table shows that all the correlations reached a significant level ( $p < .01$ ), and among them the IDR has the higher degree of correlation ( $r = .687$ ) with the IFL, having a high degree of correlation ( $r > .666$ ). Also, it can be seen that besides the ITO, which is at an average degree ( $r = .562$ ), the correlations between ER and other motivation components are at a low degree ( $r < .333$ ), and the ER has the lowest degree of correlation ( $r = .114$ ) with the ITO.

### 3.3 Regression Analysis

In order to understand whether this is a cause-effect relationship between learners' motivation and their motivational behaviors, a multiple regression analysis was employed for investigating correlations of each of the three types of motivational behaviors and the eight components of motivation.

#### 3.3.1 Motivation intensity (MI)

As shown in Table 3, the results of regression analysis indicate that this model is satisfactory, by examining the  $r$  value, which significantly accounts for 70.2% of the dependent variables. The results of the ANOVA analysis in Table 4 shows that this model can significantly account for the dependent variables ( $F = 99.721$ ,  $Sig = .000$ ). In order to determine which of the motivation components contributed to this significance, the beta value was analyzed. The results (in Table 5) show that IFL ( $\beta = .303$ ;  $Sig = .000$ ), IO ( $\beta = .225$ ;  $Sig = .000$ ), ITO ( $\beta = .205$ ;  $Sig = .000$ ), ITR ( $\beta = .08$ ;  $Sig = .05$ ), ER ( $\beta = -.113$ ;  $Sig = .000$ ) and INR ( $\beta = -.084$ ;  $Sig = .008$ ) respectively contribute to students' MI; however, it should be mentioned that the  $\beta$  value of ER and ITR is negative.

**Table 3: MI's Regression Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.702(a)	.492	.487	.33535

(a) Predictors (Constant): IDR, ER, ITO, ITR, IO, ISO, IFL, AEC

**Table 4: MI's ANOVA Summary**

Model		Sum of Square	df	Mean Square	F
1	Regression	89.717	8	11.215	99.721***
	Residual	92.555	823	.112	
	Total	182.272	831		

\*\*\*  $p < .001$

**Table 5: Summary of MI's Findings**

Model 1	Nonstandardized Coefficients		Standardized Coefficients	T
	B	Std. Error	Beta	
(Constant)	.977	.092		10.589
IFL	.270	.036	.303	7.565***
IO	.168	.026	.225	6.423***
ITO	.163	.029	.205	5.576***
IDR	.066	.033	.080	1.960*
AEC	.062	.038	.066	1.650
ISO	.023	.036	.025	.643
ER	-.088	.025	-.113	-3.545***
ITR	-.060	.023	-.084	-2.663**

\*\*  $p < .01$ ; \*\*\*  $p < .001$

### 3.3.2 Attitude toward learning English (ALE)

As shown in Table 6, the  $r$  value of ALE's regression model summary is 67.5%, which means that this model is satisfactory. Table 7 shows that this model can significantly account for the dependent variables ( $F=86.281$ ,  $Sig=.000$ ), and the coefficient analysis was carried to determine which component of motivation contributes to this significance. The beta value in Table 8 indicates that the components of students' motivations, which contribute significantly to the prediction of students' ALE, are IFL ( $\beta=.293$ ;  $Sig=.000$ ), IT ( $\beta=.291$ ;  $Sig=.000$ ), ITO ( $\beta=.153$ ;  $Sig=.000$ ), ER ( $\beta=-.120$ ;  $Sig=.000$ ) and ITR ( $\beta=-.098$ ;  $Sig=.003$ ), but it should be noted that the  $\beta$  value of ER and INR are negative.

**Table 6: ALE's Regression Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
2	.675(a)	.456	.451	.39047

(a) Predictors (Constant): IDR, ER, ITO, INR, IO, ISO, IFL, AEC

**Table 7: ALE's ANOVA Summary**

Model		Sum of Square	df	Mean Square	F
2	Regression	105.239	8	13.155	86.281***
	Residual	125.479	823	.152	
	Total	230.718	831		

\*\*\*  $p < .001$

**Table 8: Summary of ALE's Findings**

Model 1	Nonstandardized Coefficients		Standardized Coefficients	T
	B	Std. Error	Beta	
(Constant)	.725	.107		6.754***
IFL	.295	.042	.293	7.080***
IO	.244	.030	.291	8.031***
ITO	.137	.034	.153	4.026***
AEC	.056	.044	.054	1.287
ISO	.042	.042	.041	1.006
IDR	.045	.039	.049	1.157
ER	-.106	.029	-.120	-3.646***
ITR	-.079	.026	-.098	-3.002**

\*\*  $p < .01$ ; \*\*\*  $p < .001$

### 3.3.3 Desire to learn English (DLE)

Table 9 is the result of DLE's regression model summary, and by examining the  $r$  value, this model can account for 67.1% of the dependent variables, which is satisfactory. The results of the ANOVA summary (Table 10) shows that this model is significant ( $F=84.124$ ,  $Sig=.000$ ), that is, the components of students' motivations can significantly predict students' DLE. As shown in Table 11, the components of students' motivations that significantly contribute to this prediction are IFL ( $\beta=.261$ ;  $Sig=.000$ ), IT ( $\beta=.225$ ;  $Sig=.000$ ), ITO ( $\beta=.205$ ;  $Sig=.000$ ), AEC ( $\beta=.134$ ;  $Sig=.002$ ), ER ( $\beta=-.092$ ;  $Sig=.006$ ). By contrast, the  $\beta$  value of ER is negative.

**Table 9: DLE's Regression Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
3	.671(a)	.450	.445	.34682

(a) Predictors (Constant): IDR, ER, ITO, INR, IO, ISO, IFL, AEC

**Table 10: DLE's ANOVA Summary**

Model		Sum of Square	df	Mean Square	F
3	Regression	80.950	8	10.119	84.124***
	Residual	98.994	823	.120	
	Total	179.944	831		

\*\*\*  $p < .001$

**Table 11: Summary of DLE's Findings**

Model 3	Nonstandardized Coefficients		Standardized Coefficients	T
	B	Std. Error	Beta	
(Constant)	.845	.095		8.862***
IFL	.232	.037	.261	6.264***
IO	.167	.027	.225	6.180***
ITO	.162	.030	.205	5.361***
AEC	.124	.039	.134	3.184**
IDR	.043	.035	.053	1.253
ER	-.071	.026	-.092	-2.763**
ISO	-.055	.037	-.060	-1.474
ITR	-.029	.023	-.041	-1.244

\*\*  $p < .01$ ; \*\*\*  $p < .001$

## 4. Discussion

The purpose of the present study was to investigate the relationship between students' motivations and their learning behaviors, and to reveal the prediction of the eight components of students' motivation to their motivational behaviors. The results shed some empirical lights on this issue.

First, if students perceive the importance and necessity of learning English, their instrumental orientation is more likely to be enhanced, which, in turn, encourages students' motivational behaviors (Garner & MacIntyre, 1991). In other words, when students transfer the instructional benefits in the current learning environment into pragmatic opportunities for their future, their motivational behaviors will be triggered.

Second, students' attitudes toward English speaking countries do not have a significant effect on their motivation intensity and attitudes toward learning English. This result probably indicates that "learners in a FL context often do not have sufficient experience with the target-language community" (Liu, 2012, p.19). Thus, teachers should realize the potential effects of this factor, and provide students with adequate information about that community so as to foster their learning desire or change their opinion about the language. By doing so, students can come across the people, culture and other related factors of English speaking countries, which eventually will lead to students' positive attitudes and motivations in learning English.

Third, for university students in places such as Taiwan, English is one of the subjects that is primarily taken in the first year, and English language is seldom used as an instructional medium in other subjects. In this context, students normally tend to try to just get through and narrowly pass in the exams, and thus do not see the importance of learning English and are not motivated by its potential benefits. Consequently, such a learning environment has a negative influence on students' learning attitudes and desires.

An additional look at the results reveals that students were not willing to participate in English learning activities because they fear negative emotional states (i.e. shame, guilt and anxiety), leading to them becoming passive and reluctant learners. To compensate for this, teachers should do whatever they can to bring about higher student engagement in their learning, or at least they should create a collaborative learning situation where learners can work and learn together (Brophy, 2004).

In conclusion, concomitant to the findings of the study is an instructional call for the integration of the eight components of motivation into English programs. That is, such programs should be able to familiarize learners with the importance and pragmatic benefits of learning English if they are expected to raise student awareness of the necessity of learning English. This will lead to more engagement in learning activities and then better achievement in performances. Another instructional strategy is to connect the knowledge and information students receive in English courses with their experiences in real life. EFL students often see English as irrelevant because they rarely use English in their daily lives, and more importantly, in their current stage of life they are often uncertain of whether or not they will use English in their future careers. These issues should be emphasized in any English learning situation. Thus, the pedagogical aim of English teaching should be to focus on motivating students to learn and to do their best, so as to increase their English proficiency and to increase the likelihood of their success in the future. This is what educators or researchers should value.

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