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Measuring Students' Perceived Costs of Studying Abroad: Validating an Adapted Instrument and Confirming the Factor Structure

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Abstract

Study abroad experiences provide students opportunities to explore various cultures, ideals, and lifestyles around the world. However, those who may desire to participate have varying levels of motivation. Using the expectancy-value theory as a context, we sought to validate an adapted instrument to assess undergraduate students' perceived cost of participating in short-term, study abroad courses or experiences (less than 14 days). Exploratory and confirmatory factor analyses were conducted using R-type programming to confirm the factor structures. Findings revealed 12 items loaded onto four distinct factors: emotional cost, outside effort cost, loss of valued alternatives cost, and task effort cost—explaining 84% of the variance in college students' motivation to study abroad. Students were most motivated to study abroad based on the outside effort cost factor. Due to the rigorous psychometric properties used to validate the instrument, researchers can have confidence in including perceived costs when assessing motivation using the expectancy-value theory as a framework.

***Keywords**:* instrument validation; motivation; perceived cost; study abroad

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Introduction

Assessing the value of study abroad learning opportunities for students in the United States has been a common theme in higher education since the 1970s (Hachtmann, 2012). Numerous studies have been conducted regarding the valuable benefits of those learning experiences for students (Dooley et al., 2008; Edgar & Edgar, 2009; Estes et al., 2016; Hall, 2007; Kitsantas & Meyers, 2001; Navarro & Edwards, 2008; Norris & Gillespie, 2009; Northfell & Edgar, 2014; Roberts & Edwards, 2016). Organizers of such experiences have diversified study abroad programs over the years to focus largely on preparing students for a global marketplace of goods, services, and ideas (Hachtmann, 2012). As such, an increase in the study abroad participation of students in colleges of agriculture has been reported over the past two decades (Estes et al., 2016; Irani et al., 2004; Towsic, n.d.; Zhai & Scheer, 2004).

A study abroad learning experience is a trend common not only in colleges of agriculture, but across the entire higher education landscape, and numerous institutions have experienced an increase in student participation during the past 10 years (National Association of Foreign Student Advisors [NAFSA], 2017). Study abroad opportunities allow students to immerse themselves in foreign languages, cultures, and lifestyles on a global level (Clark et al., 2009). These learning opportunities are important because benefits may include increased social proficiency, intercultural awareness, and openness to intercultural communication (Clark et al., 2009). In addition, researchers have found students who acquire global experience were more likely to be self-reliant, confident, open, and mentally flexible (Özturgut, 2007).

From a student perspective, perceived benefits may include: 1) exposure to a different culture; 2) listing participation on a resume or curriculum vitae; and 3) the opportunity to study subjects not available locally or within a specific degree program (Anderson et al., 2015; Danjean et al., 2016; Doyle et al., 2010; Estes et al., 2016; Lee et al., 2012). The most frequently perceived barriers have been financial concerns, and a lack of knowledge about programming and confidence navigating a foreign landscape (Anderson et al., 2015; Danjean et al., 2016; Doyle et al., 2010; Estes et al., 2016; Lee et al., 2012).

It is possible for study abroad courses or experiences to influence students' interests in interdisciplinary study and perceptions of globalization (Lewis & Niesenbaum, 2005). However, "the decentralized nature of U.S. higher education allows for considerable variance in study abroad participation from institution to institution and from state to state" (NAFSA, 2017, p. 3). Although participation rates by students may be rising (Estes et al., 2016; Irani et al., 2004; Towsic, n.d.; Zhai & Scheer, 2004), insight into the value they place on such high impact learning experiences warrants further investigation (Kuh, 2008; Li et al., 2017). To this end, how might students' perceived costs influence their decisions to study abroad (less than 14 days) while in college? Measuring factors precluding participation could have significant implications for recruitment since these programs often serve as conduits for cultivating global awareness and competency (Norris & Gillespie, 2009; Salisbury et al., 2009).

Theoretical Framework

The expectancy-value theory (EVT) has been used for decades to understand motivational and social factors, including both long- and short-term achievement goals and behaviors (Eccles, 2013). This comprehensive model synthesizes multiple theoretical perspectives and captures key components of motivation as it seeks to explain a wide range of achievement-related choices and performances (Barron & Hulleman, 2014). Its focus lies on understanding subjective-task value and expectation for success, building on decision-making research, achievement theory, and attribution theory (Crandall, 1969; Weiner, 2010). The EVT models an individual's likely decision based on two global factors: 1) expectation for success and 2) the importance or value placed on an activity or task. Eccles (2013)

noted: "We believe that the conscious and non-conscious choices people make about how to spend time and effort lead, over time, to marked differences between groups and individuals in lifelong achievement-related patterns" (p. 106). Others agreed the critical variables are personal values an individual places on those choices and causes affecting them (Barron & Hulleman, 2014; Crandall, 1969; Eccles, 2013; Weiner, 2010).

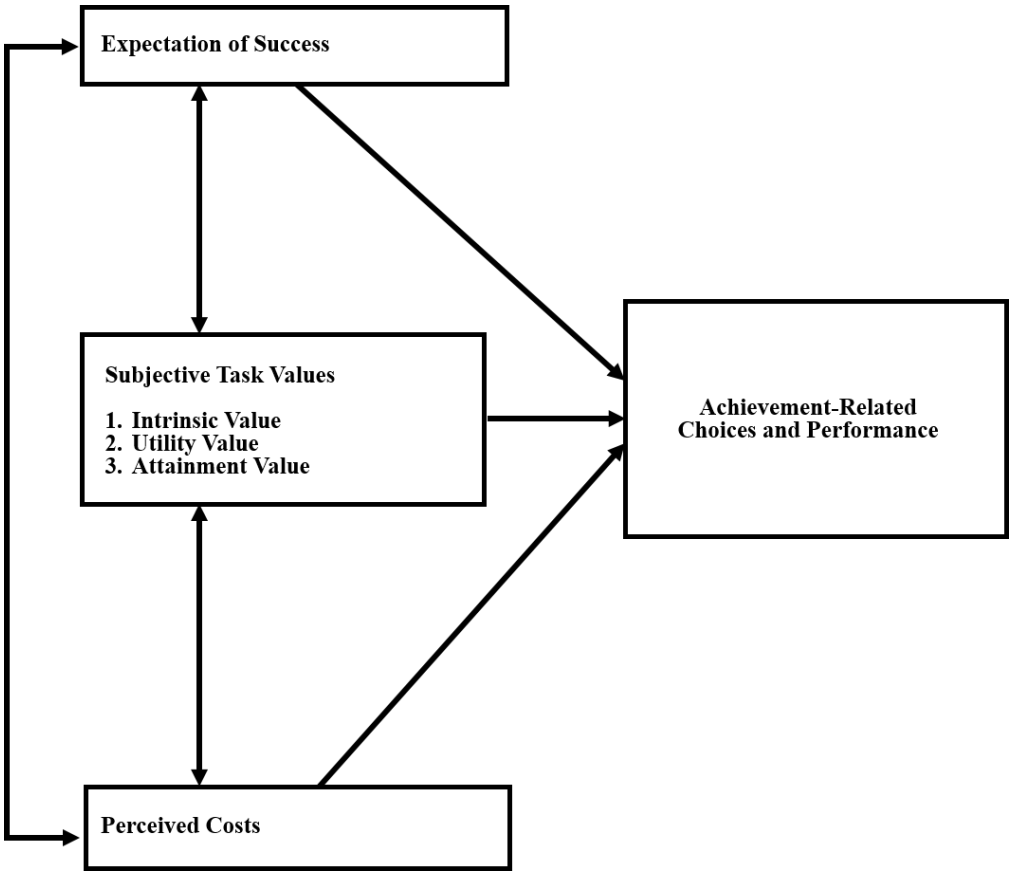
Expectancy-Value-Cost Model (EVC)

Recent empirical research found perceived cost might be separate from expectancy and value factors (Barron & Hulleman, 2014; Flake et al., 2015; Kosovich et al., 2015), and a likely influence on motivation. Other investigators found perceived cost associated negatively with achievement-related choice and performance (Conley, 2012; Grays, 2013; Kosovich et al., 2015; Perez et al., 2014). These findings encourage consideration of perceived cost as a distinct source of motivation (Hulleman et al., 2016). Additional research supports perceived cost influences achievement-related choice and performance (Flake et al., 2015).

In fact, there is a body of evidence supporting the existence of four cost sub-types: outside effort, task effort, loss of valued alternatives, and emotional. Several studies have consistently identified these cost sub-types over several decades of research examining variables that influence academic choice and performance (Barron & Hulleman, 2015; Eccles et al., 1983; Flake et al., 2015). A common theme among them appears to be students' perceptions of what is lost or given up in during academic pursuits over time. Given the importance of international study experiences for college students, such as study abroad courses or experiences, it is essential for international program coordinators, faculty, and administrators to consider these findings that highlight drivers of student choice as well as the role motivation plays in their decision-making processes. Both academic choice and performance have influenced leaders and administrators overseeing the internationalization of university campuses and curricula in the past (Navarro & Edwards, 2008).

Figure 1 illustrates the EVC model of achievement motivation. The model purports expectation for success, subjective task values, and perceived costs directly influence achievement-related choices and performance.

Figure 1
Updated EVC Model of Achievement Motivation



Note. Reprinted from Chapter 8: Student Motivation: Current Theories, Constructs, and Interventions within an Expectancy Value Framework by Hulleman et al., 2016.

Research leading to the development of psychometric tools with the purpose of assessing students' perceived costs across academic domains has increased in the last decade, but wit as limited to the view perceived cost was not a distinct source of motivation. Flake et al. (2015) has conducted the most comprehensive examination of perceived cost measures to date. They concluded it was necessary to: 1) incorporate recent empirical investigations into the body of research on perceived cost to establish a theoretical basis for inclusion as a direct influence achievement-related choices and performance and 2) develop a valid and reliable instrument to measure the four cost sub-types. Supporting this research, Barron and Hulleman (2015) developed the EVC model and began promoting perceived cost as a higher-order influence on academic-related choices and performances.

The EVT model has evolved to include perceived cost as a critical variable influencing long-term achievement-related choices and performances. Flake et al. (2015) developed the instrument identifying four cost sub-types, which contained 20 items. They developed these items following a comprehensive literature review and focus group study. Individual items were written vaguely so other researchers could adapt the instrument to different academic domains or settings. The original EVC instrument measured students' perceived costs in the context of a college-level mathematics course. Our research extends the work conducted by Flake et al. (2015) by adapting the EVC instrument to undergraduate agricultural students in the context of study abroad course participation. Taken together, a need existed for an empirically based instrument to measure students' perceptions of cost, that

extended to international learning experiences, while validating the underlying factor structure in this domain or setting.

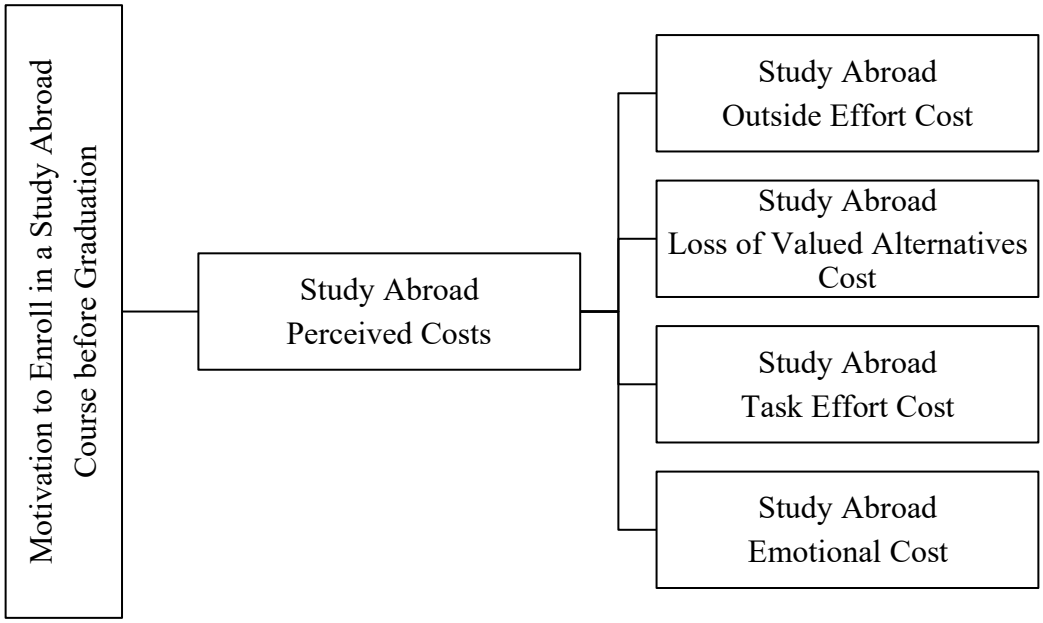
Perceived Costs of Studying Abroad Model

Raczkoski et al. (2018) adapted the EVC model developed by Flake et al. (2015) to the context of a study abroad course (less than 14 days) in a pilot study. The major distinctions between the original EVC model and the Perceived Costs of Studying Abroad (PCoSA) model were context and population. Flake et al. (2015) related their EVC model to students' overall motivation in discrete disciplinary categories: Applied Sciences, Arts/Humanities, Engineering/Computer Science, Math/Statistics, Social Sciences, Technical Sciences, and all other majors. In their study, most students self-reported to be Engineering/Computer Science majors. The PCoSA model built on their research by adapting the instrument to a study abroad course and undergraduate agricultural students.

When adapting the EVC model to the PCoSA model (see Figure 2), it was important to maintain the integrity of the EVC model to ensure the item set among the four cost sub-types contributed to the variation of the higher-order variable, perceived cost. (DeVellis, 2017). In this investigation, study abroad perceived cost factors, i.e., outside effort cost, task effort cost, loss of valued alternatives cost, and emotional cost, represented students' affective perceptions of a study abroad course. One of the major assumptions of classical measurement theory tested was whether the set of items represented a unidimensional perceived cost factor. In other words, do the 20 items describe a unidimensional factor or four second-order cost factors? Moreover, to what extent does the set interact with our study population in the context of a study abroad course?

Figure 2

Perceived Costs of Studying Abroad Model adapted from Flake et al. (2015) to the Context of Study Abroad Course Enrollment of Undergraduate Agricultural Students Before Graduation (Raczkoski et al., 2018)



Using an adapted EVC model, we attempted to validate the perceived cost factors of students who attended a land-grant university in the mid-south region of the United States. This study aligns with the American Association for Agricultural Eduation's Research Priority 4: Meaningful, Engaged

Learning in All Environments (Roberts et al., 2016). The present article describes the validation of an adapted EVC measure, including exploratory and confirmatory factor analyses.

Purpose and Research Objectives

The purpose of this study was to determine the validity and reliability of an adapted instrument intended to measure college students' perceived costs for participating in a short-term, study abroad course or learning experience before graduation. We used a sequential approach with a dataset split into two subsets. Three research objectives guided this inquiry:

1. Perform exploratory factor analysis to validate an adapted version of the EVC model;
2. Confirm the factor structure of the EVC using confirmatory factor analysis; and
3. Describe briefly students perceived costs using the confirmed instrument.

Methods and Procedures

Undergraduate students (freshmen to seniors) at the University of Arkansas were recruited during the Fall 2017 semester to complete the perceived costs measure for short-term, study abroad course participation. Procedures for human subjects research including informed consent were followed in accordance with the campus Institutional Review Board. The results were part of a larger study investigating overall motivations to participate in international experiences prior to graduation. The survey population consisted of a stratified sample of courses (N = 106) by academic major (N = 16) and course level (N = 4), as recommended by Trochim (2001). Courses were selected based on class level (1000, 2000, 3000, and 4000) and total number of students enrolled. All large enrollment courses of more than 75 students, and all freshmen orientation courses in the Dale Bumpers College of Agricultural, Food and Life Sciences were of interest. From a total of 106 possible courses, 53 were selected and 40 instructors agreed to participate (n = 75.5%). In all, students in 17 courses were surveyed and responded with complete data sets for analyses. Instruments were provided in paper form to students during their regular class sessions. Undergraduate students (n = 1,757) spanning several academic disciplines and colleges participated due to the nature of student enrollment in the Dale Bumpers College of Agricultural, Food and Life Sciences. The highest percentage of respondents self-identified as sophomores (39%) and juniors (33%); freshmen (20%) and seniors (8%) comprised the lowest percentage of respondents. A majority of respondents (93%) had not participated previously in a university-sponsored international program. However, 70% identified short-term, faculty-led programs as the type of international learning experience in which they were most interested in participating.

Instrument

The study's instrument was adapted from the EVC model questionnaire (Flake et al., 2015) to assess college students' perceived costs of participating in study abroad courses or learning experiences (Raczkoski et al., 2018). In their study, Raczkoski et al. (2018) adapted items from the EVC model instrument (Flake et al., 2015) to the context of short-term, study abroad courses or learning experiences. The Perceived Costs of Studying Abroad Instrument (PCoSAI) was a self-report measure consisting of 20 items combined to yield four composite cost scores and one overall cost score. This instrument was pilot tested using a convenience sample of agricultural students (N = 219) at a neighboring land-grant institution (Raczkoski et al., 2018). Data were collected online using Qualtrics Survey Software and imported into IBM SPSS Statistics 21 for analysis. Exploratory factor analysis (EFA) with a Promax rotation was used to validate the underlying factor structure of the items, and four factors emerged: outside effort cost (α = .89); loss of valued alternatives cost (α = .86); emotional cost (α = .85); and task effort cost (α = .86).

Following the analysis of data derived from the pilot test, it was determined the EVC model (Barron & Hulleman, 2015; Flake et al., 2015) was an appropriate theoretical framework for the instrument's intent. Items were examined to ensure alignment with the PCoSA model's factors. Items were presented to a panel of experts who specialized in research methods, psychometrics, and international education to collect validity evidence. Following the pilot study, they found the instrument would benefit from additional exploratoration into the model's factor structure using a larger sample size. In the current study, respondents completed a paper-based version of the PCoSAI – with response categories ranging from 1 (*completely disagree*) to 5 (*completely agree*).

Data Analysis

Descriptive statistics were computed using IBM SPSS Statistics 21. System-missing values were excluded from the analysis automatically by SPSS 21. Post-hoc Cronbach's alpha scores were used to determine the internal reliability of the instrument. Reliability coefficients larger than .70 were considered reliable (Nunnally, 1978). Pearson's correlation coefficients were used to examine the relationships among the variables of interest. For factor analysis, the data were divided into one of two subsets using the random sample of cases function in SPSS 21, one set for exploratory factor analysis (EFA) and one set for confirmatory factor analysis (CFA).

Exploratory Factor Analysis

The psychometric investigation began with an EFA to validate the underlying factor structure of the dataset. We used multiple methods to establish the number of factors to retain, i.e., eigenvalue > 1 and scree test (Henson & Roberts, 2006). We extracted the underlying factors using principal axis factoring with a Promax rotation in SPSS 21 because cognitive factors tend to be correlated in social science research. Two-, three-, and four-factor solutions were examined. Across the models, several items loaded on more than one factor, i.e., *crossloading*. Items with loadings on two or more factors above .32 were removed, and the factor analysis was re-run until an approximate simple structure was achieved. The suitability of the data for factor analysis was established using standard conventions, i.e, Kaiser-Meyer-Oklin measure of sampling adequacy and Bartlett's test of sphericity.

Confirmatory Factor Analysis

The CFA model was run using the maximum likelihood estimation method (MLR). We specified a two-, three-, and four-factor model. Although the four-factor model had strong support from previous versions of the instrument (Flake et al., 2015), the two- and three-factor models were examined because of the EFA results. Several measures of fit indices were used to determine model fit (Kline, 2011): root mean square error of approximation (RMSEA); *p* value to test fit; standardized root mean square residual (SRMSR); and comparative fit index (CFI). The CFA was conducted within the R statistical environment to validate the hypothesized factor structure (Beaujean, 2013).

R is a powerful, open source statistical package where all analyses can be completed within the same environment. This is especially useful for structural equation modeling (Beaujean, 2013). Another reason for using R is the "vast majority of syntax and packages are transportable from one system to another. This can aid in both research collaboration and making one's research replicable, as colleagues can reproduce results by copying and pasting the syntax" (Beaujean, 2013, p. 1). The study's syntax for the four-factor CFA model follows:

```
#Read in data set:
data = read.csv(file = "filename.csv", na.strings=".")
head(data)
dim(data)
cov(data[,1:12])
cor(data[,1:12])
model03.syntax = "
#factor specification statement (only statement needed)
EC =~ EC1 + EC2 + EC3
OEC =~ OEC1 + EC2 + OEC3
LOVA =~ LOVA1+ LOVA2 + LOVA3
TEC =~ TEC1 + TEC2 + TEC3
13"
#model estimation
model03.fit <- sem(model03.syntax, data=data, mimic="Mplus", estimator = "MLR")
#display model output
summary(model03.fit, fit.measures = TRUE, standardized = TRUE)
attributes(model03.fit)
#display normalized residual covariances
residuals(model03.fit, type="normalized")
#reorder normalized residuals from largest in absolute value to smallest in absolute value
residual_matrix = residuals(model03.fit, type="normalized")$cov
norm_resid = NULL
#plot path diagram with unstandardized coefficients
install.packages("semPlot")
install.packages("pbkrtest")
library("semPlot")
semPlotModel(model03.fit)
semPaths(model03.fit,intercepts = TRUE, residuals = TRUE, style="mx", layout="tree",
        rotation=1, optimizeLatRes=TRUE, whatLabels = "par")
#Checking residual covariances repetitions
summary(abs(residual_matrix)>2)
#get model-estimated mean and covariance matrix
fitted(model03.fit)
#getting model R^2
inspect(model03.fit, what="r2")
#plot path diagram with standardized coefficients
semPaths(model03.fit,intercepts = TRUE, residuals = TRUE, style="mx", layout="tree",
        rotation=1, optimizeLatRes=TRUE, whatLabels = "std")
```

Results

Three analyses were conducted to address each of the research objectives. Results are presented by research objective.

Objective 1: Exploratory Factor Analysis

To address research question one, the first dataset (n = 473) was used to conduct an EFA (principal axis factoring with a Promax rotation) to validate whether a set of latent factors represented undergraduate students' perceived costs of study abroad course or experience participation. Factors with three or more loadings greater than .50 were deemed strong and stable (Costello & Osbourne,

2005). The suitability of the data for factor analysis was determined using standard conventions, i.e., the Kaiser-Meyer-Oklin measure of sampling adequacy (KMO = .94) and Bartlett's test of sphericity (p = .00).

A four-factor solution was selected because it explained the most variance (84%) with the fewest factors prior to rotations, and it met the selection criteria. *Emotional cost* consisted of three items, which represented whether students perceived short-term, study abroad courses or learning experiences to be emotionally draining, worrisome, and anxiety ridden (see Table 1). *Outside effort cost* included three items which represented students' beliefs about time and effort exerted for tasks other than short-term, study abroad courses or learning experiences. *Loss of valued alternatives cost* comprised three items to represent students' beliefs about short-term, study abroad courses or learning experiences preventing them from doing other things and missing valued alternatives to participation. *Task effort cost* consisted of three items describing students' perceptions about the amount of time and effort a short-term, study abroad course or learning experience would require (see Table 1).

Table 1
*Communalities and Factor Loadings from Exploratory Factor Analysis of the Perceived Costs of Studying Abroad Instrument, Subset 1 (*n = *473)*

Items	Factor Loadings	Communalities
Emotional Cost (3 items)		
EC_1: Will be emotionally draining	0.91	0.84
EC_2: I will worry too much	0.87	0.78
EC_3: Makes me feel too anxious	0.80	0.67
Outside Effort Cost (3 items)		
OEC_1: Because of all the other things I do, I will not have time	0.92	0.74
OEC_2: Because of all the other demands on my time, I will not have enough time	0.83	0.81
OEC_3: I will have so many responsibilities that I am unable to put forth the effort	0.77	0.71
Loss of Valued Alternatives Cost (3 items)		
LOVA_1: Will cause me to miss too many other things I care about	0.84	0.83
LOVA_2: Will prevent me from spending time doing other things I like	0.80	0.67
LOVA_3: I will not spend as much time doing the other things that I would like	0.73	0.76
Task Effort Cost (3 items)		
TEC_1: Will be too much work	0.69	0.75
TEC_2: I will have to put forth too much energy	0.65	0.73
TEC_3: Will be too exhausting	0.60	0.68

Note. EC = Emotional Cost; OEC = Outside Effort Cost; LOVA = Loss of Valued Alternatives Cost; TEC = Task Effort Cost.

Objective 2: Confirmatory Factor Analysis

Research question two used the second subset ($n = 487$) for a CFA to confirm the hypothesized factor structure based on the EFA results. The data originated from the remaining 12 items measuring the perceived cost of participating in a study abroad course or other international learning experience (Flake et al., 2015; Raczkoski et al., 2018). Goodness of fit was evaluated using the RMSEA, p value to test fit, SRMSR, and CFI. All model-fit criteria were sufficient: RMSA < .08; 90% CI; SRMSR < .05; CFI > .90 (Kline, 2011). A chi-square test is reported, but its results are de-emphasized due to over-sensitivity to sample size. The fit indices are presented in Table 2. Together, they provided a holistic

and conservative approach to determining model fitness (Jackson et al., 2009). We did not conduct any post-hoc analyses due to the good fit of the model.

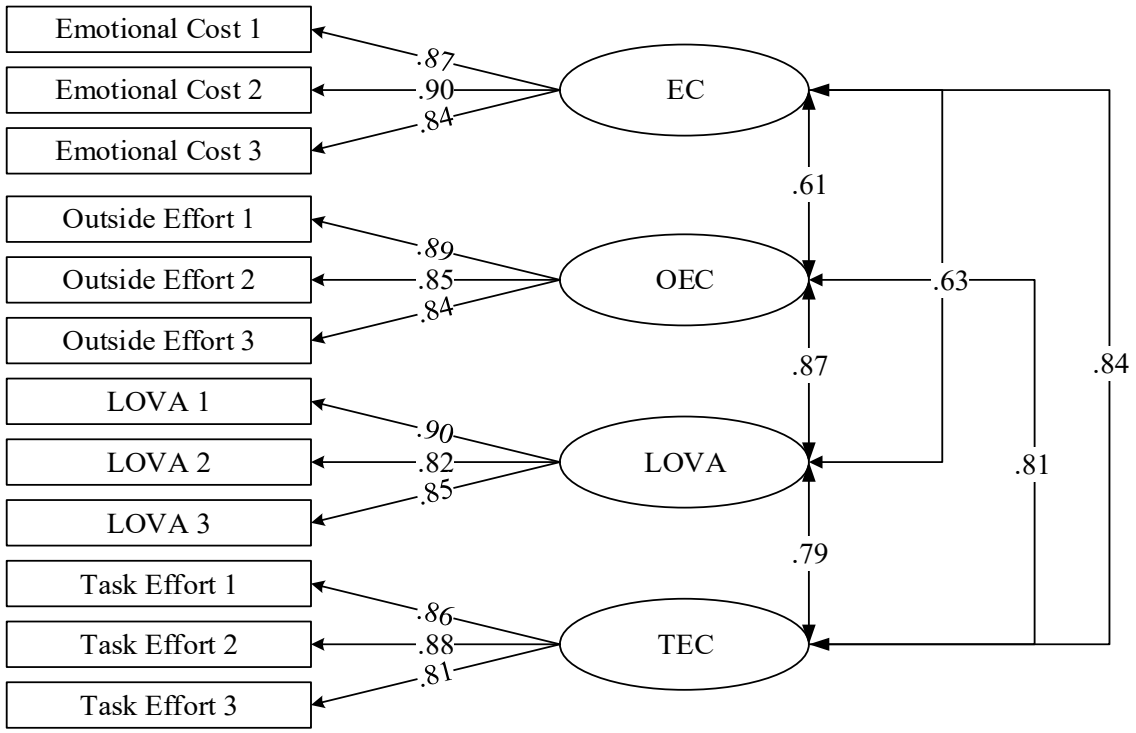
Table 2
*CFA Fit Indices for the Four Factor Model of the Perceived Costs of Studying Abroad Instrument, Subset 2 (*n *= 476)*

Model	χ^2	*df*	*CFI*	*RMSEA*	*RMSEA CI*$_{90}$	*SRMSR*
Four factors	66.892*	48	.993	.029	.009 – .054	.019

Note. RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; SRMSR = Standardized Root Mean Square Residual.
*p = .037.

Figure 3 illustrated the four-factor model derived from the CFA. Ellipses represent latent variables, and rectangles represent measured variables. Thin solid lines show the measurement component between the study's variables. Reliability coefficients (i.e., Cronbach's alpha scores) were used to determine the reliability of the four cost sub-types in data subset 2 (n = 476). As shown in Table 3, the factors had acceptable reliability coefficients (> .70): emotional cost (α = .90; 3 items); outside effort cost (α = .89; 3 items); loss of valued alternatives cost (α = .89; 3 items); and task effort cost [α = .89; 3 items] (Nunnally, 1978).

Figure 3
Path Diagram for the Four-Factor Model of the PCoSAI



Note. Root Mean Square Error of Approximation = .029; CFI = .993; SRMSR = .019; degrees of freedom = 48. EC = Emotional Cost; OEC = Outside Effort Cost; LOVA = Loss of Valued Alternatives Cost; TEC = Task Effort Cost.

Objective 3: Descriptive Statistics Related to Students' Motivations to Study Abroad

Table shows means and standard deviations for the four cost sub-types. These descriptive statistics were used to address research question three. A summated-rating scale was used to determine students' level of agreement for the 12 items identified as relative cost (Creswell, 2008). In analyzing the data, we adhered to the following real limits standard: 1.00 to 1.49 = *Strongly disagree*, 1.50 to 2.49 = *Disagree*, 2.50 to 3.49 = *Neutral*, 3.50 to 4.49 = *Agree*, and 4.50 to 5.00 = *Strongly agree*. Results indicated students from the University of Arkansas perceived a general disagreement with emotional cost ($M = 2.23$; $SD = 1.04$) and task effort cost ($M = 2.26$; $SD = 0.98$). Students exhibited a neutral level of agreement concerning outside effort cost ($M = 2.71$; $SD = 1.15$) and loss of valued alternatives cost ($M = 2.54$ $SD = 1.09$).

Table 4
*Composite Means and related Standard Deviations of the Four Factors Comprising the PCoSAI, Subset 2 (*n = *476)*

Variables	EC	OEC	LOVA	TEC
Mean	2.23	2.71	2.54	2.26
Standard Deviation	1.04	1.15	1.09	0.98

EC = Emotional Cost; OEC = Outside Effort Cost; LOVA = Loss of Valued Alternatives Cost; TEC = Task Effort Cost; $^{**}p < .01$.

Conclusions, Discussion, Implications, and Recommendations

Our sequential, two-phased analysis approach uncovered four dimensions of perceived relative cost (EC, OEC, LOVA, and TEC) and provided evidence for the psychometric properties of the 12-item instrument. The four-factor model emerged from the EFA analyses, as suggested by Flake et al. (2015). The fit indices from the CFA suggested the four-factor model provides an acceptable fit.

Although this research does provide validity evidence for a four-factor model of the PCoSAI, it is not without limitations. The students in our study were from a land-grant university in the mid-south region. As a result, the findings may not be generalizable to all students at land-grant universities. The importance of this study lies in its generalizability across disciplines. Additional research on the factor structure of the PCoSAI with students from other land-grant universities is needed. One potential research question related to location is whether students' perceived relative cost vary by geographical region (Bunch et al., 2013). In addition, the results are limited to construct validity of the scale. Although our results support the validity of the four-factor model, no information emerged about the degree to which perceived relative cost factors predict achievement-related choices and performance (Barron & Hulleman, 2014; Eccles et al., 1983). However, research by Raczkoski et al. (2018) revealed OEC was predictive of students' overall motivation and intent to enroll in a short-term, study abroad course or experience before graduating. However, a relatively low response rate and an incomplete scale limited the generalizability of their undergraduate agricultural pilot study's results. In this study, OEC and LOVA cost were revealed to be the most likely prohibitors to students' participation in short-term, study abroad courses or learning experiences as students perceived a general disagreement with

EC (*M* = 2.23; *SD* = 1.04) and TEC (*M* = 2.26; *SD* = 0.98). However, the ability of these factors to predict achievement-related choices and performance warrants further research.

Despite the limitations, this is the first factor analytic study of the PCoSAI conducted among college students at a land-grant university. Our four-factor model (see Figure 3) is a truncated version from previous iterations of the EVC model instrument (Flake et al., 2015). As such, it provides a unique contribution to the literature regarding the assessment of undergraduate students' perceived motivational barriers and benefits at a land-grant university regarding their studying abroad. This research, therefore, should provide guidance to faculty and administrators in their roles as leaders and administrators involved in the process of internationalizing land-grant university campuses and curricula (Navarro & Edwards, 2008). For example, the added capacity to understand drivers of academic choice and performance in the context of studying abroad will likely yield more targeted interventions regarding positively and negatively held views related to efforts devoted to internationalizing university campuses and curricula.

Research has been substantive in describing the benefits of study abroad experiences (Dooley et al., 2008; Edgar & Edgar, 2009; Estes et al., 2016; Hall, 2007; Kitsantas & Meyers, 2001; Navarro & Edwards, 2008; Norris & Gillespie, 2009; Northfell & Edgar, 2014; Roberts & Edwards, 2016). Studies have also identified students are motivated to study abroad when considering intrinsic, attainment, and utility subjective task values. So, why is it student participation rates remain stagnant (Estes et al., 2016)? Perhaps too much emphasis has been placed on asking students about their perceptions of the *value* of study abroad learning experiences rather than the *cost* of participating, as measured in this study. The 12-item PCoSAI should be used to further understand the cost dimension of students' decisions to study abroad. A deeper, and valid, understanding of how students perceive cost could be informative for developing strategies to engage additional students in this valuable learning experience. For example, this study found OEC and LOVA cost are the largest decisional factors when students consider traveling abroad. How could those factors be mitigated? Are students' perceptions of cost accurate? What is the impact of perceived cost when various interventions are used? These questions could be examined more fully using the cost scale validated in this study.

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