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RESEARCH ARTICLE

Subjective Task Values as Predictors of Undergraduate Students' Intentions for Postgraduate Education

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Abstract

Based on the Expectancy-Value Theory, this study aimed to determine the subjective task values that would predict intentions to pursue postgraduate education from the perspectives of students currently enrolled in bachelor's degrees. The role of subjective task values placed on postgraduate education on the intentions for postgraduate education Intention Scale and The Postgraduate Education Value Scale adapted to Turkish for the present study were used. Correlation analysis and the stepwise regression method were used to analyze the study data. The results showed that intrinsic, attainment, and utility values positively predicted participants' intentions to pursue postgraduate education, but the perceived cost negatively predicted postgraduate intentions. When these components of task value are examined in terms of their contributions to the regression model, attainment value has come to the fore as the most important task value component that affects students' intentions for postgraduate study. Findings indicate that when students value postgraduate education in terms of intrinsic value, attainment value, and utility value, they are more likely to participate in postgraduate education in the future. However, the perceived costs of postgraduate education reduce the likelihood of pursuing postgraduate study. These results shed light on the subjective task values that explain undergraduate students' intentions for postgraduate education

Keywords: Expectancy-Value Theory, postgraduate education, task values

Introduction

Introduction Postgraduate education represents a high level of knowledge and experience, expected to provide tasks requiring greater responsibility and self-control to develop highly qualified labor. This is expected as individuals generally share their expertise and provide greater returns to society (Padró et al., 2018). Postgraduate education is valued in information society discourses, and graduates are encouraged to pursue postgraduate education to become lifelong learners, improve their knowledge and skills, and provide quality service to society in terms of perceived relevance or tangible usefulness (Erwee et al., 2018; Padró et al., 2018; Wakeling, 2009). This is because postgraduate education takes into account evolving knowledge and technological trends (Artess et al., 2014; Unal & Ilter, 2010). It is also currently becoming more appealing to individuals, particularly young graduates. More people than ever before decide to pursue postgraduate studies after completing their undergraduate degrees. Increasing diversity and demands, particularly during periods such as labor market changes and the transition from education to work under the leadership of globalization, have increased participation in postgraduate studies. It is no longer just lifelong career academics seeking a scientific identity or research education qualifications in demand. A wide variety of student groups are interested in pursuing postgraduate programs, as well as graduates aspiring to have postgraduate qualifications in a specialized field, by assigning different values to postgraduate level studies (Bettinger et al., 2016; Wisker, 2007).

After finishing a bachelor's degree, pursuing postgraduate studies is complex. Individuals' intentions to pursue postgraduate education may be motivated by various subjective value beliefs (Green et al., 2018). Researchers in this field stated that various motivational beliefs that influence the decision to pursue a postgraduate degree, such as a master's or doctorate, should be readdressed, and more studies are needed to explore the roles of task values in intentions for postgraduate education (Åkerlind & McAlpine, 2017; de Meyer, 2013; Kinsella et al., 2018). This is because postgraduate qualifications are unique to each specialization (e.g., being an effective mentor, career opportunities, personal satisfaction, etc.), and graduates' decisions to continue to work postgraduate studies are not approached from a "one-size-fits-all" perspective. In other words, the values associated with postgraduate degrees such as master's and Ph.D. may differ (Hagemeier & Murawski, 2014). In terms of the meaning they carry, these value beliefs are subjective. People can attribute different subjective values to the same task or a certain activity (Wigfield et al., 2016). For example, while a master's degree may be a meaningful task choice in the lives of some students, it may not be valuable to others. In fact, a student whose goal is to contribute to their field of specialization is more likely to pursue postgraduate education.

Previous literature has empirically investigated the reasons for preferring postgraduate education (Aktan, 2019; Davey & Murrells, 2002; Gürel, 2020). In addition, there have been several studies conducted to investigate students' attitudes toward postgraduate education (Jepsen &

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Varhegyi, 2011; Overholser et al., 2010), the barriers they face while pursuing postgraduate studies (Hagemeier & Newton, 2010; Ilter, 2020a; Ulusoy & Güçlü, 2020), and the reasons for pursuing postgraduate education (Amanak et al., 2020; Kinsella et al., 2018; McCollum & Hanse, 2005). However, despite most of the research in postgraduate studies, little is known about the impact of subjective task values of undergraduate students attributed to postgraduate education on their intentions to pursue postgraduate education (Battle & Wigfield, 2003; Hagemeier & Murawski, 2014; Mahama et al., 2013). Furthermore, no study has been conducted in Turkey to date on undergraduate students' postgraduate intentions and the subjective task values they attribute to postgraduate education. Within the scope of this rationale, this study has addressed the intention to continue postgraduate education from the perspective of the Expectancy-Value Theory (EVT). Based on "task value" beliefs (Eccles et al., 1983), which is one of the components of Eccles' EVT, this study examined the role of undergraduate students' subjective task values (value beliefs) for postgraduate education on their postgraduate intentions. Exploring these effects reveals that the model can be used as an instrumental variable in undergraduate students' intentions for postgraduate study.

Although there are numerous studies on subjective task values within the scope of the EVT in different fields and school courses (Barutçu, 2017; Kesici, 2018; Wigfield & Eccles, 1989; Wu & Kang, 2021), the research on the role of subjective task values in postgraduate planning and access has lagged behind. Therefore, little is known about subjective task values for postgraduate education with undergraduate students' intentions of pursuing postgraduate programs. In this regard, determining students' value orientations toward postgraduate education is necessary to effectively target their efforts to participate in postgraduate education in higher education. Continuing postgraduate education and participation in postgraduate programs constitute an academic task choice (Hagemeier & Murawski, 2014). A student completing their final year of bachelor's study, for example, has many potential career options, each of which could be considered a choice of assignment. On the other hand, the task selection model contends that people's perceptions are task-specific (Schunk et al., 2008). In this respect, the EVT assumes that one's success expectations and task value beliefs influence educational goals and career processes such as postgraduate education (Eccles et al., 1983). Existing literature shows that task values are important elements for both student participation and future success expectations (Deci et al., 2001). Task values were defined by Eccles et al. (1983) as motivational incentives to perform various tasks and behaviors. Therefore, task values are essential in predicting task selection and task persistence or performance after choosing a task (Wigfield & Eccles, 1992). Theoretical explanations indicate that task values can motivate participation in postgraduate studies. In order to test this assumption, this study aimed to investigate whether subjective task values placed on postgraduate education would predict undergraduate students' intentions to pursue postgraduate education.

Theoretical Framework

The Expectancy-Value Theory

Eccles et al. (1983) developed the EVT, which examines how individuals' expectations for success and their values of the tasks influence their participation in various achievement activities. The EVT is based on a fundamental theory of motivation for assisting students in dealing with change and uncertainty in certain aspects of their lives, particularly their school experiences, behaviors, and academic outcomes (Wigfield et al., 2016). The EVT describes students' decisions to begin and continue specific tasks related to achievement, such as their motivation to expand their knowledge and skills (Eccles et al., 1983). According to this model, an individual's expectations of behavior and the values assigned to that behavior influence the perception of the task and the task choice (Wigfield & Eccles, 1992). In this model, expectations and task values can be influenced by one's beliefs about self-efficacy, task-specific beliefs such as intentions and self-image, and emotional memories of different events related to success (Wigfield et al., 2016). Individuals, in general, may prefer tasks that they believe they are successively able to execute. This is sufficient to make the task worthwhile (Bembenutty, 2008).

Subjective Task Values

The modern EVT (Eccles et al., 1983) assumes that choice and persistence in a required task are 2 significant components of individuals' achievements. The first is people's expectations of successfully completing tasks, and the second is people's subjective values placed on the tasks. The EVT defines individuals' success expectations and personal values as essential determinants of their motivation to enact various achievement tasks (Wigfield, 1994). Here, the expectation component is defined in this context as an individual's ability to believe in their competence in a specific area and how well they believe they can execute a given behavior or an upcoming task (Eccles et al., 1983). For instance, one may believe that enrolling in a postgraduate degree after the end of an undergraduate degree or after graduation will enable him to complete his postgraduate degree successfully. In this case, the intentions of undergraduate students to pursue postgraduate studies may be affected by the expectation that their decisions can be realized. The perceived attractiveness of succeeding or failing at a task is defined as the task values (Eccles & Wigfield, 2020). The quality of a task that increases or decreases an individual's likelihood of choosing a task is referred to as "task value." It focuses on individuals' motivations and reasons for participating in activities (Eccles, 2005).

In the EVT, Eccles et al. (1983) defined subjective task values as having 4 distinct components. These are as follows: (1) the intrinsic or interest value of the task, (2) the attainment value of the task, (3) the utility value of the task, and (4) the perceived cost of the task (Wigfield & Eccles, 1992, 2000). Attainment value refers to the individual importance of achieving or participating in a required task (Eccles, 2005). Attainment value is the importance of being successful in a task regarding self-image and personal values. High levels of attainment value have a protective role against low expectations for student achievement through greater participation in lesson assignments (Putwain et al., 2019). The intrinsic value is the individual's personal interest in the subject or enjoyment of performing a task. This is because the intrinsic value is a state of personal interest and pleasure. A person values it for his/her well-being and self-image. Individuals who place intrinsic value on a task are often deeply engaged with it and may even continue with it for an extended period of time (Ryan & Deci, 2017). Utility value is defined as capturing external reasons for participating in a task, such as performing a task to achieve the desired end state (Wigfield & Eccles, 2000). Therefore, the utility value is closely related to extrinsic motivation (Ryan & Deci, 2000). This relationship means that when a task is created out of utility value, it is a means to an end rather than an end in itself. Existing literature shows that these 3 task value components influence students' academic results and task choices (Berndt & Miller, 1990; Eccles et al., 2004). The perceived cost of a task is defined as the various negative aspects of participating in the task, such as performance anxiety, both failure and fear of success, the amount of effort required to be successful, and the lost opportunities resulting from choosing one choice over another (Battle & Wigfield, 2003; Mahama et al., 2013). Cost is defined as what is invested, required, or foregone in order to enact the required task (Flake et al., 2015). Cost can include negative factors such as anxiety, fear of failure or success, potential loss of self-worth, financial concerns, role changes, waste of time, and accessibility (Eccles et al., 1983). Studies have shown that students' subjective task values have significant effects on their achievement-related behaviors, educational aspirations, career choices, and social participation (Eccles, 2009; Eccles & Wigfield, 1995; Guo et al., 2017; Putwain et al., 2019; Trautwein et al., 2012). These studies have shown that individuals' perceived subjective values for the task while performing a task and these values are related to their subsequent choices for success (Eccles, 2005; Hulleman et al., 2008). In light of theoretical explanations and previous research results, it is understood that subjective task values affect individuals' success choices and performance. Considering this view, it is thought that the task values placed on postgraduate education may also affect the intentions of undergraduate students to pursue postgraduate education. In line with this assumption, the following research questions guided this study:

- 1. Does the intrinsic value placed on postgraduate education predict undergraduate students' intentions to pursue postgraduate education?
- 2. Does the attainment value placed on postgraduate education predict undergraduate students' intentions to pursue postgraduate education?
- 3. Does the utility value placed on postgraduate education predict undergraduate students' intentions to pursue postgraduate education?
- 4. Does the perceived cost(s) of postgraduate education predict undergraduate students' intentions to pursue postgraduate education?

Methods

Research Design

This study, which was carried out in the relational screening model, examined whether the subjective task values placed on postgraduate education were important determinants of undergraduate students' intentions to pursue postgraduate education. The relational screening method is a research model that seeks to define and quantify the degree of relationship between 2 or more variables or data sets (Büyüköztürk et al., 2012). The independent variables of the study were the intrinsic value, attainment value, utility value, and perceived cost of postgraduate education. The dependent variable was postgraduate education intentions.

Participants

The universe of this study consisted of undergraduate students who were currently enrolled in bachelor's degree programs. During the 2021-2022 academic year, the sample consisted of 369 students studying in the third and fourth grades in different departments affiliated with the education faculty at a higher education institution in Turkey. There were approximately 1734 students registered in that education faculty. Approximately 790 third- and fourth-grade students are enrolled in each department. It was challenging to prepare a list of all these students and randomly select a sample. The study group was formed through easily accessible case sampling. In each department, third- and fourth-grade students were chosen. A total of 11 classes were selected. In the 11 classes chosen, a total of 411 students were selected. Fortytwo of the measures used on 411 students in the classroom setting were administered invalid due to missing markings, and the study was based on data collected by 369 students. The average age of sample students was 21.75 years old, with a minimum age of 19 and a maximum of 37 years. The majority of students in the education faculty were females. The sample consisted of 247 females and 77 males. Seventy-seven out of 369 students are studying in primary school education, 54 in science education, 52 in social studies education, 65 in Turkish education, 58 in mathematics education, and 63 in the guidance and psychological counseling department. Considering the distribution of students by grade, there are 173 students in the third grade and 196 students in the fourth grade. The reason why third- and fourth-year students were included in this study is that students studying at this grade level have a higher level of awareness about postgraduate opportunities. Indeed, the attention of these students is more focused on preparing for opportunities and possibilities that go beyond a bachelor's degree. By thinking about and preparing for university students' employment options, particularly in their final year, they are more likely to actively seek employment information and career opportunities (Jepsen & Neumann, 2010).

Measures

Personal Information Form. A personal information form was created, which included information about the participants' gender, age, grade level, and the program they were enrolled in.

Postgraduate Education Value Scale. In this study, the Valuing of Education Scale developed by Battle and Wigfield (2003) based on Eccles' EVT (Eccles et al., 1983) was used to determine the different aspects of valuing postgraduate education of participants. The scale includes a total of 51 items addressing subjective task values (e.g., intrinsic value, attainment value, utility value, and cost) placed on postgraduate education. Some of the items consist of positive statements, and some of them consist of negative statements. For this reason, there are reverse-scored items on the scale. The Cronbach alpha (α) internal consistency reliability coefficient calculated for all items of the original form of the scale is α =.94. The correlation coefficients between the subscales of the scale ranged from -.396 to .704 (Battle & Wigfield, 2003). Eight items in the original scale were designed to determine to what extent individuals felt the feeling of liking or enjoying postgraduate education (intrinsic value). The 10 items were designed to measure the achievement values of postgraduate education or the extent to which individuals feel a sense of personal importance in their pursuit of postgraduate education. Nine items on the scale are designed to measure the utility value of postgraduate education or the sense of usefulness of postgraduate education toward the completion of individuals' current or future life goals. The remaining 24 items were developed to measure the possible costs of participating in postgraduate education, such as anxiety, time spent, effort, lost opportunities, failure, and anxiety (Battle & Wigfield, 2003). All answers to the items are based on a 5-point Likert-type scale (1=strongly disagree, 5=strongly agree).

The Valuing of Education Scale, developed by Battle and Wigfield (2003), was considered appropriate for this purpose of the study as it aimed to determine different aspects of valuing postgraduate education (i.e., graduate education). However, when the items were examined (e.g., I find the idea of being a graduate student to be very appealing) in the original scale, the name of the Valuing of Education Scale was changed to the Postgraduate Education Value Scale (PGEVS) by taking the opinions of experts during the adaptation process of the scale to Turkish in this study, in order to explain the phenomenon better to be measured. The original scale was translated into Turkish by the researcher (author). Some steps were followed in the adaptation work. First of all, the author obtained the necessary permission from the authors who developed the original scale via email. After the permission process, the original scale was translated from the source language English to the target language, Turkish. Expert opinion was used for the language validity of the scale. For this purpose, the original scale items were translated into Turkish independently by 2 field experts who were competent in both languages and had studies on scale adaptation. After determining the most appropriate expressions in the scale items, the scale was translated back from Turkish to English by another academician who knows both languages well, and it was compared with the items in the original form of the scale. It was concluded that there is a unity of expression between the English form and the form translated from Turkish to English. The items were examined separately by an expert in the field of Turkish education in terms of intelligibility, significance, and clarity, and the scale was given its final form by making necessary corrections. To ensure that the scale items were interpreted as intended, scale items were administered to a group of 30 university students, and opinions were received for each item. As a result of the pilot study, it was found that there was no change in the items translated into Turkish and that they provided clear instructions for the participants and that the statements completely defined subjective value orientations toward postgraduate education. For the linguistic equivalence of the scale, the Turkish and English forms were administrated to a group of 35 students studying in the English language education department. As a result of the correlation analysis, a positive and significant relationship was found between the Turkish form and the English form of the PGEVS (r=.71, p < .001). Afterward, the scale Turkish version was administered to 382 higher education students that were not included in this study to test the psychometric characteristics of the scale for the Turkish sample.

The construct validity of the PGEVS, which was translated into Turkish, was examined by exploratory factor analysis (EFA) using the SPSS 22.0 program. The Promax rotation technique (Nunnally & Bernstein, 1994) and principal component analysis were used as rotation techniques in the EFA analysis. The lower limit of the factor load values of the scale items was taken as .30, in line with the existing literature (Büyüköztürk, 2014; Comrey & Lee, 1992). Factors with an eigenvalue above 1 were accepted as the basis of the EFA (Tabachnick et al., 2007). As a result of the EFA performed with 51 items in the PGEVS, 9 items with a factor load value of less than .30, close to each other in different factors, and overlapping features were excluded from the scale. Exploratory factor analysis was repeated for the remaining 42 items. The EFA results indicated that there were 4 factors having eigenvalues greater than 1 and accounted for 61.10% of the total item variance. The factor load values of the items ranged from .44 to .77. The KMO (Kaiser-Meyer-Olkin) value of the scale was found as .85, and the Bartlett test of Sphericity was found statistically significant p < .05. First-level confirmatory factor analysis (CFA) was conducted to test the suitability of the factor structure related to the scale as a result of EFA in the context of model fit indices. CFA was performed using the AMOS 22.0 program. In the evaluation of the factor model of the scale as a result of CFA, Chi-square $[\chi^2 \text{ Chi-square ratio to degrees}]$ of freedom (χ^2/df)], goodness-of-fit indices such as GFI (Goodness of Fit Index), CFI (Comparative Fit Index), IFI (Incremental Fit Index), SRMR (Standardized Root Mean Square Residual), RMSEA (Root-Mean-Square Error of Approximation) were used. It was found that the χ^2 value (233.5147, p < .001) was significant, and the χ^2/df ratio (2.379) was less than 5 in the results of the CFA, which consisted of a total of 42 items and 4 factors. However, as the other fit indices (GFI=.87, IFI=. 85, CFI=.88, RMSEA=.077, SRMR=.072) were below the recommended values, the scale did not show an acceptable fit as it is. The modification suggestions in the CFA were examined, and it was found that 5 items in the scale negatively affected the fit indices of the model. These items were excluded from the scope of the scale. Modifications were made in the model to obtain better fit indices. Accordingly, it was deemed appropriate to make modifications between 2 items, which are thought to have a latent relationship in the scale's cost sub-scale and contribute significantly to the model fit. Confirmatory factor analysis results indicated that 37 items with 4 subscales were valid for Turkish higher education students ($\chi^2/df = 1.964$, GFI=.95, IFI =. 94, CFI=.96, RMSEA=.058, SRMR=.050). In this study, the reliability of the PGEVS was calculated by test-retest reliability and Cronbach's alpha internal consistency coefficient. The internal consistency coefficients of the sub-scales of the PGEVS were calculated as .82 for the intrinsic value sub-scale, .83 for the utility value sub-scale, .81 for the attainment value sub-scale, and .79 for the cost sub-scale. The internal consistency coefficient calculated for the full scale is .86. The test-retest reliability coefficients of the scale, which were performed 2 weeks apart, were .86 for the overall scale, and the value for the subscales varied between .78 and .82. These results show that the PGEVS scale adapted to Turkish is valid and reliable. The results suggest that the PGEVS-Turkish version is a suitable measurement instrument for this study. The scale gives the total score (perception for valuing postgraduate education) and the scores for the subscales. The range of points obtained from the scale is between 36 and 180. A high total score on the scale indicates that the individual places a high value on postgraduate education, whereas low scores indicate that the individual places a low value on postgraduate education. As the score level obtained from the sub-scales increases, the degree of ownership of the measured quality also increases. In Figure 1, CFA results of the PEVS are given.

An example item in the intrinsic value subscale is as follows. "The idea of being a postgraduate student is very appealing to me." An example item included in the attainment value subscale is as follows: "Postgraduate education is of great personal importance to me." An example item in the utility value subscale is "I want to have a post-graduate degree so that I can support my children, if necessary." The sample item for the cost subscale is "I am concerned that I will not be able to handle the stress that goes along with postgraduate education."

Postgraduate Education Intention Scale: The Postgraduate Education Intention Scale (PGEIS) developed by Ilter (2020b) was used in this study to measure the level of intentions of undergraduate students to pursue postgraduate study. Postgraduate Education Intention Scale aims to assess students' levels of planning to continue their postgraduate education and meet the application/entry requirements and how much, when, and why they want to continue their postgraduate education. Postgraduate Education Intention Scale is a 5-point Likert-type scale with 6 items and 1 dimension (1=strongly disagree, 5=strongly agree). The scale has the lowest possible score of 6 and the highest possible score of 30. Rising scores indicate that individuals have a higher level of intention to continue their postgraduate studies. The sample item for the scale is "I think about postgraduate education because of my desire to pursue an academic career." The Cronbach's alpha internal consistency coefficient of the scale is .81 (İlter, 2020b). Within the scope of reliability analysis, Cronbach's internal consistency coefficient of PGEIS was calculated as .92 in this study.

Data Collection and Analysis

During the data collection process for this study, a data collection booklet composed of the Personal Information Form, PGEVS, and PGEIS was created. The data collection booklet was distributed to participants chosen for this study in the classroom setting. Before the administration, all participants were given instructions on how to respond to the measures. The principles of voluntariness and confidentiality were emphasized throughout the administration process. The measurement tools were implemented within the scope of the study in a time period of 10-15 minutes. The SPSS 22.00 program was used to analyze the sub-problems of this study. To determine the suitability of the data collected prior to the data analysis for multivariate analysis, the data set was examined to see if it met the normality assumption (Tabachnick et al., 2007). To identify missing values and outliers, the Mahalanobis distance was first calculated. According to Mahalanobis distance values p < .001, there were no outliers in the data set. The data's normality assumptions were then tested using skewness and kurtosis values for all variables. The assumption of normal distribution was met because the lowest and highest values for skewness and Kurtosis were in the +1.5 and -1.5 ranges, respectively (Kline, 2015). The collected data was examined to see if it caused a multicollinearity problem by looking at the correlation coefficients between variables, variance increasing factor (VIF) values, and tolerance values. Correlations between variables ranged from .348 to .523. Tolerance values ranged from .51 to .79, and VIF values ranged from 1.124 to 1.732. The tolerance value should be greater than .2, and the VIF value should be less than 10 (Field, 2009), and the correlation between the



Figure 1.

CFA Results of the 4-Factor Model of PGEVS-Turkish Version.

independent variables should be below .80 (Büyüköztürk, 2014). All analyses showed that the study data meets the multiple-regression assumptions and that there is no multicollinearity problem. First, correlations were determined between independent variables (task values: intrinsic value, attainment value, utility value, and cost) and dependent variables (postgraduate education intentions) in the study. The Pearson correlation coefficient was used to determine the relationships between the study variables. One of the multiple regression analyses used the stepwise regression analysis method to determine which or which of the independent variables predicted the dependent variable. This method is used to determine the significance level of each independent variable in the regression model at each stage (Hair et al., 2010). In all analyses, the significance level was set at .05.

Results

Correlations Between the Study Variables

Pearson correlation test was used to examine the relationships between the subjective task values for postgraduate education and postgraduate education intention, and the results are presented in Table 1.

As seen in Table 1, each task value component for postgraduate education was significantly correlated with postgraduate education intentions. Task values, such as intrinsic value (r=.443, p < .001), attainment value (r=.485, p < .001), and utility value (r=.396, p < .001) were positively correlated with postgraduate education intentions, while cost (r=-.319, p < .01) was negatively correlated. While the attainment value sub-scale had the highest correlation with postgraduate education intentions, the perceived cost variable had the lowest correlation.

Variables Predicting Postgraduate Education Intentions

A stepwise regression method was used to determine which of the independent variables predicted participants' intentions to pursue postgraduate study and how much they contributed to the regression model. In this manner, it was determined which variable in the regression equation contributed the most to the variance and in what order it was defined (Heppner et al., 2008). Table 2 displays the results of the regression analysis.

Variable	1	2	3	4	5
1. Intrinsic value	1	.523**	.447**	384**	.443**
2. Attainment value		1	.488**	356**	.485**
3. Utility value			1	327**	.396**
4. Cost				1	319*
5. Postgraduate education intention					1

Table 2.

Stepwise Regression Analysis Results on Predicting Postgraduate Education Intentions

			Standard					
Model	Variable	В	Error	t	β			
1	Constant	4.772	.081	53.919**				
	Attainment value	.352	.058	4.425**	.324			
2	Constant	3.893	.077	51.026**				
	Attainment value	.317	.056	4.295**	.297			
	Intrinsic value	.275	.051	3.762**	.231			
3	Constant	3.496	.072	47.314**				
	Attainment value	.284	.047	4.016**	.266			
	Intrinsic value	.233	.043	3.787**	.185			
	Utility value	.198	.042	3.128**	.152			
4	Constant	2.849	.066	41.569**				
	Attainment value	.256	.048	3.867**	.241			
	Intrinsic value	.212	.045	3.356**	.172			
	Utility value	.164	.044	3.016**	.147			
	Cost	119	.037	-2.514*	115			
<i>Note</i> : ${}^{*}p < .01, {}^{**}p < .001.$								

First, in the regression analysis, the attainment value sub-scale, which was found to have the strongest correlation with postgraduate education intentions, was added to Model 1. Intentions to pursue postgraduate education were significantly predicted by attainment value. In the model, this variable alone accounted for 11.4% of the total variance in postgraduate education intentions (R^2 =.114, F=56.964, p < .001). The intrinsic value sub-scale was added to Model 2. With the addition of this variable to the model, the variance in postgraduate education intentions increased from 11.4% to 17.6%. Intrinsic value contributed to the model, with a variance explanation percentage of 6.2. The contribution of both variables to the variance was found to be statistically significant (R^2 =.176, F=40.749, p < .001). The utility value sub-scale was added to Model 3, and as a result, the model was found to be significant (R^2 =.221, F=31.999, p < .001). It contributed 4.5% to the variance in postgraduate intentions. Adding the utility value sub-scale to the model, the 3 variables together increased the total variance in postgraduate education intentions from 17.6% to 22.1%. Finally, the cost variable has been added to Model 4. The perceived cost sub-scale was found to be a significant predictor of students' postgraduate education intentions (R^2 =.252, F=23.964, p < .001). However, it was observed that the regression coefficient took a negative value. The additional contribution of the cost sub-scale, which was found as a negative predictor, to the model was 3.1%, and the variables together explained 25.2% of the total variance in postgraduate education intentions. The relative importance of the predictor variables on the postgraduate education intentions, respectively, the attainment value ($\beta = .241, p < .001$), intrinsic value ($\beta = .172$, p < .001), utility value ($\beta = .147$, p < .001), and cost ($\beta = -.115$, p < .01).

Discussion

This study focused on investigating the role of subjective task values that university students placed on postgraduate education on their intentions to pursue postgraduate education. Results showed that intrinsic value, attainment value, utility value, and perceived cost were found to be significant predictors of students' intentions to pursue postgraduate education. In addition, each contributed significantly to explaining the variance in postgraduate education intentions. The results gathered from this study have shown that the task values, including attainment value, intrinsic value, and utility value were positive determinants of postgraduate education intentions, but the perceived cost of postgraduate education is a negative determinant.

The attainment value is the task value that has the most significant contribution to explaining participants' intentions for postgraduate education. Findings showed that there was a positive relationship between the attainment value placed on postgraduate education and postgraduate education intentions. This finding showed that undergraduate students' postgraduate career goals are more shaped by their attainment value beliefs than intrinsic or utility values. Previous research with similar findings in the literature determined that the attainment value is an important task value component for students' choices about learning and success (Chiu & Wang, 2008; Harvey, 2014; Meece et al., 1990). Attainment value is the value of outcomes associated with a particular task or activity, such as career choice, according to Wigfield et al. (2016). Eccles and Wigfield (2002) define attainment value as the perceived importance of succeeding in a task to validate or confirm important salient aspects of one's self-scheme. The attainment values of various tasks may be influenced by the characteristics that specific tasks provide to fulfill particular individual needs and personal values, such as prestige, authority, and high income (Eccles, 2005). Indeed, individuals generally tend to attach more importance to tasks that provide an opportunity to realize their self-image or that are consistent with their expectations and long-term goals (Eccles, 2005). For example, the academic development experience may be of high attainment value for a university student. This is because advanced education is compatible with her philosophy of lifelong learning (Abrami et al., 2004), or it can be the formation of a sense of "professional identity" for an educator in her field (de Jesus & Lens, 2005; Emo, 2015). In the light of this information, the effect of attainment values attributed to postgraduate education on students' postgraduate goals can be explained by the nature of postgraduate education. The findings can also be conceptualized as a result of students' reflective evaluation of the subjective importance of achieving success by pursuing postgraduate education in the future. Indeed, postgraduate studies allow individuals to feel more autonomous and perceive themselves as more competent in such activities (Wisker, 2007) and help them develop an alternative sense of identity while being required in tasks (Jepsen & Neumann, 2010). Padró et al. (2018) emphasized the attainment value in career development, arguing that pursuing postgraduate education, such as a master's or doctorate, is a "valid" and "safe" decision in terms of its importance in successfully achieving academic goals. They argue that the attainment value increases the chances of taking a vital position in a competitive market. In this context, when students realize that postgraduate studies contribute positively to their future goals, selfimage, and academic needs, they are more likely to attach importance to this type of education. Although undertaking postgraduate tasks requires further knowledge, originality, learning, and writing a scientific thesis at the end of the program, it serves an educational function by providing the development of a variety of abilities and interests to perform these more complex tasks (Costley & Lester, 2012).

Another important finding of this study was that the intrinsic value placed on postgraduate education positively predicts the participants' postgraduate education intentions. Results of the regression analysis showed that the intrinsic value variable explained a significant part of the variance in postgraduate education intentions. This indicates that participants expect to enjoy postgraduate study and plan a postgraduate career in the future. In this direction, the intrinsic values of the individual for academic tasks that create "interest" can feed the idea of the love of being busy with learning and the search for education. This finding can be explained by the EVT, which states that intrinsic task value is defined as the personal "pleasure" or "interest" individuals experience while performing a task or dealing with a topic. Intrinsic value is an important phenomenon in participation in tasks. That is, when individuals perform tasks that they value intrinsically, they often achieve significant psychological outcomes that are positive. Indeed, due to the intrinsic properties of certain types of tasks, interest in or enjoyment of the task is linked to fundamental aspects of the self (Eccles, 2005). It also facilitates positive emotional experiences and a

personal desire to learn. Thus, when intrinsically motivated, individuals can move autonomously toward new challenges and broader circles of experience (Ryan & Deci, 2017). This information shows that when a task has intrinsic values for the individual, the individual may be intrinsically motivated to perform the task (Eccles et al., 1983). Undoubtedly, the culture of postgraduate education is not independent of internal values in terms of its potential gains. In essence, there are various internal stimuli associated with personal curiosity, a sense of satisfaction, personal interest, and a passion for learning. Due to its nature, postgraduate education can be personally challenging for students. However, the intrinsic values associated with this task can also be a rewarding experience, the excitement and pleasure of learning, the pursuit of genuine interests, or career identity as a symbol of the self. Intrinsic values for postgraduate education are closely related to attainment value, as they are linked to both undertaking challenging tasks and striving for competence (Eccles, 2005). For example, students who see postgraduate education as a means of promoting an academic career not only for status and prestige but only for pleasure and satisfaction internalize the importance of achieving a sense of achievement in a field by continuing postgraduate education. As a matter of fact, students who have higher intrinsic values and expectations of success for the new things they learn are likely to have a better grasp of career issues. Sadler-Smith et al. (2000) argued that the decision to engage in vocational learning is a blend of intrinsic values to develop individuals' professional competencies and advance their careers. Research has confirmed that self-directed intrinsic motivation promotes participation in postgraduate education (Artess & Hooley, 2017). Watt and Richardson (2008) found that prospective teachers with a high intrinsic value for the teaching profession are more likely to enter the profession because they have lofty goals for the time they spend. Pires (2009) found that among Portuguese postgraduate students, the intrinsic rewards of postgraduate education emerged as the desire to seek new knowledge, openness to experiences, and relationships, while the extrinsic rewards were the desire to increase job opportunities, earning power, or status. In addition, there are some studies in the literature showing that there are positive relationships between intrinsic values such as personal satisfaction and sense of achievement, and academic self and school success (Arens et al., 2011; Eccles et al., 1983; Fredricks & Eccles, 2002; Spinath et al., 2006). Accordingly, instilling in students the intrinsic values placed on postgraduate education may be critical to encouraging the continuation of postgraduate studies over time.

In the study, it was found that the utility value of postgraduate education has a significant effect on the intentions for postgraduate education. Utility value positively predicted students' postgraduate intentions. According to this finding, students' intentions to pursue postgraduate education are affected by the utility value beliefs they attribute to postgraduate education. Several reasons can explain this finding. First, the utility perspective relates to the perceived usefulness of a task for subsequent pursuits; that is, how a particular task provides an individual with perspective on other tasks or aspects of life (Eccles & Wigfield, 2002). A task can be of positive value to a person because it may facilitate important future goals, even if the person is not interested in that task for its own sake (Wigfield, et al., 2002). Utility value captures extrinsic reasons for participating in a task (Deci & Ryan, 1985). Tasks with high utility values are often aligned with goals and plans for the future (Osman & Warner, 2020). Some previous research has shown that a sense of utility value can be an influential motivating factor for individuals' current and future choices (Cameron et al., 2013; Emo, 2015; Harvey, 2014). Second, the assignment may also reflect important goals that the person holds deeply, such as achieving a particular career or occupation (Wentzel & Wigfield, 2009). Utility value can also be attributed to personal goals and a sense of self (Wigfield et al., 2016). Thus, this component of task value is somewhat similar to the

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idea of attainment value. To the extent that the task becomes an integral part of one's short-term and long-term goals, self, and needs, tasks that fulfill those goals have both utility and attainment value (Eccles, 2005). Based on this information, it is possible to say that if undergraduate students consider postgraduate education as a helpful tool for their plans, they will be more likely to apply for postgraduate education after graduation. Alternatively, the content of a postgraduate program may have high utility value for the individual. One can see what perspective this type of training will help oneself to help students develop their own competence in a specialty or work-related work. However, if attention is paid to career development, one is likely to see postgraduate education as a valuable tool in achieving this. This situation brings such a valuable component to the forefront, as postgraduate education's utility value provides students new opportunities to further develop their professional careers, as supported by the literature. Feedback on the career advantages provided by postgraduate education can also positively affect the intrinsic and attainment value attributed to this education, further reinforcing students' intentions to pursue postgraduate education in an integrated manner.

Finally, the findings showed that the perceived cost of postgraduate education negatively predicted students' intentions for postgraduate education. The negative correlation between cost and postgraduate intention variables suggests that postgraduate education is seen as costly, and this situation will reduce the possibility of participating in postgraduate education. The results suggest that students' intentions to continue postgraduate education can be predicted by looking at the perceived cost of postgraduate education. Consistent with the EVT, this finding is consistent with the model that the perceived cost of the activity is due to many factors such as performance anxiety, fear of failure, fear of social consequences of success such as rejection by peers or discrimination, or anger, fear, loss of sense of self-worth from one's parents or other people (Covington, 1992) confirms that he/she is affected. As mentioned earlier in the study, the cost component of the task value represents the perceived negative consequences of participating in a particular task. Moreover, the cost is the negative value that expresses what one has to give up (lost opportunities) to perform a task (Wigfield, 1994; Wigfield & Tonks, 2002). In this respect, the cost is critical for individuals' choices and motivational experiences (Wigfield, et al., 2002). This is because choosing a task and dedicating time to it means that other potentially valuable tasks or activities cannot be done (Eccles et al., 1983). Even when a task is otherwise valued, high perceived costs can negatively affect motivated behavior (Osman & Warne, 2020). According to Eccles et al. (1983), choices can be influenced by both positive and negative task characteristics, and because one choice often eliminates other options, all choices are considered to have costs associated with them. Researchers working on the EVT have conceptualized cost as a meaningful component of career advancement and avoidance of educational goals (Buehl & Alexander, 2005; Safavian & Conley, 2016; Wigfield & Eccles, 1992). Similar findings were found in the evaluation of cost in the literature. Most of the research on cost concerns has been done using career choice as the dependent variable. For instance, several researchers have determined that cost negatively predicts adolescents' and college students' success, career choice, and postgraduate education plans (Battle & Wigfield, 2003; Kirkpatrick et al., 2013; Perez et al., 2014). Students often talk about the costs associated with the nature of postgraduate education. More specifically, the cost of choosing postgraduate study appears to be a significant constraint for many prospective students (Artess & Hooley, 2017). This is because postgraduate education is an education with a high cost and workload. Cost considerations are affected by the expected effort and the assessment of the time and resources required (Flake et al., 2015). Carrying out postgraduate studies can be difficult, time-consuming, and stressful and can lead to the loss of valuable alternatives. In the studies available in the literature, it is observed that the

cost concerns in the planning of postgraduate education are general concerns about the balance between work-study-life, debts undertaken to obtain undergraduate qualifications, lost time, family commitments, employer problems in the profession, negativities in application areas, the financing of education, and the time-consuming nature of postgraduate studies (Amanak et al., 2020; Artess & Hooley, 2017; İlter, 2020b; Özmen & Güç, 2013; Purcell et al., 2005). While some studies reveal that when a parent and/or spouse are involved in postgraduate education, family life and relationships with children are negatively affected (Beatty, 2001; Spence, 2004b), some studies show that postgraduate individuals' relationships with friends, extended family, and social life are suspended during the program (Gray et al., 2014; Spence, 2004a), which confirmed that perceived psychological costs have a negative impact on planning postgraduate education. These results confirm that cost often eliminates what an individual has to sacrifice to perform a task and eliminates other options (Barron & Hulleman, 2015; Eccles, 2005). In this direction, it is possible to say that the negative effect of cost on postgraduate education planning will affect the decision to pursue postgraduate education. Indeed, if cost perceptions exceed students' expectations regarding achievement and task values, this leads to a motivation.

This study has provided important information to the relevant literature about the role of subjective task values placed on postgraduate education among undergraduate students' postgraduate education intentions. In the study, it was found that the attainment value contributed more to the participants' intentions to pursue postgraduate education. Participants identified attainment value for postgraduate education as a significant task value component in participation in postgraduate education. This result indicates that university students have an optimistic point of view regarding the planning of postgraduate education in the future. According to this, the results suggest that the participants consider postgraduate education as central to their perceptions, and they decide to undertake a postgraduate education with the perception that it is important for their self-schemas. Tonks et al. (2018) defined that attainment value is associated with one's self-image. In line with this information, the students participating in this study may have felt the personal importance and attainment value of getting postgraduate education and performing better to reflect their self-image. Efforts to increase the attainment value for postgraduate education to encourage commitment to postgraduate education can be particularly fruitful for students with low attainment values or resistant to change. In addition, in the study, it was found that the intrinsic and utility values placed on postgraduate education were positive variables in students' intentions to pursue postgraduate education. These factors in the task values of the EVT for postgraduate education were found to be effective in motivating university students to participate in postgraduate studies. Accordingly, perceiving both the intrinsic and utility values of postgraduate education may lead to the development of subsequent interest. Intrinsic and utility values toward postgraduate education can increase commitment to postgraduate education and trigger attention, effort, and achievement, resulting in higher performance levels (Hulleman et al., 2008).

Although the perceived cost of postgraduate education among task values had some effect on students' postgraduate intentions, it was found to have a negative effect. It was found that cost was not as effective as other task values. Providing students with more information, awareness, and guidance about the costs and benefits of postgraduate education can be an effective intervention in order to consciously target their decision to pursue postgraduate education by students (Strike & Toyne, 2015). In this way, students can focus on preparing for opportunities and employment options beyond a bachelor's degree. This increase in awareness and knowledge can encourage a student who orients herself on a particular career path early in the undergraduate

degree to seek further knowledge for postgraduate options and degrees actively. However, if higher education institutions have an idea about the demographic structure of current undergraduate students for an effective and comprehensive postgraduate education infrastructure, they can minimize the possible costs of students' career plans and career options in advance.

Academics can also reduce students' psychological cost concerns about career-related issues by talking to their students about postgraduate opportunities. Through individual interaction and experience, students can discover and appreciate the value and potential of postgraduate studies. Indeed, the perceived high costs of postgraduate education cause low participation and motivation problems. Appropriately covering the possible costs of postgraduate education based on students' expectations to encourage participation in postgraduate education can help students maintain and advance their postgraduate studies. Researchers have argued that considering the possibilities of postgraduate education, the idea of starting postgraduate education should be placed in the minds of students early; otherwise, due to cost concerns, students may have to think about entering the business life after graduation (Jepsen & Varhegyi, 2011). As a result, the positive value beliefs that students place on postgraduate studies positively predict their intentions for postgraduate education, which may serve an important psychological function in allowing them to progress to postgraduate study confidently. These values can also contribute to postgraduate education, employability, and higher lifetime earnings for participants. The right structures provided by different socializers, such as family, counselors, academics, scientists, and so on, will likely influence future positive behaviors and outcomes of the transition to postgraduate education. As students approach graduation, when socializers increase their influence on students' various task values, they may show greater determination and motivation to continue their education after graduation. Based on all these results, this study provides strong empirical evidence to the existing literature to better understand the subjective task values that affect undergraduate students' intentions to undertake postgraduate education.

This study has some implications. First, by identifying the role of task values on postgraduate education intentions, the study helped to understand the nature of task values that undergraduate students placed on postgraduate education. Findings showed strong correlations between postgraduate education intentions and subjective task values from students' perspectives. In this respect, it is expected that the findings will be a source for higher education institutions to optimize their postgraduate processes by considering students' task value beliefs. In terms of importance, this study aimed to combine the task value components of the EVT with the intention of postgraduate education in a new context. An integrated examination of these factors in a single study will help to understand better the mechanisms underlying students' intentions to pursue postgraduate education. This information is important because task values are one of the central developmental task choices of adulthood, and a successful transition also applies to future educational goals and career processes (Mahama et al., 2013).

A deeper understanding of the task values that accompany students' decision to pursue postgraduate education can help build their motivation to pursue postgraduate studies. Future research can further reveal the impact of undergraduate students' task values on their postgraduate education intentions, thereby encouraging postgraduate education and drawing a clearer picture of motivating factors. As a matter of fact, university students' career perceptions and interpretations are affected by various scientific, social, personal, and cultural factors (Wigfield & Gladstone, 2019). Accordingly, students can further explore and reconstruct their postgraduate goals and value beliefs that accompany the

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decision to pursue this education through the interaction and behavior of different socializers such as counselors, academics, scientists, and peers. Accordingly, it may be suggested that university students continue to use the EVT as a valuable tool for future research to explore their task value orientations placed on postgraduate education and contribute more to understanding this process. One of the limitations of this study is that the measures used in this study are based on selfreport, and the data gathered affects the validity of the results. In order to eliminate this limitation, future research may provide support for the collected quantitative data with qualitative data and obtain more detailed results based on research on the reasons for the observed differences in the obtained results.

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