Article

Multinomial Cross-Sectional Regression Models to Estimate and Predict the Determinants of Academic Performance: The Case of Auditor Accountant of the Pontifical Catholic University of Valparaíso

Hanns de la Fuente-Mella [1] , Ricardo Campos-Espinoza [2] , Nelson Lay-Raby [3],* , Omar Lamelés-Corvalán [3] , Mario Pino-Moya [2] and Reynier Ramírez-Molina [4]

1 Instituto de Estadística, Facultad de Ciencias, Pontificia Universidad Católica de Valparaíso, Valparaíso 2340031, Chile; hanns.delafuente@pucv.cl
2 Escuela de Comercio, Facultad de Ciencias Económicas y Administrativas, Pontificia Universidad Católica de Valparaíso, Valparaíso 2340025, Chile; ricardo.campos.e@pucv.cl (R.C.-E.); mario.pino@pucv.cl (M.P.-M.)
3 Facultad de Educación y Ciencias Sociales, Universidad Andres Bello, Viña del Mar 2531015, Chile; o.lameles@gmail.com
4 Departamento Ciencias Empresariales, Universidad de la Costa, Barranquilla 080002, Colombia; rramirez13@cuc.edu.co
* Correspondence: nelson.lay@unab.cl

Abstract: The debate on the primary cross-curricular skills or fundamental competencies that must be improved in higher education has increased in the last few years. This is especially important in the new distant learning environments, which bring new challenges to the educational process. Econometric models have been designed to explain the students' academic performance, which has been measured using their qualifications average, the number of failed subjects, passed subjects, and withdrawn subjects, and the level of progress, among other indicators, to try to understand the influence of variables such as students' self-esteem, reading comprehension, English proficiency level, and performance in a mathematics-related subject on the students of accountant auditor program from Pontificia Universidad Católica de Valparaiso. Students were asked to fill in a questionnaire to collect data on the psychological and pedagogical variables, while the socio-economic and socio-demographic data were collected from the university. The results have shown that the most significant variables in the development level of this skill type are socio-demographic and socio-economic characteristics. Some of the psychological and pedagogical variables that have, to a lesser degree, some influences are self-regulation in the learning process and the self-perception of anxiety levels. Lastly, some recommendations to intervene in the students' learning process are presented with the objective of achieving a higher level of development in this type of competences.

Keywords: multinomial logistic regression; academic performance; econometric models

1. Introduction

1.1. Academic Performance in Chile and the World

Addressing a study variable such as the academic performance of students in these times becomes a challenge without falling into value judgments or subjectivities due to the social impact that this topic causes in the life of a human being and, as such, in the university student specifically. In addition, different life situations have a notorious impact on their academic training, on the development of their skills, and how these are ted at work. All this marks differentiating qualities that will make human talent authentic and distinctive, which is a sign that generates value to its environment through its contributions or actions, reducing risks that alter the productive life of its services. According to the research carried out by Véliz, Dorner, and Sandoval [1], the results indicate that one of the variables that must

be worked on in university life is academic self-efficacy, which would contribute to favoring academic performance and the processes of adaptation to higher education.

In this sense, academic performance today is affected by environmental, social, and economic factors [2] that undermine the effectiveness of sustainability and sustainability in the global world [3,4], altering the raison d'être of educational organizations in search of learning assurance and of generic and technical skills that help students to exercise their professional role in the market with ethical and quality indicators. People are immersed in a bubble wherein they recreates their lives, overloaded with information, stimulated by external and internal factors, and exposed to constant changes, which has caused the best of the universities in Latin America to revolve around new proposals for flexible academic programs [5–7] and their to curricula adapt to the requirements of the environment. In this approach, the center of everything is learning that develops the student's skills for their daily work; that is, it prepares the student for life, with a humanizing, recursive, and holistic approach, which allows the student to obtain tools to put in practice in their personal and work area [8–10].

To the above, we must add the effects of environmental deterioration and biological damage, which have caused universities in countries such as Argentina [11,12], Mexico [13,14], Brazil [15–17], and Chile [18,19] to generate new models for the creation of educational organizations, new teaching practices have been implemented that maximize the academic performance of the students, and learning spaces (laboratories) have been recreated that allow them to experience new forms of learning and knowledge where constructivism and constructionism have value have been put into practice. At the same time, these new practices promote initiatives for the internationalization of the curriculum, promoting global cultural experiences, and new learning styles are generated, impacting pedagogical models. In contrast, new communication tools and digital platforms are being used that generate new connectivity alternatives, aiming at the freedom of education and the free transit of knowledge. For Ramírez, Villalobos, Lay, and Herrera [20], the media allow the appropriation of knowledge and are influenced by interactive models with emerging perspectives on knowledge.

Due to social problems in Chile, academic performance has undergone dizzying changes, where young talent has had to leave their classes to join the labor area informally, seeking to improve their quality of life. Due to these notable cases, it becomes essential to obtain practical skills through training that allows students to opt for job improvements, which later are rewarded in personal and family well-being. The 21st century will offer unprecedented resources for the circulation and storage of information and communication. It will pose a double demand on education that, at first glance, may seem almost contradictory: education must massively and efficiently transmit an increasing volume of evolutionary theoretical and technical knowledge, adapted to the cognitive civilization, because they are the bases of the competencies of the future [21].

The purpose of the research is to identify and measure the impact of the variables affecting the increase in the academic performance of the students of the accounting auditor program of the Pontificia Universidad Católica de Valparaíso to assess the finding that allows conclusions to be drawn about the study variable, so that contributions can be generated for the study for the advancement of science, technology, and innovation. Thus, in this research, our questions are how variables such as reading comprehension, level of English, academic self-esteem, general self-esteem, theoretical value, theoretical value, nutrition, student entry, math test, self-updating, graduation, middle school score, religious value, and exercise affect the academic performance through the design of an econometric model that will allow for the measuring and quantifying of said effect.

Some previous studies have examined how to understand and overcome learning difficulties. Most researchers analyze their research data using multiple regression analyses but do not consider learning difficulties as the dependent variable in qualitative data [10,22,23]. Therefore, this article presents a further analysis of previous studies. Multinomial logistic regression (MLR) analysis is a suitable model to solve this problem. That is because the students' tests (on their perceptions) are answers based on alternatives (categorical or qualitative). Additionally,

the students' characteristics are nominal and ordinal data. In contrast, other studies have used MLR with different objectives, such as [24–27]. However, the approach to the problem faced is not the same as that of those investigations.

This paper is organized as follows. Section 1 presents the introduction, which includes a literature review. The materials and methods are presented in Section 2. The results are shown in Section 3. Section 4 presents the discussion and conclusions of this research.

1.2. Competencies in Higher Education

Over time, the evolution of institutions has been glimpsed in terms of strengthening the skills of their students. In previous centuries, all those physical skills and strength were required due to the jobs that demanded an effort on the part of the student. Man, however, with various industrial revolutions, has changed this. Currently, organizations focus their attention on developing technical skills [28–30]. This is due to the need for humanized capital in the new global era, with essential skills for executing administrative and operational processes according to the corresponding soft areas. The educational institutions that innovate their curriculum [31–33] and bet on the training of students by challenges have been oriented to the solution of problems that the productive industry sector demands, with a holistic vision, creativity, and innovation, for the generation of value and competitiveness against the challenges of the environment, forming comprehensive leaders with skills that enhance the work of companies.

This demand has been linked to the progress of information technologies, expanding access to tools, knowledge, and networks for the expansion of meaningful learning that brings students closer to natural spaces that allow them to make decisions and be guided by what they do. This can be seen in the virtualization of multiple processes and training, work, and interaction activities through simulators, leading the participant to develop skills by making logical, rational, and analytical decisions that strengthen their work. All of this originates innovative strategies that promote the recovery and reactivation of the nation's economy and contribute to a sustainable development that minimizes the devastating effects of the environment, being focused on the responses of the human being as a strategic partner that generates value for companies following their skills acquired at the university.

Competencies in higher education refer to the set of skills, aptitudes, attitudes, and knowledge an individual has. For Fuentes, Moreno-Murcia, Rincón-Tellez, and Silva-García [34], competencies are the grouping of behaviors, measurable and perceptible, that can be evaluated in a person. Hence, it is necessary to determine which skills are required to execute activities. According to Carrión-Martínez, Fernández-Martínez, Pérez-Fuentes, and Gázquez-Linares [35], the outstanding segments for the grouping of skills and abilities are guided by cognitive traits (logical thinking and theoretical knowledge), followed by cognitive traits, social traits (communicative skills), and psychosocial traits (motivational skills). When referring to generic skills, we speak of those universal skills that must be acquired regardless of the study area. These allow for the carrying out of simple but essential processes for developing and improving local economies.

Research carried out by Echeverría-Ramírez and Mazzitelli [36], Preciado-Serrano, González, Colunga-Rodríguez, Vázquez-Colunga, Esparza-Zamora, Vázquez-Juárez, and Obando-Changuán [37] and Sagredo, Etchepare, Mendizabal, and Wilson [38] make it clear that generic competencies in higher education emphasize general attributes and abilities for the development of activities such as analytical and critical thinking, conflict resolution, communication skills, and teamwork. However, these are situational, therefore it is imperative to analyze the current and future situations to master the required skills. In contrast, technical skills in the educational context are those skills and abilities obtained by carrying out activities or, failing that, by experience. Technical or complex skills are all those qualities and knowledge acquired through experience in developing activities. It should be noted that these technical skills are more specific to the sector or type of industry to work.

Nowadays, social, economic, political, environmental, and biological factors have notoriously influenced human beings to reinvent themselves, adapting to new environmental

changes. These changes force us to enhance the competence of the living being through dynamic capabilities to systemically solve the problems that human talent itself recreates, made up of opportunities and threats. For this reason, the articulation of competencies in higher education is relevant, where students are trained with abilities, knowledge, and skills that allow them to respond to this new global era that is increasingly volatile and competitive. According to the investigations of Jiménez, Pérez, and Gómez [39] and León, Mendoza, and Gilar [40], there are social, economic, and environmental factors in universities that have a notorious impact on student performance. For this reason, it is evident to generate innovative initiatives that enhance the learner's skills to mitigate the adverse effects of these factors that threaten the development of learners' skills.

According to Sukier, Ramírez, Parra, Martínez, Fernández, and Lay [41], companies must change their models of strategic management of human talent, adapting to the dynamic challenges of the environment. These models are increasingly unstable, aggressive, and turbulent, condemning people to reinvent themselves and rely on tools to consolidate their goals and improve their skills. In recent months, the multiple effects caused by the COVID-19 virus have been evidenced. At current times, at the global level, the slowdown in economic growth, reduction in income, loss of profitability and economic insolvency, high level of unemployment, and the disappearance of companies have been observed [42–44]. At the same time, society has feared physical contact, which characterizes human beings. The Chilean economic context has not been different from the global one [45].

In the following section, we describe how the measurement of certain competencies were used for the development of this research.

1.3. Meauserement of Competencies

The instruments used to measure the skills of higher education students were the following six tests: Psychosocial Motivations Scale (MPS) by J. L. Fernández (1987) [46], Gordon Allport's values study test (1968–1972) [47], Lifestyle Profile (PEPS-I) by Nola Pender (1996) [48], Wonderlic by Eldon F. Wonderlic (1936) [49], ICT Questionnaire in Personal Training (REATIC) [50], Stanley Coopersmith's self-esteem inventory (1967) [51]. Below is a summary of each of the tests used.

Psychosocial Motivations Scale (MPS) by J. L. Fernández (1987) [46]. The instrument was designed to measure the motivation system of individuals, published by TEA Ediciones in 1987. The scale seeks to appreciate the individual's motivational system's differential structure and functional dynamics (emotional, cognitive, and situational) and predict the person's future behavior. Said evaluation is of six factors and five components of psychosocial motivations in the work context. The scale factors are acceptance and social integration, social recognition, self-concept, self-development, power, security. Its reliability coefficient is 0.53–0.83. It consists of three parts, with a total of 173 items.

In its first part, a true or false answer is given to each item for the levels of Activation, Expectation, and Execution. In its second part and, in turn, the third, it is answered using an evaluation scale of the elements chosen by the individual in the Incentives and Satisfaction of each item. The rating ranges from 1 ("some"), 2 ("normal"), 3 ("a lot"), 4 ("very much").

Allport Values. Gordon Allport's values study test (1968–1972) [47] applied his study of values inspired by the types of men of Stranger (1964), and defines the ways of life of man in six interests or basic motives in personality: the social, political, aesthetic, economic, theoretical, and religious. It consists of two parts; in the first one, there are statements or questions with two alternative answers. In the second part, situations are presented, followed by four possible attitudes or responses, where the individual must classify these responses in the order of personal preference, noting the score according to the degree of preference. Finally, the test classifies each interest style as high, average, and low.

Lifestyle Profile (PEPS-I) by Nola Pender (1996) [48]. The questionnaire quantitatively measures the level of the individual's lifestyle. It is made up of 48 Likert-type items, which are subdivided into the dimensions of nutrition (6 items), exercise (5 items), responsibility in health (10 items), stress management (7 items), interpersonal support (7 items), and self-updating

(13 items). This questionnaire asks the respondent to identify how often they have practiced each statement in the last 30 days and to circle the answer that best reflects their current lifestyle. Each item has a minimum score of 1 ("never") and a maximum of 4 ("always"), adding a minimum overall score of 48 and a maximum of 192. The scores define high lifestyles (132–192), medium (108–131), and low (48–107) according to 0.75 standard deviations above or below the mean score.

Wonderlic test by Eldon F. Wonderlic [49]. This instrument has 50 logical reasoning and problem-solving questions distributed from least to significant difficulty. It is made up of three subtests: vocabulary, arithmetic reasoning, and spatial reasoning. It presents a correlational validity between teaching and academic achievement between r = 0.30 and r = 0.80, with a reliability coefficient between 0.73 and 0.95. The Wonderlic Personnel Test (WPT) is a general intelligence test used in personnel selection and vocational guidance. It has an execution time of 12 min for the resolution of the test. The scores define each student's work and academic and training potential, distributed in six ranges below 10 points, between 10 and 15 points, between 16 and 20 points, between 21 and 23 points, between 24 and 27 points, and above 28 points. It also has a correction table according to the age of the person evaluated.

ICT Questionnaire in Personal Training (REATIC), the De Moya questionnaire [50], comprises 60 items through which the greater or lesser degree of knowledge, use, and existing assessment of information technologies can be established and communicated in university education. Therefore, the purpose of the instrument is to determine the conditions of a student's management and the positive assessment of the implementation of ICT in their academic and personal life. The test is divided into four subgroups: I know (item 1 to 14), I use (15 to 28), I consider ICT (item 29 to 44), and I use ICT according to learning style (item 45 to 60).

Stanley Coopersmith's self-esteem inventory in 1967 [51]. This instrument aims to identify the evaluation that a person makes and maintains about himself, indicating the degree to which he considers himself capable, competent, and successful. It has 25 items on a dichotomous scale (yes–no), separated into three areas, i.e., General Self, Social, and Family, establishing the following intervals for a maximum score of 100 points. Low level of self-esteem (0 to 24 points), Medium–low level of self-esteem (25 to 49 points), Medium–high level (50 to 74 points), and High-level (75 to 100 points). Its reliability is 0.79, based on the Tarazona study.

2. Materials and Methods

The analysis is carried out for the career of Accountant Auditor of the Pontifical Catholic University of Valparaíso (PUCV), Chile. It is a sample of 82 students of both genders, of which 34% are male and 66% are female. This research considered different ways of measuring the endogenous variable: average of grades; the number of approved courses; the number of failed courses; the number of retirees; the degree of advancement; the minimum qualification; the maximum qualification; and the standard deviation of qualification [52]. Both the data for the endogenous and exogenous variables of the proposed models are obtained from each of the surveys. Given the above, and following the proposed objectives, the analysis aims to establish the determining factors of the training competencies of the students of the Accountant Auditor at the PUCV, Chile, and their impact on the students' academic performance.

The instruments used to collect the information come from the different tests that the students of the Accountant Auditor career take upon entering the university. This is how students develop various tests, where the general self-esteem tests corresponding to the Coopersmith self-esteem inventory, academic self-esteem, reading comprehension, and a diagnostic test of English [51–55] stand out, considering the leveling given by the Council of the Common European Framework of Reference for the Languages (CEFR). For this research, the results obtained by each student participating in the study have been collected

directly from the Directorate of Institutional Analysis and Strategic Development (DAIDE) of the Pontifical Catholic University of Valparaíso.

Both types of data have been collected (among 2016 and 2021) by different platforms and systems in the PUCV and a unique code has been used to identify the data of each student. A protocol was established so that only one person knew the link between said code and the individualization of each student. This relationship data was not disclosed to anyone else. All this is due to the procedures for the private use of said data, respecting the individualization of the students. Similarly, when the students were surveyed, they had been informed of how the data would be used, protecting their identity. These tests were only been carried out if the participant granted their approval and consent.

The first stage of the study consists of carrying out an exploratory analysis of the variables under study to understand the behavior of each of the variables involved in the research. Subsequently, cross-sectional econometric models are used to establish the determining factors of the fundamental training competencies of the Auditor Accountant students. Cross-sectional data, or a cross-section of a study population, in econometrics, is a type of data collected by observing many subjects (such as individuals, firms, countries, or regions) at one point or period of time. The analysis might also have no regard for differences in time. Cross-sectional data can be used in cross-sectional regression, which is a regression analysis of cross-sectional data, which was conducted in this research. Analysis of cross-sectional data usually consists of comparing the differences among selected subjects, through which the assumptions associated with the problem of spherical disturbances are reviewed and evaluated and the other tests are proposed for its validation [56], performing the necessary transformations for its validation without affecting the economic nature of the model [57].

3. Results

This section presents the results of the econometric estimation of the mixed model, defined as an estimation of the academic performance of an accountant auditor student at the Pontifical Catholic University of Valparaíso, Chile.

Among the research results, determining factors were evidenced in the academic performance measured by the indicator of courses approved by students, which correspond to the scores obtained in evaluations carried out upon entering university, which sought to identify psychological elements such as levels of general and academic, or educational, self-esteem, such as performance in the English language diagnostic test or reading comprehension, that allow us to approach the objective of identifying elements that are related to the development of fundamental training competence in the students under study. Thus, the descriptive statistics of the variables used in the model are shown in Table 1

Table 1. Descriptive analysis variables of the research.

	N	Minimum	Maximum	Mean	Std. Deviation
Average of grades	82	4.17	6.62	5.42	0.65
Approved courses	82	0.50	1	0.83	0.14
Failed courses	82	0.00	0.23	0.057	0.076
Retirees courses	82	0.00	0.30	0.087	0.086
Degree of advancement	82	0.105	0.926	0.440	0.300
Minimum qualification	82	1.0	6.3	3.72	1.52
Maximum qualification	82	5.8	7.0	6.7	0.30
Standard deviation of Qualification	82	0.206	1.269	0.793	0.236
Theoretical value	82	1	5	3.93	0.890
Nutrition	82	7	24	15.66	4.054
Exercise	82	5	18	9.34	3.181
General self-esteem	82	28.0	104.0	67.92	24.192
Academic self-esteem	82	4.0	16.0	11.882	3.3802
Reading Comprehension	82	2.0	10.0	6.039	1.9896

Table 1. *Cont.*

	N	Minimum	Maximum	Mean	Std. Deviation
Level of English	82	9.0	74.0	28.302	14.8823
Maths test	82	1.0	23.0	13.360	5.3443
Self-updating	82	24	50	38.49	6.784
Religious value	82	13	45	25.86	7.236
Middle school score	82	5.2	6.8	6.070	0.3259

From the analysis of Table 1, we can see that the ranges of the exogenous variables are wide because they are related to the characterization of a heterogeneous sample, composed of students who are at different times in the curriculum of the career of the Accountant Auditor. When analyzing the standard deviation presented by some variables, this is confirmed since the high levels of dispersion with respect to their mean reinforce the idea of a heterogeneous sample, which is therefore representative of the population under study. For example, when considering variables such as the level of English of the students in the sample or the results obtained in the general self-esteem test, it is evident that these are characteristic aspects of the students themselves and that they influence the degree of development of the fundamental competencies.

Econometric Models

With the previously exposed variables, a cross-sectional econometric model has been developed. With the above, through the cross-sectional model, the intention is to assess the degree of development of fundamental competencies and their impact on the academic performance of students. The endogenous variables tested in this study are: average of grades; the number of approved courses; the number of failed courses; the number of retirees; the degree of advancement; the minimum qualification; the maximum qualification and the standard deviation of qualification. Moreover, the exogenous variables are: the results in the entrance tests of reading comprehension; level of English; academic self-esteem and general self-esteem. All discrete variables of real scale that constitute the determining factors in the degree of development of fundamental competencies.

To estimate the functional relationship of the model based on Equation (1), we propose a mixed model to explain the response variable Y in terms of a set of explanatory variables. The functional relationship of the model is defined as follows (see Equation (1)):

$$Y_{ij} = \beta_0 + \sum_{s=1}^{S} \beta_s X_{sij} + u_{i0} + e_{ij}, \tag{1}$$

where Y_{ij} corresponds to the dependent variable measured by academic performance from each auditor accountant student i over different measures of academic performance j; β_0 corresponds to a baseline parameter of the model; and β is a parameter vector that corresponds to the parameters related to variables that affect the academic performance of students i. x_{ij} corresponds to the following variables: reading comprehension, level of English, academic self-esteem, general self-esteem, theoretical value, theoretical value, nutrition, student entry, maths test, self-updating, nutrition, student entry, maths test, self-updating, graduation, middle school score, religious value, exercise; from each auditor accountant student i over different measures of academic performance j. Finally, i = auditor accountant students and j = different measures of academic performance.

From the analysis of Table 2, we can see that multiple cross-sectional econometric models have been tested for each of the endogenous variables under study. Thus, in the case of the academic performance of students measured by average of grades, the best model is explained by the variables theoretical value and nutrition. In the case of the number of approved courses, the best model is explained by the variables general self-esteem, academic self-esteem, reading comprehension, and level of English; for the model

with endogenous variable failed courses, the best model is explained with the variables theoretical value, student entry, math's test, self-updating; for the measurement of academic performance through the retirees courses variable, the best model is explained by the variables general self-esteem and academic self-esteem; with the model measured through the endogenous variable degree of advancement, the variables that explain are graduation; in the case of measuring academic performance through the minimum qualification variable, the best model is explained by the variables religious value and student entry; for the measurement through maximum qualification of student, the model is explained by the variables exercise and religious value; and, finally, for the academic performance model measured through the standard deviation of qualification variable, the best model is explained through the theoretical value variable.

Table 2. Results of the estimation of the cross-section model and its goodness of fit.

	Average of grades			
	Model 1	Model 2		
R Square	0.321	0.321		
ANOVA (*p*-value)	0.003	0.000		
Variables	Theoretical value 0.280 (3.369)	Theoretical value 0.294 (4.045)		
		Nutrition −0.047 (−2.931)		
	Approved courses			
	Model 1	Model 2	Model 3	Model 4
R Square	0.301	0.568	0.639	0.708
ANOVA (*p*-value)	0.004	0.000	0.000	0.000
Variables	General self-esteem −0.003 (−3.218)	General self-esteem −0.003 (−4.715)	General self-esteem −0.003 (−4.946)	General self-esteem 0.003 (5.525)
		Academic self-esteem 0.019 (3.772)	Academic self-esteem 0.023 (4.529)	Academic self-esteem 0.022 (4.628)
			Reading comprehension 0.019 (2.082)	Reading comprehension 0.020 (2.426)
				Level of English −0.002 (−2.230)
	Failed courses			
	Model 1	Model 2	Model 3	Model 4
R Square	0.416	0.573	0.652	0.751
ANOVA (*p*-value)	0.000	0.000	0.000	0.000
Variables	Theoretical value −0.061 (−4.135)	Theoretical value −0.071 (−5.320)	Theoretical value −0.069 (−5.534)	Theoretical value −0.071 (−6.588)
		Student entry −0.055 (−2.906)	Student entry −0.066 (−3.661)	Student entry −0.066 (−4.218)
			Maths test −0.004 (−2.232)	Maths test −0.005 (−3.160)
				Self-updating −0.004 (−2.891)

Table 2. *Cont*.

	Retirees courses	
	Model 1	Model 2
R Square	0.446	0.554
ANOVA (*p*-value)	0.000	0.000
Variables	General self-esteem 0.002 (4.400)	General self-esteem 0.002 (5.190)
		Academic self-esteem −0.007 (−2.358)
	Degree of advancement	
	Model 1	
R Square	0.414	
ANOVA (*p*-value)	0.000	
Variables	Graduation −0.130 (−4.116)	
	Minimum qualification	
	Model 1	Model 2
R Square	0.314	0.488
ANOVA (*p*-value)	0.003	0.000
Variables	Religious value −1.138 (−3.313)	Religious value −1.410 (−4.428)
		Student entry 0.779 (2.797)
	Maximum qualification	
	Model 1	Model 2
R Square	0.493	0.583
ANOVA (*p*-value)	0.000	0.000
Variables	Exercise −0.065 (−4.834)	Exercise −0.077 (−5.671)
		Religious value 0.196 (2.225)
	Standard deviation of qualification	
	Model 1	Model 2
R Square	0.214	0.356
ANOVA (*p*-value)	0.017	0.006
Variables	Middle school score −0.250 (−2.559)	Middle school score −0.216 (−2.358)
		Theoretical value −0.083 (−2.252)

The above information is presented in summary form in Table 3.

In the first model, we can see that the cognitive attitude favorably influences the grade point average, unlike the effect of concern for a healthy diet and a lifestyle that considers the importance of nutritional aspects in students; in the second model, we can see that higher levels of general self-esteem and academic self-esteem positively influence the number

of approved courses, as well as the results obtained in the reading comprehension tests, while knowledge of the English language has a negative effect on the endogenous variable; for the model that considers failed courses as an endogenous variable, the relationship of the exogenous variables with it is negative, since, the higher the cognitive attitude score achieved in the mathematics test and self-updating, the lower the expected number of failed courses obtained by students in the development of the study plan—the same impact generated by considering the type of entry of students to the career of Accountant Auditor; on the model whose endogenous variable is represented by the withdrawn courses, the general self-esteem positively affects this, while the higher the academic self-esteem, the lower the number of courses that a student is expected to be able to withdraw from during their career. For the model whose endogenous variable is defined by the minimum qualification, we note that the development of a religious life has a direct relationship with obtaining lower minimum marks, unlike the effect generated by the type of income. When the endogenous variable is defined by the maximum qualification, the religious value has a positive effect, which his quite the opposite of the effect of that generated by lifestyle when linked to sport. Finally, if we consider the model whose endogenous variable is the standard deviation of the grades, the theoretical value negatively influences this variable, that is, those students with a higher cognitive attitude present lower levels of dispersion in their grades with respect to the mean being more stable their qualifications.

Table 3. Best cross-sectional econometric model per variable.

Endogenous Variable	Explanatory Variables
Academic performance of students measured (by average of grades)	Theoretical value and nutrition
Number of approved courses	General self-esteem, academic self-esteem, reading comprehension and level of English
Failed courses	Theoretical value, student entry, maths test, self-updating
Academic performance (through the retirees courses variable)	General self-esteem and academic self-esteem
Degree of advancement	Graduation
Academic performance (by minimum qualification variable)	Religious value and student entry
Maximum qualification of student	Exercise and religious value
Academic performance model	Theoretical value

Once the analysis of the resulting models has been carried out, we can see that the theoretical value, general self-esteem, and academic self-esteem are the most significant and influential variables when we search the determining factors of the training competencies of the students of the Accountant Auditor of the PUCV, Chile, measured through indicators of academic performance. In addition, it is possible to observe that the effect that these variables have on the endogenous variables is consistent. For example, the theoretical value positively affects the explanation of the performance of students (measured by average of grades), while it negatively affects the explanation of failed courses. Other variables that maintain the same type of consistency are academic self-esteem and religious value. Additionally, the knowledge and skills of the students, measured by theoretical value, maths test, reading comprehension, and self-updating, are consistent with the expected performance, since, to the extent that they are higher, it is expected that the degree of progress and approved courses are also approved.

4. Conclusions and Discussion

According to what was mentioned in the previous section in this study, it was possible to estimate and predict the determinants of academic performance for the students of the Auditor Accountant of the Pontifical Catholic University of Valparaíso career.

The results made it possible to show that the most significant variables in the level of development of this type of skill are related to socio-demographic and socio-economic characteristics. This is somewhat related to the case studied, which is found in the Latin American [58–61] country—in the process of economic development—of Chile, in which such characteristics are heterogeneous in the study population. In this sense, both theoretical and applied studies are clear in indicating how socioeconomic variables influence academic performance in the world [62–65], in Latin America, and in the Chilean case [66–69].

This is quite helpful in improving the material elements in the broader university context and at the national level, and could subsequently improve the acquisition of the skills detailed above.

From the results, it is possible to observe that, in the sample, the self-esteem of the students is one of the strongest and most significant factors in the different models used in this research. Students' prior knowledge level, measured by the grades they obtained before enrolling in the University, is a factor that significantly explains the dispersion of university academic performance. However, what is interesting is that the levels of reading comprehension and mathematics were less significant for the average academic performance. The above could mean that this baseline and prior knowledge only contribute to significant but decreasing baseline development. On the other hand, the self-esteem that students have of themselves is even more relevant.

At another level, the psychological and pedagogical variables had, to a lesser degree, some influence on self-regulation in the learning process and the self-perception of anxiety levels. From the psychology of learning, it has been widely documented how emotional self-regulation is important to obtain academic achievement [70–75]. The same is true for self-perception of anxiety levels [76–78]. Additionally, it can be commented that the measurements of both variables were taken in a confinement context due to the COVID-19 pandemic, thus that variable has been shown with a higher estimate. Coincidentally, both the social characteristics mentioned above and confinement have a large material component at the base of the learning of the students studied.

The identification of factors associated with academic performance can allow university authorities to design policies that improve the academic quality of undergraduate students. In specific terms, the authorities could strengthen university programs and activities that foster confidence in young people and create coaching programs. According to this research, this type of activity could contribute more to improving student learning than reinforcing activities with technical program content.

This research could serve as a starting point for a broader investigation. On the one hand, expanding the number of students analyzed by incorporating other cohorts of graduates, which would also make it possible to carry out various cross-sectional studies and identify possible changes in the predictor variables that could occur. In addition, this research could be developed in other degrees and universities, which would also allow comparative studies. Specifically, according to the data collected in this research, making controlled variations of more heterogeneous samples in the social conditions of the students could provide more significant evidence.

Moreover, it is expected that the conclusions reached by this research can serve as a basis for future analyses and/or modifications of the study plan, considering it essential to become a support for the accompaniment of students in this stage of adaptation, such as, in the first year, introducing students to the opportunities that arise when the person has perseverance in the study, and fostering loyalty to the institution, creating a good image and retention from responsible academic work.

In order to safeguard the learning and social process of young people who are immersed in university, it is imperative to carry out psychosocial interventions from the field of mainly prevention through an induction that facilitates the process of adapting to university; however, when detecting students who may be more likely to have mental health disorders, it is necessary to support them through two aspects, namely counseling or individual therapy and workshops for a targeted group of students at risk. Research

indicates that the streams with better results are cognitive, behavioral, and mindfulness interventions, mainly in reducing stress in students; this could be a good path to start an intervention aimed at student assets.

It remains to be seen in future studies in this same population if the same estimates are maintained for the determined variables exposed in the proposed models. It is important for the analysis of this case that the measurement was made at a time of confinement due to the pandemic.

Notwithstanding the foregoing, the proposed models are important to be able to estimate the effects of the study variables on academic performance and a subsequent achievement of educational excellence.

Author Contributions: Data curation, R.C.-E.; Formal analysis, H.d.l.F.-M.; Investigation, N.L.-R.; Software, O.L.-C.; Writing—review & editing, M.P.-M. and R.R.-M. All authors have read and agreed to the published version of the manuscript.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Véliz, A.; Dorner, A.; Sandoval, S. Relación entre autoconcepto, eficacia académica y rendimiento académico en estudiantes de salud de Puerto Montt, Chile. *EDUCADI* **2016**, *1*, 97–109. [CrossRef]
2. Mushtaq, I.; Khan, S.N. Factors affecting student's academic performance. *Glob. J. Manag. Bus. Res.* **2012**, *12*, 17–22.
3. Alamri, M.; Almaiah, M.; Al-Rahmi, W. Social Media Applications Affecting Students' Academic Performance: A Model Developed for Sustainability in Higher Education. *Sustainability* **2020**, *12*, 6471. [CrossRef]
4. Alam, M.M.; Ahmad, N.; Naveed, Q.N.; Patel, A.; Abohashrh, M.; Khaleel, M.A. E-learning services to archive sustainable learning and academic performance: An empirical study. *Sustainability* **2021**, *13*, 2653. [CrossRef]
5. Cook, M.L. *Politics of Labor Reform in Latin America: Between Flexibility and Rights*; The Pennsylvania State University Press: University Park, PA, USA, 2010.
6. Lamarra, N.F. Higher Education, Quality Evaluation and Accreditation in Latin America and MERCOSUR. *Eur. J. Educ.* **2003**, *38*, 253–269. [CrossRef]
7. Rama, C. University virtualisation in Latin America. *Int. J. Educ. Technol. High. Educ.* **2014**, *11*, 32–41. [CrossRef]
8. Montané, A.; Llanes, J.; Calduch, I.; Hervás, G.; Méndez-Ulrich, J.L.; Muñoz, J. The social dimension in Higher Education. Design and implementation of an instrument for student analytics in a Latin American context. In *Culture, Citizenship, Participation. Comparative Perspectives from Latin America on Inclusive Education*, 1st ed.; Bon, A., Pini, M., Akkermans, H., Eds.; Pangea: Amsterdam, The Netherlands, 2019; Volume 2, pp. 133–158.
9. Lent, R.W.; Taveira, M.D.C.; Figuera, P.; Dorio, I.; Faria, S.; Gonçalves, A.M. Test of the Social Cognitive Model of Well-Being in Spanish College Students. *J. Career Assess.* **2016**, *25*, 135–143. [CrossRef]
10. Llanes, J.; Méndez-Ulrich, J.L.; Montané, A. Motivación y satisfacción académica de los estudiantes de Educación: Una visión internacional. *Educ. XX1* **2021**, *24*, 45–68.
11. Fracchia, E.; Mesquita, L.; Quiroga, L. *Business Groups in Argentina*, 1st ed.; Oxford University Press: New York, NY, USA, 2010.
12. Rozada, M.G.; Menendez, A. Public university in Argentina: Subsidizing the rich? *Econ. Educ. Rev.* **2002**, *21*, 341–351. [CrossRef]
13. Perales Franco, C.; McCowan, T. Rewiring higher education for the Sustainable Development Goals: The case of the In-tercultural University of Veracruz, Mexico. *High. Educ.* **2021**, *81*, 69–88. [CrossRef]
14. Gill, C.C. *Education in a Changing Mexico*, 1st ed.; US Office of Education, Institute of International Studies: Washington, DC, USA, 1969.
15. Laus, S.P.; Morosini, M.C. Higher Education in Brazil. In *Higher Education in Latin America: The International Dimension*, 1st ed.; De Wit, H., Jarmillo, C., Gacel-Ávila, J., Knight, J., Eds.; The World Bank: Washington, DC, USA, 2005; Volume 638, p. 111.
16. Schwartzman, S. Brazil: Opportunity and crisis in higher education. *High. Educ.* **1988**, *17*, 99–119. [CrossRef]
17. Berchin, I.I.; dos Santos Grando, V.; Marcon, G.A.; Corseuil, L.; de Andrade, J.B.S.O. Strategies to promote sustainability in higher education institutions: A case study of a federal institute of higher education in Brazil. *Int. J. Sustain. High. Educ.* **2017**, *18*, 1018–1038. [CrossRef]

18. Brunner, J.J. Higher Education in Chile from 1980 to 1990. *Eur. J. Educ.* **1993**, *28*, 71. [CrossRef]

19. Bernasconi, A. Private Higher Education in Chile: The New Exceptionalism. *Int. High. Educ.* **2003**, *32*, 18–19. [CrossRef]

20. Ramírez, R.I.; Villalobos, J.V.; Lay, N.D.; Herrera, B.A. Medios de comunicación para la apropiación del conocimiento en instituciones educativas. *Inf. Tecnológica* **2021**, *32*, 27–38. [CrossRef]

21. Delors, J. Los cuatro pilares de la educación. In *La Educación Encierra un Tesoro. Informe a la UNESCO de la Comisión Internacional Sobre la Educación Para el Siglo XXI*; Santillana/UNESCO: Madrid, Spain, 1996; Available online: https://uom.uib.cat/digitalAssets/221/221918_9.pdf (accessed on 8 July 2022).

22. Prasetvono, H.; Abdillah, A.; Widiyarto, T.; Srivono, H. Character-based economic learning implementation and teacher's reinforcement on student's affective competence in minimizing hoax. *Cakrawala Pendidik.* **2018**, *37*, 426–435.

23. Soubhi, F.Z.; Lima, L.; Talbi, M.; Knouzi, N.; Touri, B. Learning Difficulties Related of Health Status of Moroccan Students. *Procedia Soc. Behav. Sci.* **2015**, *197*, 1507–1511. [CrossRef]

24. Awan, K. Experimentation and correlates of electronic nicotine delivery system (electronic cigarettes) among university students—A cross sectional study. *Saudi Dent. J.* **2016**, *28*, 91–95. [CrossRef]

25. de la Fuente-Mella, H.; Umaña-Hermosilla, B.; Fonseca-Fuentes, M.; Elórtegui-Gómez, C. Multinomial Logistic Regression to Estimate the Financial Education and Financial Knowledge of University Students in Chile. *Information* **2021**, *12*, 379. [CrossRef]

26. Torikka, A.; Kaltiala-Heino, R.; Rimpelä, A.; Marttunen, M.; Luukkaala, T.; Rimpelä, M. Self-reported depression is increasing among socio-economically disadvantaged adolescents—Repeated cross-sectional surveys from Finland from 2000 to 2011. *BMC Public Health* **2014**, *14*, 408. [CrossRef]

27. Trinidad, M.F.; Pascual, J.L.G.; García, M.R. Perception of caring among nursing students: Results from a cross-sectional survey. *Nurse Educ. Today* **2019**, *83*, 104196. [CrossRef] [PubMed]

28. Webb, J.; Chaffer, C. The expectation performance gap in accounting education: A review of generic skills development in UK accounting degrees. *Account. Educ.* **2016**, *25*, 349–367. [CrossRef]

29. Douglas, S.; Gammie, E. An investigation into the development of non-technical skills by undergraduate accounting programmes. *Account. Educ.* **2019**, *28*, 304–332. [CrossRef]

30. Van Vught, F.A. *Governmental Strategies and Innovation in Higher Education. Higher Education Policies Series, 7*, 1st ed.; Kingsley: London, UK, 1989.

31. Kırkgöz, Y. The challenge of developing and maintaining curriculum innovation at higher education. *Procedia Soc. Behav. Sci.* **2009**, *1*, 73–78. [CrossRef]

32. Kemp, K.K.; Goodchild, F.M. Evaluating a major innovation in higher education: The NCGIA core curriculum in GIS. *J. Geogr. High. Educ.* **1992**, *16*, 21–35. [CrossRef]

33. Leask, B. Internationalisation, globalisation and curriculum innovation. In *Researching International Pedagogies*, 1st ed.; Hellstén, M., Reid, A., Eds.; Springer Dordrecht: Dordrecht, The Netherlands, 2008; pp. 9–26.

34. Fuentes, G.Y.; Moreno-Murcia, L.M.; Rincón-Tellez, D.C.; Silva-Garcia, M.B. Evaluación de las habilidades blandas en la educación superior. *Form. Univ.* **2021**, *14*, 49–60. [CrossRef]

35. Carrión-Martínez, J.J.; Fernández-Martínez, M.D.M.; Pérez-Fuentes, M.D.C.; Gázquez-Linares, J.J. Specific competencies in social work higher education in the framework of the European higher education area: The perception of future professionals in the Spanish context. *Eur. J. Soc. Work* **2018**, *23*, 43–55. [CrossRef]

36. Echeverría-Ramírez, J.A.; Mazzitelli, C. Estudio de la percepción sobre los factores institucionales que influyen en el rendimiento académico de estudiantes de la Universidad Estatal a Distancia de Costa Rica. *Rev. Electrónica Educ.* **2021**, *25*, 326–344. [CrossRef]

37. Preciado-Serrano, M.D.L.; Ángel-González, M.; Colunga-Rodríguez, C.; Vázquez-Colunga, J.C.; Esparza-Zamora, M.A.; Vázquez-Juárez, C.L.; Obando-Changuán, M.P. Construction and Validation of the University Academic Performance RAU Scale. *Rev. Iberoam. Diagnóstico Evaluación Avaliação Psicológica (RIDEP)* **2021**, *60*, 1–20. [CrossRef]

38. Sagredo, A.V.; Etchepare, G.C.; Mendizábal, E.A.; Wilson, C.P. Academic performance and its relationship with socioemotional variables in chilean students from vulnerable contexts. *Educ. XXI* **2021**, *24*, 375–398. [CrossRef]

39. Jiménez, M.; Pérez, F.; Gómez, P. Análisis de los factores tecnológicos sobre el rendimiento académico en una universidad pública en la Ciudad de México. *Form. Univ.* **2020**, *13*, 255–266. [CrossRef]

40. Quinapallo, X.P.L.; Yépez, M.M.M.; Corbi, R.G. Clima de aula y rendimiento académico: Apuntes en torno al contexto universitario. *Rev. Venez. Gerenc.* **2021**, *26*, 140–156. [CrossRef]

41. Sukier, H.; Ramírez Molina, R.I.; Parra, M.; Martínez, K.; Fernández, G.; Lay, N. Strategic Management of Human Talent from a Sustainable Approach. *Rev. Opción* **2020**, *36*, 929–953.

42. Matyushok, V.; Krasavina, V.; Berezin, A.; García, J.S. The global economy in technological transformation conditions: A review of modern trends. *Econ. Res. Ekon. Istraživanja* **2021**, *34*, 1471–1497. [CrossRef]

43. Glomado, E.; Zagrebaylova, Y. *The Overview of Factors Contributing to the Global Economy Development*, 1st ed.; Belarusian State Economic University: Minsk, Belarus, 2022.

44. Gómez, L.; Oinas, P.; Wall, R.S. Undercurrents in the world economy: Evolving global investment flows in the South. *World Econ.* **2021**, *45*, 1830–1855. [CrossRef]

45. Velasco, M.; Mumme, S.P. Environmental capacities in Latin America: A comparison of Brazil, Chile, and Mexico. *Soc. Sci. J.* **2021**, 1–20. [CrossRef]

46. Fernández, J. *Escala de Motivaciones Psicosociales*, 1st ed.; Tea Ediciones: Madrid, Spain, 1987.

47. Allport, G.W.; Vernon, P.E.; Lindzey, G. *Study of Values*, 1st ed.; Houghton Mifflin: Boston, FL, USA, 1960.
48. Pender, N.J.; Murdaugh, C.L.; Parsons, M.A. *Health Promotion in Nursing Practice*, 7th ed.; Pearson: London, UK, 2006.
49. Wonderlic, E.F. *Wonderlic Personnel Test*; Wonderlic, Inc.: Liberty, IL, USA, 2004.
50. De Moya, M.V.; Hernández, J.A.; Hernández, J.R.; Cózar, R. Análisis de los estilos de aprendizaje y las tic en la formación personal del alumnado universitario a través del cuestionario reatic. *Rev. De Investig. Educ.* **2009**, *29*, 137–156.
51. Coopersmith, S. *The Antecedents of Self-Esteem*; W. H. Freeman & Co. Behavioral Science: San Francisco, CA, USA, 1967; p. 15. [CrossRef]
52. Moren, C.C.; Augant, K.C.; Labrin, B.C.; de Giorgis, R.S.; de la Fuente-Mella, H.; Fritz, P.; Saavedra, M.V.; Monckton, P.H.; Castelli, L. A quantitative analysis of the identification of personality traits in engineering students and their relation to academic performance. *Stud. High. Educ.* **2019**, *45*, 1323–1334. [CrossRef]
53. Mella, H.D.L.F.; Navarro, M.M.; Manero, C.B.; Iglesias, M.P.; Huenuman, C.G. Análisis de los determinantes del rendimiento académico. El caso de Contador Auditor de la Pontificia Universidad Católica de Valparaíso. *Rev. Estud. Pedagógicos* **2021**, *47*, 469–482. [CrossRef]
54. De La Fuente-Mella, H.; Gutiérrez, C.G.; Crawford, K.; Foschino, G.; Crawford, B.; Soto, R.; De La Barra, C.L.; Caneo, F.C.; Monfroy, E.; Becerra-Rozas, M.; et al. Analysis and Prediction of Engineering Student Behavior and Their Relation to Academic Performance Using Data Analytics Techniques. *Appl. Sci.* **2020**, *10*, 7114. [CrossRef]
55. Lawson, A.E. The Generality of Hypothetico-Deductive Reasoning: Making Scientific Thinking Explicit. *Am. Biol. Teach.* **2000**, *62*, 482–495. [CrossRef]
56. Greene, W.H. *Análisis Econométrico*, 3rd ed.; Prentice Hall: Madrid, Spain, 1999.
57. Coughenour, C.; Paz, A.; de la Fuente-Mella, H.; Singh, A. Multinomial logistic regression to estimate and predict perceptions of bicycle and transportation infrastructure in a sprawling metropolitan area. *J. Public Health* **2016**, *38*, e401–e408. [CrossRef] [PubMed]
58. Flores-Mendoza, C.; Ardila, R.; Gallegos, M.; Reategui-Colareta, N. General Intelligence and Socioeconomic Status as Strong Predictors of Student Performance in Latin American Schools: Evidence from PISA Items. *Front. Educ.* **2021**, *6*, 1–16. [CrossRef]
59. Murillo, F.J.; Román, M. School infrastructure and resources do matter: Analysis of the incidence of school resources on the performance of Latin American students. *Sch. Eff. Sch. Improv.* **2011**, *22*, 29–50. [CrossRef]
60. Torres-Roman, J.S.; Cruz-Avila, Y.; Suarez-Osorio, K.; Arce-Huamaní, M.; Menez-Sanchez, A.; Robalo, T.R.A.; Mejia, C.R.; Ruiz, E. Motivation towards medical career choice and academic performance in Latin American medical students: A cross-sectional study. *PLoS ONE* **2018**, *13*, e0205674. [CrossRef]
61. Herman, K.C. Engaging Latino-American Students in School: Evaluating a Causal Model for Understanding and Predicting Academic Achievement. Doctoral Thesis, University of Florida, Gainesville, FL, USA, 1997.
62. Rodríguez-Hernández, C.F.; Cascallar, E.; Kyndt, E. Socio-economic status and academic performance in higher education: A systematic review. *Educ. Res. Rev.* **2019**, *29*, 100305. [CrossRef]
63. Sackett, P.R.; Kuncel, N.R.; Arneson, J.J.; Cooper, S.R.; Waters, S.D. Does socioeconomic status explain the relationship between admissions tests and post-secondary academic performance? *Psychol. Bull.* **2009**, *135*, 1–22. [CrossRef]
64. Trusty, J.; Robinson, C.R.; Plata, M.; Ng, K.-M. Effects of Gender, Socioeconomic Status, and Early Academic Performance on Postsecondary Educational Choice. *J. Couns. Dev.* **2000**, *78*, 463–472. [CrossRef]
65. Brodnick, R.J.; Ree, M.J. A structural model of academic performance, socioeconomic status, and Spearman's g. *Educ. Psychol. Meas.* **1995**, *55*, 583–594. [CrossRef]
66. Muñoz, P.; Redondo, A. Inequality and academic achievement in Chile. *CEPAL Rev.* **2013**, *109*, 99–114. [CrossRef]
67. Rossi, M. Factors Affecting Academic Performance of University Evening Students. *J. Educ. Hum. Dev.* **2017**, *6*, 96–102. [CrossRef]
68. Valladares, M.; Ramírez-Tagle, R.; Muñoz, M.A.; Obregón, A.M. Individual differences in chronotypes associated with academic performance among Chilean University students. *Chronobiol. Int.* **2017**, *35*, 578–583. [CrossRef]
69. Claro, S.; Paunesku, D.; Dweck, C.S. Growth mindset tempers the effects of poverty on academic achievement. *Proc. Natl. Acad. Sci. USA* **2016**, *113*, 8664–8668. [CrossRef]
70. Gestsdottir, S.; von Suchodoletz, A.; Wanless, S.B.; Hubert, B.; Guimard, P.; Birgisdottir, F.; Gunzenhauser, C.; McClelland, M. Early Behavioral Self-Regulation, Academic Achievement, and Gender: Longitudinal Findings from France, Germany, and Iceland. *Appl. Dev. Sci.* **2014**, *18*, 90–109. [CrossRef]
71. Zimmerman, B.J. Self-Regulated Learning and Academic Achievement: An Overview. *Educ. Psychol.* **1990**, *25*, 3–17. [CrossRef]
72. Nota, L.; Soresi, S.; Zimmerman, B.J. Self-regulation and academic achievement and resilience: A longitudinal study. *Int. J. Educ. Res.* **2004**, *41*, 198–215. [CrossRef]
73. Zimmerman, B.J. *Self-Regulated Learning and Academic Achievement: Theoretical Perspectives*, 2nd ed.; Routledge: London, UK, 2001.
74. Ruban, L.M.; McCoach, D.B.; McGuire, J.M.; Reis, S.M. The Differential Impact of Academic Self-Regulatory Methods on Academic Achievement among University Students with and Without Learning Disabilities. *J. Learn. Disabil.* **2003**, *36*, 270–286. [CrossRef]
75. Matuga, J.M. Self-regulation, goal orientation, and academic achievement of secondary students in online university courses. *J. Educ. Technol. Soc.* **2009**, *12*, 4–11.
76. Stringer, R.W.; Heath, N. Academic self-perception and its relationship to academic performance. *Can. J. Educ./Rev. Can. De L'éducation* **2008**, *31*, 327–345.

77. Chevalier, A.; Gibbons, S.; Thorpe, A.; Snell, M.; Hoskins, S. Student's academic self-perception. *Econ. Educ. Rev.* **2009**, *28*, 716–727. [CrossRef]
78. Leung, P.W.; Kwan, K.S. Parenting styles, motivational orientations, and self-perceived academic competence: A mediational model. *Merrill-Palmer Q.* **1998**, *44*, 1–19.