

Article

The Students' Intrinsic Motivation for Learning Non-Financial Information Matters from Their Self-Identification as Global Citizens

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Abstract: Recent developments related to non-financial information (NFI) reporting encourage the adoption of a long-term vision approach to sustainable development, which is also behind the definition of global citizens. In turn, the self-determination theory (SDT) describes which elements explain the students' motivation. Using NFI as the subject and the SDT as the theoretical framework, this paper aims to identify the elements that can explain accounting students' intrinsic motivation to learn topics related to NFI. Those elements include the different aspects that integrate the concept of a global citizen as well as sociodemographic variables. Data were gathered from a questionnaire to accounting students in Portugal. Through factorial analysis and linear regression, the findings indicate that all the elements underlying the concept of a global citizen, except empathy, are relevant in explaining students' intrinsic motivation. Conversely, sociodemographic variables were not relevant for this purpose, which may indicate a more integrated perspective of the learning usefulness of topics related to NFI by self-identified students as global citizens. This paper provides insights into how students of an accounting course are intrinsically motivated to acquire skills in NFI reporting, which is particularly relevant to higher education institutions (HEIs), professors, students, and organizations related to accountancy education.



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1. Introduction

Sustainable development (SD) planning is believed to be an important element in allowing HEIs to set their goals and commit to concrete actions and measures at all levels to implement sustainability. Therefore, HEIs around the world are involved in promoting sustainability in many ways [1]. It is essential to integrate economic and social development and environmental protection in a higher education context holistically and comprehensively, not just by focusing on a few subjects [2,3].

On one hand, the impact that businesses have on society and the environment must be informative on those three pillars, economic, social, and environmental, commonly known as the triple bottom line (TBL) [4]. On the other hand, it must also include the environmental and society's effects on the company's value creation [5]. The representation of such relations on corporate reports is an important challenge for accounting students [6] who must expectedly and simultaneously act as global citizens and employees of these companies in the future, as their reports' preparers [7].

The concept of global citizenship may be referred to as awareness, caring, embracing cultural diversity, promoting social justice and sustainability [8–11], encompassing a wide range of dimensions, from political, moral, and economic, to social, environmental, or spiritual [12]. Public awareness for such matters has been more prominent since the beginning of this century, mainly with statements on climate change that revealed how

sustainability issues are framed within broader social, political, economic, and daily-life contexts [13]. This also motivated a growing interest in reviewing education as a path to forming responsible global citizens [12].

In September 2015, the United Nations (UN) 2030 Agenda adopted the Sustainable Development Goals (SDGs). SDG 4 Quality Education aims to “[e]nsure inclusive and equitable quality education and promote lifelong learning opportunities for all” [14]. More specifically, target 4.7 states that it should be ensured “that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development”. This transcription highlights that the approval of the SDGs in the UN General Assembly approached the concepts of sustainable development and global citizenship. However, the relationship or differentiation between the terms is unclear as regards their concepts and practices [15].

Target 4.7 of the UN 2030 Agenda was a significant step that empowered educators, education planners, and practitioners [14] and established a favorable environment that cleared up the implementation of Education for Sustainable Development (ESD) [16]. The United Nations [17] states that ESD and Global Citizenship Education (GCE) nurture respect for all, build a sense of belonging to a common humanity, foster responsibility for a shared planet, and help learners become responsible and active global citizens and proactive contributors to a more peaceful, tolerant, inclusive, secure, and sustainable world. Notwithstanding, to accomplish target 4.7 and, therefore, to have the competencies required to deal with sustainability issues, it is necessary to undertake actions that lead to an ESD [13,18]. SDG 4 highlights the role of teachers in developing students’ awareness [14]. As such, to educate global citizens is to prepare individuals to take responsibility for global changes in uncertain times [12].

HEIs are responsible for developing society’s leaders and preparing graduates with the knowledge, ability, and willingness to appreciate diversity and address social injustice. Additionally, many HEIs aim to internationalize their curricula to ensure that students acquire skills that will enable them to contribute to an evolving global knowledge economy [19]. Higher education students must be qualified as future decision-makers, making it essential to raise their awareness of SD and develop important skills such as systems, critical and anticipatory thinking, problem-solving skills, and the ability to participate [20].

Therefore, HEIs play an important role in advancing SD [21,22], as well as pursuing agendas to educate students as global citizens [23]. Students must be prepared to act as persuasive citizens and “agents of change” in their future professional environment and participate in the changes necessary for social transformation toward SD [3,24]. The aim is not to educate students to behave in a certain way but rather to enable them to think critically about SD-related issues and to get them to participate in SD training [20].

As corporate sustainability disclosure has become a core expectation with investors pressuring for improved corporate disclosure of environmental, social, and governance (ESG) risks [25], these developments led to the concept that NFI may now include information on those aspects. Hence, accounting students are facing challenges in learning these controversial topics. Nonetheless, with a self-perspective as global citizens, those students are likely to present a higher intrinsic motivation to learn the subjects related to those matters.

As SDT assumes that individuals engage in activities that satisfy their most basic psychological needs [26], the students who are self-identified as global citizens may be self-motivated to acquire competencies related to ESG matters. Therefore, accounting students identified as global citizens would be more motivated to learn and acquire competencies in such matters and contribute to critical thinking, linking better financial and non-financial reporting as well as providing transparency on what is the entities’ impact on sustainability and society matters overall.

Based on this assumption, this paper proposes the following research question: does the accounting students' self-perspective as global citizens play a relevant role in explaining their intrinsic motivation to learn matters related to NFI? To answer this question, it aims to assess the likely influence of their views as global citizens on their intrinsic motivation to learn topics related to NFI. To achieve this main goal, the following specific objectives are proposed:

- Identify the accounting students' level of intrinsic motivation to learn topics related to NFI;
- Identify the elements (latent variables) which underlie the concept of global citizenship from the students' perspective;
- Finally, and taking into consideration a set of sociodemographic variables representative of specific students' characteristics, assess the likely influence on the students' self-identification as global citizens with their intrinsic motivation to learn those subjects.

For those purposes, a survey was applied to students in the second and third (last) year of the accounting degree at the Lisbon Accounting and Business School (ISCAL), a highly traditional accounting school in Portugal. The global citizens' survey items are used to measure the dependent variable, while Deci and Ryan's [26] self-determination theory (SDT) is used as the theoretical basis to measure the individual level of students' intrinsic motivation in this context. In the context of this research, those variables were adapted to obtain a proxy for the students' interests in learning NFI matters, such as sustainability aspects. The latter and students' sociodemographic characteristics are, therefore, included as independent variables of the regression model proposed.

Literature has been concerned with the role played by the students' motivation regarding their performance or outcomes (e.g., [27]). Therefore, students' intrinsic motivation has been included in those studies as the independent variable of those models to assess its predictive value to achieve these goals, instead of as the dependent one. Nonetheless, studies in psychology and other areas of social sciences have also been trying to find the individuals' characteristics that can strengthen their motivation (e.g., [28]), as proposed for this research.

To the best of the author's knowledge, no previous research assessed the likely relationship between those variables, which is a research gap in the literature on students' motivation for learning subjects related to NFI. Then, this paper may contribute to a wider range of actors in the academy, which includes accounting professors and HEIs in general when proposing strategies to improve the students' intrinsic motivation for learning a topic of increasing interest.

This paper is structured as follows. Section 1 provided its background. Section 2 presents the literature review. Section 3 sets forth the materials and methods. Section 4 presents the findings, followed by their discussion in Section 5. Finally, conclusions, research limitations, and directions for future research are presented in Section 6.

2. Literature Review

The following three sections present the topics related to the matters that underlie this research, establishing their possible relationships. The first one provides the elements behind the NFI matters from the professional and academic perspectives, as well as the emergence of the concept of global citizenship. The second presents the motivation theory used to measure the students' intrinsic motivation to learn matters related to NFI. The third proposes a link between the previous ones, aligned with the aim of this research, by relating the students' self-perspective as global citizens and their intrinsic motivation for learning NFI subjects.

2.1. Non-Financial Information and Global Citizenship

Organizations all over the world are pressured to improve transparency by explaining their business models in more detail, which is reflected by linking traditional financial reports with topics sometimes mentioned as NFI [29]. However, this continues to be a

process in the discussion. Milne and Gray [30] argue that the TBL information may be used as synonymous with corporate sustainability reporting but is paradoxically reinforcing business as usual and greater levels of unsustainability.

In the specific literature of business sciences, sustainability reporting considers the relevance of sustainability to an organization and addresses key topics focused on creating value with the optimal use of human, material, financial, and natural capital [5,6]. Nevertheless, it is important to point out that, as with the popularization of the expression “sustainable development” in the 1980s with the publication of *Our Common Future* by the World Commission on Environment and Development [18], expressions such as “NFI”, “corporate social reporting”, “corporate sustainability reporting” or “ESG” are commonly used to describe types of information that are not intrinsically financial [31,32]. In addition to the debate of defining concepts, the implementation of sustainability concepts itself is controversial, with some organizations seeing it as improvements on business as usual while others understand it as a major paradigm shift in thought and action [33].

Nonetheless, reporting NFI is not a new concept, but it has been marked by all types of pressures for development in the latest years [31,32,34–37] largely due to the advances of the impacts of climate change in the lifestyles of individuals as well as organizations [13].

As the regulation for corporate reporting is changing for more transparent and integrated sustainable reporting [29,34], also accounting education has increasingly reformed because of the growing globalization that requires skilled professionals able to assess the complex and controversial issues related to the topic [38] to achieve the UN’s Agenda for SDG in 2030 [39,40]. From the organization’s perspective, some international companies such as Ernst & Young, Cisco, Coca-Cola, or Cotton On are making popular discourses, funding campaigns, and publishing materials focused on the promotion of responsible global citizenship [12].

Teaching sustainable development in economics is a challenge since it involves the interpretation of the pillars of sustainability considering the economic forces within natural systems [18]. Therefore, HEIs linked to accounting also need to produce global citizens capable of meeting the social, political, and economic demands [41], establishing offers that meet the purposes of ESD and GCE [42]. Such relationships may be established for those aspects related to corporate reporting. In this context, Chung and Park [15] argue that many have the incorrect perception that ESD is focusing on environmental issues while GCE is for civic affairs. In practice, countries tend to include GCE in ESD activities as ESD is an umbrella terminology [14], and educators are to replicate the integration of such concepts. Hence, the United Nations [17] conceptualized that ESD and GCE aim to empower learners of all ages to face and resolve local and global challenges and to make informed decisions and actions for environmental integrity, economic viability, and a fair society for present and future generations while respecting cultural diversity.

Hence, global citizenship and understanding NFI topics are well connected, as individuals—and accounting students, more particularly—can play either the preparers’ or users’ role regarding the information provided by entities. The first is played through the duty of accountability, which includes providing transparent corporate reporting. Being part of the entities’ stakeholders, the latter is played through the pressure on entities regarding their compliance with matters related to sustainability overall, such as environment and climate change, their interaction with society and the economic sustainable development.

2.2. Intrinsic Motivation

In the higher education context, Deci and Ryan’s [26] SDT is one of the theories frequently used to study and explain students’ motivation [27,43], and the best-known theories about motivation and human personality based on social psychology, being applicable and validated in various forms and domains [43].

In SDT, multiple types of motivation are specified, and each one has unique characteristic phenomenology and dynamics [27]. This theory proposes that all people have an innate propensity to develop their personalities and that they engage in activities that give

them the possibility of satisfying basic psychological needs: competence, autonomy, and relationship. These types of motivation can be ordered on a self-determined continuum [44], ranging from more self-determined (intrinsic motivation) to partially self-determined (introjection) and finally to an absence of self-determination (i.e., amotivation). SDT specified four major subtypes of extrinsic motivation: external regulation, introjection, identification, and integration [44].

According to SDT, intrinsic motivation drives actions for personal interest, positive experience, and satisfaction. Intrinsic motivation is the most self-determined type of motivation and the most autonomous of the SDT continuum, being defined by the individual's attitude toward the task. In this type of motivation, the action is independent of external consequences; on the contrary, what moves the individual is the task itself and the satisfaction in accomplishing it [28].

In the context of learning, motivation is affected by the student's satisfaction and enjoyment of studying. Intrinsically motivated individuals voluntarily participate in an activity without experiencing external or internal pressures to do so and without expecting rewards [26]. On one hand, according to the authors, intrinsic motivation can explain satisfaction, interest, and personal pleasure in performing a task, instead of performing it to obtain a tangible reward. Extrinsic motives, on the other hand, represent an external influence, such as good job opportunities, high salaries, or prestige. When compared to intrinsic motivation, extrinsic motivation is less autonomous, because it is driven by internally defined goals related to external reward or punishment [28].

The distinction between extrinsic and intrinsic motivations is not always very clear. For example, when personal values are present, intrinsic motivation is usually assumed, although there may also be social influence from third parties. Furthermore, intrinsic and extrinsic motivation are not mutually exclusive, that is, individuals can have multiple goals with their behavior [24]. According to the author, there is a connection between the distinction of extrinsic/intrinsic motivation and egoistic motivation (the activity must have a direct benefit to oneself) and altruistic motivation (without self-interest, for example, to help other people) in which altruistic motives refer to an intrinsic orientation of the person insofar as they are ultimately determined by internal value dispositions.

2.3. Linking Students as Global Citizens and Their Intrinsic Motivation for Learning NFI Subjects

The issue of higher education for sustainability has been the subject of study in countries such as New Zealand [1], Hungary [45], Brazil, Serbia, Latvia, South Africa, Spain, Syria, and the United Kingdom (UK) [3]. Notwithstanding, empirical research focused on millennials' global citizenship attitudes is limited [46], although some recent studies that have been investigating higher education students' predispositions for learning SD-related issues can be found in Australia [19,47], Switzerland and Austria [24], Romania [2], and the USA [46,48].

It is frequently assumed that environmental education has a significant influence on students' environmental awareness, everyday lifestyles, and consumer behaviour [45]. According to those authors, several HEIs have come to recognize the importance of integrating sustainability issues into education, with the findings showing a strong correlation between the intensity of environmental education and the Hungary students' environmental knowledge, which can be due to environmental education itself and the higher intrinsic motivation of university students [45].

Investigations carried out on the perceptions of students enrolled in different specialization fields, considering their attitudes and environmental behaviors, identified factors such as environmental importance, concerns, and culture, as well as participation, voluntary action, and the influence of recycling [2]. The findings by those authors suggest that students who receive academic training are involved in environmental protection activities, and a positive relationship between the variable's perception, attitude, and behavior has been also identified.

In turn, studies such as Sklarwitz [48] have explored education for global citizenship, social awareness, and responsibility in higher education, noting that, for individuals to take steps to address issues of social justice, they must have attitudes supported by the three dimensions of global citizenship, namely, the global competence, global social responsibility, and global civic engagement. The author recognizes that students become involved in GCE courses due to their values and beliefs, and their previous experiences can affect how they engage with the courses.

Woosnam et al. [46] also found that millennials who had previous volunteering experience were generally more inclined to participate in future environmental volunteering than those without previous experience. The research by these authors analyzed the notion of global citizenship attitudes as a multidimensional construct, concluding that global awareness, appreciation of diversity, social justice, environmental sustainability, intergroup help, and responsibility to act were identified as dimensions of attitudes of global citizenship to be examined in terms of their ability to explain environmental volunteering among millennials.

Previous literature [2,45,48] has been, therefore, presenting arguments that individuals self-identified as global citizens are more willing to address controversial issues, which may include the reporting of NFI from the accounting students' perspective, as a trending topic considering its latest developments within the corporate reporting area [30,35,39]. According to Aleixo et al. [21], students are among the most important stakeholders in the development of more sustainable societies, highlighting that they intend to work in companies that actively support sustainable development. Based on the previous findings, the students' perceptions about topics of NFI may influence their willingness to accept NFI reporting as part of their academic curriculum [21,41]. Mulder et al. [49], in turn, present arguments that HEIs do not need motivators as universities teach rationality, despite also claiming that motivation, on its own, is sufficient. More specifically, Cogut et al. [50] argue that sustained behaviour change is the result of intrinsically based ones, through internal motivation, without the need for external compensation. Therefore, from the students' point of view, their awareness of sustainability issues and their self-identification with the global citizen concept can make them more likely to adopt behaviour that cultivates sustainability, increasing their intrinsic motivations for learning topics related to NFI.

Considering the elements above, this paper proposes the following Hypothesis 1 (H1):

Hypothesis 1 (H1): *Besides the likely influence of sociodemographic characteristics, the students' self-perspective as global citizens positively influences their intrinsic motivation to learn matters related to NFI.*

The next section provides the materials and methods used to test the hypothesis proposed for this paper.

3. Materials and Methods

This section aims to present a previous description of data gathered from the survey that will be subsequently used in the linear regression models presented in the next section.

To achieve its proposed goal, this paper intends to identify the elements that can explain accounting students' intrinsic motivation to learn topics related to NFI, which is the dependent variable proposed for this research. Those elements include the different aspects that integrate the concept of a global citizen as well as sociodemographic variables, which are, in turn, the independent variables used in this assessment. For this purpose, this research explores the answers provided by accounting students to a different set of questions included in a questionnaire.

The sample for this research, subsequently detailed, was comprised of students in the second and third (last) year of the accounting degree at the ISCAL, which is a highly traditional school of accounting of the Polytechnic Institute of Lisbon, Portugal. Its history can

be found in the Trade Class (“Aula do Comércio”, in the Portuguese language), launched by the Marquis of Pombal more than 260 years ago [51].

Previously to the survey distribution, students were invited to attend an online conference within the last quarter of the spring semester of the academic year 2021/2022 (more specifically, on 30 April 2022). At this conference, the topic of NFI was lectured by two specialists: a professor at ISCAL with a recent Ph.D. in this area of investigation and an Audit and Assurance partner of a Big-4 audit firm. The intention was to provide two presentations of about thirty minutes by each invited speaker covering this topic with different approaches: a more academic (by the Ph.D. professor) and a more professional one (by the partner auditor).

The conference was entitled “Reporting: An integrated thinking”, and the presentations by the invited speakers were specifically entitled as follows: “A look at the past and future of reporting” and “From voluntary to mandatory information: From Nice to Must-Have in Europe”, respectively. To sum up, the past, present, as well as perspectives of the accounting profession as regards NFI, including the latest developments on this subject within the EU, were discussed during the conference. The following link provides further details on the conference: <https://www.iscal.ipl.pt/eventos/seminario-reporting-integrated-thinking>, accessed on 10 February 2023.

The conference was organised by a group of professors from ISCAL, including the accounting course director, and moderated by a professor at ISCAL. During the conference session, students were encouraged to pose questions to the invited speakers. Based on the Zoom report, 188 students attended the session. Subsequently, an online survey was created on Google Docs, and the link was distributed to the students via Moodle, and 103 valid answers were obtained, which represents 55% of the students who attended the conference.

The questionnaire comprises three sets of questions used for the data collection to conduct this empirical research. The independent variables, which include the students’ sociodemographic characteristics as well as the elements behind the concept of global citizens, were collected from the first two parts. The third one, which concerns the students’ intrinsic motivation, was proposed to collect the dependent variable.

The first set of questions, related to the sociodemographic variables, intended to identify different patterns amongst those students concerning the following four characteristics:

- By gender: male, female, and other options/I would rather not answer.
- By age: younger than (or equal to) 21 years old versus older than 21 years old.
- By students’ occupation: only student versus student and worker simultaneously.
- By stage in the course: second-year student versus third-year student.

Table 1 provides the figures for the sample used, in number and percentage, with a breakdown by those characteristics.

Table 1. Sample characteristics in number and percentages by total and subgroups.

	In Number	In Percentage
Total	103	100
By gender		
Male	31	30
Female	69	67
Other options/I would rather not answer *	3	3
By age		
Younger than (or equal to) 21 years old	64	62
Older than 21 years old	39	38

Table 1. *Cont.*

	In Number	In Percentage
By students' occupation		
Only students	65	63
Student and worker	38	37
By stage in the course		
Second-year student	39	38
Third-year student	64	62

* Considering the low representativeness, this will not be used as an assessment category.

Table 1 shows that approximately two-thirds of the answers gathered from the students included in this research are female, younger, only students, and, finally, are in the last year of the accounting course.

Following, a second set of questions comprises the elements, hereinafter classified as items, behind the definition of global citizens. A seven-point Likert scale, from strongly disagree to strongly agree, was used to measure global citizenship, based on a survey instrument that has been widely used in the literature, either partially (to measure some particular aspects of this concept) or integrally (e.g., [9–11,46,52]). This survey is comprised of 22 items, which provide distinct aspects (or dimensions) of this concept.

The literature shows that the global citizenship concept and its dimensions are diverse and not consensual, which is also explained by their distinct use in different fields of social sciences [11]. Using the Reysen and Katzarska-Miller's [11] model as reference, the survey proposes a diverse (nine) set of characteristics within the person's self-identification with the global citizenship concept, including (i) the normative environment, (ii) global awareness, (iii) global citizenship identification, (iv) intergroup empathy, (v) valuing diversity, (vi) social justice; (vii) environmental sustainability, (viii) intergroup helping and, finally, (ix) responsibility to act. The first two dimensions include four items and the remaining two items each. The first two dimensions corroborate and strengthen the global citizenship identification proposed in the third one.

Table 2 identifies the global citizens' items (I) proposed.

Table 2. Items that underlie the concept of global citizens.

I	Definition
I1	Most people who are important to me consider that it is desirable to be a global citizen.
I2	If I call myself a global citizen, most people who are important to me will approve.
I3	My friends think that it is desirable to be a global citizen.
I4	My family thinks that it is desirable to be a global citizen.
I5	I am aware that my actions in my local environment may affect people in other countries.
I6	I believe that I relate to people from other countries, and my actions can affect them.
I7	I try to stay informed of current situations that impact the world.
I8	I understand how the various cultures of the world interact socially.
I9	I would describe myself as a global citizen.
I10	I can see myself as a global citizen for sure.
I11	I can empathize with people from other countries.
I12	It is easy to put myself in someone else's perspective, regardless of their country of origin.
I13	I would like to join groups that promote the knowledge of people from other countries.
I14	I am interested in learning about the different cultures around this world.

Table 2. *Cont.*

I	Definition
I15	Countries that are doing well should help people in less- developed countries
I16	Basic services such as healthcare, clean water, food, and legal assistance should be available to everyone, regardless of the country in which they live.
I17	People have a responsibility to conserve natural resources to promote a sustainable environment.
I18	Natural resources should be used primarily to provide basic needs rather than material wealth.
I19	If given the opportunity, I would help others who are in need, regardless of their nationality.
I20	If I could, I would dedicate my life to helping others, regardless of their country of origin.
I21	It is my responsibility to be actively involved in global issues.
I22	It is my responsibility to understand and respect the world’s cultural differences to the best of my ability.

Finally, the third set of questions uses the same Likert scale to gather the dependent variable related to students’ intrinsic motivation based on previous literature (e.g., [52]), including research on this topic already performed in Portugal [53]. Notwithstanding, in the context of this research, those variables were adapted to obtain a proxy for the students’ interests in learning NFI matters, such as sustainability aspects. Therefore, three questions (Q) related to students’ intrinsic motivation were proposed, as Table 3 shows.

Table 3. Questions proposed to assess the students’ intrinsic motivation.

Q	Definition
Q1	I feel enormous satisfaction in listening to discussions and debates on topics related to the reporting of non-financial information.
Q2	I am delighted to find out more about topics related to the reporting of non-financial information.
Q3	I enjoy attending classes on topics related to reporting non-financial information.

This research will first provide the results through frequency analysis. Then, an exploratory factor analysis by principal component analysis (PCA) with varimax rotation was carried out to identify the items that integrate the elements behind the concept of global citizens as a set of different latent variables (factors) later transformed into several continuous variables. The objective behind this analysis is twofold, namely, reducing the items under assessment and aggregating them into factors. The students’ intrinsic motivation was also verified as a possible use as a single continuous variable through the reliability of Cronbach’s Alpha (α).

To validate the use of PCA, the Bartlett, and Kaiser–Meyer–Olkin (KMO) tests will be used, assessing if the correlation between the items under study is adequate. Thus, the overall adequacy of factor extraction via PCA is verified through their factor loading, with values lower than 0.5 being disregarded. After verifying the communalities of the items and estimates of the PCA model, the values and percentages of the explained variance will be obtained, which allows for identifying the factors that explain the total data variability. Afterwards, the communality ranges of those items within the factors selected will be assessed to identify the latent variables associated with each of those factors. Finally, Cronbach’s Alpha (α) will be also checked to ascertain the internal consistency within each factor.

The research model is summarised in Figure 1 as follows.

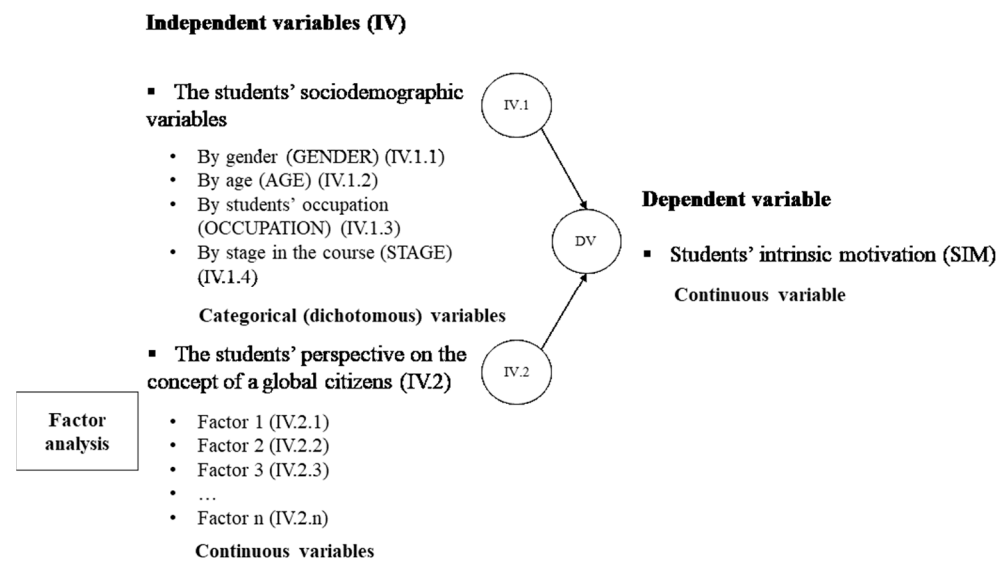


Figure 1. Research model.

Then, further statistical methods will be used to relate the set of independent variables and the dependent one, with the statistical significance defined as p -value < 0.05 for this study. More specifically, the nonparametric Mann–Whitney U test will be used to identify statistically significant differences between the subgroups within the students' sociodemographic variables and their intrinsic motivation. Furthermore, the relationship between the students' perspective on the concept of a global citizen and their intrinsic motivation will also be assessed through a correlation analysis.

The Enter method was used to include predictors to allow the analysis of the statistical significance of their coefficients in the model. Before presenting the regression results, its essential assumptions will be validated. The process began by assessing the correlation between the independent variables, to identify potential issues of collinearity. Correlations greater than 0.5 in absolute value may be an indication of collinearity issues. The Durbin–Watson test will also be performed to validate the absence of independent errors, with no evidence of autocorrelation whenever the values are closer to 2.0. The overall significance will be tested, in turn, by the F test (analysis of variance (ANOVA)), which allows the assessment of whether the model can be applied to perform statistical inference. Finally, the diagnosis of multicollinearity will be assessed through the variance inflation factor (VIF). The figures for VIF must be within the intervals to rule out the hypothesis of multicollinearity between the independent variables, which can be seen whenever the figures are below 2.5 in a conservative approach. Then, those findings will indicate whether the model can be performed and assessed for the intended purposes of this study.

The next section presents the analysis of the results obtained, based on the methodological approach proposed for this research.

4. Results

The proposed purpose of this section is to present the analysis of data gathered for this research. For this purpose, it is divided into two subsections. The first presents a descriptive analysis to provide a previous overview of the students' answers by each variable proposed other than the students' sociodemographic characteristics already presented in the previous section. The second one provides the statistics related to the exploratory factor analysis and the linear regression model performed to a multivariate assessment of the data gathered, which were also complemented by the Mann–Whitney bivariate test of differences as regards the subgroups within each of the students' sociodemographic characteristics.

4.1. Descriptive Analysis

Table 4 initiates this analysis by providing the frequencies regarding the 22 items that comprise the concept of global citizens from the students' perspective, based on the seven-point Likert scale available from strongly disagree to strongly agree. The first three and final three points were aggregated (columns in light grey) to ease the readiness regarding the disagreement and agreement levels, respectively, as the neutral level is represented by point 4 of the Likert scale (column in dark grey).

Table 4. Items that comprise the concept of global citizens, in percentage.

I	Likert Scale (Values in Percentage)								
	1	2	3	1 + 2 + 3	4	5	6	7	5 + 6 + 7
I1	1	1	6	8	31	23	22	16	61
I2	1	3	1	5	22	23	24	25	72
I3	1	0	4	5	32	23	21	18	62
I4	0	3	7	10	33	17	21	19	57
I5	3	1	3	7	10	23	24	36	83
I6	1	3	6	10	15	26	22	27	75
I7	1	0	0	1	11	26	26	36	88
I8	2	0	3	5	17	30	29	19	78
I9	0	1	6	7	26	24	24	18	66
I10	0	2	5	7	26	28	19	19	66
I11	0	0	2	2	10	17	33	39	89
I12	0	2	7	9	16	31	30	15	76
I13	3	3	6	12	29	30	13	17	60
I14	2	1	1	4	7	28	28	33	89
I15	0	0	3	3	8	17	26	46	89
I16	0	0	0	0	3	4	8	85	97
I17	0	0	1	1	6	12	22	59	93
I18	0	0	2	2	9	10	25	54	89
I19	0	1	3	4	5	16	25	50	91
I20	5	2	10	17	17	29	22	16	67
I21	1	0	3	4	19	26	27	23	76
I22	0	1	1	2	8	10	24	56	90

From Table 4, the agreement levels (points 5 to 7 of the Likert scale) are higher than the opposite ones (points 1 to 3 of the Likert scale) in all cases. Only two items recorded more than 10% (but lower than 20%) of the students' answers in the disagreement levels of the scale proposed, namely, items I13 (12%) and I20 (20%). Those are related, respectively, to their wish to join groups that promote the knowledge of people from other countries and their self-ability to dedicate their lives to helping people from different countries.

The students' self-identification as global citizens is particularly evident in nine out of twenty cases, for which the percentages are closer to, or higher than, 90%. Those cases include a different set of students' concerns, thoughts, and self-identification, as follows: the understanding of the need for providing people from different countries with basic services (I16) and most favored countries to provide better support to unfavored ones (I15), their desire to help others who are in need (I19), and their ability to have empathy for others (I11); the understanding about people's responsibility to promote a sustainable environment (I17) and the best use of natural resources (I18); and their thoughtful and respectful perspectives on the world's cultural differences (I22), their need to stay informed about situations with the world's impact (I7) as well as their interest to learn more about them (I14). Interestingly, item I6 also includes 85% of the students' answers in the highest level of the Likert scale proposed, which separates it from the second item. Four other items in this group also overpass 50% of the answers in that level (I17, I18, I19, and I22).

Then, having two-thirds, or more, of the students' agreement levels, but below that threshold, nine other items can be found, which include the following issues: their awareness that local actions may affect people in other countries (I5); their knowledge of the

social interaction amongst various cultures (I8) and their belief that everyone is somehow connected (I6); their ability to put themselves in someone else's perspective (I12); their responsibility to be actively involved in global issues (I21); their self-identification, and the other people's approval of, as a global citizen (I2, I9, and I10); and their self-ability to dedicate their lives to helping people from different countries (I20). In this group, item I5 achieved more than one-third of the students' answers in the highest level of the Likert scale proposed, followed by I6 and I2, with about 25% of the answers in that level.

Finally, with about 60% of the students' answers in the agreement level of the Likert scale, Table 4 shows that the last four items, comprising issues regarding the other's perspective on their self-identification as a global citizen (I3, I1, and I4) as well as their wish to join groups that promote the knowledge of people from other countries (I13). Those items had also closer levels of the students' answers in the agreement levels of the Likert scale proposed (points 5 to 7), and only 10% or lower in its disagreement levels (points 1 to 3), as already mentioned. Therefore, this group is mostly distinct from the previous ones by the highest levels of the answers in the neutral point of this scale (about one-third of the students' answers in point 4).

Table 5, in turn, provides similar data and an analysis perspective regarding the three questions proposed for the assessment of students' intrinsic motivation to learn matters related to NFI subjects, based on the seven-point Likert scale available from strongly disagree to strongly agree.

Table 5. Questions related to students' intrinsic motivation, in percentage.

Q	Likert Scale (Values in Percentage)								
	1	2	3	1 + 2 + 3	4	5	6	7	5 + 6 + 7
Q1	3	3	7	13	23	33	20	11	64
Q2	2	3	9	14	19	28	28	11	67
Q3	4	1	12	17	28	23	22	9	55

Table 5 show a relatively similar pattern among the three questions proposed for this purpose, with percentages between 14 and 17% (55% and 67%) for the disagreement levels (agreement levels). Notwithstanding, a higher difference can be seen in percentage points, between the third question and the additional ones within the neutral (the third is higher) and the agreement levels (the third is lower) of the Likert scale.

The next subsection aims to present the multivariate models proposed.

4.2. Bivariate and Multivariate Analysis

Following the previous analysis, a PCA was performed to summarise and identify the latent variables (components) that can be used as several independent variables related to the overall concept of global citizens. Bartlett's sphericity test was statistically significant at 1%-level. A KMO of 0.875 was found, which is relatively high. Notwithstanding, a communality below 0.4 was identified for item I16, which is explained by its particularly high level of the students' agreement, which is likely not related to the further items. Also, the last five components included a single variable. Then, a new rotation was performed excluding that item and imposing the identification of four components. Communalities ranging between 0.42 and 0.74 were obtained at the end of this process.

Table 6 presents the different items included in the final four components and their respective loadings, having a total explained variance of 60% (19%, 19%, 13%, and 8% respectively). The maximum loadings above 0.4 by item are identified in light grey (in dark grey, those cases for which a lower loading was found when compared to the maximum, but still above that threshold). Four continuous variables using the regression method were then created for subsequent inclusion in the proposed regression model. It is worthwhile to stress that Cronbach's Alpha performed for the items above that threshold found values between a minimum of 63% for the fourth component and 88% for the first one, which demonstrates the items' internal consistency within those four components. Table 6 also

shows that some items have relatively high loads shared between two of the components selected. Considering the maximum values (thresholds), the four components include seven (eight), eight, four (seven), and only two (three) items, respectively.

Table 6. Rotated component matrix for the global citizens' items.

Items	Components			
	1: Global Citizenship View ($\alpha = 88\%$)	2: Self-Responsibility with Social and Environmental Matters ($\alpha = 86\%$)	3: Culture and Social Care ($\alpha = 80\%$)	4: Intergroup Empathy ($\alpha = 63\%$)
I1	0.830	0.098	0.164	0.108
I3	0.831	0.114	0.120	0.104
I4	0.713	0.331	0.276	−0.054
I5	0.430	0.353	0.420	0.043
I6	0.430	0.389	0.198	0.418
I9	0.649	0.281	0.060	0.355
I10	0.687	0.229	0.336	0.094
I7	0.028	0.621	0.373	0.221
I14	0.381	0.490	0.316	0.157
I15	0.086	0.653	0.083	0.301
I17	0.278	0.739	0.186	0.009
I18	0.258	0.718	−0.081	0.116
I19	−0.104	0.546	0.526	0.205
I21	0.330	0.533	0.419	−0.049
I22	0.285	0.717	0.190	−0.015
I2	0.401	0.119	0.527	0.149
I8	0.133	0.278	0.644	0.175
I13	0.172	0.018	0.781	0.064
I20	0.296	0.141	0.552	0.058
I11	0.168	0.291	0.010	0.727
I12	0.082	−0.014	0.265	0.779

The first component includes items related to either the self-identification as a global citizen or the people's judgment related to this (all items in grey, other than I9 and I10). Furthermore, it also includes the self-consciousness that local actions can affect people from other countries (I9 and I10). Therefore, it is comprised of the items related to the normative environment and global awareness (partially, except for I7 and I8) as well as both items related to global citizenship identification, which is relatively aligned with the Reysen and Katzarska-Miller's [11] findings. Then, this first component will be hereinafter mentioned by simplification as the "global citizenship view".

The second component, in turn, includes items related to either the self-responsibilities or others' people and countries' duties regarding global issues, including unfavoured people, respect for cultural differences, and environmental matters (I15, I17, I18, I19, I21, and I22). Furthermore, I7 and I14 are related to the students' concerns about the need to stay informed about the world's current situation and learn about different cultures around the world.

Following, the third component includes, besides sharing items with the previous two components, items more specifically related to the understanding of cultural relationships and the improvement of this knowledge by joining groups that promote learning as regards other cultures (I8 and I13). It also includes an item related to the need to help others, regardless of their origin countries (I20).

Based on the Reysen and Katzarska-Miller's [11] model, the items from the second and the third component relate to their dimension proposed other than the global citizenship view and intergroup empathy, which includes matters such as valuing diversity, social justice, environmental sustainability, the intergroup helping and responsibility to act.

Notwithstanding, the second includes the I7 not found within the first component, which is specifically related to the need for staying informed about what is currently

happening around the world, which may be explained by the particular characteristic of this research sample (accounting students). As a particular characteristic, it includes all elements from the dimensions related to environmental sustainability (I17 and I18) and responsibility to act (I21 and I22).

Furthermore, besides including the additional item of global awareness (I8), the third strengthens its relationship with the global citizenship view by sharing items from both the normative environment (I2) and global awareness (I5). As a particular characteristic, both items from intergroup helping can be seen in this component (I19 and I20).

Consequently, the second component will be hereinafter mentioned by simplification as “self-responsibility with social and environmental matters”. Therefore, this third component will be hereinafter mentioned by simplification as “culture and social care”. Both include the students’ concerns and their wish to learn more about those issues.

Finally, the fourth component includes two exclusive items related to the ability to create empathy for others, particularly with people from other countries or origins (I11 and I12), besides sharing the I6 with the first component, related to the consciousness that their actions can affect people from other countries. Hence, this last component will be hereinafter mentioned by simplification as “intergroup empathy” since it integrally corroborates Reysen and Katzarska-Miller’s [11] model.

To assess whether there are differences between the subgroups from the sociodemographic variables proposed concerning the four continuous variables which resulted from the PCA process, a Mann–Whitney test was performed. No statistically significant differences were found regardless of the sociodemographic variable under assessment, which may indicate a certain cohesion about the elements that underlie the concept of a global citizen from the students’ perspective.

Following, the three questions related to the students’ intrinsic motivation were also transformed into a continuous variable, as the Alfa reliability test revealed a value of about 90%.

Again, the Mann–Whitney test does not reveal statistically significant differences between the subgroups that comprise the sociodemographic variables as regards the students’ level of intrinsic motivation which results from that process.

A correlation analysis between the four variables related to the global citizen concept, extracted from the PCA, and the students’ intrinsic motivation revealed statistically significant levels in all cases, except for the four variables related to the component denominated as “intergroup empathy”.

Finally, using the students’ intrinsic motivation (SIM) as the dependent variable and the students’ demographic characteristics and the four components found from the PCA performed as the independent ones, the multivariate linear regression was performed considering the equation provided below:

$$SIM = \beta_0 + \beta_1 GENDER + \beta_2 AGE + \beta_3 OCCUPATION + \beta_4 STAGE + \beta_5 global\ citizenship\ view + \beta_6 self \\ -\text{responsibility with social and environmental matters} + \beta_7 culture\ and\ social\ care \\ + \beta_8 intergroup\ empathy + \varepsilon \quad (1)$$

Table 7 shows that no issues regarding collinearity between the independent variables were recorded. The same is applicable as regards the multicollinearity issues, as the VIF are within the intervals proposed to rule out this hypothesis. The Durbin–Watson test presents a value of 1.9 and the ANOVA test a result at a 1% significance level. Finally, the adjusted R² shows a corrected goodness-of-fit (model accuracy) measure for this linear model at 35%. Aligned with the previous findings, Table 7 shows that sociodemographic variables are not related to the students’ intrinsic motivation levels. Conversely, the elements behind the concept of the global citizen can explain that variable, with “intergroup empathy” as an exception in this context. Therefore, the hypothesis proposed for this research can be only partially supported.

Table 7 shows the multivariate linear regression results.

Table 7. Linear regression results.

	Non-Standard Coefficients		Standardized Coefficients	T	Sig.	Statistics of Collinearity	
	B	Standard Error	Beta			Tolerance	VIF
(Constant)	0.162	0.262		0.619	0.538		
Gender	−0.090	0.182	−0.042	−0.496	0.621	0.910	1.099
Age	−0.262	0.197	−0.128	−1.332	0.186	0.696	1.437
Occupation	−0.015	0.197	−0.007	−0.076	0.939	0.701	1.426
Stage	0.111	0.170	0.054	0.651	0.517	0.928	1.078
Global citizenship view	0.417	0.081	0.417	5.137	<0.001	0.971	1.030
Self-responsibility with social and environmental matters	0.265	0.080	0.265	3.289	0.001	0.986	1.015
Culture and social care	0.399	0.081	0.399	4.900	<0.001	0.962	1.039
Intergroup empathy	−0.070	0.082	−0.070	−0.862	0.391	0.958	1.044

The next section provides a discussion of the main results obtained through the data previously presented.

5. Discussion

The purpose of this section is to discuss the findings based on the literature review.

From the descriptive analysis, data globally shows a high level of students that are self-identified as global citizens within different matters and dimensions behind this definition, based on the lower levels of disagreement levels found in their answers. The higher levels of disagreement, despite being lower than 20% of their answers, are exclusively associated with only two issues that, in a certain sense, are related to their availability to join groups or to be dedicated to a social cause. Despite no shreds of evidence found in the literature on this topic, this can be probably explained by the thought of the need for being available to assume those tasks by students that are sometimes under pressure from academics and professionals' issues (in the case of students who are also workers). Therefore, different agreement levels among the items are mostly explained by students' answers in the neutral point of the scale proposed for some items.

The findings from this research are only partially consistent with those by Reysen and Katzarska-Miller [11] regarding the dimensions proposed for the global citizenship model. The differences can probably be explained by the specific characteristics of this research sample (accounting students) as well as the high level of sharing features which underlie the matters proposed within the survey instrument.

Notwithstanding, the students' self-perspective as global citizens over the different dimensions found is mostly aligned with the literature on this topic. For instance, in the study conducted by Sklarwitz [48], students mentioned that helping others was one of their future goals; Hartung [12] concluded that a particular kind of entrepreneurial global citizen is to be simultaneously responsible for themselves, for the right of other and for ensuring the country's future economic prosperity. Additionally, Woosnam et al. [46] demonstrate that global citizenship attitudes tend to explain intentions to participate in environmental volunteering, regardless of whether individuals have previous experience. This may be also explained by the increasing relevance of sustainability matters not only in the students' everyday lives but also in their accounting courses, mostly due to new reporting requirements. In this sense, research has also found that environmental education has a significant influence on students' global citizenship attitudes [2,21,45], such as their environmental awareness, their everyday lifestyle, their behavior as consumers,

their involvement in environmental protection activities, with a positive impact on the relationship between perception, attitude, and behavior. Notwithstanding, Mulder et al. [49] identified group autonomy as a motivator for learning sustainable development issues, but not individual autonomy.

Furthermore, the students' answers also show higher levels of intrinsic motivation to learn matters related to NFI subjects, despite lower than the levels found for their self-identification as global citizens. As the findings by Cogut et al. [50] evidenced, students' awareness of sustainability issues and their self-identification with the concept of a global citizen can make them more likely to adopt behaviors that cultivate sustainability, increasing their intrinsic motivation to learn NFI-related topics. Additionally, Oberrauch et al. [24] state that the main reasons that lead students to enroll in courses related to sustainability are intrinsic factors. Again, lower levels were found for the item, which is somehow related to their time availability, by the expression "attending classes" included in this last question, which seems to create a different level of commitment when compared to the others. Furthermore, the enjoyment underlying the question could be dependent on different factors, such as the pedagogical and assessment methods, and the quality of infrastructures and resources, among other aspects.

The Mann–Whitney test performed also showed no differences between the students' answers from their distinctive characteristics by gender, age, occupation, and stage in the course, which is aligned with the regression models performed. Those finding suggests relatively harmonised thoughts, from the students' perspective, regarding the issues behind the concept and their self-identification as global citizens, as well as the relevance of NFI matters itself since intrinsic motivation was the core concept assessed in this latter context. It is worthwhile to mention some divergent evidence in the literature. For instance, Oberrauch et al. [24] concluded that female students score higher in terms of strong sustainability and everyday actions than male students, while the sustainability-related attributes of male students decrease with increasing age, conversely to female students.

Finally, the regression model proposed found that the different dimensions behind the concept of global citizen are likely explanatory of students' intrinsic motivation to learn NFI matters. The exception is made, in this context, to the issues related to the students' intergroup empathy dimension, the fourth component of the PCA with lower levels of explained variance. This dimension includes the students' ability to create empathy with others, particularly with people from other countries or origins, besides the consciousness that their actions can affect people from other countries. Sklarwitz [48] concluded that it is unusual for some students to decide to help people from another country when there are people in their own country who need assistance, which might explain this finding. Generally, most of the students who participated in this research showed characteristics of global competence and social responsibility, but only a few showed global civic involvements.

The next section presents the main conclusions from this research.

6. Conclusions

This study highlights the attitude of a sample of Portuguese higher education accounting students toward intrinsic motivation to learn NFI-related topics, and the influence of their self-perspective as global citizens in this context, which is particularly relevant to HEIs, professors, students, and organizations related to accountancy education.

The findings from this research also provide evidence of future implications for HEIs' policy and practice related to their need to provide curricula with an increasingly international perspective and, simultaneously, better linked with the global citizenship concept. Furthermore, by illustrating the students' motivation towards NFI-related topics, future research could investigate the students' perspective on global citizenship education, which is still a current gap in this field based on the literature review.

Notwithstanding, the previous conclusions were based on data exclusively obtained from the accounting students of a single Portuguese HEI, Lisbon-based, which represents a limitation of this study, as the sample is limited and also not representative of the

accounting students in Portugal. The use of a larger sample may reinforce the findings of the present study. Additionally, a larger sample would allow for exploring further analysis with different variables, including different social, economic, and cultural ones, that may be useful to provide a more in-depth analysis. Accountants (professionals) could be also considered as an avenue for future research, as well as the comparison between the students' and professionals' perspectives from different areas regarding the elements that underly NFI matters. An international comparison among accounting students might be seen as relevant, as it would also allow for identifying the possible differences from contextual or cultural reasons behind their perspectives on this topic.

Furthermore, it could be useful that future research also focuses on students from secondary and/or higher education who are self-identified as global citizens to identify if this characteristic may be related to their future perspectives, for instance, in terms of professional paths, career goals or work–life balance. In the specific area of accounting, this can be used as an explanatory factor of the students' motivation to likely choose the accountant profession, their view on its benefits, as well as their willingness to make a career in this field.

Finally, as the literature has been diverse as regards the global citizenship definition and the elements behind this concept, further investigation seems to be necessary to improve the comparisons of the findings to achieve a higher level of consistency on what should be expected from its use and whether this is dependent, for instance, on research sample characteristics.

The contribution of this paper to literature is twofold. Firstly, it contributes to the accounting field related to the NFI, since it demonstrates how intrinsic motivation is related to attitudes toward global citizenship. Secondly, it shows that new approaches to integrating NFI aspects into the curricula of HEIs are feasible and desirable, which challenges the academy to continue developing new paths to integrating theory and practice to promote students' transformative potential in creating a sustainable future.

Therefore, by linking intrinsic motivational factors to the interest of students in learning NFI subjects, this research can promote new activities and/or curricular changes in HEIs. This can be useful for students to develop their self-identity as global citizens as well as to obtain the sustainability knowledge and skills they need to be successful in their careers since, as future professionals (accountants), they will be able to contribute to the non-financial reporting challenges entities face, as these issues continue to grow in importance.

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