FACTORS INFLUENCING THE ATTITUDES OF INDIVIDUALS IN FAVOR OF SUSTAINABLE DEVELOPMENT: A STUDY WITH STUDENTS IN THE FIELD OF MANAGEMENT

FATORES QUE INFLUENCIAM AS ATITUDES DOS INDIVÍDUOS EM PROL DO DESENVOLVIMENTO SUSTENTÁVEL: UM ESTUDO COM DISCENTES DA ÁREA DE NEGÓCIOS

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ABSTRACT

Purpose: This study aimed to identify factors influencing the attitudes of individuals towards sustainable development, in its different dimensions.

Design/methodology/approach: For the scope of the study, were admitted students from presential courses in Administration and Accounting Sciences from two Higher Education Institutions (HEI) located in the State of Bahia. Questionnaire was used as the data collection instrument. For the test of hypothesis, a multiple linear regression analysis was made, with a data base of 254 questionnaires.

Findings: There was evidence that the knowledge about sustainability influences, in a positive and significant way, the student attitude in Dimensions Environmental, Economic, Social and Education. Results indicate that students with left-wing political conceptions have a tendency of showing more positive attitudes regarding sustainable development in Social and Education Dimensions. Finally, evidence was obtained about negative and significant relation between family income with Environmental and Economic Dimensions.

Research Implications: Conceptually, in this study a fourth dimension of attitudes regarding sustainability was incorporated to the traditional tripod of sustainability, thus transforming it in a tetrahedron.

Practical Implications: The meaning and importance of those evidences are discussed and can contribute to generate policies on education for sustainability.

Originality/value: The study contributes to enable a better understanding about the formative process, the conscience, the attitude and the behaviors around sustainability questions in the field of management, which are relevant for reaching one of the Sustainable Development Goals proposed by the United Nations.

Keywords: Attitudes regarding sustainability; Sustainable Development; dimensions of sustainable development; Education in Business; Education for Sustainability.

RESUMO

Objetivo: Este estudo teve o propósito de identificar fatores que influenciam as atitudes de indivíduos em prol do desenvolvimento sustentável, em suas diferentes dimensões.

Design/Metodologia/Abordagem: Para o escopo do estudo, admitiram-se discentes de cursos presenciais em Administração e Ciências Contábeis de duas Instituições de Ensino Superior localizadas no Estado da Bahia. Empregou-se o questionário como instrumento de coleta de dados. Para o teste de hipóteses, realizou-se análise de regressão linear múltipla com uma base de dados de 254 questionários.

Resultados: Houve evidências de que o conhecimento sobre sustentabilidade influência de forma positiva e significante a atitude discente nas Dimensões Ambientais, Econômicas, Sociais e de Educação. Os resultados apontaram que discentes com concepções políticas de esquerda tendem a apresentar atitudes mais positivas em prol do desenvolvimento sustentável, nas Dimensões Ambientais e Sociais, e que o gênero feminino apresenta atitudes mais positivas nas Dimensões Sociais e de Educação. E, por fim, obtiveram-se indícios de relação negativa e significante da renda familiar com as Dimensões Ambientais e Econômicas.

Implicações da Pesquisa: Conceitualmente, neste estudo, uma quarta dimensão de atitudes em relação à sustentabilidade foi incorporada ao tradicional tripé da sustentabilidade, transformando-o em um tetraedro.

Implicações Práticas: O significado e a importância dessas evidências são discutidos e podem contribuir para a geração de políticas de educação para a sustentabilidade.

Originalidade/valor: O estudo contribui para possibilitar uma melhor compreensão sobre o processo formativo, a consciência, a atitude e os comportamentos em torno das questões de sustentabilidade no campo da gestão, que são relevantes para alcançar um dos Objetivos de Desenvolvimento Sustentável propostos pelas Nações Unidas.

Palavras-chave: Atitudes quanto à sustentabilidade; Desenvolvimento Sustentável; dimensões do desenvolvimento sustentável; educação em negócios; Educação para a sustentabilidade.

1 INTRODUCTION

The scenarios outlined due to degradation of soils, climate change, extinctions of species of fauna and flora, increase of "natural" catastrophes, endemic diseases and several types of cancer, besides socio-environmental implications, cause a significant impact in the economy and development of nations. The several hegemonic solutions proposed until this moment were not enough to face the challenge of matching economic growth with socio-environmental questions (löwy, 2014).

In this context, during the United Stations Summit about sustainable development, promoted in September 2015, more than 150 world leaders assumed the formal commitment of a new agenda of sustainable development, composed by 17 Sustainable Development Goals (SDGs), which should be implemented by all world countries, until the year of 2030. Based on the *triple bottom line*, the 17 SDGs are interdependent and involve themes such as: poorness, hungry, health and well-being, education, gender, water and sanitation, energy, economic growth and labor, innovation, sustainable production and consumption, waters, seas and oceans, climate change, ecosystems, mobility and infrastructure, peace and justice among nations (United Nations Organization for Education, Science and Culture [UNESCO], 2017).

In face of this scenario, business organizations are already undertaking efforts in order to make more transparent the actions taken for complying with the SDGs, by means of the disclosure of information beyond the ones of economic-financial nature, as shown by the study made by KPMG (2018). It evaluated the preparation and disclosure of information about the progress of the Sustainable Development Goals by companies. The research found that eight out of the ten largest companies in the world, consider SDG as relevant for continuing with their business. From those eight, four are already acknowledging the global objectives in their corporate reports.

Under this perspective, it urges to point out that for incorporating the SDG in the business environment it is necessary that managers are dully trained and, with Business Schools being an

important locus for their formation, it is expected that the pressure on them to incorporate the promotion of sustainable development in their activities of teaching, research, extension and university management will also intensify (Jabbour, 2014). In this sense, it is brought to the fore that the teaching of social-environmental questions supposes a critical view, questioning everyone involved and a desire by knowledge and by positive change in the medium. Thus, under the auspices of the transformative learning, seeking to promote transformations in the reference frameworks of individuals, in a conscious way, by means of the critical reflection about assumptions built uncritically, contributing to transform society so that people can be creative producers of themselves as well as of the society and its political and economic policies. (Sharma & Hart, 2014; Closs & Antonello, 2014).

Producers studying the insertion of education for sustainability in the business area are undertaking efforts to identify, among other aspects, the courses that have disciplines about sustainability in their curriculum, as well as the condition offers of those. They also had contributions about the scientific production in events and in national and international periodicals and are mapping the perception and the knowledge level of coordinators, teachers, students and professionals about the theme. (Calixto, 2006; Carvalho, 2011; Jabbour, 2014; Luca et al., 2014; Franco et al., 2015; Lima & Vieira, 2018; Lessa, Spier & Nascimento, 2018).

However, there is still a lack of studies discussing, in a systematic way, factors influencing the attitudes of students in the field of management for benefiting the sustainable development. Identifying those factors is a complex task and involves a process of choices that has a tendency of behaving in a dynamic way along time. Individual differences, socio-cultural influences and psychological processes are some of the factors that may have a significant impact in face of the questions of sustainability (Young et al. 2010; Braga Junior, Silva & Moretti, 2011; Gorni, Gomes & Dreher, 2012; Wiernik, Ones & Dilchert, 2013).

It must be emphasized that the promotion of sustainable development was always based in three dimensions (*triple bottom line*): the Environmental Dimension, the Economic Dimension and the Social Dimension. However, for Unesco (2017) and Biasutti and Frate (2017), Education is an important Dimension, transversal to the traditional tripod of sustainability. Because of that, for the scope of this investigation education as a fourth dimension of attitudes regarding sustainability was also incorporated to the traditional tripod of sustainability, thus transforming it in a tetrahedron.

It is in this context that this study is inserted, aiming to identify demographical, economical, educational, and knowledge-related and course-related factors influencing the attitudes of students in the field of management regarding the tetrahedron of sustainable development.

With the findings it is expected to obtain empirical evidence that may contribute for Higher Education Institutions, class entities and regulatory organs to discuss, in a systematized way, the need of fulfilling Goal 4.7 of the Sustainable Development of Education, which challenges institutions and governments to promote an education for the global citizenship, inclusive, respecting the human rights, the culture of peace, the cultural diversity and gender equality. Thus, an unfolding of this contribution points to the need of understanding and debating the formative process, the conscience, the attitudes and behaviors of potentially organizational managers, so that they may be more trained, technically and humanly, to deal with problems related with sustainability and its possible solutions to beyond the corporate environment.

2 CONSTRUCTION OF HYPOTHESIS

The inclusion of education for sustainability in Business Schools, besides contributing to aggregate value to the academic training, has the goal of forming more capacitated professionals to deal with programs related with sustainability. In this context, it is important to point out that the

theme started to gain visibility in Business Schools only during the two last decades, because until the middle of the 70's, the predominant conception was that the only goal of business organizations consisted in maximizing the profit generation for shareholders/owners. This way, allocating resources for socio-environmental questions would represent only increased costs. (Calixto, 2006; Silva et al., 2013; Jabbour, 2014; Barbieri, 2017).

For Figueiró and Raufflet (2015) the Higher Education Institutions (HEI) have a fundamental role for promoting Sustainable Development, by means of their pedagogic discourse and by adopting more sustainable practices in the educational management. Under this perspective, for Barbieri and Silva (2011), Business Schools have been challenged to create professionals with a greater *background* of knowledge that will allow a better understanding regarding the environment in its totality, which start to have sensibility and conscience about environmental problems, developing new abilities and attitudes aiming to contribute for their resolutions and that are more prepared to evaluate the measures and programs of environmental education due to ecologic, political social, aesthetic and educational factors. For that, according to Godoy, Brunstein and Fischer (2013, p.14) it is necessary to develop a "process of critical investigation that encourages people to explore the complexity and the implications of this approach in face of the economic, political, social, cultural, technological and environmental forces that nourish it or that prevent it".

In this sense, Gomes et al. (2012) also indicate that among the challenges is the lack of teachers trained to teach in a holistic way, integrated with the theme. Therefore, graduates from courses in the business area may not be properly trained to deal with programs regarding sustainability in the corporate environment and, in consequence, they are not ready to propose possible solutions for building a better world. Besides the lack of teacher training, Godoy et al (2013) report that it is important to call attention to the fact that the education for sustainability in business schools contemplates challenges both in the macro-structural, collective, individual scope, which will impact a way of conceiving the pedagogical project, the curriculum, the teacher training, as well as what is, in fact, taught inside classrooms.

In this line, Biasutti and Frate (2017) propose that the meaning of sustainability and sustainable development is evolving along time with the terms being commonly inter-related to describe a broad approach which incorporates three dimensions (*triple bottom line*): the Environmental Dimension, the Economic Dimension and the Social Dimension. However, Lopes and Tenório (2011, p. 90) argue that, in the society of knowledge, education "incorporates itself almost naturally with the concept of sustainability. [...] it is necessary to face the new challenges that constantly surge in the social dynamics; this role is the responsibility of education". Under this perspective, for Unesco (2017, p.1): "Education is a priority because it is a basic human right and establishes the foundation for building peace and promoting the sustainable environment".

So, Biasutti and Frate (2017) conclude that Education is an important Dimension, transversal to the traditional tripod of sustainability, because it contributes for the development of the environmental and ethical conscience, including values and attitudes consistent with sustainable development. For the scope of this investigation was considered the model used by Biasutti and Frate (2017) to measure the attitudes in favor of the sustainable development. Therefore, education as a fourth dimension of attitudes regarding sustainability was also incorporated to the traditional tripod of sustainability (environmental, economic and social), thus transforming it in a tetrahedron.

It is thus expected that Education, while dimension of sustainability, is able to foster aptitudes and behaviors developed during the formation process of the students. It is in this sense that Jacomossi, Morano and Barichello (2014, p.5) state that:

> The future attitudes of students from schools linked with business management, when those assume functions in organizations demanding the capacity of decision taking, will be ruled by the content and type of teaching that those had along their lives and reinforced, mainly, by the type of undergraduate studies that considers, or not, the formation of environmental values.

Given this scenario, understanding the factors that impact the attitudes of students in the field of management in favor of Sustainable Development becomes relevant, because they will potentially be the future Decision makers in the corporate environment and, therefore, they may contribute to minimize the social-environmental impacts of business activities in the context where they are developed. Even though Paço and Lavrador (2017) found no relation between environmental knowledge and attitudes, studies made by Jacomossi et al (2014), Heeren et al. (2016) and Faria et al. (2018) demonstrate that there is a possible relation between knowledge on sustainability and attitudes towards Sustainable Development. Chandler (2020) found evidence that enrolling students into environmental education programs increased the students' knowledge and had a significant and positive impact on their attitudes towards environmental issues. In this line, empirical evidences suggest that the knowledge about sustainability may interfere, inclusive, on the consumption decisions of individuals. This way, it is expected that the greater the knowledge about sustainability of the individual is, the greater tends to be its engagement. Starting from this assumption, the first research hypothesis is proposed: **H1: The level of knowledge about sustainability positively influences the attitudes of students towards the promotion of sustainable development.**

The role of education in the formation of individuals is extremely relevant for promoting the Sustainable Development. Silva et al. (2013, p.156) indicate that education, while a fundamental element in the search by sustainability, contributes for "searching for more adequate responses and inquires, by the awareness and behavior change, by the comprehension and dissemination of new practices, by the incentive and respect to life, among many other needs". This awareness has a tendency of influencing the aptitudes and behaviors of people making them socially and environmentally responsible. In this sense, Faria et al. (2018) discuss that the inclusion of education for sustainability is a difficult and complex task and that more disciplines stimulating the critical vision of students about sustainability should be offered. Under this perspective, the second hypothesis of investigation is proposed: **H2: Attending specific disciplines positively influences the attitudes of students towards sustainable attitudes**.

Under another perspective, Bacelar and Castro (2015) argue that the political party identity contributes to mark positions objectified in the political field and also in collective identities. In this line, Neumayer (2004), when analyzing the relation between the ideological orientation of individuals and their beliefs, attitudes and behaviors toward sustainability, found that the search by equality, the concerns about distributive nature and the skepticism of market mechanisms are typically considered as defining factors of the left wing political orientation. Additionally, empiric evidences suggest that parties and individuals of the left are also more pro-environmental than their right wing peers.

Similarly, Chang et al. (2018) investigated the relation between governmental ideology and greenhouse gas emissions in 65 countries during the period from 1981 until 2012. They found that the effects of the governmental ideology over carbon dioxide emissions are significantly distinguished between developed and developing countries. Additionally, evidences suggest that left wing parties are associated with lower carbon dioxide emissions in countries with low levels of pollution. Starting from this assumption, the third hypothesis of investigation is proposed: **H3: Students with more left wing political conceptions have a tendency of having more positive attitudes in favor of sustainable development**.

In a broader scope, Berger and Luckmann (1985) indicate that in order to keep social order, aiming to give stability to reality, Institutions arise. Those may be defined as social relations that remain crystallized in time and that are always imposing rules, sometimes charismatic, others rational-legal. Among institutions, religions also contribute for the process of institutionalization of practices through the usual, typified action shared by the actors, which constitutes the subject and conditions the social behavior. In this sense, the social structures impose restrictions to the behavior of individuals, mainly by means of moral limits. Hartmann (2002, p. 11) also exposes that although much more than a concatenated body of doctrines, religiosity "permeates the daily living of people and human groups, interpenetrates relations and cultures, builds, destroys and reconstructs myths and gods, signalizes and impregnates the more simple gesture and actions of the daily life of people". Because of that, the next hypothesis was tested: **H4: the absence of religion negatively influences the attitudes of students in favor of the sustainable development**.

Under another perspective, Kollmuss and Agyeman (2002) and Mccright and Sundström (2013) defend that demographic factors, such as gender, have influence in the attitudes of individuals towards sustainability. In this sense, Gorni et al. (2012, p. 4) propose that it must be considered that each gender has: "needs and interests, different aspirations and that, because of this, contribute differently for the conservation, handling and sustainable use of the resources of bio-diversity". Paço and Lavrador (2017) and Chandler (2020) found evidence that females have more positive attitudes towards environmental behavior. The empiric evidences obtained by the aforementioned researchers indicate that female people are more likely to have a proactive posture regarding sustainability questions. Under this perspective, the fifth investigation hypothesis is proposed: **H5: Students of feminine gender have a tendency of having more positive attitudes in favor of the sustainable development.**

Beyond gender, Martins and Veiga (2016) claim that results are not conclusive regarding the relation between age and attitudes for sustainability. The authors stress the importance of the influence of different social contexts about the attitudes of adult people. Among other aspects, evidence obtained by Wiernik, Ones and Dilchert (2013) suggests that older people have a tendency of being more involved with nature, trying to avoid environmental damages, wishing to conserve raw materials and natural resources. From this assumption, the sixth research hypothesis was elaborated: **H6: Age positively influences the attitudes of students in favor of the sustainable development.**

The investigation guided by Braga Junior et al (2011) also suggests that people with a greater income range have a tendency of being less concerned with the promotion of Sustainable Development, because the greater the income is, the greater the propensity to consume non-essential goods and the smaller the predisposition to promote the collective well-being. In this line, the seventh research hypothesis is proposed: **H7: The level of income negatively influences the attitudes of students in favor of the sustainable development.**

Additionally, as highlighted by Jacomossi et al (2014) and Sammalisto et al. (2016), if the education for sustainability is incorporated along the formation route of students, it is expected that graduating students or in more advanced stages in the course have a differentiated posture in favor of sustainability. Because of that, beyond the HEI of origin, the next hypothesis was also tested: **H8: The semester of the course positively influences the attitudes of students in favor of sustainable development.**

Finally, authors such as Perlin et al. (2016), when investigating, by means of questionnaires, the ecologic behavior of students from Business Administration and Accounting Sciences courses from a Federal University found out that, generally, students from Administration had greater environmental awareness than students from Accounting Sciences in questions such as, for instance the correct garbage separation, caring to avoid wasting water and to sustain the preservation of public places. For that, additionally, the next hypothesis was tested: **H9: Students from the course of Administration have a tendency of presenting more positive attitudes towards sustainable development.**

3 METHODOLOGICAL PROCEDURES

For the scope of the study, bachelor courses in Business Administration and Accounting Sciences were admitted. The empirical field investigated was constituted by two HEI offering courses in classroom mode in the State of Bahia, one of private nature and the other one public. The HEIs were chose by accessibility. The instrument of data collection used was a questionnaire composed by two blocks of questions. Block I was structured in Likert scale of 5 points, aiming to measure the attitude of students regarding sustainable development, as well as their knowledge about sustainability.

For that were used scales developed and validated by Biasutti and Frate (2017) and Sammalisto et al. (2016), as exposed in Table 1, built according to the template proposed by Mazzon (Telles, 2001), in an adapted and simplified manner; the first column was excluded, since the conceptual model proposed in this study is already portrayed on figure 1, below, and the data analysis was performed in only one step or stage. Each factor or construct, hypothesis, and questionnaire question was presented, and the sources for the scales and proxies used to measure each factor were displayed.

In block II, it was sought to map the following characteristics in the profile: political party identity, religion, income level, discipline studied (specifically on sustainability), gender, semester, age, course and type of HEI, as demonstrated in Table 1. The questions were developed with the intent of not inducing a specific response, or influencing the students in any way.

Table 1: Questions in the first block of the questionnaire

Research Objectives	Factors	Hypotheses	Questionnaire Question	Source/Proxy	Analytical Technique
Identify socio-demographic, political-religious, educational, knowledge-related and course-related factors influencing the attitudes of students regarding sustainable development.	Knowledge	H1: The level of knowledge about sustainability positively influences the attitudes of students towards the promotion of sustainable development.	I know a few texts that focus on with sustainable development / The three dimensions of sustainable development are economic, social and environmental / I know a lot about sustainability	Model of Sammalisto et al., (2016). Likert Scale, 5 points.	Multiple linear regression
	Educational	H2: Attending specific disciplines positively influences the attitudes of students towards sustainable attitudes.	Did you already attend some technical discipline specifically about sustainability?	Assigned 1 for those who had attended and 0 for the other cases	
	Political-religious	H3: Students with more left wing political conceptions have a tendency of having more positive attitudes in favor of sustainable development.	In which political positioning do you identify the most?	Grouped in three categories: left, center and right	
		H4: the absence of religion negatively influences the attitudes of students in favor of the sustainable development.	What is your religion?	Grouped in three categories: Catholics, protestants, other religions and no religion	
	Socio-demographic	H5: Students of feminine gender have a tendency of having more positive attitudes in favor of the sustainable development.	What gender do you identify with?	Assigned 1 for female gender and 0 for male gender.	
		H6: Age positively influences the attitudes of students in favor of the sustainable development.	What is your age?	Number of years	
		H7: The level of income negatively influences the attitudes of students in favor of the sustainable development.	What is your family income in minimum wages?	Grouped in three categories: one minimum salary, two minimum salaries and equal or greater than three minimum salaries.	
	Course	H8: The semester of the course positively influences the attitudes of students in favor of sustainable development.	In which phase of the course are you in (semester)?	Semester of course	

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Identify socio-demographic, political-religious, educational, knowledge-related and course-related factors influencing the attitudes of students regarding sustainable development.	Attitudes regarding sustainable development.	Social Dimension	The contact among cultures is stimulating and rewarding	Model of Sammalisto et al., (2016). Likert Scale, 5 points.	Multiple linear regression
			Society must take responsibility for the well-being of individuals and families		
			Any country can do a lot to promote world peace.		
		Education Dimension	Teachers should promote interdisciplinarity on issues that are taught		
			Teachers should promote the connection between local and global issues		
			Teachers should use active learning methodologies, focused on the students		
			Teachers should promote critical thinking.		
			Teachers should promote future-oriented thinking for students, besides focusing on historical content		

Source: The Authors, 2019.

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			Teachers should promote critical thinking.		
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Source: The Authors, 2019.

The aforementioned scales were validated in previous studies and are psychometrically sound. They were translated by a research doctor, back-translated and inspected for errors, and were semantically validated by a group of four PhD professors, aiming to improve the clarity of each question. Small adjustments were made.

It is important to point out that Dimension Education is differentiated from variable knowledge about sustainability. The first one aimed to identify the attitude of the student about the role of education as an agent of transformation for promoting the sustainable development. For that, it was sought to identify its positioning regarding the use of active methodologies and the use of critical, anticipatory and systemic thinking. The second one identified the knowledge of individuals regarding the tripod of sustainability.

Posteriorly, a pre-test of the instrument was made with a group of eight students. One of the main concerns in the pre-test was to not influence the students or induce specific responses. Small additional adjustments were needed in the questions. It was verified, for instance, that the respondents had resistance to inform their precise family income. In face of this scene, the family income was presented in salary ranges, based on the number of minimum wages, according to what is exposed in Table 1. The questionnaire was administered between the months of November and December of 2018. Data collected were analyzed with the help of software SPSS version 21. Before being submitted to analysis, the data base built was treated aiming to reduce possible noise due to cases in which the individual left blank questions or selected the same option of answers for all items of the questionnaire. Because of that, of the 390 questionnaires answered, only 254 were validated. The operating model of the research proposed for this investigation is represented in Figure 1.

Figure 1: Operating model of the research
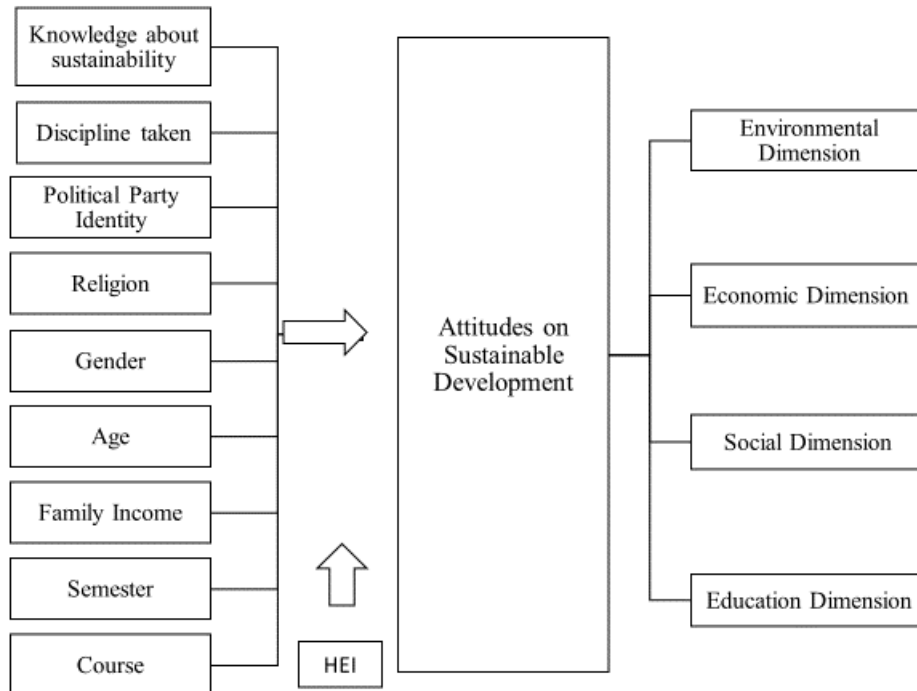
As presented in Figure 1, for the scope of this research it was considered as dependent variable the attitudes of students of the business area regarding Sustainable Development in dimensions Environmental, Economic, Social and Education. As independent variables were used: knowledge about sustainability, studied discipline (specific on sustainability), political party identity of the individual (left/right), its religion (or absence), gender, age, income level, period and course (Business Administration/Accounting Sciences). There was also a control variable: HEI of origin. It is important to point out that if a variable has, for instance, N classes, only N-1 dummy variables should be created (Hair et al, 2009)

For the testing hypothesis, a multiple linear regression was executed. Analyzing the variance inflation factors (VIF), the problem of collinearity was not identified because values were fewer than 10 for all independent variables, as demonstrated in Table 3. Analyzing the adjustment of the proposed models, it was found that the predictive power of model 3, which had as dependent variable Social Dimension was the one with greater R^2 adjusted (14.2%), followed by models 4 (Education Dimension, 13%), model 2 (Economic Dimension, 12.4%) and finally, model 1 (Environmental Dimension, 10.4%).

The general regression model used is in Equation 1.

$$ADS = \beta 0 + \beta 1\ CSS + \beta 2\ DIS + \beta 3\ SEM + \beta 4\ COURSE + \beta 5\ IES + \beta 6\ GEN + \beta 7\ ID + \beta 8\ RD2SM + \beta 9\ RD3SM + \beta 10\ LEFT + \beta 11\ RIGHT + \beta 12\ CATHOLICS + \beta 13\ PROTESTANTS + \beta 14\ WITHOUT\ RELIGION + \varepsilon\ (1)$$

Being:
ADS = Attitudes Towards Sustainable Development, Likert scale 5 points [(model of Biasutti and Frate (2017)]; β0 = intercept; β1 CSC= Knowledge about sustainability, Likert scale 5 points [(model of Sammalisto et al., (2016)]; β2 DIS= Taking a specific discipline on sustainability, dummy variable; β3 SEM = Semester of the course in which the student is enrolled; β4 COURSE= Course of student, dummy variable, assigned 1 for Administration and 0 o for Accounting Sciences; β5 HEI = Higher Education Institution of origin, dummy, assigned 1 for private HEI and 0 to public; β6 GEN=

Gender, dummy variable, assigned 1 for female gender and 0 for male; β7 ID= Age of student; β8 RD2SM = Family income over 2 Minimum Salaries, dummy variable; β9 RD3SM = Family income equal or over 3 Minimum Salaries dummy variable; β10 LEFT= Leftwing, dummy variable; β11 RIGHT= Rightwing Party ID, dummy variable; β12 CAT= Catholic Individuals, dummy variable;β13 PROTESTANTS= Protestant Individuals dummy variable; β14 WRELIG = Individuals without religion, dummy variable.;

4 ANALISYS AND DISCUSSION OF RESULTS

In this section the results from the research will be presented and discussed. Regarding the profile of the investigative ones, most of them is from the course of Accounting Sciences (75%) and of female gender (54%), have age between 18 and 25 years (67%) and study at a private HEI (62%). Besides, they already attended some discipline specifically about sustainability (53%).

Regarding the semester of the course, the sample obtained was heterogeneous, contemplating students from the first until the last semester. However, it was verified a predominance of students from the 3rd semester in the public HEI and from the 8th semester in the private HEI. Regarding religion, it was verified predominance of catholic and protestant individuals (68.5%).

Based on the profile of the sample, two other residual categories were created. The first one with students having another religious identity (5%) and a residual category encompassing individuals without religion (26.5%), as demonstrated in Table 2.

Table 2 – Profile of respondents

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	Public HEI			Private HEI	
Gender	**Frequency**	**%**	**Gender**	**Frequency**	**%**
Male	52	53.6	Male	65	41.4
Female	45	46.4	Female	95	58.6
Age Range	**Frequency**	**%**	**Age Range**	**Frequency**	**%**
18 – 25	73	75.3	18 – 25	96	61.1
26 – 33	15	15.5	26 – 33	46	29.3
34 – 41	6	6.2	34 – 41	14	8.9
Over 41	3	3.1	Over 41	1	0.6
Took Course Specifically on Sustainability	**Frequency**	**%**	**Took Course Specifically of Sustainability**	**Frequency**	**%**
Yes	55	56.7	Yes	80	51
No	42	43.3	No	77	49
Course	**Frequency**	**%**	**Course**	**Frequency**	**%**
Administration	40	41.2	Administration	22	14
Accounting Sciences	57	58.8	Accounting Sciences	135	86
Religion	**Frequency**	**%**	**Religion**	**Frequency**	**%**
Catholic	25	25.77	Catholic	76	46.49
Protestant	20	20.62	Protestant	56	25.67
No Religion	43	44.33	No Religion	24	15.28
Others	9	9.28	Others	4	2.56
Semester	**Frequency**	**%**	**Semester**	**Frequency**	**%**
1st	11	11.3	1st	10	6.4
2nd	4	4.1	2nd	24	15.3
3rd	38	39.2	3rd	22	14
4th	11	11.3	4th	18	8.9
5th	13	13.4	5th	15	9.6
6th	4	4.7	6th	16	10.2
7th	5	5.2	7th	9	5.7
8th	11	11.3	8th	47th	29.9
Total	97	100	Total	157	100

Source: The Authors, 2019

Results from regression analysis, on Table 3, indicate that the models built had a low adjusted coefficient of determination; however the intention was not to build regression models to predict behaviors, but to explain and list its predictors, as well as to verify which selected variables would have an impact, positive or negative, on the analyzed dimensions. Starting from this assumption, the fact of models having a square R adjusted low, does not necessarily represents a limitation, as indicated by Chalmer (1986). It is important to highlight that results from F test had values between 3.202 and 3.972 with a significance level 0.000 ($p<0.05$). Those results reveal that at least one of the coefficients of the equation is different from zero and that there is association between the variables.

Table 3: Regression Models

Variables		Model 1 Environmental Dimension	Model 2 Economic Dimension	Model 3 Social Dimension	Model 4 Educational Dimension
Intercept	Coefficient	3.722	3.097	3.938	3.337
	P-value	0	0	0	0
Knowledge about sustainability	Coefficient	0.16	0.271	0.184	0.248
	P-value	0.002*	0.000*	0.000*	0.000
	VIF	1.11	1.11	1.11	1.11
Course taken(Specifically on sustainability)	Coefficient	-0.04	-0.024	-0.068	-0.061
	P-value	0.579	0.767	0.289	0.415
	VIF	1.288	1.288	1.288	1.288
Semester of Course	Coefficient	0.017	0	-0.14	0.003
	P-value	0.294	0.977	0.309	0.869
	VIF	1.513	1.513	1.513	1.513
Course (Administration/Accounting)	Coefficient	0.099	0.002	-0.029	0.149
	P-value	0.225	0.985	0.688	0.080*
	VIF	1.215	1.215	1.215	1.215
Type of HSE (Private/Public)	Coefficient	-0.077	-0.233	-0.079	-0.125
	P-value	0.338	0.009*	0.272	0.136
	VIF	1.517	1.517	1.517	1.517
Gender	Coefficient	0.049	0.058	0.114	0.12
	P-value	0.471	0.433	0.058**	0,086**
	VIF	1.109	1.109	1.109	1.109
Age	Coefficient	0.002	0.004	0.003	0.005
	P-value	0.736	0.555	0.622	0.502
	VIF	1.331	1.331	1.331	1.331
Family Income (2 Minimum wages)	Coefficient	-0.161	-0.17	-0.072	0.007
	P-value	0.040*	0.049*	0.3	0.928
	VIF	1.167*	1.167	1.167	1.167
Family Income (3 or more Min. Wages)	Coefficient	-0.244	-0.292	-0.064	-0.032
	P-value	0.018*	0.010*	0.485	0.764
	VIF	1.259	1.259	1.259	1.259
Leftwing	Coefficient	0.153	0.076	0.134	0.084
	P-value	0.041*	0.355	0.043*	0.28
	VIF	1.229	1.229	1.229	1.229
Rightwing	Coefficient	-0.186	-0.081	-0.195	-0.082
	P-value	0.040*	0.411	0.015*	0.379
	VIF	1.259	1.259	1.259	1.259
Catholic	Coefficient	-0.094	0.18	-0.064	0.027
	P-value	0.535	0.281	0.636	0.863
	VIF	5.367	5.367	5.367	5.367
Protestant	Coefficient	-0.158	0.187	-0.035	0.073
	P-value	0.311	0.274	0.796	0.653
	VIF	4.966	4.966	4.966	4.966
Without Religion	Coefficient	-0.137	0.146	0.002	0.109
	P-value	0.373	0.227	0.99	0.493
	VIF	4.414	4.414	4.414	4.414
R^2 Adjusted		0.109	0.124	0.142	0.13
F's Test		3.202	3.537	3.972	3.689
P-value		0	0	0	0

*Relation is significant at the 0.05   ** Relation is significant at 0.1 level
Source: The authors, 2019

By means of results from the regression analysis, it is possible to suppose that there is a positive reaction, statistically significant, between knowledge about sustainability and attitudes in favor of Sustainable Development, thus hypothesis H1 is accepted. Those findings are in line with the ones found by Chandler (2020), Heeren et al. (2016), Jacomossi et al. (2014) and Farias et al. (2018) and reiterate the need of HEIs developing strategies to contribute for a greater knowledge about questions of sustainability during the formative path of students. Enrolling students in classes focused on environmental issues is a possible approach (Chandler, 2020), which will be discussed further, in view of the other results. After all, this will have an impact in the beliefs and values, and consequently in the behavior and attitudes of the students that will be potential decision makers in the organizational environment.

On the other hand, evidences suggest that the simple fact of attending specific disciplines about sustainability has no influence over the attitudes of the students in favor of Sustainable Development, therefore, it is not possible to accept hypothesis H2. Those results while seemingly contradictory may indicate the need of reviewing the way in which those curricular components are being inserted in the formative process of the investigated students. In other words, apparently it is not enough that the student has classes about sustainability; They must, effectively, have acquired knowledge. Generally, those results corroborate with what researchers such as Calixto (2006), Gomes et al. (2012) and Jacomossi et al. (2014) and Heeren et al. (2016) defend.

Results also indicate that the political party identity of students exerts a significant influence regarding attitudes in favor of Environmental and Social Dimensions (not in economic and educational Dimensions). It was found that the fact of a student being of left-wing impacted in a positive and significant way the attitudes in the mentioned Dimensions. Results indicate that there is a negative and significant relation between being "right-wing" and having attitudes in favor of socio-environmental issues. Generally, those results are in line with the ones found by Neumayer (2004) and Chang et al. (2018). Thus, hypothesis 3 is partially accepted: students with left-wing orientation have a tendency of having more positive attitudes in favor of sustainable development.

In order to try to capture the influence of the variable religion, students were asked straight about their religious denomination. The findings suggest that the fact of the student having or not a religion, did not influence their attitudes in any of the Dimensions researched, thus it was not possible to accept Hypothesis 4. However, for authors such as Hartmann (2002), religion may be conceived in a broader way than a single body concatenated of doctrines thus making more complex and challenging to identify the isolated effect of it in the attitudes of individuals in favor of socio-environmental, economic and educational questions.

It was found that individuals who self-declared as being from female gender have more positive attitudes towards sustainability regarding the social and educational questions, thus, Hypothesis H5 is partially accepted. Those results are in line with those found by Gorni et al. (2012), Chandler (2020) and Paço and Lavrador (2017) regarding social questions, but they go against environmental questions. The finds also indicate that variable age had no significant influence in any of the investigated dimensions, thus, it is not possible to accept Hypothesis H6. The non-influence of this variable may be explained, partially, by the profile of the sample itself, because most of the investigated ones (approximately 67%) had between 18 and 25 years of age and only 2% had ages over 41 years. Thus, the concentration of students in a single age range may have contributed for the results found.

Regarding the behavior of variable family income, indications of a negative and significant relation with Dimensions Environmental and Economic were obtained. A negative coefficient of -0.161 and -0.17 from those earning two salaries and of -0.244 and -0.292 for those over three sal-

aries, respectively, was verified. By means of the analysis of coefficients, it is possible to infer that the highest income range contributed more incisively for the lack of attitudes in favor of social and economic issues. Those results, generally, allow accepting Hypothesis 7 and are in line with the ones found by Braga Junior et al (2011). Moreover, it was expected that the semester of the course would positively influence the attitudes of students in favor of sustainability. Thus, contrary to research expectations and findings by Sammalisto et al. (2016), the behavior of variable semester was not significant; therefore, it is not possible to accept Hypothesis 8.

Regarding the behavior of the control variable HEI of origin, it was identified a negative relation between students from Private Institutions of Higher Education and Dimension Economy. In this sense, it is recommended that future studies investigate the reason for this finding, also considering the political-institutional context, as well as the profile of the egress desired by those HEIs. Regarding variable course, it was identified that students from Administration courses have a more favorable tendency towards sustainable development only in Dimension Educations, going against the findings of Perlin et al. (2016), therefore Hypothesis 9 is partially accepted.

Theoretical researchers such as Barbieri (2017) and Laffin (2015) emphasize that currently the curricular guidelines of the courses of Administration and Accounting Sciences reflect a pragmatic conception of the curriculum, with predomination of technical rationality, thus restricting the capacity of professionals to be reflexive and to take critical action regarding sustainability, hindering their potential of social participation to interact and intervene in this scene. It is clear that triggering a change in behavior requires an education not only about how one's actions have an impact on sustainability but also about attitudes towards sustainable behaviors, social norms and the level of actual efficacy of one's behavior (Heeren et al., 2016).

Under this perspective, the findings presented here suggest that it is needed to rethink the way in which the teaching of sustainability is being treated along the development path of the investigated students. As Sacristán (2013) proposes, it is necessary to overcome the traditional conception of curriculum, by means of a closer approach, more committed with reality. Thus, it is expected that the evidences obtained here may contribute to suggest the creation of public policies and of pedagogic orders seeking to incorporate in the upbringing of professionals in the field of management, an education contributing for the development of critical-reflexive subjects, rejecting the mere reproduction of the status quo for the promotion of the sustainable development. Thus, an unfolding of this contribution indicates that the teaching about sustainability must be part of the courses, but it must be incorporated in a holistic and not punctual way in the formative path of the students, since there is evidence that attending specific disciplines about sustainability apparently had no influence over the attitudes of the students. It is also suggested that democratic spaces are created in curricular components respecting the social-economic context and the political party identity of individuals. This may contribute to prevent students with greater income levels and those with a political positioning of right-wing, ideologically, from rejecting such contents, since there is evidence that these groups have less favorable attitudes towards sustainability. Furthermore, a special attention should be given to male students, since there is evidence suggesting that gender plays a role in the attitudes towards environmental issues and sustainability.

5 FINAL CONSIDERATIONS

This study investigated factors influencing the attitudes of students from the area of business considering the sustainable development. Evidence obtained indicates that, in the samples, the knowledge about sustainability influences in a positive and significant way, the attitude of the student in Dimensions Environmental, Economic, Social and Education and, therefore, hypothesis H1

was accepted. However, it was not possible to accept the hypothesis H2 that the fact of attending specific disciplines regarding sustainability has some influence in the attitude of the student.

Results also point that left-wing students have a tendency of having more positive attitudes regarding sustainable development only in Environmental and Social Dimensions. Therefore Hypothesis H3 was partially accepted. It was found that the fact of the student having of not having a religion did not influence its attitudes in any of the researched Dimensions, thus, it was not possible to accept Hypothesis 4. It was verified that individuals that self declared being from the female gender had more positive attitudes regarding sustainability as well as regarding social and educational questions. Starting from this assumption, Hypothesis H5 was partially accepted.

Results also indicated that variables age and semester had no significant influence in any of the investigated Dimensions, thus, it was not possible to accept Hypotheses H6 and H8. Evidence of a negative and significant relationship of variable family income with Dimensions Environmental and Economic were obtained, thus Hypothesis 7 was partially accepted. It was also found that students from the Administration Course have a tendency by attitudes more favorable to sustainable development only in Dimension Education and, therefore, Hypothesis H9 was partially accepted.

Results from the investigation bring a contribution for discussing some of the support pillars of sustainability. In literature there is already a debate about other pillars such as culture and ethics but, considering the cut of this research beyond the traditional *triple bottom line*, Dimension "attitude towards education" was incorporated. It is highlighted that studies aiming to understand and debate the formative process, the conscience, the attitude and the behaviors around sustainability issues in the field of management are relevant for reaching one of the challenging goals of the United Nations' Sustainable Development Goals, (number 12.8), which aims to ensure that people, everywhere, have relevant information and awareness about sustainable development and life styles in harmony with nature.

In the current scenario, future professionals must be more trained to deal with problems regarding sustainability and their possible solutions beyond the corporate environment. It is important to contribute for the upbringing of more conscious professionals regarding their environmental responsibilities, which adopt differentiated postures to avoid agreeing with management models such as the one of the mining company VALE, which on its sustainability reports has a fallacious speech based on the *triple bottom line*. However, the collapse of the dams of Mariana and Brumadinho, in Minas Gerais, shows how much people and nature are being treated in the more inhuman way for the sake of accumulating financial capital.

The hypotheses that were partially accepted and the non-balanced behavior of independent variables, contribute for future studies to deepen the discussions about the need of better articulation between the socio-environmental questions and the ones of economic and educational nature.

Although the hypothesis related to variable Family income was confirmed, its operationalization with two dummy variables (for three income ranges) is one of the limitations of the study. Due to the limited size of the sample, the number of income ranges was also deliberately reduced. The use of a greater number of ranges could have generated more interesting results. The main reason for the choice was due to the fact that many times individuals avoid disclosing their precise incomes (Van Melis-Wright, Stone & Miller, 1993), which could generate an incomplete filling of questionnaires and missing data.

Additionally, it also stands out that results are restricted to the period and sample investigated. In face of this scenario, it is suggested that future researches amplify the sample and use a greater temporal horizon. Besides, it is proposed the use of other methodological procedures of qualitative nature, such as interviews and focal groups, and the use of other variables that were not captured in this investigation, such as family influence and the life experience of the individual. Additional studies may magnify the academic discussions, investigating the factor impacting the attitudes of students and professionals in the field of management towards Sustainable Development.

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1. Definition of research problem	√	X	√	x	x	
2. Development of hypotheses or research questions (empirical studies)	√	x	√	x	x	X
3. Development of theoretical propositions (theoretical work)	x	X	x	x	x	x
4. Theoretical foundation / Literature review	√	X	X			
5. Definition of methodological procedures	X	X	√			
6. Data collection	X					
7. Statistical analysis	√	X	X			
8. Analysis and interpretation of data	X	X	√	x	x	X
9. Critical revision of the manuscript	x	X	X	x	x	X
10. Manuscript writing	√	√	X			
11. Other (please specify)						