

The Dimensions that Affect University Social Responsibility

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ARTICLE INFO

ABSTRACT

Received: 22 Dec 2024

Revised: 20 Feb 2025

Accepted: 26 Feb 2025

University social responsibility (USR) is still confused as a benevolence that universities give to their region of influence or their interest groups; however, the reality is far beyond that concept. USR involves various aspects ranging from education to the impact generated in society, known as its externalities. The present study analyzes the dimensions of this responsibility and how the students at the Technical University of Cotopaxi perceive it. It is mixed-type research with a descriptive approach and a relational approach. This study was evaluated through a survey with a sample of 371 students with the instrument used by Flores et al., (2022). Subsequently, a logit-type model was employed to assess and correlate the dimensions that are immersed in the USR, which allowed us to identify that the education and research dimensions are significant in the proposed model and that the engagement and management dimensions as perceived by the students must be reoriented to have a significant social impact on society.

Keywords: University social responsibility; Dimensions; Logit; Corporate social responsibility; University

INTRODUCTION

Companies have an important role within society; on the one hand, they provide goods and services to society to satisfy needs; on the other hand, they generate a series of effects within it. Within those processes, companies create value chains that include their interest groups, both internal and external.

Inside the internal interest groups are workers and shareholders, while in universities, there are teachers, workers, employees, and students. The external groups are suppliers, strategic partners, the government, and

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society. In universities, these groups would comprise people who provide goods and services to the university; higher education institutions (HEIs), and private organizations with which the university has cooperation agreements, and within the state apparatus would be the Ministry of Finance of Ecuador (MEF), Council of Higher Education (CES), National Secretariat of Science and Technology (SENESCYT), among others.

These groups are of interest because, to a certain extent, they regulate university activities; in the case of students, the previous policies implemented by the national government reduced the autonomy of HEIs in terms of the admission policies established by each institution. In this case, the Technical University of Cotopaxi was not oblivious to the provisions issued by the State; as of 2023, that admittance capacity was returned to the HEIs that requested it.

Currently, some universities have their own admission processes, but even so, there are students who do not have access to education; as mentioned in the Gestion Magazine (2024), "for the second semester of 2022, a total of 168,095 applications were registered, compared to 106,128 acceptances and 129,583 places, that is, 61,967 students were not accepted into any institution despite their motivation to continue their studies" (p. 1). According to these data, some students do not access HEIs, restricting their education rights. The role of HEIs in society in providing education is limited to policies promoted by the government; this is why it is necessary to analyze whether HEIs are fulfilling their responsibility to society and, even more so, to analyze the factors that influence this reality.

The concept of social responsibility has been widely confused with solidarity, or to a certain extent, generous actions carried out by organizations towards the external context; as Arvizu and Velázquez (2019) point out: "In its origins, the concept of Social Responsibility was related only to the set of altruistic activities carried out by companies in the area surrounding their facilities" (p. 7); but social responsibility looks much further, even considering ethical issues; as it is going to be analyzed.

The foundation of social responsibility is undoubtedly ethics. The academy must be an advisor guide for society; even more, it must tend to ethics in all its actions; society is the implacable judge in these processes. Ethics must be reflected not only in the training of ethical professionals, the academy must become an example for society, generating trust and achieving a remarkable reputation over time so that the impact on society is profound and, above all, the unrestricted respect for the legal regulations that govern HEIs.

Transparency in their accountability must be fundamental to improve the institutional image and constitutes another example of ethics; accepting constructive criticism and facing accreditation processes are undoubtedly clear signs that universities assume with all honesty the processes that help to improve their management and, above all, achieve national and international standards for continuous improvement, which translates into a sustainable process of social responsibility, to build a more just and equitable society, demonstrating respect for concerned parties.

The ethical issue in social responsibility can be approached from different criteria; Schwalb, Prialé & Vallaeys (2019) propose ethics in three dimensions, which are analyzed in Table 1.

Table 1

Ethics in 3D

Ethics in 3D	1st dimension	2nd dimension	3rd. Dimension
	Self-ethics	Socioethics	Anthropoethics
Duties type	Virtue	Justice	Sustainability
Duty subject	The person (personal duties)	Community (interpersonal duties)	Humanity (transgenerational duties)

Duty purpose	The events	The laws	The world
Liability type	Moral	Legal	Social
Obligation framework	Personal Awareness	The rule of law	International governance
Responsibility Generator	One's own fault and the pain of others	The illegal act and injustice	The negative impact and systematic unsustainability
Regulation Mode	Morality	The law	Politics

Note: Taken from Schwalb et al., (2019, p.12)

Autoethics refers to the self-regulation that each human possesses in his or her internal "I"; it helps the person make personal decisions based on their own formation, granting them autonomy.

Socioethics regulates ethical practices within society, which is why the obligation framework is the law, which is fulfilled through the different laws, decrees, and legal regulations imposed by the State on individuals, considering the cultural contexts in which it is immersed. The anthropoethics relates to culture, society, and humanity in the formation of ethics; the human being is holistic and, as such, must consider all its dimensions.

It is necessary to understand and comprehend the concept of corporate social responsibility and then that of university social responsibility, although related but different in their context; for Ayala (2021, p. 1), Corporate Social Responsibility is "a form of organizational management that promotes responsible citizenship in the business world through action so that it becomes one of the challenges of the organization posed by globalization".

Responsibility becomes management organization model, referring to civility as the respect that citizens have in their social coexistence; now, all this is due to the globalization that has imposed the world economic model, turning the world into a large global market. Within this market, countries and organizations assume particular ethical, environmental and economic commitments, so this large market operates within a framework of respect for countries and nature.

Later on, the same author, Ayala (2021), defines corporate social responsibility more clearly as "... that set of obligations and commitments, legal and ethical, national and international, with interest groups, which derive from the impacts that the business activity of organizations produces in the social, labor, environmental and Human Rights fields" (p. 3).

In this globality, obligations, and commitments that organizations acquire with the environment in which they exercise their activity and interest groups appear; that business flow carried out by organizations affects society in one way or another; and a leading role is given to interest groups or "stakeholders" as Daniel et al., (2024) "it associates it with the responsible management of externalities, the incorporation of stakeholder expectations in management, the creation of shared value, and a leading role for the company in the construction of sustainable development" (p. 283).

In an organization, there are always interested parties for the organization to achieve its objectives because if the company does well, the interest groups do well, starting with the shareholders themselves, customers, suppliers, and even the state. However, the management of externalities allows local organizations to articulate themselves to face negative externalities or responsibly take advantage of positive externalities, which implies efficient and effective control by organizations; this management also implies satisfying the requirements of interest groups by creating adequate communication channels to identify and respond proactively to those requirements and thus create value and lead economic and environmental sustainability processes. Based on these ideas, Caro & Salazar (2018) state that CSR is

the ethical or moral obligation, voluntarily accepted by the company as an institution towards society as a whole, in recognition and satisfaction of its demands or in reparation for the damages that may have been caused to it in persons or its common patrimony by the activity of the company (p. 4).

For these authors, CSR already becomes an obligation beyond the assumed responsibility; if organizations have caused damage, they must be financially responsible for that damage and compensate in some way for the damage caused. Another organizations' way of acting is by contributing to the mitigation of social inequalities, this can be done by executing projects of social interest that reduce social gaps. Arvizu & Velázquez (2019) state that SR is not only a business issue but must also be a matter of society

a way of acting compatible with the practices and management operated by each company to enhance its contribution to sustainable development that guarantees coherence between economic, social, and environmental objectives, to achieve the trust of societies and markets. In this sense, CSR is not only an obligation of companies, but also of society, which must seek to incorporate the common good within the main objectives of economic activities (p. 11).

One way to manage companies today is to manage alignment with sustainable development from their strategic planning; the plans that range from the annual operational plans, the strategic institutional development plans, and the government's development plans should align with the Sustainable Development Goals (SDGs).

CSR can also be conceived as a tool used by economic organizations to reduce negative externalities, such as building works of public interest that benefit a particular community, as Cañizares (2020) points out that "CSR understood as the tool used by economic corporations to provide public goods to society, periodically reduce the externalities created from their industrial activities, and mitigate the harmful effect that they sometimes generate on the integrity of their environment" (p. 109).

Another way is by carrying out training or providing education to the low-income or vulnerable population so that their production processes can be reoriented towards cleaner production or respecting the environment, adopting recycling policies; in that sense, the circular economy is undoubtedly a significant support for these purposes.

UNIVERSITY SOCIAL RESPONSIBILITY

Universities also generate externalities, as they also have interest groups; they are concerned with sustainable development and articulate their substantive functions to achieve impacts in the areas of influence. Vallaeys (2018) states that the first law in Latin America that proposes university social responsibility from an impact management approach is the Peruvian one:

Article 124. University social responsibility: University social responsibility is the ethical and effective management of the impact generated by the university in society due to the exercise of its functions: academic, research, and extension services and participation in national development at its different levels and dimensions; it includes the management of the impact produced by the relationships between the members of the university community, on the environment, and on other public and private organizations that constitute stakeholders. University social responsibility is the foundation of university life; it contributes to society's sustainable development and well-being. It commits the entire university community (Law No. 30220, 2014, p. 1).

The Peruvian definition of RSU is forceful and very clear, very contrary to what is referred to in the regulations referring to Ecuador; The difference is that responsibility is only addressed in a general way, in the Organic Law of Higher Education it establishes

Article 17.- Recognition of responsible autonomy. - The State recognizes the academic, administrative, financial and organizational autonomy of universities and polytechnic schools, following the principles established in the Constitution of the Republic (...) In the exercise of responsible autonomy, universities and polytechnic schools must maintain relationships of reciprocity and cooperation between them and between them and the State and

society; They will also observe the principles of justice, equity, solidarity, citizen participation, social responsibility and accountability (National Assembly of Ecuador, 2010).

In Ecuador, University Social Responsibility (USR) is considered a principle rather than an end goal. Collaboration between universities is promoted, and when comparing the regulations, Peruvian legislation becomes more interesting and ambitious. However, an analysis of the different definitions of USR will be carried out to cite Espinoza & Guayamín (2015) define it as "a policy of ethical quality of the performance of the university community through the responsible management of the educational, cognitive, labor, social and environmental impacts generated by the university, in a participatory dialogue with society to promote sustainable human development" (p. 11).

This definition refers to performance; it encompasses a notion of performance; therefore, it is an indicator rather than efficiency effectiveness; it implies the promotion of research, teaching, and engagement in spaces of dialogue with the community; other authors such as Baca et al., (2017) perceive it as capabilities:

Institutional capacity to generate and apply universal principles and values, through four key processes: management, teaching, and research, extension, which are aimed at improving the quality of life of the community (internal and external), minimizing pernicious impacts and optimizing the predicted benefits of the university (p. 5).

From the two definitions, it is clear that the first emphasizes it as a policy and the other as a capacity, and that precisely is what society wants for HEIs to be able to generate positive impacts in the regions of influence in one way or another; and it is precisely this idea that is embodied by the authors Schwalb, Priale, & Vallaeys, (2019) in the following definition:

The responsibility of the university must respond to the need for social transformation in its sphere of influence through the ethical and efficient management of all its administrative, training, cognitive, and extension processes, taking care of the negative social and environmental impacts that it may generate and promoting positive impacts in territorial alliances for sustainable human development (p. 24).

The role of USR is to transform reality; the University should not be an entity distant from society but rather a committed university that feels the needs of the people, which makes the needs of the region in which it is geographically located its own, which transforms realities for the better, as the authors point out that they are positive impacts. Gaete mentions instead that USR is rather a behavior that must converge in 4 factors:

It is a behavior of the university community, both at the institutional and individual level that has an implicit and obligatory character in the case of public universities, under the funding that society grants it, and for which it must revert to society by trying at least: (1) to maintain an active and permanent relationship with the society in which it is inserted; (2) respond to the social needs of their environment; (3) adequately manage the social impacts of their work; and (4) to encourage socially responsible behavior internally as in the rest of society (Gaete, 2015, p. 21).

The author insists again that the University must be concerned with its environment and that it solves the problems of reality, it demands a more active and less passive role:

they allow us to observe an important change demanded by society towards universities, with the purpose that these institutions assume in their work a greater concern for social needs and problems, directing the generation of knowledge towards the resolution of those situations of social interest, which will demand from the university a more active and permanent role in the sustainable development of society, a situation that is quite far from the traditional figure of the endogamous university concerned, fundamentally, with what happens inside it (Gaete, 2015, p. 7).

USR is approached from different meanings; the important thing is to train committed human beings, as mentioned by López et al., (2016): "USR is an ethical and moral quality management policy that seeks to train people with social values and commitments through the achievement of the institutional policies established as a

university community" (p. 307). By training people with values, honesty, responsibility, and solidarity are encouraged, the professional will assume with criteria an active commitment to society, will be upright in their actions, and will seek that the actions of the HEIs generate impacts and not only administrative management will be joined but also the other three substantive functions of the academy, as Vallaey & Álvarez, (2019) point out

University Social Responsibility is the responsibility of the university for the social and environmental impacts it generates, through an ethical and efficient management of its administrative processes and substantive academic functions, to participate together with the other actors in its territory of influence in the promotion of fair and sustainable human development (p. 113).

The management of the university must be framed in quality criteria, the use it makes of resources must be as efficient and effective as possible, the actions of its authorities, teachers, and students must generate trust in the community, it must feel supported by knowing that it has the academy to solve the most pressing problems it must face, whether in the political, economic or social sphere, the University must become the engine of development in the region; if a university does not generate impacts it makes no sense for it to be a University.

DIMENSIONS OF UNIVERSITY SOCIAL RESPONSIBILITY

Cornejo (2022) carries out a study on the dimensions of USR and determines in a general way the research, teaching, and extension, work framed more in the bibliographic field that gives guidelines on the dimensions of responsibility; as seen in the previous definitions, there are many edges to define what USR is; however, few works have been dedicated to working with dimensions, there is a study carried out by (Cusimayta, 2021) that takes as a reference the definition given by Vallaey (2013), and from there he carries out his study:

University Social Responsibility is a policy of continuous improvement of the University towards the effective fulfillment of its social mission through 4 processes: Ethical and environmental management of the institution; Training of conscious and supportive citizens; Production and dissemination of socially relevant knowledge; social participation in the promotion of more equitable and sustainable development. The specific socially responsible strategies to achieve this improvement are: 1) the integrated participation of internal and external interest groups in the University's mission; 2) the articulation of curricula, research, extension, and teaching methods with the solution of society's problems; 3) the regular self-diagnosis of the institution with appropriate measurement tools for accountability to interest groups (Vallaey, 2013, p. 5).

Cusimayta (2021) adopts the dimensions detailed in Table 2:

Table 2

Cusimayta Dimensions

Dimensions	Indicators
Ethical and environmental management	There are labor policies with ethical and socially responsible principles.
	There are environmental policies with ethical and socially responsible principles.
	The management is focused on cultivating values that transcend institutionally in the families linked to the institution.
Education of responsible citizens	The teaching-learning processes are aimed at forming socially responsible citizens.
	The curricular structure is coherent with the professional profile that is being formed.
	Identify, define, and develop SR actions articulated with the comprehensive training of students.
	Scientific production is based on an epistemological theoretical base.

Production and

dissemination The developed research is guided by the research proposed lines.

of knowledge

Social	The institution has good links with external social organizations to take advantage of.
participation	There is a strong impact of the university on the community and sphere of influence.
and human	
development	The humanistic praxis of sustainable development is a philosophical principle of the university.

Note: Cusimayta (2021, p. 87)

The author elaborates on an instrument that is validated by Cronbach's Alpha. Another author who defines dimensions and subdimensions is Salinas (2017); among the dimensions are management, research, extension, and teaching, and details 23 subdimensions and the activities each subdimension must contain.

Another study that similarly contributes to the present research is the one carried out by the authors Rubio et al., (2022), who employed an instrument based on three dimensions: "1) characterization of the student; 2) promotion of SR policies; and 3) impact of SR internally" (p. 5), this instrument was also validated by Cronbach's Alpha. The study by Flores et al., (2022) is also significant, who present an equal instrument validated by Cronbach's Alpha; these dimensions are presented in Table 3.

Table 3

Dimensions and affirmations

Dimensions	Claims
Broad and transformative academic training	The university promotes university volunteering.
	Participation in social responsibility projects and programs is encouraged at my university.
	The university organizes conferences, forums, and/or activities concerning sustainable development.
	The university has agreements with organizations that promote social development (State, NGOs, International Organizations, companies, among others).
	The university has initiatives that allow me to develop innovation and social entrepreneurship actions.
	The university has an office that coordinates and advises on social responsibility matters.
Socio-environmental linkage	The university supports me in applying for scholarships, exchanges, or internships.
	The university promotes healthy nutrition and physical and mental care practices.
Socio-environmental linkage	The university promotes the efficient use of water consumption, energy, and care of green areas.
	The university promotes actions in the face of society's environmental problems.

The university disseminates its environmental policy to the university community.

The university has deposits to classify the different types of waste (glass, plastic, paper, and others).

The university carries out the process of electing authorities transparently and democratically.

The university provides free and open access to its documents, rules, and procedures.

Research with a social focus

The university promotes multidisciplinary research with a social focus.

The university promotes research that responds to the objectives of sustainable development.

I believe that the university is prepared to adapt to new global contexts.

The university considers social and environmental commitment in its institutional mission.

Institutional management and transformative administration

The university orients my academic training to the service of society.

In the development of my courses, I have the opportunity to participate in projects, programs, or social activities.

The courses I take in my career are up-to-date and respond to social needs.

At my university, I have the possibility of taking virtual courses.

The university has communication strategies that highlight its actions in the face of social problems.

Note: Taken from Flores, Severino, & Sarmiento (2022, p. 93)

This study was carried out with 150 students from a public university in Peru, with the participation of 51% of women and 49% of male respondents. In the study conducted by Serrano et al., (2022), the authors identified 4 factors of USR, which are Social participation implies the ability and willingness of the university student to participate and lead initiatives that improve community development, improve the quality of life, protect the environment and contribute to shaping public policies. Likewise, social knowledge management refers to the fact that university students can create, share and apply knowledge for the improvement of their community, thus helping to solve local challenges effectively.

For its part, responsible management refers to how students see their university as an institution that fosters a positive organizational climate, ethical behavior, and defends human rights. Also, career and civic preparation highlights how students perceive that their college education shapes them as ethical individuals capable of caring for themselves, caring for others, and stewarding the environment, allowing them to contribute significantly to global sustainable development. This study worked with psychosocial variables with an instrument that was applied to around 500 students.

METHODOLOGY

This work is carried out under the focus of a mixed research, qualitative because it worked with students' perceptions regarding university responsibility, and quantitative because this approach allowed to assess which factor has the most prominent impact on university responsibility.

The level of research is relational; to establish these relationships, a logit model was applied using the instrument devised by Flores et al., (2022), given that according to the analysis of the different instruments directed by the authors, it determined that it is the one that best adapts to the reality of the Technical University of Cotopaxi.

The sample was taken from a population of 10,500 students (UTC, 2024); the formula applied was:

$$n = \frac{N \times Z^2 \times p \times q}{(N - 1) \times E^2 + Z^2 \times p \times q}$$

Where:

N = Population

Z = Desired confidence level

p = Success probability

q = Failure probability

E² = Error Level

It was worked with a of 95% of confidence level.

Once used the formula, the result was 371 surveys, which were applied. Table 4 presents the Likert scale (EdL) that was adopted for the surveys:

Table 4

Likert scale

Items's	Assessment
1 Strongly agree	
2 Agree	1 = Yes
3 Neither agree nor disagree	
4 Disagree	
5 Strongly disagree	0 = No

Note: The adopted Likert scale is presented. Source: Authors

Table 5 presents the assessments of the variables used

Table 5

Variable Assessment

Dimensions	Claims	Assessment	Dichotomous variable
Broad and transformative academic training (For)	The university promotes university volunteering.	EdL	1 = Yes 0 = No
	Participation in social responsibility projects and programs is encouraged at my university.	EdL	1 = Yes 0 = No
	The university organizes conferences, forums, and/or activities concerning sustainable development.	EdL	1 = Yes 0 = No

	The university has agreements with organizations that promote social development (State, NGOs, International Organizations, companies, among others).	EdL	1 = Yes 0 = No
	The university has initiatives that allow me to develop innovation and social entrepreneurship actions.	EdL	1 = Yes 0 = No
	The university has an office that coordinates and advises on social responsibility matters.	Yes No	1 = Yes 0 = No
	The university supports me in applying for scholarships, exchanges, or internships.	Yes No	1 = Yes 0 = No
	The university promotes healthy nutrition and physical and mental care practices.	Yes No	1 = Yes 0 = No
Socio-environmental linkage (Vin)	The university promotes the efficient use of water consumption, energy, and care of green areas.	EdL	1 = Yes 0 = No
	The university promotes actions in the face of society's environmental problems.	EdL	2 = Yes 0 = No
	The university disseminates its environmental policy to the university community.	EdL	3 = Yes 0 = No
	The university has deposits to classify the different types of waste (glass, plastic, paper, and others).	EdL	4 = Yes 0 = No
	The university carries out the process of electing authorities transparently and democratically.	EdL	5 = Yes 0 = No
	The university provides free and open access to its documents, rules, and procedures.	EdL	6 = Yes 0 = No
Research with a social focus (Inv)	The university promotes multidisciplinary research with a social focus.	EdL	7 = Yes 0 = No
	The university promotes research that responds to the objectives of sustainable development.	EdL	8 = Yes 0 = No
	I believe that the university is prepared to adapt to new global contexts.	EdL	9 = Yes 0 = No
	The university considers social and environmental commitment in its institutional mission.	EdL	10 = Yes 0 = No
Institutional management	The university orients my academic training to the service of society.	EdL	11 = Yes 0 = No

and transformative administration	In the development of my courses, I have the opportunity to participate in projects, programs, or social activities.	EdL	12 = Yes 0 = No
(Gest)	The courses I take in my career are up-to-date and respond to social needs.	EdL	13 = Yes 0 = No
	At my university, I have the possibility of taking virtual courses.	Yes No	1 = Yes 0 = No
	The university has communication strategies that highlight its actions in the face of social problems.	EdL	15 = Yes 0 = No

Note: Adapted from Flores et al., (2022)

The proposed model is composed of the dependent variable, that is University Social Responsibility, and its dependent variables, Broad and transformative academic training (For); Socio-environmental linkage (Vin); Research with a social focus (Inv); Institutional management and transformative administration (Gest)

Results and discussion

As analyzed in the previous section, there are several models to measure USR; however, the one by Flores et al., (2022) is chosen; since it resembles the Ecuadorian reality, the proposed model will be run through a logistic regression, which will allow the statistical significance of the proposed dimensions to be analyzed. The mathematical model is as follows:

$$USR = f(\text{For}, \text{Vin}, \text{Inv}, \text{Gest})$$

Where:

USR = University social responsibility

For = Broad and transformative academic training

Vin = Socio-environmental linkage

Inv = Research with a social focus

Gest = Institutional management and transformative administration.

According to what has been proposed, university social responsibility depends on teaching, linkage, research, and institutional management. Once the model was chosen, the Durbin-Watson test was run, the same one that indicates that the assumption of independence of errors is fulfilled (1.993). In addition, the variance inflation factor (IVF) indicates that there is no multicollinearity (IVF: 1). Once the logistic regression has been performed, the following results are obtained:

Table 6

Results of the R squares

Stair	Verisimilitude logarithm -2Cox and Snell square R	Nagelkerke square R
1	110,870	0,086
		0,266

Note: Source Authors

When observing, Nagelkerke's R-squared value indicates that the proposed model explains 26.6 % of the variance of the proposed dimensions (0.266), the estimated Cox and Snell R² of 0.086 implies that the independent variables used in the regression model explain 8.6% of the variance of the dependent variable.

The verisimilitude logarithm is the expression that maximizes the optimal values determination of the estimated coefficients (β). Since it is wanted to maximize the log-verisimilitude, the higher the value, the better (Ryan, 2024). In the present study, the value obtained is 110.87. Next, the Hosmer-Lemeshow test is applied, a method to determine the goodness-of-fit of the logistic regression (see Table 7).

Table 7*Hosmer and Lemeshow test*

Stair	Chi-square	Gl	Gis.
1	2,305	3	0,512

Note: Source: Elaborated by Authors.

According to Sánchez (2019), if the Hosmer and Lemeshow test is more significant than 0.05, it indicates that the variance explained by the model describes a substantial percentage of the variance of the dependent variable. As can be seen in Table 7, the value obtained in this test is equal to 0.512, which means that the model is reliable. Table 8 shows the variables that are part of the equation.

Table 8*Variables in the equation*

		B	Standard Error	Wald	Gl	Gis.	Exp(B)
Step 1a	Formation	1,537	0,624	6,060	1	0,014	0,215
	Link	-0,559	0,648	0,744	1	0,389	0,572
	Research	2,145	0,552	15,073	1	0,000	0,117
	Management	-0,632	0,589	1,152	1	0,283	0,532
	Constant	4,194	0,450	86,952	1	0,000	66,307

Note: Source: Elaborate by Authors.

As can be seen in Table 8, two dimensions were not statistically significant; these two dimensions were socio-environmental linkage and institutional management transformative administration; as it is known at the university and world level, the linkage has different shades, it is reflected in the perception that students have, without a doubt, the linkage and management must promote the solution of the society problems, in the specific case of the Technical University of Cotopaxi in its 29 years of institutional life, it has sought the solution of the problems of society, but this externality can be potentialized, considering that the linkage in all HEIs in the world is difficult to perceive as such; management and linkage must be strengthened at the university level.

On the other hand, the training dimension is significant with a positive sign (1,537), which means that there is a positive relationship between this dimension and USR; since being a university oriented to the social, students have a good perception of what they receive in classes with the articulation with the social, the entrepreneurship center is a good tool that has allowed students to have a good image about the university as well as the very good scholarship policy maintained by the university.

These results coincide with those proposed by Flores et al., (2022) since innovation and entrepreneurship are tools for sustainable development. Similarly, this dimension coincides as significant within USR, with the study carried out by Cusimayta (2021). The same results are obtained by applying other methods by Erazo & Narváez (2022) since they consider that training processes respond to environmental needs, in the fact that the redesigns of programs and careers are oriented towards that area.

The research dimension is also significant and maintains a positive relationship with USR; the perception that students have leads to the fact that the research carried and being carried out by the university is

multidisciplinary and has a high social content; Flores, Severino & Sarmiento (2022) also state that research with a high social content has a high impact on USR.

For the authors Baca et al., (2017) mention that USR comes from two key concepts, one political and the other referring to capacities; political because it refers to the quality policy that HEIs implement in their management and the impacts that these cause in society; and, the second concept, based on the capacity to disseminate it to society, in practicing a set of principles and values based on four fundamental processes: management, teaching, research, and extension; processes that have their origin in Vallaey (2008).

Following with Baca et al., (2017), they propose a model based on the value chain of each HEI; to the authors, the governing and support processes sustain USR; the governing processes are given by the strategic part that the HEIs have (Mission, vision, values, policies, and strategies of USR) and the support processes (Organization, research, teaching and extension). They make an instrument, which they submit to the Promax method and find what is indicated in Table 9.

Table 9

USR dimensions, Promax method

Dimensions	Percentages
Research	36.86 %
Environmental Management	8.21%
Extension	8.08%
Organizational Management	3.45%
Teaching	2.9%

Note: Taken from Baca et al., (2017).

In the work of Baca et al., (2017), the research dimension explains USR; it coincides with the findings of our work; research is a determining dimension for USR; there is no agreement on the teaching dimension; this is due to the application of the instrument was in a University that has the Faculty of Medicine and that its impacts on research are much higher than other faculties and the teaching component was not significant; In Faculties of Administrative Sciences the opposite occurs.

The work performed by Ramírez & Álvarez (2024) ratifies that an essential component within USR is the Research dimension; these authors' work was executed through a qualitative survey, which was applied to university students and sought to inform about the student's perception regarding USR. This work did not have the statistical rigor of the work of Baca et al., and ours.

Flores et al., (2022) define four dimensions: Academic training, Research, linkage with society, institutional management, and environmental management; they make an instrument to which they submit to a factor and internal consistency analysis, which show that academic training explains 21.55%, the linkage with society measures 19.54%, research 12.32% and institutional management 12.03%; as can be seen, in this study, academic training is significant; in these two studies both by Flores et al., and that of Baca et al., the two dimensions that we present in our work Research and Teaching are the ones that explain USR to a greater extent.

CONCLUSIONS

The analysis of the dimensions allowed a diagnosis of the perception that the students of the Technical University of Cotopaxi have regarding university social responsibility, highlighting that in the study carried out, linkage and management should potentiate USR.

On the other hand, the dimensions that contribute to USR according to the perception of students are training and research; this is due to the redesigns of programs and careers aimed at solving social problems and also because of the type of research carried out by the university to solve the requirements of the area of influence.

The dimensions of socio-environmental linkage and transformative institutional management were not statistically significant, which reflects the complexity of university linkage and that through accreditation models, the State has tried to reorient it; since, until years ago, the linkage was a welfare policy generated by universities, in current accreditation models emphasis is placed on applied research and its synergy with linkage; in such a way that these two substantive functions are oriented to generate solutions to the problems that the objective reality has. On the other hand, institutional management is limited by the lack of budget, which is why HEIs have been forced to generate self-management resources so that the budgetary impact caused by the decrease in financial resources is minimized.

The redesigns of the careers and programs in the case of the UTC respond to environmental needs and consequently promote university social responsibility; the impulse that has been given to innovation and entrepreneurship through the Entrepreneurship Center ensures that the activities of the University contribute to sustainable development through improvements in the living conditions of the influence region of the same.

The perception that students have about the training received, especially in the conjunction of social elements with the curriculum, is significant in their education, which highlights the importance of articulating teaching with social responsibility, positively impacting the image of the University and also the student by preparing him to face and solve social problems.

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