Artículos científicos

Responsabilidad social universitaria: el caso de un programa educativo de una universidad intercultural

University social responsibility: the case of an Educational Program of an Intercultural University

Responsabilidade social universitária: o caso de um programa educativo de uma universidade intercultural

Guadalupe Higuera Torres
Universidad Autónoma Indígena de México
lupitahiguera@uaim.edu.mx
https://orcid.org/0009-0007-0058-3495

Aida Alvarado Borrego
Universidad Autónoma Indígena de México
aidaalvarado@uaim.edu.mx
https://orcid.org/0000-0003-1228-5333

Erasmo Miranda Bojórquez
Universidad Autónoma Indígena de México
emiranda@uaim.edu.mx
https://orcid.org/ 0000-0001-6879-4837

Resumen

El objetivo del presente estudio fue analizar las actividades académicas y de apoyo a la formación profesional que impactan en la adquisición de valores relacionados con la responsabilidad social de los estudiantes de la licenciatura en Ingeniería en Sistemas de Calidad adscritos a la unidad académica Mochicahui de la Universidad Autónoma Indígena de México (UAIM). Para ello, se aplicó un cuestionario en línea a 81 participantes. Los resultados —examinados con base en un enfoque cuantitativo no experimental transversal correlacional— demostraron que los programas de trabajo solidario, servicio social y estadía profesional son indicadores de responsabilidad característicos de la universidad, los cuales fueron agrupados en siete dimensiones: implicación personal, descubrimiento de los valores, conciencia social, conocimiento de la realidad, compromiso social de la profesión, ecología-

medio ambiente y diversidad. Posteriormente, el análisis estadístico reveló que tales indicadores están asociados en intensidades moderadas y fuertes de manera positiva, y que la responsabilidad social general de los estudiantes es de intensidad fuerte, con un compromiso de contribuir y preservar de forma ética su entorno. Asimismo, la correlación general fue fuerte, con un índice de 0.620, lo que permite afirmar que los indicadores están asociados positivamente e impactan fuertemente en la construcción de la responsabilidad social de los estudiantes a través de conocer su realidad personal y social, en el aumento de sus valores éticos, el sentir su compromiso social al estar como estudiante, egresado o integrante en una empresa responsable y actuar en favor de su contexto en un ambiente diverso y ecológico.

Palabra clave: política social, comportamiento del estudiante, análisis factorial, calidad, economía.

Abstract

The objective of this study was to analyze the academic activities and support for professional training that impact the acquisition of values related to social responsibility of the students of the degree in Quality Engineering assigned to the Mochicahui academic unit of the Universidad Autónoma Indígena de México (UAIM). A questionnaire was developed that was applied online to 81 participants; the data analysis was quantitative, non-experimental, cross-correlational. Finding that the solidarity work, social service and professional stay programs are characteristic indicators of responsibility of the university. Seven dimensions were established: personal involvement, discovery of values, social awareness, knowledge of reality, social commitment of the profession, ecology-environment and diversity. The statistical analysis revealed that the indicators are associated in moderate and strong intensities in a positive way, the general social responsibility of the students is of strong intensity, with a commitment to ethically contribute and preserve their environment. The general correlation is strong with an index of 0.620, which allowed us to answer the research question that was posed if they are positively associated and have a strong impact on the construction of students' social responsibility through knowing their personal and social reality; in increasing their ethical values, feeling their social commitment by being as a student, graduate or member of a responsible company and acting in favor of their context in a diverse and ecological environment.

Key words: Social Policy, Student Behavior, Factor Analysis, Quality, Economy.

Resumo

O objetivo deste estudo foi analisar as atividades acadêmicas e de apoio à formação profissional que impactam na aquisição de valores relacionados à responsabilidade social dos alunos do curso de Engenharia em Sistemas de Qualidade lotados na unidade acadêmica Mochicahui da Universidade Indígena Autônoma. Comunidade do México (UAIM). Para isso, um questionário online foi aplicado a 81 participantes. Os resultados - examinados com base numa abordagem correlacional transversal quantitativa não experimental - demonstraram que os programas de trabalho solidário, serviço social e permanência profissional são indicadores característicos de responsabilidade da universidade, os quais foram agrupados em sete dimensões: envolvimento pessoal, descoberta de valores, consciência social, conhecimento da realidade, compromisso social da profissão, ecologia-meio ambiente e diversidade. Posteriormente, a análise estatística revelou que tais indicadores estão associados positivamente em intensidades moderadas e fortes, e que a responsabilidade social geral dos alunos é de forte intensidade, com o compromisso de contribuir eticamente e preservar o seu meio ambiente. Da mesma forma, a correlação geral foi forte, com um índice de 0,620, o que permite afirmar que os indicadores estão associados positivamente e têm um forte impacto na construção da responsabilidade social dos alunos através do conhecimento da sua realidade pessoal e social, no aumento da seus valores éticos, sentindo seu compromisso social por ser estudante, graduado ou membro de uma empresa responsável e agir em favor de seu contexto em um ambiente diverso e ecológico.

Palavra-chave: política social, comportamento estudantil, análise fatorial, qualidade, economia.

Introduction

Corporate social responsibility (CSR) is a broad concept that encompasses not only ecological aspects, but also social ones, hence including essential variables such as business ethics, community investment, diversity and inclusion, transparency and accountability. These factors, logically, require new ones from companies in order to cope with the changes that are taking place in the way of doing business.

In the case of educational institutions, they must promote other management models in which they include - in addition to the philosophy, values and objectives - the strategic axes of social and environmental responsibility to become a way in the permanence and contribution to the development of the community in which they are inserted (López *et al.*, 2016). This gives rise to the concept of *university social responsibility* (USR), which refers to the contribution of educational institutions to the sustainable development of society.

Some ways in which universities can promote USR include doing responsible research to address environmental challenges and then sharing the results in an accessible way, engaging with the community through programs and projects that enable capacity building, adapting sustainable practices in resource management (including energy, water and waste), and integrating sustainability into curricula to train students aware of global issues and able to address them ethically.

Based on the latter premise, Latif (2018) created a scale for measuring university social responsibility, which included students, academics, and parents, who identified keywords that were categorized into seven dimensions and 60 sub-dimensions. The factors identified as part of the factor analysis were as follows: operational responsibilities, internal stakeholder responsibilities, legal responsibilities, ethical responsibilities, research/development responsibilities, philanthropic responsibilities, and community engagement.

On the other hand, the empirical study by Sánchez-Hernández and Mainardes (2016) focused on a primary data source of perceptions provided by students in a questionnaire with responses on a Likert-type scale. For that, 47 indicators or subdimensions related to teaching, research and public events and activities of the graduates were used to determine their exercise regarding the issue of ethical and environmental responsibility.

Similarly, Ortiz (2020) inquired about university social responsibility in state public higher education institutions in northwestern Mexico. Specifically, the research subjects were students who concluded their university social service between 2019 and the beginning of

2020. The data reveal that the universities to which these students belonged were limited to training professionals in terms of social commitment, but not in the aspect of sustainable development.

Now, in the case of the Universidad Autónoma Indígena de México (UAIM), it has been perceived that there is no program, plan or department that specifically addresses university social responsibility, although it should be recognized that a series of strategies have been developed to give continuity to the learning and professional training of its students, as its main interest group. For example, in its educational model it incorporates activities of a social community nature established in programs of solidarity work and social service with the community, as well as professional service practices, all of which are planned and supervised. In addition, the UAIM promotes policies to facilitate access to academic training in favor of marginalized interest groups (indigenous population, low-income students, etc.), for which it offers scholarships and other benefits.

In other words, it is based on the principle that university education cannot be reduced only to a technical preparation oriented to the performance of a profession. For this reason, UAIM's curricula include a set of humanistic and social subjects, as well as complementary solidarity activities aimed at instilling in the student a series of values, attitudes and habits. Among these complementary solidarity activities we can mention the following: solidarity work, social service and professional internships.

a. Solidarity work is a voluntary action at the service of the community, which makes it possible to develop human values and competencies established in the subjects. It is composed of eight basic subprograms: 1) ecological, 2) production, 3) health, 4) awareness promotion, 5) administrative support, 6) security and road safety, 7) artistic-cultural, and 8) disciplinary subprograms of each educational program. The period covers from the first to the sixth semester.

b. Social service makes it possible to give back to society for the support received in their professional training and to reinforce the competencies acquired by the students. The objectives are to foster in students and graduates an awareness of social responsibility and to link the university with the population in order to contribute to the improvement of the human development index, sustainability and gender equity. This is done when the student is in the seventh semester and in different public or non-governmental institutions.

c. The professional internship is a mandatory activity that allows students to apply their professional knowledge in the solution of problems in the social and productive

environment. Its general objective is to provide students with the opportunity to learn about and identify with the areas of action, functions, activities and problems of the labor field in which they will develop as professionals (UAIM, 2023).

The problem of study of the present work is to know the impact of the student's training on their social responsibility during and after their school career. The actors involved were students from different educational programs, specifically from the Quality Systems Engineering program of the Mochicahui Unit of the UAIM.

This interest arises due to the set of national and international economic, social, legal, environmental and ethical obligations and commitments of organizations with their stakeholders. In other words, a socially responsible company is characterized because the people who are part of it and who relate to it are able to answer for their actions, decisions and their consequences (García *et al*., 2016). In this sense, the university training exercised by the educational program of engineering in Quality Systems should participate in the preparation of socially responsible people, through their integral development to integrate into companies.

The phenomenon of social responsibility is manifested by institutionally contrasting the dimensions of the professional training of the Quality Systems engineering student, which allows the definition of a theoretical-practical framework of his social responsibility and, above all, the implementation of his vision as an individual, of his social relations and to know the structure of reality.

The factors addressed in the present research include the discovery of the values acquired by the student before entering the university, the thematic contents related to social responsibility, the fulfillment of solidarity work with the community that spans from the first to the sixth semester, the performance of social service in public institutions or organizations during the seventh semester, professional internships in companies during the eighth semester and, finally, the professional integration of the Quality Systems engineering student in a company after graduation.

The problem is centered on the fact that students are being trained both professionally and ethically through the thematic contents in subjects of the curriculum and with complementary activities of service to other interest groups, both social and business. Therefore, it is important to analyze the academic and professional training support activities of the students of the Quality Systems Engineering program at the Mochicahui Unit of the UAIM in order to determine the impact on their university social responsibility.

This study serves to know how students act ethically in the school context during the consolidation of their learning, as well as graduates within their work environment. In addition, it provides elements to devise a model of university social responsibility, according to the purposes and functions of the UAIM.

To this end, the research questions that this study aims to address are the following: How do the academic and professional training support activities of the Quality Systems Engineering students of the Mochicahui Unit of the UAIM impact their social responsibility? Are the dimensions of social responsibility of the students of the Quality Systems Engineering program of the Mochicahui Unit of the UAIM positively associated?

In addition, the objectives are as follows:

- To analyze the support activities for professional training in order to know the impact of university social responsibility on the students of the educational program of Quality Systems Engineering at UAIM.

- To examine the complementary professional training activities of the students of the Quality Systems engineering educational program to determine the subject matter of their social responsibility.

- To establish the dimensions and their indicators of students' social responsibility for the collection of information from the students of the Quality Systems engineering educational program.

- To discover the relationships between the defined variables of social responsibility in order to measure their impact on the students of the Quality Systems engineering educational program.

Method

The analysis of the academic and professional training support activities of the students of the Quality Systems Engineering educational program of the Mochicahui Unit of the UAIM was carried out through a non-experimental cross-sectional correlational quantitative design. The objective of the research focused on the topic of *student social responsibility*. To measure it, the following dimensions proposed by García *et al*. (2016) were adapted: commitment to others and the environment, personal discovery of values, formation of social responsibility, and approach to professional practice from commitment.

Likewise, the dimensions based on the theory of change proposed by Bolio Domínguez and Pinzón Lizarraga (2019) were considered, i.e., personal transformation, transformation of relationships, transformation of collective patterns, and transformation of structure and institutions. In addition, dimensions proposed by Vallaeys (2021) were included within the model proposed by the Union of Latin American University Social Responsibility (URSULA) (2019). In addition, new dimensions were proposed due to UAIM's own characteristics, such as solidarity work activities, social service and professional stay.

It should be noted that each university has its own characteristics, so that the indicators of the dimensions of the aforementioned research work do not fully agree with those of social responsibility existing at UAIM, since its own characteristics such as complementary activities of solidarity work, social service in public institutions and the performance of professional practices should be considered to fully understand social responsibility in this institution.

Specifically, the social responsibility of UAIM students is made up of sixty indicators grouped into seven dimensions: 1) personal involvement, 2) discovery of values, 3) social awareness, 4) knowledge of reality, 5) social commitment of the profession, 6) ecology and environment, and 7) diversity (see appendix).

The students of the Quality Systems Engineering educational program of the Mochicahui academic unit of the Universidad Autónoma Indígena de México, active in the period January-June 2023, specifically second, fourth, sixth and eighth semesters, were selected. In addition, an invitation was sent to graduates of previous generations, who have already experienced the entire educational training process.

The items were categorized through six stages:

- Stage 1: The ethical formation that students bring with them when they enter the university.
- Stage 2: Solidarity work carried out from the first to the sixth semester.
- Stage 3: Their training in subjects related to the contents related to social responsibility.
- Stage 4: The one that takes place during your social service
- Stage 5: Professional stay
- Stage 6: Work experience after graduation (Table 1).

Table 1. Dimensions of UAIM student social responsibility

DIMENSIONS	S T A G E S					
	Stage 1 Prior Education	Stage 2 Solidarity work	Stage 3 Subject Training	Stage 4 Social Service	Stage 5 Professional stay	Stage 6 Work experience
Personal involvement	X	X	X	X	X	X
Discovery of values	X	X		X		
Social awareness	X	X		X	X	X
Knowledge of reality				X	X	X
Social commitment of the profession		X	X	X	X	X
Ecology and environment		X	X	X		
Diversity			X			

Source: Own elaboration

Likewise, an online questionnaire was implemented for data collection, designed in a Google form (Likert scale) with the following possible answers: strongly agree (5), agree (4), disagree (3), strongly disagree (2), don't know (1). To be answered, a flow chart (Figure 1) was designed according to the students' semesters. The semesters included were second, fourth, sixth, eighth and graduates.

Figure 1. Flow for answering questionnaires
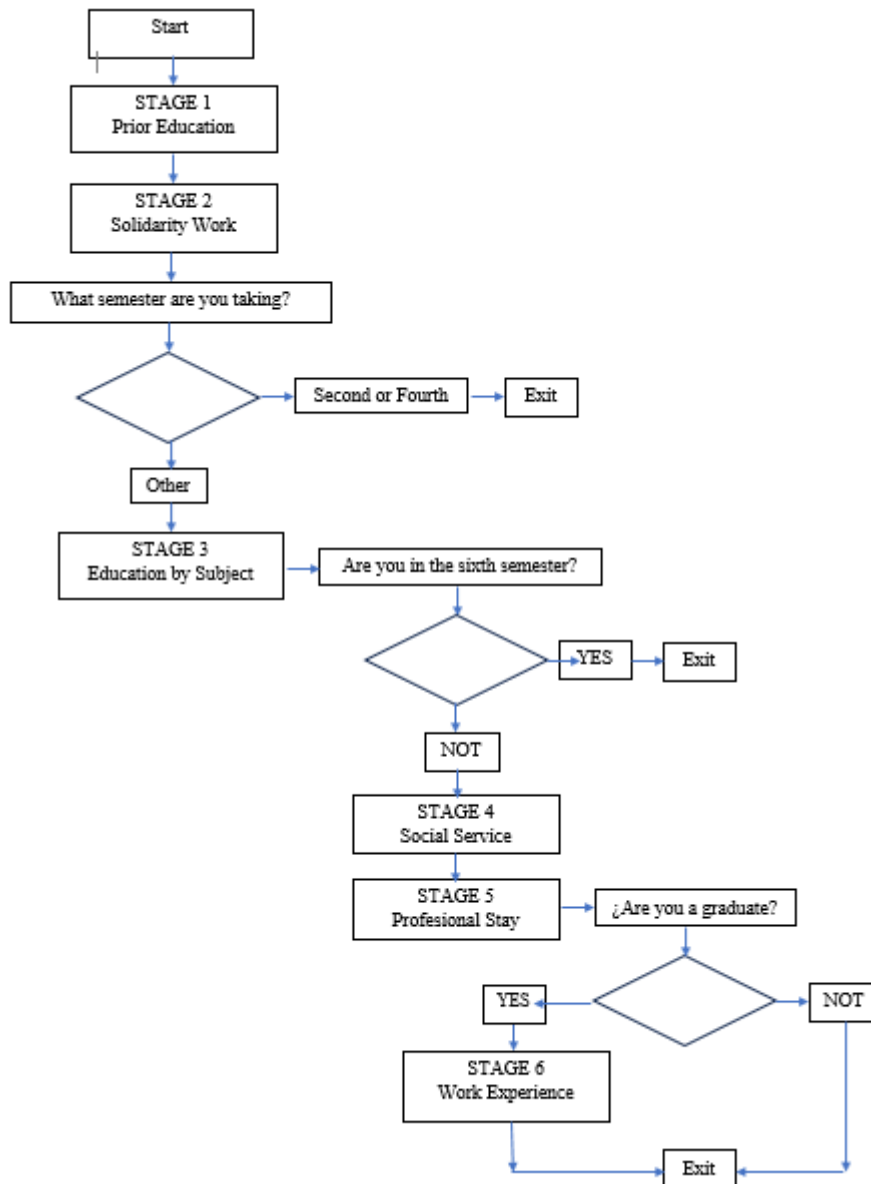
Source: Own elaboration

Results

Forty-one women and 40 men participated in the online survey. Of the total, 90% indicated that they were from the rural area, 28.4% (23) are graduates and 71.6% (58) are currently in a semester. In addition, three important aspects of the data obtained from the total number of students were reviewed:

1. Validity of the instrument scale with Cronbach's alpha coefficient.
2. Validity of the data through the association between the questions to know the impact value in the formation of social responsibility of the students of the educational program of engineering in Quality Systems. For this purpose, Spearman's correlation statistical analysis was used in SPSS 25.0 (for non-parametric data).
3. We evaluated whether the operational definition of a variable reflects the theoretical meaning based on the fact that they are grouped into dimensions. For this purpose, a model was used to group the items into seven dimensions, and confirmatory factor analysis was used to confirm whether the structure submitted to the SAS-JMP 11.0 *software* analysis coincides with the seven dimensions that have been formulated in this research.

1. Validity of the instrument scale with Cronbach's alpha coefficient.

The internal consistency of the data was quantified through the degree to which the items of an instrument correlate. In this regard, values normally range from 0 to 1, where 0.0 to 0.40 are considered low, 0.40 to 0.60 moderate, 0.60 to 0.80 good and 0.80 to 1.0 high (Frías-Navarro, 2022). Table 2 shows the reliability of the data as a whole. The reliability analysis is shown with three coefficients (Cronbach's alpha, Spearman-Brown coefficient and Guttman's two halves) ranging from 0.658 to 0.828, while individually the values for each statement or question range from 0.811 to 0.859 (Table 3).

Table 2. Overall reliability of data

Cronbach's alpha	0.828
Spearman-Brown Coefficient	0.765
Two Guttman halves	0.658

Source: Own elaboration

Table 3. Individual data reliability

DIM1P1	0.811		DIM3P12	0.820
DIM1P2	0.822		DIM3P13	0.828
DIM1P3	0.827		DIM4P3	0.836
DIM1P4	0.824		DIM4P4	0.832
DIM1P6	0.830		DIM4P5	0.828
DIM1P7	0.819		DIM5P1	0.816
DIM1P8	0.825		DIM5P2	0.831
DIM1P9	0.821		DIM5P3	0.829
DIM1P10	0.820		DIM5P4	0.827
DIM1P11	0.829		DIM5P5	0.825
DIM1P12	0.828		DIM5P7	0.831
DIM1P13	0.823		DIM5P10	0.845
DIM2P1	0.820		DIM5P11	0.821
DIM2P2	0.820		DIM5P12	0.825
DIM3P1	0.826		DIM5P13	0.850
DIM3P2	0.826		DIM6P1	0.825
DIM3P3	0.820		DIM6P2	0.830
DIM3P5	0.828		DIM6P3	0.826
DIM3P6	0.822		DIM6P4	0.859
DIM3P7	0.834		Dim7P1	0.829
DIM3P8	0.836		Dim7P2	0.829
DIM3P10	0.821		Dim7P3	0.828
DIM3P11	0.826			

Source: Own elaboration

2. Validity of data with association between the questions

Correlational research seeks to establish the intensity and direction of the relationship between two variables, if one increases what happens to the other or if one decreases what happens to the others. In this way, the linear relationship between two or more variables is described (Mousalli-Kayat, 2015). The values that determine the correlation strength are located from 1.0 to -1.0 (Table 4). The accepted hypothesis (Ha) is that the correlation is different from 0, while the null or rejected hypothesis is equal to 0.

Table 4. Range of correlations

Range Values		Intensity
1.0 a 0.50		Fort
0.49 a 0.30		Moderate
0.29 a 0.00		Weak
-1.0 a 0.50		Fort
-0.49 a -0.30		Moderate
-0.29 a 0.00		Weak

Source: Own elaboration

Table 5 shows the correlation values for each of the sentences or items, while Table 6 presents the data values already grouped in the seven established dimensions.

Table 5. Individual correlation

DIM1P1	0.681		DIM3P12	0.778
DIM1P2	0.760		DIM3P13	0.282
DIM1P3	0.413		DIM4P3	0.024
DIM1P4	0.548		DIM4P4	0.029
DIM1P6	0.197		DIM4P5	0.321
DIM1P7	0.828		DIM5P1	0.682
DIM1P8	0.390		DIM5P2	0.174
DIM1P9	0.486		DIM5P3	0.210
DIM1P10	0.518		DIM5P4	0.341
DIM1P11	0.339		DIM5P5	0.505
DIM1P12	0.301		DIM5P7	0.174
DIM1P13	0.586		DIM5P10	-0.295
DIM2P1	0.518		DIM5P11	0.676
DIM2P2	0.518		DIM5P12	0.391
DIM3P1	0.415		DIM5P13	-0.234
DIM3P2	0.415		DIM6P1	0.485
DIM3P3	0.778		DIM6P2	0.143
DIM3P5	0.269		DIM6P3	0.421
DIM3P6	0.619		DIM6P4	-0.482
DIM3P7	0.163		Dim7P1	0.210
DIM3P8	0.024		Dim7P2	0.242
DIM3P10	0.676		Dim7P3	0.322
DIM3P11	0.557			

Source: Own elaboration

Revista Iberoamericana para la
Investigación y el Desarrollo Educativo
ISSN 2007 - 7467

Table 6. General correlation

DIM. 1	Correlation between internal elements	0.573
DIM. 2	Correlation between internal elements	0.403
DIM. 3	Correlation between internal elements	0.513
DIM. 4	Correlation between internal elements	0.440
DIM. 5	Correlation between internal elements	0.257
DIM. 6	Correlation between internal elements	0.285
DIM. 7	Correlation between internal elements	0.573
	General correlation	0.620

Source: Own elaboration

Table 7. Association between dimensions

	DIM 1	DIM 2	DIM 3	DIM 4	DIM 5	DIM 6	DIM 7
DIM 1	1						
DIM 2	0.398	1					
DIM 3	0.537	0.298	1				
DIM 4	0.282	0.359	-0.101	1			
DIM 5	0.211	0.091	0.355	-0.193	1		
DIM 6	0.123	0.301	0.139	-.076	0.008	1	
DIM 7	0.208	0.173	0.059	0.421	0.258	0.123	1

Source: Own elaboration

3. It was evaluated whether the operational definition of a variable reflects the theoretical meaning based on the fact that they are grouped into dimensions.

The statistical analysis grouped the items into dimensions that should coincide with the seven formulated in this research. Confirmatory factor analysis (CFA) was used to verify the structure of the dimension model. The results are shown in Tables 8 and 9.

Table 8. Significant resulting factors

Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
DIM3P13	0.808636	-0.023917	0.132602	-0.054143	0.063662	-0.17689	-0.099608
DIM3P12	0.701605	0.168455	-0.172329	0.213034	-0.012225	0.088808	0.306894
DIM3P5	0.681369	0.164676	-0.105641	0.080391	-0.049574	0.225567	-0.130284
DIM3P3	0.564039	-0.027247	-0.002484	0.373259	-0.04268	0.251496	0.261992
DIM3P2	0.543684	0.259954	-0.022733	0.318977	-0.04922	0.291306	0.056791
DIM3P11	0.463934	0.345565	-0.053999	-0.285644	0.149377	-0.21967	0.104174
DIM3P10	0.449613	0.287913	0.148235	0.105902	0.425029	0.240947	0.144278
DIM1P13	0.441693	-0.047505	0.415594	0.035667	0.218065	-0.107456	-0.206317
DIM1P12	0.423468	0.092063	0.266157	-0.232454	0.404445	-0.221361	0.339529
DIM2P2	0.016492	*0.807253*	-0.00077	-0.037435	-0.005098	-0.06459	0.078825
DIM2P1	0.121654	*0.743386*	-0.026717	0.032001	-0.147469	-0.098797	0.189622
DIM6P3	-0.036834	*0.687607*	0.20483	0.039018	0.287642	0.207152	0.000429
DIM1P10	0.342187	*0.632699*	-0.302457	0.122938	0.353963	-0.159219	-0.281619
DIM6P1	0.312664	*0.499615*	-0.111851	-0.0103	0.313814	-0.047876	-0.405803
DIM1P4	0.356195	*0.470251*	0.368535	0.109723	0.132766	0.109311	-0.170492
DIM6P2	0.113216	*0.458823*	0.135042	0.000587	0.242768	0.26119	0.380974
DIM3P6	0.382002	*0.446992*	0.143775	0.162245	0.203458	0.111162	-0.178019
DIM2P3	0.083672	*0.286457*	-0.037247	0.062404	-0.202234	-0.023207	0.019818
DIM6P4	-0.202126	*0.280499*	0.002241	-0.423082	-0.381953	-0.060705	-0.146535
DIM5P10	-0.159094	*0.046981*	-0.183988	-0.117121	-0.28662	-0.042518	-0.086888
DIM4P4	-0.105715	-0.012855	*0.96604*	-0.051031	0.107939	0.023311	0.075175
DIM4P5	0.10347	0.26409	*0.684034*	-0.246288	0.06868	-0.156511	-0.058947
DIM3P8	0.00704	-0.10236	*0.63454*	0.040203	-0.031641	-0.04514	-0.077214
Dim7P2	-0.11357	0.091515	*0.520856*	0.510283	0.080912	-0.169876	0.14369
DIM3P7	-0.002189	0.121644	*0.304493*	0.00788	0.243773	0.204575	-0.329233
DIM5P12	-0.106952	-0.123537	-0.053614	*0.828347*	0.05975	0.034638	-0.071448
DIM3P1	0.276996	0.065491	-0.208398	*0.670935*	0.008202	0.168721	-0.096239
DIM1P2	0.435008	0.195795	-0.108746	*0.560072*	-0.00983	-0.255024	0.107144
DIM1P1	0.136052	0.354904	-0.069422	*0.508527*	0.008415	-0.092262	-0.297993
Dim7P1	-0.073466	0.429719	0.388965	*0.490612*	0.122175	-0.071424	0.054591
DIM5P5	0.217839	0.074407	0.255037	*0.48342*	0.247689	0.440336	-0.045587
DIM5P4	0.248295	0.123271	0.348372	*0.474561*	0.122296	0.458756	0.216132
DIM5P3	0.184963	0.369409	0.386136	*0.436346*	0.20743	0.221852	-0.056617
DIM5P1	-0.108175	-0.062186	-0.202123	0.020484	*0.778086*	-0.027188	-0.266623
DIM5P11	0.527044	0.259583	0.160969	0.086596	*0.635107*	0.374748	0.006336
DIM1P9	-0.089713	0.143016	0.136668	0.033046	*0.578055*	-0.044415	0.159551
DIM1P8	0.147643	0.022426	-0.540976	0.159519	*0.491349*	0.37302	0.348405
DIM1P7	0.182096	0.359631	0.137148	0.085843	*0.471139*	0.36943	-0.022
DIM1P11	0.277601	0.064303	-0.012029	0.213464	*0.4517*	-0.441025	0.119136
Dim7P3	-0.074623	0.019589	0.311688	0.035784	*0.330634*	-0.1494	0.21332
DIM5P7	0.044031	-0.076952	-0.191713	0.174524	0.022326	*0.851037*	-0.024011
DIM5P2	0.028431	-0.021842	-0.186769	-0.090923	-0.01427	*0.800546*	0.012243

Revista Iberoamericana para la
Investigación y el Desarrollo Educativo
ISSN 2007 - 7467

DIM5P13	-0.226616	-0.189339	-0.385731	-0.077095	0.202498	-0.114982	*0.728381*
DIM1P6	0.135338	0.210576	0.154366	-0.091883	0.218475	0.170317	*0.672348*
DIM1P3	0.445793	0.163036	-0.141506	0.10376	-0.121732	-0.172005	*0.563529*

Source: Own elaboration

Table 9. Recognition of dimensions and their indicators

Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
Items	DIM 3	DIM 2	DIM 4	DIM 5	DIM 1	Factor 6	Factor 7

Source: Own elaboration

Discussion

The following conclusions can be drawn from the above analysis data:

1. The questions asked should aim at the same purpose, and the measurement of the indicators should be reliable. The values obtained for Cronbach's alpha coefficient as a whole are 0.828 (Table 2) and individually range from 0.811 to 0.859 (Table 3). These values are high, indicating good validity of the indicators.

2. Regarding the correlation values of each of the sentences or items, 65% of the correlations show moderate and strong intensities (Table 5). The overall correlation is strong, with an index of 0.620 (Table 6). The internal correlation of each dimension is positive and ranges from moderate to strong, except in dimensions 5 and 6, where the intensity is weak. Furthermore, Table 7 shows that the strongest correlation is between dimensions 1 and 3, corresponding to personal involvement and social awareness. There is a moderate correlation between dimension 1 and 2, this between personal involvement and the discovery of values. However, dimension 7 (diversity) shows no correlation with any other dimension.

It is true that dimension 3 (social awareness) also shows a strong intensity correlation with dimension 1 (personal involvement), which suggests that the indicators linked to social awareness are themes that have had a significant impact on both academic training and the activities carried out in solidarity work and social service.

Issues such as realizing their position as a university student, identifying personal aspects that they can make available to others, being interested in solving problems in their social environment to improve the quality of life in their communities, and

thinking about how to contribute to solving social and environmental problems first as a student and then as a professional are aspects that contribute to shaping the student's personality and interest in doing good in the society around them.

3. The variables do reflect the theoretical meaning since they are grouped into seven dimensions. The information submitted to confirmatory factor analysis results in Table 9, which shows the coefficients of all the indicators (items), grouped into seven factors. It can be seen that factor 1 corresponds to dimension 3 (DIM3), factor 2 to dimension 2 (DIM2), factor 3 to dimension 4 (DIM4), factor 4 to dimension 5 (DIM5), and factor 5 to dimension 1 (DIM1). The indicators of factors 6 and 7 are rearranged in dimensions DIM1 and DIM5. Based on the above, the indicators for knowing the social responsibility of Quality Systems engineering students were finally grouped into 5 dimensions (Table 10).

Table 10. Final dimensions

DIM. 1	Personal involvement
DIM. 2	Discovery of values
DIM. 3	Social awareness
DIM. 4	Knowledge of reality
DIM. 5	Social commitment of the profession

Source: Own elaboration

This research shares common themes with Narváez (2019) in the evaluation of student perception, such as ethical and citizenship training, as well as the development of subjects with applied research. However, each university has its own characteristics, and in the case of UAIM systematized actions such as solidarity work, social service and professional internships are carried out, which have a positive effect on the social responsibility of the student.

The design of the instrument for measuring social responsibility was supported by Bolio Domínguez and Pinzón Lizarraga (2019), which is based on models of social training that seek the recognition of talents, interests, aspirations, values and personal dreams with a view to putting them at the service of others and in the construction of a more just society.

In addition, following the recommendations of Espitia *et al.* (2020), indicators related to ethics, environment and sustainability were included. Also considered were the findings of Erro *et al.* (2020), who analyzed the perception that students at a university in Sonora,

Mexico, have of their social responsibility, as well as the objectives of sustainable development, topics of great importance to graduates.

However, the present research differs from that of Ortiz (2020), which focuses on university social responsibility in state public higher education institutions in northwestern Mexico through university social service. That is, Ortiz's study reveals that these universities are limited to training professionals at a level of social commitment, and not sustainable development. In contrast, at the UAIM sustainability is integrated into the curricula to train students aware of global problems and capable of addressing them ethically. In addition, the commitment to the community is emphasized through the establishment of programs and projects that benefit local communities, from training to technical assistance.

Finally, a limitation of the research conducted is the lack of documentation on social responsibility studies in the country's intercultural universities, which did not allow for a more general analysis to better determine the influence of study plans and programs on the responsible education of students.

Conclusions

Frequent problems arise when measuring university engagement with society, such as the variety of approaches adopted and the lack of standardized instruments and tools. Therefore, the proper selection of measurement indicators may be more critical than the choice of the method itself. Therefore, this research ensured that there was a clear relationship between the indicators, in addition to grouping them into dimensions and subjecting them to statistical processes such as correlations and confirmatory factor analysis for validation.

In this sense, research papers were found that used various interest groups, such as students, teachers, administrators and others, to measure university social responsibility. However, this research focused specifically on works that only involved students, since the main interest was to measure the social responsibility of those who were studying Quality Systems Engineering.

On this issue, it can be affirmed that the social responsibility training of students - through activities such as solidarity work, social service and professional internships - influences sustainability, especially in the economic aspect. This implies that UAIM must offer quality education that fosters the employability of graduates. In accordance with this principle, the professional internship of Quality Systems engineering students in companies has allowed some of them to be hired directly, which contributes to economic sustainability.

In fact, UAIM's intervention through activities such as solidarity work, social service and professional internships promotes collaboration between the university, the community and companies, which can result not only in the transfer of knowledge and technology to industry, but also in benefiting both companies and the local and national economy.

Finally, it should be noted that students identify social responsibility as an obligation and commitment to preserve the environment, regardless of whether they belong to it or not. They even recognize that both companies and organizations have an obligation to act in an ethical and sustainable manner, not only in terms of operations and financial results, but also in terms of their social and environmental impact.

Future lines of research

The research developed with students of the Quality Systems Engineering program opens important doors for future lines of research, among which the following stand out:

1. University social responsibility in the UAIM as a whole: This line would cover all the university's stakeholders in order to seek a thorough understanding of the aspects that integrate or reinforce administrative and academic activities, so as to contribute to the common good of society from higher education. This would also be an opportunity to comprehensively evaluate the impact of social responsibility initiatives in all areas of the institution and its relationship with the community.

2. Development of a model for measuring university social responsibility for intercultural universities in Mexico: Given that the UAIM belongs to this group of universities, there is the possibility of formulating a specific model that adapts to the particular characteristics of these institutions, which could take into account the cross-cutting themes of linkage and socialization with the communities, as well as the principles of the intercultural educational model.

References

Bolio Domínguez, V. y Pinzón Lizarraga, L. M. (2019). Construcción y validación de un instrumento para evaluar las características de la responsabilidad social universitaria en estudiantes universitarios. *Revista Internacional de Educación para la Justicia Social*, *8*(1). https://doi.org/10.15366/riejs2019.8.1.005

Erro, S., Mendivil, V. Y. y Córdova C., G. (2020). Perspectiva de estudiantes universitarios sobre la responsabilidad social. *Revista Inclusiones*, *7*(2), 619-626. https://revistainclusiones.org/index.php/inclu/article/view/295

Espitia C., A. A., Meneses P., L. I. y Huertas F. (2020). Análisis de las expectativas de los egresados frente a un modelo de responsabilidad social universitaria. *Equidad y Desarrollo*, (35), 61-84. https://doi.org/10.19052/eq.vol1.iss35.3

Frías-Navarro, D. (2022). *Apuntes de estimación de la fiabilidad de consistencia interna de los ítems de un instrumento de medida*. Universidad de Valencia. España. https://www.uv.es/friasnav/AlfaCronbach.pdf

García R., De la Calle M., C., Valbuena M., M. C. y De Dios Alija, T. (2016). Hacia la validación del constructo "responsabilidad social del estudiante universitario" (RSEU). *Bordón. Revista de Pedagogía*, *68*(3), 41–58. https://doi.org/10.13042/Bordon.2016.68303

Latif, K. F. (2018). The Development and Validation of Stakeholder-Based Scale for Measuring University Social Responsibility (USR). *Social Indicators Research*, *140*, 511–547. https://doi.org/10.1007/s11205-017-1794-y

López N., M. D., Zalthen, H. L. y Cervantes, M. de los A. (2016). La responsabilidad social universitaria desde la perspectiva del alumno. *RA XIMHAI*, *12*(6), 305–314. https://doi.org/10.35197/rx.12.01.e3.2016.20.ml

Mousalli-Kayat, G. (2015). *Métodos y diseños de investigación cuantitativa*. Mérida. https://www.researchgate.net/publication/303895876_Metodos_y_Disenos_de_Investigacion_Cuantitativa

Narváez, J. A. (2019). *Análisis de las funciones de la universidad y su incidencia en la responsabilidad social universitaria, un estudio de caso* (tesis doctoral). Universidad Nacional Santiago Antúnez de Mayolo.

Ortiz, M. C. (2020). *Responsabilidad social universitaria y servicio social en universidades públicas estatales del Noroeste de México* (tesis doctoral). Universidad Autónoma de Baja California.

Sánchez-Hernández, M. I. and Mainardes, E. W. (2016). University social responsibility: a student base analysis in Brazil. *Int Rev Public Nonprofit Mark*, *13*, 151–169. https://doi.org/10.1007/s12208-016-0158-7

Universidad Autónoma Indígena de México (UAIM) (2023). *Normativa. Documentos de trabajo*. http://www.uaim.edu.mx/portal/index.php/h-consejo-universitario/normativa

Unión de Responsabilidad Social Universitaria latinoamericana (URSULA) (2019). *Investigación continental URSULA: estado del arte de la responsabilidad social universitaria (RSU) en América Latina-2019*. http://unionursula.org/investigacion-continental-rsu-2019/resultados/

Vallaeys, F. (2021). *Manual de responsabilidad social universitaria. El modelo URSULA: estrategias, herramientas, indicadores*. Unión de Responsabilidad Social Universitaria Latinoamericana (URSULA). https://unionursula.org/wp-content/uploads/2021/06/2021-Manual-RSU-Modelo-URSULA-Esp

Annex

Dimension 1: personal involvement

Indicators

Have you done volunteer work in any group (e.g., foundation, civil association, church or community) before entering college?
I have experienced the joy and satisfaction of helping others.
I am willing to work with diverse groups (race, gender, culture, religion, sexual orientation).
I am passionate about solidarity work, it is important and I recommend doing it.
Do you feel satisfied with your social service work?
I am familiar with the functioning of the quality area of the company where I developed my professional stay.
I have used quality analysis tools (control plans, work instructions, etc.) during my professional stay.
During my stay I specialized in continuous improvement from a quality perspective.
Would you take a job with a company that endangers and disrespects the community?
Do you personally share or make known the activities in favor of the environment and its people carried out by the company where you work?
Have you started any type of business or enterprise?
I perform college projects or assignments above and beyond the expectations of my professors.
I don't give up in the face of difficult college challenges.
Year of graduation from university

Dimension 2: discovery of values

Indicators

For me, solidarity work is just a mandatory procedure, an extra job, a responsibility to help the community.
The experience of doing solidarity work has motivated me to do other social activities inside or outside the university.
The activities carried out during the solidarity work made me feel more responsible.
What attitudes did you develop during the solidarity work activities?
If you could describe your university social service experience with a human value, what value would it be?
I consider myself a trustworthy person.

Dimension 3: social awareness

Indicators

I have become aware of my privileged status as a university student.
It has increased my interest in improving my immediate environment.
I understand that being part of this world implies an ethical responsibility for what surrounds me.
What does social responsibility mean to you?
I recognize that I can be part of the solution to problems that affect others.
I am aware that as a student it is a privilege to do solidarity work.
In your social service did you collaborate in a possible solution to a social problem?
I have overcome my initial attitude of suspicion, fear of the unknown, apathy or skepticism during my social service.
I clearly identify what my contribution in social service to society was.
I think that with the exercise of my profession I can contribute to reach more dignified human levels in the quality of life of the inhabitants of my city or community.
As a professional I would like to support in the design, implementation and evaluation of public policies that improve the quality of life of minority groups (race, ethnicity, sexual preference) and vulnerable groups (children, women, elderly, etc.).
I am aware that I am in the world to contribute in a responsible way to its social transformation.
I am able to identify aspects of myself that I can put at the service of others.

Dimension 4: knowledge of reality

Indicators

Have you identified any problems in the company during your professional stay?
As a professional I would like to support in the design, implementation and evaluation of public policies that improve the quality of life of minority groups (race, ethnicity, sexual preference) and vulnerable groups (children, women, elderly, etc.).
During your social service, did you reflect on the social reality and its problems and do you consider yourself more sensitive to this reality?
I consider that during the study of my profession I was given tools that allow me to follow up on the implementation of plans and governmental or private initiative programs that seek social transformation.
I am interested in using my career as a Quality Systems Engineer as a means to contribute to poverty reduction in my state.
Does the company where you perform or performed your professional stay offer products, services, products and services?

Dimension 5: social commitment of the profession

Indicators

In solidarity work there are only routine tasks with little or no learning.
In the development of your subjects do you have the opportunity to do research work to solve social, economic or environmental problems?
My training is truly integral, human and professional, and not only specialized in quality.
The skills acquired in my career allow me to act with quality and responsibility in a company or business.
The university provides me with an ethical and civic education that helps me to be a socially responsible person.
Was the social service performed in la UAIM, public school, social institution?
In my social service I applied my knowledge of quality engineering.
Describe what activities you would like to have performed in your social service.
Is the company of your professional stay a socially responsible company?
Have you participated in any improvements in the company's work area during your internship?
I have discovered that my personal fulfillment is that of a professional committed to society.
Have you made any improvements in your work area?
Do you work or have you worked in a socially responsible company?

Dimension 6: ecology and environment

Indicators

I share information on social networks about environmental care.
I have been acquiring green habits since I was in college.
Some of the subjects of my career influenced me to participate in environmental conservation activities such as recycling, reforestation, protection of flora and fauna and natural reserves.
During your social service, did you perform more administrative and clerical activities than activities with a social or ecological cause?

Dimension 7: diversity

Indicators

I am convinced that working with diverse people is a powerful tool for finding innovative solutions to problems.
When working with diverse groups, I try to ensure that everyone has the opportunity to express their ideas.
In the course of my career, I have been given the tools to sensitize others to the importance of respecting others in their diversity (racism, discrimination, sexual preferences, gender equality).

Contribution role	Author(s)
Conceptualization	Guadalupe Higuera Torres
Methodology	Aida Alvarado Borrego
Software	Erasmo Miranda Bojórquez
Validation	Guadalupe Higuera Torres
Formal analysis	Erasmo Miranda Bojórquez
Research	Guadalupe Higuera Torres
Resources	Guadalupe Higuera Torres
Data Curation	Guadalupe Higuera Torres
Writing - Preparation of the original draft	Guadalupe Higuera Torres
Writing - Proofreading and editing	Aida Alvarado Borrego
Visualization	Aida Alvarado Borrego
Supervision	Aida Alvarado Borrego
Project management	Erasmo Miranda Bojórquez
Acquisition of funds	Not applicable