RESULTS REPORT

INTERNATIONAL SURVEY ON CLIMATE CHANGE 2019

18 Latin American countries

(CR)² | Center for Climate and Resilience Research
www.CR2.cl

StatKnows
Inteligencia artificial aplicada

PRESENTATION

The International Survey on Climate Change 2019 was a joint effort between StatKnows and the Center for Climate and Resilience Research, (CR)[2]. The study is statistically representative of the population over the age of 18 in Latin America as of November 2019, considering Brazil and 17 Spanish-speaking countries in South and Central America, which makes up a universe of 430 million people. The 18 countries are Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela[1].

The sampling process was probabilistic, stratified, with fixation proportional to the size of the strata, and selection in two phases. The sample size was 7,232 people, and the estimated sampling error at the total survey level was 2.8%.

It was applied between November 14 and 18, 2019, with the support of artificial intelligence algorithms to form representative probabilistic samples of the population of each of the 18 countries. It was conducted using StatKnows sample inference methodology for online surveys, which is reviewed in this report and which includes calibration of responses according to census data. Age and sex were used as calibration variables, which required projecting the census information of the 18 countries to 2019, and harmonization work.

The survey questionnaire was developed by (CR)[2] specialists. Its design considered the previous work done by (CR)[2] researchers in the Third National Survey on the Environment and Climate Change (Chile, 2016)[2], and the review of similar studies and instruments available in the specialized literature on this subject[3], in order to make future comparisons. Elements included in this survey were adapted to the digital format. Other questions aimed at detecting perceptions of the relationship between climate change and poverty, inequality and justice were added, as they were deemed relevant in a context of ongoing social upheavals in Colombia and Chile.

StatKnows and (CR)[2] worked collaboratively to gather robust citizen perception information useful for scientific research, public policy development, and climate action. The results were presented at the COP 25 in Madrid, in the side events and exhibits area

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[1] Due to technical restrictions of the country, Cuba was not included in the study.

[2] Sapiains R, Ugarte AM and Rdz-Navarro K (2017) Encuesta Nacional de Medio Ambiente y Cambio Climático. Santiago de Chile: Ministerio del Medio Ambiente, CONICYT y CR2. Available at: http://www.cr2.cl/wp-content/uploads/2017/04/ENMA-Informe-2.pdf

[3] Hornsey M, Harris E, Bain P and Fielding K (2016) Meta-analyses of the determinants and outcomes of belief in climate change. Nature Clim Change 6: 622–626. https://doi-org.uchile.idm.oclc.org/10.1038/nclimate2943.
Leiserowitz A, Maibach E, Roser-Renouf C, Feinberg G and Rosenthal S (2015) Global Warming's Six Americas, March 2015. Report, Yale University and George Mason University. New Haven, CT: Yale Program on Climate Change Communication, March.
Leviston Z, Price J, Malkin S and MacCrea R (2014) Fourth annual survey of Australian attitudes to climate change: Interim report. Report, Perth, Australia: CSIRO, 1 January.
Pew Research Center (2015) Global Concern about Climate Change, broad support for limiting emissions. November. Available at: http://assets.pewresearch.org/wp-content/uploads/sites/2/2015/11/Pew-Research-Center-Climate-Change-Report-FINAL-November-5-2015.pdf

administered by the United Nations Framework Convention on Climate Change Secretariat (blue zone)[4].

The process complied with the European Union and California personal data protection regulations. The survey was carbon neutral.

StatKnows financed the gestation work and the technical implementation of the survey, deploying its global tools and methodology as a contribution to the global challenge that climate management is. (CR)[2] financed the working hours of its team of researchers.

Since its conception, the implementation of this survey in 18 Latin American countries was considered part of a broader effort that would go on to gather perceptions on climate change in other regions of the world. It is the team's intention to create alliances and prepare new phases of the international survey to reflect citizen perceptions beyond Latin America.

About the Center for Climate and Resilience Research – (CR)[2]

(CR)[2] is a center of excellence composed of academics and researchers in the social and natural sciences, with the main purpose of generating research on climate science and resilience from an interdisciplinary approach. Researchers from Universidad de Chile, Universidad de Concepción, Universidad Austral de Chile and other institutions, participate. It is funded by the Fondap program of the National Agency for Research and Development (ANID), a continuation of the National Commission for Scientific and Technological Research of Chile (CONICYT).

(CR)[2] conducts interdisciplinary scientific research to deepen the understanding of the processes and impacts of the climate system in Chile. It also works as an interface between science and decision making.

(CR)[2] projects itself as a relevant research center, a global reference in climate and resilience issues in Latin America that accompanies the transformation of a changing world.

Further information at www.cr2.cl.

About StatKnows

StatKnows is a knowledge and technology intensive Chilean company, which works with statistical science, applied artificial intelligence and other advanced resources.

StatKnows uses a sample inference methodology for online surveys, employing algorithms in a probabilistic, stratified, size-proportional, and two-stage selection sampling process.

It applies statistical techniques to calibrate and weight the responses received with census data and other off-line information, in order to accurately represent the populations

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[4] Results of this survey were presented on December 13, 2019, in the "blue zone" of the COP 25. The presentation program, developed by the UNFCCC, is available at
https://seors.unfccc.int/applications/seors/reports/archive.html

The video of the presentation, broadcasted live, can be viewed here: https://attend-emea.broadcast.skype.com/es-ES/2a6c12ad-406a-4f33-b686-f78ff5822208/27e12bb6-ad74-4e41-abe9-ff65abb2cc99/player?cid=t2l646dg2nq5y5vqgfl4gvspt32ufu4c553aobzav2sgswcrxhda&rid=EMEA

studied. Selection biases are overcome, including those derived from the greater or lesser intensity of Internet use by some strata of the population.

Surveys are carbon neutral.

Further information at www.statknows.com.

WORK TEAM

Center for Climate and Resilience Research – (CR)²

Rodolfo Sapiains Arrué, psychologist, MSc in Community Psychology from the University of Chile, and PhD in Psychological Factors for Environmental Management from the University of Queensland.

Anahí Urquiza Gómez, anthropologist, MSc in Anthropology and Development from the University of Chile, and PhD in Sociology from the University of Munich.

Ana María Ugarte Caviedes, psychologist, MSc in Social Sciences, with a mention in Sociology of Modernization from the University of Chile, and PhD in Latin American Studies from the University of Chile.

Andrea Rudnick García, civil engineer of industries and MSc in engineering sciences from the Pontifical Catholic University of Chile, and MSc in Planning and Management of the Environment and Natural Resources from the Polytechnic University of Madrid.

Valentina Inostroza Lazo, psychologist from the University of Chile and member of the Latin American Education Network for the Environment (RedLama).

StatKnows

José Antonio Ruette Colmenares, statistical engineer from the Central University of Venezuela and MSc in Financial Mathematics from the Instituto de Estudios Superiores de Administración (IESA).

María Eugenia García Fernández, statistical engineer from the Central University of Venezuela.

María Teresa Bravo de Goyeneche, journalist from the Pontifical Catholic University of Chile.

Gonzalo Sánchez Serrano, lawyer from the University de Chile.

Joaquín Acevedo Moraga, journalist from the Pontifical Catholic University of Chile and MSc in Scientific Information and Communications from the University of Granada.

Project Director:
María Teresa Bravo de Goyeneche, StatKnows
mtbravo@statknows.com

Content Director:
Rodolfo Sapiains Arrué, (CR)², Department of Psychology, Faculty of Social Sciences, University of Chile
Rodolfo.sapiains@gmail.com

Editing and translation of this report:
Joaquín Acevedo Moraga, StatKnows

This survey was sponsored by the following institutions:

The **results of this survey were formally presented at the COP 25**, in Madrid, in the area administered by the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC).

The calculation and neutralization of this survey's carbon footprint was carried out by Proyecta-e.

MAIN FINDINGS

Although certain distinctions between countries were detected, perceptions about climate change were found to be highly consistent across Latin American countries in general.

Important issues and problems

- For Latin Americans over 18, education, crime, health and wages stand out as important issues over the environment. However, 93% considered that they strongly agree or agree with the statement "climate change has to be a priority for the next government of my country."
- Climate change is perceived as the main environmental problem that personally affects the population over 18 in Latin America (27%). When asked to select only one option, "Climate change" took first place in 14 of the 18 countries in the region.

Social justice

- 82% strongly agree or agree that "climate change will worsen poverty and inequality in my country."
- 73% strongly agree or agree that "the effects of climate change will mainly affect the poorest people."
- 88% strongly agree or agree that "facing climate change is an opportunity to build a more just world."

Climate change causes and time horizon

- There is broad consensus (89%) that climate change is caused totally or partially by human activity. 54% consider human activity to be the main cause of climate change, and 35% believe that it is due to a combination of human activity and natural processes on the planet.
- 93% declare its consequences are currently occurring.

Predominant emotions linked to the concept of climate change

- 75% emotionally associate climate change with concern.
- Women mention sadness and fear more than men.
- Expressions of sadness, guilt, fear, and especially anger are greater in women without children than in women with children.
- Indifference, although a minority, is expressed more by men than by women.

Concern and impact

- 89% claim to be pretty concerned or very concerned about climate change.
- Women express a significantly higher concern than men: 95% compared to 85%, and with a higher relative weight of the option "very concerned."
- 57% of respondents said they disagreed or strongly disagreed with the statement "The impacts of climate change are out of my control."

- Faced with the statement "the impacts of climate change are out of my control," a strong difference can be perceived between genders in the young population (18-39 years old): 46% of young men and 31% of young women agree with this statement, while 68% of young women and 54% of young men disagree.

Responsibility in cause and solution

- 55% say they feel them, their families and their friends are completely or quite responsible for climate change occurring. Women's sense of responsibility for the cause is higher than men's.
- 58% say they feel them, their families and their friends are completely or quite responsible for the solution of the problem. Having or not having children has a significant impact: parents express a greater sense of responsibility for the solution (63%) compared to those who do not have children.

Preparation

- The perception that countries are not adequately prepared to deal with climate change is widely prevalent. 97% say they are little or not at all prepared.

Information

- 67% feel very or quite informed about climate change.
- Internet in general and social media widely displace traditional media as more reliable sources of communication on climate change
- For those who responded "social media," Facebook is the most reliable platform.

INTRODUCTION

This report, prepared jointly by professionals from StatKnows and CR², communicates the general results of the International Climate Change Survey 2019, applied in November of that year to a representative probabilistic sample of the population over 18 years of age in Latin America. The universe consisted of 430 million people from 18 countries[5] in South and Central America.

Aside of the contents of the initial pages – work team, presentation and main findings -, this report is structured in three chapters.

Chapter 1 outlines the methodology. It discusses StatKnows sampling inference methodology for online surveys in general terms, and points out aspects of this particular survey's development. A brief explanation is included regarding the role played by artificial intelligence algorithms when configuring the probabilistic samples for this study.

Results are presented in chapter 2. Extracts from the presentation made in the context of the COP 25 are shared, using graphics and descriptive texts of the findings. Links to access an interactive dashboard with additional information are also included.

Chapter 3 discusses conclusions. This section includes comments on the main findings, and highlights the importance that, in the opinion of the work team, paying attention to and disseminating citizens' perspectives on this subject has for climate management.

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[5] The 18 countries are Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela, as noted in the presentation of this report.

Table of content

1. METHODOLOGY

This survey was conducted using StatKnows sampling and sample inference methodology for online surveys.

StatKnows' founding partners are statistical engineers specializing in sample design and artificial intelligence. They developed algorithms and a proprietary methodology that makes use of public information available on the Internet, off-line information, and information voluntarily provided by those who respond their surveys. This methodology is protected by intellectual property rights.

For each study, probabilistic samples of the universe under study are constructed. The process includes a massive, efficient and systematic search through public information to detect multiple characteristics of the universe. People who reflect the diversity detected are invited online to respond to the survey in an intelligent, stratified and random way. In populations of equal size, the more heterogeneity discovered, the larger the sample size must be in order to reach the same rate of error. Samples are actively adjusted as people freely accept or decline the invitation to participate.

The invitation to participate in StatKnows' studies reaches people through banners displayed on social media and/or websites they visit. As they click on the banner, they are redirected to a digital questionnaire. People are free to click or not click on the banners, and then complete or not complete the survey. Through the banners they can also access complementary information, including StatKnows' privacy policy.

In the introduction of the privacy policy the following is informed:

> *We conduct surveys aimed at understanding people and community perspectives and perceptions on a wide variety of issues.*
>
> *We carry out these surveys for public, private and/or civil society organizations that want their initiatives, products and services to meet the expectations and needs of the people to whom surveys are targeted, or who want to understand social phenomena or citizens' perspectives.*
>
> *We also carry out surveys in partnership or for universities and study centers, aimed at collecting key inputs for academic research.*
>
> *Individuals are free to accept or decline our invitations to respond to surveys.*
>
> *We work with high standards of personal data protection. The reports on the results of our surveys always include aggregated and anonymized data, so that a person's individuality is not recognizable.*

StatKnows studies' questionnaires are designed in consideration of its digital application, and can be applied simultaneously in several languages.

If people begin responding a certain questionnaire but do not click the "send" button at the end of it, their partial opinions are not considered. Owing to algorithmic learning, response rates of StatKnows surveys are usually high.

To properly reflect the characteristics of the universe studied, answers obtained are then calibrated and weighted with census data and other information.

In the case of the International Climate Change Survey, the process included a massive search through public information of 43,213,002 people, resulting in a dynamic and optimized conformation of a sample integrated by 7,232 people. The type of sampling was probabilistic, stratified, with fixation proportional to the size of the strata, and of selection in two phases. The survey was applied between November 14 and 18, 2019, in Spanish, Portuguese and Guarani. The response rate was 62%.

Representativeness was achieved at the general level and for each of the 18 countries. At the general level, the estimated sampling error was 2.8%. By country, the estimated error fluctuated between 6.35% and 7.52%.

Ilustration 1 corresponds to the survey's data sheet.

UNIVERSE:
430,411,041 people

All people over 18 living in the following 18 countries (*):

Argentina	Honduras
Bolivia	Mexico
Brazil	Nicaragua
Chile	Panama
Colombia	Paraguay
Costa Rica	Peru
Ecuador	Dominican Republic
El Salvador	Uruguay
Guatemala	Venezuela

SEARCH
with AI to identify population characteristics and form representative samples:
Public information of 43,213,002 people.

SAMPLE SIZE:
7,232 people

SAMPLE ERROR
2.8% estimated at the general level for the total survey. Results per country remain representative, while error in each case is indicated (error per country of between 6.35 and 7.52%).

RESPONSE RATE:
62%

SAMPLING TYPE:
Stratified probabilistic sampling with allocation proportional to the size of biphasic selection.

TIME PERIOD OF ADMINISTRATION:
November 14 to 18, 2019

Ilustration 1: Survey data sheet.

Ilustration 2 groups examples of *banners* used as invitations to participate in the survey, in each of the three languages.
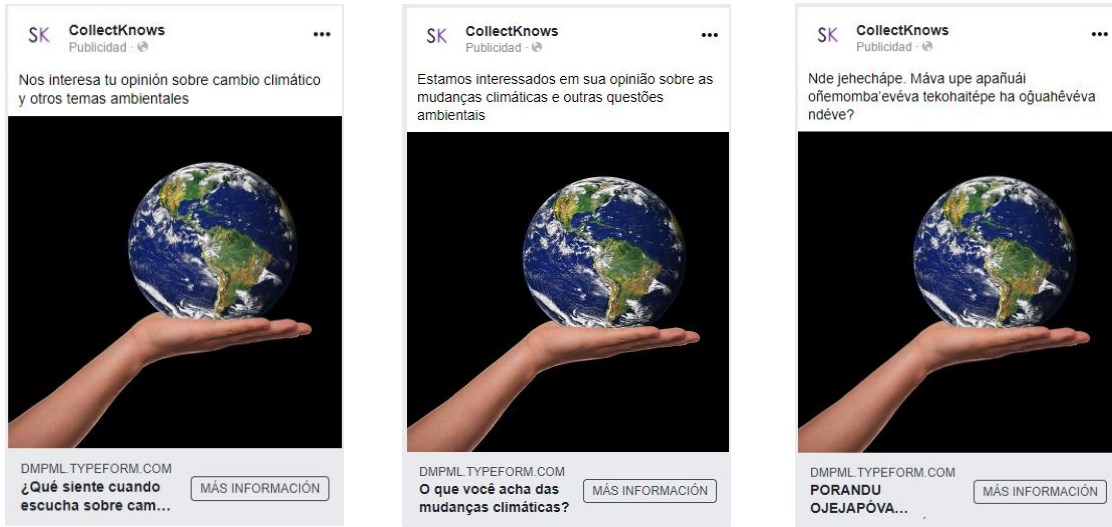
Ilustration 2: Examples of banners used as invitations to participate in the survey.

Demo versions of the questionnaire are available here: Spanish version, Portuguese version and Guarani version. The questionnaire consisted of 23 questions, including some characterization questions.

The questionnaire's main topics were: priority issues for each country; environmental issues that most affect personally; relationship between climate change and aspects of social justice; causes of climate change; predominant emotions associated with the concept of climate change; levels of concern about climate change; advocacy capacity; responsibility for its causes and its solution; level of preparation of each country to deal with climate change; and information sources.

Ilustration 3 shows an example of a question. Response options are displayed in random order, which is one of several measures aimed at overcoming bias. Response options are always displayed randomly unless a logical order underlies the nature of them (e.g., levels of agreement or disagreement with a statement).

Ilustration 3: Example of a single question.

The support of artificial intelligence allows the samples to be representative of the diversity of the universe under study, despite the fact that the invitation to answer it makes subtle reference to the subject of the study. In other words, digitally inviting people from different strata to respond to a survey on environmental issues does not mean that only people with special sensitivity for such issues will respond. In fact, one of the questions included in the International Survey on Climate Change survey detected that only 18% of the people who identified themselves as "ecologically minded," among 9 other options for self-identification.

With statistical techniques, including expansion factors[6], selection biases are also overcome, including those derived from the greater or lesser intensity of Internet use by some segments of the population.

The socio-demographic profile of the sample is reflected in Illustration 4. Variables used for calibration were sex and age.

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[6] The expansion factor corresponds to the number of people in the population that a person in the sample represents. Differentiated factors are applied.
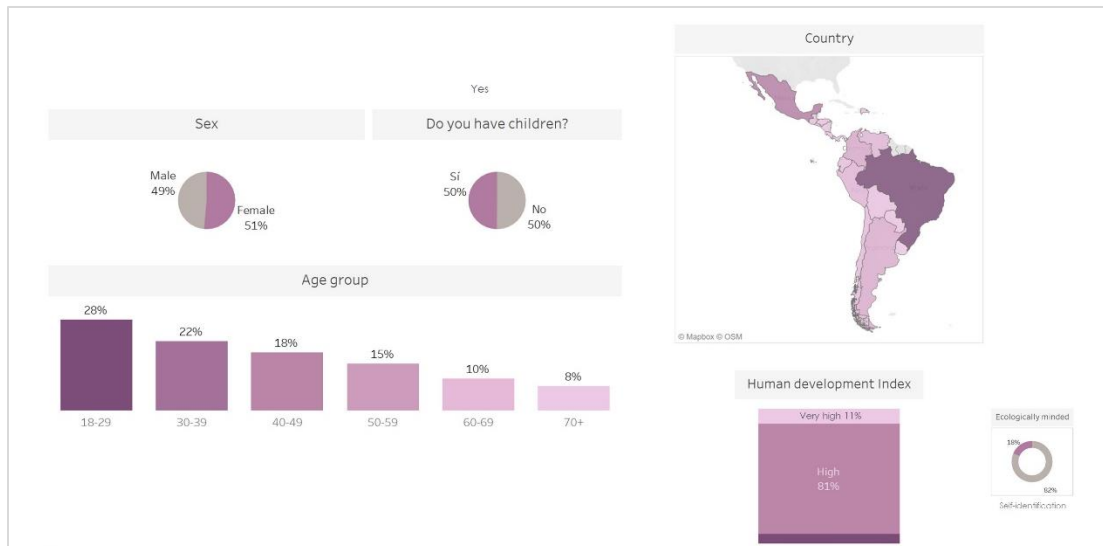
Ilustration 4: Socio-demographic profile.

It should be noted that Internet's penetration, including smartphones, is sufficient for StatKnows to develop studies with low margin of error in almost all countries and regions of the world[7]. Within the margin of error are reflected those very limited and statistically insignificant cases of people who cannot be represented in the sample by someone of their characteristics with the possibility of responding to the survey digitally.

The process complies with personal data protection regulations of the European Union (GDPR) and California (CCPA). Individuals are free to give or withhold consent to participate in the study. Acceptance implies authorization for the use of the information they provide, without their identity being recognizable in the work deliverables or complementary services. The data collected are analyzed and delivered aggregately and anonymously.

The process is low carbon, and the footprint is neutralized. The specialist company Proyecta-e (www.proyectae.cl) calculates and manages the neutralization of the carbon footprint of the different surveys carried out by StatKnows according to GHG Protocol, considering direct and indirect emissions (scopes 1, 2 and 3)

The carbon neutral certificate and the independent third party verification report for the International Climate Change Survey 2019 are available at www.Proyectae.cl/NeutralizacionStatKnowsDic2019.

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[7] According to a report published by Internet World Stats and the Economic Commission for Latin America and the Caribbean (ECLAC), internet's penetration in Latin America reached 71,5% in 2020, topping the world average of 62%.
 https://www.larepublica.co/especiales/la-industria-del-e-commerce/penetracion-de-internet-en-latinoamerica-supera-la-media-mundial-que-es-de-58-3088484

2. RESULTS

The overall results of the survey are presented below.

The presentation made in the context of COP 25 is used as a model.

Although the study allows for the observation of results by country, conclusions highlighted in this document are mostly drawn at the aggregate level, unless expressly indicated otherwise. As noted in the methodology section, the estimated error is 2.8% at the aggregate level.

It should be emphasized that the results reflect what the respondents say they know, feel, and perceive, and that the preliminary analysis from the data is done on that basis.

More detailed information of results is available in an interactive dashboard, which enables data comparison and cross-reference, observing sample sizes, population and statistical error associated to each cross-reference.

The presentation and the interactive dashboard, in their Spanish and English versions, can be accessed at https://www.statknows.com/cambioclimatico using 17934688 as a password.

The results will be further analyzed and disseminated in the framework of an academic publication by CR², currently under preparation[8].

Context: Important issues

When asked "Of these issues, which are the most important for your country," and having the possibility of choosing three out of a list of six options related to basic needs or pressing problems, education (55%), crime (46%), health (42%) and wages (22%) stood out. The environment came in fifth (15%), only above retirement (12%). However, 93% of those surveyed strongly agreed (67%) or agreed (26%) that "climate change must be a priority for my country's next government," indicating climate change is an issue that, for a large majority of people in Latin America, should be a core issue on the public agenda of any government.

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[8] Statistical hypothesis testing performed by StatKnows on the collected data, both parametric and non-parametric, will be useful for this publication. These tests allowed measuring the level of association between the study variables, detecting how statistically significant the relationships between pairs of variables are.
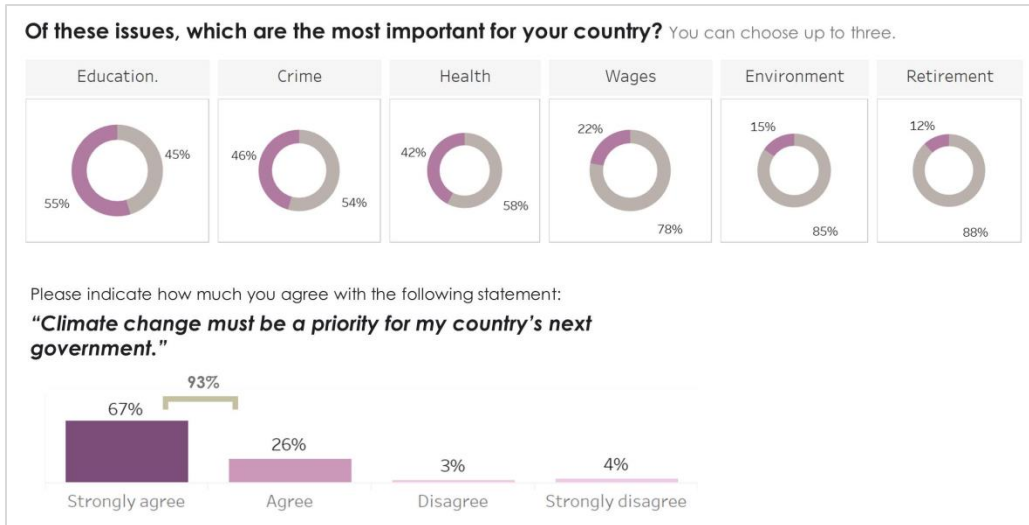
Of these issues, which are the most important for your country? You can choose up to three.

Education.	Crime	Health	Wages	Environment	Retirement
45% / 55%	46% / 54%	42% / 58%	22% / 78%	15% / 85%	12% / 88%

Please indicate how much you agree with the following statement:

"Climate change must be a priority for my country's next government."

93%

67% — Strongly agree
26% — Agree
3% — Disagree
4% — Strongly disagree

Ilustration 5: Context: Important issues; general population.

Environmental issues that affect the most

When asked "According to your perception, what is the main environmental problem that affects you?" climate change ranked first in Latin America in general, and in 14 of the 18 countries. It is perceived as the main environmental problem that personally affects the population over 18 in Latin America (27%).

Garbage and dirty streets (22%) ranked second, and loss of flora and fauna reached third (17%).
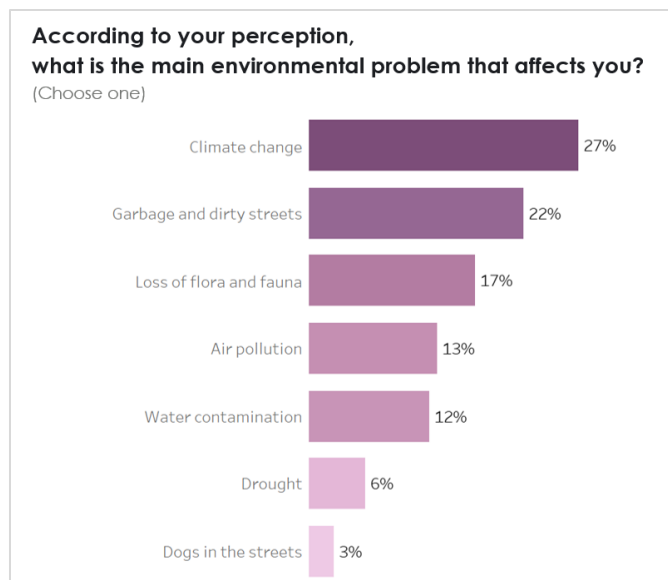
According to your perception, what is the main environmental problem that affects you?
(Choose one)

Climate change	27%
Garbage and dirty streets	22%
Loss of flora and fauna	17%
Air pollution	13%
Water contamination	12%
Drought	6%
Dogs in the streets	3%

Ilustration 6: Environmental issues that affect the most; general population.

Climate change reached higher percentages in Panama (32%) and Costa Rica (31%). Garbage and dirty streets outplaced climate change in the Dominican Republic (35%), Nicaragua (33%), and El Salvador (28%). Loss of flora and fauna topped climate change in Bolivia (27%).

High percentage achieved by the option "climate change" in Chile, where it also reached first place, could have been influenced by the fact that the COP 25 was to be held in the country (before its definitive realization in Madrid), which translated into the issue being broadly covered by the media and consequently achieving great visibility in the public sphere.

Social justice

Findings showed Latin Americans perceive a strong relationship between climate change, and poverty and inequality, and that confronting climate change is seen as an opportunity to build a more just world.

82% of people strongly agreed (38%) or agreed (44%) with the statement "climate change will worsen poverty and inequality in my country;" 73% strongly agreed (39%) or agreed (34%) with the statement "the effects of climate change will mostly affect the poorest people," and 88% strongly agreed (47%) or agreed (41%) with the statement "facing climate change is an opportunity to build a more just world."
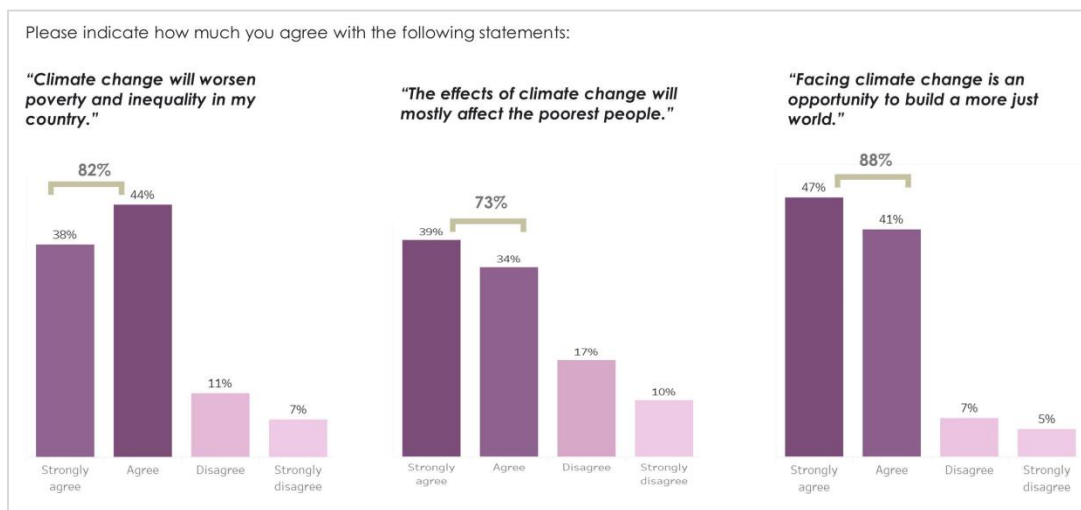

Ilustration 7: Social justice; general population.

These numbers are also consistent in Chile and Colombia, countries where social outbursts occurred during 2019. In the case of Chile, 82%, 74% and 87% expressed strong agreement or agreement with the three statements, respectively, while numbers in Colombia reached 84%, 71% and 90%, respectively.

In light of these results, it is evident climate change is perceived not only as a purely scientific or environmental issue, but also as an issue of sustainable development. The message that underlies is that dealing with climate change is at the same time dealing with social issues, as both issues are intimately entwined.

Causes of climate change

Causes of climate change were an issue that gathered broad consensus as well. With four different response options, when asked "What do you think is the main cause of climate change?", 59% of people said they believe the phenomenon is the result of human activity, while 35% said they consider it a combination of human activity and natural processes of the planet. Only 3% of people said that the planet's natural processes alone are the main cause of climate change, while the same percentage said climate change is not happening.

Regarding the consequences of climate change, 93% of people stated these are currently occurring. Only 3% stated that they will occur between 1 and 10 more years, 2% that they will occur within the next 11 to 20 more years, and 3% that they will occur in more than 20 years.
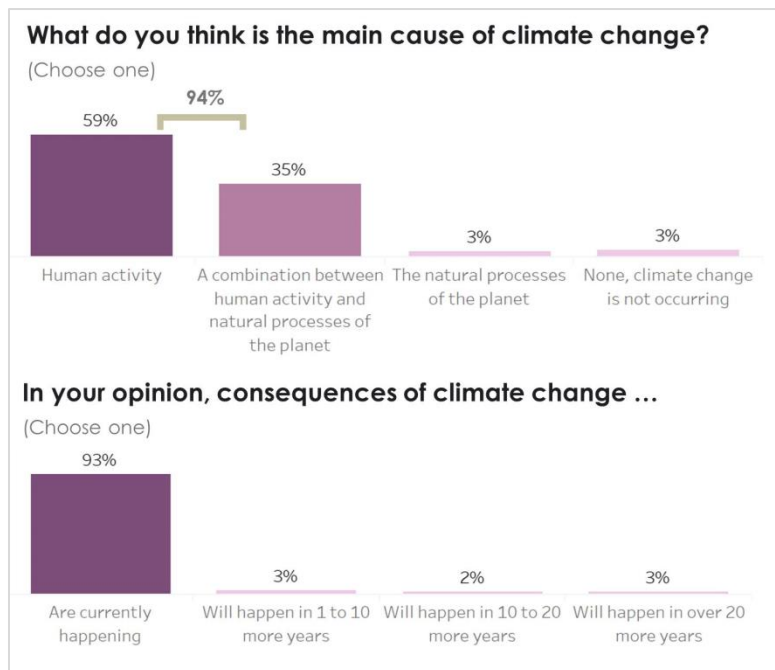

Ilustration 8: Causes and consequences of climate change; general population.

Predominant emotions

Concerning people's predominant emotions when hearing the concept of "climate change," concern (75%) stood out among the general population of Latin America, followed by sadness (35%) and guilt (20%).

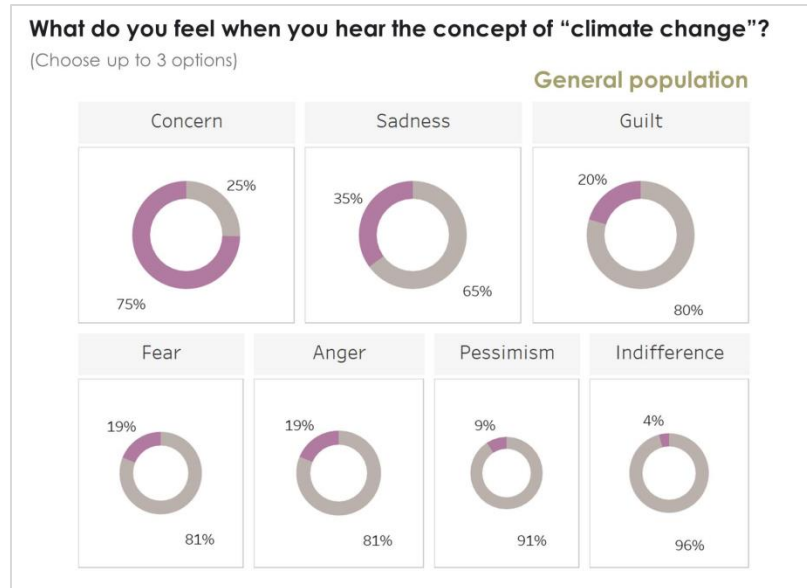Indifference came in last place out of seven response options, with 4%.

Ilustration 9: Predominant emotions; general population.

It is interesting to note certain gender differences: sadness rises among women (38%, compared to 32% in men) and fear (22%, compared to 16% in men). Differences with respect to indifference are noted as well (2% in women and 6% in men).
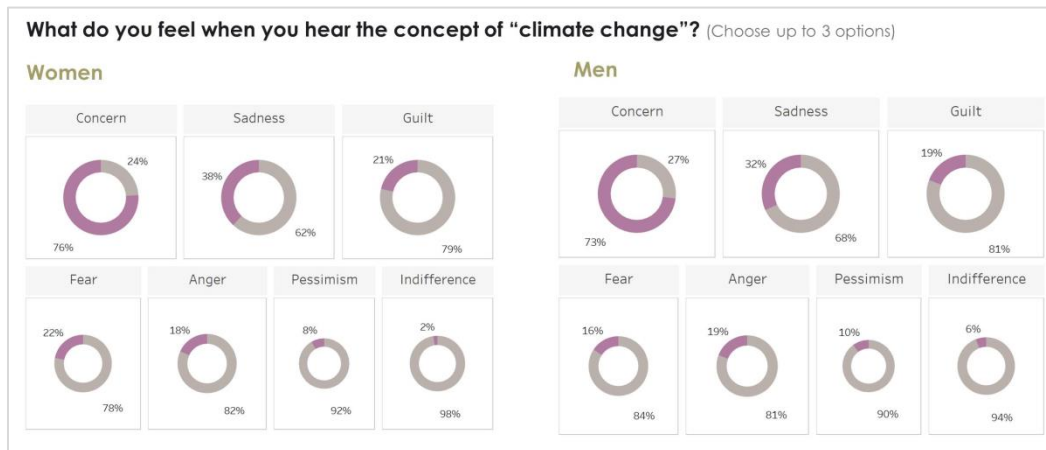

Ilustration 10: predominant emotions; comparison between genders.

There were also some notable differences in perceptions between women with children and women without children. Emotions such as sadness (42%), guilt (24%), fear (25%) and anger (24%) climb considerably among women without children, exceeding percentages reached by said emotions in women with children, with differences of between 6 and 11 percentage points.

What do you feel when you hear the concept of "climate change"? (Choose up to 3 options)

Ilustration 11: predominant emotions; comparison between women with and without children.

The study enables comparisons between the general population and the population that selected specific emotions. Variations regarding gender, age, and having or not having children were detected.
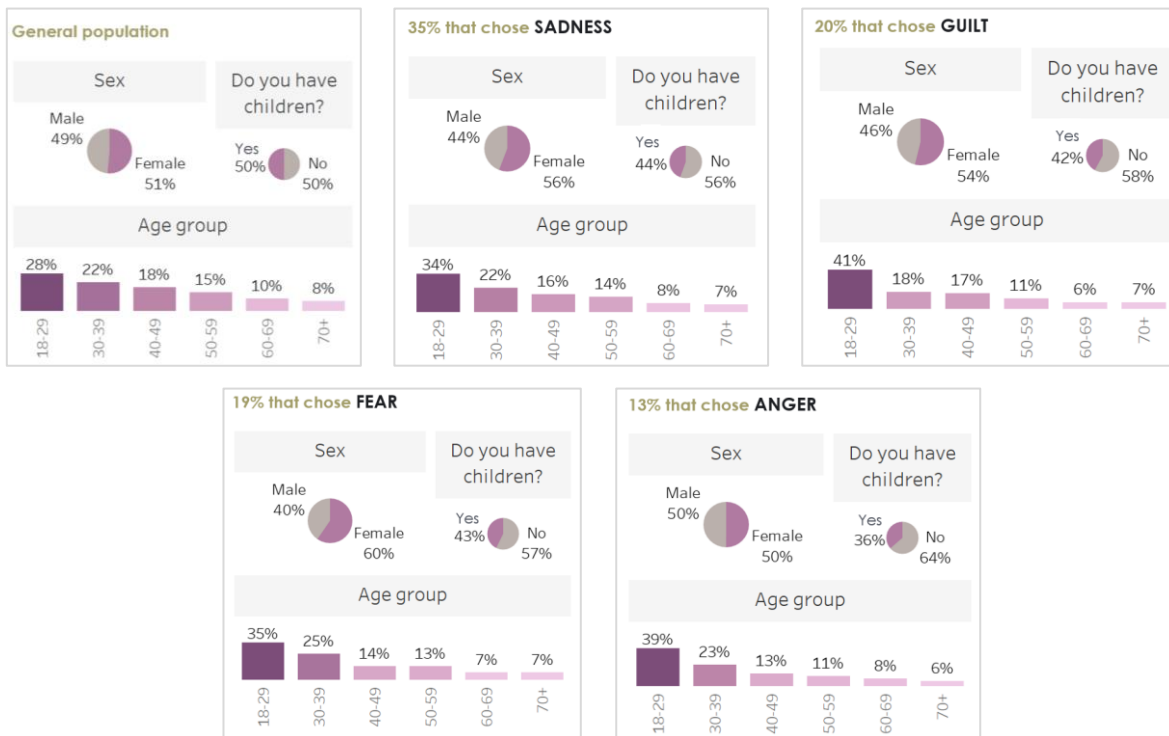

Ilustration 12: Predominant emotions; comparison between emotions

Concern and individual impact capacity

At the level of the general population in Latin America, high levels of concern about climate change were observed. When asked "In general, how concerned are you about climate change," 89% admitted being very concerned (43%) or quite concerned (46%).
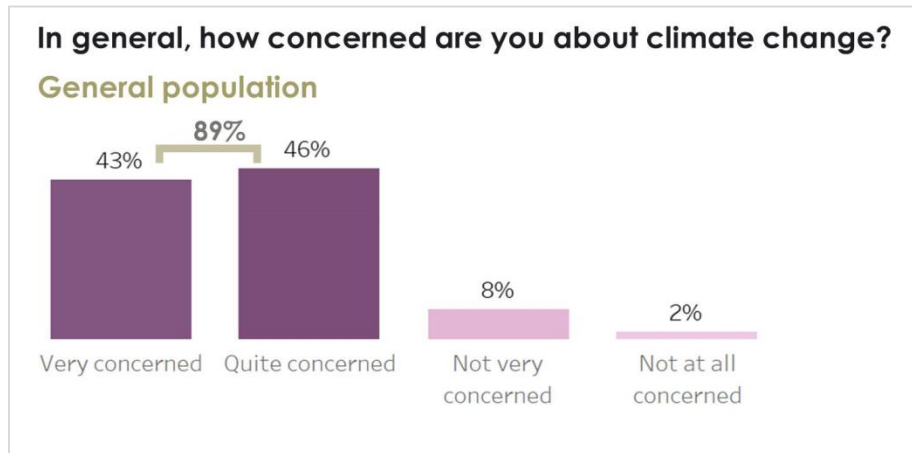

Ilustration 13: Concern; general population.

The aggregate percentage between the "very concerned" and "quite concerned" options was higher among women, reaching 95%. In men, the sum of these options reached 85%.
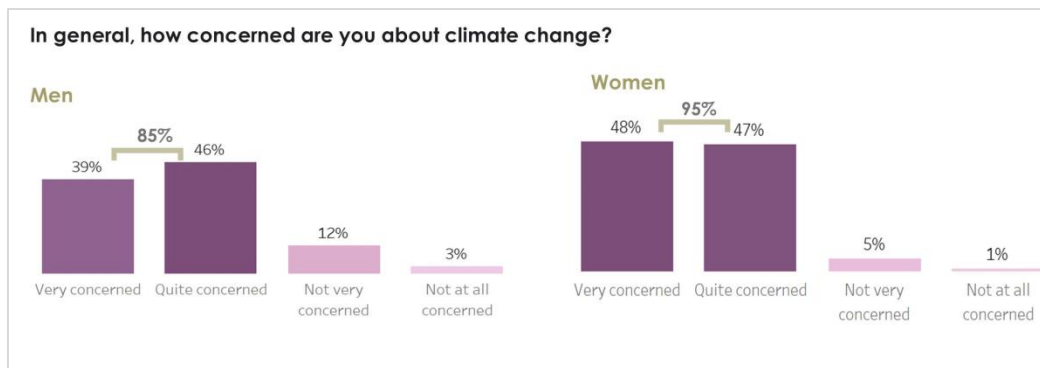

Ilustration 14: Concern; comparison between genders.

In terms of perceived individual capacity to impact, 57% of the general population in Latin America indicated that they strongly disagreed (15%) or disagreed (42%) with the statement "The impacts of climate change are out of my control," while 43% said they strongly agree (11%) or agree (32%) with that same statement.

Please indicate how much you agree with the following statement:

"The impacts of climate change are out of my control."
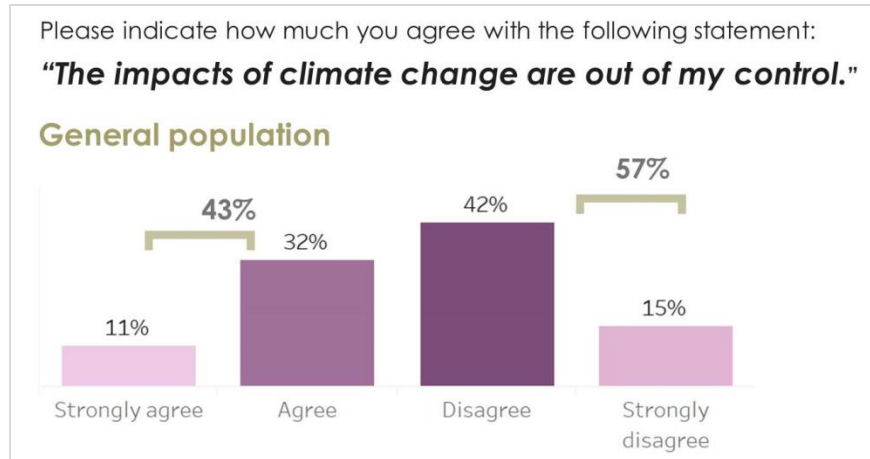
General population

Ilustration 15: Individual impact capacity.

Marked differences can be seen between genders in the younger population between 18 and 39 years old who declared being very much in disagreement or in disagreement with the statement. While 54% of young Latin-American men state that they strongly disagree or disagree that the impacts of climate change are out of their control (a similar percentage to that of the total population), these same levels of disagreement or strong disagreement reach 68% among young women.
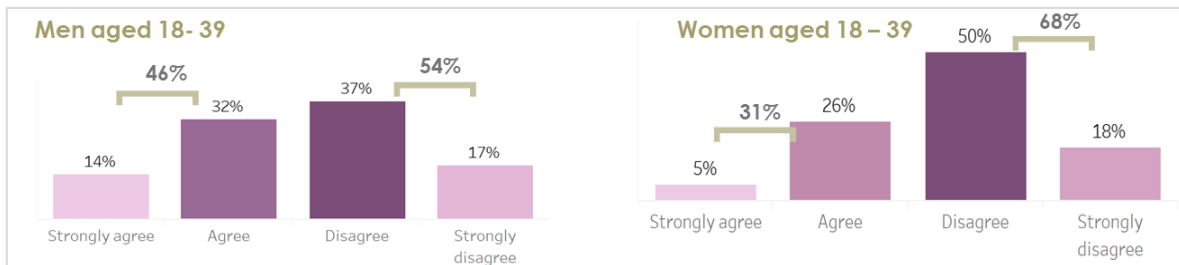

Ilustration 16: Individual impact capacity; comparison between genders.

Responsibility for its causes

When asked "How responsible do you feel your family, your friends and you are for climate change happening?" 55% of the general population in Latin America says they feel completely or quite responsible. 36% say they feel a little responsible and only 8% feel not responsible at all.
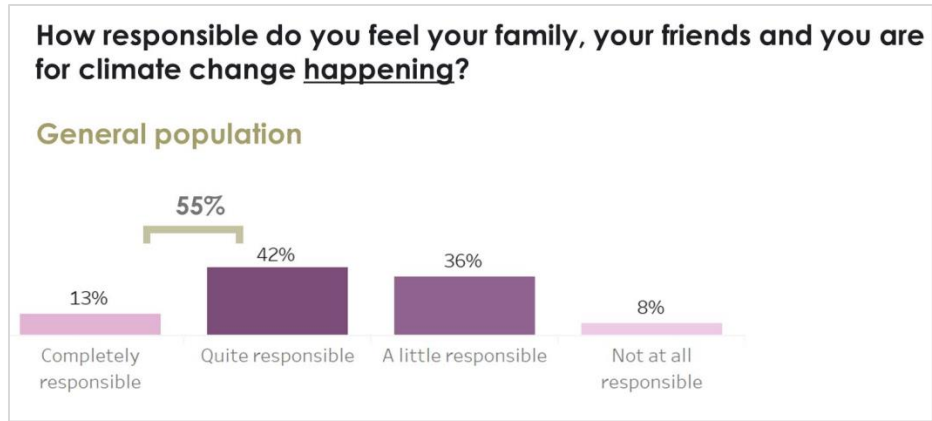
Ilustration 17: Responsibility for its causes.

Notable gender differences are also perceived in this case at the general population level. In men, the sense of responsibility is equally divided between those who feel completely and quite responsible for climate change occurring (50%) and those who feel they are little or not at all responsible (50%). In contrast, the sense of responsibility in women is stronger: 61% feel completely or fairly responsible, while 39% feel little or not at all responsible.
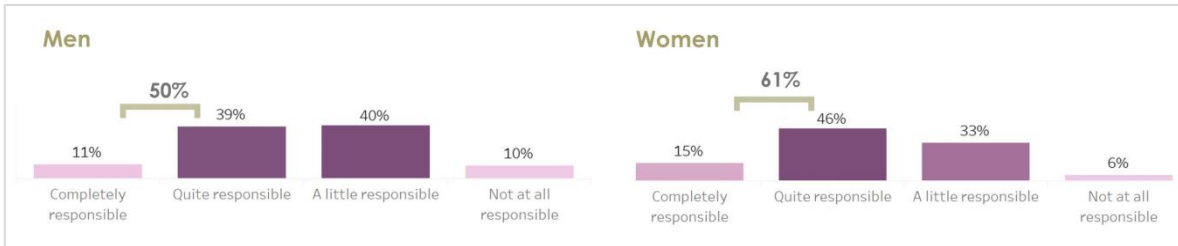
Ilustration 18: Responsibility for its causes; comparison between genders.

Responsibility for its solution

Also linked with the feeling of responsibility, but with respect to the solution to the problem of climate change, 58% of the general Latin-American population expresses their families, their friends and they are completely or quite responsible for its solution. 34% feel their close social environment is little responsible and only 8% not at all responsible.

How responsible do you feel your family, your friends and you are for the **solution** to the problem of climate change?

General population

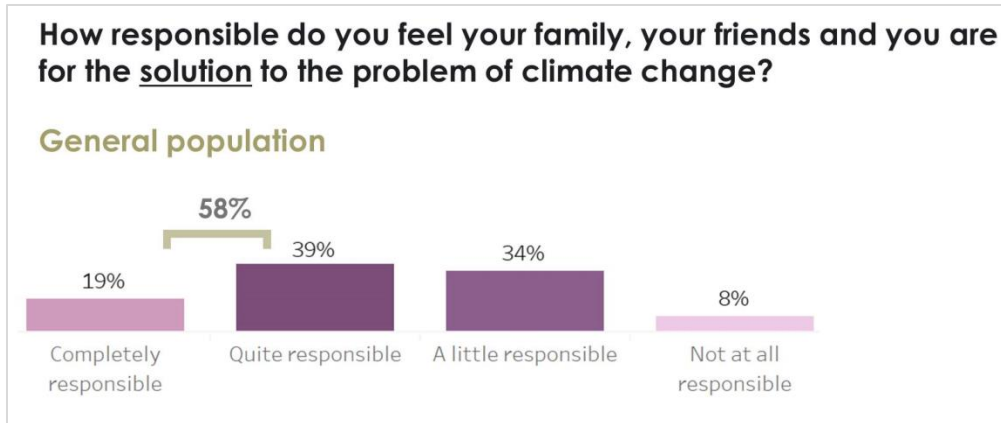| | 58% | | |
| 19% | 39% | 34% | 8% |
| Completely responsible | Quite responsible | A little responsible | Not at all responsible |

Ilustration 19: Responsibility for its solution; general population.

In this regard, relevant differences are perceived when comparing the population of men and women without children with the population of men and women with children. While 52% of childless men and women feel completely or quite responsible for solving the problem of climate change, this number climbs up to 63% among people who do have children.
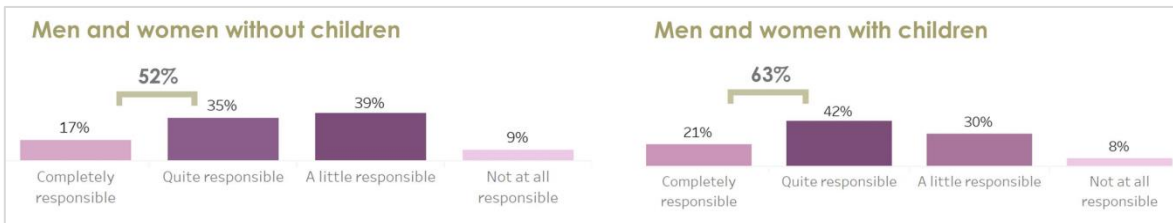

Men and women without children

	52%		
17%	35%	39%	9%
Completely responsible	Quite responsible	A little responsible	Not at all responsible

Men and women with children

	63%		
21%	42%	30%	8%
Completely responsible	Quite responsible	A little responsible	Not at all responsible

Ilustration 20: Responsibility for its solution; comparison between men and women without children and men and women with children.

Preparedness to face climate change

At the general population level in Latin America, an overwhelming majority (97%) say that their respective countries are little or not at all prepared to face climate change. Of this 97%, 60% believe they are unprepared and 37% believe they are somewhat prepared. 2% believe their countries are quite prepared and only 1% that they are very prepared.
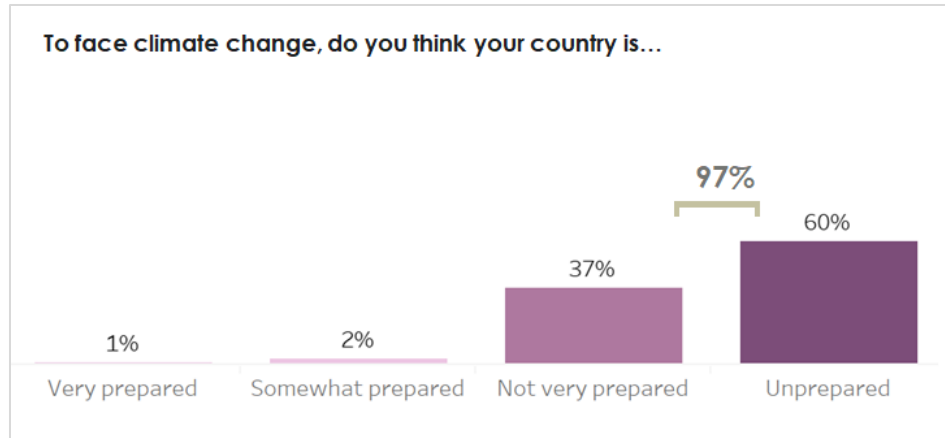
To face climate change, do you think your country is...

97%

60%

37%

1%   2%

Very prepared   Somewhat prepared   Not very prepared   Unprepared

Ilustration 21: Preparedness to face climate change

Information

When asked "How informed do you feel about climate change...?" 67% of the general population said they feel very informed or quite informed. 30% admitted feeling not very informed, while 4% said they feel uninformed.
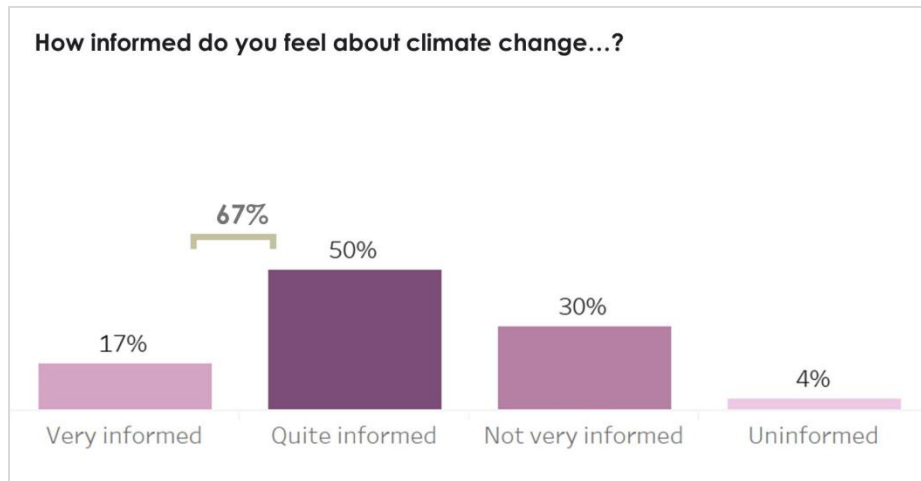
How informed do you feel about climate change...?

67%

50%

30%

17%

4%

Very informed   Quite informed   Not very informed   Uninformed

Ilustration 22: Information

In relation to the question "In your opinion, what is the most reliable source of communication for information on climate change?", internet in general (52%) and social media (18%) ranked first and second among seven possible response options, widely displacing traditional media such as television, radio and written press.
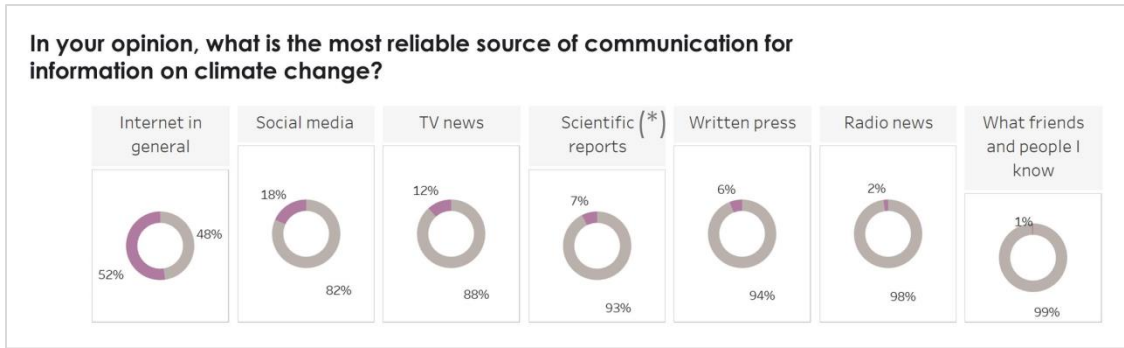
Ilustration 23: Information; most reliable sources.

A specific question was added for those who, in the previous question, selected social media as the most reliable source of communication. When asked which social media they consider to be a more reliable platform to obtain information on climate change, Facebook was by far the most selected option with 74%. Instagram (12%), Twitter (8%) and WhatsApp (5%) followed.
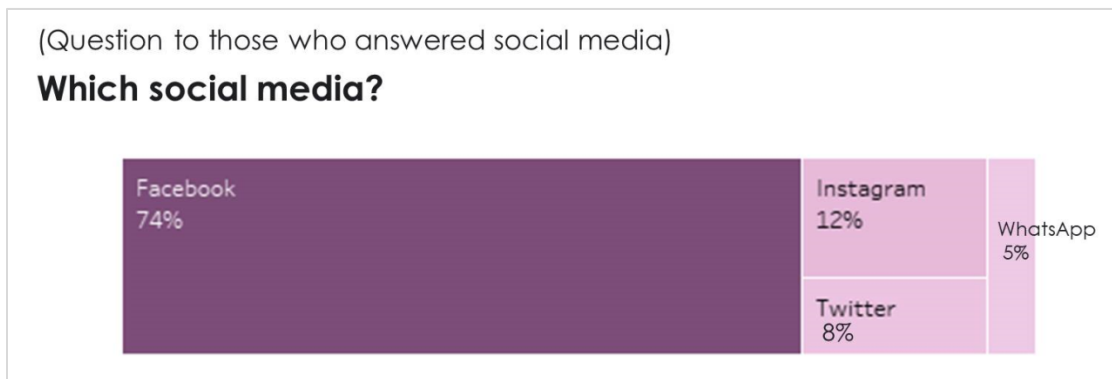

Ilustration 24: Information; social media.

3. CONCLUSIONS

This survey intended to reveal the perceptions on climate change of the population over 18 years old in Latin America in a statistically representative way. In light of the results, it is safe to say it made clear that, concerning fundamental matters, citizens' perspectives in this region are quite consistent with what the scientific world is proposing. The survey also showed that gathering such perceptions, analyzing them and disseminating them could catalyze climate action of countries and organizations, hand in hand with citizen climate action, and thus contribute to the deep institutional and socio-cultural transformations required to face the global climate crisis.

One of the main findings that stand out is that 89% of Latin Americans over the age of 18 consider that climate change is a problem caused totally or partially by human activity, and that 93% perceive and declare that its impacts are already occurring.

In a region facing significant social challenges and partly experiencing social upheavals, this survey also highlights that 82% agree that "climate change will worsen poverty and inequality in my country," and that 73% think that "the effects of climate change will mostly affect the poorest people." It is even more significant that 88% agree that "facing climate change is an opportunity to build a more just world."

There is thus a basis for affirming that, in the opinion of Latin American citizens – and no longer only in the opinion of scientists - the climate crisis has social effects; social crises partly reflect climate concerns, and social agendas must consider climate action in a cross-cutting manner.

Issues related to other basic needs or pressing problems, such as education, crime, health, and wages are placed above the environment as priorities for the region's population. However, climate change is perceived as the main environmental problem personally affecting Latin Americans (27%) in a single-choice question, which is consistent with high levels of concern about the impact of climate change: 89% of the population said they were very concerned or quite concerned about this issue.

Concern, while not a guarantee of action, is an emotion that under certain circumstances can become mobilizing, unlike pessimism and indifference. Such mobilization, if made effective, may involve third parties and trigger action of oneself and of the close social environment.

In this sense, it is worth noting that 97% consider that their respective country is not very prepared or unprepared to face climate change, and that 93% consider climate change must be a priority for the next government of their respective country.

When it comes to citizen climate action, regardless of the fact that there is space for increasing awareness and effective practice, it is worth noting 55% of the population considers their close social environment and themselves to be completely or quite responsible for climate change occurring, and that this percentage climbs up to 58% when asked about the responsibility of family, friends and themselves for its solution. In general,

women express higher levels of concern and sense of responsibility for climate change than men, and although the perception of the control they have over it varies, women under 40 years of age feel more capable of advocacy to address the problem. It is also noteworthy that having children significantly affects the perception of responsibility for the solution. All of the above reinforces the importance of incorporating a gender focus in environmental and climate policies.

2019 was a special year for climate action. Part of the world's citizenry, and especially a significant number of young people, raised their voices demanding responsible action. If the crucial role science, countries or states and institutions of various kinds have to play in climate action had already been made clear, the attention *Fridays for Future* and Gretha Thunberg (among other movements and people) drew in 2019 made evident that citizenship also has a very important role to play, both for the transformation of lifestyles and for triggering mobilization of others. In order for that to happen at the citizen level, it is necessary that the general population reaches significant levels of knowledge of the problem, awareness of its effects, and a sense of responsibility and capacity for advocacy.

Although perceptions are dynamic and can be tracked over time, this survey by StatKnows and CR² shows that there is a basis of opinion in Latin America which is compatible with citizens effectively playing this crucial role in climate issues.

(CR)²   StatKnows

The contents of this report can be disseminated citing the source.

Contact:

Project Director:
María Teresa Bravo de Goyeneche, StatKnows
mtbravo@statknows.com

Content Director:
Rodolfo Sapiains Arrué, (CR)²,
Department of Psychology, Faculty of Social Sciences, University of Chile
Rodolfo.sapiains@gmail.com