4 Global Citizenship and Youth Profiles of Perception of Global Threats¹

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Introduction

The intense interconnectedness of the world's economies, societies, and environment may imply that a local threat can rapidly convert into a global one. The COVID-19 pandemic experienced during 2019–2021 is the most immediate example of how global threats can affect the lives of the population worldwide. This event has shown how a local health issue—focused on a specific region of China—rapidly transformed into a global threat, transforming social, cultural, and economic conditions in the world (Wolski, 2020). In this sense, COVID-19 is probably the newest example of a specific global threat that, different from others such as climate change or even crime that may take time to expand, unfolded and changed the lives of people around the world in a two-month period.

The way in which pandemic COVID-19 has performed shows one of the greatest challenges for society in the coming decades: the need to develop competencies for being global citizens to understand, analyze, and respond to threats that can rapidly reach worldwide scale. To respond to this challenge, young people have a key role to play in understanding such global issues that are affecting them and that will continue to do so in the future. However, perceiving global threats requires, at least, a sophisticated understanding of international trends, links between local actions and global impacts, access to reliable information, and the motivation to maintain interest in these issues.

The chapter aims to contribute to the research on youth, education, citizenship, and democracy in the current global era. We have witnessed in recent times a global pandemic that affected the entire world, and still, notions of citizenship are circumscribed to notions of belonging to a political community, often defined as the nation-state (Treviño et al., 2021). Such perspective on citizenship may play a valuable role in sustaining key elements of democracy, for example, participation in free elections, involvement in political and social issues, and even participating in protests whenever society identifies abuses of power from the political system (Villalobos et al., 2021). However, the definition of citizenship as national and territorial belonging to a political community is insufficient to develop deeper and informed understandings among youth of the international interconnectedness of social, environmental, and economic issues (Davis, 2007; Habermas, 2001). Living on the earth, with limited resources, in an environmental crisis due to global warming, the transmission of diseases, and the spread of armed conflicts are only some of the issues that citizenship definitions require to include in this global era. Still, shortsighted approaches on citizenship, sometimes fueled by nationalisms and different types of social segregation common in the developed and developing world, leave out of their definition the fact that all human beings live in a finite and interconnected world (O'Bryne, 2003).

This chapter analyzes the profiles of global citizenship (GC) and global threats among youth of approximately 13 years of age in 24 countries using the data from the International Civics and Citizenship Study of 2016 (Schulz et al., 2018), which included countries in Asia (3), Europe (16), and Latin America (5). Using an innovative person-centered approach via latent classes analysis, the study identifies five profiles in relation to global threats. The latent class analysis (LCA) approach differentiates from traditional variable-centered methods, like regression, for its capacity to substantially describe population attitudes' heterogeneity in a set of indicators or variables. This method groups people based on their response patterns, each a latent class or profile (Masyn, 2013). International Civic and Citizenship Education Study (ICCS) measures the perception of global threats through 13 indicators; some examples are climate change, pollution, financial crises, overpopulation, and violent conflicts, among others. In this book chapter, we find five response patterns or profiles. The first one is the *aware* profile, grouping 52% of the total population. The *aware* profile is characterized by a probability response pattern where all the indicators are considered a possible threat to the world's future. An opposite response pattern is the unaware profile (2%), where all the items have a low probability of being considered a threat. Another profile is comprised by the *pollutionists* (12%), who perceive only the pollution indicator as a possible global threat. Finally, two remaining profiles are the aware but conflict senseless (16%) and aware but overpopulation and climate change senseless (18%). In both cases, the responders perceive each indicator as a possible threat to the world's future, but related to violent-social conflicts in the first instance and climate change and overpopulation in the second. It is interesting to note that such profiles are present in all the participating countries, and the analyses ensure the comparability (invariance) of the profiles across countries. With this evidence at hand, we describe the profiles and the distribution of patterns across regions and countries.

The chapter is organized into four sections. First, it presents a literature review on GC and global threats to democracy among youth. Second, it describes the data and methods used to estimate the profiles. The third section delves into the main results of the study. The last section presents the main conclusions, limitations, and ideas for further research.

Literature review

Developing citizenship attributes for youth in the 21st century represents an enormous challenge due to the complexities of the problems that societies

currently face and the limited set of responses that the political and policy structures of nation-states have at hand for facing these complex challenges (Innerarity, 2020). Over time, the notion of citizenship in education has been focused on social rights and duties, with a special emphasis on voting, knowing, and respecting the functioning of political institutions via the official curriculum in schools (Villalobos et al., 2021). However, such perspective oversimplifies the citizenship concept in an era of complex global challenges for humanity (Treviño et al., 2021).

The context of globalization poses challenges for democracy (Innerarity, 2020) and requires an advanced and multidimensional approach to citizenship definitions (Haste et al., 2017), which consider, at least, the interaction between: (a) civic knowledge; (b) citizenship attitudes; and (c) civic participation (i.e., elections, political parties, and legal or illegal protests). These three dimensions are interrelated, but they are three different conceptual and empirical constructs (Schulz et al., 2018). International literature shows that these three dimensions are linked, but they have low correlations among them (Isac et al., 2014). Thus, the definition of citizenship has been historically shaped by the notions of liberal democracy and nation-state—in which citizenship implies being a member of a community (Villalobos et al., 2021; Andreotti & Pashby, 2013), in this case a country with its political, social, cultural, and legal components (Stokke, 2017; Katzarska-Miller & Reysen, 2018)—and seems to fall short in the face of current and future global challenges.

A seemingly easy way to analyze how youth value global threats around the world is to stick to the concept of GC. However, such a concept is polysemic because it may have different meanings according to the specific framework used to define it and the contexts in which this concept takes form. The notion of GC has been defined in the literature in, at least, four ways. First, a Western view of GC has been used to frame the important issue of knowing, getting involved, and participating locally and globally to solve global challenges (UNESCO, 2014, 2017). This notion of GC emerged after World War II as part of the central role played by international organizations (Trully, 2014) and the legal changes in different countries sharing the human rights framework (Parada, 2009). Within this definition of GC, the literature has emphasized the development of inter- and multi-cultural skills (Barrett et al., 2014) as a way to promote tolerance, knowledge, and respect toward others, as well as the capacity of building societal agreements to live in community. Such a perspective has been labeled as soft or traditional GC (Akkari & Maleq, 2019).

Second, a neoliberal approach to GC is linked to the immense power of international corporations (Trully, 2014), the multiplication of both markets and migrations of capital and transnational workers (Sassen, 1999), and rapid technological changes (Borja & Castells, 1996). According to the neoliberal approach, a combination of factors has created a global and interdependent economy where production and consumption patterns are configured at a planetary scale. The neoliberal conception of GC usually denotes a more economic perspective, and the notion of GC is linked to the intercultural skills

to develop economic exchanges around the world (Davies & Reid, 2005). Thirdly, critical GC is a different approach, which has focused not only on the promotion of global human values but specially on the inequitable processes that affect different minorities and disadvantaged groups (Chapman et al., 2018), and extensively questions the global configurations of power and inequality (Andreotti & De Souza, 2012; Camicia & Franklin, 2011).

Finally, the environmental dimension of GC is related to the awareness of the fact that all humans share this finite and interconnected world (Arneil, 2007) in close relationship to nature. To summarize, GC is a polysemic concept that can be defined from different perspectives. It involves at least three components: sociopolitical (soft or critical), economic, and environmental (Kirkwood, 2001; OXFAM, 2015). The four perspectives presented here share the idea that there are global processes that defy traditional citizenship notions based on political participation and voting within a nation-state (Villalobos et al., 2021; Oxley & Morris, 2013). These GC definitions, despite coming from different sociopolitical perspectives, recognize the relevance of globalization and the challenges of expanding the notion of citizenship to face global processes or threats (Holsti, 2002).

Global awareness, a key concept for GC, has been present in the literature at least since the 1970s (Hanvey, 1976). This definition, according to Hanvey (1976), includes five dimensions: (a) perspective consciousness; (b) stateof-planet awareness; (c) cross-cultural awareness; (d) knowledge of global dynamics; and, (e) awareness of human choices. It is interesting to note that "state-of-planet" awareness is a broad dimension with two elements. First, it implies the comprehension of prevailing world conditions, developments, trends, and problems that are confronted by the global community. Second, it also involves having an in-depth understanding of global issues such as population growth, migrations, economic disparities, depletion of resources, and international conflicts. The literature on GC evolved posing several critiques and advancements. Among them, there is a critique of Hanvey's (1976) description of global awareness because it neither considers the perspective of consciousness nor the introspection needed to know each one's own place in the local and global structures of power (Merryfield & Subedi, 2001). Case (1993) has also identified global interconnections, along with universal values and cultural practices, as one of the elements of GC, which includes the four major interactive global systems: economic, political, ecological, and technological. A similar case is presented by Pike and Selby (1988), who pointed out the need for global awareness on the health of the planet, which is based on the awareness of global conditions and developments. These conceptual elements are discussed in the findings and concluding sections in relation to empirical results.

Developing GC as part of the purposes of the school system is still a pending matter around the world, although there are interesting examples. The European Union (EU) has promoted policy frameworks that aim at enhancing citizenship education through the promotion of common values and attitudes among student populations in Europe, while at the same time valuing cultural diversity (Isac et al., 2021). However, an analysis of middle and secondary education texts—on the disciplines of history, social studies, civics, and geography—in 78 countries shows that the nationalist narrative persists in textbooks, and it has not diminished with the political, economic, and social globalization, suggesting that more globalization coexists with nationalism in a non-zero sum game (Lerch et al., 2019). The evidence on these issues shows tensions between the aim of sharing a common culture and valuing diversity, especially among some European-born students that present attitudes that propose that immigrants should not have the same rights as those born in Europe (Isac et al., 2021).

Besides this multi-country institutional effort for developing shared values in Europe, the countries from Asia and Latin America share cultural and linguistic features that are a product of their history. Asian countries, at least those participating in ICCS 2016, are characterized by sharing a common cultural heritage of Confucianism, which emphasizes a long-term horizon for promoting change and respect for authorities, and it may be related to the evidence suggesting that protests are the least preferable way of participation among Asian students (Kennedy & Kuang, 2021). Latin American countries participating in ICCS 2016 also share a common heritage marked by the imposition of the Spanish language on the local indigenous populations since the arrival of the Spaniards in the 15th century, as well as political forms of organization and the instauration of Catholicism as the official religion. Therefore, there are key historical and cultural commonalities among Latin American countries. The development of the region led to widespread corruption and authoritarian regimes (Sánchez-Ancochea, 2021). For such a reason, tolerance for corruption (Carrasco et al., 2020; Morris, 2008; Sánchez-Ancochea, 2021) and support of authoritarian practices by government leaders (Miranda et al., 2021) are current challenges faced by countries within this region. In sum, the countries from the three regions (i.e., Asia, Europe, and Latin America) face different contexts that may shape their views on citizenship and, specifically for this chapter, the understanding of global threats.

It is important to state that the capacity of schools to promote civic and citizenship attributes seems to be rather limited. Recent evidence shows that school factors explain limited variance of student attitudes toward equality of rights for minorities and women (Treviño et al., 2017), as well as to explain participation in Latin America (Treviño et al., 2018). In fact, nearly 90% of the variance on student citizenship outcomes occurs within schools, meaning that students within the same schools are highly diverse in most of the cases, and schools have to deal with such diversity (Treviño et al., 2019). In the same line, it seems that schools have a limited capacity to influence civic outcomes, and more challenging that schools could promote GC skills, although this is a question for further research.

Recognizing the variety of perspectives on GC, this study follows an empirical approach based on a holistic definition of GC, which involves sociopolitical, economic, and environmental global threats (Kirkwood, 2001; Tawil, 2013). The available data from ICCS 2016 includes violent conflicts, terrorism, crime, overpopulation, and infectious diseases as sociopolitical elements. It considers economic elements such as global financial crises, energy and food shortages, poverty, and unemployment. The environmental aspects include pollution, climate change, and water shortages (Schulz et al., 2018). This exercise will allow us to describe the combination of global threats that students are aware of in countries from Asia, Europe, and Latin America, as an empirical approximation to understand how youth approach GC.

The approximation to the study of GC via global threats has advantages and shortcomings. Among the advantages, the study allows us to illuminate the way in which youth around the world consider these specific sociopolitical, environmental, and economic global threats. We then can identify the way in which students regard the combination of global threats and relate such results to specific contextual elements. The main disadvantage may be that the conceptual framework used by ICCS 2016 may be leaving out key specific global threats that may be more important for students according to their local context. Furthermore, the analysis of global threats does not allow for an in-depth analysis of the different conceptual frameworks of the GC. However, we propose that students with more awareness regarding the different global threats may be more inclined to have a more holistic approach of the sociopolitical, economic, and environmental issues related to GC. We also pose, as a hypothesis, that students with more awareness may be nearer to a critical GC profile.

In general terms, it is possible to hypothesize that each region may face specific global threats more intensively. For example, violent conflicts, crime, poverty, and unemployment may be regarded as key issues for Latin America (Lessing, 2012; López-Calva & Lustig, 2010; Sánchez-Ancochea, 2021). In Europe, environmental awareness seems to be a widespread worry among youth (TUI Stiftung, 2018). Finally, in Asia, the geopolitical situation may shape the views of youth in terms of violent conflicts. At the time of data collection for this study, the world did not foresee the COVID-19 pandemic; for such a reason, we present results that represent the situation previous to the spread of the virus.

With this initial effort, we aim at understanding the different configurations of GC understood as awareness of global threats among youth attending schools in 24 countries and three regions. Using the ICCS 2016 data offers a unique opportunity to study this phenomenon around the globe, but it may also have limitations, as discussed in the conclusion.

Data sources and analytical methods

Our study is based on data from the ICCS 2016. The project collected data from two-staged national representative samples of eighth-grade students in 24 countries on key civic and citizenship dimensions, including global threats.

The study selects schools and complete classrooms within schools. Such a characteristic implies the need to use analytical methods that consider the complex or two-stage design of the study (Schulz et al., 2018). ICCS 2016 included students from: (a) Asia (i.e., Chinese Taipei, Hong Kong SAR, and the Republic of Korea) for a total of 9,207 students; (b) Europe (i.e., Flemish Belgium, Bulgaria, Croatia, Denmark, Estonia, Finland, Latvia, Lithuania, Malta, the Netherlands, Norway, The Russian Federation, Slovenia, Sweden, and Germany's North Rhine-Westphalia) comprising a total of 60,077 students; and (c) Latin America (i.e., Chile, Colombia, the Dominican Republic, Mexico, and Peru) with 25,315 students.

The variables selected for these analyses are those in the battery of the ICCS 2016 study related to economic, sociopolitical, and environmental factors perceived by students as global threats, as marked in the literature of GC. The items ask students the following: "To what extent do you think the following issues are a threat to the world's future?" Item responses are designed as a Likert scale with four levels: "very important," "quite important," "not very important," and "not important at all." However, for these analyses, the scales were recoded into two levels: (a) important, which includes the responses "very important" and "quite important"; and, (b) not important, grouping answers in the "not very important" and "not important at all" original levels. This recoding was performed under the criterion of diminishing cells with a small number of cases in the items and countries analyzed (Torres-Irribarra & Carrasco, 2021). The specific items of the scale allow students to assess the degree to which they consider problems to be a global threat, as presented in Table 4.1.

We analyzed the data fitting a structurally homogeneous LCA (Kankaraš & Vermunt, 2014) to create students' profiles on their perspectives on the importance of global threats. As explained in the introduction, the LCA approach differentiates from traditional variable-centered methods—like regression for its capacity to substantially describe population attitudes' heterogeneity in a set of indicators or variables. This method groups people based on their response patterns (Masyn, 2013). This means that the method allows for the identification of students with similar profiles, in this case, profiles of awareness on global threats.

The structurally homogeneous model used allows comparing among countries without losing interpretability. In this way, the between-country variation is only the proportion of students in each country that pertains to a latent class (or response profile). Also, the analysis considers the nesting of students within schools (Asparouhov & Muthén, 2008; Henry & Muthén, 2010; Vermunt, 2008), which is part of the sampling-design of ICCS 2016, which collects data of students within schools, as well as the sampling weights and the sample stratification (Asparouhov & Muthén, 2010; Gonzalez, 2012). We selected the model following the standard methodologies of LCA, and we performed a robustness check to ensure the stability of results through an exploratory and validation sample (for more information refer to the Appendix).

Item description	Type of threat
Pollution	Environmental
Climate change	Environmental
Water shortages	Environmental
Global financial crises	Economic
Energy shortages	Economic
Poverty	Economic
Unemployment	Economic
Food shortages	Economic
Crime	Sociopolitical
Violent conflict	Sociopolitical
Terrorism	Sociopolitical
Overpopulation	Sociopolitical
Infectious diseases (e.g., bird flu and AIDS)	Sociopolitical

Table 4.1 Items from ICCS 2016 on global threats: to what extent do you think the following issues are a threat to the world's future?

Source: Köhler et al., 2018.

Study results

The results show that students can be categorized into the following five profiles in relation to their awareness about global threats: (a) aware; (b) aware but climate change and overpopulation senseless; (c) aware but conflict senseless; (d) pollutionists; and (e) unaware. These results are presented in Figures 4.1 and 4.2. These categories are organized in relation to the probability of students considering each threat as important, according to their answers to the survey questions representing each global threat. Therefore, each profile groups students with a similar probability of response to the group of items. The method used allows us to differentiate across groups, even in the cases when groups of students may have a similar probability of considering one or several threats as important.

The general results for all the participating countries show that 52% of the students fall into a class labeled as *aware*. Students classified as *Aware* have 90% or higher probabilities of considering all the threats as important, according to their answers to the questions in the survey. This means that these students see economic, sociopolitical, and environmental factors as important threats for humanity, being aligned with the most sophisticated definitions of GC, which consider all these elements as important.

Conversely, 2% of the students are in a category labeled *unaware*. Students within this group have less than 10% of probabilities of considering all the threats to the future as important, except for pollution. This means that they have very low probabilities of classifying the different global phenomena as a threat for humankind. Even in the case of pollution, *unaware* students have only 18% of probabilities of qualifying such a global challenge as a threat. In sum, *unaware* students do not consider all the global threats measured in the





Note: In the *x*-axis are the 13 indicators based on student responses. The *y*-axis represents the expected response probability of agreeing with the indicator statement for each latent class. For validation results, see Figure 4.1A in the Appendix.

survey as important. Also, they are only modestly aware of the threat of pollution. However, it is important noticing that *unaware* students represent a small proportion of the total population of students.

Nearly 16% of the students are classified as *aware but conflict senseless*. Students within this category have 70% or higher probabilities of answering the items of all global threats as important, except for those related to crime and violence. These students are mostly aware of global threats, due to their high probability of considering them as important, but they have between 50% and 60% probability of considering crime and violent conflicts as global threats. The latter implies that within this profile there is not a clear pattern to identify crime and violence as global threats.

The next class can be defined as *aware but climate change and overpopulation senseless*, which accounts for 18% of the students. Students in this class show 70% or higher probabilities of considering important all the items, except for overpopulation and climate change. It is worth noticing that students within this profile have 50% of probabilities of regarding overpopulation as a global threat, a magnitude that does not represent a clear pattern in favor or against the perception of this phenomenon as a threat. Complementarily,



Figure 4.2 Proportions of students by type of global threat awareness profile and country, organized by region

Note: BFL = Belgium (Flemish), BGR = Bulgaria, CHL = Chile, COL = Colombia, DNK = Denmark, DNW = Germany (North Rhine-Westphalia), DOM = Dominican Republic, EST = Estonia, FIN = Finland, HKG = Hong Kong SAR, HRV = Croatia, ITA = Italy, KOR = Republic of Korea, LTU = Lithuania, LVA = Latvia, MEX = Mexico, MLT = Malta, NLD= Netherlands, NOR = Norway, PER = Peru, RUS = Russian Federation, SVN = Slovenia, SWE = Sweden and TWN = Chinese Taipei.

students in this category show nearly 65% of probabilities of considering climate change as a global threat. Although this may represent a clearer pattern towards perceiving climate change as a threat, students in this profile have lower probabilities of considering the latter as a threat in comparison to students in the *aware* profile.

The final class includes 12% of the students who are labeled as *pollutionists*. Students within this profile have 70% or higher probabilities of considering pollution as an important global threat, according to their answers to the survey. As can be seen in Figure 4.1, students in the *pollutionists* profile have between 35% to 58% probability of perceiving the rest of the global challenges as a threat. This means that it is only possible to clearly identify this group as worried for pollution, without clearer patterns in relation to the rest of the global threats included in the survey.

Behind these general trends, there are important regional and country differences that deserve attention. Asian countries show somewhat different patterns. For example, the percentage of *aware* students ranges from 44% in Korea, 53% in Chinese Taipei to 67% in Hong Kong SAR. This finding may be fueled by the geopolitical situation in the region, in which Chinese Taipei and Hong Kong SAR students are aware of the political tensions with mainland

China. If we consider the two categories that are aware of conflicts (*aware and aware but climate change and overpopulation senseless*), the proportion of students in the two profiles accounts for 74% in Hong Kong SAR, 74% in Chinese Taipei, and 78% in the Republic of Korea. This suggests that the hypothesis of geopolitical tensions may be fueling the worry of a threat of violent conflict in the region. Still, there are 19% of students in Hong Kong SAR and 10.6% in Chinese Taipei that are aware but conflict senseless. This may be explained, in part, by the long-term vision toward change influenced by the Confucian tradition in these countries, which includes a perspective of incremental and non-disruptive social changes (Kennedy & Kuang, 2021).

Also, it is interesting to note that the Republic of Korea has the largest proportion of *aware but climate change and overpopulation senseless* students. With nearly 35% of the total student population in this category, it seems that the rapid industrialization and positioning of this country in the global economy has influenced the perception of global threats of the students, since economic dynamism may be regarded as being at odds with the care for the environment. Furthermore, the decrease in the rate of population growth in the past 40 years may be an explanation of the lack of preoccupation for overpopulation as a problem among students in this country (World Bank, 2021).

European countries exhibit a more diverse distribution of students into the profiles. First, one-fifth or more of the student population is classified as *pollutionists* in the Netherlands (31%), Sweden (22%), Norway (21%), and Denmark (20%). These figures represent the highest concentration of pollutionists across the 24 participating countries. The level of economic development of these countries from Northern Europe may be an explanation for these trends, in which consciousness about climate change and the environment is heightened. However, it also reveals that a substantial proportion of students have a reduced conceptualization of the rest of the global threats. This seems contradictory with terrorist events that have happened in several European countries. Furthermore, not being aware of infectious diseases as a global threat is now more evident than in 2016—when the data was collected—but these students did not regard such an element as a threat that unfortunately was transformed into reality in 2020.

Half or more of the student population is classified as *aware* in eight European countries. They are Lithuania (65%), Slovenia (62%), Latvia (57%), Italy (57%), Russia (54%), Croatia (54%), Bulgaria (51%), and Malta (50%). It is noticeable that six countries that were part of the orbit of the Soviet regime have high percentages of *aware* students. This phenomenon may be partly explained by the recent history of armed conflicts, as well as organized crime and terrorist activities in several of these countries. Also, the collapse of the Soviet Union, along with the long processes of economic change, have had important impacts on the economic life of these countries. Finally, it is interesting that these students are also conscious of environmental threats,

a finding that may be related to the integration of several of these countries to the European Union, which has set targets to reduce emissions by 2030 (EU, 2021).

In seven European countries, one-fourth of the student population or more is classified as *aware but conflict senseless*, also representing the highest proportions of this profile among the participating countries in ICCS 2016. Belgium (Flemish) (39%), Sweden (37%), Germany (North Rhine-Westphalia) (35%), Denmark (34%), Norway (33%), the Netherlands (29%), and Finland (25%) have more students classified as *aware but conflict senseless* across the 24 participating countries. They are all highly developed countries from Northern Europe, with consolidated democracies characterized by solving their differences through institutional mechanisms (Biseth et al., 2021). This may also explain the high proportions of students in this profile in Belgium (Flemish) and Germany (North Rhine-Westphalia).

In Latin America, *aware* students are the majority in three out of the five countries. Specifically, Chile (74%), Colombia (73%), and Mexico (65%) show the highest proportions of students classified as *aware* among the participating countries—except for Hong Kong SAR that shows a similar proportion of students in this profile. With lower figures but nearing half of the population, the Dominican Republic, and Peru have 46% and 41% of *aware* students, respectively. Rampant inequality, crime, violent conflicts, over-crowded cities, poverty, and unemployment are attributes of the Latin American region (López-Calva & Lustig, 2010; Sánchez-Ancochea, 2021), and that may explain why a high percentage of students consider all of the global threats as important.

In the Dominican Republic and Peru, one-third or more of the student population is classified as *aware but senseless to climate change and overpopulation*. After long internal armed conflicts and dictatorships, these countries have recently enjoyed the economic boom in the region during the period of 2000–2012 that brought large segments of the population out of poverty (Rivas, 2015). Such a phenomenon may explain why these students appreciate economic global threats more than climate change and overpopulation. This profile has lower proportions of students in Chile (13%) and Colombia (12%), countries that have had more steady growth and were recently accepted as member countries of the OECD, an organization that groups developed countries.

Finally, the proportion of students in the *pollutionist* profile range from 4% to 15% in Latin American countries. Interestingly, Peru (15%), Dominican Republic (14%), and Mexico (11%) have the highest percentages of students in the *pollutionist* profile in the region. This suggests that such students may have a less sophisticated understanding of global threats, given the economic and sociopolitical threats that are present currently in the region.

The results of this research show that there are different configurations of GC in relation to the perception of global threats to the future of humanity.

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Conclusion

The overall aim of this chapter has been to contribute to the discussion of GC and education, considering the enormous challenges that we face as humanity that are not blocked by borders. The interconnectedness of the world in economic, sociopolitical, and environmental terms requires citizens to develop more sophisticated understandings of the world's workings. The study of the awareness of global threats offers a unique opportunity to study the way in which students understand the world and its economic, sociopolitical, and environmental challenges. The analysis of ICCS 2016 data has allowed us to classify students into profiles in terms of their awareness of global threats, which is an approach to study GC in a more holistic and generalized way.

Most of the students in the study are in the *aware* profile, meaning that they perceive the different global threats. In fact, across the 24 participating countries, 52% of the students are classified as *aware*, meaning that they are aware of economic, environmental, and sociopolitical global threats. This may mean that they are more sophisticated in analyzing the interconnection between these three types of threats. These results, however, are not homogeneously distributed among regions and countries.

In the Asian context, there are also high proportions of students in the *aware* profile, ranging from 44% to 67%. Considering together the students in the *aware* and the *aware but climate change and overpopulation senseless* categories, nearly three-fourths of the students in Chinese Taipei, Hong Kong SAR, and the Republic of Korea are highly aware of sociopolitical threats, such as violent conflicts. This may be shaped by the geopolitical situation in the Asian region and the tensions between these countries and mainland China.

In Europe, there is a twofold phenomenon. On the one hand, students in northern countries tend to be less sensitive to violent conflicts as a global threat, especially in Nordic countries along with Belgium (Flemish), the Netherlands, and Germany (North Rhine-Westphalia). The democratic and institutional traditions of these countries from the mid-20th century onwards may partially explain the lower awareness of conflict as a threat, because they have channeled social and economic challenges through the institutions of liberal democracy in place in such territories. Conversely, in the countries that were part of the orbit of the Soviet Union, half or more of the students are in the *aware* profile. Italy and Malta also show a similar pattern.

Latin American countries have high proportions of students in the *aware* profile. In Chile, Colombia, and Mexico, two-thirds or more of the population are classified as *aware*, a figure that is approximately 40% in the Dominican Republic and Peru. Such results may be shaped by the economic, sociopolitical, and environmental challenges that converge in the region.

The evidence suggests that students worldwide have sophisticated levels of awareness regarding the different types of global threats and that they may be gauging these threats with some complexity. Therefore, it seems that students are developing GC awareness in relation to different types of global threats. However, this evidence is not sufficient to assert what type of GC is more common among students in each context. We may hypothesize that *aware* students have a more critical GC profile, but we need further research to confirm that hypothesis.

Note

1 This work has been supported by the National Research and Development Agency (ANID) of Chile through PIA CIE160007 and the Project CHIC ANID/BASAL FB210018.

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Appendix

The results show that the model with five classes is the most appropriate option to meaningfully divide students into groups according to their perceptions on global threats. To arrive at this result, we estimated models including from one to ten latent classes. Table 4.1A includes the results and the fit indices. According to the BIC index, the six-class model shows the best fit, while the AIC suggests that the ten-class model has the best fit. However, analyzing the changes in the value of the likelihood ratio chi-square statistic (L^2), the improvement of this statistic shows that the improvement in the model is marginal between the models with four to ten classes (6%). Additionally, the classification error between the ten-class and the four-class model increases by 8%. For these reasons, we decided to analyze the solutions between four and five classes, where the classification error is similar (between .14 and .17, respectively).

The study used both an exploratory and a validation sample. We used the exploratory sample to identify the number of latent classes and, with this, the response patterns. Afterward, we used the validation sample to test the replication of results. These processes serve as mechanisms for robustness checks of the models, to ensure that the results of the profiles are statistically

Classes	BIC (LL)	AIC (LL)	Npar	L^2	$\%$ change L^2	Class. Err.
1	126082.10	125985.98	13.00	44884.70		0.00
2	106908.02	106538.33	50.00	25363.05	0.43	0.05
3	104451.94	103808.69	87.00	22559.41	0.50	0.09
4	103788.27	102871.45	124.00	21548.17	0.52	0.14
5	103276.33	102085.95	161.00	20688.66	0.54	0.17
6	103126.17	101662.23	198.00	20190.94	0.55	0.17
7	103142.16	101404.65	235.00	19859.37	0.56	0.19
8	103160.59	101149.51	272.00	19530.23	0.56	0.19
9	103216.21	100931.56	309.00	19238.28	0.57	0.21
10	103361.18	100802.97	346.00	19035.69	0.58	0.22

Table 4.1A Results of fit indices for the exploratory latent class model

Note: BIC (LL) = Bayesian Information Criteria, AIC (LL) = Akaike's Information Criteria, Npar = Number of parameters estimated in the model, L^2 = likelihood ratio chi-square statistic, % change L^2 = percentage of change between k_n and k_1 class model, Class. Err. = Clas sification error.

consistent. For the case selection, we randomly divided the complete sample into two groups, keeping the school as the primary sampling unit. All the latent-class analyses were performed with the software Latent Gold v5.1 (Vermunt & Magidson, 2013). For choosing the model with the exploratory sample, we analyzed the variation from one to ten latent classes. Then, we used three criteria for defining the final number of latent classes. First, we assessed the relative fit adjustment indexes AIC and individual BIC. However, these criteria are not sufficient because finding the lowest values in these indexes does not guarantee the best solution due to a possible overextraction of classes. For this reason, it is necessary to consider the classification error of the model, which is the second criterion for model assessment (Masyn, 2013). Finally, we assessed if the classes obtained have a substantively and theoretically sufficient interpretability, along with the proportion of classes that are not extreme (Henry & Muthén, 2010; Masyn, 2013). Once defining the number of classes, we replicated the latent classes in the validation sample, in which we compared both results and used the literature to interpret them.

We used the criterion of class interpretability to select the final model. Models with five and six classes differ in that the six-class solution adds a class that represents a small portion of the sample, it does not substantially differ from the class with more proportion of cases. When contrasting the four- and



Figure 4.1A Response probabilities patterns for the five-class solution in the exploratory sample

Note: In the x-axis are the 13 indicators responded by students. The y-axis represents the expected response probability of agreeing with the indicator statement for each latent class.



Figure 4.2A Response probabilities patterns for the five-class solution in the validation sample

Note: In the x-axis are the 13 indicators for which students responded. The y-axis represents the expected response probability of agreeing with the indicator statement for each latent class.

five-class solutions, the analysis of the profiles of the five-class model shows the inclusion of a new class, which has patterns different from the rest with a sizable proportion of students. Therefore, considering both the statistical and substantive criteria and the interpretability of the solution, we decided to select the five-class solution.

As mentioned before, we tested the stability of results of the five-class solution replicating the analyses with the validation sample. Figures 4.1A and 4.2A show that response patterns for both the exploratory and validation samples are highly similar. We estimated the difference in probability of responding each item for both samples, finding an average difference of 0.002 with a range of variation between 0 and 0.02. In terms of the proportion of students in each class, both samples show similar results with a difference ranging from 0.001 to 0.02. Therefore, it is possible to conclude that the five-class solution is stable in both samples.

Masyn (2013) suggests a set of criteria to interpret and label latent classes, which include putting attention to both the average response rates within each class and the items that separate one class from others. Following such suggestions, we labeled the classes using both the typical behavior in response probabilities for different items and using items showing either very high or low patterns of response patterns within its class.