Inequalities and participation in the digital society: online experiences among children and adolescents in Brazil and Chile

Daniela Trucco, Patricio Cabello and Magdalena Claro

Abstract

This paper presents a comparative analysis of the Global Kids Online research network data from Brazil and Chile in 2016 relating to children's digital access, uses and skills. Results show that high-frequency users tend to be from higher socioeconomic groups. Girls and higher-income children perceive higher levels of risk on the Internet. The most common areas of use are related to learning and social life. The type of guidance that children receive matters: active mediation strategies at home and school are vital for increasing children's digital opportunities, while restrictive mediation tends to reduce them. Also, parental mediation appears to be unequally distributed, showing differences by age, gender and socioeconomic group. These results contribute to discussions on promoting digital opportunities and reducing risks.

Keywords

Information society, children, adolescents, Internet, social media, digital technology, digital divide, equal opportunity, households, schools, ICT indicators, Chile, Brazil

JEL classification

J13, L63, D63

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I. Introduction

Digital technologies have spread over recent years in many societies, transforming different areas such as work, politics, education and even private life. Over the coming years, these transformations are expected to increase in most of the world's emerging economies. This is a response both to the new paradigms of scientific and technological innovation and to the new patterns of competitiveness that characterize the globalization process (Hirt and Willmott, 2014; Qu, Simes and O'Mahony, 2017).

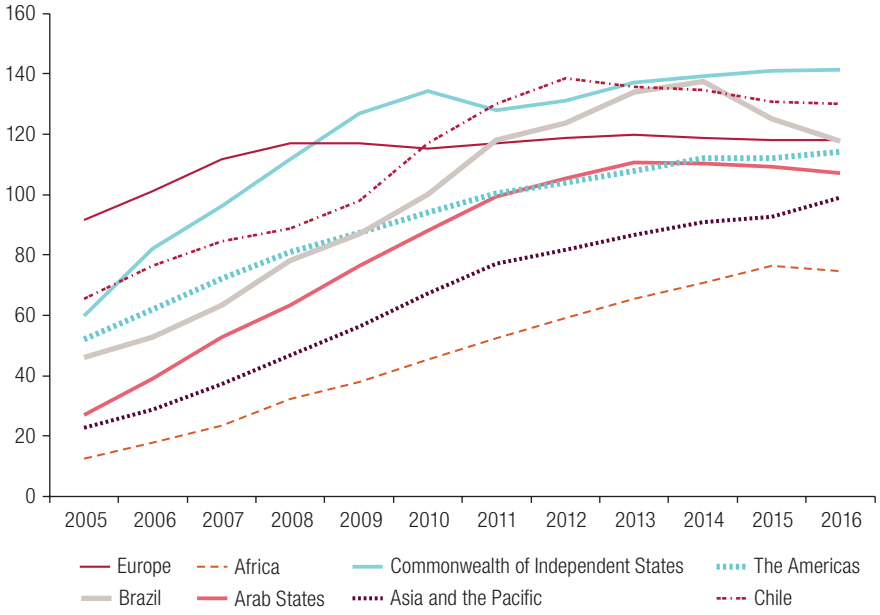
These changes require substantial transformations in the institutional labour market framework so that rights and negotiating power can be upheld in the new circumstances. They also require education and training systems to be permanently adjusted and updated so that they provide the skills and capabilities needed to work in the digital age (ECLAC, 2017; González and others, 2019). This new paradigm is likewise influencing activities in other areas of life: social relations, the production and acquisition of information and knowledge, the production and commercialization of goods and services and the exercise of citizenship, among others (Robinson and others, 2018; Scheerder, van Deursen and van Dijk, 2017).

Despite these trends, the so-called "fourth industrial revolution", predicated on innovation and the spread of information and communications technologies (ICTs), finds the Latin American economies in a situation of weakness in ICT infrastructure, while adoption of ICTs in the productive sector and society at large has been sluggish (Novick, 2017). Inequality is a historical and structural characteristic of Latin American and Caribbean societies that has reproduced itself even at times of growth and prosperity. There is a growing recognition that inequality is a multidimensional phenomenon. The accumulation or simultaneous reinforcement of disparities connected with social class, gender, racial or ethnic belonging or territory creates a complex structure of social relations, with numerous forms of discrimination that manifest themselves as inequalities in autonomy, well-being and empowerment and as pronounced differences in the exercise of rights (ECLAC, 2016a).

There is evidence that these inequalities may be reproducing themselves and increasing in the digital context, generating the so-called "digital divide" (Toyama, 2011; Scheerder, van Deursen and van Dijk, 2017). The concept of the digital divide was initially defined in dichotomous terms as the distance between those who have access to ICTs and those who do not. However, the evidence now is that as quantitative access increases and levels out, qualitative disparities are appearing in the way people use and engage with information technologies. These disparities are not only financial but also cognitive, social and cultural, leading researchers and public agencies to identify a "second digital divide" (DiMaggio and others, 2004; Montagnier and Wirthmann, 2011). This more refined approach shows that the benefits of using ICTs depend not only on physical access but also on individuals' situations and scope for engaging with and taking advantage of the opportunities provided (i.e., information, resources, applications and services) (Hargittai and Hinnant, 2008; Montagnier and Wirthmann, 2011; Selwyn, 2004; van Dijk, 2005).

Brazil and Chile are among the countries with the most widespread access to the Internet in the Latin American region. They are also well positioned in global rankings of social network users. The sources of access to the Internet have broadened significantly, particularly with the spread of smartphones and other mobile devices, which have democratized access to the web and broadened opportunities to connect any time and anywhere. As shown in figure 1, Brazil and Chile have very high rates of mobile phone penetration by global standards, with both being well above the average for the Americas region (which includes North American subscribers).

Figure 1
World regions, Brazil and Chile: mobile phone subscriptions
(Subscriptions per 100 inhabitants)



Source: International Telecommunication Union (ITU), World Telecommunication/ICT Indicators Database [online] https://www.itu.int/en/publications/ITU-D/pages/publications.aspx?parent=D-IND-WTID.OL-2021&media=electronic.

The ability to access the Internet from telephones, tablets and other devices has led to the emergence of a generation for whom being connected is part of daily life. Young Internet users have grown up in this connected era and are gaining access in increasingly diverse ways and at earlier ages. The Internet may have significant positive effects on different spheres of children's and adolescents' lives, creating present and future opportunities, while also bringing new risks (Haddon and Livingstone, 2014; Livingstone, Mascheroni and Staksrud, 2015; Cabello-Hutt, Cabello and Claro, 2017), whence the importance of helping them develop the skills they need to take advantage of the potential of technology while reducing the risks.

Social networks have become one of the most common ports of entry to Internet use, particularly among adolescents in Latin American countries. Research has shown how these platforms are changing social interactions among adolescents and youth, generating new codes of communication which are predominantly visual, with strong consumption and production of images (Murden and Cadenasso, 2018). There are also new risks to adolescents' health, such as excessive use of digital media and sleeping and nutrition disorders, among other problematic situations (Navarrete and others, 2017; Hooft, 2018). It is important to study how much and in what way adolescents are using social networks, and if there are any segmentations by sociodemographic variables.

There tends to be a general assumption that the younger generations are more technically savvy, but research has shown that they are not always effective at searching for and evaluating online content (Fraillon and others, 2014 and 2019) or at using the Internet in a manner that both meets their needs and avoids risks (Livingstone and Helsper, 2010; Vandoninck, D'Haenens and Roe, 2013). Research also shows that adults play an important role in helping children develop the skills to make positive use of online opportunities, instilling greater technical abilities in them and making them able to adapt more comfortably to changing digital environments and technologies (Dürager and Livingstone, 2012; Livingstone and others, 2015). Research in this area has found three general types of adult mediation: active mediation (parents talk to their children about appropriate behaviour when using the Internet),

restrictive mediation (parents set rules to control their children's Internet use) and co-use (parents share the Internet experience with their children) (Livingston, Mascheroni and Staksrud, 2015). Within these general types, more specific practices have also been identified (see Dürager and Sonck, 2014), and more attention is being given to adolescents' experiences and perceptions regarding these different forms of mediation (Valkenburg and others, 2013).

This paper reviews children's and adolescents' Internet access and use and adult mediation strategies in Brazil and Chile, in the context of increasing digital access in the region. It aims to answer three research questions (RQs):

(i) RQ1: What online access do children have, what activities do they carry out and what are the perceived adult online mediation strategies in Brazil and Chile?

(ii) RQ2: What are the differences in access, online activities and perceived adult online mediation strategies by age, gender and socioeconomic group between children in Brazil and Chile?

(iii) RQ3: What is the association between school mediation and children's digital opportunities in Chile and Brazil?

By answering these questions, it will provide comparative data for policies aimed at guaranteeing that everyone has access to and can take advantage of the opportunities brought by the digital era in the Latin America and Caribbean region.

II. Methodology

1. The Kids Online Survey

The analysis presented in this document is based on data collected through a survey that has been conducted, in various formats, since 2010 by the European Union (EU) Kids Online research network, Global Kids Online and the Latin America Kids Online network, focusing on the cases of Brazil and Chile with data collected between August and November 2016.

(a) Chile

The Kids Online Chile survey was conducted between August and November 2016 with a representative national sample of 1,000 children and adolescents who were Internet users aged between 9 and 17 and 1,000 parents or guardians (one per child interviewed). Internet users were defined as people who had used the Internet at least once during the past three months (ITU, 2014). The study followed a four-stage cluster sampling method with a probability proportional to size (PPS): first, municipalities were selected and stratified; second, census areas were enumerated; third, homes were systematically selected; and fourth, children were randomly sampled. The probability weights took account of this selection method.

(b) Brazil

The Kids Online Brazil 2016 survey was conducted in 2016 by the Regional Centre for Studies on the Development of the Information Society (Cetic.br). The sample included 2,999 children and adolescents who were Internet users aged between 9 and 17 and 2,999 parents or guardians (one per child or adolescent interviewed), residing in permanent private households in Brazil. Internet users were defined as people who had used the Internet at least once during the past three months.

The survey involved stratified sampling of clusters in multiple stages. The number of stages in the sample plan depended on the role assigned to the selection of municipalities. Various municipalities were included in the sample with a probability equal to one (self-representative municipalities). In these cases, the municipalities served as strata for selecting the sample of census enumeration areas and, afterwards, of households and residents to interview, constituting a three-stage sample design. Other municipalities not necessarily included in the sample served as primary sampling units (PSUs) in the first sampling stage. In these cases, the probabilistic sample consisted of four stages: selection of municipalities, selection of census enumeration areas in the selected municipalities, selection of households, and then selection of residents. The probability weights took account of this selection method (CGI.br, 2017).

The analytical sample for this study consisted of 2,438 Brazilian children and teenagers aged 9 to 17.

2. Variables and measures

The following variables and measures were used in the analysis:

Access to the Internet. This was to ascertain where and how children accessed the Internet. In the case of Brazil, a yes or no answer was required for access locations and devices. In the case of Chile, the answers to the question about the frequency of Internet access shown below were recodified into a dichotomous variable, with "Never" and "Almost never" equated to "No access".

Frequency of Internet access. The question asked was "How often do you use the Internet?" The alternatives were "Never", "Almost never", "At least once a month", "At least once a week", "Every day or almost every day" and "Many times a day" (see table 1).

Digital uses index. This refers to what children do online and was measured using a set of 23 activities in Chile and 16 activities in Brazil with the question "Have you done these things in the past three months? Yes/no". The index was calculated by adding together the activities engaged in.

Socioeconomic group. In the case of Brazil, the classification was based on the Brazilian Criteria for Economic Classification (CCEB), as defined by the Brazilian Association of Research Companies (ABEP). This classification is based on ownership of durable goods for household consumption and the level of education of the household head. Ownership of durable goods is measured using a scoring system that divides households into the following economic classes: A1, A2, B1, B2, C, D, and E. The CCEB was updated in 2015, resulting in classifications that are not comparable with the previous edition, the 2008 CCEB (CGI.br, 2017). For Chile, the Ipsos protocol was used. This is a categorization with five values based on an index composed of a combination of the following indicators: goods, residential area classification, family income, quality of the home, main activity of the household head, education of the household head.

Index of active mediation at home. This index was constructed from the frequency with which respondents reported an adult at home engaging in active mediation strategies with them (the higher the frequency, the higher the value): 11 strategies with 4 levels of frequency in Chile and 10 dichotomous indicators in Brazil. This index, like all the others, was normalized for means comparison but not for the regression analysis.

Index of restrictive mediation at home. This index was constructed from the frequency with which respondents reported an adult at home engaging in restrictive mediation strategies with them (the higher the frequency, the higher the value): 13 strategies with 4 levels of frequency in Chile and 5 dichotomous indicators in Brazil.

Index of monitoring mediation at home. This index was constructed from the frequency with which respondents reported an adult at home engaging in three monitoring mediation strategies with

them (the higher the frequency, the higher the value). This index was only constructed for Chile and not for Brazil, since no indicators were included in the latter's survey.

Index of active mediation at school. This index was constructed from the frequency with which respondents reported an adult at school engaging in active mediation strategies with them (the higher the frequency, the higher the value): 14 strategies with 4 levels of frequency in Chile and 7 dichotomous indicators in Brazil.

Index of restrictive mediation at school. This index was constructed from the frequency with which respondents reported an adult at school engaging in restrictive mediation strategies with them (the higher the frequency, the higher the value): three strategies with four levels of frequency in Chile and only one in Brazil, with no index being constructed for the latter.

Table 1
Brazil and Chile: demographic variables and frequency of Internet access among children and adolescents aged 9–17
(Percentages)

Variable	Alternatives	Brazil	Chile
Gender	Male	50.2	50.8
	Female	49.8	49.2
Socioeconomic group	A, B (Brazil) C1 and C2 (Chile)	23.3	17.7
	C/ (Brazil) C3 (Chile)	47.0	47.6
	D and E	29.6	34.6
Frequency of internet access	Less than once a month	1.7	4.3
	At least once a month	2.8	1.4
	At least once a week	8.9	5.9
	Every day or almost every day	15.1	38
	Many times a day	71.5	50.3

Source: Prepared by the authors.

The values of all these indices were standardized in a normal distribution for comparison (see table 2).

Table 2
Brazil and Chile: adult mediation indices for Internet use by children and adolescents aged 9–17
(Percentages)

Variable	Non-standardized								Standardized							
	Brazil				Chile				Brazil				Chile			
	Min.	Max.	Mean	Standard deviation	Min.	Max.	Mean	Standard deviation	Min.	Max.	Mean	Standard deviation	Min.	Max.	Mean	Standard deviation
Active mediation at home	0	10	6.55	2.76	0	44	23.56	10.83	-2.38	1.24	-0.01	1.00	-2.18	1.88	-0.01	1.00
Restrictive mediation at home	0	15	3.23	4.30	0	40	13.50	9.36	-0.77	2.64	-0.03	0.98	-1.47	2.75	-0.04	0.99
Monitoring mediation at home	N/A				0	12	3.82	4.03	N/A				-0.96	1.99	-0.02	0.99
Active mediation at school	0	7	3.60	2.50	1	54	27.39	12.55	-1.40	1.36	0.02	1.00	-2.10	2.12	0.00	1.00
Restrictive mediation at school[a]	N/A				0.00	8.00	5.52	2.36	N/A				-2.31	1.05	0.01	0.99

Source: Prepared by the authors.
[a] There was only one indicator for Brazil, so no index was constructed.

3. Analysis

A descriptive analysis was first carried out to understand children's and adolescents' online access and activities and the adult online mediation strategies perceived by them in Brazil and Chile. The different indicators for Internet access and use and perceived mediation strategies were analysed for each country by gender, age and socioeconomic group in order to identify social segmentation in digital participation. Summative indexes were constructed for each mediation type and were also analysed in accordance with these sociodemographic characteristics.

A regression model analysis was then performed to understand the association between school mediation and children's digital opportunities in Chile and Brazil, with age, gender and socioeconomic group included as control variables.

III. Results

This section describes online access and activities among children and adolescents and perceived adult mediation strategies in Brazil and Chile in relation to some of the main axes of social inequality in this region of the world: socioeconomic group, age and gender (ECLAC, 2016b).

1. Online access

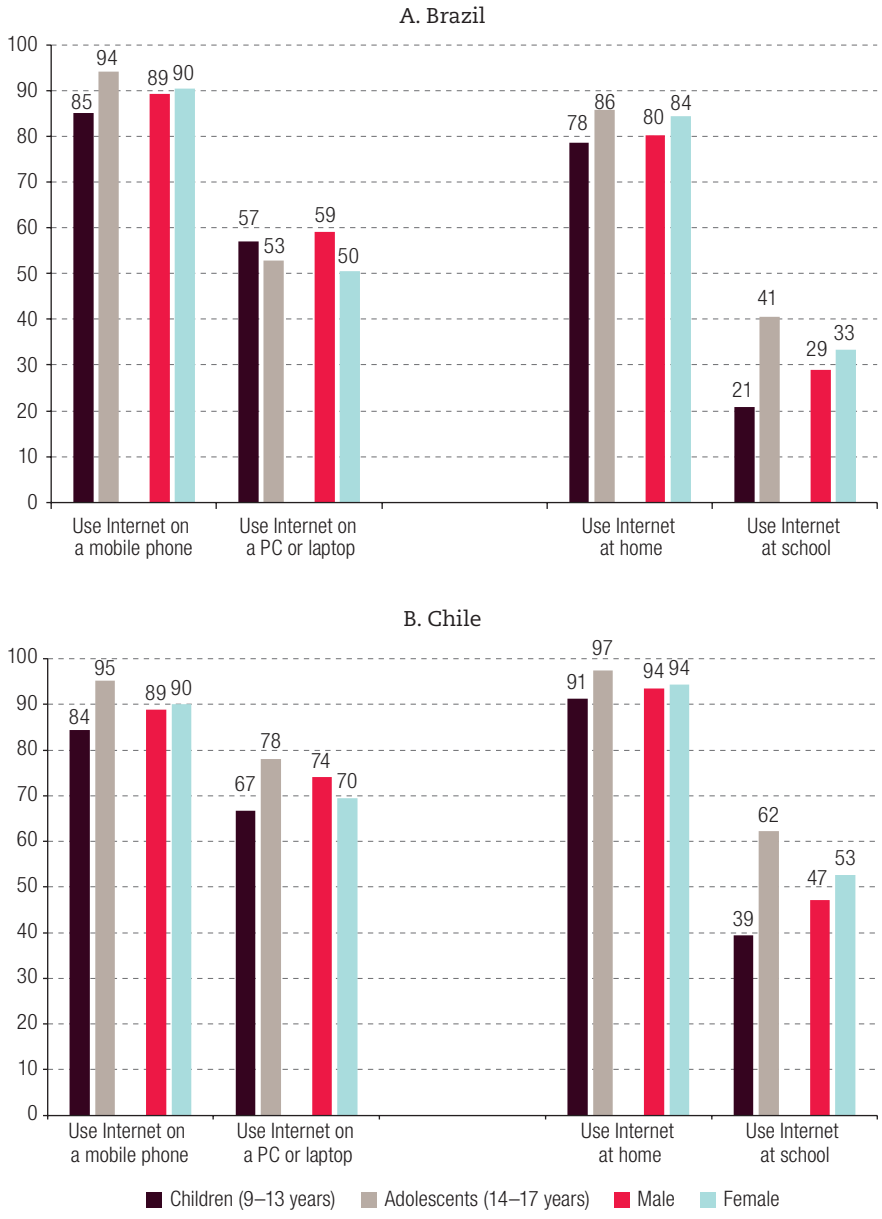
Children in Brazil and Chile who use the Internet access it mainly from home and from mobile phones. The two countries show similar trends in terms of the places and devices from which the Internet is accessed by children and adolescents, presenting higher access (more than double in the case of Brazil) at home than at school. Chile shows higher levels of use at home and, particularly, at school than Brazil.

Adolescents in both countries are more likely to access the Internet through their mobile phones than younger children (9–13 years) (see figure 2). Where use of a computer or laptop is concerned, there is a difference between Chile and Brazil, with adolescents in Chile also accessing the Internet through a computer more than children, whereas in Brazil it is the opposite. Also, children are less likely in general to access the Internet through a computer in Brazil than in Chile. In both countries, the greatest age gap is in school access, with adolescents making much greater use of the Internet at school than younger children, this being probably indicative of more active promotion of ICT use for school activities at the secondary level.

When the sexes are compared, little difference is found between girls and boys in the places and devices from which the Internet is accessed (see figure 2). The largest gaps in both countries are in computer access, with boys having more access than girls, and in-school access, with girls having slightly more access than boys.

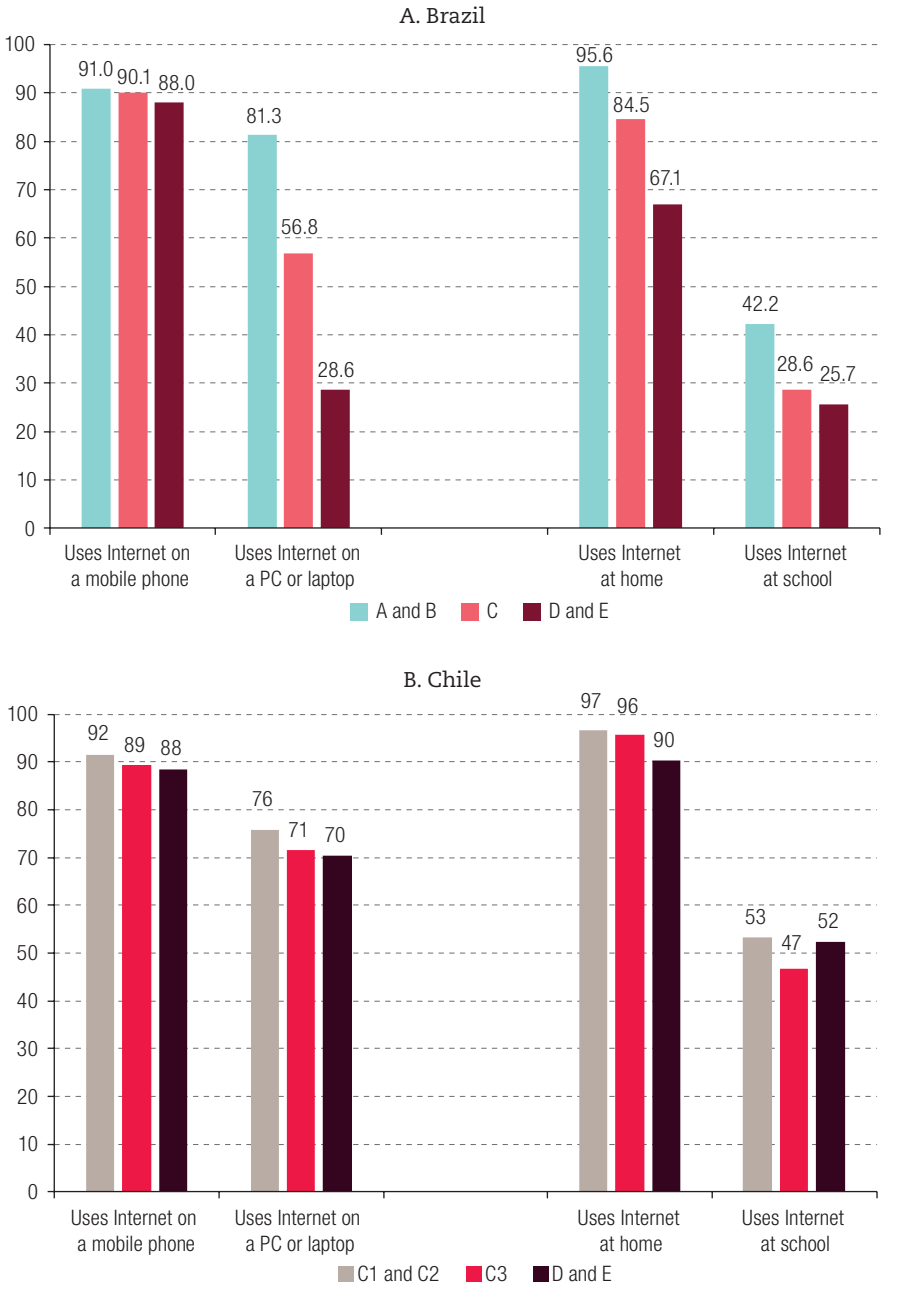
Figure 3 shows that mobile phone access to the Internet has been an equalizing point of entry in both countries. Close to 90% of children and adolescents of every socioeconomic group have access to the Internet through a mobile phone in both countries. There are still differences by socioeconomic group where computers are concerned, particularly in Brazil, where access to the Internet in schools is also unequal; when asked about the frequency of Internet use at school, only a little over half as many children from the lowest socioeconomic group as from the highest socioeconomic group reported using it. Home access to the Internet differed less by socioeconomic group in Chile than in Brazil, and there were hardly any differences in access at school. However, comparison of socioeconomic differences between Chile's and Brazil's results must be undertaken with caution, given that class segments are calculated differently (see the Methodology section).

Figure 2
Brazil and Chile: Internet access of children and adolescents (9–17 years), by age and gender, 2016
(Percentages)



Source: Prepared by the authors, on the basis of Global Kids Online data.

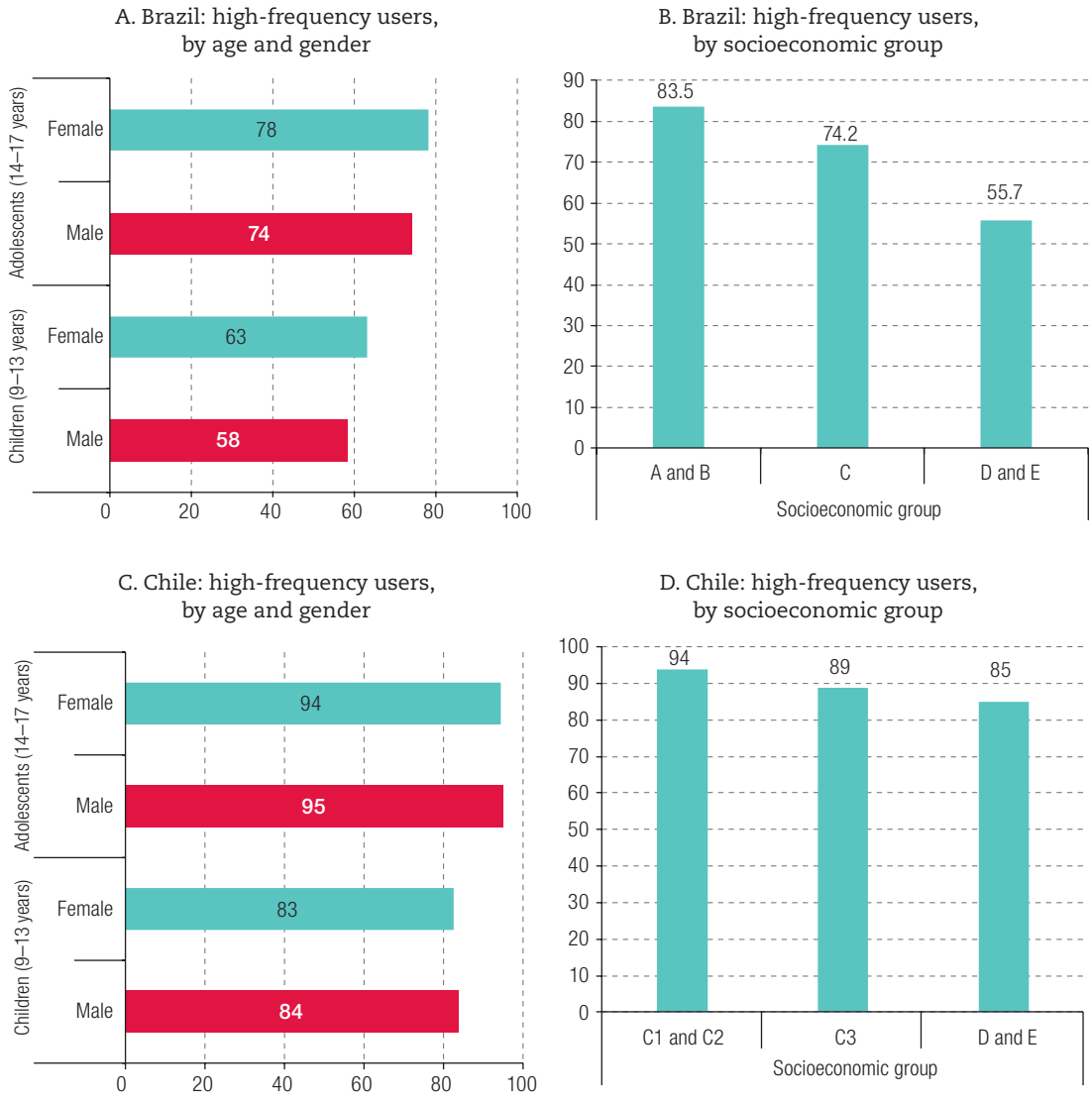
Figure 3
Brazil and Chile: Internet access of children and adolescents (9–17 years), by socioeconomic group, 2016
(Percentages)



Source: Prepared by the authors, on the basis of Global Kids Online data.
Note: Socioeconomic groups are identified by different methodologies in Brazil and Chile.

With regard to frequency of use, a higher proportion of children were intensive users, i.e., connected to the Internet more than once a day, in Chile than in Brazil, which is probably related to Chile's higher levels of access at home. There seem to be no significant gender divides among intensive users, but adolescents were more connected than younger children in both countries (see figure 4A and 4C). There was socioeconomic segmentation among frequent users, this being more marked in Brazil than in Chile (see figures 4B and 4D).

Figure 4
Brazil and Chile: proportions of Internet-using children and adolescents (9–17 years) who are high-frequency users (more than once a day), by age and gender and by socioeconomic group, 2016
(Percentages)

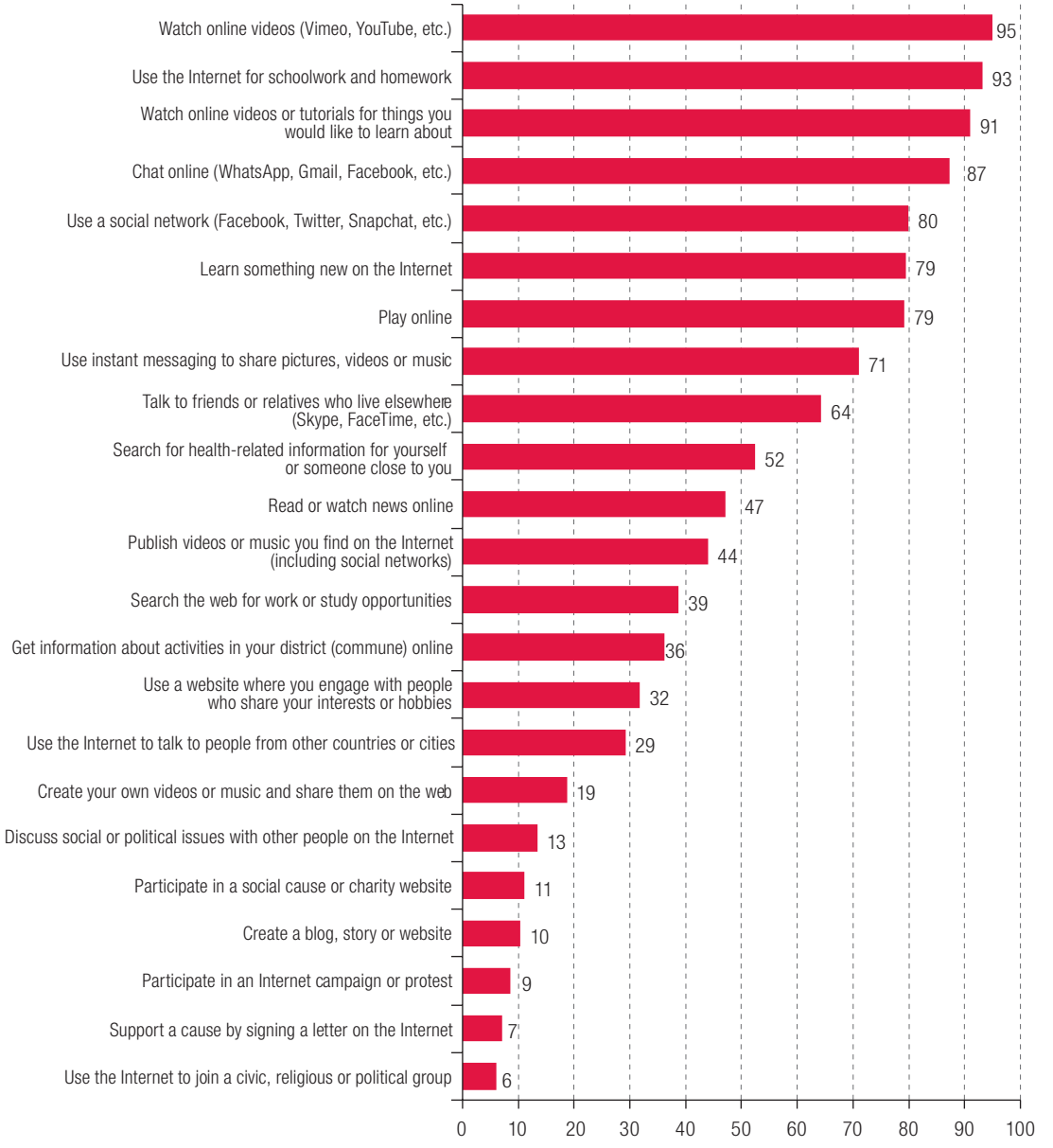


Source: Prepared by the authors, on the basis of Global Kids Online data.
Note: Socioeconomic groups are identified by different methodologies in Brazil and Chile.

2. Online activities

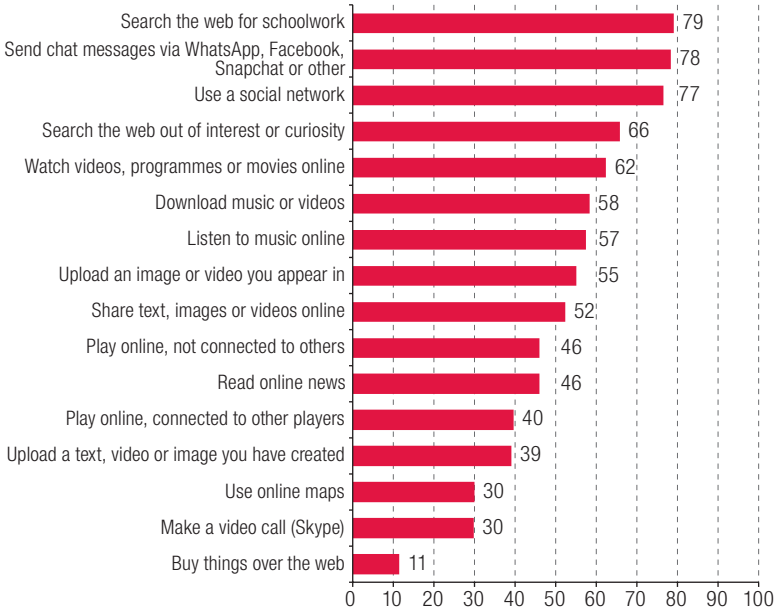
Figures 5 and 6 show the online practices of children and adolescents in Chile and Brazil. In both countries, they evince high levels of formal learning activities (i.e., related to their schoolwork), informal learning activities (i.e., searches for information that interests them) and activities related to their social life, such as using social networks and chatting online.

Figure 5
Chile: proportion of Internet-using children and adolescents (9–17 years) who have carried out each online activity within the last three months, 2016
(Percentages)



Source: Prepared by the authors, on the basis of Global Kids Online data.

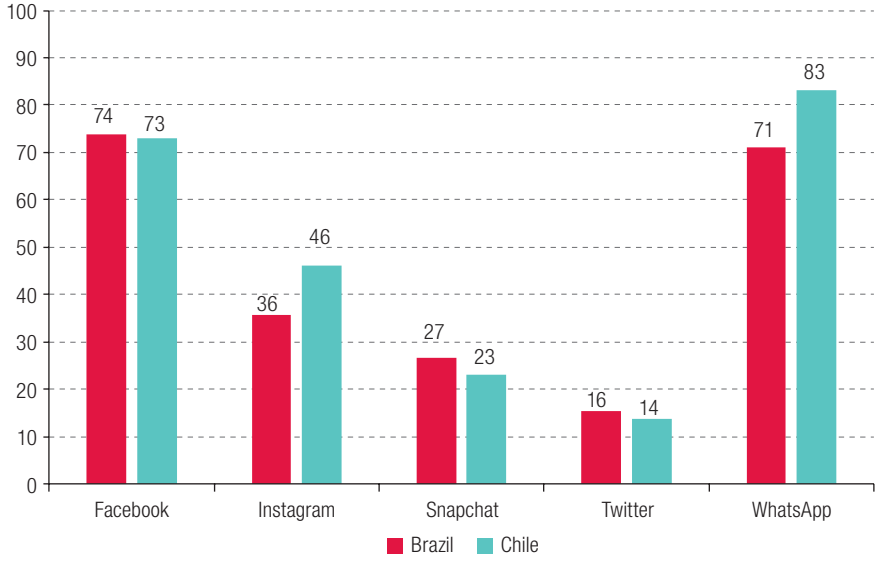
Figure 6
Brazil: proportion of Internet-using children and adolescents (9–17 years) who have carried out each online activity within the last three months, 2016
(Percentages)



Source: Prepared by the authors, on the basis of Global Kids Online data.

Regarding social network participation, close to 90% of adolescent Internet users in Brazil and Chile reported having a Facebook profile, although a significantly higher proportion of children had profiles in this network in Chile than in Brazil. The level of Instagram usage is also higher in Chile than in Brazil, while Snapchat and especially Twitter are much less popular in both countries (see figure 7 and table 3).

Figure 7
Brazil and Chile: children and adolescents (9–17 years) with a social network profile, 2016
(Percentages)



Source: Prepared by the authors, on the basis of Global Kids Online data.

Table 3
Brazil and Chile: children and adolescents with a social network profile, by age group, 2016
(Percentages)

		Facebook	Instagram	Snapchat	Twitter	WhatsApp
Brazil	Children (9–13 years)	60	23	18	10	59
	Adolescents (14–17 years)	92	49	36	22	86
Chile	Children (9–13 years)	60	30	17	11	77
	Adolescents (14–17 years)	89	65	31	18	91

Source: Prepared by the authors, on the basis of Global Kids Online data.

Table 3 shows the differences between children aged 9 to 13 and adolescents aged 14 to 17 regarding the percentages with a social network profile. In both countries, access to each social network is significantly higher for adolescents.

There are some differences in the way girls and boys use certain social networks, as those characterized by stronger visual features or applications, such as Instagram and Snapchat, are more attractive to girls, while for other networks there is no difference between girls and boys (see figure 8).

Figure 8
Brazil and Chile: children and adolescents (9–17 years) with a social network profile, by gender, 2016
(Percentages)

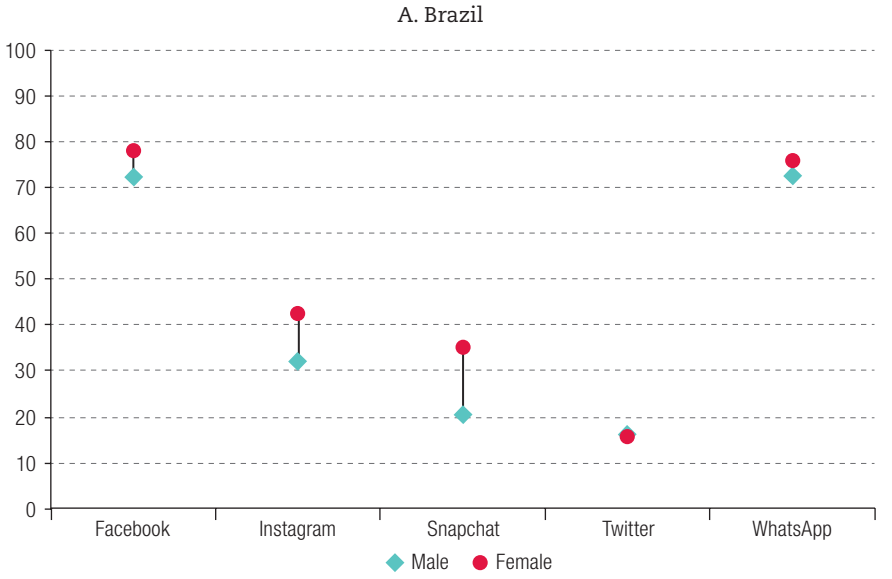
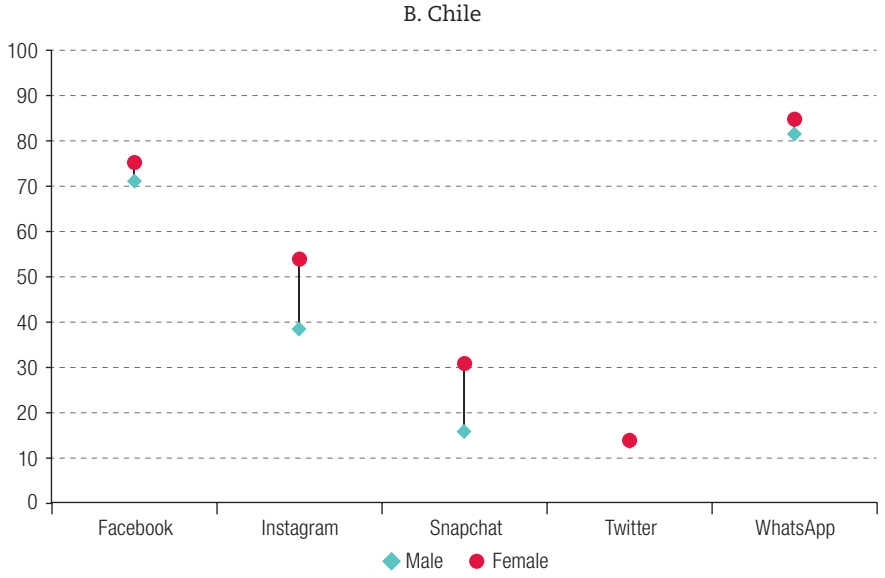


Figure 8 (concluded)



Source: Prepared by the authors, on the basis of Global Kids Online data.

In terms of socioeconomic background, Brazil shows significant gaps between children from the highest and lowest socioeconomic groups for all social networks except Facebook. Chile shows no significant socioeconomic differences (see figure 9). Facebook, like mobile phones, has penetrated most massively, reaching the largest sections of the population.

Figure 9
Brazil and Chile: children and adolescents (9–17 years) with a social network profile, by socioeconomic group, 2016
(Percentages)

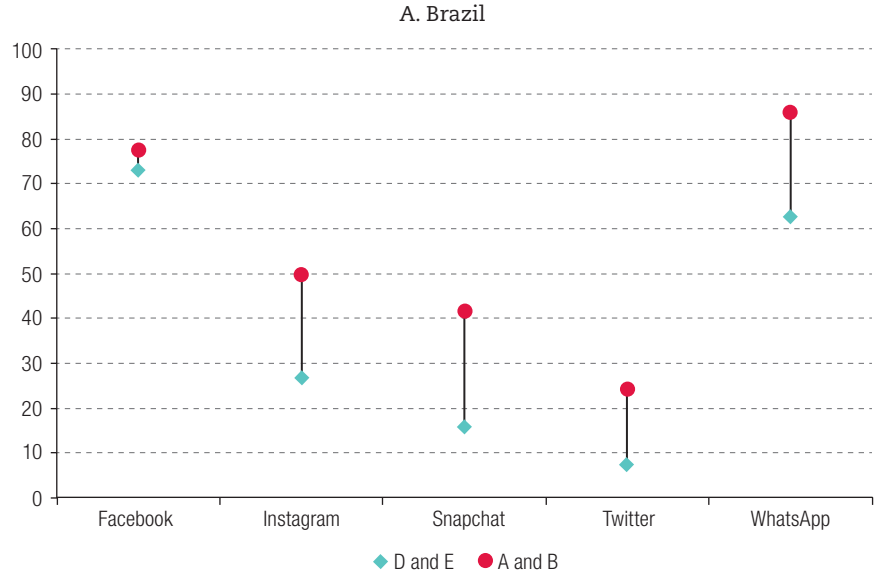
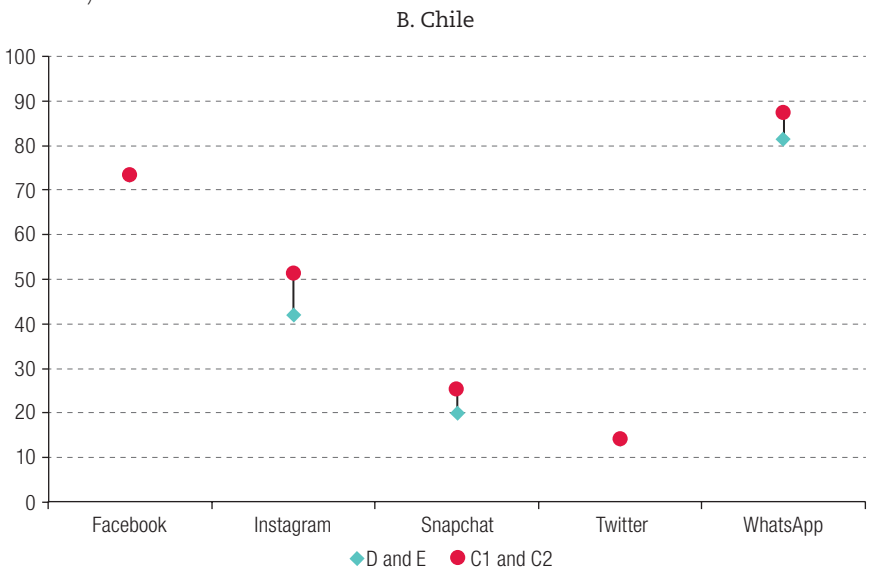


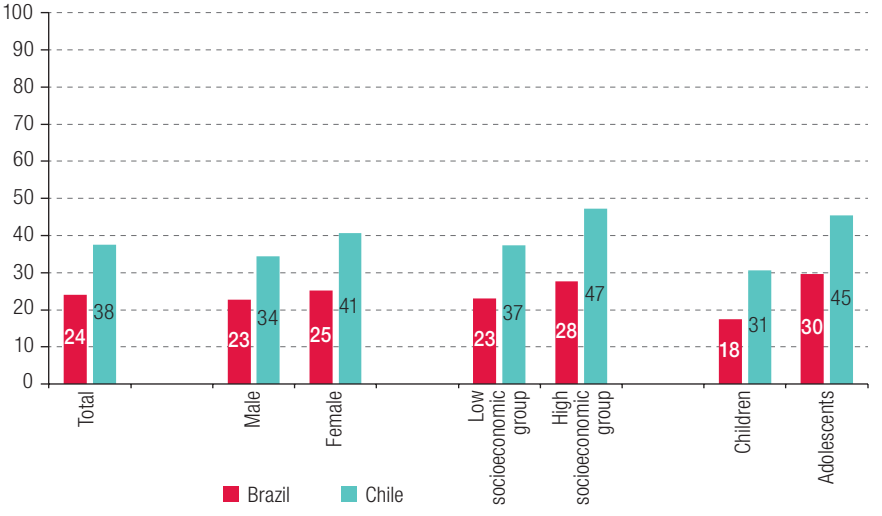
Figure 9 (concluded)



Source: Prepared by the authors, on the basis of Global Kids Online data.

Frequent use of the Internet and social networks by children and adolescents brings learning opportunities and new forms of social interaction, but also exposure to risks and potentially harmful experiences. The perceived level of harm, understood as the proportion of children who have felt bad or had an uncomfortable experience using the Internet within the past year, is higher in Chile (38%) than in Brazil (24%) (see figure 10). In both countries, levels of perceived harm are higher for older children and those from a higher socioeconomic background. In the case of Chile, there is a gender gap that affects girls negatively, since on average they perceive higher levels of harm than boys.

Figure 10
Brazil and Chile: proportions of Internet-using children (9–13 years) and adolescents (14–17 years) who have felt bad or uncomfortable because of something they have encountered on the Internet during the last year, 2016
(Percentages)



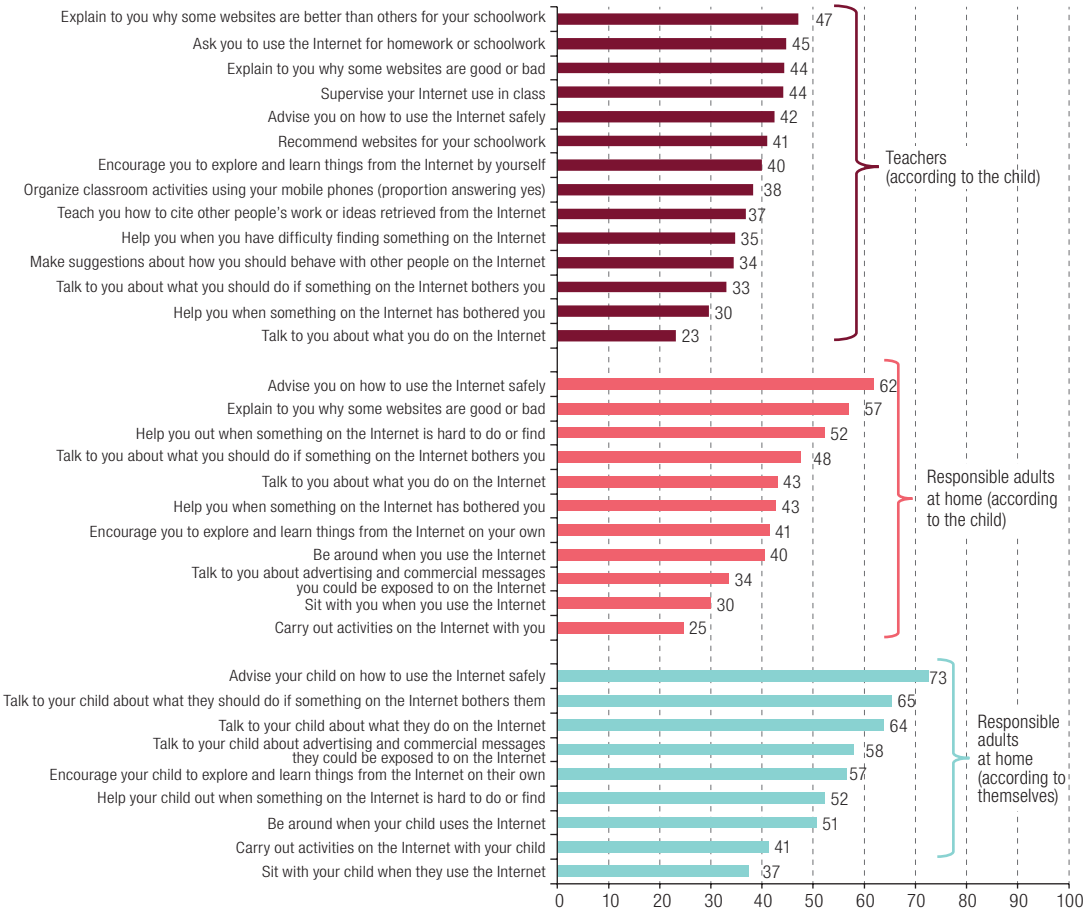
Source: Prepared by the authors, on the basis of Global Kids Online data.
Note: In the case of Brazil, the age gap is statistically significant at a 95% confidence level and the socioeconomic gap is significant at a 90% confidence level. In Chile, all three gaps are statistically significant at a 95% confidence level, measured by the chi-square test.

3. Adult mediation strategies at home and school

(a) Active mediation strategies

As described in the Methodology section, active mediation strategies refer to the actions that adults take to guide children in their Internet use and explain the risks and opportunities involved. Children in Chile tend to perceive a similar level of adult involvement in their Internet use at home and at school (see figure 11). On average, around 40% of children who are Internet users feel that they are often supported in its use at home. The most common strategies are "Advise me on how to use the Internet safely" and "Explain to me why some websites are good or bad". A lower percentage perceive the use of more active strategies, such as "Carry out activities on the Internet with me". There is an apparent gap between how children perceive their parents' mediation and what their parents perceive or report that they perceive. There is a group of adults that reports always carrying out every one of the strategies asked about. We assumed that the children's responses were a stronger indicator when it came to generating a summative index. The data for Brazil show similar trends, with children perceiving high levels of parental involvement in activities such as explaining what to do on the Internet and suggesting how to behave towards others and use the Internet safely (Cabello-Hutt, Cabello and Claro, 2016).

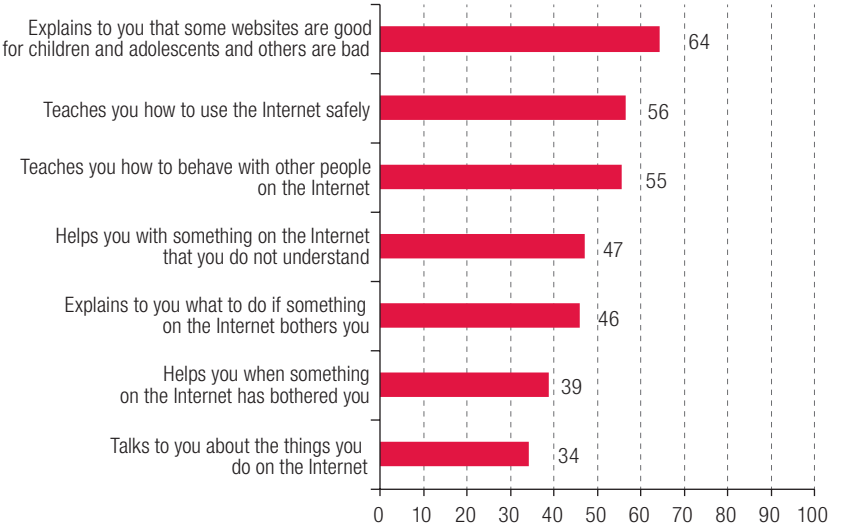
Figure 11
Chile: respondents answering "Always" or "Almost always" to questions beginning "How often do…", 2016
(Percentages)



Source: Prepared by the authors, on the basis of Global Kids Online data.

As regards school mediation strategies, about half of Internet-using students in Brazil perceive they are receiving active support from a teacher at school. The highest-rated strategies are those related to safety and general norms of online behaviour (see figure 12).

Figure 12
Brazil: students stating that a teacher implements the following active mediation strategies, 2016
(Percentages)



Source: Prepared by the authors, on the basis of Global Kids Online data.

Home scored slightly higher than school on the average active mediation strategies index. The main finding regarding social gaps in adult mediation of children's and adolescents' Internet activities is consistent in both countries, namely that younger children and girls are more actively supported in their digital behaviour (see tables 4 and 5). Concerning mediation strategies at home, there are no differences between children of different socioeconomic groups in Chile, while there are differences in Brazil, where higher socioeconomic groups report higher levels of active mediation. In both countries, girls perceive higher levels of parental mediation than boys, and younger children than adolescents.

Table 4
Chile: normalized index of active mediation strategies at home (z-values), by gender, age and socioeconomic group, 2016

			Mean comparison	
Gender[a]	Mean	N	T (t-test)	Significance
Male	-0.15	499	-4.96	0.000
Female	0.16	469		
Age[a]			T (t-test)	Significance
Children (9–13 years)	0.18	519	6.01	0.000
Adolescents (14–17 years)	-0.20	449		
Socioeconomic group			F (analysis of variance)	Significance
C1 and C2	-0.05	168	1.76	0.173
C3	0.06	468		
D and E	-0.06	331		
Total	0.00	968		

Source: Prepared by the authors, on the basis of Global Kids Online data.
[a] Difference is statistically significant at a 95% confidence level.

Table 5
Brazil: normalized index of active mediation strategies at home (z-values), by gender, age and socioeconomic group, 2016

			Mean comparison	
Gender[a]	Mean	N	T (t-test)	Significance
Male	-0.07136504	1 206	-3.52	0.000
Female	0.07178206	1 199		
Age[a]			T (t-test)	Significance
Children (9–13 years)	0.23	1 135	11.01	0.000
Adolescents (14–17 years)	-0.21	1 270		
Socioeconomic group			F (analysis of variance)	Significance
A and B	0.08527488	538	5.81	0.003
C	0.0247242	1 102		
D and E	-0.09558627	765		
Total	0.00	2 405		

Source: Prepared by the authors, on the basis of Global Kids Online data.
[a] Difference is statistically significant at a 95% confidence level.

The trend is slightly different for perceived mediation strategies at school. In both Chile and Brazil (see tables 6 and 7), girls also perceive higher levels of mediation by teachers at school. But there is a smaller age gap, i.e., children and adolescents perceive similar levels of guidance from schoolteachers. There is also a socioeconomic gap between perceived active mediation strategies at school that is the opposite to the gap perceived at home, with higher-income children perceiving less guidance and mediation than lower-income children.

Table 6
Chile: normalized index of active mediation strategies at school (z-values), by gender, age and socioeconomic group, 2016

			Mean comparison	
Gender[a]	Mean	N	T (t-test)	Significance
Male	-0.10	442.70	-2.93	0.003
Female	0.10	428.51		
Age			T (t-test)	Significance
Children (9–13 years)	0.01	439.31	0.34	0.736
Adolescents (14–17 years)	-0.01	431.90		
Socioeconomic group[a]			F (analysis of variance)	Significance
C1 and C2	-0.24	154.97	6.99	0.001
C3	0.00	408.32		
D and E	0.12	307.92		
Total	0.00	871.21		

Source: Prepared by the authors, on the basis of Global Kids Online data.
[a] Difference is statistically significant at a 95% confidence level.

Table 7
Brazil: normalized index of active mediation strategies at school (z-values), by gender, age and socioeconomic group, 2016

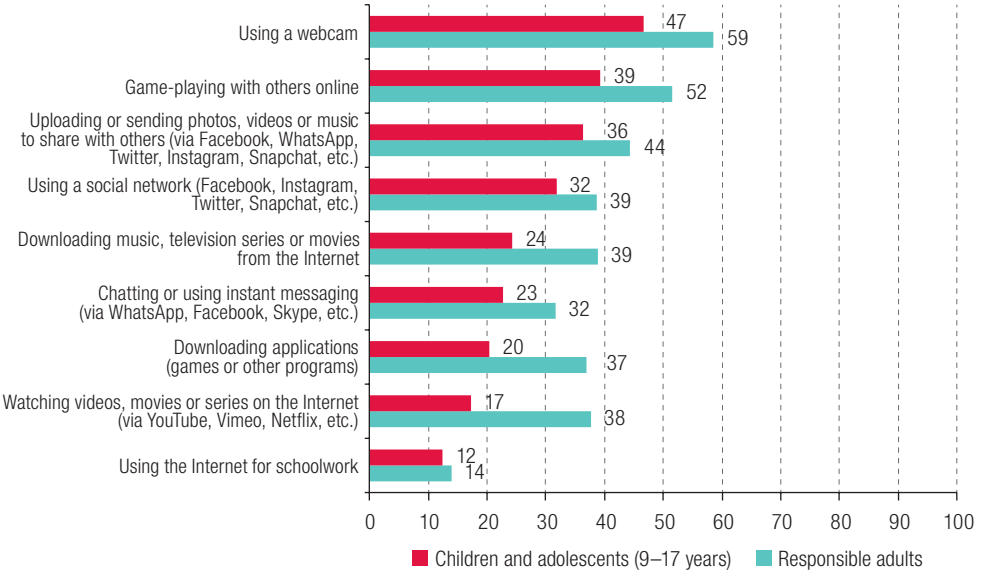
			Mean comparison	
Gender[a]	Mean	N	T (t-test)	Significance
Male	-0.13	1 160	-5.24	0.000
Female	0.09	1 159		
Age			T (t-test)	Significance
Children (9–13 years)	0.01	1 108	1.23	0.217
Adolescents (14–17 years)	-0.04	1 211		
Socioeconomic group[a]			F (analysis of variance)	Significance
A and B	-0.14	554	5.31	0.005
C	0.02	1 080		
D and E	0.02	685		
Total	-0.02	2 319		

Source: Prepared by the authors, on the basis of Global Kids Online data.
[a] Difference is statistically significant at a 95% confidence level.

(b) Restrictive mediation strategies

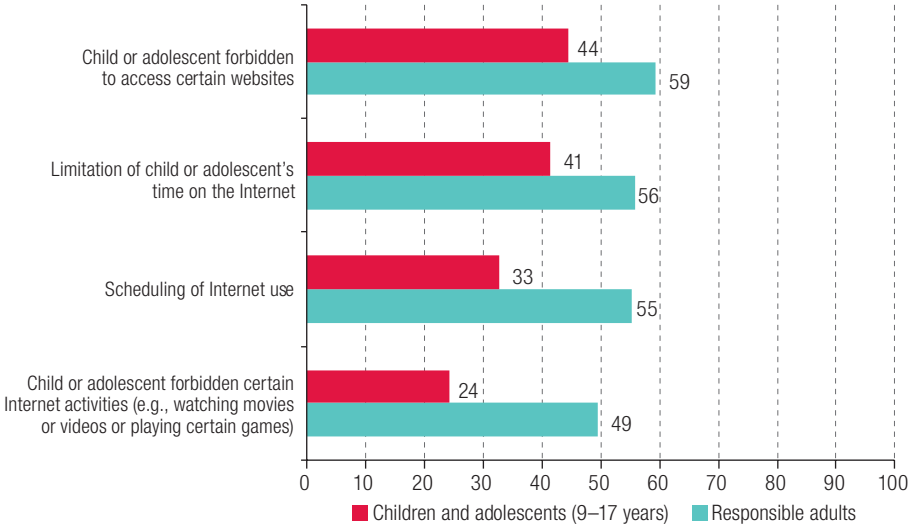
As presented in the Methodology section, the participants were also asked about their experience with restrictive mediation strategies. Figures 13 and 14 show the percentages of Internet-using children and adolescents in Chile who perceive different restrictive mediation strategies relating to their Internet use, compared to what responsible adults at home declare. The most common restrictions concern webcam use, game-playing with others online, access to certain websites and time spent online. As can be observed, these restrictions are intended to protect children from exposure to external risks. There are fewer perceived restrictions on using the Internet for schoolwork, watching movies or chatting with friends. However, there is a gap between adults' and children's perceptions that is consistent in every indicator, with adults always perceiving a higher level of mediation.

Figure 13
Chile: respondents stating that each online activity is forbidden to the child or adolescent or allowed only with permission or supervision, 2016
(Percentages)



Source: Prepared by the authors, on the basis of Global Kids Online data.

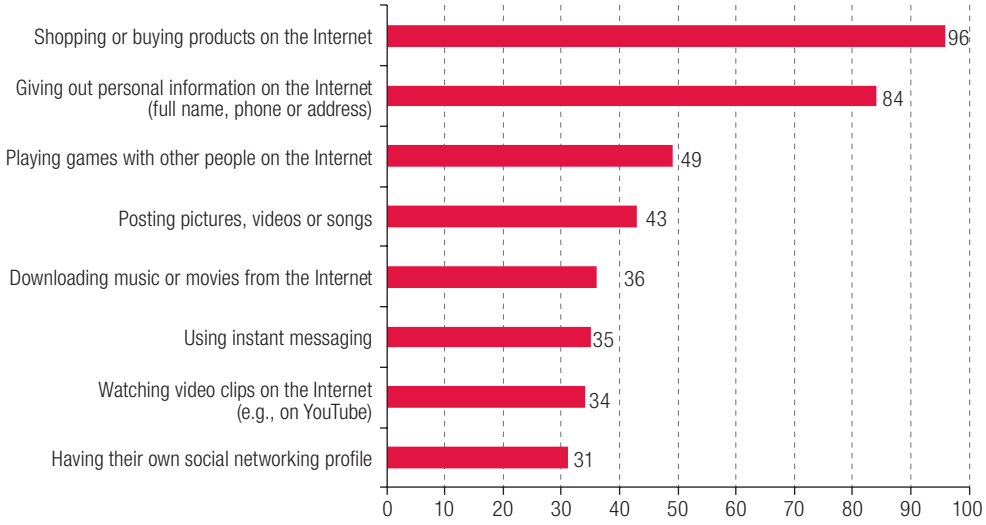
Figure 14
Chile: respondents stating that the responsible adult always or almost always enforces each measure, 2016
(Percentages)



Source: Prepared by the authors, on the basis of Global Kids Online data.

Although the indicators of restrictive mediation used in the Brazilian survey are slightly different from those in the Chilean survey, the results for comparable items show that between 40% and 50% of children in both countries are restricted in their online play with others and around 40% in the pictures or videos they are allowed to upload. In Brazil, the most common restrictions are, first, on shopping online and, second, on giving away personal information (see figure 15), items that were not included in the Chilean survey.

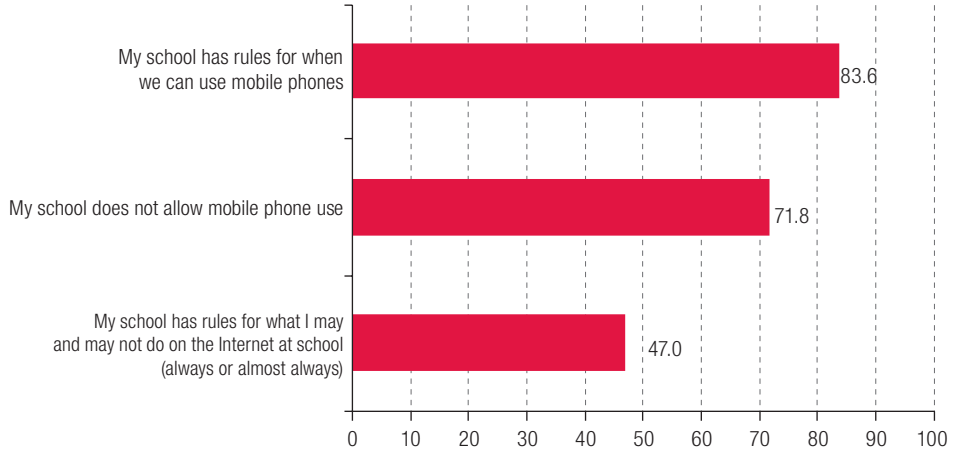
Figure 15
Brazil: children and adolescents (9–17 years) stating that each online activity is forbidden to them or allowed only with permission or supervision, 2014
(Percentages)



Source: Prepared by the authors, on the basis of T. Cabello-Hutt, P. Cabello and M. Claro, "Parental mediation in the use of ICT as perceived by Brazilian children: reflections on the 2014 ICT Kids Online Brazil Survey", *ICT Kids Online Brazil 2015: Survey on Internet Use by Children in Brazil*, São Paulo, Brazilian Internet Steering Committee (CGI.br), 2016.

Although the survey includes fewer indicators for schools' restrictive mediation strategies, children perceive high levels of restrictions on mobile phone use at school in Chile (see figure 16). The only indicator available from Brazil's 2016 survey is that 47% of young Internet users report that a teacher at their school sets rules for what they can or cannot do on the Internet at school, a similar proportion to that in Chile.

Figure 16
Chile: children and adolescents (9–17 years) reporting each restriction at school, 2016
(Percentages)



Source: Prepared by the authors, on the basis of Global Kids Online data.

Following the same methodology as for active mediation, an index of restrictive mediation strategies was generated and normalized for comparison purposes. The most obvious differences in perceptions of restrictive mediation strategies at home are by age group. Adolescents report higher levels of autonomy and fewer parental restrictions in both countries. Neither Brazil nor Chile shows any gender differences in perceptions of restrictive mediation at home (see tables 8 and 9). Regarding differences by socioeconomic group, results in Brazil show higher levels of restrictive strategies in families from the lower socioeconomic groups (see table 9), while in Chile it is families in the middle socioeconomic groups that present the highest levels of restrictions (see table 8).

Table 8
Chile: normalized index of restrictive mediation strategies at home (z-values), by gender, age and socioeconomic group, 2016

			Mean comparison	
Gender	Mean	N	T (t-test)	Significance
Male	-0.02	448.29	-0.95	0.344
Female	0.02	423.56		
Age[a]			T (t-test)	Significance
Children (9–13 years)	0.47	469.67	19.64	0.000
Adolescents (14–17 years)	-0.55	402.17		
Socioeconomic group[b]			F (analysis of variance)	Significance
C1 and C2	-0.15	148.86	3.36	0.035
C3	0.06	419.83		
D and E	-0.02	303.16		
Total	0.00	871.84		

Source: Prepared by the authors, on the basis of Global Kids Online data.
[a] Difference is statistically significant at a 95% confidence level.
[b] Difference is statistically significant at a 90% confidence level.

Table 9
Brazil: normalized index of restrictive mediation strategies at home (z-values), by gender, age and socioeconomic group, 2016

			Mean comparison	
Gender	Mean	N	T (t-test)	Significance
Male	0.0034	1 212	0.17	0.869
Female	-0.0033	1 218		
Age[a]			T (t-test)	Significance
Children (9–13 years)	0.50	1 145	26.28	0.000
Adolescents (14–17 years)	-0.44	1 285		
Socioeconomic group[b]			F (analysis of variance)	Significance
A and B	-0.21	545	22.76	0.000
C	-0.01	1 117		
D and E	0.17	768		
Total	0.00	2 430		

Source: Prepared by the authors, on the basis of Global Kids Online data.
[a] Difference is statistically significant at a 95% confidence level.
[b] Difference is statistically significant at a 90% confidence level.

Although the indicators are not strictly comparable (that for Brazil is based on a single item, while for Chile it was possible to generate a summative index of restrictive mediation at school), girls perceived higher levels of restrictive measures regarding Internet use at school in both Brazil and Chile (see tables 10 and 11). This was also the case for active mediation strategies (both at school and at home). In Chile, adolescents perceive more restrictions at school than at home, while in Brazil there is no significant difference. This difference in Chile probably has to do with the inclusion of regulations for mobile phones among the indicators used, as these affect adolescents more than children. Lastly, there are no differences in school mediation measures by socioeconomic group in either country.

Table 10
Chile: normalized index of restrictive mediation strategies at school (z-values), by gender, age and socioeconomic group, 2016

			Mean comparison	
Gender[a]	Mean	N	T (t-test)	Significance
Male	-0.08	501.75	-2.29	0.022
Female	0.08	485.33		
Age[a]			T (t-test)	Significance
Children (9–13 years)	-0.06	536.92	-1.75	0.080
Adolescents (14–17 years)	0.08	450.16		
Socioeconomic group			F (analysis of variance)	Significance
C1 and C2	-0.11	173.14	0.54	0.583
C3	0.01	473.62		
D and E	0.04	340.32		
Total	0.00	987.08		

Source: Prepared by the authors, on the basis of Global Kids Online data.
[a] Difference is statistically significant at a 95% confidence level.

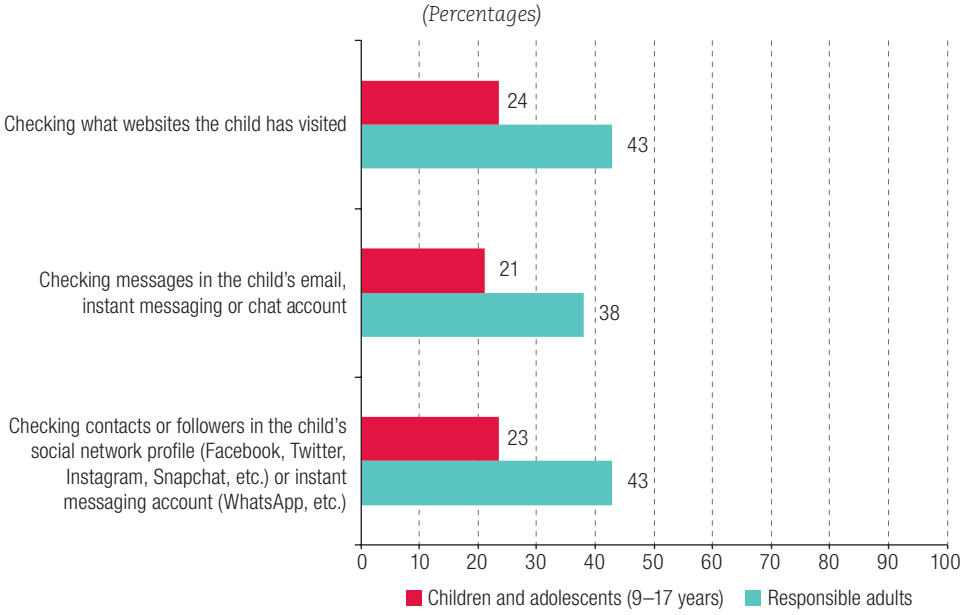
Table 11
Brazil: children (9–13 years) and adolescents (14–17 years) reporting that a teacher sets rules on what may and may not be done on the Internet at school, by gender, age and socioeconomic group, 2016
(Percentages)

Gender[a]		Age		Socioeconomic group				
Male	Female	Children	Adolescents	A	B	C	D and E	Total
47	52	50	49	54	47	51	49	47

Source: Prepared by the authors, on the basis of Global Kids Online data.
[a] Difference is statistically significant at a 95% confidence level, as measured by the chi-square test.

The third type of mediation is technical monitoring (see figure 17). Again, there is a difference between children's and parents' perceptions. Only around 20% of Internet-using children in Chile report that their parents monitor their online activities, while almost double the proportion of responsible adults report implementing technical monitoring mediation strategies. In this case, the gap might also reflect children being unaware that their parents are checking up on their online activities.

Figure 17
Chile: respondents reporting that responsible adults always or almost always implement monitoring mediation strategies, 2016
(Percentages)



Source: Prepared by the authors, on the basis of Global Kids Online data.

In Chile, as with active mediation strategies, children and girls perceive higher levels of monitoring strategies at home than adolescents (see table 12), and there are no significant differences by socioeconomic group.

Table 12
Chile: normalized index of monitoring mediation strategies at home (z-values), by gender, age and socioeconomic group, 2016

				Mean comparison	
Gender[a]	Mean	N	Standard deviation	T (t-test)	Significance
Male	-0.10	470.37	0.95	-3.12	0.002
Female	0.10	454.40	1.04		
Age[a]				T (t-test)	Significance
Children (9–13 years)	0.26	501.32	1.05	9.75	0.000
Adolescents (14–17 years)	-0.30	423.45	0.84		
Socioeconomic group				F (analysis of variance)	Significance
C1 and C2	-0.03	155.70	1.00	0.48	0.620
C3	-0.01	449.63	0.97		
D and E	0.03	319.44	1.04		
Total	0.00	924.77	1.00		

Source: Prepared by the authors, on the basis of Global Kids Online data.
[a] Difference is statistically significant at a 95% confidence level.

4. Mediation strategies and digital opportunities

As described in the Methodology section, a summative index of digital opportunities was calculated in consideration of children and adolescents' online activities. Consistently with the results of the analysis done with data from Brazil by Cabello-Hutt, Cabello and Claro (2017), when the association of the different types of home mediation of children and adolescents' digital behaviour in Chile and Brazil with their digital opportunities was measured, active mediation strategies were found to be strongly related to greater opportunities for children and adolescents when the sociodemographic variables (gender, age and socioeconomic group) were controlled for (see tables 13 and 14). Restrictive mediation, conversely, was found to be strongly and negatively related to children's online opportunities, as would be expected, since these strategies reduce the times and spaces in which children can use the Internet. Lastly, monitoring strategies in Chile seemed to have a modest positive relationship with children and adolescents' digital opportunities.

Table 13
Chile: linear regression coefficients for children and adolescents' digital opportunities and mediation strategies in the home, 2016[a]

Model	Unstandardized coefficients		Standardized coefficients	t	Significance
	B	Standard error	Beta		
(Constant)	10.853	0.409		26.520	0.000
Index of adults' active mediation strategies in the home[b]	0.068	0.012	0.212	5.560	0.000
Index of adults' restrictive mediation strategies in the home[b]	-0.178	0.016	-0.467	-11.180	0.000
Index of adults' monitoring mediation strategies in the home[b]	0.090	0.033	0.104	2.690	0.007
High socioeconomic group (C1 and C2 as compared to D and E)	0.091	0.325	0.010	0.280	0.780
Middle socioeconomic group (C3 as compared to D and E)	-0.279	0.242	-0.039	-1.150	0.250
Adolescents (14–17 years) as compared to children (9–13 years)[b]	1.378	0.263	0.194	5.230	0.000
Male (as compared to female)	0.118	0.221	0.017	0.530	0.595

Source: Prepared by the authors, on the basis of Global Kids Online data.
[a] The index of digital opportunities is the dependent variable and R-squared is 0.28.
[b] Difference is statistically significant at a 95% confidence level.

Table 14
Brazil: linear regression coefficients for children and adolescents' digital opportunities and mediation strategies in the home, 2016[a]

Model	Unstandardized coefficients		Standardized coefficients	t	Significance
	B	Standard error	Beta		
(Constant)	6.938	0.193		35.860	0.000
Index of adults' active mediation strategies in the home[b]	0.085	0.013	0.103	6.380	0.000
Index of adults' restrictive mediation strategies in the home[b]	-0.449	0.016	-0.533	-28.630	0.000
High socioeconomic group (A and B as compared to D and E)[b]	1.094	0.101	0.200	10.780	0.000
Middle socioeconomic group (C as compared to D and E)b	0.627	0.083	0.137	7.510	0.000
Adolescents (14–17 years) as compared to children (9–13 years)[b]	0.619	0.088	0.131	7.010	0.000
Male (as compared to female)[b]	0.308	0.072	0.067	4.260	0.000

Source: Prepared by the authors, on the basis of Global Kids Online data.
[a] The index of digital opportunities is the dependent variable and R-squared is 0.43.
[b] Difference is statistically significant at a 95% confidence level.

Among the sociodemographic variables, age seems to be the only one that is relevant in Chile, in contrast to Brazil, where digital opportunities vary with gender and socioeconomic group. More specifically, in Brazil girls had fewer digital opportunities than boys, and the children of families in higher socioeconomic groups reported more digital opportunities (see table 14).

Tables 15 and 16 present the results of linear regression models that measure the association between school mediation and children's digital opportunities in Chile and Brazil, controlling for sociodemographic variables. Age is the most important of these variables in the school mediation models for both countries, showing a positive relationship with digital opportunities. As with parental mediation, Brazil's results show fewer digital opportunities for girls than for boys, while Chile does not present a gender gap. Socioeconomic group is again relevant in Brazil, where lower socioeconomic groups have fewer digital opportunities than higher socioeconomic groups. As for mediation strategies, active mediation at school, although significant, shows a modest effect only in Chile, and restrictive mediation strategies show no significant effect in either of the countries.

Table 15
Chile: linear regression coefficients for children and adolescents' digital opportunities and mediation strategies at school, 2016[a]

Model	Unstandardized coefficients		Standardized coefficients	t	Significance
	B	Standard error	Beta		
(Constant)	8.746	0.411		21.274	0.000
Index of adults' active mediation strategies at school	0.043	0.010	0.155	4.350	0.000
Index of adults' restrictive mediation strategies at school	-0.012	0.058	-0.007	-0.202	0.840
High socioeconomic group (C1 and C2 as compared to D and E)[b]	0.705	0.321	0.078	2.193	0.029
Middle socioeconomic group (C3 as compared to D and E)	0.036	0.245	0.005	0.147	0.883
Adolescents (14–17 years) as compared to children (9–13 years)	2.567	0.220	0.371	11.669	0.000
Male (as compared to female)	-0.096	0.221	-0.014	-0.433	0.665

Source: Prepared by the authors, on the basis of Global Kids Online data.
[a] The index of digital opportunities is the dependent variable and R-squared is 0.17.
[b] Difference is statistically significant at a 95% confidence level.

Table 16
Brazil: linear regression coefficients for children and adolescents' digital opportunities and mediation strategies at school, 2016[a]

Model	Unstandardized coefficients		Standardized coefficients	t	Significance
	B	Standard error	Beta		
(Constant)	5.16	0.20		25.70	0.00
Index of adults' active mediation strategies at school[b]	0.06	0.03	0.04	1.80	0.07
Index of adults' restrictive mediation strategies at school	0.02	0.16	0.00	0.10	0.92
High socioeconomic group (A and B as compared to D and E)[c]	2.84	0.19	0.32	14.60	0.00
Middle socioeconomic group (C as compared to D and E)[c]	1.61	0.17	0.21	9.69	0.00
Adolescents (14–17 years) as compared to children (9–13 years)[c]	2.92	0.14	0.39	20.71	0.00
Male (as compared to female)[c]	0.37	0.14	0.05	2.58	0.01

Source: Prepared by the authors, on the basis of Global Kids Online data.
[a] The index of digital opportunities is the dependent variable and R-squared is 0.22.
[b] Difference is statistically significant at a 90% confidence level.
[c] Difference is statistically significant at a 95% confidence level.

IV. Conclusions

The analysis presented in this paper has aimed at offering a comparative picture of the digital access and opportunities of children and adolescents in Brazil and Chile and the mediation strategies applied to them by adults, in the context of increasing digitalization of their societies. It has also looked to explore the main gaps associated with sociodemographic variables as significant axes of social inequality in the Latin America region.

Where access is concerned, the results showed similar trends in Brazil and Chile regarding places and devices from which the Internet is accessed, but young users in Chile are more likely to access the Internet through a computer and show higher levels of use at home and school than young Internet users in Brazil. Concerning sociodemographic differences, although access through mobile phones has increased in the past few years, there are still differences in equipment types and connectivity that need to be addressed in both countries.

Concerning Internet use at school, only half of young Internet users or fewer reported this in both countries. In the case of Brazil, these results are consistent with data indicating that while 96% of urban schools are connected to the Internet, only 39% of students report using the Internet at school (CGI.br, 2017). Although Brazil has made substantial long-term investments in digital education policies, such as the National Programme of Informatics in Education (ProInfo), in place since 1997, the majority of students do not mention school as somewhere they access the Internet. In many schools, computer laboratories are only available for teachers and administrative staff, and connectivity speed and quality are a problem (Costa and Senne, 2018). In the case of Chile, 81% of schools have Internet access (Ministry of Education, 2013) and there are 4.7 students per computer, which matches the Organisation for Economic Co-operation and Development (OECD) average (Ministry of Education, 2015). Despite these promising data, digital technologies are underused in Chilean schools (Hepp and others, 2017).

As for frequent users (i.e., those who report connecting to the Internet more than once a day), Chile shows a higher proportion, probably because of its higher levels of home access. With respect to sociodemographic differences, there are no gender gaps in the proportion of frequent users in either country. Nevertheless, high-frequency users tend to be from higher socioeconomic groups in both countries, with socioeconomic gaps being larger in Brazil than in Chile. It is important to mention the strong body of evidence indicating that more frequent Internet use is not in itself a beneficial activity; it depends on the adult guidance provided and the level of risk exposure (Cabello-Hutt, Cabello and Claro, 2017; Livingstone and others, 2017).

Where digital opportunities are concerned, the results show that the most common areas of digital activity are learning and social life. Both countries evince high levels of formal learning activities (i.e., activities related to schoolwork), indicating the importance of schools and teachers' guidance and mediation in promoting children and adolescents' digital opportunities in these countries. Informal learning activities (children looking for information on subjects they are interested in) are also important. Social networking and chatting online are likewise very frequent activities, especially among adolescents in both countries, probably because it extends the time and space of social interaction, something that is important at this stage of life (Boyd, 2007). These results are consistent with evidence showing that Brazil and Chile rank high for social network use in the world, in terms of users as a share of the population (Pavez, 2014).

The most widely used social networks in Brazil and Chile are Facebook and WhatsApp; Instagram and Snapchat show segmented use with clear age differences, while Twitter presents the lowest percentages of use. This finding is consistent with earlier analysis indicating that Twitter is a non-teenage-oriented network (Santoyo-Cortés and others, 2019), which may be explained by the fact that it is less about social relations and self-identity construction and more about public discourse

(O'Connor and others, 2010), political propaganda (Kalsnes, Krumsvik and Storsul, 2014) or marketing (Leung, Bai and Stahura, 2015). More in-depth studies of youths' social networking practices in the region are necessary given how they have been becoming part of behaviour in adolescence, when the construction of self-identity through social relationships is most intense (Navarrete and others, 2017; Murden and Cadenasso, 2018).

Concerning risks and the perception of harm, age and socioeconomic group are significant, with adolescents and higher socioeconomic groups showing higher levels of perceived harm. Both age and socioeconomic gaps may be linked to higher levels of Internet use, and thus higher exposure. However, as the Kids Online network research has shown, lower exposure to digital activities reduces not only risk but also digital opportunities and the potential for developing higher levels of digital skills to fully participate in the digital era (Dürager and Livingstone, 2012; Cabello-Hutt, Cabello and Claro, 2017). Consequently, the challenge is to promote these opportunities at the same time as taking specific protection measures.

An important finding is that there is also a gender gap: a higher percentage of girls than boys report perceived harm. This result calls for further and more qualitative research to understand the source of this gap and the types of activities or exposures that make girls and boys uncomfortable, depending on their gender. This would make it possible to understand the different resources and guidance strategies that boys and girls may need.

Regarding parental mediation, girls perceive higher levels of this than boys in both countries, which probably reproduces gender socialization practices whereby adults try to exert more control over girls' socialization (Cabello-Hutt, Cabello and Claro, 2016). The same trend can be observed in children as compared to adolescents, with children reporting higher levels of parental supervision and mediation. This shows how Internet use is part of the general social dynamic of parenthood and childhood, with children becoming more independent as they grow up and parents scaling back their guidance and supervision strategies.

Research has shown that the type of mediation is not the only factor related to risk or harm at a country level. Within a country, parental mediation should be considered in combination with other influences and characteristics of the child population, such as the role that schools and peers play, child development and resilience, and the sociodemographic characteristics of parents (Helsper and others, 2013). An integrated policy perspective should focus on the combination of elements required to comprehend and approach the problem. Policies must consider child development from a broad perspective, including the different dimensions associated with digital opportunities, such as access to material resources, households' socioeconomic background, parents' mediation role, education policies and children's skills, among others. The process of digital inclusion should be seen from a perspective that combines personal, family, cultural and structural factors (Cabello-Hutt, Cabello and Claro, 2017). Therefore, the challenge lies in building digital capacities and strategies for social and productive inclusion, online security and self-care.

Results from this research show schools to be an important mediation actor, particularly in Chile. The lesser Internet access at school of children in Brazil might be one of the factors explaining the more limited influence of school mediation strategies in students' digital opportunities in that country. "Education policy and the school system have been a positive point of entry to the digital world in the Latin American region. Especially in terms of providing more equitable access to technology but also in terms of offering pedagogical guidance that motivates students to use the technology independently for research and homework. However, there still is much to be done in terms of promoting an equitable formation of knowledge and cultural assets" (Trucco, 2013). An interesting finding is that, contrary to the situation in Brazilian homes, in Chile higher-income children perceive less guidance and mediation than lower-income children. This raises several questions, such as whether it means that higher-income

children are given more autonomy at school. Alternatively, are schools providing remedial guidance and support for lower-income children? Both hypotheses should be tested in future research with a view to designing well-contextualized educational policies for schools with students from different socioeconomic backgrounds. It is also necessary to study the effect of these different strategies on the development of students' digital skills for learning and self-protection in a way that takes advantage of the benefits of technology so that they can develop and exercise their rights (ECLAC/UNICEF, 2014).

Concerning mediation strategies, they are a process that plays out mainly at home during childhood, so an important question is how parents can be involved. The results of this paper show how important parental mediation is for children's and adolescents' digital opportunities, with active mediation strategies having a positive association with opportunities, while restrictive strategies have a negative relationship. What might be the best approach to strengthening families' ability to develop these types of strategies and mediate children's use of technology? Parental mediation is not distributed equally, as this document has shown, whence the importance of adapting social policies to different contexts.

Social exclusion from the digital world, like other types of exclusion affecting adolescents and children, has long-term consequences for the skills they develop and their future opportunities to participate as full citizens in an increasingly digitalized world. The different levels of exclusion from the digital sphere tie in with other dimensions of social and economic exclusion in Latin America that are structural and mutually reinforcing (such as socioeconomic status, gender, ethnicity and race), as has been seen throughout this paper. Digital exclusion should therefore be addressed from a multidimensional perspective so that it can be approached with appropriate strategies for different populations.

The results presented in this paper in the context of the Kids Online network show that restrictions and controls are not everything, but that guidance and mediation also matter. Childhood development requires support from adults equipped to guide and promote the process of skill development and appropriation, instilling capabilities such as the ability to search, discriminate, synthesize, analyse and represent information in the digital environment and to use digital tools to share and collaborate with others. Educating children in these skills means going beyond technology as such and focusing on the capabilities needed to participate and be included in the digital world (Trucco, 2018).

Bibliography

Boyd, D. (2007), "Why youth (heart) social networking sites: the role of networked publics in teenage social life", *Youth, Identity and Digital Media*, D. Buckingham (ed.), Cambridge, Massachusetts, MIT Press.

Cabello-Hutt, T., P. Cabello and M. Claro (2017), "Online opportunities and risks for children and adolescents: the role of digital skills, age, gender and parental mediation in Brazil", *New Media & Society*, vol. 20, No. 7, Thousand Oaks, SAGE Publications.

___(2016), "Parental mediation in the use of ICT as perceived by Brazilian children: reflections on the 2014 ICT Kids Online Brazil Survey", *ICT Kids Online Brazil 2015: Survey on Internet Use by Children in Brazil*, São Paulo, Brazilian Internet Steering Committee (CGI.br).

CGI.br (Brazilian Internet Steering Committee) (2017), *ICT Kids Online Brazil 2016: Survey on Internet Use by Children in Brazil*, São Paulo.

Costa, D. and F. Senne (2018), "Políticas de inclusão digital de crianças e adolescentes a partir da escola: ¿o que dizem os estudantes?", *Jóvenes, transformación digital y formas de inclusión en América Latina*, C. Cobo and others (eds.), Montevideo, Penguin Random House.

DiMaggio, P. and others (2004), "Digital inequality: from unequal access to differentiated use", *Social Inequality*, New York, Russell Sage Foundation.

Dürager, A. and S. Livingstone (2012), "How can parents support children's internet safety?", London, EU Kids Online.

Dürager, A. and N. Sonck (2014), "Testing the reliability of scales on parental internet mediation", London, EU Kids Online.

ECLAC (Economic Commission for Latin America and the Caribbean) (2017), *Linkages between the social and production spheres: gaps, pillars and challenges* (LC/CDS.2/3), Santiago.
___(2016a), *Inclusive social development: the next generation of policies for overcoming poverty and reducing inequality in Latin America and the Caribbean* (LC/L.4056/Rev.1), Santiago.
___(2016b), *The social inequality matrix in Latin America* (LC/G.2690(MDS.1/2)), Santiago.
ECLAC/UNICEF (Economic Commission for Latin America and the Caribbean/United Nations Children's Fund) (2014), "Children's rights in the digital age", *Challenges*, No. 18, Santiago.
Fraillon, J. and others (2019), "Computer and information literacy framework", *IEA International Computer and Information Literacy Study 2018 Assessment Framework*, Berlin, Springer.
____ (2014), *Preparing for Life in a Digital Age: The IEA International Computer and Information Literacy Study International Report*, Berlin, Springer.
González, I. and others (2019), *The Changing Nature of Work and Skills in the Digital Age*, Luxembourg, Publications Office of the European Union.
Haddon, L. and S. Livingstone (2014), "The relationship between offline and online risks", *Young People, Media and Health: Risks and Rights: The Clearinghouse Yearbook 2014*, C. von Feilitzen and J. Stenersen (eds.), Gothenburg, Nordic Information Centre for Media and Communication Research (NORDICOM).
Hargittai, E. and A. Hinnant (2008), "Digital inequality: differences in young adults' use of the Internet", *Communication Research*, vol. 35, No. 5, Thousand Oaks, SAGE Publications.
Helsper, E. and others (2013), "Country classification: opportunities, risks, harm and parental mediation", London, EU Kids Online.
Hepp, P. and others (2017), "Desafíos para la integración de las TIC en las escuelas: implicaciones para el liderazgo educativo", *Informe Técnico*, No. 2-2017, Valparaíso, Pontifical Catholic University of Valparaíso (PUCV).
Hirt, M. and P. Willmott (2014), "Strategic principles for competing in the digital age", *McKinsey Quarterly*, vol. 5, No. 1, Chicago, McKinsey & Company.
Hooft, J. (2018), "New technologies and 21st century children: recent trends and outcomes", *OECD Education Working Papers*, No. 179, Paris, Organisation for Economic Co-operation and Development (OECD).
ITU (International Telecommunication Union) (2014), *Manual for Measuring ICT Access and Use by Households and Individuals, 2014 Edition*, Geneva.
Kalsnes, B., A. Krumsvik and T. Storsul (2014), "Social media as a political backchannel: Twitter use during televised election debates in Norway", *Aslib Journal of Information Management*, vol. 66, No. 3, Bingley, Emerald Publishing.
Leung, X., B. Bai and K. Stahura (2015), "The marketing effectiveness of social media in the hotel industry: a comparison of Facebook and Twitter", *Journal of Hospitality & Tourism Research*, vol. 39, No. 2, Thousand Oaks, SAGE Publications.
Livingstone, S. and E. Helsper (2010), "Balancing opportunities and risks in teenagers' use of the Internet: the role of online skills and internet self-efficacy", *New Media & Society*, vol. 12, No. 2, Thousand Oaks, SAGE Publications.
Livingstone, S., G. Mascheroni and E. Staksrud (2015), "Developing a framework for researching children's online risks and opportunities in Europe", London, EU Kids Online.
Livingstone, S. and others (2017), "Maximizing opportunities and minimizing risks for children online: the role of digital skills in emerging strategies of parental mediation", *Journal of Communication*, vol. 67, No. 1, Hoboken, Wiley.
___(2015), "How parents of young children manage digital devices at home: the role of income, education and parental style", London, EU Kids Online.
Ministry of Education (2015), *Análisis de indicadores educativos en Chile y la OCDE en el contexto de la Reforma Educacional*, Santiago.
___(2013), *Informe de resultados SIMCE TIC 2° medio 2013*, Santiago.
Montagnier, P. and A. Wirthmann (2011) "Digital divide: from computer access to online activities – a micro data analysis", *OECD Digital Economy Papers*, No. 189, Paris, Organisation for Economic Co-operation and Development (OECD).
Murden, A. and J. Cadenasso (2018), *Ser joven en la era digital*, Santiago, SM Foundation/Economic Commission for Latin America and the Caribbean (ECLAC).
Navarrete, D. and others (2017), "Negative influence of social networks on the health of adolescents and young adults: a review of the research literature", *Psicología y Salud*, vol. 27, No. 2, Veracruz, University of Veracruz.

Novick, M. (2017), "Metodologías aplicadas en América Latina para anticipar demandas de las empresas en materia de competencias técnicas y profesionales", *Macroeconomics of Development series*, No. 187 (LC/TS.2017/37), Santiago, Economic Commission for Latin America and the Caribbean (ECLAC).

O'Connor, B. and others (2010), "From tweets to polls: linking text sentiment to public opinion time series", *Proceedings of the International AAAI Conference on Weblogs and Social Media*, Menlo Park, Association for the Advancement of Artificial Intelligence (AAAI).

Pavez, M. (2014), "Los derechos de la infancia en la era de Internet: América Latina y las nuevas tecnologías", *Social Policy series*, No. 210 (LC/L.3894), Santiago, Economic Commission for Latin America and the Caribbean/United Nations Children's Fund (ECLAC/UNICEF).

Qu, J., R. Simes and J. O'Mahony (2017), "How do digital technologies drive economic growth?", *Economic Record*, vol. 93, Hoboken, Wiley.

Robinson, L. and others (2018), "Digital inequality across major life realms", *American Behavioral Scientist*, vol. 62, No. 9, Thousand Oaks, SAGE Publications.

Santoyo-Cortés, H. and others (2019), "Análisis de redes en Twitter para la inserción en comunidades: el caso de un producto agroindustrial", *Interciencia*, vol. 44, No. 2, Caracas, Interciencia Association.

Scheerder, A., A. van Deursen and J. van Dijk (2017), "Determinants of Internet skills, uses and outcomes: a systematic review of the second- and third-level digital divide", *Telematics and Informatics*, vol. 34, No. 8, Amsterdam, Elsevier.

Selwyn, N. (2004), "Reconsidering political and popular understandings of the digital divide", *New Media & Society*, vol. 6, No. 3, Thousand Oaks, SAGE Publications.

Toyama, K. (2011), "Technology as amplifier in international development", *iConference '11: Proceedings of the 2011 iConference*, New York, Association for Computing Machinery (ACM).

Trucco, D. (2018), "Inclusión digital en la infancia en sociedades marcadas por la desigualdad", *Jóvenes, transformación digital y formas de inclusión en América Latina*, C. Cobo and others (eds.), Montevideo, Penguin Random House.

___(2013), "The digital divide in the Latin American context", *The Digital Divide: The Internet and Social Inequality in International Perspective*, M. Ragnedda and G. Muschert (eds.), Milton Park, Routledge.

Valkenburg, P. and others (2013), "Developing and validating the perceived parental media mediation scale: a self-determination perspective", *Human Communication Research*, vol. 39, No. 4, Oxford, Oxford University Press.

Van Dijk, J. (2005), *The Deepening Divide: Inequality in the Information Society*, Thousand Oaks, SAGE Publications.

Vandoninck, S., L. D'Haenens and K. Roe (2013), "Online risks: coping strategies of less resilient children and teenagers across Europe", *Journal of Children and Media*, vol. 7, No. 1, Worcester, American Psychological Association (APA).