Research Report

The development of the Global Citizenship Inventory for adolescents

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Abstract
In this paper we report on the development of an inventory that measures global citizenship among adolescents. The methodology used consists of cognitive interviews for questionnaire design and explorative and confirmatory factor analyses among several datasets. The resulting Global Citizenship Inventory (GCI) includes a global citizenship behaviour index and three scales measuring principles underlying global citizenship: human equality, mutual dependency in the world, and the shared responsibility for solving global issues. The behaviour index measures behaviour connected to efficient use of energy and water, mobility, recycling and handling waste, search for information and expressing an opinion on global issues, donating to charity, and volunteering. The results provide support for our theoretical constructs regarding global citizenship.

Keywords: Global citizenship, inventory, scale development, adolescents

Adolescents currently aged between 12 and 18 are part of Generation Z, born between 1992 and 2010 (Ahlers and Boender, 2011), and of the borderless generation, born after 1986 (Spangenberg and Lampert, 2009). Communicating with people outside their own country and travelling to distant places are much more common for the current generation of Dutch adolescents than for earlier generations (Ahlers and Boender, 2011). Does this affect their relationship with the world? Trend watchers predict that this generation is imbued with such a clear idea of the importance of sustainability during their upbringing and education that as adults they will be unwilling to buy non-sustainable products or to work for unsustainable companies (Ahlers and Boender, 2011: 78). Others assert that, on the contrary, the present generation of adolescents are more focused on themselves – and consequently less on the world around them – and display a less ethical mindset in their consumer behaviour than previous generations (Spangenberg and Lampert, 2009: 253). They

supposedly are less environmentally conscious and less concerned about the earth's preservation than other generations (Spangenberg and Lampert, 2009: 240).

It is worthwhile to investigate these different opinions on how young people nowadays relate to the world. Changes in modern society caused by globalization, shortage of global public goods, climate change, and the like, lend urgency to extending citizenship beyond national borders. It calls for citizens who are willing to take on joint responsibility for global issues relating to justice and sustainability. From an academic point of view it raises the question of what kind of citizenship this is: global citizenship. And, along the same lines, it asks how can one assess whether people, and especially young people, behave as global citizens? In this article such questions are answered. The goal of this study is to present a definition of global citizenship and to develop an instrument that appropriately measures it in adolescents. In this article, we begin by presenting a definition of global citizenship based on current academic discourse. Next, we examine the empirical properties of global citizenship based on this definition before explaining the methodology used to validate the inventory.

1. Global citizenship

The current debate on international cooperation is no longer about the support from 'here' for development activities 'there'. Instead, it concerns our role in the world, for which cooperation is needed to solve issues in such fields as climate and energy, food, water, and conflict and safety. Active citizenship and an open view of the world are important in a world where we are increasingly interconnected and mutually dependent. We call this role of citizens in a globalizing world global citizenship.

The National Committee for Sustainable Development and International Cooperation (NCDO) is the Dutch expertise and advisory centre for citizenship and international cooperation. It carries out research, provides information and advice, stimulates public debate, and is actively involved in the field of training and education. To form a clear idea of what global citizenship means precisely, the NCDO has done an extensive literature study into different backgrounds of and discussions on global citizenship (Carabain *et al.*, 2012), from which the following definition of global citizenship has emerged:

> *The global dimension of citizenship is manifested behaviour that does justice to the principles of mutual dependency in the world, the equality of human beings, and the shared responsibility for solving global issues.*

Figure 1: Graphic representation of definition on global citizenship

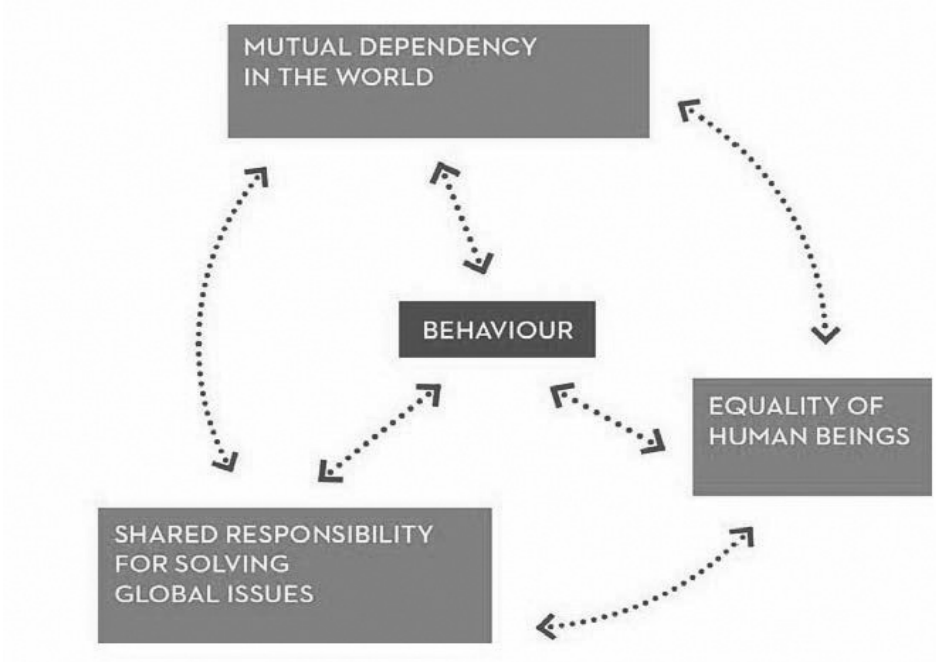

Figure 1 reflects the alleged links between behaviour and the degree of awareness of mutual dependency, shared responsibility, and the conviction of human equality. We expect that an endorsement of the three principles can explain global citizenship behaviour. The three principles are also assumed to be interlinked. In other words, people with above-average awareness of mutual dependency have a stronger conviction that people are equal and people who show greater willingness to take (co-)responsibility for global issues are more likely to display behaviour befitting a global citizen. People who are prepared to take (co-)responsibility for global issues are also more convinced that people are equal, and so on.

Global citizenship behaviour can be seen as a collection of concrete behaviours, such as buying fair trade products or engaging in activities to improve the living conditions of people in developing countries. The awareness of mutual dependency refers to the awareness of a relationship between the local and the global, and an insight into mutual dependency on a global scale. A minimum knowledge of the world and of global developments is required for this awareness (Beneker *et al.*, 2009: 19). The belief in human equality also includes such things as respect for diversity, making no distinctions between human beings based on characteristics such as gender, ethnicity, social class, and sexual orientation, and a commitment to a world of

social and economic justice and equality (Beneker *et al.*, 2009; Oxfam, 2006: 7). The willingness to take shared responsibility for solving global issues is reflected in the motivation to effectively address global problems independently or cooperatively (Brigham, 2011; Morais and Ogden, 2010; Parekh and Biekart, 2009). The belief that people can make a difference and the awareness of one's own contribution to solving global issues are also important (Beneker *et al.*, 2009; Carabain *et al.*, 2012; Oxfam, 2006: 7). In addition, a minimum understanding of the world and of global developments is important.

Thus, in the NCDO's definition of global citizenship, the focus is on individual contributions of people. Hence, not the support for formal development aid organizations but rather the role that citizens themselves can play. This assumption corresponds well with the need felt by the current generation of adolescents to contribute to the world themselves (De Goede, 2011).

2. Empirical properties of global citizenship

Having introduced a definition of global citizenship we now want to examine its empirical properties. There are a few academic scales developed around global citizenship (Sampson and Smith, 1957; Hett, 1993; Morais and Ogden, 2010). However, these do not align with the definition of global citizenship stated in this article. Sampson and Smith's (1957) world-mindedness scale positions world mindedness as the opposite of national mindedness. However, we see global citizenship as an extension of citizenship and not as diametrically opposed to it. Hett's (1993) global-mindedness scale focuses mainly on attitudes rather than behaviour. And Morais and Ogden's (2010) global-citizenship scale is developed to measure the outcomes of student exchanges and therefore adopts a specific angle towards global citizenship. It is therefore necessary to study the empirical properties of our own definition in order to compose a new scale.

Global citizenship behaviour

There are two focus areas in which global citizenship behaviour can be expressed: social sustainability and environmental sustainability (Carabain *et al.*, 2012). The NCDO distinguishes eight types of behaviour related to environmental or social sustainability (see Table 1). However, it should be noted that we do not claim that this list is exhaustive. The items are based on and inspired by studies on ecological behaviour (Kaiser and Wilson, 2004; Kaiser *et al.*, 2007), philanthropic behaviour (Schuyt *et al.*, 2011), active citizenship (ten Dam *et al.*, 2010), and support for development cooperation (Hento, 2011). No distinction has been made between behaviour at the local or global level. Following Kaiser and Wilson (2004), we concur that behaviours in the fields of saving energy and water, mobility, and the reuse and handling of waste in particular have a positive effect on environmental

sustainability. With regard to other behaviours it is harder to distinguish whether they affect environmental or social sustainability. Consumer behaviour, searching for information, expressing an opinion about global issues, making donations to charitable organizations, or volunteering might contribute to both environmental and social sustainability.

Table 1: Empirical properties of global citizenship behaviour

Types	Items
Being efficient in the use of water and energy	I leave the charger in the socket once I have charged my mobile
	I leave the light on when leaving the room last
	I leave the tap on while brushing my teeth
Mobility	If I can choose, I would rather have someone drive me than have to cycle
Recycling and handling of waste	I use plastic carrier bags more than once
	I litter the street
	I throw away leftover food, even when it is still edible
Consumer behaviour	I buy products, despite being aware they have been made by children
	I eat meat
	I buy second-hand goods
Searching for information	I keep up to date about the problems in the world via the Internet
	I keep up to date about the problems in the world via television, radio, or the newspapers
Expressing an opinion on global issues	I talk about poverty in the world
	I hold family and friends to account when they act against the interests of the environment
	I discuss environmental problems
	I support charities on Facebook by clicking 'like' or by becoming a fan
	I share my opinion about the problems in the world online, via websites, blogs, or Twitter
Donating to charity	During the past 12 months, did you collect money for charities by means of a campaign, e.g. a sponsored walk, fasting fundraisers, sales promotion, or other initiative?
	During the past 12 months, did you donate to charities via e.g. a collection, SMS campaign, or other promotion?
Volunteering	During the past 12 months, have you carried out volunteer work for a club or organization in the field of <…>

Note: The answer categories of these items were: 'almost never', 'sometimes', 'often', and '(almost) always'

Underlying principles

Apart from behaviour, the earlier mentioned definition also outlines three principles: mutual dependency, human equality, and shared responsibility. The principle of

mutual dependency focuses on the awareness that the lives of people around the world are connected. Our behaviour 'here' can have an impact on other parts of the world and vice versa. Global citizens look further than their own community, realize they are part of the world population, and acknowledge links between 'here' and 'there'. The principle of human equality encompasses such values as respect for others, concern for human rights, and social and economic equality. The third principle, shared responsibility for global issues, is expressed in the willingness to contribute to issues that surpass national borders. Global citizens want to change their own behaviour to solve problems such as climate change, poverty, etc., and they agree that global issues should be addressed by nations. In the academic literature hardly any scales which operationalize these three principles can be found. For this reason the items to measure the three constructs were mostly drafted by the researchers themselves. In Table 2, all the items included in the final version of the GCI questionnaire are presented, to measure the extent to which young people agreed with the three principles. The answer categories of the items were: totally disagree, disagree, in between, agree, totally agree, and don't know. The hatched rows are items that were removed during the scale construction process.

Table 2: Empirical properties of principles underlying global citizenship

		Items
Equality	E1	I believe the norms and values of my own culture are better than those of other cultures (-)
	E2	Freedom of speech is less important to people in poor countries than it is to people in The Netherlands (-)
	E3	In The Netherlands, we are richer than people in poor countries because we organize things better (-)
	E4	I prefer people from my own culture living next to me rather than people from a different culture (-)
	E5	I believe a child from a poor country having fewer opportunities than I have is unjust (+)
	E6	I believe Islam is just as good or bad as Christianity (+)
	E7	I believe that I should have a better chance of finding a job in The Netherlands than a Polish citizen who is looking for work here (-)
Mutual dependency	D1	I can make a contribution to solving global problems through the choices I make in day-to-day life (+)
	D2	If The Netherlands were to refuse entry to asylum seekers, the countries surrounding us would receive more asylum seekers (+)
	D3	Rich countries benefit from solving poverty in poor countries (+)
	D4	The Netherlands do not need other countries in order to earn money (-)
	D5	Some clothing in The Netherlands is cheap because it is made in poor countries, by people earning a low wage (+)
	D6	The Netherlands are not affected by unemployment in other countries (-)

	D7	Protecting the rainforests in Brazil, i.e. preventing them from being cut down, is good for the climate in The Netherlands (+)
	D8	The melting of the ice-caps at the North and South Poles does not affect us in The Netherlands (-)
Shared responsibility	S1	The Netherlands must help poor countries to solve their problems (+)
	S2	People in poor countries must solve their poverty themselves (-)
	S3	The Netherlands should not interfere with how other countries treat their natural environment (-)
	S4	I feel responsible when I see other people in the world suffering in poverty (+)
	S5	The Dutch Government should only focus on problems in The Netherlands (-)
	S6	People have a joint responsibility to help the victims of natural disasters across the globe (-)
	S7	I believe the Dutch Government must hold other countries to account when they violate human rights (+)

Notes: Positively formulated items are marked with a (+). Negatively formulated items are marked with a (-)

3. Methodological construction of the GCI

The scale development process was informed by several steps. The multifaceted process included expert interviews, cognitive interviews, and explorative and confirmatory factor analyses among several datasets. In this article, we report on the scale for adolescents, however a scale for adults has also been constructed concurrently. The two scales resemble each other for approximately four-fifths of the questions and were developed simultaneously in the same process consisting of the following steps.

Development of a definition of global citizenship

The theoretical exploration of global citizenship which shaped the definition mentioned earlier has been extensively discussed with eight experts from the Dutch Ministry of Foreign Affairs.[1] The definition has also been talked through with seven participants from NCDO's southern network VoiceOver, who come from African, South Asian, and East European countries.[2] Afterwards, a seminar with approximately 50 participants from the field of global education was held to see if the definition would also fit into the daily practice of global learning. Although some critique has been voiced on the emphasis on behaviour, in general the definition was well received, which meant a start could be made with the operationalization of the concept.

Composition of pool with concept items

The NCDO's research team looked at existing scales to compose a first pool of items that measured the types of behaviour and the three principles found in the literature.

More material exists on behaviour than on the three principles. For this reason the items for measuring the constructs of mutual dependency, human equality, and shared responsibility have been, to a great extent, drafted by the researchers themselves. In total 28 behavioural items were developed, as well as eight items about human equality, six items about mutual dependency, and six items about shared responsibility.

Preliminary qualitative test

Ten pupils with a relatively low level of vocational education at the ages of 15 and 16 were asked to fill in a first draft of the questionnaire. These pupils were selected on the basis that if they understood the questionnaire then most young people would be able to fill it in. After filling in the questionnaire a short focus group was held by a researcher. In the discussions with the pupils it became clear that some of the wording in the questions was too difficult and also that some items were not applicable to the respondents (e.g. most pupils said parents made the decision whether glass was thrown in a glass container, not pupils). After this test the first pool of concept items was modified.

Focus group practitioners

Twelve practitioners in the field of global citizenship/global education, all employed by the NCDO, were invited to criticize and complement the pool of concept items. Their feedback was used to strengthen the concept questionnaire. Some items were removed and replaced with other items and the wording of some of the items was adjusted.

Quantitative testing

The result of the first three steps was a pilot version of the GCI: 30 items about behaviour, eight items for equality, six items for mutual dependency, and eight items for shared responsibilities. An online pilot test of the concept questionnaire under a representative sample of 500 Dutch young people between the ages of 12 and 17 and with different educational backgrounds was completed to identify difficulties respondents might have had with such issues as clarity of instructions, item clarity, response option applicability, and the overall amount of time taken to complete the instrument. Based upon the results, a number of items were removed or changed. An important criterion for removing items was a skewed distribution in answering patterns. Items that elicited almost only positive or negative responses would not differentiate enough. Also, some preliminary factor analyses were performed to look at scale construction for the three principles, which led to items being adapted. For example, to measure the construct of 'human equality' two items around gender equality and sexual preferences were listed. In the factor analyses the results

suggested that this kind of equality was of a different dimension than other equality items, and might not be related to any great extent to the global side of citizenship. Additionally, respondents were so convinced of these types of equality that the items did not differentiate. For these reasons, those items were removed from the equality scale. Overall, the results suggested that more elaborative testing was needed, and that additional items were possibly required to measure the three principles.

Review of two experts

Two experts then reviewed the questionnaire. One was selected based on his expertise with (global) citizenship, the other due to his knowledge on survey research methodology. With their feedback further alterations in the questionnaire were made. For example, the answering categories of the behavioural items were reduced from five to four categories (leaving out 'frequently' as a category as the distinction between 'sometimes', 'frequently', and 'often' was too difficult to make). Also, one of the experts commented that the items for mutual responsibility and equality were formulated too much in a 'pro-global citizenship' discourse without room for the different discourses in society. For that reason an additional set of items was developed for each of the three principles, so that we would be able to select the most successful during a later stage. This step helped to further establish each item's relevance to the construct of global citizenship, and additionally provided initial reliability and validity estimates.

Cognitive interviews

At this stage the questionnaire consisted of 25 behavioural items, 12 items for equality, 14 items for mutual dependency, and 17 items for shared responsibilities. As said, we developed additional items for the three principles in order to select those most suitable for the target population. A qualitative interview guide, based on Gordon Willis's (1999) guidelines of cognitive interviewing, was designed to elicit perceptions of a group of respondents concerning the concept questionnaire. The guide included questions that, in general, focused on how people experience the questioning. A total of five adolescents aged between 12 and 18 (and also five adults for the adult version of the GCI) from different cultural and educational settings were interviewed. Their responses were audio-taped and a verbatim transcript was subsequently prepared. Based on the interviews, we reviewed the items for clarity, sentence structure, and ambiguous meanings which led to certain items from the pool being eliminated. For example, during the testing it became clear that young people had difficulties in understanding words like Fair Trade or organic food. Also, they made clear that in most households the mothers and not the children make the choices regarding consumption behaviour. To ask young people if they exhibited this kind of behaviour was not really testing their own behaviour, but rather that of

their parents. For those reasons these items were deleted. In addition, from the three principles five items were deemed too complex for the respondents. These were also deleted from the questionnaire.

Quantitative testing

Another online pilot test of the GCI was completed with a representative sample of 500 Dutch people aged 18–75 years and with different educational backgrounds. Although this testing was done with adults, the GCI for adolescents was also influenced, since both questionnaires resemble each other for approximately four-fifths of the questions. With this test difficulties were again identified, such as clarity of instructions, item clarity, response option applicability, and overall amount of time taken to complete the instrument. Based upon the results and some preliminary explorative factor analyses, the GCI was revised. The most important step in this phase was to select the definitive set of items that measured the three principles, diminishing the 36 items down to 22. First, we looked at the skewness in answering patterns. Items that elicited almost only positive or negative responses do not differentiate enough and were therefore deleted. Second, preliminary factor analyses were conducted. Some items clearly didn't correlate with others, indicating that they didn't approach the construct we intended to measure. These items were also deleted. After this step, the adolescents' questionnaire was downsized to 20 items regarding behaviour, seven items measuring shared responsibility, seven items measuring human equality, and eight items measuring mutual dependency.

Final sample testing

The definitive GCI for adolescents was administered in June 2012 to a representative sample of 2,003 Dutch young people along with selected demographic items. TNS NIPO executed the fieldwork by means of their internet panel.[3] The sample size approached the sample requirement recommended by Nunnally (1978) of 300 respondents for scale testing. Apart from the GCI, other questions which might be related to global citizenship were added in the fieldwork. Knowledge of global issues was measured in eight multiple choice questions.[4] Also, some questions were asked about the child's home situation (attitude and behaviour of parents regarding global issues), cultural exposure (extent of contacts with other cultures), and academic scales concerning empathy, altruism, and social/political trust.

A behavioural index of global citizenship was created with a minimum score of 0 and a maximum score of 100. The index was constructed on the basis of 19 (positively recoded) dichotomized variables. No difference has been made in weights; each item was has been given an equal weight.

Exploratory and confirmatory factor analyses and scale construction

Extensive exploratory and confirmatory factor analyses followed, using the quantitative data mentioned in step 9. For each principle a scale was constructed based on the answers on the items of Table 2. All items that were negatively phrased were recoded in a positive direction. Exploratory factor analyses were executed to determine if each of the constructed scales was unidimensional. This was the case for the constructed scale 'shared responsibility'. The scales 'human equality' and 'mutual dependency' proved to be multidimensional. Based on the first explorative analysis item E5 (I believe a child from a poor country having fewer opportunities than I have is unjust) was deleted in the scale construction. Regarding the principle 'mutual dependency' three items were removed: D6 (The Netherlands are not affected by unemployment in other countries), D2 (If The Netherlands were to refuse entry to asylum seekers, the countries surrounding us would receive more asylum seekers), and D3 (Rich countries benefit from solving poverty in poor countries).

Confirmative factor analyses (CFA) were subsequently executed to determine the fit of the three unidimensional scales. Based upon the results of the initial confirmative factor analyses, it was decided to remove two items from the scale of 'shared responsibility', namely S5 (The Dutch Government should only focus on problems within The Netherlands) and S7 (I believe the Dutch Government must hold other countries accountable if they violate human rights). The results of the final confirmative factor analyses are presented in Table 3.

Table 3: Confirmative factor analyses of the three scales

	N	*Chi-square*	*RMSEA*
Shared responsibility	2003	24.49**	0.045
Equality of human beings	2003	36.19**	0.039
Mutual dependency	2003	16.26**	0.061

The values of Chi-square and RMSEA prove there is a reasonable fit of the models (Hair *et al.*, 2010).[5] In testing for internal consistency, reliability analyses were carried out (Cronbach, 1951) on the final scales: shared responsibility, equality of human beings, and mutual dependency. With a Cronbach's alpha of 0.7, the equality of human beings and shared responsibility scales are sufficiently reliable (Table 4). The alpha for the mutual dependency scale (0.6) is a bit on the low side, but can also be judged as sufficient (Kline, 1999).

Table 4: Reliability of scales

	Number of Items	*Cronbach's alpha*
Shared responsibility	5	0.70
Equality of human beings	6	0.68
Mutual dependency	5	0.56

Validity testing

The validity of a test refers to the extent to which operationalization of a construct does actually measure what the theory says it should. Such lines of evidence include statistical analyses of the test's internal structure. They also include relationships between the test and measures of other constructs. To establish construct validity for the GCI, we looked at both. First, we looked to see if the relationships between the constructs as prescribed in our theoretical framework could be found in the data. Our framework (see Figure 1) suggests a positive relationship between behaviour and the principles of human equality, mutual dependency in the world, and shared responsibility for solving global issues. It also predicts a positive connection between the three principles. If these relationships were to be found in the data, this would be a positive sign for the viability of our theoretical framework. The suggested relations in the theoretical framework were indeed supported by the data collected. Table 5 shows Pearson's correlation coefficient between the behaviour index and the three principles. Young people who are convinced of human equality, have an understanding of the mutual dependency in the world and feel a sense of responsibility for the world behave more like global citizens. The principle of shared responsibility is most strongly related to behaviour, the principle of human equality the least, although the differences are small. The three principles are also mutually related. Young people who feel a sense of shared responsibility are also more convinced of human equality and additionally have a greater understanding of mutual dependency.

Second, the scale was compared with two other related constructs to see if the scores resulting from the GCI relate to other variables to which the construct is to be connected. For that reason two additional scales, measuring empathy[6] and altruism[7], were applied. The academic literature shows well-established relationships between altruism and empathy versus prosocial behaviour (see, for instance, Bekkers and Schuyt, 2008; Farmer and Fedor, 2001; Schwartz, 2007; Eisenberg and Miller, 1987). Our global citizenship behaviour scale could well be seen as prosocial behaviour, which is defined as a broad range of actions intended to benefit one or more people other than oneself (Batson and Powell, 2003). If a positive relation between our global citizenship behaviour scale and altruism or empathy exists, this would give additional validity to the construct. The correlations between global citizenship

behaviour and the three principles on the one hand and the scales for altruism and empathy on the other are strong (see Table 5), hence providing a further indication of our scales' validity.

Table 5: Pearson's correlation coefficient between the GCI, altruistic values, and empathic concern

	Equality of human beings	Mutual dependency	Shared responsibility	Altruistic values	Empathic concern
Global citizenship behaviour	0.28	0.29	0.35	0.44	0.29
Equality of human beings		0.28	0.45	0.36	0.29
Mutual dependency			0.49	0.28	0.28
Shared responsibility				0.48	0.42

4. Conclusion and implications

The purpose of this paper is to report the development of a theoretically grounded and empirically validated inventory that measures global citizenship among adolescents. It is important to note that this paper does not aim to provide a universal ready-to-use scale to measure global citizenship among any given population. For example, the items around behaviour could possibly fit in similar European countries, but would not be suitable to apply to the lives of people in, for example, Africa. This is simply because daily behaviour there is different, making a number of the behavioural items inapplicable. We see our operationalization therefore as a first attempt to empirically translate the theoretical definition of global citizenship into a questionnaire. In the long term we need to ascertain whether there is a sufficient body of evidence to judge whether our concepts and scales are reliable and valid. Research should be repeated to determine whether these items represent the underlying construct we were trying to measure and whether the results are similar in different research populations.

Apart from testing the GCI, the NCDO used the collected data to publish a report on the question presented at the beginning of this article: how do Dutch adolescents relate to the world (Van Gent *et al.*, 2013)?[8] In this report we also explored how global citizenship can be explained by various other factors. These determining factors can give insights into how global citizenship can be influenced. For example, the expectation that adolescents who subscribe more to the three above-mentioned principles behave more often as global citizens is supported by the findings of this research. Furthermore, their knowledge of global issues and level of education were found to have a positive effect on global citizenship behaviour. Altruistic values also

appear to significantly explain differences in the extent to which the young behave as global citizens.

Many primary and secondary schools aim to develop their pupils into global citizens. Both our theoretical framework and this questionnaire provide practitioners with tools for the kind of change they want their pupils to experience. It also provides scholars in the field of global citizenship an instrument to measure the global dimension of citizenship. The GCI could also be useful for measuring the impact of 'global learning' programmes on pupils and students who follow them.

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Notes

1 The former Minister of Foreign Affairs, Bert Koenders, introduced the term global citizenship into Dutch policy (Dutch Ministry of Foreign Affairs/DGIS, 2009) and commissioned the NCDO to become the expertise center for citizenship and international cooperation in The Netherlands.

2 VoiceOver is a network of people from developing countries whose members contribute to the Dutch development debate with their opinions. The network was established by the NCDO.

3 TNS NIPObase is a database with 59,000 households (133,000 respondents) who regularly take part in research of TNS NIPO. The panel is representative for Dutch citizens and certified according to ISO norms (ISO 20252 and ISO 26362).

4 The themes of these knowledge questions were deducted from the United Nations Millennium Declaration and the millennium development goals.

5 The root mean square error of approximation (RMSEA) is a fit indice in structural equation modelling. The RMSEA gives information about how well the hypothesized model fits the population covariance matrix (Byrne, 1988).

6 Empathic concern: items adapted by the NCDO, based on Davis (1994).

7 Altruistic values: items adapted by NCDO items, modified by Bekkers (2004), from Lindeman (1995), based on Drenth and Kranendonk (1973), originally based on Gordon (1960).

8 The publication can be found online at: www.ncdo.nl/sites/default/files/NCDO%20global%20citizenship.pdf

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