**Coronavirus Conspiracy Theories in Southeast Europe: (Non-)Believers, Social Network Bubbles, and the Discourse of Blame**

Supplementary Materials: Survey details, privacy policy and consent form, survey questionnaire

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| Survey sponsor | European Research Council Starting Grant No. 714589, Faculty of Humanities, Education and Social Sciences at the University of Luxembourg. |
| Ethics evaluation and approval | Data Protection Office and the Ethics Committee at the University of Luxembourg, the National Commission for Data Protection of the Grand Duchy of Luxembourg (Reference T011917), and the European Research Council |
| Survey/Data collection supplier | Oraclum Intelligence Systems Ltd |
| Population represented | Adults in Croatia, Bosnia-Herzegovina, and Serbia |
| Type of sample (probability/non-probability) | Non-probability |
| Start and end dates of data collection | 27 April 2020 to 16 May 2020 |
| The sampling frame(s) and its coverage of the target population | The sampling frame consisted of adults in Croatia, Bosnia-Herzegovina, and Serbia with a Facebook account. According to <https://www.internetworldstats.com>, 50.8% of residents of Bosnia-Herzegovina, 50.6% of residents of Croatia, and 41.9% of residents of Serbia had such an account at the time of data collection. |
| Sample design (the method by which the respondents were selected, recruited, intercepted or otherwise contacted or encountered, along with any eligibility requirements and/or oversampling) | Stratified online panel where target users were first divided into different predefined population weights (based on age, gender, education, and location), drawn from the official national statistics for each country (described in detail below).  Users were recruited using ads administered via Facebook’s random algorithm. Those who agreed to the privacy policy and consent form (available below) then logged into the online survey app via their Facebook account to verify a unique ID. Each user was selected at random in order to fill in the prespecified quota. They filled in the survey anonymously and no identifying data was available to Oraclum or the research team, apart from contact information needed to administer rewards which was subsequently destroyed. |
| Mode of data collection | Online |
| Sample sizes | 7,105 (2,219 from Bosnia-Herzegovina, 2,282 from Croatia, and 2,604 from Serbia) |
| Credibility interval for total sample | +/- 1.3 percentage points |
| Credibility interval for Bosnia-Herzegovina | +/- 2.4 percentage points |
| Credibility interval for Croatia | +/- 2.4 percentage points |
| Credibility interval for Serbia | +/- 2.2 percentage points |
|  | As this is a non-probability survey, credibility intervals are reported instead of the margins of sampling error. These credibility intervals are based on a Bayesian model. In the calculations, we were conservative and assumed that the prior on θ was a=1 and b=1 and y=n/2. This constitutes a worst-case scenario, and results in the largest possible credibility interval for the observed samples. |
| Cooperation rate in the data collection process | The sampling process entailed showing an ad for the survey on the feed of Facebook users. However, it is uncertain and even highly doubtful that this constitutes genuine contact with a potential respondent. Therefore, the number of eligible units contacted is defined as the total number of Facebook users who saw the ad, and had shown interest by interacting with or clicking on the survey. This includes commenting on the ad, or clicking to see more information. By that metric, the cooperation rates of the survey is the following:   |  |  |  | | --- | --- | --- | | Country | Users contacted | Cooperation rate | | BA | 18,040 | 12.26% | | HR | 13,681 | 16.48% | | RS | 18,366 | 14.06% | | Total | 50,087 | 14.07% | |
| Description of survey weights | The survey weights were calculated using iterative proportional fitting, better known as raking. Three sets of variables were used for which the population distribution was known. The first set consists of gender and level of education, the second of gender and age category, and the third of the countries’ total adult populations. This ensures that the samples and subsamples reflect the population in terms of gender, age, and education, and the overall population of a country.  The information on the population distributions was obtained from The Agency for Statistics of Bosnia and Herzegovina, the Croatian Bureau of Statistics, and The Statistical Office of the Republic of Serbia |
| Details about screening procedures, including any screening for other surveys that would have made sample members ineligible for the current survey must be disclosed (e.g., in the case of online surveys if a router was used). | There were three main screening techniques. First, based on the location of the user, i.e. the location of their IP, which enabled only people living in the country of interest to enter the survey in their language. Second, the Facebook log-in ensured that the same person does not fill out the survey more than once. Third, the survey app had an internal screening method that eliminated potential fake profiles or bots (e.g. by checking the name, number of friends, and other publicly available data on the user, but also the timing of solving the survey). |
| Details of any strategies used to help gain cooperation (e.g., advance contact, compensation or incentives, refusal conversion contacts) whether for participation in a group, panel or access panel or for participation in a particular research project. | Respondents were offered compensation in terms of a prize-based competition. Survey participants had to predict a series of questions regarding the incidences of COVID, and the top three most accurate predictors in each country would get a monetary reward. This ensured a low dropout rate from the Facebook users that were attracted to the survey. Contact information needed to administer the rewards was subsequently destroyed. No information that could connect individual respondents to their anonymized survey responses is in the possession of Oraclum, Facebook, or the research team. |
| Procedures undertaken to ensure data quality, if any. Where applicable, this includes re-contacts to confirm that the interview occurred and/or to verify the respondent’s identity, measures taken to prevent respondents from completing the same survey more than once, and other quality control procedures (e.g., logic checks and tests for speeding and patterning). If no such efforts were undertaken, this will be disclosed. | Three sets of checks were performed. The first consisted of an additional check whether the respondents were residents of the three countries, based on IP address. The second entailed a number of logical tests revealing whether a respondent had given answers deemed impossible or false. False answers were detected through year of birth, educational attainment, and vote choice in the last elections. Respondents who claimed to be older than 100, to have obtained a college degree while being younger than 20, to have obtained a PhD while being younger than 26, or to have voted in the last election while being too young to be eligible to vote at the time were considered dishonest respondents and excluded from the analyses.  The third check consisted of tests for speeding. In total, there were 18 time checks, which indicated how fast respondents had answered all the questions on a page. Per time check, respondents were given a ‘speeding ticket’ when they belonged to the 5 percent fastest respondents. Respondents who accumulated more than 5 speeding tickets were excluded from the analyses. |
| Details of efforts to develop the questionnaire (focus groups, pretests, etc.) | Fine-tuning the questionnaire with qualitative interviews or focus groups, or to conduct a pilot survey was deemed unfeasible given the substantial practical obstacles created by the pandemic in Europe, and the goal of launching the survey in a timely manner. |

**Survey Privacy Policy and Consent Form**

1. This survey is being conducted by a data science company Oraclum Intelligence Systems Ltd (hereafter Oraclum), situated at 23 Arnold Close, Hauxton, Cambridge, United Kingdom, CB22 5FN. The survey is part of an academic research project studying public responses to the Corona crisis conducted by the University of Luxembourg (hereafter UoL) situated at Belval Campus, 2, avenue de l'Université, L-4365 Esch-sur-Alzette. Oraclum will conduct this survey on behalf of UoL. UoL and Oraclum are strictly non-partisan and hold no prior ideological position on any issue. The results of the survey need not correspond to the actual voter preferences, so they should be interpreted with caution.
2. Both Oraclum and UoL take very seriously the European General Data Protection Regulation 2016/679 (hereafter GDPR). UoL is controller of processing of personal data involved by this research project and Oraclum is processor in the meaning of the GDPR. The privacy policy details what kind of personal data is processed and for which purpose, how and by whom the personal data are processed when a person decides to participate in the Survey.

Upon the completion of the survey, Oraclum will provide anonymized data to UoL within one week and at that moment delete it from its possession. Hence, UoL is the only party that will keep access to that data from the survey.

1. The information regarding the Facebook profile of the user is being transferred via the secure official Facebook API (<https://developers.facebook.com/>). This API provides anonymized identity, and **not real Facebook ID**. This means that neither Oraclum nor UoL know the real identity of the user.

To remove any possible concern regarding the Facebook identity that might appear on the side of users not trusting the Facebook API, Oraclum further encrypts this information so that there are at least two degrees of separation to get to any identification information about the survey participant.

To conclude - no one, not even our staff, is able to uncover the real person's identity because we receive anonymous data and we further encrypt it when handing it over to the UoL. This keeps the personal data collected in the survey (sociodemographic, political and economic views, attitudes toward the Corona crisis, etc.) anonymous.

1. By exception, identification data is collected only for the specific piece of information whose disclosure is optional to the participants: e-mail address. The sole purpose of this personal information is to enable participants to enter our prize draw on their own choosing. This personal information is not transferred to any third party (not even to UoL) and it is also encrypted in the Oraclum database. We pledge not to use these email addresses for any purpose other than to contact the winners.

When the survey ends, the survey data are transferred to UoL without any information about the prize draw participants, while **Oraclum removes all the survey data from its possession**. This means that Oraclum and UoL **will never be able to reconstruct the real identity of survey participants**.

1. The online survey is conducted on a server that belongs to Oraclumduring the duration of this project and it is entirely configured by Oraclum. No third parties have access to the back-end framework or to the collected data.

The usage of all collected data in this survey will be solely for the purpose of the UoL project. Oraclum will remove the data from its possession once the data are collected. The e-mail information related to the prize draw in this survey will be also removed and Oraclum will keep only the information about the prize winners for the purposes of tax audit for HMRC in the UK after the execution of prize payments.

1. During the survey users have a full access to all the data they submitted. At any point a user may request from Oraclum that his or her data (email and any answers that they give in the survey) should be deleted from our database. Upon a user's request, where he or she will give us a piece of identifying information such as his or her email, we will search for their data based on their decrypted email and delete it, after which we will notify the user that they no longer have any personal data stored with us. When the survey ends, only anonymized data are transferred to UoL, while Oraclum deletes the data. From that point onward, the users can exercise their rights by contacting Oraclum at devnet@oraclum.co.uk. Oraclum will consult UoL prior to answering users without revealing any personal data.
2. Given that our survey is performed online, the survey participants from non-EU countries provide their data directly onto Oraclum’s server in the EU (located in Germany). Oraclum hereby pledges to comply with the EU general data protection regulation 2016/679 (GDPR) and will adhere to its standards for processing data of all participants within and outside the EU. This implies handling anonymized data as described earlier so that all private data of natural persons is protected and never disclosed to any party. Furthermore, Oraclum follows EU Directive 2002/58/EC which specifies that the use and processing of any kind of electronic data from non-EU countries to EU countries must comply with the aforementioned legislation within the EU. The legal basis for processing is Art. 6 para. 1 point (a) of GDPR. The user’s consent is explicitly collected via checkbox when entering the survey.
3. The website survey.oraclum.co.uk (hereafter website) uses cookies to provide a better and safer user experience. The user is prompted about their content and explicit agreement when initially accessing the website. This data is used only for analysing the website traffic needed for optimizing the website efficiency. This data is not given to any third parties to use for their advertising or any other purpose not related to the website.
4. Users’ individual survey responses as well as other information they provide are not visible to other users of the website. A user’s friends using the website can only see the aggregate votes of their Facebook friends and only if they have also filled out the survey. No user of the survey has any information on how and which one of his or her friends has voted.

The aggregate Leaderboard of the survey will be publicly available. The Leaderboard shows how successful a user is in predicting the average answers from all other users on questions listed in the Rules of the Game. The Rules describe the mathematical method for calculating the ranking and how the prizes are selected. Users have a full control on whether they participate anonymously in Leaderboard or not. The Leaderboard shows only the ranking and no other data from the survey.

1. All users can freely share the data from the survey (e.g. who they voted for) if they want to. UoL holds the right to publish the anonymous statistics and data in science journals and present the aggregate data at scientific conferences. The consent is explicitly requested via checkbox when entering the survey. All statistics and information on our website are only informative and neither Oraclum nor UoL hold any responsibility for any consequences from misinterpretation.
2. In case of legal disputes on the privacy policy, Luxembourg law applies, and the courts of the Grand Duchy have exclusive jurisdiction.

Checkbox Y/N:

I agree to participate in this survey in accordance to this Privacy Policy.

Checkbox Y/N:

I agree to have my responses in this survey anonymized and used for research purposes in accordance to this Privacy Policy.

**Survey questionnaire** (in the order questions were shown to respondents)

Please note that all questions were translated into Bosnian, Croatian, and Serbian. Prior to beginning the survey, respondents were able to choose their preferred language.

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| --- | --- | --- |
| What is your gender? | | |
| Response options | |  |
| 1 | Male |  |
| 2 | Female |  |

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| --- | --- | --- |
| In what year were you born? | | |
| \*Dropdown with all years in between the following years | | |
| 1900 | 1900 |  |
| 2002 | 2002 |  |

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| What is the highest level of educational degree you completed? | | |
| Response options | |  |
| 1: | None |  |
| 2: | Completed elementary school |  |
| 3: | Vocational school degree |  |
| 4: | Secondary school degree, 4 years  (this includes both academic university preparatory education and the advanced technical schools which also allowed entrance to either universities or higher educational schools) |  |
| 5: | Third level school – 2 years after secondary |  |
| 6: | University education |  |
| 7: | Doctoral degree |  |

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| If you add up your income from all revenue sources, which category would accurately reflect your household’s monthly total net income? | | |
| Response options | |  |
| 1 | [decile 1] |  |
| 2 | [decile 2] |  |
| 3 | [decile 3] |  |
| 4 | [decile 4] |  |
| 5 | [decile 5] |  |
| 6 | [decile 6] |  |
| 7 | [decile 7] |  |
| 8 | [decile 8] |  |
| 9 | [decile 9] |  |
| 10 | [decile 10] |  |
| [decile 1]:  For respondents from Bosnia-Herzegovina: “Less than 100 KM”;  For respondents from Croatia: “Less than 2000 Kuna”;  For respondents from Serbia: “Less than 20,000 Dinar” | | |
| [decile 2]:  For respondents from Bosnia-Herzegovina: “Between 100 and 300 KM”;  For respondents from Croatia: “Between 2000 and 3200 Kuna”;  For respondents from Serbia: “Between 20,000 and 30,000 Dinar” | | |
| [decile 3]:  For respondents from Bosnia-Herzegovina: “Between 300 and 500 KM”;  For respondents from Croatia: “Between 3200 and 4400 Kuna”;  For respondents from Serbia: “Between 30,000 and 40,000 Dinar” | | |
| [decile 4]:  For respondents from Bosnia-Herzegovina: “Between 500 and 700 KM”;  For respondents from Croatia: “Between 4400 and 5600 Kuna”;  For respondents from Serbia: “Between 40,000 and 50,000 Dinar” | | |
| [decile 5]:  For respondents from Bosnia-Herzegovina:, “Between 700 and 900 KM”;  For respondents from Croatia: “Between 5600 and 6800 Kuna”;  For respondents from Serbia: “Between 50,000 and 60,000 Dinar” | | |
| [decile 6]:  For respondents from Bosnia-Herzegovina: “Between 900 and 1100 KM”;  For respondents from Croatia: “Between 6800 and 8000 Kuna”;  For respondents from Serbia: “Between 60,000 and 70,000 Dinar” | | |
| [decile 7]:  For respondents from Bosnia-Herzegovina: “Between 1100 and 1300 KM”;  For respondents from Croatia: “Between 8000 and 9200 Kuna”;  For respondents from Serbia: “Between 70,000 and 80,000 Dinar” | | |
| [decile 8]:  For respondents from Bosnia-Herzegovina: “Between 1300 and 1500 KM”;  For respondents from Croatia: “Between 9200 and 10,400 Kuna”;  For respondents from Serbia: “Between 80,000 and 90,000 Dinar” | | |
| [decile 9]:  For respondents from Bosnia-Herzegovina: “Between 1500 and 1700 KM”;  For respondents from Croatia: “Between 10,400 and 11,600 Kuna”;  For respondents from Serbia: “Between 90,000 and 100,000 Dinar” | | |
| [decile 10]:  For respondents from Bosnia-Herzegovina: “More than 1700 KM”;  For respondents from Croatia: “More than 11,600 Kuna”;  For respondents from Serbia: “More than 100,000 Dinar” | | |

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| Which of the following categories best fits your current employment situation? | | |
| Response options | | (Randomize order) |
| 1: | Full time employed |  |
| 2: | Part-time employed |  |
| 3: | Unemployed |  |
| 4: | Retired, pensioner |  |
| 5: | Stay-at-home spouse |  |
| 6: | Pupil, student |  |
| 7: | Sick, disabled |  |
| 8: | Self-employed |  |

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| To what extent are you interested in politics in general? Give a value on a scale from 0 to 10, where 0 means that you are not interested in politics at all, and 10 means you are very interested in politics. Intermediate values allow you to nuance your answer. | | | |
| Response options | |  | |
| 0: | 0: Not interested at all | |  |
| 1: | 1 | |  |
| 2: | 2 | |  |
| 3: | 3 | |  |
| 4: | 4 | |  |
| 5: | 5 | |  |
| 6: | 6 | |  |
| 7: | 7 | |  |
| 8: | 8 | |  |
| 9: | 9 | |  |
| 10: | 10: Very interested | |  |

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| Asked only in Bosnia-Herzegovina | | |
| In October 2018, you could vote for the House of Representatives. For which party did you vote back then? | | |
| Response options | |  |
| 1: | SDA |  |
| 2: | SDP BiH |  |
| 3: | Demokratska fronta |  |
| 4: | Savez za bolju budućnost BiH |  |
| 5: | HDZ |  |
| 6: | HDZ 1990 |  |
| 7: | BPS |  |
| 8: | A-SDA |  |
| 9: | Naša stranka/Наша странка |  |
| 10: | Nezavisni blok |  |
| 11: | Partija demokratske akcije |  |
| 12: | Narod i pravda |  |
| 13: | Nezavisna bosanskohercegovačka lista |  |
|  |  |  |
| 20: | SDA |  |
| 21: | SDP BiH |  |
| 22: | SDS |  |
| 23: | Partija demokratskog progresa (PDP) |  |
| 24: | Narodni Demokratski Pokret |  |
| 25: | Demokratski narodni savez |  |
| 26: | Socijalistička partija |  |
|  |  |  |
| 27: | SNSD |  |
|  |  |  |
| 95: | Other: [open text field] |  |
| 96: | I cast a blank vote |  |
| 97: | I didn't vote |  |
| 98: | I don't want to answer | (Fixed position) |

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| Asked only in Croatia | | |
| In September 2016, you could vote for the Croatian Parliament. For which party did you vote back then? | | |
| 1: | HDZ Coalition (HDZ, HSLS, HDS, Hrast) |  |
| 2: | People's Coalition (SDP, HNS, HSU, HSS) |  |
| 3: | Bridge of Independent Lists |  |
| 4: | The Only Option Coalition (Živi zid, UF, PH, AM, AD) |  |
| 5: | For Prime Minister Coalition (BM 365, Reformisti, Novi val, HSS HR, BUZ) | |
| 6: | Even Stronger Istria Coalition (IDS, PGS, RI) |  |
| 7: | Turn Croatia Around Coalition (Pametno, Za Grad) |  |
| 8: | HDSSB Coalition (HDSSB, HKS) |  |
|  |  |  |
| 95: | Other: [open text field] |  |
| 96: | I cast a blank vote |  |
| 97: | I didn't vote |  |
| 98: | I don't want to answer |  |

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| Asked only in Serbia | | |
| In October 2016, you could vote for the National Assembly. For which party did you vote back then? | | |
| 1: | SNS | (Randomize order) |
| 2: | SPS-JS-ZS | (Randomize order) |
| 3: | SRS | (Randomize order) |
| 4: | DJB | (Randomize order) |
| 5: | DS | (Randomize order) |
| 6: | Dveri-DSS | (Randomize order) |
| 7: | SDS-LDP-LSV | (Randomize order) |
| 8: | VMSZ-VMDP | (Randomize order) |
|  |  |  |
| 95: | Other: [open text field] | (Fixed position) |
| 96: | I cast a blank vote | (Fixed position) |
| 97: | I didn't vote | (Fixed position) |
| 98: | I don't want to answer | (Fixed position) |

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| To what extent do you agree or disagree with each of the following statements? | | |
| Statements | | (Randomize order) |
| 1: | Important sectors of the economy should be nationalized |  |
| 2: | The government should reduce the differences in income |  |
| 3: | The government should guarantee everyone a minimum standard of living | |
| 4: | People should receive unemployment benefits until they find a new job | |
| 5: | Public services would work better if they were privatized |  |
| Response options | |  |
| 1: | Completely disagree |  |
| 2: | Disagree |  |
| 3: | Neither agree nor disagree |  |
| 4: | Agree |  |
| 5: | Completely agree |  |

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| --- | --- | --- |
| To what extent you agree or disagree with each of the following statements? | | |
| Statements | |  |
| 1: | Men can feel completely safe only when the majority belong to his nation(ality). | |
| 2: | Among nations, it is possible to create cooperation, but not full trust. | |
| 3: | I would rather be a citizen of this country than of any other country in the world | |
| 4: | It is important that my country performs better than other countries | |
| 5: | It is best that villages, towns, and cities should be composed of only one nationality. | |
| Response options | |  |
| 1: | Completely disagree |  |
| 2: | Disagree |  |
| 3: | Neither agree nor disagree |  |
| 4: | Agree |  |
| 5: | Completely agree |  |

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| For each of the following media, can you indicate how often you use them during an average week to get informed about politics and current affairs? | | |
| Statements | |  |
| 1: | Newspapers |  |
| 2: | Television news |  |
| 3: | An information website |  |
| 4: | The radio |  |
| 5: | Social media (YouTube, Facebook, Twitter, …) |  |
| Response options | |  |
| 1: | Never |  |
| 2: | Rarely, that is less than once a week |  |
| 3: | Sometimes, that is one or two days per week |  |
| 4: | Often, that is three or four days per week |  |
| 5: | Almost every day of the week, that is five days per week or more | |

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| To which extent has the Corona Crisis affected you personally: Your economic situation has gotten worse due to the Corona Crisis | | |
| 1: | Yes |  |
| 0: | No |  |

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| Who do you think is most responsible for the outbreak of Covid-19 virus in your country? | | |
| Response options (default value: 99) | |  |
| 1: | China | (Randomize order) |
| 2: | Your national government | (Randomize order) |
| 3: | The World Health Organization (WHO) | (Randomize order) |
| 4: | People in your country who are not following government measures such as social distancing | (Randomize order) |
| 5: | Globalization | (Randomize order) |
| 6: | Neighboring countries | (Randomize order) |
| 7: | The EU | (Randomize order) |
| 8: | Other: [open text field] | (Fixed position) |

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| --- | --- |
| Could you please explain your answer in a few short sentences? (max 300 characters) | |
| [open text field, max 300 characters] |  |

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| --- | --- |
| What is the official number people in your country that are currently infected with the Corona virus? | |
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| To which extent do you agree with the following statements? | | |
| Statements | |  |
| 1: | There is already a cure/vaccine for coronavirus but the pharmaceutical industry do not want to release it yet | |
| 2: | Coronavirus is a bioweapon engineered by the Chinese government to wage war on America and the West | |
| 3: | Coronavirus is a bioweapon engineered by the CIA to wage war on China | |
| 4: | If you can’t hold your breath for 10 seconds without coughing, then you have probably contracted the coronavirus | |
| 5: | Coronavirus is a hoax. There is no such thing as a global pandemic. | |
| Response options | | |
| 1: | Completely disagree |  |
| 2: | Disagree |  |
| 3: | Neither agree nor disagree |  |
| 4: | Agree |  |
| 5: | Completely agree |  |