First Round of Delphi Study

JS

Welcome to our Delphi research study!

1. Invitation We invite you to participate in a research study. Before you agree to take part, it is important that you understand the purpose of our research and what it involves. Please read the following information carefully. If anything is unclear or wish to have additional information, please contact georgios.georgiadis@ugent.be.

2. Purpose of this study
We conducted a systematic literature review of approximately 159 articles through which we identified specific privacy and data protection risks associated with Big Data Analytics. Our literature search, described in [1], included 10 digital databases as well as published material on data protection authority websites. This research enabled us to discover nine important privacy and data protection risks or harms. For practical reasons, we have referred to these as "privacy touchpoints" (PTPs) to avoid the overuse of the term "risk" in our paper.

The purpose of this Delphi study is to validate and extend the PTPs and gather expert opinions on possible guidelines for a Data Protection Impact Assessment (DPIA) that takes these PTPs into account. We firmly believe that DPIA can become more relevant for dealing with Big Data, as there is currently no methodology that could adequately support organisations in assessing PTPs in the context of Big Data Analytics data processing.

[1] G. Georgiadis and G. Poels, "Towards a Privacy Impact Assessment Methodology to Support the Requirements of the General Data Protection Regulation in a Big Data Analytics Context : A Systematic Literature Review," Publ., Computer Law & Security Review 2022

3. Why have you been chosen?
We are asking you to participate because we have identified you as experts in the topics to be discussed. As there are many different levels of expertise on Big Data and privacy/data protection, we have prepared a short questionnaire asking you to give us some background

information to determine your profile and for statistical purposes.

4. Do I have to take part?
Participation in this Delphi study is voluntary. While we greatly appreciate your input in all three rounds of the study, it is up to you to decide whether you wish to participate and when to withdraw. You are free to withdraw at any time without giving any reason.

5. What are the possible benefits of taking part?
We can share our intermediate and final results with you. If you agree, we can include some general information about you in our research article that will come out of this study. As a participant in our study, you will be recognized in general anonymity or, if you wish and have specifically told us so, with your name (see also the next point).

6. Confidentiality
Your participation in the study and your individual responses will be kept strictly confidential. Reasonable efforts will be made to keep personal information confidential as part of this study, but complete confidentiality cannot be guaranteed. Your contact details are known to the principal researcher (see next section) of this study for practical reasons and will not be shared with other participants or third parties. Throughout the study you will remain anonymous to the other participants. The final results of this study will also not allow any conclusions to be drawn about you.

7. Organisers of the Delphi study
Georgios Georgiadis, is the principal researcher under the supervision of Professor Dr. Geert Poels. Expert support in organising this study was provided by Professors Dr. Amy Van Looy, Dr. Frederik Gailly and Dr. Seppe vanden Broucke, all from the University of Ghent, Belgium.

8. Further information
If you have any questions about this study, please contact the principal researcher: georgios.georgiadis@ugent.be

Informed Consent

You will be presented with information on Big Data Analytics privacy and data protection risks and existing assessment methods and asked to answer some questions about them. Please be assured that your answers will be treated with absolute confidentiality.

 The study should take you around 30 minutes to complete. By clicking the button below, you acknowledge that:

Agree to participate in this study   Understand that participation in this study is voluntary and that you may withdraw from the study at any time   Confirm that I have read and understood the information sheet about this study   Understand that your data will be used anonymously and will not be used in any reports or publications arising from the study

Understand that the data collected, as part of this study, will be submitted for publication in an academic journal and presented at conferences   You understand the importance of the above statements.

Please note that this survey is best viewed on a laptop or desktop computer. Some features may be less well suited for use on a mobile device.

○ I consent, begin the study

○ I do not consent, I do not wish to participate

End of Block: Welcome & Informed Consent

In which country do you currently reside?

▼ Afghanistan ... Zimbabwe

What is your highest educational qualification?

○ Associate degree

○ Bachelor's degree

○ Master's degree

○ Professional degree

○ Doctorate degree

What are your domains of expertise (multiple section)?

- [ ] Artificial Intelligence

- [ ] Audit

- [ ] Big Data Analytics

- [ ] Business Administration

- [ ] Data Science

- [ ] Law

- [ ] Privacy and Data Protection

- [ ] Security

- [ ] Other, please specify

_____

Which statement best describes your current employment status?

○ Employed, private sector

○ Employed, public sector

○ Employed, academic

○ Retired

○ Other _____

○ Prefer not to answer

Which of the following industries most closely matches the one in which you are employed?

○ Professional, scientific or technical services

○ Management of companies or enterprises

○ Construction

○ Manufacturing

○ Educational services

○ Consultancy

○ Health care or social assistance

○ Retail trade

○ Transportation or warehousing

○ Accommodation or food services

○ Information Technology

○ Other services

How many employees work in your establishment?

- ○ 1-4
- ○ 5-9
- ○ 10-19
- ○ 20-49
- ○ 50-99
- ○ 100-249
- ○ 250-499
- ○ 500-999
- ○ 1000 or more

How well do you know the General Data Protection Regulation (GDPR)?

- ○ Very Good
- ○ Good
- ○ Acceptable
- ○ Poor
- ○ Very Poor

How well do you know the concept of Privacy Impact Assessment or Data Protection Impact Assessment?

○ Very Good

○ Good

○ Acceptable

○ Poor

○ Very Poor

How well do you know methodologies (e.g., guidelines, processes, methods, rules, principles) for Privacy Impact Assessment and Data Protection Impact Assessment?

○ Very Good

○ Good

○ Acceptable

○ Poor

○ Very Poor

End of Block: Demographics

Below we ask for your opinion on the PTPs (i.e. specific risks or harms related to Big Data analytics for data protection and privacy) that we have identified in our systematic literature review. Please indicate the extent to which you agree with the statements given, drawing on your specific expertise and experience in this area. We would be grateful if you could also justify your choice.

PTP (1) Unclear data controllership

Please indicate to what extent you agree with the fact that it is often difficult to understand and comply with data protection requirements among data controllers when it comes to Big Data analytics

○ Strongly disagree   ○ disagree   ○ Neither agree nor disagree   ○ Agree   ○ Strongly agree

Can you give some reasons why you agree or disagree?

_____

_____

_____

_____

_____

PTP (2) Identification of individuals from derived data

Please indicate to what extent you agree that Big Data Analytics techniques enable inference to undisclosed information that could be used to identify an individual, thereby facilitating re-identification

○ Strongly disagree   ○ disagree   ○ Neither agree nor disagree   ○ Agree   ○ Strongly agree

Can you give some reasons why you agree or disagree?

_____

_____

_____

_____

_____

PTP (3) Discrimination issues affecting moral or material personal matters

 Please indicate to what extent you agree that there is an increasing risk of statistical discrimination or 'data determinism' which may cause material (e.g. reducing the chance of

finding a job) or moral (e.g. stigmatisation) harm to data subjects as referred to in [Recital 75](#) of the General Data Protection Regulation?

○ Strongly disagree　　○ disagree　　○ Neither agree nor disagree　　○ Agree　　○ Strongly agree

Can you give some reasons why you agree or disagree?

_____

_____

_____

_____

_____

PTP (4) Lack of transparency

Please indicate to what extent you agree there are risks of non-transparency (violation of transparency) and intervenability (control over how personal data is being processed by information systems) when dealing with Big Data Analytics

○ Strongly disagree　　○ disagree　　○ Neither agree nor disagree　　○ Agree　　○ Strongly agree

Can you give some reasons why you agree or disagree?

_____

_____

_____

_____

_____

PTP (5) Increased scope leading to further processing incompatible with the initial purpose

Please indicate to what extent you agree that Big Data Analytics solutions can reveal a wealth of sensitive information about an individual that has nothing to do with what was originally intended when data was collected

○ Strongly disagree   ○ disagree   ○ Neither agree nor disagree   ○ Agree   ○ Strongly agree

Can you give some reasons why you agree or disagree?

_____

_____

_____

_____

PTP (6) Improper treatment of different types of privacy risks and data breaches

Please indicate to what extent you agree that Big Data Analytics solutions could lead to different types of privacy risks and data protection breaches.

○ Strongly disagree   ○ disagree   ○ Neither agree nor disagree   ○ Agree   ○ Strongly agree

Can you give some reasons why you agree or disagree?

_____

_____

_____

_____

_____

PTP (7) Limited range of stakeholders' involvement

Please indicate to what extent you agree that it is necessary to include in the data protection

impact assessment external (to the organisation) stakeholders whose data is predominantly processed in the context of Big Data Analytics solution

○ Strongly disagree   ○ disagree   ○ Neither agree nor disagree   ○ Agree   ○ Strongly agree

Can you give some reasons why you agree or disagree?

_____

_____

_____

_____

_____

PTP (8) Practical issues due to procedural vagueness

Please indicate to what extent you agree that existing PIA or DPIA methodologies ddo not provide sufficient practical guidance for assessing the privacy or data protection risks in Big Data Analytics operations

○ Strongly disagree   ○ disagree   ○ Neither agree nor disagree   ○ Agree   ○ Strongly agree

Can you give some reasons why you agree or disagree?

_____

_____

_____

_____

_____

PTP (9) Treatment of indirect privacy harms
Please indicate to what extent you agree that indirect harms such as those related to societal and ethical concerns should also be taken into account when assessing the protection risks of Big Data analytics in the data protection impact assessment

○ Strongly disagree   ○ disagree   ○ Neither agree nor disagree   ○ Agree   ○ Strongly agree

Can you give some reasons why you agree or disagree?

_____

_____

_____

_____

_____

Next, we would like to know your opinion on the importance of the Privacy Touchpoints (PTPs) described earlier so that we can focus on them when developing specific guidance for conducting data protection impact assessments in environments where Big Data analytics are deployed.

How important to you are the following Privacy Touchpoints (PTPs)?

	Not at all important	Slightly important	Moderately Important	Very important	Extremely opinion
Unclear data controllership	○	○	○	○	○
Identification of individuals from derived data	○	○	○	○	○
Discrimination issues affecting moral (e.g. stigmatisation) or material (e.g. reducing the chance of finding a job) personal matters	○	○	○	○	○
Lack of transparency	○	○	○	○	○
Increased scope leading to further processing incompatible with the initial purpose	○	○	○	○	○
Improper treatment of different types of privacy risks and data breaches	○	○	○	○	○
Limited range of stakeholders' involvement	○	○	○	○	○

Practical issues due to procedural vagueness	○	○	○	○	○
Treatment of indirect privacy harms	○	○	○	○	○

Can you give some reasons for your choices?

_____

_____

_____

_____

_____

Finally, we would like to know your opinion on the following. During our research we came across a number of PIA or DPIA methodologies. Which of them do you think provide sufficient guidance for assessing the previously discussed PTPs in the context of Big Data Analytics? Please only give an opinion on the methodologies that are familiar with.

During our research we came across a number of PIA and DPIA methodologies or extensions. Which of these do you consider to be extremely or not at all important for the assessment of PTPs. If you do not know, please select the option "Not familiar".

	Not at all important	Slightly important	Moderately important	Very important	Extremely important	Not familiar
Assessment Template for Smart Grid and Smart Metering systems	○	○	○	○	○	○
CNIL PIA	○	○	○	○	○	○
IRL Data Protection Commissioner	○	○	○	○	○	○
ISO/IEC 29134:2017	○	○	○	○	○	○
LINDDUN	○	○	○	○	○	○
Model-based privacy analysis	○	○	○	○	○	○
NZ Privacy Commissioner	○	○	○	○	○	○
Office of the Australian Information Commissioner	○	○	○	○	○	○
Office of the Privacy Commissioner of Canada	○	○	○	○	○	○
PIA for RFID	○	○	○	○	○	○
pISRA	○	○	○	○	○	○

PRIAM	○	○	○	○	○	○
PRIPARE	○	○	○	○	○	○
Privacy Commissioner for Personal Data, Hong Kong	○	○	○	○	○	○
Privacy points for PIAs	○	○	○	○	○	○
UK ICO PIA	○	○	○	○	○	○
US Homeland Security	○	○	○	○	○	○

Can you give some reasons for your choices?

_____

_____

_____

_____

_____

Please add general comments here, especially what you expect or would like to be asked in the next Delphi round(s)

_____

_____

_____

_____

_____

End of Block: Privacy touchpoints