

Big Data thematic review

NCA survey

Information about the reporting Authority

Name of the reporting Authority:

Country:

Date of submission:

Introduction

Objective

On 15 March 2018 the Joint Committee of the European Supervisory Authorities (ESAs) published a report on the use of Big Data by financial institutions.¹ The ESA's report identified a wide array of potential benefits arising from Big Data Analytics (BDA), both for the industry as well as for consumers. However, new regulatory and supervisory questions do also emerge requiring more in-depth analysis and supervisory oversight going forward.

¹ Report on the use of BDA by financial institutions, Joint Committee of the ESAs, 15 March 2018, <https://eiopa.europa.eu/Publications/Other%20Documents/JC-2018-04%20Joint%20Committee%20Final%20Report%20on%20Big%20Data.pdf>

The objective of this thematic review is therefore to find answers to some of these questions and to gather better understanding about the implications of the use of BDA in decision-making processes, emerging business models and the different stages of the insurance value chain.

Scope

The present thematic reviews covers the use of BDA by insurance undertakings.

Instructions on how to fill the survey

The survey should be completed on a “best efforts” basis, i.e. in case you do not have exact information immediately available to reply to a specific question, it is possible to use estimations or approximations. We are aware that some questions might not have a straightforward answer so please respond to the questions to the best of your knowledge.

The survey uses deliberately a broad definition on BDA given the varied range of definitions and views about the topic. Indeed there is often not a common approach to clearly delineate the term "Big Data" from other expressions such as "data analytics", "data science", "artificial intelligence" or "machine learning". Some consider that you cannot separate one from the other. For this reason, the references to BDA in this survey should be understood in a broad sense.

Glossary

BDA Analytics (BDA)* ²	Large volumes of data that can be generated, processed and increasingly used by digital tools and information systems for the purpose of making predictive, descriptive and prescriptive analysis. This capability is driven by the increased availability of structured data, the ability to process unstructured data, increased data storage capabilities and advances in computing power
Predictive analysis	Making future predictions by studying recent and historical data
Descriptive analytics	The use of data aggregation and data mining to provide insights into the past and answer what has happened
Prescriptive analytics	The use of data aggregation and data mining to provide recommendations of one or more courses of action and showing the likely outcome of each decision

Consumer complaints

NB: If your Authority does not receive consumer complaints, please liaise with the relevant Authority in your jurisdiction (e.g. Ombudsman) to complete this section of the survey.

To help you respond to this part of the survey the first question includes some examples of possible situations where BDA could have motivated the complaint of the consumer. Please tell us if you have received similar complaints and how these types of complaints have evolved in recent years.

² The terms with an * are based on the definitions used in the report Implications of fintech developments for banks and bank supervisors, BIS, February 2018, <https://www.bis.org/bcbs/publ/d431.pdf>

1. Have you received any consumer complaints relating to the use of BDA by insurance undertakings in 2017 (e.g. undesirable risk segmentation of consumers, use of social media comments for marketing campaigns, or high-risk consumers being denied access to insurance coverage, or complaints relating to motor insurance Pay-As-You-Drive (PAYD) products or other telematics-based insurance products, or consumers challenging the automated methodology on which a claims settlement offer was based).
 - Yes
 - No
 - No information available / not applicable

Please explain the main causes of the complaints

2. What percentage of the total number of complaints received by your Authority in 2017 do the complaints related to BDA approximately represent?
 - 0%-10%
 - 11%-20%
 - 21%-30%
 - 31%-40%
 - 41%-50%
 - 51%-60%
 - 61%-70%
 - 71%-80%
 - 81%-90%
 - 91%-100%
 - No information available / not applicable

Please explain your response

3. To the best of your knowledge, how has the number of consumer complaints related to the use of BDA by insurance undertakings broadly evolved in the last 3 years:
 - Increased³
 - Increased considerably
 - Decreased
 - Decreased considerably
 - Remained unchanged
 - No information available / Not applicable

^{3 3} Increased = approximately +1% to +30%, and increased considerably if approximately increased over 30%.
Idem for decreased and decreased considerably

Please explain your response, and if possible specify what was the cause of complaints that increased / decreased the most

NCA mandate

4. Does your NCA actively cooperate with other authorities competent in in your jurisdiction to supervise the use of BDA by insurance undertakings (e.g. possible MoUs with data protection or medical authorities, joint onsite visits, regular exchanges of information, etc.)?
- Yes
 - No
 - No information available / Not applicable

Please explain your response, and if possible mention any recent actions / agreements you have reached with such authorities.

5. Does your national insurance legislation (i.e. not data protection legislation) establish rules regarding what types of data and sources can and can't be used by insurance undertakings (e.g. in health insurance)?
- Yes
 - No
 - No information available / Not applicable

Please explain your response, if possible mentioning specific examples of types of data that can't be used by insurance undertakings

6. Is (part of) the personal data provided by consumers to insurance undertakings (e.g. health records) considered as "insurance secrets" by your national insurance legislation?
- Yes
 - No
 - No information available / Not applicable

Please explain your response, including how this affects the capacity of insurance undertakings to process such data and / or to share such information with 3rd parties and/or the mandate of your NCA to supervise the use of such data

Financial inclusion / exclusion

7. Are there any schemes / “insurability pools” in your jurisdiction aiming to ensure that all consumers / high-risk consumers have access to affordable insurance coverage?

- Yes
- No
- No information available / Not applicable

Please explain your response

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8. If your answer to the previous question is “yes”, please liaise with the relevant schemes / “insurability pools” and provide an overview of the evolution of the number of members of these schemes during the last 5 years (if there exists more than one insurability pool, please copy-paste the table below as many times as relevant):

	2013	2014	2015	2016	2017
Number of members					

Please provide any additional information that could help explain the numbers

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9. Have you identified situations where consumers in your jurisdiction have increasing / better access to insurance products because of BDA?

- Yes
- No

Please provide examples

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10. Have you identified situations about consumers in your jurisdiction having increasing difficulties to be offered / obtain affordable insurance cover because of BDA?

- Yes
- No

Please provide examples

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11. Can insurance undertakings in your jurisdiction use genetics data for pricing and underwriting purposes?

- Yes
- No
- No information available / Not applicable

Please explain your response

12. Is the issue of financial exclusion sufficiently covered by existing legislation (e.g. obligation to treat customers fairly)? Please mention specific provisions in insurance and/or other sectorial legislations addressing this issue.

13. In your opinion, in case high-risk consumers were increasingly having difficulties to obtain affordable insurance cover (e.g. health insurance) due to BDA, what do you think should be the role of insurance regulatory authorities regarding this issue?

Please explain your response, and where applicable mention any action that your NCA has developed in this concrete area.

Price optimisation

14. Please explain which competences your NCA has with regard to pricing and underwriting practices and how supervision is done in practice, in particular regarding the rating factors used from a conduct of business perspective (e.g. review of data regularly reported by insurance undertakings, on-site inspections, thematic work etc.)?

15. Is the use for pricing purposes of rating factors such as credit scoring, number of inquiries, complaints, diet, job stability, wealth, level of education or social media comments and network sufficiently covered (or not) by the existing rules (e.g. obligation to treat customers fairly)? Please explain your response

16. Do you believe, if applicable, that consumers should be made aware that the premiums they pay for their insurance depends on rating factors such as the one described in the previous question?

- Yes
- No
- No information available / Not applicable

Please explain your response, and where relevant explain if there are sufficient disclosure vis-à-vis consumers

17. Do you believe there are any data variables / data sources that should not be allowed to be used for pricing and underwriting purposes?

- Yes
- No
- No information available / Not applicable

Please explain your response

18. What tools and procedures does your Authority believe it needs to further develop to supervise possible conduct of business issues arising from price optimization practices using BDA?

Data accuracy

19. Have you identified any data accuracy / data interpretation issues (e.g. “correlation is not causation”) regarding the use of BDA by insurance undertakings?

- Yes
- No
- No information available / Not applicable

Please explain your response and provide examples specifying how did your NCA deal with this issue

20. Are you aware of the use of rating factors by insurance undertakings that could potentially be correlated with prohibited factors such as gender, ethnicity, religion, etc?

- Yes
- No
- No information available / Not applicable

Please explain your response and provide examples

21. How does the use of external data sources and outsourcing activities (including purchasing data and data analytics tools from data vendors) affect the risk of data accuracy issues? Is there a need for additional regulatory oversight of data vendors by insurance supervisors?

22. Do you believe possible data accuracy issues such as the ones described in the Big Data thematic review Issues Note are already covered by the existing rules? Please mention specific provisions in insurance and/or other sectorial legislations addressing this issue.

Please explain your response

23. Do you believe specific levels of correlation and/or causality should be required for rating variables?

- Yes
- No
- No information available / Not applicable

Please explain your response

24. Do you believe your Authority has the appropriate tools and access to data to supervise possible data accuracy issues such as the ones described in the Big Data thematic review Issues Note?

- Yes
- No
- No information available / Not applicable

Please explain your response

25. In particular, please elaborate over the level of preparedness of your NCA to assess the use of BDA for the calculation of technical provisions or in the assessment of risk exposures both for life and non-life business.

26. Please explain if you have recently undertaken or if you have planned any supervisory actions which address the analysis of statistical and actuarial methods based on BDA, and where relevant please explain the key findings.

27. In case you consider it relevant, please explain what are the quantitative and qualitative information which has to be collected in order to be able to adequately supervise the use of Big Data by insurance undertakings.

BDA tools

28. To what extent does your NCA supervise the use of machine learning and/or artificial intelligence by insurance undertakings, both in the case of proprietary and off-the-shelf products? Please explain any recent supervisory action that you have developed and your key findings

29. Please describe the main challenges that your NCA faces regarding the supervision of machine learning and/or artificial intelligence used by insurance undertakings and how do you plan to address them.

Impact of BDA in the insurance value chain

30. What are the main potential benefits and risks arising from new insurance products such as Pay-As-You-Drive (PAYD) and Pay-How-You-Drive (PHYD) in motor insurance, Pay-As-You-Live (PAYL) in health insurance?

Please explain your response

31. What are the main potential benefits and risks arising from the use of BDA by insurance undertakings for sales and distribution purposes?

Please explain your response

32. What are the main potential benefits and risks arising from the use of BDA by insurance undertakings in claims management, fraud prevention and post-sales services?

Please explain your response

Other issues

33. Are there any other issues that you would like to highlight in relation to the use of BDA by insurance undertakings?