The Geneva Papers on Risk and Insurance - Issues and Practice (2022) 47:495–498
https://doi.org/10.1057/s41288-022-00274-6

EDITORIAL

New technologies and data in insurance

Isabelle Flückiger[1] · Meryem Duygun[2]

Accepted: 22 April 2022

Globalisation, digitalisation and smart technologies have reshaped several industries within any possible area. The insurance industry has also been affected, changing private customers' lives and businesses at an accelerated speed. This has been enhanced by the COVID-19 pandemic, which represented a turning point in many sectors with an increase in technological developments and adoption globally. Digitisation, connectivity and big data are now a constant part of our daily lives, and their usage is also expanding rapidly in developing economies.

Finance and banking have already been firmly impacted by the use of technology and have undergone dramatic change (Buchak et al. 2018). According to Frame et al. (2019), technological changes that generate financial innovations in banking have connotations for developments in Fintech. Non-intermediated peer-to-peer lending, cryptocurrencies and smart contracts are all part of an emerging mosaic of technology-assisted, customised financial services (see Thakor 2020).

Navaretti et al. (2017) argue that while technology developments impact traditional banking services and/or activities such as credit, deposits and capital-raising services, they also affect the insurance industry. Although there is synergy and overlap among firms in the financial services industry in terms of offering banking and insurance products, the insurance context is different in several ways (Schiro 2006; Trichet 2005). This implies that much more work lies ahead to meaningfully and efficiently understand how technology is reshaping the insurance industry and what are the related risks, e.g. cybercrime. It also calls for a better understanding of the role of insurance in dealing with the regulation of customer data, and traditional insurers will need to ensure they keep up-to-date to retain their prominent role at the customer interface.

This special issue of *The Geneva Papers* contributes to this understanding by addressing three important issues: the use of technology innovations within

✉ Isabelle Flückiger
isabelle.flueckiger@math.ethz.ch

Meryem Duygun
meryem.duygun@nottingham.ac.uk

1 ETH Zurich, Zurich, Switzerland

2 Nottingham University Business School, Nottingham, UK

insurance companies, the concept of open insurance and its relationship with customer data regulation and the management of cybersecurity and cyber risks. We provide below a brief summary of the eight papers included in the issue.

The paper by Brandon Saliba, Jonathan Spiteri and Dominic Cortis investigates and compares the results of 272 runners and 265 soccer players to determine the current use of wearables, as well as people's propensity to purchase insurance services that are coupled with such technologies. Using a Logit model, the authors show that soccer players are more likely to purchase insurance as a means of protecting future income, especially at a younger age. Moreover, their findings highlight that the perception of and experience with technology are key determinants of the use of wearables and disposition to share insurance data for both cohorts, with wearables more likely to be adopted if offered at a lower pricing point.

The paper by Davide Lanfranchi and Laura Grassi examines the use of technology innovations within insurance companies. Focusing on the initiatives put in place by the most influential insurers at the global level, the authors frame the innovation mechanisms in the industry, highlighting four rationales underpinning these initiatives (Adaption, Expansion, Reaction and Aggression), which differ according to the relevance of the technology in use and innovation to the portfolio of risks covered. Overall, their findings show that insurance companies have the room and capability to innovate, in many cases using technological applications to cover new and existing risks. Moreover, it is highlighted that innovations based on new or existing technologies determine the success and competitiveness of the business.

The paper by Xiao Hu, Zhengjie Wang and Jun Liu studies the impact of digital finance on household insurance purchases and explores its mechanisms by using micro-data in China. The results indicate that digital finance can promote household insurance purchases by increasing residents' financial literacy and their accessibility to online financial services. A heterogeneity analysis reveals that digital finance has a more positive effect on the insurance purchases of households located in less developed and rural areas with fewer assets and lower income. The results also show that digital finance enhances the purchase of property and life rather than health insurance and that the breadth of coverage and depth of usage of digital finance have more significant impacts on household insurance purchases than the level of digitalisation.

The paper by Christian Eckert, Christof Neunsinger and Katrin Osterrieder analyses the impact of digital transformation on managing customer satisfaction. The authors identify and assess a set of digital applications from a comprehensive review of 106 academic papers and publications from the industry and supervisory authorities. They go on to illustrate opportunities to increase customer satisfaction and their impact on insurers at four major customer touchpoints: contract conclusion, contract modification, the event of damage and further contacts.

The paper by Angela Zeier Röschmann, Matthias Erny and Joël Wagner studies on-demand insurance and considers three perspectives. First, the authors define the concept and study the current market landscape of offerings, leading to a characterisation of the phenomenon. Second, they analyse the on-demand insurance business model, discuss how value is created and develop a taxonomy of the dimensions among business model components. Third, they describe the awareness and interest of potential customers in Switzerland using novel data recorded from a recent consumer survey. Their findings show that InsurTech companies address emerging customer needs and that traditional incumbent insurers must innovate to remain competitive in this space.

The paper by Willem Standaert and Steve Muylle investigates the literature and performs 30 interviews with industry experts in Europe in order to define open insurance, identify its key drivers and discuss the dimensions and performance impact of open insurance strategies. Three categories of drivers of open insurance, namely regulation and standards, the market and technology, are identified and discussed. The insights of this paper can help executives to develop a better understanding of open insurance and formulate an open insurance strategy that provides performance benefits to them, their customers and third parties.

The paper by Jacob Dexe, Ulrik Franke, Kasia Söderlund, Niels van Berkel, Rikke Hagensby Jensen, Nea Lepinkäinen and Juho Vaiste investigates how European insurance companies have navigated automated decision-making on the basis of the European General Data Protection Regulation (GDPR). By recruiting volunteer insurance customers, the authors sent requests to 26 insurance companies in Denmark, Finland, The Netherlands, Poland and Sweden on how insurance premiums are set. Their findings illustrate the practice of responding to GDPR information requests and the authors identify possible explanations for shortcomings and omissions in the responses. The paper also adds to existing research by showing how the wording in the different language versions of the GDPR could lead to different interpretations.

Finally, the extant academic and industry literature on cybersecurity and cyber risk management with a particular focus on data availability is analysed in the paper by Frank Cremer, Barry Sheehan, Michael Fortmann, Arash N. Kia, Martin Mullins, Finbarr Murphy and Stefan Materne. From a preliminary search resulting in 5219 cyber peer-reviewed studies, the application of the systematic methodology resulted in 79 unique datasets. The authors argue that the lack of available data on cyber risk poses a serious problem for stakeholders seeking to tackle this issue. In particular, they identify a lacuna in open databases that undermines collective endeavours to better manage this set of risks.

This set of papers contributes to the main aim of this journal, which is to improve the scientific knowledge of insurance and to offer a rigorous forum among concerned parties. This special issue provides some important messages for policymakers and other stakeholders on the potential integration between insurance and digital finance, which could potentially lead to a change in the insurance underwriting system, providing benefits but also posing risks for both insurance providers and users. This can lead to insurance services being more proactive in transforming the industry on a large scale for the foreseeable future. The extent to which disruption occurs and exactly how it will happen remain to be seen. However, it seems that InsurTechs will play an increasing role as digital innovation in the insurance world unfolds. We hope that the topics covered in the issue will motivate academics to further explore the impact of digitalisation on the insurance industry.

References

Buchak, G., G. Matvos, T. Piskorski, and A. Seru. 2018. Fintech, regulatory arbitrage, and the rise of shadow banks. *Journal of Financial Economics* 130 (3): 453–483.

Frame, S., W. Larry Wall, and L. White. 2019. Technological change and financial innovation in banking: Some implications for fintech. In *Oxford handbook of banking*, 3rd ed., ed. A.N. Berger, P. Mullineaux, and J.O.S. Wilson. Oxford: Oxford University Press.

Navaretti, G.B., G. Calzolari, J.M. Mansilla-Fernandez, and A.F. Pozzolo. 2017. Fintech and banking. Friends or foes? *European Economy Banks, Regulation, and the Real Sector* 2: 9–30.

Schiro, J.J. 2006. External forces impacting the insurance industry: Threats from regulation. *The Geneva Papers on Risk and Insurance—Issues and Practice* 31 (1): 25–30.

Thakor, A.V. 2020. Fintech and banking: What do we know? *Journal of Financial Intermediation* 41: 100833.

Trichet, J.C. 2005. Financial stability and the insurance sector. *The Geneva Papers on Risk and Insurance—Issues and Practice* 30 (1): 65–71.