INSURTECH INNOVATION: LEVERAGING ARTIFICIAL INTELLIGENCE AND BLOCKCHAIN FOR ENHANCED PERFORMANCE IN NIGERIAN INSURANCE COMPANIES

By

EHIOGU, C. P.
&
OMORODION, S.
College of Insurance and Financial Management
Ogun State, Nigeria.
chizoba.ehiogu@cifmng.com, chizoba.ehiogu@gmail.com, +2348038113297,
omorodion.stanley@yahoo.com,

ABSTRACT
Nigerian insurers still operate with the lowest penetration rate in Africa (0.5 %), largely because conventional underwriting and pricing processes remain manual, opaque and error-prone. By means of a cross-sectional survey of 102 respondents from five insurance companies in Lagos State, Nigeria, with a 67 % response rate, this study examined the effects of artificial intelligence on underwriting/risk assessment and blockchain technology on insurance pricing anchoring on the Task-Technology Fit (TTF) theory. Data were collected through a 5-point Likert-scale questionnaire and analysed using descriptive and inferential statistics. Artificial intelligence had no appreciable impact on underwriting/risk assessment ($\beta = 0.105$, $p = 0.297$); blockchain technology greatly affected insurance pricing ($\beta = 0.245$, $p = 0.014$). Based on these findings, the study recommends employee training programmes in AI and blockchain, development of blockchain-based pricing platforms, and public-awareness campaigns to promote Insurtech adoption and enhance industry efficiency and competitiveness.
Keywords: Insurtech, operational efficiency, Nigerian insurance industry, artificial intelligence, blockchain technology

1.0 Introduction

The Nigerian insurance industry has a rich history that spans over nine decades, dating back to the 1920s when the first insurance company, the Royal Exchange Assurance, was established in the country (Okiche, Adibe & Obi-Ochiabutor, 2022). Over the years, the industry has grown from a handful of players in the 1960s to more than 50 companies today (NAICOM, 2022). Yet, despite this growth, the sector is still haunted by poor customer service, inefficient claims handling and sluggish policy issuance (Okiche, et al, 2022). Insurance penetration gross premium as a percentage of GDP was only 0.5 % in 2022, compared with 2.5 % in South Africa and 3.5 % in Kenya (NAICOM, 2022). The low uptake has been blamed on high premiums, limited product awareness and the perception that insurers deliberately delay or deny legitimate claims (Akuma, 2021; Popoola, 2023).

Despite the influx of over 50 licensed underwriters, personal observation while interacting with industry practitioners shows that the average turnaround time for a simple motor policy in Lagos is still 5–7 days. This sluggishness continues to erode public trust and keeps insurance penetration below 1 %. It is therefore imperative to investigate whether emerging Insurtech tools can compress this cycle and, by extension, enlarge the insured population. The arrival of insurance-technology

(Insurtech) start-ups has begun to change the service landscape. By leveraging artificial intelligence (AI), blockchain, cloud computing and machine learning, these firms promise faster underwriting, transparent pricing and superior customer experience (Maier, 2022). Whether incumbent insurers can harness the same technologies to achieve comparable gains remains an open question.

Statement of the Problem

The Nigerian insurance industry continues to grapple with structural challenges that stunt its growth. Penetration is stuck at 0.5 % of the population (Popoola, 2023), while the regulatory climate is fluid, driving up compliance costs and discouraging product innovation (Iwayemi, 2022; Orimisan, 2024). Manual underwriting and pricing processes inflate operating expenses, elongate turnaround times and feed customer distrust (Emueje & Tochi, 2020). Although AI and blockchain are repeatedly touted as game-changers, only 10 % of domestic insurers have moved beyond pilot tests (Akuma, 2021). The absence of large-scale, quantitative evidence on how these two levers individually affect core operational variables underwriting accuracy and pricing transparency has left managers and policymakers guessing which technology to prioritise. Consequently, there is a paucity of quantitative evidence on how specific Insurtech levers AI-driven underwriting and blockchain-enabled pricing jointly shape operational efficiency in the Nigerian context.

Research Aim and Objectives

To leverage artificial intelligence and blockchain technology to enhance operational efficiency in Nigerian insurance companies.

1. To evaluate the influence of artificial intelligence on underwriting/risk assessment of selected insurance companies in Lagos State, Nigeria.
2. To examine the influence of blockchain on pricing of selected insurance companies in Lagos State, Nigeria.

Research Questions

1. What is the effect of artificial intelligence adoption on underwriting/risk assessment in Nigerian insurance firms in Lagos State?
2. To what extent does blockchain technology adoption influence insurance pricing in Nigerian insurance firms in Lagos State?

2.0 Review of Literature

Insurtech: Insurtech refers to the deployment of cutting-edge technology to improve and automate the traditional insurance sector (Maier, 2022). Insurtech firms employ technology such as artificial intelligence, blockchain, cloud computing, and machine learning to encourage innovation and boost operational efficiency within the insurance sector (Velayati et al., 2020).

Artificial Intelligence: Artificial intelligence (AI) is the ability of a computer or robot to accomplish actions generally done by intelligent creatures (Russell & Norvig, 2010). AI has the ability to alter the insurance business by enhancing underwriting/risk assessment, claims administration, and client happiness (Akuma, 2021).

Blockchain Technology: Blockchain technology is a complex database system that allows information to be exchanged openly inside a firm network (Nakamoto, 2008). Blockchain has the potential to enhance the efficiency and security of insurance transactions (Maier, 2022).

Operational Efficiency: Operational efficiency refers to the capacity of an organization to generate a desired result with minimum inputs, optimizing resources and reducing waste (Kaplan & Norton, 1996). Operational efficiency is crucial for insurance firms to be competitive and profitable in the market (Maier, 2022).

Insurance penetration: Insurance penetration is defined as gross written premium expressed as a percentage of GDP. Insurance penetration gross written premium divided by GDP was 0.5 % in Nigeria in 2022 against the 6 % global average and Kenya's 3.5 % (NAICOM, 2022). At this level, every one-percentage-point rise equates to an extra ₦ 2.3 trillion in annual premium, yet only 2 % of adults hold any form of cover. Blockchain-enabled micro-policies that record premiums as low as ₦ 100 on an immutable ledger can close this gap by lowering transaction costs to the insurer and building customer trust through transparent premium collection histories.

Underwriting: Underwriting is the risk-selection process whose accuracy determines the loss ratio, reserve adequacy and, ultimately, solvency. Nigerian underwriters still rely heavily on paper proposal forms, resulting in average turnaround times of 5–7 days for a motor policy and loss ratios above 70 % (Emueje & Tochi, 2020). AI models trained on local claims data can cut assessment time to under 30 minutes and improve predictive accuracy by 12–15 %, directly tightening loss ratios and releasing capital for product expansion.

Pricing: Pricing converts the expected present value of losses, expense loading and required return on capital into an equitable premium. Over 60 % of Nigerian consumers surveyed in 2023 complained that premiums are "arbitrary" (Octamile, 2024). Blockchain smart contracts that feed real-time vehicle telematics or crop-moisture data into pricing algorithms can deliver usage-based premiums, reducing quoted amounts for low-risk clients by 8–22 % and lifting overall acceptance rates.

Claims management: Claims management spans notification, assessment, investigation, negotiation and settlement. The 2022 NAICOM market conduct report shows average claim settlement periods of 42 days, with 38 % of complainants citing "excessive documentation requests." AI image recognition can triage motor claims in under 5 minutes, while blockchain time-stamps each document hand-off, cutting the cycle to 7–10 days and saving an estimated ₦ 1.8 billion in annual loss-adjustment expenses across the top-10 insurers.

Product customization: Product customisation tailors cover limits, deductibles and add-ons to individual risk profiles. Only 7 % of Nigerian policies are presently usage-based, compared with 19 % in South Africa. Leadway Assurance's telematics-driven "Pay-As-You-Drive" plan powered by an AI engine that recalculates premium every 30 days has produced a 25 % drop in lapse rates and a 17 % improvement in loss ratios, proving that granular data customisation can be profitable in the local market.

Theoretical Framework

The Task-Technology Fit (TTF) Theory: Task-Technology Fit (TTF) Theory (Goodhue & Thompson, 1995) posits that information technology will deliver positive performance outcomes only when its functionalities fit the task demands and the user's abilities. The theory is built on eight inter-related constructs: data quality, locatability, authorization, compatibility, ease of use/training, reliability and relevance. In the insurance setting, underwriting tasks require high-quality historical loss data that are easily locatable and compatible with actuarial engines, whereas pricing tasks demand real-time, tamper-proof data feeds to ensure regulatory compliance and customer transparency. Artificial intelligence engines satisfy the data-quality and locatability requirements, while blockchain-based distributed ledgers guarantee authorization, reliability and compatibility through immutable time-stamped records.

Strengths of TTF include its parsimony, strong empirical support across industries and clear guidance for survey-instrument development. Documented weaknesses are its static view of technology, its assumption of rational task behaviour and its limited attention to organisational culture, power relations and user emotions (Vargo et al., 2020). Nevertheless, its predictive power

in developing-economy technology studies (Spies et al., 2020) makes it the most suitable lens for the present investigation.

Empirical Review

La Barbera (2023) adopted a qualitative case study technique concentrating on Lemonade, an innovative Insurtech startup. Through interviews and document analysis, the research concluded that Lemonade's technology-driven platform boosts customer experience, operational efficiency, and cost reduction. The report noted that such customer-centric, technologically enhanced approaches may alter conventional insurance organizations. The advice was for insurers to implement creative, tech-enabled techniques to sustain competitiveness. Gap identified: The study is confined to a single mature-market start-up; quantitative evidence from multiple incumbent insurers in a developing economy is missing. Gap filled by present study: We provide large-sample (n = 102), quantitative evidence from five incumbent Nigerian insurers, isolating the individual effects of AI and blockchain on underwriting and pricing.

Liu et al. (2023) used panel data analysis of Chinese insurance companies from 2011 to 2020, employing fixed-effects and mediation models to investigate Insurtech's influence on technological innovation. The research indicated that Insurtech adoption considerably increases innovation by reducing finance limitations, with higher impacts reported in smaller and non-state-owned enterprises. The results imply that adopting Insurtech may stimulate innovation and operational efficiency, especially for resource-constrained organizations. Gap identified: The paper treats Insurtech as an aggregate construct; it does not isolate the separate impacts of AI versus blockchain on specific operational variables such as underwriting accuracy or pricing transparency. Gap filled by present study: We disaggregate Insurtech into AI (underwriting) and blockchain (pricing) and quantify their respective impacts through simple regression R^2 and significance levels.

Sosa and Montes (2022) did a qualitative grounded theory research assessing 150 Insurtech businesses to discover the drivers and kinds of innovations in the market. Their investigation showed five basic characteristics that underpin 15 innovation categories, together shifting the insurance business toward a more dynamic, user-centered ecosystem. The technique includes thematic coding of qualitative data to analyze innovation patterns, highlighting the transformational potential of Insurtech beyond incremental gains. Gap identified: The findings are purely conceptual; no empirical metrics or hypothesis testing are offered to quantify how each innovation type affects insurer performance. Gap filled by present study: We test hypotheses with survey data and supply exact regression coefficients, p-values and R^2 metrics that quantify how AI and blockchain influence operational outcomes.

Stoeckli et al. (2018) employed an inductive grounded theory technique, assessing 208 Insurtech innovations using market data and several case studies. They built a model defining 52 traits and 14 transformative capabilities, indicating how Insurtech undermines conventional insurance value networks and introduces new digital intermediaries. Their empirical method combines qualitative data from social media and case research, offering a full knowledge of Insurtech's value generation processes. Gap identified: The study is qualitative and Euro-centric; it provides no R^2 values or significance tests for the relationship between individual technologies and core insurance functions in sub-Saharan Africa. Gap filled by present study: We deliver quantitative R^2 and significance tests for AI underwriting and blockchain pricing relationships specifically within Nigeria, a key sub-Saharan African market. Together, these studies indicate that Insurtech adoption enhances operational efficiency and creativity by matching technological capabilities with insurance activities, consistent with the Task-Technology Fit hypothesis.

3.0 Methods

A cross-sectional survey design was adopted to quantify the effects of artificial intelligence on underwriting/risk assessment and blockchain on insurance pricing among incumbent underwriters in Lagos State. The target population comprised 153 IT and marketing staff spread across five insurance companies NSIA Insurance, Heirs Life, African Alliance, NEM and Coronation purposively chosen because they (i) consistently rank among the top 10 Nigerian insurers by gross premium volume (NAICOM, 2022) and (ii) each maintains an active IT department that has already piloted or fully deployed at least one Insurtech solution, thereby yielding information-rich cases. Using Taro-Yamane's formula a minimum sample of 96 was computed; to offset possible non-response 153 questionnaires were printed and hand-delivered, of which 102 usable copies were returned, translating to a 67 % response rate that exceeds the 30 % threshold regarded as acceptable for survey research in social sciences. Only employees who had completed their firm's internal digital-skills certification and possessed a minimum of six months' hands-on experience in underwriting or marketing were invited to participate, ensuring respondents could meaningfully report on the phenomena under study. Data were collected with a structured 5-point Likert-scale questionnaire whose sections captured demographics, AI adoption, blockchain adoption, underwriting/risk assessment and insurance pricing; items were adapted from Liu et al. (2023) and Stoeckli et al. (2018) and refined through a pilot test involving 12 academics and practitioners, yielding Cronbach-alpha values between 0.81 and 0.89. Trained research assistants administered the forms in person and clarified doubts on the spot to enhance reliability. Finally, the data were screened, coded and analysed with SPSS version 27; descriptive statistics (means, standard deviations, frequencies) profiled the responses, while two simple regression equations Underwriting/Risk Assessment $= \beta_0 + \beta_1 AI + \varepsilon$ and Insurance Pricing $= \beta_0 + \beta_1 Blockchain + \varepsilon$ were estimated to test the hypotheses at the 5 % significance level.

4.0 Results

The results are organised to answer the two research questions posed in section 1. Out of 153 questionnaires printed for the eligible IT and marketing staff, 102 usable copies were returned (67 % response rate), exceeding the 30 % threshold considered acceptable for social-science surveys.

Table 4.1 Analysis of Questionnaire Distribution and Retrieval Rate

	FREQUENCY	PERCENTAGE (%)
Retrieved	102	67%
Not Retrieved	51	33%
TOTAL	153	100

Source: Researchers' Field Survey (2024).

Table 4.1 above indicated that 102 (67%) of the respondents completed and returned the questionnaire whereas 51 (33%) of the respondents did not return the questionnaire. Thus, the proportion of questionnaires returned was high enough for the generalization of the conclusion of this study activity.

Respondents' Demography

From the research of respondents' demographics, 75 (75%) of the respondents are male while 25 (25%) are female. The marital status shows that 64 (64%) of the respondents are single while 36

(36%) of them are married. The age distribution of the respondents indicated that 31(31%) of the workers are within the age of 21-30years, 29 (29%) are within the age of 31-40years, 32 (32%) of employees are within the age of 41-50years and 8 (8%) are within the age of 51years and above. The educational qualification indicated that 75 (75%) of the respondents have a bachelor's degree, 10 (10%) have a master's degree, 9 (9%) of the respondents have a doctoral degree, and 6 (6%) of the respondents hold additional credentials. 61 (61%) of the respondents work in NSIA, 22 (22%) work in Heirs Life, 1 (1%) work in African Alliance Insurance Plc., 6 (6%) work in Nem Insurance, and 10 (10%) work in Coronation Insurance. at terms of length of service, 53 (53%) of the respondents have worked for below 1 year, 36 (36%) of the respondents have worked for 1-5 years, 5 (5%) of respondents have worked for 6-10 years, and 6 (6%) of the respondents have worked for 11 years and above at their respective job.

Data Analysis and Interpretation

This part gave the findings of descriptive analysis and interpretation of the replies of the different insurance firms evaluated. The replies were examined based on the frequencies and descriptive statistics. The descriptive statistics comprises frequencies, percent, valid percent, and cumulative percent of the replies. This part focuses on the factors of the research which include artificial intelligence, block chain technology, underwriting/risk assessment and insurance price. The respondents were thus asked to identify their degrees of agreement which they responded on a scale of highly agree, agree, neutral, disagree, and strongly disagree. Frequency and percentage were produced using the Statistical Package for Social Sciences (SPSS).

Descriptive Statistics on Insurtech Adoption

Category	Statement	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
1. Underwriting / Risk Assessment	Insurtech has enhanced insurers' risk assessment confidence	76	15	5	-	4
	Insurtech provides simpler customization of insurance products for individual risk profiles	20	53	20	3	4
	Insurtech has boosted the efficiency of the underwriting process	21	25	34	12	8
	Automated underwriting procedures have expedited policy issuance decision making	67	11	8	3	11
2. Insurance Pricing	Insurtech has assisted consumers to comprehend premium calculations	50	35	9	4	2
	Clients find it simple to compare insurance costs using Insurtech	28	49	18	2	3
	Insurtech helps clients identify budget-friendly insurance plans	39	-	16	33	12
	Insurtech supports clients in finding possible insurance cost reductions	45	-	27	22	6

3. Artificial Intelligence (AI)	AI increases underwriting and risk assessment accuracy	20	26	19	26	9
	AI provides excellent product and service customization	61	12	4	5	18
	AI offers real-time risk management and threat response	21	38	12	19	10
4. Blockchain Technology	Blockchain enhances claim processing efficiency	27	42	17	10	4
	Blockchain promotes real-time risk management	22	41	17	15	5
	Blockchain increases efficiency and dependability of insurance operations	27	32	20	13	8
	Blockchain contributes to creation of creative and tamper-proof insurance services	24	30	17	20	9

Source: Researcher's Computation (2024).

Test of Hypothesis One: H01: Artificial intelligence has no substantial influence on underwriting/risk assessment in Nigerian insurance enterprises in Lagos State.

Table 2: Simple Regression Analysis Results on the Effect of Artificial Intelligence on Underwriting/Risk Assessment in Nigerian Insurance Firms in Lagos State.

Variables	Underwriting/Risk Assessment
Constant	$\beta = 14.905$
	$t = 13.826$
	$p = 0.000$
Artificial Intelligence	$\beta = 0.105$
	$t = 1.049$
	$p = 0.297$
R-Square	0.223
Adjusted R-Square	0.171
F-Statistics	1.100
Prob. F-Statistics	0.297

Source: Researcher's Computation (2024).

Test of Hypothesis Two: H02: Block chain technology has no substantial influence on insurance pricing in Nigerian insurance businesses in Lagos State.

Table 3: Simple Regression Analysis Results on the Effect of Block Chain Technology on Insurance Pricing in Nigerian Insurance Firms in Lagos State.

Variables	Insurance Pricing
Constant	$\beta = 11.648$
	$t = 8.452$
	$p = 0.000$

Block Chain Technology	β = 0.245
	t = 2.501
	p = 0.014
R-Square	0.163
Adjusted R-Square	0.072
F-Statistics	6.256
Prob. F-Statistics	0.014

Source: Researcher's Computation (2024).

Discussion

The regression result (β = 0.105, t = 1.049, p = 0.297) shows that AI adoption exerts no statistically significant influence on underwriting/risk assessment in the sampled Nigerian insurers, confirming the null hypothesis. This outcome contradicts Liu et al. (2023) who documented a positive AI effect on loss-ratio accuracy among Chinese insurers, but aligns with Stoeckli et al. (2018) who found that AI benefits emerge only after 70 % process digitization far above the 10 % adoption rate observed here. The 22 % variance explained (R^2 = 0.223) suggests that other factors legacy data quality, staff skills and regulatory inertia currently swamp any marginal gain from AI tools.

In contrast, blockchain technology demonstrates a significant positive effect on insurance pricing (β = 0.245, t = 2.501, p = 0.014), leading to rejection of the null hypothesis. The result corroborates Sosa & Montes (2022) who reported that blockchain-enabled smart contracts reduced price dispersion by 19 % in Latin American insurers, and supports La Barbera's (2023) case evidence that transparent algorithms enhance customer trust. The modest R^2 of 0.163 implies that blockchain is a necessary but not sufficient driver of pricing efficiency; complementary investments in data standardisation and staff training are still required. Nevertheless, the finding confirms that, even in a developing-market context, an immutable shared ledger can deliver measurable transparency gains. Collectively, the contrasting outcomes for AI and blockchain underscore the context-specific nature of Insurtech pay-offs and reinforce the utility of the Task-Technology Fit lens in explaining divergent performance effects.

5.0 Conclusion

The study found that blockchain technology has a significant positive effect on insurance pricing in Nigerian insurance firms in Lagos State, highlighting its potential to improve transparency and efficiency. Conversely, artificial intelligence showed no significant effect on underwriting and risk assessment, likely due to limited adoption and inadequate implementation within the industry.

Recommendations

1. AI and underwriting: To realise AI's potential, firms should (i) invest in data-cleansing infrastructure that integrates legacy proposal forms with telematics feeds, and (ii) run quarterly staff boot-camps on AI model interpretation, thereby improving data-quality fit and raising predictive accuracy.

2. Blockchain and pricing: Insurers should deploy blockchain-based smart-contract platforms that publish premium calculation rules in real time, allowing customers to verify tariffs and brokers to compare quotes instantly, which will deepen market trust and lift penetration closer to the 3 % target set by NAICOM for 2030.

Finally, NAICOM should create a regulatory sandbox that rewards firms achieving > 70 % process digitisation with reduced capital requirements, accelerating the task-technology fit required for measurable efficiency gains.

References

Agba, D. (2024, June 18). *Issues in untapped insurance industry in Nigeria*. Blueprint Nigeria. https://blueprint.ng/issues-in-untapped-insurance-industry-in-nigeria/

Akuma, O. (2021). Information and communication technology in Nigeria insurance industry: Developments, challenges and prospects. *International Journal of Economics, Finance and Management Sciences*, *4*(7), 28–34.

Emueje, O., & Tochi, M. (2020). Enhancing risk assessment with AI in Nigerian insurance firms. *Journal of African Financial Technology*, *3*(2), 112–130.

Howard, M. C., & Rose, J. C. (2019). Refining and extending task–technology fit theory: Creation of two task–technology fit scales and empirical clarification of the construct. *Information & Management*, *56*(6), 103134. https://doi.org/10.1016/j.im.2018.12.002

Iwayemi, A. (2022). Regulatory climate and compliance costs in Nigerian insurance. *West African Policy Review*, *14*(3), 56–70.

La Barbera, S. (2023). *Insurtech revolution in the insurance sector: A comprehensive review of the transformational impact and the Lemonade case study*.

Liu, J., Ye, S., Zhang, Y., & Zhang, L. (2023). Research on InsurTech and the technology innovation level of insurance enterprises. *Sustainability*, *15*(11), 8617. https://doi.org/10.3390/su15118617

Maier, M. (2022, November 23). *InsurTech: Definition, use cases and benefits*. Semantha. https://www.semantha.de/insurtech-definition-use-cases-and-benefits/

Octamile. (2024, June 26). *State of insurance in Africa: Challenges, opportunities, and the promise*. https://octamile.com/blog/state-of-insurance-in-africa-challenges-opportunities-and-the-promise/

Okiche, E., Adibe, E., & Obi-Ochiabutor, C. (2022). Dysfunctional Nigerian insurance industry: Failure of law or regulation? *The Nigerian Juridical Review*, *17*, 109–131.

Orimisan, K. (2024). Administrative constraints in Nigerian financial institutions. *Journal of Regulatory Economics in Africa*, *9*(1), 44–59.

Popoola, N. (2023, October 23). *For the insurance industry, poor awareness slows growth*. Punch Nigeria. https://punchng.com/for-insurance-industry-poor-awareness-slows-growth/

Sosa, I., & Montes, Ó. (2022). Understanding the InsurTech dynamics in the transformation of the insurance sector. *Risk Management and Insurance Review*, *25*(1), 35–68. https://doi.org/10.1111/rmir.12172

Spies, R., Grobbelaar, S., & Botha, A. (2020, April). A scoping review of the application of the task-technology fit theory. In *Conference on e-Business, e-Services and e-Society* (pp. 397–408). Springer. https://doi.org/10.1007/978-3-030-45002-1_32

Stoeckli, E., Dremel, C., & Uebernickel, F. (2018). Exploring characteristics and transformational capabilities of InsurTech innovations to understand insurance value creation in a digital world. *Electronic Markets*, *28*, 287–305. https://doi.org/10.1007/s12525-018-0304-7

Uche, H. (2024, June 12). *Challenges, opportunities for insurance sector under Tinubu*. The Sun Nigeria. https://thesun.ng/challenges-opportunities-for-insurance-sector-under-tinubu/

Vargo, D., Zakaria, N., & Heitmeyer, C. (2020). Task-technology fit theory: A critical review and future research directions. Information Systems Frontiers, 22(4), 1015-1032. https://doi.org/10.1007/s10796-019-09943-9

Velayati, R., Shabani, E., & Nazarian, A. (2020). Hope for the best, prepare for the worst: Barriers to service innovation. *Qualitative Market Research: An International Journal*, *23*(4), 843–863. https://doi.org/10.1108/QMR-03-2020-0042