An Assessment of the Adoption and Usage of E-Commerce by Insurance Firms in Zambia

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Abstract

The last decade has seen a significant impact of digital transformation on the insurance industry as regards the creation of value for customers and sustaining superior performance and competitive advantage. Substantial future influences of e-commerce are also anticipated on product design, product delivery and coverage packaging. In advanced markets, insurance companies are starting to provide a broad range of online services through novel technologies such as Insurtech. In Zambia, insurance firms are augmenting their delivery channels with e-commerce by increasing their web presence. In this study, we investigate the current status of e-commerce adoption and usage by Zambian insurers. The study sphere and test sample are the existing websites of the life and general insurance companies. The methodology consists of analyzing the presence of selected website features by indexing them based on their role as service provision channels. The second part of the assessment evaluates the true usage of these features by the insurers through feedback questionnaires. Using the UN-ASPA e-adoption framework our findings show that the Zambian insurers are still largely in the early e-adoption and usage stages and have not yet developed a completely integrated web presence. This study is of present-day importance especially now that e-insurance is being explored as one of the solutions to insurance wider availability, transparency, financial inclusion and multi-channel marketing in Zambia.

Keywords

E-Commerce, Digital Transformation, E-Adoption, Insurers' Websites, Zambia

1. Introduction

The Internet and e-commerce are increasingly developing into key drivers of strategic transformation for business entities as well as governments. Several

works have been done that record such efforts (Simukanga, Phiri, Nyirenda, & Kalumbilo-Kabemba, 2018a; 2018b; Simukanga, Muhone, Mulenga, Phiri, & Nyirenda, 2018). E-commerce breaks down old business patterns, changes the cost structures and strategic approach, and, reorders linkages among sellers, buyers and everyone in between (Kalakota & Robinson, 2002). Most industry analysts believe that recent developments in e-commerce (like Insurtech) will radically change the value creation of the insurance industry, with multiple innovative ways of customer interaction, business processes, new products and delivery (Eling & Lehman, 2018). In insurance, e-commerce entails advertising, recommendation, negotiation, purchase of insurance policies and claim settlement through the Internet (Dasgupta & Sengupta, 2002). The Zambian insurance sector has not yet exploited the full potential of e-commerce.

In developing countries like Zambia, successful adoption of e-commerce faces a number of challenges including, nonexistent or unreliable telecommunications infrastructure (Alyoubi, 2015) and power supply, limited access to online payment systems, and high costs of personal computers/access to Internet. The lack of human resources; internal resistance; unready customers; lack of support; security issues; unready business partners; internal constraints; a lack of IT resources and also Socio-cultural barriers. Inadequate skills and education are also an inhibition for e-commerce. Yet, if successfully implemented, e-commerce offers the consumer the benefits of modernization of value in the form of helpful information, scope of service, customization, convenience, speed, accuracy, engagement, accessibility and price.

The objectives of the study were as follows:

1) To investigate the current stages of e-insurance adoption attained by the Zambian insurance firms.

2) To investigate whether the insurers in Zambia are actually using their websites to conduct some level of e-commerce.

2. Theoretical Background and Hypothesis

In today's global economy the application of information technology (IT) is largely regarded as essential in augmenting the resourcefulness of any country. It is now generally understood that IT has a marked effect on the productivity and efficiency gains for firms. In the insurance industry there have been some steady movements and activities towards increased utilization of the internet in their commercial exchanges.

This appraisal and review of literature brings to light the function of the insurance industry in an economy, electronic commerce and the influence and impact of the internet on the insurance industry.

2.1. The Insurance Industry

A well-established, well-regulated and functioning insurance sector plays a major part in the development of any good economic system by providing a solid

support structure for its success (Akinlo & Apanisile, 2014). It is, therefore, critical that the industry continues to evolve as it provides risk transfer solutions through its products and services.

Insurance is designed to provide financial stability to businesses and individuals. It also offers risk management support as an additional function. Businesses can continue with operations and individuals can continue to receive income through the pecuniary compensation that insurance provides when an insured peril occurs that results in bodily harm or property damage.

Innovation through new technologies is a strategic agent of change in the financial services sector and this has led to immense gains in efficiency. Technology creates prospects for new methods of providing service plus greater opportunities for collection of data and detecting fraud that can result in improved identification of risk and risk reduction measures, which are known as "InsurTech" (OECD, 2017).

2.1.1. The Business Process and Value Chain for Insurance

The term value chain (Porter, 1985) was conceived by a Harvard Business School Professor, Michael Porter and relates to the manifold business processes and activities involved in conducting a service or creating a product. This concept shows how firms can differentiate their products/services by evaluating the chain of activities within the company to create a competitive advantage in the flooded market.

The objective of this strategic management tool is to optimize the creation of value while minimizing costs. The value is that amount customers are willing to pay against what a company offers them, and the measure is the total revenue. A company is said to be profitable where the value it generates exceeds the costs related to the creation of the product or service.

2.1.2. The Impact of Technology on the Value Chain

Technology transforms the manner insurance firms interact with consumers (e.g. sales, customer service) and how they adjust to their behavior (Kalakota & Robinson, 2002). While traditionally, customers required personal interaction (broker, agent, bank, etc.) for information on the products, they can now access most details online and make direct comparisons of products and prices through certain platforms. Some products can be procured online without any personal contact. Additionally, technologies like apps provide assistance and facilitate reporting of claims in the final phases of the value chain. Digitalization of every process along the value chain would initiate the automation of the whole business process. (e.g., automatized contract processing, automated claim notification) and decisions (e.g., automated product offerings, underwriting, and settlement of claims).

2.2. The Zambian Insurance Market

In 1991 when the third democratic republic formed government various law reforms were introduced including the privatization of state-owned firms and the

deregulation of the insurance industry. The Zambian insurance industry has ever since grown markedly and according to the Pensions and Insurance Authority website there are now 31 insurance providing entities that are registered and licensed on the Zambian Market as of December, 2020.

With the increasing rate of change in the macroeconomic, technological and social patterns and rules of conducting business, the insurance sector is faced with challenges that have become severe and complex. Drawing from previous assessment of e-commerce in the Zambian insurance industry, it can be concluded that the key limiting factor to the advancement of e-commerce is largely due to low levels of acceptance, sluggish diffusion of innovation within insurance providers, low investment levels in digital technology and the conditions of the market (underdeveloped financial systems).

2.3. The Internet and E-Commerce

Electronic commerce' (e-commerce) is defined by the Systems Audit and Control Association (ISACA) as the process by which organizations conduct business electronically with their customers, suppliers and other external business partners using the internet as an enabling technology.

With e-commerce consumers can electronically exchange goods and services without the limitations of time or distance. E-commerce also involves the pre-sale and post-sale activities throughout the supply chain (Chaffey, 2011).

2.3.1. Types of E-Commerce

There are six basic classifications of e-commerce applications based on transaction types. These include: Business-to-Consumer (B2C), Business-to-Business (B2B), Consumer-to-Consumer (C2C), Consumer-to-Business (C2B), Consumer-to-Administration (C2A) and Business-to-Administration (B2A). This research work is focused on the B2B and B2C electronic business software that can be employed in the Zambian Insurance Industry.

2.3.2. E-Commerce Technologies

E-commerce technology include: Electronic Data Interchange, Electronic Funds Transfer (EFT), Electronic Mail (e-mail), Imaging, Electronic Facsimile, Smart Card and Instant Messaging (IM).

2.3.3. Modern Advancements in Digital Technology

Digitalization is defined as, "the integration of the analogue and digital worlds with new technologies that enhance customer interaction, data availability and business processes" (Porter, 1985). Another study, describes "digitalization" as a process of "creating value in a new business environment", "creating value in the customer experience" and "building capabilities to support this structure" (Dorner & Edelman, 2015).

Eling & Lehmann (2018) summarizes the emergent wider categories of change in the insurance industry as follows: 1) the manner insurers interact with customers (for example, social media, robo-advisor and chatbots); 2) automation,

standardization and improvement of the effectiveness and efficiency of business processes (e.g. digital claims settlement, online sales); and 3) new technologies to generate prospects and to develop new products (e.g. cyber insurance) and to adapt existing ones (e.g. telematics insurance).

2.4. Adoption and Implementation of E-Commerce in Insurance

It is generally held that insurance firms are too sluggish to espouse evolving technologies in comparison with other businesses like retail, banks and travel, among which a number have completely reinvented their processes. Nevertheless, the insurance sector has made gradual progress in implementing some of the e-commerce technologies, investing significant sums in the expansion of internet activities (e.g., web design).

It is held by Swiss Re (2014) that practically all insurance providers today have an internet site offering information about the firm, the contact details and its products and services. A greater part of the corporate models for internet delivery are still undergoing development in the personal lines business. Insurance websites are largely informatory and factual sites mainly due to characteristics of the insurance product and also inadequate marketing history in the insurance industry. Insurance providers' web presentations are frequently considered to be traditionalist and uninteresting when compared to other industries.

Arguably, the suitability of insurance products for Internet offering varies and depends chiefly on the weight of personal assistance required for the product/service. Personal lines private motor, personal liability, domestic and term life insurance are products especially suited for Internet delivery.

The value of e-commerce and contactless payments has been highlighted by the existing COVID-19 crisis, stimulating actions by governments.

2.5. Critique of the Literature Review

There is still an absence of reliable empirical evidence on the extent, pace, degree and nature of factors influencing the speed of e-business growth in the insurance industry, specifically in developing African countries, despite the increasing number of studies and market research on e-commerce, by many authors and research firms across the globe. There is need for more research work to build on the existing literature especially for the insurance industry in emerging and developing economies.

Many studies have endeavored to present the factors that may impact the rate of adoption of e-commerce (e.g., Sherafati et al., 2014). The need for more studies focused on the insurance sector to explore region specific barriers for a closer understanding and to generate effective solutions cannot be more emphasized.

The adoption of electronic commerce involved both the application of e-commerce features (the stage of e-adoption attained) and usage of these features (Figure 1).
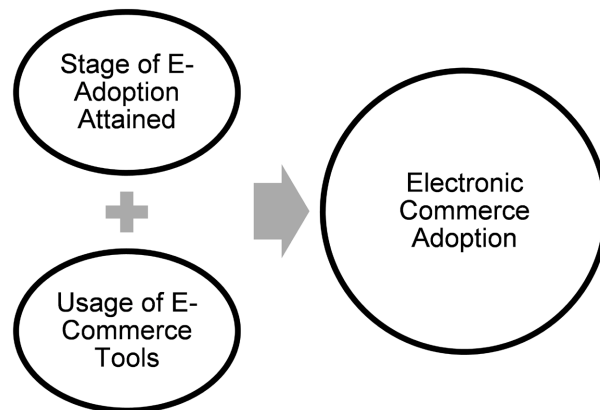
Figure 1. Research model.

3. Methods

Sample and Data Collection

Primary data was obtained in two parts based on a Quantitative approach. First, a website content analysis and second, a survey using questionnaires.

The first method involved content analysis of the websites of the general and life insurance firms in Zambia. The existence of selected features on the site has been codified to denote the extent of e-commerce adoption. To identify the stages of e-adoption, the study adapted the United Nations and American Society for Public Administration's (UN-ASPA) model (2001), to the insurance industry. The analysis of the websites has been carried out during the period October-December, 2021. The list of licensed insurance firms has been accessed from the Pensions and Insurance Authority website (http://www.pia.org.zm/).

The second part involved administering survey forms to obtain data related to the level of usage of the internet for e-commerce purposes. The questionnaire was designed by the author using the dichotomous nominal-scale questions that require yes or no answers. The survey targeted IT personnel as well as senior managers within the targeted insurance companies and, this was carried out between January and February, 2022. In the questionnaire sampling 18 selected insurers were targeted but responses were received from 13 of them which was a 72.2% response rate.

The population and sample for the first exercise consisted websites of 19 general insurance, 9 life insurance firms both in the private and public sectors, and the website of 1 bank as co-owners of 1 life assurance firm. The research encompassed the websites of all the currently licensed and trading general and life insurers in Zambia.

The second part was a field survey conducted by distributing questionnaires to 7 life and 11 general insurance companies using the purposive sampling approach. Responses were received from 5 life providers and 8 general insurers, giving a total response rate of 13 out of 18, which translates to a realistic 72.2 per cent. This investigation was conducted between 15th and 23rd February 2022.

The research has adapted the UN-ASPA standard e-government model (2001), with five stages to suite the insurance environment. The features on the insurers' websites that should be looked for to determine presence of elements representing the description of each stage were identified and codified (Table 1). Figure 2 shows the visualized phases of electronic commerce adoption based on the UN-ASPA standard.

Table 1. UN-ASPA model stages of online presence: adopted for insurance companies' websites.

STAGE of E-Commerce Adoption	Elements Present on Website
Stage One *Emerging* Web Presence	Contact Information
	Company Information
	Insurance Overview/FAQs
	Information about the products offered
	Feedback forms
Stage Two *Enhanced* Web Presence	Detailed product information
	Media Centre
	Links to other sites
Stage Three *Interactive* Web Presence	Availability of various forms in PDF
	Live Chat
	Online claim intimation
	Online Claim tracker
	Online Application tracker
	Online Policy Status
Stage Four *Transactional* Web Presence	Online Purchase
	Online premium payment
	Online accounts
Stage Five *Fully Integrated* Web Presence	Instant/Free quotes
	Online Insurance Market Place-Alliance with competitors
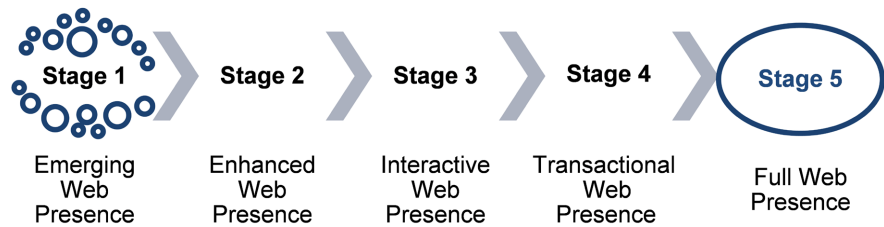
Figure 2. Electronic commerce adoption phase status based on UNASPA model.

4. Analyses and Results

4.1. Part I—Insurance Companies' Web Presence Phases

Table 2 summarizes the findings of content analysis of 28 insurance companies' websites that include 9 life insurance providers and 19 general insurance companies, involving a population of 26 private sector and 2 public sector providers in Zambia as of October, 2021. The overall percentage in terms of existence of these features on all the websites is noted under each stage of development.

Stage 1—*Emerging Web Presence*: The analysis shows that all the life and non-life firms have provided their company information and contact details on their websites. 4 life and 8 general insurers have discussed the significance of investing in insurance and also have a section for FAQs. All the websites except 1 life firm and 1 general insurer's sites have provided information on the products/services they offer and, 7 and 10 websites have the feedback option for customers in life and non-life respectively. It can therefore, be decided that 80% of the insurance firms have passed the first stage of emerging web presence.

Stage 2—*Enhanced Web Presence*: The results gave an overall adoption percentage of 73.4% and thus, it can be concluded that the Zambian Insurers have attained the enhanced web presence stage.

Stage 3—*Interactive Web Presence*: The interactive web presence is designed to help a firm gain customer linked benefits of e-insurance like increased sales, better stakeholder relationships, transaction transparency and so on (Odoyo & Nyangozi, 2011). The overall adoption level for this phase was observed at 40% for the Zambian insurers.

Stage 4—*Transactional Web Presence*: Only 3 insurers have online account and online premium payment facility and 2 general companies provide for online purchase of products. An overall adoption level of 19% was observed for this phase.

Stage 5—*Fully Integrated Web Presence*: Only 21% of all insurers have achieved some element of fully integrated phase of adoption.

4.1.1. Web Presence Stages ANOVA: Life/Non-Life and Private/Public Insurance Firms

We used the analysis of variance (ANOVA) statistical procedure to test the hypothesis for our study that there is no significant difference among Life/Non-life

Table 2. Stages of online presence: insurance companies' websites (N = 28).

STAGE|% of Adoption Overall	Elements Present on Website	Life Insurance No. (%) N=9	Non-Life Insurance No. (%) N=19	Private Sector No. (%) N=26	Public Sector No. (%) N=2
Stage One|80% *Emerging* **Web Presence**	Contact Information	9 (100)	19 (100)	26 (100)	2 (100)
	Company Information	8 (89)	19 (100)	25 (96)	2 (100)
	Insurance Overview/ FAQs	4 (44)	8 (42)	10 (38)	2 (100)
	Information about the products offered	9 (100)	18 (94)	25 (96)	2 (100)
	Feedback forms	7 (78)	10 (53)	15 (58)	2 (100)
Stage Two|73.4% *Enhanced* **Web Presence**	Detailed product information	8 (89)	11 (58)	17 (65)	2 (100)
	Media Centre	2 (22)	4 (21)	4 (15)	2 (100)
	Links to other sites	4 (44)	6 (32)	10 (38)	0 (0)
Stage Three|40% *Interactive* **Web Presence**	Availability of various forms in PDF	5 (56)	9 (47)	12 (46)	2 (100)
	Live Chat	1 (11)	4 (21)	2 (8)	2 (100)
	Online claim intimation	2(22)	4 (21)	2 (8)	2 (100)
	Online Claim tracker	0 (0)	0 (0)	0 (0)	0 (0)
	Online Application tracker	0 (0)	0 (0)	0 (0)	0 (0)
	Online Policy Status	0 (0)	2 (11)	2 (8)	0 (0)
Stage Four|19% *Transactional* **Web Presence**	Online Purchase	0 (0)	2 (11)	2(8)	0 (0)
	Online premium payment	1 (11)	2 (11)	2 (8)	1 (50)
	Online accounts	1 (11)	3 (16)	3 (12)	1 (50)
Stage Five|21% *Full* **Web Presence**	Instant/Free quotes	1 (11)	2 (11)	2 (10)	1 (50)
	Online Insurance Market Place-Alliance with competitors	0	0 (0)	0	0

and Private/Public providers on web existence of features suggesting stages of web presence. Taking the data from Table 1, the percentage frequency scores for each existing attribute were, by phase, subjected to one-way ANOVA test. It was seen that there was no significant difference between the groups in web presence in all the phases. Table 3 shows the results.

At a significance level of 5% (or 0.05) we were ready to accept a 5% chance of rejecting the null when it is true. Since our **p-values** are all above the significance level, we failed to reject the null hypothesis and concluded that there is no statistically significant difference in the mean percentage scores showing the stages of e-adoption.

Table 3. Web presence stages life (Non-Life) & private (Public) insurance companies.

Phases of Web Presence	Web Presence Hypothesis	Means	F	F-Critical	Significance	P-Value
1) Emerging	Life/Non-Life	82.20/77.8	0.07303		N/S	0.79381
	Private/Public	78.00/100	0.02542	3.23887	N/S	0.11120
2) Enhanced	Life/Non-Life	51.67/37.0	0.42252		N/S	0.55112
	Private/Public	39.33/66.67	0.56604	4.06618	N/S	0.49369
3) Interactive	Life/Non-Life	14.83/16.67	0.02542		N/S	0.87649
	Private/Public	11.67/50.00	2.67312	3.09839	N/S	0.13310
4) Transactional	Life/Non-Life	7.33/12.67	1.75342		N/S	0.25604
	Private/Public	8.00/33.33	2.3104	4.06618	N/S	0.20314
5) Full Presence	Life/Non-Life	5.50/5.50	0.000		N/S	1.00000
	Private/Public	5.00/25.00	0.61538	6.59138	N/S	0.51493

4.1.2. Analysis of Bank Websites Offering Insurance Products and Services

Only one bank in Zambia has a subsidiary insurance company and it offers life insurance products. Three other banks, are only offering insurance broking/agency services in form of bancassurance.

4.2. Part II—Empirical Findings of the Survey on the Extent of Use of Websites for E-Commerce by Insurers

This section of the research activity is a follow up to the website assessments to confirm whether the insurers who have websites are actually using them for e-commerce. It focuses on data presentation of the empirical findings of the mini survey. The results were subjected to the one-way ANOVA test to assess whether a statistically significant difference existed between the means of the two groups of providers (Life and general Insurers). Frequency tables were used for each variable to determine the groups.

4.2.1. E-Commerce Adoption and Usage

The questions were codified into five groups in line with the e-Government adoption phases and addressed certain features on the websites that each company actively uses to conduct e-commerce related trade activities. In the following we will further discuss each of them.

Emerging Web Presence Phase Adoption and Usage: The first item addressed how the company is using the elementary features of web presence. It was observed from the responses that more than 88% are using the e-commerce fea-

tures under this phase.

Enhanced Web Presence Adoption and Usage: The overall result reflected an average usage level of 70.63% of the enhances web presence features.

Interactive Web Presence Adoption and Usage: The section assessed usage of the interactive web presence. The overall picture shows that less than half (47%) of insurers with this business tool are using it purposefully.

Transactional Web Presence Adoption and Usage: Responses to questions under this phase gave an overall 43.33% usage level of the transactional web presence features.

Fully Integrated Web Presence Adoption and Usage: The overall responses showed 45.83% in terms of insurers using of the fully integrated web presence features. This percentage is mainly in respect of compatibility for mobile use. Only three insurers have an interface with brokers and are practically using it.

4.2.2. ANOVA Test of the Statistics Outputs

The results of our evaluations were subjected to the ANOVA test to assess whether our results can be generalized across the industry. The ANOVA between the life and the general insurance providers looks as in Table 4.

The two values of immediate interest for our purposes are the F-Statistic and the P-Value in the summary. The F-statistic value of 0.46 and p-value of 0.50237 (higher than a at 0.05) indicate that there is no difference in the means between the life and non-life companies' statistics as far as e-commerce usage is concerned. If there is any difference then it is insignificant.

This means to say we can confidently conclude that insurance industry is indeed largely still at the enhanced web presence phase of e-adoption and usage as both the installed business tools and their use patterns more or less correspond.

Table 4. Analysis of variance (ANOVA): single factor.

SUMMARY

Groups	Count	Sum	Average	Variance
Life Insurance	17	1000	58.82353	923.5294
Non-Life Insurance	17	1112.5	65.44118	693.9338

ANOVA

Source of Variation	SS	df	MS	F	P-Value	F Crit
Between Groups	372.2426	1	372.2426	0.46028	0.50237	4.149097
Within Groups	25879.41	32	808.7316			
Total	26251.65	33				

5. Discussion and Conclusion

5.1. Reliability Analysis

Assessing the reliability of study findings requires the researcher to make judgements about the "soundness" of the study with regard to the appropriateness and application of the methods employed and the integrity of the final conclusions (Noble & Smith, 2015). However, the terms validity and reliability may not be relevant to ensuring credibility in a qualitative study such as this one (Long & Johnson, 2000). The tests and measures used to establish the validity and reliability of quantitative research cannot be applied to qualitative research (Rolfe, 2006).

The study on the adoption and use of electronic commerce among insurers in Zambia was qualitative in nature. The UN-ASPA Model that this study used is in itself a proven measure for progress in terms of application of electronic commerce in organizations. The questionnaire that was used to asses usage of the websites for e-commerce was created by the researcher and was basically a conversion of the elements that are usable for e-commerce under each phase of adoption in the UN-ASPA Model into questions to enquire from the insurer as regards usage.

5.2. Limitations and Future Research

Due to the constantly evolving nature of internet and related technology, it should be noted that evaluation of website contents is susceptible to the limitation of the period of time during which the research work is being carried out. The study has been done on the assumption that the presence of the essential website features will predict future results and does not imply the effectiveness of those web features in the delivery of service. Further, some insurance providers' websites have not been included in this study because at the time of the research they are either not recognized or not licensed by the Pensions and Insurance Authority, the regulatory body for insurance providers in Zambia.

Future researches in this area could include the following:

- Extending the scope of the current study so as to make a comprehensive evaluation of the insurance industry as a whole by including such vital participants as the insurance brokers, reinsurers, insurance agents and the regulators.
- A study focused on investigating the link between e-adoption and attainment of goals by insurance firms and how this link impacts on the stakeholders and customers plus sales agents (the network partners), so as to evaluate the efficiency of multi-channel marketing of insurance.

5.3. Contribution and Originality

This study is being conducted at a time electronic commerce is on the rise in Zambia and being supported by various law reforms by the government. There-

fore, discussions on e-insurance and website features that could contribute to the success of this innovative channel are encouraged. The UN-ASPA model of stages of e-government was assumed in order to show a link between the creation of the online channel and a set of achievable and measurable indicators that are pivotal in a competitive market. This research will benefit the insurance firms, the customers and the regulatory authorities by augmenting the advantages of the electronic channel. This also promotes the regulatory pledge of transparency, free access to information and speed as these are the requisite attributes of the financial services market.

5.4. Conclusion

From both the analyses conducted, it is evident that the Zambian insurance firms have advanced on from the Emerging and Enhanced web presence phases and have made marked progress to the Interactive and Transactional stages. The overall results though show that the actual levels of use are lower than the adoption levels. There is still a long way to reaching the Fully Integrated web presence phase but the potential is there. Less than 25% of the firms offer online purchase options and limit this to a few selected products. Because of the complex nature of most insurance products, they need offline validation of the data uploaded by the customer or agent. Online claim settlement is still a far-fetched dream for Zambian customers.

The banks that have an insurance company as a subsidiary have largely not yet started to utilize the potential for cross-selling though they are using their banking websites to promote their insurance products as is clearly evident from the assessment of banking websites. The participation of banks in the Zambian insurance industry is basically by way of banc assurance which is agency or brokerage.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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