



Digital intelligence and real estate digital marketing in Nigeria: practitioner's appraisal

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Abstract Digital disruption in real estate transactions has led to the full adoption of digital marketing in real estate agency services. However, the demand for sustainability in real estate agency service requires adopting digital skills and competencies to achieve effective and efficient real estate digital marketing. This study examines Estate Surveyors and Valuers' perceptions of the relevance of digital intelligence for sustainable real estate digital marketing in Nigeria, using Edo State as the study area. The data for the survey were sourced from 120 registered and practicing Estate Surveyors and Valuers (ESVs) using structured questionnaires, out of which 100 (83.33%) were retrieved and found suitable for analysis. Mean score, cross-tabulation, and chi-square were employed for data analysis. Findings indicated that social media marketing and e-mail marketing are the highest-ranked digital marketing channels adopted among the surveyed respondents. Also, chi-square results show that there is a significant relationship between the relevance of digital intelligence and the level of usage of social media marketing, the relevance of digital intelligence and the level of usage of e-mail marketing, and the relevance of digital intelligence and the level of usage of affiliate marketing. It was recommended, among others, that ESVs should invest in themselves and their staff in terms of training to raise their competency to harness the opportunities in technology to enhance their professional practice.

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1 Introduction

The outbreak of the COVID-19 pandemic has demanded full adoption of digital marketing in the service industry to obtain real-time customer insights, effective value creation, and customer loyalty. The study of Khin et al. (2016) outlined four stakeholders (merchant, network, publisher, and customer) involved in digital marketing. Thus, these stakeholders are necessary for setting digital marketing strategies with the appropriate use of online digital channels to influence customers and achieve sustainable digital marketing.

The significance of the internet in adopting digital marketing strategy can be seen through statistics in various research studies and reports, most especially in real estate industry (Olukolajo et al. 2015; Dumpe 2015; Masis et al. 2017; States 2019; Sheen et al. 2020). With an annual growth of 22% in internet-based searches in the United States. The real estate industry shows that 10% of property buyers use the internet as their primary search tool. In comparison, 52% use the internet as their search tool to explore information about real estate (Dumpe 2015). In Asia, 55.1% of the population access the internet daily, while 62% of Asia Pacific region residents buy online products (States 2019). The report of Malaysian statistics shows that web users increased from 2.9 million to 5 million between 2004 and 2006 (Masis et al. 2017). WhatsApp was launched in the year 2009 as a smartphone messaging app and has amassed more than 2 billion users worldwide and claiming 500 million users in India (Channel News 2021). In Africa, the Nigerian Communication Commission (NCC) statistics show that Nigeria had over 122 million internet users and a 33.13% broadband penetration in 2019. This implies that Nigeria is one of the largest numbers of internet users globally. As a result of fast growth in web and internet usage, service industries such as real estate are taking advantage of internet usage to market their products and services. Internet is therefore adopted as a sustainable digital advertising tool for promoting real estate products and services due to its effectiveness and efficiency in achieving customers' satisfaction and loyalty.

The effectiveness of digital advertising tools for sustainable digital marketing requires digital competencies in promotion, pricing, and distribution (Sheen et al. 2020; Akinwamide et al. 2021; Akinwamide and Hahn 2021). Real estate developers adopt digital marketing to promote brand image through online presence and attractive websites (Ullah and Sepasgozar 2019; Sheen et al. 2020). Studies show that real estate customers prefer web and internet usage to search for property rather than using the traditional approach in real estate transactions (i.e., buying and sales of property) through appointment, as it abridges the sales cycle and reduces costs (Felli et al. 2018; Ullah and Sepasgozar 2019; Ullah and Sepasgozar 2020). With the adoption of e-commerce for sustainable digital marketing applied in the Chinese real estate market, studies associated with Chinese markets revealed an increase in sales from 17 to 25% (Tao and Hinton 2004). This suggests that adopting digital marketing in real estate investment could help achieve greater returns.

The convenience and efficiency of digital marketing help real estate customers to leverage accessible digital real estate information in decision making. Proper digital communication of crucial information to potential real estate customers can eliminate emotional trauma in decision-making (Ullah and Sepasgozar 2019; Ullah and Sepasgozar 2020). Using appropriate digital channels could therefore help influence decisions in real estate transactions. Given this, real estate practitioners require digital competencies to meet clients' needs in digital marketing. The new concept of digital intelligence refers to the ability to acquire and apply knowledge, skills, and competencies related to digital technologies (such as Search Engine Optimization, (SEO), mobile apps, data analytics, internet of things, artificial intelligence, etc.) to market real estate products and services online. Adopting interconnected competencies (such as digital: use, safety, identity, rights, security, literacy, communication, and emotional intelligence) of digital intelligence is therefore relevant to sustain the future of digital real estate marketing. Thus, this study examines real estate firms' perception of the relevance of digital intelligence for sustainable real estate digital marketing in Nigeria.

2 Literature review

Digital marketing is restructuring industry and customer behaviors to achieve quality service delivery. Ryan (2016) argues that digital marketing is gradually becoming complex, dynamic, and global service delivery. In terms of function, digital marketing is an enhancer to sales growth and a medium to reach out to customers (Ryan 2016; Acker et al. 2011; Akinwamide 2021c). Furthermore, Mazarol (2015) referred to digital marketing as the online marketing or e-marketing tool that can promote business and attract or retain more customers. Kannan (2017) describes digital marketing as adopting digital technologies to maintain a sound relationship with customers by building customer preferences, brand promotion, more retention, and increment in sales.

Shirisha (2018) express that digital marketing channels are more efficient in terms of cost than traditional marketing channels (such as word of mouth, flyers, etc.) and can reach a larger audience and deliver a quick message. With the adoption of traditional marketing, small-scale businesses find it difficult competing with big-scale businesses over advertisement space (Sherman 2019). Muhanna (2000) argues that the size of a business could be linked to its online presence since the size of larger businesses is most likely to create a quick and attractive online presence compared to small businesses. Thus, online-based marketing could be a vital tool for achieving business goals.

The study of Saura et al. (2017) explored sustainable digital marketing with the argument that businesses have sighted the digital ecosystem as present and future. Firms are therefore concerned about the growth and sustainability of their business. Thus, firms are now exploring new business models online that could support digital advertising campaigns to promote sustainability. However, sustainable digital marketing is new in real estate practice. Regarding real estate marketing and advertising, most real estate developments need effective targeting (Sheen et al. 2020). For

instance, commercial property development would require real estate development firms to target investors in their marketing campaigns.

Real estate digital marketing could therefore be referred to as the adoption of digital technologies for measurable communication (such as web analytics) while maintaining and sustaining a solid relationship to retain current real estate customers. Digital marketing channels effectively position real estate products and services for a more effortless customer experience and better decision-making (Royle and Laing 2014; Akinwamide 2021c). Digital marketing channels include social media, SEO, Search Engine Marketing (SEM), e-mail newsletter, website, e-commerce, affiliate marketing, radio advertising, television advertising, Mobile App, Paid Digital Ads (Pay-Per-Click Advertising), and Customer Relationship Management (CRM) (Royle and Laing 2014; Taiminen and Karjaluoto 2015; Olukolajo et al. 2015; Akinwamide and Bello 2019; Sheen et al. 2020). Social media (such as Twitter, Facebook, Instagram, WeChat, TikTok, etc.) has attracted numerous potential real estate customers using this innovative and sustainable digital channel. In China, WeChat is one of the most adopted communication channels that provide Chinese property buyers an easy and fast way to utilize tasks such as the smart in-built CRM and intelligent language translations (Bingjian and Changliu 2016; Sheen et al. 2020). Furthermore, Chinese property developers are smartly adjusting their websites through various languages to deliver messages and reach out to a broad spectrum of global real estate customers (Sun and Ifeanyi 2014).

Few empirical studies in Nigeria focused on sustainable real estate digital marketing (Olukolajo et al. 2015; Akinwamide and Bello 2019). Using descriptive statistics, the study by Olukolajo et al. (2015) investigated the level of adoption of social media in real estate transactions. It was found that social media is one of the most adopted marketing strategies among real estate practitioners in Lagos State. Furthermore, Oyetunji et al. (2018) study investigated the factors influencing the adoption of ICT in the Nigerian real estate practice.; using a factor analytical approach, findings depicted that technological infrastructure, delivery of enhanced efficient services, and branding of products influenced the adoption of ICTs in the practice of real estate in Lagos State.

To achieve sustainability in real estate digital marketing, competencies such as digital intelligence have become real estate's future for practitioners and firms. The new concept of digital intelligence refers to acquiring and applying knowledge, skills, and competencies related to digital technologies and channels to market real estate products and services online effectively and efficiently. The eight interconnected competencies of digital intelligence are digital: use, safety, identity, rights, security, literacy, communication, and emotional intelligence (Park 2016; Akinwamide 2021a; 2021b).

Digital intelligence also involves how data and information created and explored are adopted to achieve brand promotion, build customer preferences, create a digital advertising campaign, and increase sales performance, among others (Akinwamide et al. 2021). The study of Akinwamide and Bello (2019) employed Pearson correlation to examine the relationship between digital emotional intelligence and real estate digital marketing performance. The result shows a significant positive correlation between digital emotional intelligence and real estate digital marketing performance.

However, the relevance of digital intelligence to sustain the future of real estate digital marketing has not been explored globally. This study, therefore, focused on the relevance of digital intelligence for sustainable real estate digital marketing in Nigeria. Table 11 in the Online Appendix shows the summary of digital marketing for the most important publications regarding the following studies on real estate transaction.

3 Research methods

Estate Surveyors and Valuers, the target population of this study, are professionals in the built environment saddled with the management of interests in land and landed properties to secure optimum returns. The profession was backed by Decree No. 24 of 1975, now CAP E. 13 LFN 2004. This legislation established Estate Surveyors and Valuers Registration Board of Nigeria (ESVARBON) as the regulatory body for the profession. By their duties and training, the professionals are involved in the marketing of real estate products and services in Nigeria, in line with the approval of the ESVARBON.

Benin City, the capital of Edo State, Nigeria, has been consistently experiencing innovative and rapid urban development. This has brought it to the limelight among cities with vibrant and active real estate transactions. The vibrancy of the real estate market has attracted branches of real estate surveying and valuation firms to establish practices in various major cities in Edo state. Thus, the practice is beyond ethnic and tribal affiliation. The volume of demand for real estate products and services necessitated real estate practitioners' digital competencies in online real estate transactions.

A total of 120 registered estate surveyors and valuers, favorably disposed to using online tools, were purposively selected for structured questionnaires on online real estate marketing, which is the only source of data collection for this study. This purposive selection method, while effective for targeting specific expertise, introduces a potential bias, as it may not fully represent the broader population of ESVs in Nigeria. Specifically, the sample may be skewed towards ESVs who have a more positive disposition towards online marketing, which could influence the study's findings. Therefore, the results should be generalized with caution.

Out of the total questionnaire administered, 100 (83.33%) were retrieved and found suitable for data analysis. Descriptive statistics, cross-tabulation, and chi-square (χ^2) test were employed for data analysis. Descriptive statistics were employed to assess the level of usage of digital marketing channels for real estate transactions, the relevance of digital intelligence, and the level of awareness of digital competencies for sustainable real estate digital marketing. Cross tabulation and chi-square tests were employed to examine the significant relationship between the relevance of digital intelligence and the level of adoption of different digital marketing channels for sustainable real estate digital marketing in the study area. The study tested the following hypotheses toward achieving its objectives:

H1 There is no significant relationship between the relevance of digital intelligence and the level of usage of social media marketing among the respondents ESVs.

H2 There is no significant relationship between the relevance of digital intelligence and the level of usage of e-mail marketing among the respondents ESVs.

H3 There is no significant relationship between the relevance of digital intelligence and the level of usage of affiliate marketing among the respondents ESVs.

4 Results and discussion

The discussion of results generated from the analysis of survey data as well as the test of research hypotheses are presented in this section. The socio-economic characteristics of the respondents' estate surveyors and valuers selected for the study are shown in Table 1.

The results within Table 1 indicate that 72% of the respondents had studied up to post graduate level (this include Master's degree and Ph.D. degree), 23% were either Higher National Diploma (HND), Bachelor of Technology (B.Tech) or Bachelor of Science (B.Sc) holders, and 5% possess National Diploma (ND). This implies that most of the respondent's qualifications were master's and Ph.D. degree holders. Professional qualifications indicate that 95% of the respondents were associate members of the Nigerian Institution of Estate Surveyors and Valuers (NIESV) and registered

Table 1 Socio-economic characteristics of estate surveying and valuation firms

Characteristics	Frequency	Percentage (%)
Years of Experience in Online Marketing		
Below 5 years	35	35
5–10 years	49	49
11–15 years	9	9
15 years and above	7	7
<i>Total</i>	<i>100</i>	<i>100</i>
Educational Background		
ND/Diploma	5	5
HND/B.Tech./B.Sc	23	23
Post Graduate	72	72
<i>Total</i>	<i>100</i>	<i>100</i>
Professional Qualification		
ANIVS/RSV (Associate member of NIESV)	95	95
FNIVS	5	5
<i>Total</i>	<i>100</i>	<i>100</i>

Table 1 shows the most important socio-economic characteristics of estate surveying and valuation firms in the study area

ND National Diploma, *HND* Higher National Diploma, *ANIVS* Associate Member of NIESV, *RSV* Registered Surveyor and Valuer, *NIESV* Nigerian Institution of Estate Surveyors and Valuers, *FNIVS* Fellow Member of NIESV

Table 2 Adoption of digital marketing channels and their usage for real estate transaction

Digital Marketing Channels	Number of Observations	Mean	Std. Deviation	Rank
Social Media Marketing	100	4.25	0.857	1st
E-mail Marketing	100	3.67	1.074	2nd
Affiliate Marketing	100	3.09	1.120	3rd
Content Marketing	100	2.82	1.114	4th
Influencer Marketing	100	2.71	1.028	5th
Displaying Marketing	100	2.59	0.842	6th
Video Marketing	100	2.05	1.048	7th
Paid Digital Ads (Pay-Per-Click Advertising)	100	1.90	0.835	8th
Search Engine Optimization	100	1.88	0.844	9th
Mobile App Marketing	100	1.77	0.790	10th
Search Engine Marketing	100	1.70	0.718	11th

This table displays the adoption level of digital marketing channels and their usage for real estate transactions in the study area

with ESVARBON, while 5% were fellow members of the professional body. Notably, most respondents are professionally registered, affiliated, and recognized by the ESVARBON. Furthermore, all respondents had adequate online marketing experience; 49% had experienced below 5 years, 35% had engaged in online real estate transactions between 5–10 years, 9% within 11–15 years, while 7% had over 15 years of online marketing experience. With the cream of the estate surveying and valuation firms, and their characteristics as provided in this section, it is no doubt that they will be able to provide the required information towards achieving the objectives of this study. They have the required educational background, year of practice and particularly deploying online marketing tools in their professional practice.

Table 2's results indicated that the use of social media marketing ranked 1st with a mean score of 4.25, and e-mail marketing with a mean score of 3.67 ranked 2nd. These two are the highest-ranked digital marketing channels adopted for real estate transactions. All the respondents often adopt social media channels (such as Facebook, WhatsApp, YouTube, Twitter, etc.) in marketing real estate products and services. This finding agrees with the existing literature (Akinwamide and Bello 2019;

Table 3 The relevance of digital intelligence for real estate digital marketing

	Frequency	Percent
Valid Not Relevant	0	0
Slightly Relevant	8	8.0
Moderately Relevant	14	14.0
Relevant	42	42.0
Very Relevant	36	36.0
Total	100	100.0

This table displays digital intelligence's reported relevance for sustainable real estate digital marketing among practitioners

Table 4 Cross tabulation of the relevance of digital intelligence and the level of usage of social media marketing

Digital Intelligence	Social Media Marketing						Total
	Never	Seldom	Sometimes	Often	Always		
Not Relevant	Count	0	0	0	0	0	0
	% of Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Slightly Relevant	Count	0	0	4	0	4	8
	% of Total	0.0%	0.0%	50.0%	0.0%	50.0%	100.0%
Moderately Relevant	Count	0	0	1	2	13	16
	% of Total	0.0%	0.0%	6.2%	12.5%	81.2%	100.0%
Relevant	Count	4	1	5	19	13	42
	% of Total	9.5%	2.4%	11.9%	45.2%	31.0%	100.0%
Very Relevant	Count	1	3	5	14	11	34
	% of Total	2.9%	8.8%	14.7%	41.2%	32.4%	100.0%
Total	Count	5	4	15	35	41	100
	% of Total	5.0%	4.0%	15.0%	35.0%	41.0%	100.0%

This table shows the cross tabulation of the relationship between the relevance of digital intelligence and the level of usage of social media marketing for sustainable real estate digital marketing

Table 5 Chi-square test results for social media marketing

	Value	Df	<i>p</i> -value (2-sided)
Pearson Chi-Square	28.918 ^a	12	0.004
Likelihood Ratio	30.207	12	0.003
Linear-by-Linear Association	2.343	1	0.126
<i>N</i> of Valid Cases	100	–	

This table the result of chi-square test of independence performed to examine the relevance of digital intelligence and the level of usage of social media marketing. The superscript *a* indicates that 12 cells (60.0%) have an expected count of less than 5. The minimum expected count is 0.32
df degrees of freedom

Olukolajo et al. 2015) that social media marketing is the most effective marketing channel adopted among real estate practitioners for marketing real estate products and services. Affiliate marketing ranked third with a mean Score of 3.09, followed by content marketing (this includes websites, blogs, etc.) with a mean Score of 2.82, ranked 4th. This implies that real estate practitioners sometimes adopt these digital marketing channels to market real estate products and services. Other digital marketing channels such as Mobile App (10th) and Search Engine Marketing (SEM) (11th) were the least adopted among the surveyed real estate practitioners to market real estate products and services, with the mean Score of 1.77 and 1.70, respectively.

From the Table 3 above most practitioners indicated that digital intelligence is relevant for the effective and efficient adoption of the best digital marketing channels in real estate transactions. This finding is consistent with Akinwamide and Bello (2019) that digital emotional intelligence would improve the performance of digital real estate marketing in Nigeria.

Findings from Table 4 indicates that most practitioners with frequent social media marketing agreed that digital intelligence is very relevant in marketing real estate products and services online. However, practitioners who have never adopted social media marketing in real estate practice also assumed that digital intelligence could be very relevant for sustainable real estate digital marketing. This finding is consistent with Olukolajo et al. (2015) that adopting social media marketing would help real estate practitioners improve sales performance, provide market insights, and build customer brand loyalty.

Based on the results in Table 5, the relation between these variables was significant, χ^2 ($df=12$, $N=100$)=28.918, p -value=0.004. It is important to note that 12 cells (60.0%) have an expected count of less than 5, with a minimum expected count of 0.32. This implies that there is a significant correlation between the relevance of digital intelligence and the adoption of social media marketing for sustainable real estate digital marketing. Thus, the Hypothesis 1 (H1) of this study is rejected. This finding agrees with Akinwamide and Bello (2019) that social media channels are one of the fastest means of disseminating information to real estate customers and advertising real estate products and services.

Findings from Table 6 indicates that most practitioners with the frequent (i.e., often and always) usage of e-mail marketing agreed that digital intelligence is relevant in marketing real estate products and services online. However, practitioners who have never adopted e-mail marketing in real estate practice also assumed that

Table 6 Cross tabulation of the relevance of digital intelligence and the level of usage of e-mail marketing

E-mail Marketing		Never	Seldom	Sometimes	Often	Always	Total
Digital Intelligence	Not Relevant	Count 0	0	0	0	0	0
		% of Total 0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Slightly Relevant		Count 1	0	2	1	4	8
		% of Total 12.5%	0.0%	25.0%	12.5%	50.0%	100.0%
Moderately Relevant		Count 0	1	11	1	3	16
		% of Total 0.0%	6.2%	68.8%	6.2%	18.8%	100.0%
Relevant		Count 0	1	12	26	3	42
		% of Total 0.0%	2.4%	28.6%	61.9%	7.1%	100.0%
Very Relevant		Count 5	2	6	7	14	34
		% of Total 14.7%	5.9%	17.6%	20.6%	41.2%	100.0%
Total		Count 6	4	31	35	24	100
		% of Total 6.0%	4.0%	31.0%	35.0%	24.0%	100.0%

This table shows the cross-tabulation of the relationship between the relevance of digital intelligence and the level of usage of e-mail marketing for sustainable real estate digital marketing

Table 7 Chi-square test results for e-mail marketing

	Value	Df	p-value (2-sided)
Pearson Chi-Square	46.150 ^a	12	0.000
Likelihood Ratio	48.727	12	0.000
Linear-by-Linear Association	0.029	1	0.864
N of Valid Cases	100	–	

This table the result of chi-square test of independence performed to examine the relevance of digital intelligence and the level of usage of e-mail marketing. The superscript *a* indicates that 13 cells (65.0%) have expected count less than 5. The minimum expected count is 0.32

df degrees of freedom

digital intelligence could be relevant for sustainable real estate digital marketing. This finding is consistent with Akinwamide and Bello (2019) that e-mail marketing is one of the marketing strategies that would help real estate practitioners build customer brand loyalty.

The relationship between these variables was significant, χ^2 ($df=12$, $N=100$) = 46.150, p -value = 0.000 as shown in Table 7. It is important to note that 13 cells (65.0%) have an expected count of less than 5, with a minimum expected count of 0.32. This implies a significant correlation between the relevance of digital intelligence and the level of adoption of e-mail marketing for sustainable real estate digital marketing. Hence, the Hypothesis 2 (H2) is rejected.

Findings from Table 8 indicates that most of the practitioners with the frequent (i.e., often and always) usage of affiliate marketing agreed that digital intelligence is very relevant in marketing real estate products and services online. However, practitioners who have never used affiliate marketing in real estate practice also assumed that digital intelligence could be very relevant (17.6%) for sustainable real estate digital marketing.

Table 9 shows that the relationship between these variables was significant, χ^2 ($df=12$, $N=100$) = 56.834, p -value = 0.000. It is important to note that 22 cells (88.0%) have an expected count of less than 5, with a minimum expected count of 0.05. This indicates a significant correlation between the relevance of digital intelligence and the level of usage of affiliate marketing for sustainable real estate digital marketing. Thus, Hypothesis 3 (H3) is rejected. This could be attributable to the high level of digital competencies among real estate practitioners for online marketing of real estate products and services.

Findings from Table 10 depicted that digital security with a mean score of 4.18 and digital identity, with a mean score of 4.03 was the most aware digital competencies in real estate digital marketing, with a ranking of 1st and 2nd respectively. Followed by digital competencies such as digital: rights (3.93), safety (3.83), literacy (3.72), and use (3.54) were somewhat aware digital intelligence in real estate digital marketing. This appears that real estate practitioners have the knowledge of cybersecurity, intellectual property, copyright, trademark, and cyberbullying in online real estate transactions. Other digital competencies such as digital: communication (2.93), and emotional intelligence (2.49) were the slightly aware digital intelligence in real estate digital marketing with the least ranking of 8th and 9th respectively.

Table 8 Cross tabulation of the relevance of digital intelligence and the level of usage of affiliate marketing

Digital Intelligence		Affiliate Marketing					Total
		Never	Seldom	Sometimes	Often	Always	
Not Relevant	Count	0	0	0	0	0	0
	% of Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Slightly Relevant	Count	3	0	4	0	1	8
	% of Total	37.5%	0.0%	50.0%	0.0%	12.5%	100.0%
Moderately Relevant	Count	0	10	5	1	0	16
	% of Total	0.0%	62.5%	31.2%	6.2%	0.0%	100.0%
Very Relevant	Count	0	26	12	4	0	42
	% of Total	0.0%	61.9%	28.6%	9.5%	0.0%	100.0%
Total	Count	6	0	17	4	7	34
	% of Total	17.6%	0.0%	50.0%	11.8%	20.6%	100.0%
	Count	9	36	38	9	8	100
	% of Total	9.0%	36.0%	38.0%	9.0%	8.0%	100.0%

This table shows the relationship between the relevance of digital intelligence and the level of usage of affiliate marketing for sustainable real estate digital marketing

Table 9 Chi-square test results for affiliate marketing

	Value	<i>Df</i>	<i>p</i> -value (2-sided)
Pearson Chi-Square	56.834 ^a	12	0.000
Likelihood Ratio	74.583	12	0.000
Linear-by-Linear Association	6.421	1	0.011
<i>N</i> of Valid Cases	100	–	

This table the result of chi-square test of independence performed to examine the relevance of digital intelligence and the level of usage of affiliate marketing. The superscript *a* indicates that 22 cells (88.0%) have expected count less than 5. The minimum expected count is 0.05
df degrees of freedom

Table 10 The level of awareness of digital competencies for sustainable real estate digital marketing

Digital Competencies	Number of Observations	Mean	Std. Deviation	Rank
Digital Security	100	4.18	0.999	1st
Digital Identity	100	4.03	1.141	2nd
Digital Rights	100	3.93	0.868	3rd
Digital Safety	100	3.83	1.334	4th
Digital Literacy	100	3.72	0.975	5th
Digital Use	100	3.54	1.352	6th
Digital Communication	100	2.93	1.241	8th
Digital Emotional Intelligence	100	2.49	1.059	9th
Valid <i>N</i> (listwise)	100	–		

This table displays the level of awareness of digital competencies for sustainable real estate digital marketing among the surveyed respondents

5 Conclusion

This study has appraised real estate surveyors and valuers' perception on the relevance of digital intelligence for sustainable real estate digital marketing in Nigeria. It was found that the use of social media marketing (such as Facebook, WhatsApp, YouTube, Twitter), and e-mail marketing are the highest ranked digital marketing channels adopted for real estate transaction. Majority of the practitioners indicated that digital intelligence is relevant for an effective and efficient adoption of the best digital marketing channels (i.e., social media marketing and e-mail marketing) in online marketing real estate products and services. It is noteworthy that real estate practitioners have the knowledge of digital security (such as cybersecurity, cyberbullying) and digital right (such as intellectual property rights, copyright, trademark) for sustainable real estate digital marketing.

The analysis conducted on the set hypotheses in this study demonstrated significant relationships between digital intelligence and the levels of usage of social media marketing, e-mail marketing, and affiliate marketing among the respondents. The chi-square tests revealed that these relationships were statistically significant, indicating that digital intelligence plays a crucial role in the adoption and effectiveness of these digital marketing channels.

However, it is important to acknowledge the potential bias in the selection of respondents, as the sample may have been skewed towards ESVs who are favorably

disposed to online marketing. This selection bias suggests that the findings should be generalized with caution, as they may not fully represent the broader population of ESVs in Nigeria.

Therefore, this study recommends that the adoption of digital intelligence is needed among practicing real estate firms to sustain real estate digital marketing in Nigeria. To this end the practitioners should invest in themselves and their staffs in term of training towards raising their competency in order to harness the opportunities in technology to enhance their professional practice. With digital intelligence, and adoption same in real estate marketing, the estate surveyors and valuers will reach wider potential user of their services for better performance and global relevance.

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6 Appendix

Table 11 Summary of digital marketing channels adopted in real estate transaction

Authors	Social Media Marketing	E-mail Marketing	Influencer Marketing	Content Marketing	Affiliate Marketing	Displaying Marketing	Video Marketing	Paid Digital Ads	Search Engine Optimization	Mobile App Marketing	Search Engine Marketing
Royle and Laing (2014)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Taiminen and Karjaluoto (2015)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
Olukolajo et al. (2015)	✓	-	✓	✓	✓	✓	-	✓	✓	✓	✓
Akinwamide and Bello (2019)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sheen et al. (2020)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Akinwamide (2021b)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Gravatt (2018)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Nzuva (2018)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dumpe (2015)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Alias and Pui (2012)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

This table shows the adoption of digital marketing in real estate practice and its sustainability in the literature. The sign ✓ indicates the relevant studies on each digital marketing channels related to real estate transactions

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