



(REVIEW ARTICLE)



EVALUATING THE ROLE OF NO-CODE WEB PLATFORMS AND MESSAGING APIS IN THE DIGITAL TRANSFORMATION OF LOCAL TRAVEL AGENCIES IN NIGERIA

Peter Ayorinde Oduroye, Christiana Onyedikachi Nwosu *, Toyeeb Olamilekan Abolade, Simeon Eyo Aneosong and Ayodeji Michael Akanbi

Department of Computer Science, Faculty of COPOS, Caleb University, Imota, Lagos, Nigeria.

* Corresponding Author

ORCID Details

Peter Ayorinde Oduroye: <https://orcid.org/0000-0001-8755-9816>

Toyeeb Olamilekan Abolade: <https://orcid.org/0009-0004-4458-0243>

Global Journal of Engineering and Technology Advances, 2026, 28(02), 187–192

Publication history: Received on 12 July 2026; revised on 22 August 2026; accepted on 24 August 2026

Article DOI: <https://doi.org/10.30574/gjeta.2026.28.2.0225>

Copyright © 2026 Author(s) retain the copyright of this article. This article is published under the terms of the Creative Commons Attribution License 4.0

ABSTRACT

Digital transformation is reshaping small and micro enterprises in Nigeria, and the travel agency sector, reliant on face-to-face bookings, phone calls, and manual itinerary preparation, is no exception. This paper reviews the potential of no-code web platforms and messaging Application Programming Interfaces (APIs) as acceptable tools for driving digital transformation among local Nigerian travel agencies, most of which operate as micro or small enterprises with limited technical or financial capabilities. Drawing on a synthesis of 10 studies spanning digital market adoption, technology diffusion theory, no-code or low-code development, global distribution systems and messaging-based customer engagement in tourism, the paper develops an integrated conceptual framework grounded in the Technology Acceptance Model (TAM) and the Technology-Organization-Environment (TOE) framework. The review finds that no-code platforms lower the costs and skill barrier that have historically excluded micro travel agencies from maintaining a credible online presence, while messaging APIs, particularly those built on WhatsApp, extend an already established conversational commerce culture rather than requiring new consumer behaviour, though this trust remains conditional on agencies visibly safeguarding customer data and payment information rather than an automatic property of the channel itself. Adoption nonetheless remains constrained by inconsistent infrastructure, low digital literacy among agency owners, and limited awareness of no-code tooling. The paper concludes that a no-code-plus messaging strategy offers a low-cost, high-impact pathway for digital transformation among Nigeria's local travel agencies and aligns direction for future empirical validation.

Keywords: No-Code Platforms; Global Distribution System (GDS); Digital Transformations; Travel Agencies; Technology Acceptance Model(TAM); Technology-Organization-Environment (TOE) Framework

1 INTRODUCTION

Across Nigeria, the digital transformation has moved from a competitive advantage to a condition of survival for service-oriented micro and small enterprises. Businesses that once relied entirely on word of mouth, physical shopfronts and personal relationships are increasingly expected to maintain some form of online presence, whether a website, a social media page, or a messaging channel through which customers can reach them directly [1]. The travel agency sector illustrates this shift with particular clarity. Nigerian travelers now routinely compare flights, hotels and visa assistance services online before even speaking to an agent, yet a large share of local travel agencies, especially those outside the largest cities in Nigeria, still operate with minimal digital infrastructure: a phone number, a WhatsApp line or channel, and a Facebook page [2].

The gap between large, well-resourced agencies and small local operators is visible in how each engages with core travel technologies. Olasaju [3] shows that the adoption of the Global Distribution System (GDS), the booking infrastructure that connects agencies to airline and hotel inventory, is concentrated among larger and more established Lagos-based agencies, while smaller agencies are held back by licensing costs, training requirements, and limited perceived needs. This pattern mirrors a broader finding in the Nigerian SME literature: digital tool adoption is shaped less by whether a technology exists than by whether it is affordable, easy to use, and visibly beneficial to a resource-constrained business owner [1,4].

Two categories of technology have emerged in the last decade that could narrow this gap without requiring the capital outlay or technical staffing that GDS integration demands. The first is the no-code platform, a class of tools that allows a business owner with little to no programming background to build a functioning website, product catalogue or booking form through visual, drag-and-drop interfaces [5]. The second is the messaging Application Programming Interface (API), which allows a business to connect its customer communication, most often on WhatsApp, to structured, semi-automated systems for enquiries, itinerary sharing, and payment confirmation, while still preserving the conversational format Nigerian consumers already prefer [6,7].

This paper asks a simple but underexamined question: What role can no-code web platforms and messaging APIs realistically play in the digital transformation of local travel agencies in Nigeria? The question matters because, unlike GDS adoption or full-scale e-commerce systems, no-code tools and messaging APIs are positioned as low-cost, low-skill entry points; precisely the profile of intervention that the Nigerian micro-business literature suggests is needed [8]. Yet no study in the reference base reviewed here examines the two technologies together, or specifically within the Nigerian travel agency context. This paper addresses the gap conceptually, by synthesising the closest available evidence and building a framework that can guide both practice and future empirical research.

1.1 Objectives of Study

This paper pursues four objectives: (i) To examine the state of digital technology adoption among Nigerian service micro-businesses generally, and travel agencies specifically;

(ii) To evaluate the potential of no-code web platforms as an enabler of digital transformation for resource-constrained travel agencies; (iii) To evaluate the role of messaging APIs in customer engagement, trust-building, and value co-creation within tourism and travel services; and (iv) To propose an integrated conceptual framework, grounded in established technology-adoption theory, that explains how and why local Nigerian travel agencies might adopt these tools.

1.2 Significance of Study

The findings are intended to be useful in three ways. For travel agency owners, the paper offers a low-cost roadmap for building a credible digital presence without hiring developers. For policymakers and industry bodies such as the National Association of Nigeria Travel Agencies (NANTA), it identifies specific addressable barriers, rather than generic calls for “more digitalisation”. For researchers, it identifies a concrete gap: empirical, Nigeria-specific evidence on combined no-code and messaging-API adoption in travel services, and proposes a framework that future studies can test.

2 MATERIALS AND METHODS

This paper is a conceptual, narrative literature synthesis rather than an empirical study. A systematic, PRISMA-style review was considered but judged premature: PRISMA-style methodology depends on a retrievable body of studies that share a comparable research question, population, and outcome measures, against which inclusion and exclusion criteria can be systematically applied. No published study currently examines no-code platforms and messaging APIs together, and none examines either technology specifically within Nigerian local travel agencies, so there is no such

comparable body of literature yet to screen. A narrative synthesis across four adjacent bodies of evidence was used instead, on the basis that a systematic review of a topic that does not yet exist in the literature would return an empty or near-empty result set rather than a meaningful synthesis. Ten sources were purposively selected to represent four bodies of evidence that jointly bear on the research question: Nigerian SME and micro-business digital adoption [1,4,8], Nigeria travel agency technology use specifically [2,3]; no-code and low-code development [5], messaging-based customer engagement in tourism [6], [7], and foundational technology-adoption theory [9], [10].

Each source was read and coded thematically for factors relevant to adoption, benefits, and barriers. The resulting themes were organised under the constructs of the Technology Acceptance Model (TAM) and the Technology-Organization-Environment (TOE) framework (Section 3.5) to build the integrated framework presented in Section 3.9. This method allows the paper to draw defensible, theory-grounded conclusions from indirect evidence, while making explicit that the framework itself, rather than any single numerical finding, is the paper's primary output and the object that future empirical work should test.

3 RESULTS AND DISCUSSION

3.1 Digital Transformation Among Nigerian SMEs and Service Micro-Businesses

A thematic analysis of the factors influencing digital marketing device adoption among service-oriented micro-businesses in Nigeria identified perceived cost, perceived usefulness, digital skill, infrastructure reliability, and social or peer influence as the dominant themes shaping whether a small business owner adopts a given digital tool [1]. Travel agencies fit squarely within this service-oriented micro-business category, and the barriers identified, cost and skill above all, are exactly the barriers no-code platforms and messaging APIs are designed to reduce.

Research on the digitalisation of high-technology startups, while not focused on travel agencies, found that digitalisation widens market reach and reduces operating costs, but only where the business possesses the strategic capability to translate a digital tool into a customer-facing offer [4]. This is instructive for local travel agencies: acquiring a website or a WhatsApp number is not, by itself, transformation, the tool has to be paired with a workable service process.

Recent Nigerian evidence indicates that adoption of social commerce positively affects MSME performance, including sales, customer engagement and business growth [8]. This supports the premise of the present paper: Nigerian micro-businesses, including travel agencies, are not simply lagging in digital adoption; they are adopting selectively, gravitating toward tools that fit existing communication habits rather than toward heavier, Western-style e-commerce infrastructure.

3.2 Digitalisation of Travel Agencies in Nigeria

The closest available evidence on travel agency technology adoption in Nigeria focuses on GDS adoption and choice among agencies in Lagos State, and finds that adoption correlates with agency size and years of operation, with smaller agencies citing cost, training requirements and limited perceived necessity as reasons for staying outside formal distribution systems [3]. This is a useful contrast case: GDS represents a heavy digital transformation pathway with a high entry cost, while no-code platforms and messaging APIs represent a lighter pathway that could, in principle, be adopted by exactly the smaller agencies excluded from GDS.

A study of e-marketing and the performance of travel agencies in Port Harcourt found a positive relationship between e-marketing activity and agency performance, but also noted that adoption of formal e-marketing tools was uneven, and that many agencies relied heavily on informal channels, social media pages and direct marketing rather than dedicated marketing platforms [2]. Reading alongside the social commerce findings above, this suggests a consistent pattern: informal, conversational digital channels are already in use even where formal digital marketing or booking infrastructure is not, which is precisely the behaviour that messaging APIs are built to formalise and scale.

3.3 No-Code and Low-Code Platforms as Digital Transformation Enablers

A systematic literature review of low-code and no-code development adoption identified speed of development, reduced dependence on scarce developer skills, and lower costs as and the primary drivers of adoption across sectors, while security concerns, platform lock-in, and limits on customisation were the most cited barriers [5]. This review also identified a gap this paper directly engages with: most existing no-code adoption research is set in large organisations or developed-economy contexts, with comparatively little attention paid to micro-enterprises in developing economies, exactly the population a local Nigerian travel agency represents.

3.4 Messaging APIs, Chatbots, and Customer Engagement in Tourism

Research on mobile instant messaging in tourism and hospitality found that messaging enables customers to co-create value with providers through real-time personalisation, faster resolution of inquiries, and a sense of relational closeness that more transactional channels, such as static websites or emails, do not replicate as easily [6]. This is important for local Nigerian travel agencies, whose competitive advantage has traditionally rested on personal relationships and trust rather than price alone; messaging APIs offer a way to preserve that relational quality while scaling it beyond what a single human agent can manage manually.

A study of tourists' perception of chatbot services at Kainji Lake National Park in Nigeria found that visitors generally perceived chatbots as useful for basic information retrieval, but expressed reservations about relying on them for more complex, trust-sensitive interactions, preferring human confirmation for bookings and payments [7]. This finding tempers an over optimistic reading of messaging-API adoption: automation through messaging is valuable, but the evidence from a Nigerian tourism context suggests it works best as a hybrid, human-supported system rather than a fully automated one.

3.5 Theoretical Framework

Two established technology-adoption theories anchor this synthesis. The Technology Acceptance Model (TAM) proposes that an individual's intention to use a technology is shaped primarily by perceived usefulness and perceived ease of use [9]. Applied here, this explains why a travel agency owner might adopt a no-code website builder over a custom-built website: perceived ease of use is substantially higher than that of hiring or becoming a developer, while perceived usefulness, a visible, shareable online presence, is immediate and easy to grasp even for a non-technical owner. The same logic applies to messaging APIs from the customer side: a WhatsApp-based booking flow requires no new app, account, or learning curve.

The Technology Organization Environment (TOE) framework explains adoption at the organisational level through three contexts: technological (availability, complexity, and compatibility of the technology), organisational (firm size, resources, and owner attitude), and environmental (competitive pressure, regulation, and infrastructure) [10]. This paper combines the two frameworks rather than treating them as competing explanations: the Technology Acceptance Model explains the owner's individual willingness to adopt, while the Technology Organization Environment framework explains whether the surrounding firm and environment make that willingness actionable. An owner may find a no-code platform easy to use and clearly useful but still fail to adopt it if the agency lacks reliable internet access or operates in an environment with no competitive pressure to digitalise. In the Nigerian context, this environmental dimension also extends to data security and regulatory compliance expectations. Survey evidence on Nigerian fintech users documents persistent security concerns around digital financial platforms [11], concerns squarely relevant to any tool, including a messaging API, that handles payment confirmation.

3.6 Synthesis: No-Code Platforms as a Digital Transformation Enabler

The evidence synthesised above suggests that no-code platforms are well matched to the specific barriers Nigerian travel agencies face. Where GDS adoption is blocked by cost and training requirements [3], no-code platforms offer a substantially lower-cost, lower-skill alternative for the narrower but still valuable goal of establishing an online storefront, publishing packages and pricing, and collecting inquiries and deposits. This does not replace GDS integration for agencies that need live airline inventory, but it addresses the more basic value proposition of no-code tools, speed and reduced dependence on scarce developer skills, applies across sectors [5], and there is no theoretical reason it would not transfer to travel agencies, even though direct evidence from this sector does not yet exist.

3.7 Synthesis: Messaging APIs and Conversational Commerce

The Nigerian SME and travel-agency literature points to growing reliance on social and conversational digital channels for customer engagement [2,8]. Messaging APIs do not ask agency owners or their customers to adopt an unfamiliar behaviour; they formalise and extend a channel, typically WhatsApp, that is already the primary point of contact. This format supports value co-creation through personalisation and responsiveness [6], both important in travel purchases, which are high-involvement, trust-sensitive decisions. That trust, however, is not purely a function of conversational familiarity: broader evidence on Nigerian consumers' fintech security concerns [11] suggests that messaging-based trust must be paired with visible data protection and secure payment handling to be sustained, not assumed as an inherent property of the channel. The finding that Nigerian consumers prefer human confirmation for bookings and payments [7] is an important qualifier: messaging APIs are best deployed as a hybrid system, automating routine inquiries and itinerary sharing while routing bookings and payment confirmation to a human agent, rather than as a fully automated chatbot funnel.

3.8 Barriers and Enablers Specific to Local Nigerian Travel Agencies

Several barriers recur across the reviewed literature: unreliable and costly internet infrastructure, low digital literacy among owner-operators, limited awareness of no-code tooling specifically, and consumer caution around online payment and automated systems[1,7]. At the same time, several enablers work in the agencies' favour: established use of social commerce among Nigerian MSMEs [8], high smartphone and WhatsApp penetration, a maturing ecosystem of no-code tools with built-in messaging and payment integrations [5], and the availability of Nigerian payment gateways that can be embedded into no-code sites without custom development.

3.9 Proposed Framework

Table 1 sets out the integrated framework proposed by this paper. It maps Technology Acceptance Model constructs to the individual, owner-level decision to adopt no-code and messaging tools, and Technology Organization Environment constructs to the firm-and-environment-level conditions that determine whether that individual willingness can be acted on. The framework's central proposition is that no-code platforms and messaging APIs function as complementary technologies: the no-code platform provides a stable, searchable digital storefront, while the messaging API provides a stable, searchable digital store front, while the messaging API provides the relational, trust-preserving communication layer that Nigerian travel consumers expect, with the two connected through integrations that route website inquiries directly into WhatsApp conversations.

Table 1: Integrated TAM-TOE framework for no-code and messaging API adoption among local Nigerian travel agencies.

Construct	Dimension	Application to No-Code + Messaging Adoption
TAM	Perceived usefulness	Owner believes a no-code site and WhatsApp booking flow will generate more enquiries and bookings than current phone/walk-in model
TAM	Perceived ease of use	Drag-and-drop site builders and familiar WhatsApp interface require minimal new learning for owner and customer alike
TOE – Technological	Compatibility and localisation	Availability of Naira pricing, Paystack/Flutterwave integration, and WhatsApp Business API support within no-code tools
TOE – Organisational	Size and resource slack	Owner-operator agencies need low-cost, low-time-investment tools; larger agencies can absorb more setup effort
TOE – Environmental	Infrastructure and competitive pressure	Internet reliability, electricity, and visibility of digitally active competitor agencies shape urgency to adopt, alongside data security and regulatory compliance expectations (e.g., NDPR) for any tool handling payment-related communication.
Trust layer	Hybrid automation	Automated messaging for enquiries/information; human handoff for bookings and payment, per consumer trust patterns

3.10 Implications for Practice and Policy

For travel agency owners, a minimum viable digital presence, a no-code website connected to a WhatsApp Business API line, is achievable without hiring developers or committing to GDS-level investment, and should be treated as a first step rather than an end state. For industry bodies such as NANTA, digital-upskilling programmes are likely to be more effective if they target perceived ease of use of unfamiliar tools specifically, rather than generic digital literacy training. For no-code and messaging-platform vendors, the review points to a localisation opportunity: closer integration with Nigerian payment gateways and pre-built travel booking templates would directly address the technological-context barriers identified in Section 3.8. For policymakers, the recurring infrastructure barrier, internet reliability and cost, identified across nearly every Nigerian SME study reviewed, remains the environmental-context constraint most clearly outside any individual agency's control.

Limitations

This paper's central limitation is also its main justification: it is a conceptual synthesis built from ten sources, none of which empirically examines the combined use of no-code platforms and messaging APIs specifically within Nigerian local travel agencies. The framework proposed in Section 3.9 is therefore theoretically grounded but empirically untested. Future research should address this directly through survey or interview-based studies of travel agency owners in Lagos, Port Harcourt, Abuja, and secondary cities, measuring the constructs proposed here against actual adoption of no-code platforms and messaging APIs and, where adoption has occurred, against measurable outcomes such as inquiry volume, booking conversion, and customer retention. The proposed framework also does not examine

data-security and regulatory-compliance requirements, such as adherence to the Nigeria Data Protection Regulation, in the depth this dimension likely warrants for a tool handling payment-related communication; this remains an important avenue for future work.

4 CONCLUSION

Local travel agencies in Nigeria face a familiar set of barriers to digital transformation: limited capital, limited technical skill, and infrastructure that cannot be assumed to be reliable. This paper has argued that no-code web platforms and messaging APIs, used together, are unusually well matched to these barriers precisely because they were designed for non-technical users and because they extend, rather than replace, communication habits, particularly WhatsApp-based conversation, that Nigerian travel consumers and agencies already rely on. The integrated framework proposed here suggests that adoption is most likely where perceived usefulness and ease of use are high at the owner level, and where technological compatibility, organisational resources, and environmental infrastructure align at the firm and environment level, with a hybrid human-plus-automation approach preserving the trust that Nigerian consumers still expect around bookings and payment. No existing study tests this combination directly in the Nigerian travel sector, which is both the gap this paper fills conceptually and the opportunity it leaves for future empirical work.

STATEMENTS ON COMPLIANCE WITH ETHICAL STANDARDS

Acknowledgments

The authors used Claude (Anthropic) as an AI-assisted tool during the initial literature synthesis and drafting of this manuscript. The authors independently reviewed, verified, revised, and substantially rewrote the resulting material and assumed full responsibility for the accuracy, originality, interpretation, and conclusions presented in the final manuscript.

Disclosure of conflict of interest

The authors declare no financial or non-financial conflict of interest related to this research.

REFERENCES

- [1] Eze SC, Chinedu-Eze VC, Okike CK, Bello AO. Critical factors influencing the adoption of digital marketing devices by service-oriented micro-businesses in Nigeria: a thematic analysis approach. *Humanities and Social Sciences Communications*. 2020;7:90. doi: <https://doi.org/10.1057/s41599-020-00580-1>
- [2] Ollor HY, Nwankwo K. Influence of E-Marketing on the Performance of Travel Agencies in Port Harcourt, Rivers State. *African Journal of Management and Business Research*. 2022 Dec 31;8(1):10-27.
- [3] Oluyemi T, Olasoju OO. Factors Influencing the Choice of Global Distribution Systems (GDSs) by Travel Agents in Nigeria. *Federal Polytechnic Ado-Ekiti Journal of Management*. 2023;3(1):89-98.
- [4] Gbadegeshin SA. The effect of digitalization on the commercialization process of high-technology companies in the life sciences industry. *Technology Innovation Management Review*. 2019;9(1).
- [5] Ajimati MO, Carroll N, Maher M. Adoption of low-code and no-code development: A systematic literature review and future research agenda. *Journal of Systems and Software*. 2025 Apr 1;222:112300.
- [6] Lei SI, Ye S, Wang D, Law R. Engaging customers in value co-creation through mobile instant messaging in the tourism and hospitality industry. *Journal of Hospitality & Tourism Research*. 2020 Feb;44(2):229-51.
- [7] Gana MA. Perception of tourists on chatbot service usage on tourism destination: A study of Kainji Lake National Park, Nigeria. *ABUAD Journal of Social and Management Sciences*. 2024 Jun 28;5(1):170-86.
- [8] Muhammad AS, Adalier A, Adeshola I. Digital transformation in youth owned MSMEs: A mixed method exploration on the impact of contemporary social commerce on sustainable performance. *Information Development*. 2025 Apr 1:02666669251329908.
- [9] Davis FD. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*. 1989;13(3):319-40. doi: <https://doi.org/10.2307/249008>
- [10] Tornatzky LG, Fleischer M. The processes of technological innovation. Lexington Books; 1990.
- [11] C. Agwi, Akpojaró J. An Exploratory Study of Fintech Security Concerns among its Users in Nigeria. *Authorea*. 30 January 2024. DOI: <https://doi.org/10.22541/au.170664227.79688144/v1>