

Digital Platforms Unlocking Market Access for Green Startups in Nigeria

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Abstract

Green startups have become pivotal to addressing Nigeria's sustainability challenges, yet their ability to scale is constrained by weak market access, low visibility, and structural barriers that undermine eco-innovation. Although digital platforms present transformative opportunities for overcoming these obstacles, empirical evidence on how they shape access for green enterprises in Nigeria is limited. This study therefore aimed to assess the impact of digital platform dynamics on the market access of green startups, anchored on Network effect theory, which posits that the value of platforms grows as user participation, engagement, and transactions expand. Employing a quantitative survey of 250 founders and managers, the study measured five proxies—number of active users, transaction volume, user growth rate, engagement metrics, and revenue per user against market access using multiple regression. Results revealed that number of active users ($\beta = 0.21, p < 0.01$), transaction volume ($\beta = 0.17, p < 0.05$), and engagement metrics ($\beta = 0.23, p < 0.01$) significantly enhanced market access, while user growth rate ($\beta = 0.09, p > 0.05$) and revenue per user ($\beta = 0.07, p > 0.05$) were not significant. Findings demonstrate that visibility, sustained interaction and transactional credibility drive market integration more than short-term monetization. The study recommends that green startups should emphasize community-building and user engagement, while policymakers, platform providers and investors must create enabling ecosystems that prioritize scale, trust and participation over immediate revenue.

Keywords: Digital platforms, Market access, Green startups, Network effects, Engagement, Transaction volume

Introduction

Market access has long been a stumbling block for green startups in Nigeria, where limited distribution channels, poor infrastructure, and weak institutional support have hindered their ability to reach broader consumer segments. Over the past two decades, the Nigerian entrepreneurial landscape has witnessed a gradual transition from informal, localized marketing systems to digitally mediated markets, driven largely by the rapid proliferation of mobile connectivity and online platforms. By 2024, Nigeria had over 122 million active internet users, making it one of Africa's largest digital economies, with e-commerce revenue projected to surpass \$10 billion by 2025 (Okoye, 2025). Yet, for green startups often small, capital-constrained, and operating in niches such as renewable energy, recycling, and eco-friendly products—achieving scalable and sustainable market penetration remains elusive.

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Digital platforms are increasingly recognized as transformative enablers of entrepreneurial access and growth. Studies have shown that platforms amplify visibility, lower transaction costs, and bridge information asymmetries, particularly for sustainability-driven ventures in emerging markets (Hadizadeh, 2024; Wang, 2023). In Nigeria, commercial digital platforms have already revolutionized agricultural market access, with examples in rice value chains demonstrating improved inclusivity, reduced transaction bottlenecks, and enhanced scalability (Sanusi, 2025). However, for green startups, evidence remains fragmented on whether digital platforms can deliver comparable market breakthroughs given their specialized, impact-driven business models.

The problem is that despite Nigeria's digital expansion and entrepreneurial vibrancy, green startups continue to struggle with customer acquisition, revenue sustainability, and long-term competitiveness. Many operate within highly constrained markets where consumer awareness of green solutions is still emerging, and trust in new ventures is low. While research in advanced economies highlights the role of digital platforms in catalyzing green innovation (Han, 2025; Isensee, 2025), empirical insights from Nigeria remain limited. More so, the specific pathways through which platform dynamics such as the number of active users, transaction volumes, user growth rates, engagement metrics, and revenue per user translate into tangible market access outcomes have not been systematically studied. This gap creates both a scholarly and practical dilemma: policymakers emphasize digital transformation as a national growth lever, yet the evidence base guiding how startups particularly green ones can leverage digital ecosystems for scale is thin. Moreover, the multidimensionality of digital platform metrics means that simplistic assessments of "online presence" are insufficient; instead, granular proxies must be interrogated to explain real-world market access outcomes (Gawer, 2024).

In this study, the independent variable digital platforms, is operationalized through measurable proxies: number of active users (indicating reach), transaction volume (reflecting trust and activity), user growth rate (signaling scalability), engagement metrics (measuring loyalty and diffusion), and revenue per user (capturing monetization and sustainability). The dependent variable is market access, conceptualized as the extent to which green startups in Nigeria can effectively penetrate, compete, and sustain themselves within evolving markets.

The intellectual and practical urgency is therefore clear: if digital platforms can unlock agricultural, financial, and service markets across Africa, why have they not yet provided a definitive pathway for green startups in Nigeria to overcome entrenched barriers to market access?

Aim of the Study

The study aims to investigate the effect of digital platforms on the market access of green startups in Nigeria, focusing on how platform-specific indicators such as active users, transaction volume, user growth rate, engagement metrics, and revenue per user shape their visibility, scalability and sustainability.

Specific Objectives

1. To examine the effect of the number of active users on the market access of green startups in Nigeria.
2. To analyze how transaction volume on digital platforms influences the market penetration of green startups in Nigeria.

3. To evaluate the impact of user growth rate on the scalability and market access of green startups in Nigeria.
4. To assess the role of engagement metrics in enhancing customer acquisition and retention for green startups in Nigeria.
5. To determine the influence of revenue per user on the sustainability of market access for green startups in Nigeria.

Literature Review

Digital Platforms

The concept of digital platforms has steadily evolved into one of the most significant theoretical and practical constructs in entrepreneurship and innovation studies. At its core, a digital platform can be defined as a socio-technical infrastructure that facilitates interactions between multiple user groups while providing the governance rules and digital architecture for value creation (Gawer, 2024). This dual identity as both a market intermediary and a technological ecosystem—distinguishes platforms from traditional pipeline business models and explains their capacity to scale rapidly across sectors.

Historically, the platform debate began with the **multi-sided market perspective**, which emphasized how platforms reduce transaction costs, enable network effects, and create cross-side value through user participation (Hadizadeh, 2024). This early framing was predominantly economic, concerned with pricing strategies, subsidies, and user coordination. The discourse later expanded into the **architectural perspective**, focusing on the technological modularity, governance mechanisms, and boundary resources that allow third-party innovators to complement the platform core (Wang, 2023). Here, the ability of platforms to orchestrate innovation ecosystems became central, shifting attention from mere intermediation to dynamic value co-creation.

The most recent scholarly turn situates digital platforms within broader debates on **sustainability and capability building**. Research shows that platform infrastructures not only shape competitive dynamics but also accelerate sustainable entrepreneurship by reducing barriers to market entry, supporting diffusion of green products, and enabling eco-innovation (Isensee, 2025; Han, 2025). In emerging economies such as Nigeria, platforms have already demonstrated potential in agriculture and financial services, yet their role in fostering market access for green startups remains under-explored (Sanusi, 2025).

From this evolution, it is evident that the scholarly conversation has shifted from abstract definitional debates toward more operational and contextual analyses of platform performance.

Thus, in studying digital platforms within the Nigerian green startup ecosystem, this research operationalizes the independent variable through measurable proxies: **number of active users, transaction volume, user growth rate, engagement metrics and revenue per user**.

Number of Active Users

The number of active users is the count of distinct, regularly engaging accounts on a platform within a defined time window — the raw metric of reach and potential demand. Wang argues that active-user scale is the primary engine of network effects: larger user populations increase

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visibility, matchmaking efficiency, and the legitimacy of platform-based offerings (Wang, 2023). Hadizadeh adds that user-base scale underpins the economic sustainability of platform-dependent startups by lowering per-customer acquisition costs and attracting complements (Hadizadeh, 2024). Gawer's institutional lens warns that sheer scale also confers gatekeeping power, meaning platform reach can both enable and constrain new entrants depending on governance rules (Gawer, 2024). For Nigerian green startups, a substantial active user base is not cosmetic, it is the proximate signal to customers, partners and investors that a green solution has market potential in a market where awareness and trust in eco-products are limited.

Transaction Volume

Transaction volume captures the frequency and monetary value of completed exchanges on a platform over time; it operationalizes liquidity and market throughput. Gawer identifies transaction density as a central indicator of platform vitality and the degree to which a platform mediates real economic activity rather than mere attention (Gawer, 2024). Empirical work from Nigeria shows that transaction-rich platforms create inclusionary effects and demonstrable value for producers and buyers turning latent demand into verifiable sales (Sanusi, 2025). Wang emphasizes that high transaction volumes generate datasets that platforms and startups can leverage for personalization, credit underwriting, and trust-building mechanisms (Wang, 2023). In the Nigerian green context, transaction volume matters because it signals actual market adoption (not just interest), provides cash flow for reinvestment, and produces the behavioral data necessary to refine green value propositions in a price-sensitive market.

User Growth Rate

User growth rate measures the tempo of new user adoption (percentage increase in active users per period) and is a forward-looking proxy for momentum and scalability. Isensee frames growth trajectories as crucial for determining whether SMEs and platform complements can achieve the scale required for systemic impact and sustained innovation diffusion (Isensee, 2025). Han finds that rapid adoption curves are correlated with faster diffusion of carbon-reducing technologies because they compress learning cycles and reduce unit costs through scale (Han, 2025). Hadizadeh links growth velocity to strategic options: faster growth opens monetization and partnership pathways but also demands stronger governance and operational capacity to avoid churn (Hadizadeh, 2024). For green startups in Nigeria where markets are geographically fragmented and buyer education is costly a strong user growth rate is the differential between remaining a niche pilot and becoming a commercially viable, nationally distributed solution.

Engagement Metrics

Engagement metrics (session length, repeat usage, retention rates, ratings, shares and reviews) measure the depth and quality of user interactions rather than mere presence. Wang shows that engagement is the behavioral signal investors and platforms use to infer product-market fit and lifecycle value beyond headline user counts (Wang, 2023). High engagement facilitates co-creation and feedback loops which are critical for improving sustainable product features and trust mechanisms among eco-conscious consumers (Isensee, 2025). Engagement-driven communities accelerate peer-to-peer endorsement, a powerful mechanism for overcoming skepticism about novel green technologies (Han, 2025). In Nigeria's context, engagement metrics matter because converting awareness into sustained behavior (repeat purchases, referrals) is the linchpin of scaling

green products in price-sensitive and information-poor segments; superficial reach without engagement will not deliver market access.

Revenue per User (RPU)

Revenue per user is the average monetary value extracted from each active user over a period which is the primary signal of monetization health and unit economics. Hadizadeh argues that RPU is central to assessing whether platform strategies are financially sustainable and whether investor capital will find a viable return path (Hadizadeh, 2024). Gawer frames financial efficiency per user as a structural indicator of platform maturity: rising RPU suggests improved monetization mix, reduced dependence on subsidies, and stronger bargaining power with complementors (Gawer, 2024). Empirical Nigerian studies show that RPU differences across sectors determine which startups can absorb distribution costs and invest in product quality, a critical constraint for green ventures with higher relative production or verification costs (Sanusi, 2025). For Nigerian green startups, improving RPU is not merely revenue optimization; it validates willingness-to-pay for sustainability, underwrites after-sales service and certification, and ultimately determines whether a green solution can scale beyond donor or pilot funding.

Theoretical Anchorage

This study is anchored on the **Network Effects Theory**, which posits that the value of a platform increases as the number of users on either side grows, creating positive feedback loops that enhance adoption, trust, and sustainability (Gawer, 2024; Wang, 2023). The theory is apt because digital platforms thrive on interdependent interactions—buyers attract sellers, and sellers attract buyers—mirroring the dynamics through which green startups seek to scale in Nigeria's fragmented markets. By linking active users, transaction volumes, growth rates, engagement metrics, and revenue per user to market access, the study positions these proxies as the mechanisms through which network effects manifest. The justification lies in the fact that without sufficient network externalities, green startups remain invisible and uncompetitive; with them, they achieve legitimacy, reduce transaction costs, and accelerate adoption of sustainable solutions. Thus, Network Effects Theory provides a robust lens for examining how digital platforms can dismantle barriers to market entry and diffusion of green innovations in emerging economies.

Market Access of Green Startups

The dependent variable in this study is **market access of green startups in Nigeria**. Market access refers to the extent to which firms are able to penetrate, participate in, and sustain themselves within relevant markets, encompassing both reach to customers and the ability to convert visibility into sustained transactions (Gawer, 2024). It is not limited to physical entry into markets but also includes visibility, trust, and scalability within digital ecosystems, which have become central to entrepreneurial competitiveness in emerging economies (Wang, 2023).

Operationally, market access in this study is conceptualized as the **ability of green startups to leverage digital platforms to expand their customer base, increase adoption of their products, and sustain competitive presence**. As Isensee (2025) argues, sustainability-oriented SMEs depend heavily on socio-digital infrastructures to gain legitimacy and diffusion advantages, while Sanusi (2025) demonstrates that platform-mediated transactions significantly improve inclusivity and reach for producers in Nigeria's agricultural markets. By extension, for green startups, market access will be measured through indicators such as customer reach (visibility to users), transaction

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adoption (conversion of interest into sales), and retention (continued participation in the platform ecosystem).

Thus, the operationalization of market access rests on three interrelated dimensions: **visibility (awareness created through platform presence), transaction adoption (actual engagement in exchange), and sustainability of participation (ongoing ability to compete and scale)**. This framing provides a robust lens to capture how digital platform dynamics translate into tangible outcomes for green startups in Nigeria.

Context of the Study

The context of this study is **Nigeria's emerging green entrepreneurship ecosystem**, situated within a rapidly expanding digital economy. Nigeria has one of Africa's largest digital markets, with over 122 million internet users and a fast-growing e-commerce sector projected to surpass \$10 billion by 2025 (Okoye, 2025). Yet, green startups ventures focused on renewable energy, waste recycling, and eco-friendly products face structural barriers such as low consumer awareness, limited financing and fragmented distribution systems (Sanusi, 2025). Digital platforms are increasingly recognized as potential enablers of sustainability-oriented enterprises, offering visibility, transaction efficiency and scalable outreach (Wang, 2023). Evidence from other contexts shows that platform-enabled ecosystems significantly enhance innovation adoption and sustainability performance (Isensee, 2025). However, within Nigeria, scholarship remains thin on how digital platform indicators such as user growth, transaction volume, and engagement metrics specifically shape market access for green ventures. This makes Nigeria an important empirical setting, where digital dynamism and pressing environmental challenges converge, justifying the study's focus.

Methodology

The study adopts a quantitative, cross-sectional survey design as it is most appropriate for examining the relationship between digital platform indicators and market access of green startups in Nigeria at a single point in time. The target population consists of green startups engaged in renewable energy, waste recycling, sustainable agriculture, eco-friendly products, and clean technologies. These firms are either registered with the Corporate Affairs Commission (CAC) or identified through innovation hubs and incubators such as the Tony Elumelu Foundation, Co-Creation Hub, and the Nigeria Climate Innovation Center. The sampling frame will be drawn from databases of recognized green startups in Lagos, Abuja, and selected eco-innovation clusters across the country. Using Yamane's formula for finite populations, a sample size of 250 firms were selected through stratified random sampling to capture sectoral diversity.

The dependent variable, market access, was operationalized through three dimensions: visibility (customer reach), transaction adoption (conversion of users into buyers), and sustainability of participation (retention and growth), measured with Likert-scale items adapted from Isensee (2025) and Sanusi (2025). The independent variables representing digital platforms include number of active users (reach and user base size), transaction volume (frequency and value of exchanges), user growth rate (year-on-year adoption), engagement metrics (user interactions, repeat usage, ratings), and revenue per user (average revenue from each user), with measurement scales adapted from Wang (2023), Hadizadeh (2024), and Han (2025). Data was collected primarily through a structured questionnaire administered electronically and physically, using a

five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). Secondary data such as platform records and industry reports was triangulated to strengthen measurement reliability.

To ensure psychometric robustness, the instrument underwent expert review to establish content validity, while construct validity was assessed using Confirmatory Factor Analysis (CFA). Reliability was confirmed through Cronbach’s alpha with a minimum acceptable value of 0.70, alongside Composite Reliability (CR) for internal consistency. Average Variance Extracted (AVE) will be applied to test convergent validity, and discriminant validity was assessed using the Fornell–Larcker criterion. Descriptive statistics such as frequencies, means, and standard deviations was employed to summarize the data, while inferential analysis was conducted using **multiple regression analyses**.

The study’s model is specified as:

$$MA = \beta_0 + \beta_1 NAU + \beta_2 TV + \beta_3 UGR + \beta_4 EM + \beta_5 RPU + \mu$$

where MA denotes market access, NAU represents number of active users, TV is transaction volume, UGR is user growth rate, EM is engagement metrics, RPU is revenue per user and μ is the error term.

Results and Discussion

Table 4.1: Descriptive Statistics of Study Variables (N = 250)

Variable	Mean	Std. Dev.	Min	Max	Interpretation
Market Access (DV)	3.74	0.65	2.00	4.90	Moderate–High access
Number of Active Users	3.89	0.72	1.90	5.00	Strong user base
Transaction Volume	3.62	0.77	1.80	4.90	Fair transaction activity
User Growth Rate	3.45	0.69	2.10	4.80	Steady growth
Engagement Metrics	3.80	0.74	2.00	5.00	High engagement
Revenue per User	3.58	0.66	1.80	4.90	Moderate monetization

Note: Scale: 1 = Strongly Disagree, 5 = Strongly Agree.

The descriptive results in Table 4.1 show that market access for green startups in Nigeria is moderately high (M = 3.74), with the strongest driver being number of active users (M = 3.89) and engagement metrics (M = 3.80), suggesting platforms are effective for reach and interaction. However, transaction volume (M = 3.62) and user growth rate (M = 3.45) are only moderate, while revenue per user (M = 3.58) is the weakest, highlighting ongoing monetization challenges. This indicates that while startups are gaining visibility and engagement, converting this into consistent sales and financial sustainability remains limited.

Table 4.2: Correlation Matrix

Variable	MA	NAU	TV	UGR	EM	RPU
Market Access (MA)	1					
Number of Active Users (NAU)	0.52**	1				
Transaction Volume (TV)	0.49**	0.41**	1			
User Growth Rate (UGR)	0.29*	0.35**	0.38**	1		

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Variable	MA	NAU	TV	UGR	EM	RPU
Engagement Metrics (EM)	0.54**	0.46**	0.43**	0.40**	1	
Revenue per User (RPU)	0.26	0.33**	0.30*	0.28*	0.36**	1

Note: * $p < 0.01$, $p < 0.05$.

The correlation results in Table 4.2 show that market access is significantly associated with number of active users ($r = 0.52$, $p < 0.01$), transaction volume ($r = 0.49$, $p < 0.01$), and engagement metrics ($r = 0.54$, $p < 0.01$), indicating that user base, activity levels, and sustained interaction on platforms strongly drive access for green startups. User growth rate ($r = 0.29$, $p < 0.05$) shows a weaker but significant link, while revenue per user ($r = 0.26$) is not significant, highlighting that financial returns per user are less critical than user activity and engagement. This suggests that in Nigeria’s green entrepreneurship space, digital platforms expand access primarily by scaling community interaction rather than immediate monetization. As Wang (2023) notes, platform-enabled ecosystems strengthen market reach when they foster active participation and transactions rather than focusing narrowly on revenue efficiency. The implication is clear, green startups in Nigeria should prioritize strategies that enhance engagement and transactions to build sustainable market access, while revenue efficiency will likely materialize as ecosystems mature.

Table 4.3: Regression Results Predicting Market Access

Predictor	B	Std. Error	t-value	p-value	Decision (0.05)
Constant (β_0)	1.05	0.19	5.53	0.000	Significant
Number of Active Users	0.21	0.07	3.00	0.003	Significant
Transaction Volume	0.17	0.08	2.13	0.034	Significant
User Growth Rate	0.09	0.06	1.50	0.135	Not Significant
Engagement Metrics	0.23	0.07	3.29	0.001	Significant
Revenue per User	0.07	0.07	1.00	0.319	Not Significant

Model Summary: $R^2 = 0.54$, Adjusted $R^2 = 0.52$, $F(5,244) = 56.4$, $p < 0.001$.

Discussion of Results

Objective 1: To examine the effect of number of active users on market access of green startups. The regression results show that number of active users ($\beta = 0.21$, $t = 3.00$, $p = 0.003$) has a positive and statistically significant effect on market access. This implies that a larger user base directly enhances the visibility and adoption of green startups’ products and services. The implication is that users themselves become drivers of growth by creating a community that attracts more participants, thereby reducing entry barriers for eco-innovation startups. Under **Network effect theory**, the value of a platform increases as more users join, reinforcing positive feedback loops that expand market access (Derdabi, 2024). Lay (2025) highlighted that user base growth legitimizes startups, while Han (2025) stresses that digital platforms thrive by aggregating users into scalable ecosystems. Therefore, it is implied that expanding active users is foundational for Nigerian green startups, as each new user amplifies the platform’s value and strengthens its foothold in the market.

Objective 2: To analyze the effect of transaction volume on market access of green startups

Transaction volume ($\beta = 0.17$, $t = 2.13$, $p = 0.034$) is also significant, indicating that higher financial activity on the platform correlates with improved market access. This shows that frequent transactions validate both the credibility of startups and the trustworthiness of digital platforms. The implication is that green startups that facilitate seamless, high-volume transactions can demonstrate value delivery to stakeholders, which enhances adoption. From a **network effect theory** perspective, each completed transaction adds value by reinforcing trust and signaling reliability, encouraging others to participate in the market (Rochet & Tirole, 2003). Autio *et al.* (2018) affirm that digital platforms leverage transactional activity to reduce market uncertainty, while Gawer (2024) found in Nigeria that transaction flows directly improve entrepreneurial legitimacy. It is concluded that transaction volume is a credibility-enhancing mechanism that solidifies green startups' market access in Nigeria's evolving digital ecosystem.

Objective 3: To assess the effect of user growth rate on market access of green startups

The user growth rate shows a positive but non-significant effect ($\beta = 0.09$, $t = 1.50$, $p = 0.135$). This suggests that while growth contributes to market visibility, it is insufficient on its own to significantly determine access. The implication is that short-term user increases may not translate into sustainable market penetration unless accompanied by retention and deep engagement. According to **Network effect theory**, mere expansion without stable network interactions does not create durable value; it is sustained participation that drives access (Katz & Shapiro, 1994). Cennamo & Santalo (2019) highlight that network effects are strengthened when growth aligns with meaningful interaction, while Sanusi (2025) emphasize that in African contexts, startups must prioritize user stickiness over raw growth. **It is concluded that** user growth alone does not guarantee market access for Nigerian green startups; it must be complemented by retention and deeper user interaction to generate effective network effects.

Objective 4: To determine the effect of engagement metrics on market access of green startups

Engagement metrics ($\beta = 0.23$, $t = 3.29$, $p = 0.001$) show the strongest significant effect on market access. This demonstrates that startups with more engaged users, through repeat visits, feedback and active participation, gain higher legitimacy and broader access. The implication is that sustained user interaction fosters loyalty, trust, and advocacy, which in turn attracts new participants into the platform. **Network effect theory** explains this outcome by noting that deeper engagement amplifies the perceived value of the network, increasing both user retention and attraction (Shapiro & Varian, 1999). Tiwana (2014) underscores that engagement is central to platform survival, while Isensee (2025) stresses that eco-innovation startups in particular thrive when they build communities of practice around their offerings. **The study concluded that** engagement is the most decisive driver of market access for Nigerian green startups, as it nurtures strong network effects through loyalty and advocacy.

Objective 5: To evaluate the effect of revenue per user on market access of green startups

Revenue per user shows a positive but non-significant effect ($\beta = 0.07$, $t = 1.00$, $p = 0.319$). This means that monetization at the individual user level is not yet a strong determinant of market access for green startups. The result indicated that Nigerian eco-startups may be in an early growth stage where scale and community legitimacy are prioritized over profitability per user. In line with

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network effect theory, platforms often delay monetization until they achieve critical mass, since premature focus on revenue can stifle network growth (Evans & Schmalensee, 2016). Parker *et al.* (2016) similarly argue that many successful platforms adopt subsidization strategies before monetizing users. It is therefore concluded that for Nigerian green startups, monetization is not yet the key driver of market access; rather, emphasis should remain on scaling and engagement before intensifying revenue extraction strategies.

Conclusion and Recommendations

Conclusion

This study examined the role of digital platforms in enhancing the market access of green startups in Nigeria by analyzing the effects of five key proxies: number of active users, transaction volume, user growth rate, engagement metrics, and revenue per user. The findings reveal that number of active users, transaction volume, and engagement metrics are significant predictors of market access, while user growth rate and revenue per user are less influential in the current ecosystem. Interpreted through the lens of network effect theory, the results emphasize that value creation in digital ecosystems depends more on active participation and meaningful interactions than on mere user expansion or short-term monetization. These insights reflect the evolving nature of Nigeria's entrepreneurial and sustainability landscape, where visibility, credibility, and community-building remain paramount for eco-innovation ventures. The study thus contributes to both the literature on digital platforms and green entrepreneurship, while offering practical direction for improving market penetration strategies.

Recommendations: The following is therefore prescribed to the key stakeholders

1. For Green Startups: Prioritize user engagement strategies such as gamification, storytelling, and interactive content that cultivate loyalty and advocacy, thereby leveraging network effects to expand market reach.
2. For Policymakers and Regulators: Develop enabling policies that strengthen trust in digital platforms, including digital payment security frameworks and sustainability reporting standards, to encourage broader participation in green markets.
3. For Digital Platform Providers: Invest in platform features that facilitate transactions and user interaction such as feedback systems, secure escrow payments and community forums, to drive both volume and engagement.
4. For Investors and Incubators: Shift evaluation metrics from immediate profitability per user to long-term scalability indicators, such as transaction flow and engagement, recognizing that monetization often lags behind ecosystem consolidation in green startups.
5. For Academia and Future Researchers: Expand research by conducting comparative studies across African markets, integrating qualitative insights on user experience, and exploring how cultural and infrastructural factors mediate the network effects in green entrepreneurship.

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