

CROWDFUNDING LITERACY AND STARTUP CAPITAL FORMATION AMONG RURAL ENTREPRENEURS IN NORTHERN NIGERIA: EVIDENCE FROM A CROSS-SECTIONAL SURVEY

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Abstract

Access to startup capital remains a significant challenge for rural entrepreneurs, particularly in contexts where conventional financing is constrained by limited collateral, geographical barriers, and restricted access to formal financial services. Crowdfunding offers an alternative digital financing mechanism, but its effective use may depend on entrepreneurs' knowledge, confidence, digital capabilities, and ability to communicate their business propositions. This study examines the relationships between four dimensions of crowdfunding literacy—awareness of crowdfunding opportunities, trust in crowdfunding platforms, digital proficiency, and content presentation skills—and startup capital formation among rural entrepreneurs in Northern Nigeria. The study employed a quantitative cross-sectional survey design and analysed data from 384 rural entrepreneurs using confirmatory factor analysis and structural equation modelling. The measurement model demonstrated acceptable fit, while the structural model also showed satisfactory fit. All four dimensions of crowdfunding literacy were positively and significantly associated with startup capital formation. Awareness of crowdfunding opportunities had a significant positive relationship with startup capital formation ($\beta = 0.29$, $p = 0.003$), as did trust in crowdfunding platforms ($\beta = 0.22$, $p = 0.019$), digital proficiency ($\beta = 0.25$, $p = 0.012$), and content presentation skills ($\beta = 0.35$, $p = 0.001$). Content presentation skills exhibited the strongest standardised association among the four predictors. The findings suggest that the potential contribution of crowdfunding to rural entrepreneurial finance depends partly on entrepreneurs' ability to understand, trust, navigate, and communicate within digital funding environments. The study contributes to the literature by conceptualising crowdfunding literacy as a multidimensional entrepreneurial capability and by integrating the Resource-Based View with Diffusion of Innovation theory to explain its relationship with startup capital formation. The findings have implications for entrepreneurship education, digital financial-inclusion programmes, crowdfunding platforms, and policies aimed at expanding alternative financing opportunities for rural enterprises.

Keywords: Crowdfunding literacy; startup capital formation; rural entrepreneurs; digital finance; alternative finance; financial inclusion; Northern Nigeria

1. Introduction

Access to adequate startup capital remains a persistent challenge for rural entrepreneurs in developing economies. Rural enterprises frequently operate under conditions characterised by limited collateral, weak financial histories, geographical distance from formal financial institutions, and restricted access to conventional sources of external finance. These constraints can hinder the establishment of new ventures and limit their ability to acquire the resources required for business development and growth. The financing problem is therefore not simply one of whether entrepreneurial opportunities exist, but whether rural entrepreneurs possess and can access appropriate mechanisms for mobilising the capital required to pursue those opportunities.

Crowdfunding has emerged as an alternative financing mechanism that enables entrepreneurs to seek relatively small contributions from a potentially large number of individuals through digital platforms. Depending on the model employed, crowdfunding may involve donations, rewards, lending, or equity participation. By connecting entrepreneurs with geographically dispersed contributors, crowdfunding can broaden the range of financing opportunities available beyond conventional financial institutions and personal or local networks. Previous research has established the relevance of crowdfunding to entrepreneurial finance and has examined its potential to facilitate access

to resources for ventures that may encounter difficulties obtaining conventional financing (Agrawal et al., 2014; Belleflamme et al., 2014; Mollick, 2014).

The availability of crowdfunding, however, does not necessarily translate into effective use by rural entrepreneurs. Access to a digital financing mechanism requires more than the existence of a platform. Entrepreneurs must recognise crowdfunding as a viable financing opportunity, understand how relevant platforms operate, have confidence in their reliability, possess the digital capabilities required to navigate the platforms, and communicate their business propositions effectively to potential contributors. These requirements make crowdfunding participation a capability-intensive process. They may be particularly important in rural settings, where differences in digital access, financial knowledge, technological exposure, and entrepreneurial support can affect the ability of business owners to engage with emerging forms of finance.

This issue motivates the present study's focus on crowdfunding literacy, which is conceptualised as a multidimensional entrepreneurial capability comprising awareness of crowdfunding opportunities, trust in crowdfunding platforms, digital proficiency, and content presentation skills. The concept extends the conventional understanding of financial literacy by recognising that participation in technology-mediated entrepreneurial finance requires capabilities that go beyond knowledge of

financial products. Entrepreneurs must also understand crowdfunding opportunities and platform processes, operate effectively within digital environments, assess their confidence in the financing platform, and communicate their entrepreneurial propositions in ways that can be understood and evaluated by prospective funders.

The Nigerian context provides an important setting for examining this problem. Although digital financial services and financial-inclusion initiatives have expanded the range of financial channels available to individuals and businesses, access to formal financial services remains uneven across geographical and socioeconomic contexts. Rural entrepreneurs may face particular difficulties in accessing conventional startup finance because of collateral requirements, limited financial records, geographical constraints, and other barriers associated with formal financing. Crowdfunding therefore presents a potentially relevant alternative, but its usefulness depends partly on whether entrepreneurs possess the capabilities necessary to participate effectively in the digital financing environment.

The central problem addressed by this study is consequently the gap between the availability of crowdfunding as an alternative financing mechanism and the capabilities required by rural entrepreneurs to use it effectively for startup capital formation. Being aware that crowdfunding exists does not necessarily mean that an entrepreneur can use a crowdfunding

platform successfully. An entrepreneur may possess awareness of crowdfunding opportunities but lack the digital proficiency required to create and manage a campaign. Another entrepreneur may have the necessary technical skills but lack confidence in the credibility or reliability of the platform. Similarly, an entrepreneur may understand how crowdfunding works and trust the platform but lack the ability to present the business proposition clearly and persuasively to potential contributors. These differences indicate that crowdfunding literacy should be examined as a multidimensional capability rather than as a single measure of awareness.

This problem is particularly significant because existing crowdfunding research has largely examined issues such as campaign characteristics, investor behaviour, platform characteristics, and the broader role of crowdfunding in entrepreneurial finance (Agrawal et al., 2014; Belleflamme et al., 2014; Bi et al., 2017; Mollick, 2014). Research on financial literacy has also established the importance of financial knowledge in financial decision-making and access to financial opportunities (Lusardi & Mitchell, 2014). However, comparatively limited attention has been given to crowdfunding literacy as a distinct multidimensional entrepreneurial capability, particularly among rural entrepreneurs in Northern Nigeria. Consequently, there remains insufficient understanding of whether and how specific crowdfunding-related capabilities are associated with the

ability of rural entrepreneurs to form startup capital.

The complexity of the problem arises from the fact that effective crowdfunding participation involves several interconnected but conceptually distinct capabilities. Awareness concerns whether entrepreneurs recognise crowdfunding as a potential financing opportunity; trust concerns their confidence in the platforms through which crowdfunding is conducted; digital proficiency concerns their ability to operate within the relevant technological environment; and content presentation skills concern their ability to communicate the value and credibility of their business propositions to potential funders. Treating these dimensions separately makes it possible to determine whether particular capabilities have different levels of association with startup capital formation rather than assuming that crowdfunding literacy operates as a single undifferentiated construct.

Against this background, the present study examines rural entrepreneurs in Kano, Kaduna, and Bauchi States in Northern Nigeria. It employs a quantitative cross-sectional survey design and uses confirmatory factor analysis and structural equation modelling to examine the relationships between the four dimensions of crowdfunding literacy and startup capital formation. The study is guided by the Resource-Based View (RBV) and Diffusion of Innovation (DOI) theory. RBV provides a basis for understanding crowdfunding

literacy as an entrepreneurial capability that may enable entrepreneurs to identify and exploit alternative sources of financial resources, while DOI provides a basis for understanding awareness and digital competence in relation to the adoption and use of crowdfunding as an emerging financing mechanism.

The purpose of the study is therefore to examine whether and to what extent the four dimensions of crowdfunding literacy are associated with startup capital formation among rural entrepreneurs in Northern Nigeria. Specifically, the study examines the relationship between awareness of crowdfunding opportunities and startup capital formation, the relationship between trust in crowdfunding platforms and startup capital formation, the relationship between digital proficiency and startup capital formation, and the relationship between content presentation skills and startup capital formation.

The study is expected to contribute to the existing literature in three principal respects. First, it develops and empirically examines crowdfunding literacy as a multidimensional entrepreneurial capability rather than treating it merely as an extension of general financial literacy. Second, it provides evidence from rural entrepreneurs in Northern Nigeria, an empirical context that remains comparatively underrepresented in crowdfunding research. Third, by integrating RBV and DOI theory, the study provides a theoretical explanation of how entrepreneur-level capabilities and readiness to engage

with an emerging digital financing mechanism may be associated with startup capital formation.

The empirical analysis indicates that all four dimensions of crowdfunding literacy have positive and statistically significant relationships with startup capital formation. Awareness of crowdfunding opportunities is positively associated with startup capital formation ($\beta = 0.29$, $p = 0.003$), as is trust in crowdfunding platforms ($\beta = 0.22$, $p = 0.019$). Digital proficiency also demonstrates a positive and statistically significant relationship ($\beta = 0.25$, $p = 0.012$), while content presentation skills exhibit the strongest standardised association with startup capital formation ($\beta = 0.35$, $p = 0.001$). These findings suggest that the potential usefulness of crowdfunding for rural entrepreneurial finance depends not only on the availability of digital financing platforms but also on the capabilities of entrepreneurs to recognise, evaluate, access, and communicate within the crowdfunding environment. Given the cross-sectional design, however, these findings are interpreted as statistically significant relationships rather than definitive causal effects.

The remainder of the article is organised as follows. The next section reviews the relevant literature and develops the study's hypotheses. This is followed by the theoretical framework, which explains the relevance of the Resource-Based View and Diffusion of Innovation theory to crowdfunding literacy and startup capital

formation. The subsequent section presents the conceptual framework and research hypotheses, followed by the methodology used to conduct the study. The results section reports the descriptive, measurement-model, and structural-model findings. The discussion then interprets the findings in relation to the theoretical framework and existing literature, followed by the study's theoretical contributions, practical and policy implications, limitations, directions for future research, and conclusion.

2. Literature Review

2.1 Conceptual Review

Crowdfunding and Entrepreneurial Finance

Crowdfunding is a technology-mediated form of alternative finance through which entrepreneurs seek financial contributions from a relatively large number of individuals, usually through online platforms. It can connect entrepreneurs with geographically dispersed contributors and thereby extend financing opportunities beyond conventional financial institutions and immediate personal networks (Agrawal et al., 2014; Belleflamme et al., 2014). Depending on the model, crowdfunding may involve donations, rewards, lending, or equity participation. Its growing importance in entrepreneurial finance reflects the potential of digital platforms to facilitate resource mobilisation for ventures that may struggle to access conventional sources of capital.

However, the availability of crowdfunding does not necessarily ensure effective participation. Entrepreneurs need to recognise crowdfunding as a financing opportunity, understand relevant platform processes, assess the credibility of platforms, possess the digital capabilities required to operate online, and communicate their business propositions effectively. Mollick (2014) shows that campaign characteristics are associated with crowdfunding outcomes, while Bi et al. (2017) demonstrate the importance of online information in crowdfunding investment decisions. These observations indicate that entrepreneurial capabilities may be important in converting access to crowdfunding into actual financing opportunities.

Crowdfunding Literacy

In this study, crowdfunding literacy refers to the knowledge, confidence, and practical capabilities required to understand and engage effectively with crowdfunding for entrepreneurial financing. It extends the conventional concept of financial literacy by recognising that technology-mediated financing requires capabilities beyond knowledge of financial products. Financial literacy remains important to financial decision-making (Lusardi & Mitchell, 2014), but crowdfunding additionally requires entrepreneurs to understand digital platforms, evaluate associated risks, operate within digital environments, and communicate effectively with potential funders.

Crowdfunding literacy is conceptualised through four dimensions: awareness of crowdfunding opportunities, trust in crowdfunding platforms, digital proficiency, and content presentation skills. Awareness concerns knowledge of crowdfunding and its potential as an alternative source of finance. Trust concerns confidence in the credibility, security, transparency, and reliability of crowdfunding platforms. Digital proficiency concerns the ability to navigate and use digital technologies for crowdfunding activities. Content presentation skills concern the ability to communicate a business proposition clearly and persuasively through written, visual, or audiovisual digital content.

The multidimensional nature of crowdfunding literacy is important because possession of one capability does not necessarily imply possession of the others. An entrepreneur may know about crowdfunding but lack the digital skills needed to use a platform, or may possess adequate digital skills but lack confidence in the platform. Similarly, an entrepreneur may understand and trust a platform but be unable to present a business proposition effectively to potential funders. Crowdfunding literacy is therefore treated as a combination of complementary capabilities rather than as simple awareness.

Startup Capital Formation

Startup capital formation refers to the mobilisation of financial resources required to establish and develop an entrepreneurial

venture. Rural entrepreneurs may encounter particular constraints in accessing conventional finance and may therefore rely on personal savings, family resources, informal associations, cooperatives, and other informal financing arrangements. Crowdfunding provides a potential additional channel by allowing entrepreneurs to seek contributions beyond their immediate social and geographical networks.

The usefulness of crowdfunding, however, depends on an entrepreneur's capacity to identify and exploit the opportunity. Crowdfunding literacy may therefore be associated with startup capital formation because it equips entrepreneurs with capabilities needed to recognise, access, navigate, and communicate within a digital financing environment. This relationship provides the basis for the empirical review and research model developed below.

2.2 Empirical Review

Existing crowdfunding research has established that the mechanism can facilitate alternative forms of entrepreneurial finance. Agrawal et al. (2014) demonstrate how crowdfunding can connect entrepreneurs with geographically dispersed contributors, thereby reducing some geographical limitations associated with conventional financing. Belleflamme et al. (2014) similarly establish crowdfunding as an alternative mechanism for mobilising financial resources while creating opportunities for interaction between entrepreneurs and potential supporters.

Research has also shown that crowdfunding outcomes depend partly on how entrepreneurial opportunities are presented to potential funders. Mollick (2014) finds that characteristics of crowdfunding campaigns are associated with campaign outcomes, suggesting that the success of crowdfunding is influenced by more than the underlying business idea. Bi et al. (2017) further demonstrate that online information influences crowdfunding investment decisions, highlighting the importance of information communicated through digital campaigns.

These findings provide an empirical basis for considering content presentation skills as an important dimension of crowdfunding literacy. Entrepreneurs must communicate their business propositions to potential funders who may have limited prior knowledge of the venture. Clear and credible information can therefore facilitate understanding and evaluation of the proposed opportunity.

The broader alternative-finance literature also indicates the increasing significance of crowdfunding within the entrepreneurial-finance ecosystem. Ziegler et al. (2021) document the development and expanding significance of alternative finance globally. This expansion increases the relevance of understanding not only the availability of alternative financing mechanisms but also the capabilities required by entrepreneurs to use them effectively.

Research on online transactions provides additional evidence concerning the importance of trust. Gefen et al. (2003) demonstrate that trust is important in online environments where users face uncertainty concerning the reliability of electronic transactions. Crowdfunding similarly involves reliance on digital platforms, unfamiliar counterparties, and electronic financial processes. Entrepreneurs who lack confidence in platform credibility or security may therefore be less willing to engage with crowdfunding.

The literature on financial literacy provides a further foundation for the present study. Lusardi and Mitchell (2014) establish the importance of financial literacy for financial decision-making. Crowdfunding extends this issue into a digital financing environment in which financial knowledge must be accompanied by platform awareness and digital capabilities. The present study therefore moves beyond conventional financial literacy by considering awareness, trust, digital proficiency, and content presentation as distinct capabilities.

Despite these insights, the literature provides comparatively limited empirical evidence concerning crowdfunding literacy as a multidimensional entrepreneurial capability, particularly among rural entrepreneurs in Northern Nigeria. Existing studies have predominantly focused on crowdfunding markets, campaigns, investors, online information, and the broader alternative-finance environment (Agrawal et al., 2014; Belleflamme et al., 2014; Bi et al., 2017;

Mollick, 2014). Less attention has been given to whether entrepreneurs' own knowledge, confidence, digital competence, and communication capabilities are associated with their ability to form startup capital.

The present study addresses this gap by examining four dimensions of crowdfunding literacy among rural entrepreneurs in Kano, Kaduna, and Bauchi States. It specifically investigates whether awareness of crowdfunding opportunities, trust in crowdfunding platforms, digital proficiency, and content presentation skills are positively associated with startup capital formation.

2.3 Research Framework/Model and Underpinning Theory

2.3.1 Underpinning Theories

The study is underpinned by the Resource-Based View (RBV) and Diffusion of Innovation (DOI) theory. These perspectives are complementary because RBV explains the importance of entrepreneur-level capabilities, while DOI explains engagement with crowdfunding as an emerging financing innovation.

The Resource-Based View, developed from the work of Wernerfelt (1984) and Barney (1991), explains differences in organisational outcomes in terms of resources and capabilities that can be controlled and effectively deployed. Barney (1991) argues that resources capable of providing sustained competitive advantage possess characteristics including value,

rarity, inimitability, and non-substitutability. Although originally developed in the context of firms, the perspective applies to entrepreneurial capabilities because entrepreneurs require knowledge and skills to identify opportunities and mobilise resources.

In this study, crowdfunding literacy is viewed as an entrepreneurial capability that can facilitate access to alternative financial resources. Awareness represents a knowledge capability, digital proficiency represents an operational capability, content presentation represents a communication capability, and trust facilitates confidence in engaging with the digital financing environment. From an RBV perspective, entrepreneurs possessing stronger crowdfunding-related capabilities should be better positioned to identify and exploit crowdfunding opportunities.

Diffusion of Innovation theory, developed by Rogers (2003), explains how new ideas, technologies, and practices are understood and adopted within a social system. The theory identifies knowledge, persuasion, decision, implementation, and confirmation as stages of the innovation-decision process and emphasises characteristics such as relative advantage, compatibility, complexity, trialability, and observability.

Crowdfunding can be viewed as an innovative financing mechanism for rural entrepreneurs. DOI is particularly relevant to the awareness dimension because entrepreneurs must first acquire knowledge

about crowdfunding before they can evaluate or adopt it. The theory also helps explain digital proficiency, since the ability to use the technological environment can reduce practical difficulties associated with adoption. Trust is relevant because confidence in the reliability of an unfamiliar digital financing mechanism can reduce uncertainty, while content presentation enables entrepreneurs to communicate the value of their proposed venture within the digital environment.

The two theories therefore provide complementary explanations. RBV explains why crowdfunding literacy represents a potentially valuable entrepreneurial capability, while DOI explains how awareness and technological competence can facilitate engagement with crowdfunding as an innovative financing mechanism.

2.3.2 Research Framework/Model

Drawing on the conceptual and theoretical arguments, the study specifies crowdfunding literacy as comprising four explanatory dimensions - awareness of crowdfunding opportunities, trust in crowdfunding platforms, digital proficiency, and content presentation skills—and startup capital formation as the outcome variable.

The research model specifies four direct relationships, namely the relationship between awareness of crowdfunding opportunities and startup capital formation, the relationship between trust in crowdfunding platforms and startup capital

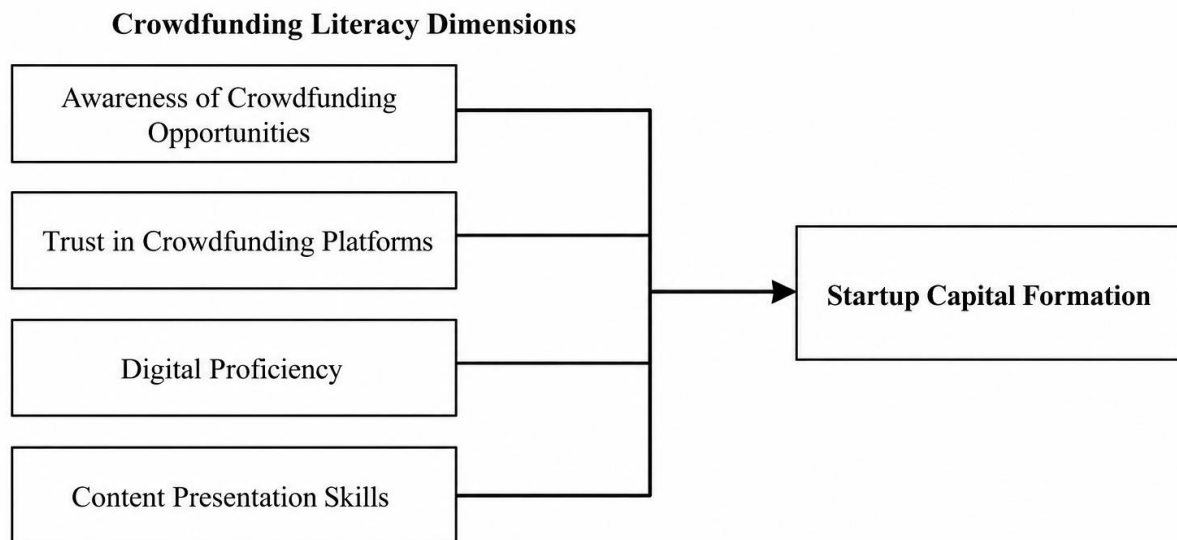
formation, the relationship between digital proficiency and startup capital formation, and the relationship between content presentation skills and startup capital formation.

The four dimensions are treated as separate explanatory constructs rather than as a sequential causal chain. Thus, the model

does not propose that awareness causes trust, that trust causes digital proficiency, or that digital proficiency causes content presentation skills. Each dimension is independently related to startup capital formation, and this specification is consistent with the structural model estimated in the study.

Figure 1

Research Framework/Model



Source: Author's conceptualisation based on the literature and theoretical framework.

The model proposes that rural entrepreneurs possessing greater awareness, stronger trust, higher digital proficiency, and stronger content presentation skills are better positioned to engage with crowdfunding and mobilise startup capital. The framework does not assume that crowdfunding literacy automatically produces capital; rather, it proposes that these capabilities are

positively associated with the capacity to mobilise startup finance.

2.3.3 Hypotheses Development

Awareness of Crowdfunding Opportunities and Startup Capital Formation

Awareness is the informational foundation for considering crowdfunding as an

alternative financing mechanism. Entrepreneurs must know that crowdfunding exists and understand its basic financing possibilities before they can evaluate its relevance to their ventures. This expectation is consistent with DOI's emphasis on knowledge as the starting point of innovation adoption (Rogers, 2003) and with RBV's recognition of knowledge as an entrepreneurial capability (Barney, 1991; Wernerfelt, 1984). The expansion of alternative-finance markets further increases the potential relevance of awareness to entrepreneurial financing decisions (Ziegler et al., 2021). Accordingly, the study hypothesises that greater awareness is positively associated with startup capital formation.

H₁: Awareness of crowdfunding opportunities has a significant positive relationship with startup capital formation among rural entrepreneurs in Northern Nigeria.

Trust in Crowdfunding Platforms and Startup Capital Formation

Crowdfunding requires entrepreneurs to rely on digital platforms to communicate information and facilitate financial interactions. Trust can reduce uncertainty concerning platform credibility, security, and reliability. Gefen et al. (2003) demonstrate the importance of trust in online transactions, suggesting that confidence in a digital environment can facilitate willingness to engage with electronic systems. Accordingly, entrepreneurs with greater trust in crowdfunding platforms are

expected to demonstrate stronger startup capital formation.

H₂: Trust in crowdfunding platforms has a significant positive relationship with startup capital formation among rural entrepreneurs in Northern Nigeria.

Digital Proficiency and Startup Capital Formation

Crowdfunding is fundamentally technology-mediated and requires entrepreneurs to access platforms, create campaigns, upload information, communicate with potential funders, and manage online activities. Digital proficiency therefore represents an operational capability that can enable entrepreneurs to exploit digital financing opportunities. From the RBV perspective, it is a capability for resource mobilisation, while from the DOI perspective it can reduce the practical complexity associated with using an innovative digital mechanism. Accordingly, greater digital proficiency is expected to be positively associated with startup capital formation.

H₃: Digital proficiency has a significant positive relationship with startup capital formation among rural entrepreneurs in Northern Nigeria.

Content Presentation Skills and Startup Capital Formation

Crowdfunding requires entrepreneurs to communicate their business propositions to a potentially dispersed audience. The quality, clarity, and credibility of campaign information can therefore influence how

potential funders evaluate an opportunity. Mollick (2014) identifies campaign characteristics as relevant to crowdfunding outcomes, while Bi et al. (2017) demonstrate the importance of online information in crowdfunding investment decisions. Content presentation skills consequently represent an important communication capability through which entrepreneurs can communicate the value of their ventures to potential funders.

H₄: Content presentation skills have a significant positive relationship with startup capital formation among rural entrepreneurs in Northern Nigeria.

3. Method

3.1 Research Design

The study employed a quantitative, cross-sectional survey design to examine the relationships between four dimensions of crowdfunding literacy and startup capital formation among rural entrepreneurs in Northern Nigeria. A quantitative approach was appropriate because the study sought to operationalise specified constructs, collect standardised responses, and statistically test the hypothesised relationships. The cross-sectional design enabled data to be collected from the target respondents during a single period and was therefore suitable for examining patterns of association among the study variables.

The study is treated as quantitative rather than mixed methods because the reported data collection and analysis procedures comprise a structured questionnaire,

confirmatory factor analysis (CFA), and structural equation modelling (SEM), with no qualitative sample, interview procedure, or qualitative analysis reported. Given the cross-sectional design, the estimated relationships are interpreted as statistical associations rather than definitive causal effects.

3.2 Sampling and Participants

3.2.1 Study Population and Context

The target population comprised rural entrepreneurs in Northern Nigeria, particularly those engaged in activities such as agribusiness, retail, and artisanal production. The study focused on rural entrepreneurs because they may face constraints in accessing conventional startup finance arising from limited collateral, inadequate financial histories, geographical barriers, and restricted access to formal financial institutions. These conditions provide an appropriate context for examining whether crowdfunding-related knowledge and capabilities are associated with startup capital formation.

The study was conducted in Kano, Kaduna, and Bauchi States. These states were selected as the geographical settings for identifying rural entrepreneurs and provided a multi-state Northern Nigerian context for examining crowdfunding literacy and startup capital formation.

The unit of analysis was the individual rural entrepreneur. Although the original manuscript reports an estimate of more than

18 million rural micro-enterprises in Northern Nigeria, the basis for this population estimate is not sufficiently documented. It is therefore not used as a definitive population parameter in the present study.

3.2.2 Sampling Procedure and Sample Size

A multistage sampling procedure was employed. Kano, Kaduna, and Bauchi States were purposively selected at the first stage. Rural Local Government Areas within the selected states were then identified, followed by the selection of entrepreneurs across relevant business activities using a stratified sampling approach. The procedure was intended to provide coverage across rural locations and business activities while maintaining the feasibility of primary-data collection.

The final sample comprised 384 rural entrepreneurs. The original study indicates that the sample size was determined using the procedure proposed by Krejcie and Morgan (1970). The manuscript does not report the number of questionnaires distributed, the number returned or excluded, or the response rate; these statistics are therefore not introduced into the revised method.

The attached methodology does not provide a complete demographic profile of the 384 respondents. Accordingly, no percentages or distributions for age, gender, education, business type, or entrepreneurial experience are reported here. Such information should

be added to the final manuscript if it is available in the original survey dataset.

3.3 Data Collection

Primary data were collected using a structured questionnaire comprising six sections. Section A obtained respondents' demographic information, while Sections B–F measured awareness of crowdfunding opportunities, trust in crowdfunding platforms, digital proficiency, content presentation skills, and startup capital formation, respectively.

The substantive items were measured on a five-point Likert scale, ranging from 1 = *Strongly Disagree* to 5 = *Strongly Agree*. The common response format facilitated quantitative measurement of the latent constructs and their subsequent assessment through CFA and SEM.

Before the main survey, the questionnaire was pilot-tested with 30 rural entrepreneurs in Nasarawa State, outside the principal study locations. The pilot exercise assessed the clarity, consistency, and practical suitability of the instrument. The reported overall Cronbach's alpha of 0.78 indicated acceptable internal consistency for the pilot instrument.

Content validity was further addressed through expert assessment. Three academics specialising in entrepreneurial finance and rural development reviewed the questionnaire to assess the adequacy and contextual appropriateness of the items.

The original methodology states that the questionnaire was based on validated measures from previous literature but does not identify the source of each item. The revised method therefore does not attribute specific measurement items to sources that cannot be verified from the available research record.

Ethical procedures were observed during data collection. The study reports that institutional ethical approval was obtained and that informed consent was secured from participants. Respondents were informed that their responses would be treated confidentially and anonymously and that participation could be withdrawn without consequences. The specific approving body and approval number are not reported in the attached methodology and are therefore not supplied here.

3.4 Measures

The study comprised four explanatory constructs and one outcome construct. Awareness of crowdfunding opportunities measured the extent to which entrepreneurs understand crowdfunding as an alternative source of finance and recognise its basic opportunities and processes. Trust in crowdfunding platforms measured confidence in the credibility, reliability, security, and integrity of crowdfunding platforms and their associated transactions. Digital proficiency measured the ability to use digital technologies and online platforms for activities relevant to crowdfunding, including platform navigation, campaign management, information uploading, and

communication with potential funders. Content presentation skills measured the ability to communicate a business proposition clearly and persuasively through textual, visual, or audiovisual digital content. Startup capital formation represented the entrepreneur's capacity to mobilise the financial resources required to establish an entrepreneurial venture.

Because startup capital formation was measured through self-reported questionnaire items rather than independently verified financial records, the construct represents the respondents' reported financing outcome and should not be interpreted as a verified monetary amount raised through crowdfunding.

3.5 Data Analysis

Data were analysed using IBM SPSS Statistics version 26 and Structural Equation Modelling (SEM) using AMOS. The analysis proceeded in three stages. First, descriptive statistics were used to summarise respondent characteristics and the distributions of the study constructs. Second, CFA was conducted to evaluate the measurement model. Third, SEM was used to estimate the hypothesised relationships between the four dimensions of crowdfunding literacy and startup capital formation.

CFA assessed whether the observed indicators adequately represented their respective latent constructs. Model adequacy was evaluated using χ^2/df , Comparative Fit Index (CFI), Tucker-Lewis Index (TLI),

Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). The use of multiple fit indices provides a more comprehensive assessment of model adequacy, consistent with established structural-equation modelling recommendations (Hu & Bentler, 1999).

SEM was selected because the study examines relationships among latent constructs measured using multiple questionnaire items. It permits simultaneous estimation of the structural relationships while accounting for the measurement properties of the constructs. The structural model was evaluated using the reported goodness-of-fit indices, while the standardised path coefficients and associated *p*-values were used to assess the hypotheses.

The structural model can be expressed as:

$$SCF = \beta_0 + \beta_1 ACW + \beta_2 TCP + \beta_3 DP + \beta_4 CPS + \varepsilon \quad (1)$$

where SCF represents startup capital formation, ACW represents awareness of crowdfunding opportunities, TCP represents trust in crowdfunding platforms, DP represents digital proficiency, CPS represents content presentation skills, β_0 is the intercept, $\beta_1 - \beta_4$ are the estimated structural coefficients, and ε represents the unexplained component.

Because the study is based on cross-sectional data, the estimated coefficients are interpreted as associations rather than definitive causal effects.

3.6 Reliability and Construct Validity

Measurement quality was assessed through content validity, convergent validity, and composite reliability. The three academic experts reviewed the questionnaire for content coverage and contextual appropriateness.

Convergent validity was assessed using standardised factor loadings and Average Variance Extracted (AVE). The reported factor loadings exceeded 0.60, while AVE values exceeded the conventional 0.50 threshold, providing evidence of adequate convergent validity. Composite Reliability (CR) values also exceeded 0.70, indicating acceptable internal consistency.

The available methodology does not report a specific discriminant-validity statistic such as the Fornell–Larcker criterion or HTMT ratios. Accordingly, the revised article does not make a definitive empirical claim that discriminant validity was established. If such results are available from the underlying AMOS analysis, they should be incorporated into the final measurement-model table.

3.7 Scope of Methodological Interpretation

Three methodological considerations define the scope of the findings. First, the cross-sectional design does not establish temporal precedence or causality. Second, the study relies on self-reported questionnaire responses, which may be influenced by respondents' subjective interpretation or reporting tendencies. Third, the geographical

scope is limited to rural entrepreneurs in Kano, Kaduna, and Bauchi States, requiring caution in generalising the findings to all rural entrepreneurs in Nigeria. In addition, startup capital formation is based on a self-reported construct rather than independently verified monetary records.

4. Results and Discussion

4.1 Descriptive Results

Descriptive statistics were first examined to establish the reported levels of the study constructs among the sampled rural entrepreneurs. The results indicate generally favourable responses across the dimensions of crowdfunding literacy. Content presentation skills recorded the highest mean ($M = 3.90$), followed by awareness of crowdfunding opportunities ($M = 3.80$) and trust in crowdfunding platforms ($M = 3.50$). These values indicate moderate-to-high reported levels across the measured constructs.

The relatively high mean for content presentation skills is noteworthy because this construct subsequently records the strongest standardised relationship with startup capital formation. However, the descriptive statistics alone do not establish a relationship or causal effect; those conclusions depend on the structural-model results.

4.2 Measurement Model Results

Confirmatory Factor Analysis (CFA) was conducted to determine whether the observed questionnaire indicators adequately represented their respective latent constructs. The measurement model produced satisfactory fit, with $\chi^2/df = 1.89$, CFI = 0.961, TLI = 0.942, RMSEA = 0.048, and SRMR = 0.039. These values indicate an acceptable overall correspondence between the proposed measurement model and the observed data, consistent with established recommendations for evaluating structural-equation models (Hu & Bentler, 1999).

Table 3
Measurement Model Fit Indices

Fit index	Reported value	Interpretation
χ^2/df	1.89	Acceptable fit
CFI	0.961	Good fit
TLI	0.942	Good fit
RMSEA	0.048	Good/close fit
SRMR	0.039	Good fit

Source: Author's analysis.

The reliability and convergent-validity assessment further indicated that standardised factor loadings exceeded 0.60,

AVE values exceeded 0.50, and CR values exceeded 0.70. These results support the adequacy of the indicators and provide evidence of convergent validity and composite reliability.

Table 4**Summary of Measurement-Model Reliability and Validity**

Assessment	Reported result			Decision	
Standardised factor loadings	> 0.60			Acceptable	
Average Variance Extracted (AVE)	> 0.50			Acceptable	
Composite Reliability (CR)	> 0.70			Acceptable	
Convergent validity	Supported			Acceptable	
Discriminant validity	Separate reported	statistic	not	Requires verification	additional

Source: Author's analysis.

The available analysis does not report construct-specific factor loadings, AVE and CR values, or a separate Fornell–Larcker or HTMT assessment. Consequently, the findings support convergent validity and composite reliability, but a definitive claim concerning discriminant validity cannot be made from the reported statistics alone.

4.3 Structural Model and Hypothesis Testing

Following confirmation of the measurement model, the structural model was estimated to examine the four hypothesised relationships between crowdfunding-literacy dimensions and startup capital formation. The structural model produced $\chi^2/df = 1.98$, CFI = 0.967, RMSEA = 0.049, and SRMR = 0.041, indicating satisfactory overall fit. The structural-model output does not report a TLI value, and no value is inferred from the other statistics.

Table 5**Structural Model Fit Indices**

Fit index	Reported value	Interpretation
χ^2/df	1.98	Acceptable fit
CFI	0.967	Good fit
RMSEA	0.049	Good/close fit
SRMR	0.041	Good fit
TLI	Not reported	—

Source: Author's analysis.

All four hypothesised relationships are positive and statistically significant. Awareness of crowdfunding opportunities

has a positive relationship with startup capital formation ($\beta = 0.29$, $p = 0.003$), supporting H1. Trust in crowdfunding

platforms is also positively associated with startup capital formation ($\beta = 0.22$, $p = 0.019$), supporting H2. Digital proficiency demonstrates a positive relationship with startup capital formation ($\beta = 0.25$, $p =$

0.012), supporting H3. Content presentation skills have the strongest standardised relationship with startup capital formation ($\beta = 0.35$, $p = 0.001$), supporting H4.

Table 6

Structural Relationships and Hypothesis Testing

Hypothesis	Relationship	β	p-value	Decision
H1	Awareness $\rightarrow$ Startup capital formation	0.29	0.003	Supported
H2	Trust $\rightarrow$ Startup capital formation	0.22	0.019	Supported
H3	Digital proficiency $\rightarrow$ Startup capital formation	0.25	0.012	Supported
H4	Content presentation skills $\rightarrow$ Startup capital formation	0.35	0.001	Supported

Source: Author's analysis.

The standardised coefficients indicate the following ordering of the predictors:

Content presentation skills ($\beta = 0.35$) > Awareness ($\beta = 0.29$) > Digital proficiency ($\beta = 0.25$) > Trust ($\beta = 0.22$).

Although content presentation skills have the strongest association, all four dimensions are statistically significant. The coefficients should therefore be interpreted as evidence of relative strength within the estimated model rather than as evidence that one dimension renders the others unimportant.

4.4 Discussion of Findings

4.4.1 Awareness of Crowdfunding Opportunities and Startup Capital Formation

The positive and statistically significant relationship between awareness of crowdfunding opportunities and startup capital formation ($\beta = 0.29$, $p = 0.003$) supports H1. The finding indicates that entrepreneurs with greater awareness of crowdfunding opportunities tend to report stronger startup capital formation. Awareness is an important starting point because crowdfunding cannot become a viable financing option for an entrepreneur who does not recognise its existence or understand its basic operation.

The result is consistent with Diffusion of Innovation (DOI) theory, which identifies knowledge as the initial stage of the innovation-decision process (Rogers, 2003). It also supports the Resource-Based View (RBV), under which knowledge concerning alternative financing opportunities can constitute an intangible capability that enables entrepreneurs to identify and exploit available resources (Barney, 1991; Wernerfelt, 1984).

For rural entrepreneurs, this finding is particularly relevant because reliance on personal savings, family resources, informal associations, or conventional credit may limit the range of financing alternatives considered. Greater awareness may broaden that financing opportunity set. However, because the study is cross-sectional, the result indicates an association rather than a definitive causal effect.

4.4.2 Trust in Crowdfunding Platforms and Startup Capital Formation

H2 is supported by the positive and statistically significant relationship between trust in crowdfunding platforms and startup capital formation ($\beta = 0.22$, $p = 0.019$). The finding suggests that confidence in the credibility, reliability, and security of crowdfunding platforms is associated with entrepreneurs' reported ability to form startup capital.

Crowdfunding involves digitally mediated financial interactions, disclosure of business information, and reliance on technological

infrastructure and unfamiliar counterparties. The result is consistent with Gefen et al. (2003), who demonstrate the importance of trust in electronic transactions where users face uncertainty concerning digital systems and counterparties.

Trust records the smallest coefficient among the four predictors, but its statistical significance indicates that it remains an important dimension of crowdfunding literacy. The finding suggests that confidence in a platform may provide a supportive condition for participation, although trust alone may not be sufficient where entrepreneurs lack awareness, digital proficiency, or communication capabilities. This reinforces the study's multidimensional conceptualisation of crowdfunding literacy.

4.4.3 Digital Proficiency and Startup Capital Formation

The positive and statistically significant relationship between digital proficiency and startup capital formation ($\beta = 0.25$, $p = 0.012$) supports H3. The result highlights the importance of practical digital capability in using technology-mediated financing. Crowdfunding requires entrepreneurs to access platforms, create campaigns, upload information, communicate with potential funders, and manage online activities.

The finding is consistent with both RBV and DOI. From an RBV perspective, digital proficiency represents an operational capability through which entrepreneurs can exploit a digital financing resource. From the DOI perspective, digital competence can

reduce the practical complexity associated with engaging with an innovation (Rogers, 2003). The finding also underscores the distinction between access to digital technology and the ability to use it effectively.

This distinction is particularly relevant to rural entrepreneurship, where differences in digital exposure, access to devices, education, and digital infrastructure may affect entrepreneurs' capacity to use online financing mechanisms. The result therefore suggests that promoting crowdfunding should involve capability development as well as platform availability.

4.4.4 Content Presentation Skills and Startup Capital Formation

Content presentation skills record the strongest positive and statistically significant relationship with startup capital formation ($\beta = 0.35$, $p = 0.001$), providing support for H4. The finding suggests that the ability to communicate a business proposition clearly and persuasively may be particularly relevant to entrepreneurs seeking to mobilise capital through crowdfunding.

Crowdfunding differs from many traditional financing arrangements because entrepreneurs may need to communicate directly with a large and geographically dispersed audience of potential funders who have limited prior knowledge of the venture. Campaign information therefore becomes an important means through which potential funders evaluate the opportunity.

The finding is consistent with Mollick (2014), who demonstrates that campaign characteristics are associated with crowdfunding outcomes, and Bi et al. (2017), who show that online information influences crowdfunding investment decisions. The present study extends this perspective by focusing specifically on the entrepreneur's content-presentation capability, rather than only on campaign characteristics or funder behaviour.

The result also supports the RBV interpretation of content presentation as an intangible communication capability that can help entrepreneurs transform a business opportunity into information that potential funders can understand and evaluate. Its relatively strong coefficient nevertheless represents an association rather than proof of a causal mechanism.

4.5 Integrated Discussion

Taken together, the findings demonstrate that all four dimensions of crowdfunding literacy are positively and significantly associated with startup capital formation. The results therefore support the central proposition that crowdfunding literacy is a multidimensional entrepreneurial capability rather than simply an awareness of crowdfunding.

The relative ordering of the coefficients provides additional insight. Awareness makes crowdfunding opportunities visible to the entrepreneur; trust supports confidence in the digital financing environment; digital proficiency enables practical platform

participation; and content presentation skills facilitate communication with potential funders. The dimensions therefore represent complementary capabilities, although they were estimated as separate predictors rather than as a sequential causal chain.

The findings provide complementary support for RBV and DOI. RBV helps explain why differences in entrepreneur-level capabilities may be associated with differences in the ability to mobilise external financial resources. Awareness can be viewed as a knowledge capability, digital proficiency as an operational capability, content presentation as a communication capability, and trust as a confidence-related capability that facilitates engagement with a digitally mediated financial environment.

DOI, in turn, helps explain engagement with crowdfunding as an emerging financing mechanism. Awareness is consistent with the knowledge stage of innovation adoption, while digital proficiency facilitates practical engagement with the technology. Trust is relevant to the uncertainty surrounding an unfamiliar digital financial mechanism, and content presentation reflects the entrepreneur's active communication within the digital environment.

The integration of the two perspectives therefore suggests that DOI explains engagement with crowdfunding as an innovative financing mechanism, while RBV explains the value of the entrepreneur's capabilities in exploiting that financing mechanism. This integrated interpretation is

consistent with the finding that all four dimensions are significantly associated with startup capital formation.

The findings are broadly consistent with previous crowdfunding research. The role of trust accords with evidence on electronic transactions (Gefen et al., 2003), while the importance of content presentation is consistent with research emphasising campaign information and characteristics (Bi et al., 2017; Mollick, 2014). The study's distinctive contribution is therefore not the claim that these factors have individually never appeared in previous research. Rather, it is the integration of the four capabilities into a crowdfunding-literacy framework and their empirical examination among rural entrepreneurs in Northern Nigeria.

The findings are also important in the rural Northern Nigerian context. Rural entrepreneurs may face geographical, collateral, documentation, and digital-access constraints that differ from those encountered by entrepreneurs in larger urban centres. Crowdfunding can potentially broaden their financing opportunity set by connecting them with geographically dispersed funders, but the present findings indicate that the benefits of such a mechanism are partly capability-dependent. Digital financial inclusion therefore involves not only infrastructure and access but also the capabilities required to convert digital access into meaningful financial participation.

Overall, the evidence indicates that awareness, trust, digital proficiency, and content presentation skills are all positively associated with startup capital formation, with content presentation skills exhibiting the strongest standardised association. The results consequently support the study's argument that crowdfunding literacy is an important entrepreneur-level capability in alternative digital financing. Nevertheless, the cross-sectional design means that the findings should be interpreted as relationships rather than causal effects.

4.6 Summary of Results and Discussion

The results can be summarised in four findings. First, awareness of crowdfunding opportunities is positively associated with startup capital formation ($\beta = 0.29$, $p = 0.003$). Second, trust in crowdfunding platforms has a positive and significant association ($\beta = 0.22$, $p = 0.019$). Third, digital proficiency is positively associated with startup capital formation ($\beta = 0.25$, $p = 0.012$). Fourth, content presentation skills demonstrate the strongest positive association ($\beta = 0.35$, $p = 0.001$). Consequently, all four hypotheses are supported.

The combined evidence indicates that effective participation in crowdfunding involves more than awareness of the financing mechanism. Rural entrepreneurs require a combination of knowledge, confidence, digital capability, and communication capability to engage effectively with digital alternative finance. This finding provides the empirical foundation for the theoretical and practical

implications developed in the subsequent sections.

5. Conclusion

This study examined the relationships between crowdfunding literacy and startup capital formation among rural entrepreneurs in Northern Nigeria. Specifically, it investigated whether four dimensions of crowdfunding literacy - awareness of crowdfunding opportunities, trust in crowdfunding platforms, digital proficiency, and content presentation skills—are associated with startup capital formation.

The study employed a quantitative cross-sectional survey design and analysed data from 384 rural entrepreneurs using confirmatory factor analysis and structural equation modelling. The measurement model demonstrated acceptable fit, with the reported fit indices indicating that the specified measurement structure provided an adequate representation of the observed data. The structural model also demonstrated satisfactory fit.

The empirical findings provide support for all four hypothesised relationships. Awareness of crowdfunding opportunities has a positive and statistically significant relationship with startup capital formation ($\beta = 0.29$, $p = 0.003$). Trust in crowdfunding platforms is also positively and significantly associated with startup capital formation ($\beta = 0.22$, $p = 0.019$). Digital proficiency demonstrates a positive and statistically significant relationship with startup capital formation ($\beta = 0.25$, $p = 0.012$), while

content presentation skills exhibit the strongest standardised association among the four dimensions ($\beta = 0.35$, $p = 0.001$).

The findings suggest that the ability of rural entrepreneurs to benefit from crowdfunding is not simply a matter of whether digital financing platforms exist. Entrepreneurs require a combination of knowledge, confidence, technological capability, and communication skills to engage effectively with the crowdfunding environment. Awareness enables entrepreneurs to recognise crowdfunding as a potential financing opportunity; trust supports confidence in the platform through which the opportunity is pursued; digital proficiency facilitates practical interaction with the digital environment; and content presentation skills enable entrepreneurs to communicate their business propositions to potential funders.

The comparatively strong relationship between content presentation skills and startup capital formation is particularly noteworthy. Crowdfunding frequently requires entrepreneurs to communicate directly with a dispersed audience of potential contributors who may have little prior knowledge of the entrepreneur or the proposed venture. The ability to communicate the business proposition clearly and persuasively may therefore represent an important entrepreneurial capability within a digital financing environment.

The findings also contribute to the theoretical understanding of crowdfunding literacy. From the Resource-Based View, the four dimensions can be interpreted as intangible entrepreneurial capabilities that may help entrepreneurs identify, access, and exploit alternative sources of financial resources. From the Diffusion of Innovation perspective, awareness and digital proficiency are relevant to entrepreneurs' engagement with crowdfunding as an innovative financing mechanism, while trust and communication capabilities may facilitate effective participation within the digital environment.

The integration of the two theoretical perspectives provides a broader explanation of the crowdfunding-capital relationship. Diffusion of Innovation theory helps explain the process through which entrepreneurs become aware of and engage with an emerging financing mechanism, whereas the Resource-Based View helps explain why differences in entrepreneur-level capabilities may be associated with differences in the ability to exploit that financing opportunity.

The study also has practical implications for efforts to strengthen rural entrepreneurial finance. Policies and programmes aimed at expanding crowdfunding should not focus exclusively on the establishment or promotion of digital platforms. They should also strengthen entrepreneurs' crowdfunding awareness, digital proficiency, ability to assess platform credibility, and capacity to present business propositions effectively. Entrepreneurship-support institutions,

financial-inclusion programmes, crowdfunding platforms, and development organisations can incorporate these capabilities into practical training and business-development interventions.

At the same time, the findings should be interpreted within the limits of the research design. The cross-sectional nature of the study means that the observed relationships should not be interpreted as definitive causal effects. The geographical focus on Kano, Kaduna, and Bauchi also limits direct generalisation to all rural entrepreneurs in Nigeria. Furthermore, the use of self-reported measures means that startup capital formation represents the measured survey construct rather than independently verified monetary amounts raised through crowdfunding. The manuscript also does not provide sufficient construct-level statistics to permit a complete independent assessment of discriminant validity.

Despite these limitations, the study provides useful empirical evidence concerning the capability dimension of alternative entrepreneurial finance. Its central conclusion is that crowdfunding literacy, expressed through awareness of crowdfunding opportunities, trust in crowdfunding platforms, digital proficiency, and content presentation skills, is positively and significantly associated with startup capital formation among the rural entrepreneurs examined in Northern Nigeria.

The study therefore suggests that the potential contribution of crowdfunding to

inclusive entrepreneurial finance depends partly on the capabilities of the entrepreneurs who seek to use it. Strengthening those capabilities, alongside improvements in digital infrastructure, platform credibility, financial inclusion, and the institutional environment, may enhance the ability of rural entrepreneurs to explore alternative financing opportunities.

Future research should build on these findings through longitudinal, experimental, comparative, and objective-performance studies. In particular, research that measures actual crowdfunding campaigns and amounts raised, while examining how crowdfunding literacy develops through targeted training and entrepreneurial experience, would provide stronger evidence concerning the mechanisms through which entrepreneurial capabilities are translated into financing outcomes.

In conclusion, crowdfunding should not be viewed simply as a technological platform that makes financial resources available to entrepreneurs. Its effective use requires a set of complementary entrepreneurial capabilities. For rural entrepreneurs operating in resource-constrained environments, strengthening these capabilities may represent an important component of efforts to broaden access to alternative sources of startup finance.

6. Implications/Recommendations

The findings have implications for policymakers, crowdfunding platforms, entrepreneurship-support organisations,

financial institutions, and educational institutions. The central implication is that expanding the contribution of crowdfunding to rural entrepreneurial finance requires attention not only to the availability of digital financing platforms but also to the capabilities of entrepreneurs who use them.

6.1 Policy and Financial-Inclusion Implications

The positive relationships between awareness, trust, digital proficiency, content presentation skills, and startup capital formation indicate that crowdfunding literacy should be incorporated into broader financial-inclusion and entrepreneurship-development programmes. Government agencies and development organisations should introduce rural entrepreneurs to crowdfunding models, legitimate platforms, platform risks, campaign requirements, and responsible management of funds. This is particularly relevant because awareness of crowdfunding opportunities has a significant positive relationship with startup capital formation ($\beta = 0.29$, $p = 0.003$).

Such programmes should move beyond general awareness to practical capability development. A suitable approach would combine crowdfunding awareness, platform evaluation, digital proficiency, and entrepreneurial communication rather than treating any single capability as sufficient. This reflects the multidimensional nature of crowdfunding literacy identified by the study.

6.2 Recommendations for Crowdfunding Platforms and Regulators

The significant relationship between trust and startup capital formation ($\beta = 0.22$, $p = 0.019$) highlights the importance of platform credibility. Crowdfunding platforms should therefore provide transparent information on fees, requirements, campaign procedures, and fund management, while strengthening user verification, information security, customer support, and accessible platform interfaces. Educational materials, templates, tutorials, and campaign-development guidance could further assist inexperienced rural entrepreneurs.

Regulators should complement these efforts through a clear framework covering platform registration and oversight, disclosure, participant protection, fund safeguarding, cybersecurity, complaint resolution, and transparency of platform charges. Such arrangements can reduce uncertainty and strengthen confidence without unnecessarily restricting legitimate crowdfunding activity.

6.3 Recommendations for Digital and Entrepreneurship Training

Digital proficiency has a positive and significant relationship with startup capital formation ($\beta = 0.25$, $p = 0.012$). Consequently, digital-literacy programmes for rural entrepreneurs should extend beyond basic technology awareness to practical skills relevant to crowdfunding, including platform navigation, account management, uploading documents and multimedia content, online communication,

digital payments, cybersecurity, and management of digital fundraising activities. Where possible, training should be accompanied by improvements in connectivity and access to appropriate devices.

The strongest relationship in the model is between content presentation skills and startup capital formation ($\beta = 0.35$, $p = 0.001$). Entrepreneurship-development programmes should therefore incorporate practical training in entrepreneurial storytelling, concise business propositions, crowdfunding campaign narratives, visual and video communication, presentation of funding requirements, and transparent communication with potential funders. Training should emphasise accurate and responsible communication rather than merely making campaigns attractive.

6.4 Recommendations for Rural Entrepreneurship Support

Entrepreneurship-support organisations, universities, polytechnics, incubators, and development agencies can integrate crowdfunding literacy into existing MSME, agricultural entrepreneurship, youth-

enterprise, digital-finance, and business-development programmes rather than creating entirely separate interventions. Practical workshops and simulated crowdfunding campaigns could allow entrepreneurs to develop and test campaign content before approaching actual platforms.

Because rural entrepreneurs differ in digital experience, connectivity, education, communication preferences, and exposure to alternative financial products, interventions should use accessible communication formats and practical demonstrations. Local cooperatives, community associations, and established entrepreneurship-support networks can provide effective channels for delivering such programmes.

6.5 Integrated Recommendation

The four significant relationships suggest that policymakers and support organisations should adopt a bundled crowdfunding-literacy approach rather than prioritising a single capability. Although content presentation skills have the strongest standardised association, all four dimensions are statistically significant:

Dimension	B	p-value
Content presentation skills	0.35	0.001
Awareness	0.29	0.003
Digital proficiency	0.25	0.012
Trust	0.22	0.019

The recommended intervention should therefore combine crowdfunding awareness, platform trust and risk assessment, digital

proficiency, and content presentation skills. The objective should not be to encourage indiscriminate adoption of crowdfunding,

but to equip entrepreneurs to determine when it is appropriate, identify legitimate platforms, understand relevant risks, communicate their propositions responsibly, and manage funds transparently.

6.6 Overall Recommendation

The study recommends that crowdfunding literacy be incorporated into Nigeria's broader strategies for digital financial inclusion and rural entrepreneurship development. Expanding the supply of digital financing platforms alone is unlikely to be sufficient if potential users lack the knowledge, confidence, digital competence, and communication skills required to exploit them effectively. A coordinated ecosystem involving entrepreneurs, support organisations, crowdfunding platforms, financial institutions, and regulators would provide a more sustainable basis for developing crowdfunding as an alternative source of startup finance.

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