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"Impact of Vernacular AI Voice Advertisements on Rural Consumer Adoption of Fintech Products"—An Empirical Study

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ABSTRACT

Fintech services in india have witnessed tremendous growth that has opened new possibilities of financial inclusion, particularly in rural areas. Nevertheless, the uptake rate by rural consumers is relatively low because of language, low digital literacy, and a lack of trust. As artificial intelligence (ai) has grown, personalised and culturally appealing ai voice advertisements have now become a reality. This paper will consider how the impact of vernacular ai voice advertisements on the awareness, trust and adoption of fintech products that include mobile banking applications, upi payment services, digital wallets, and micro-loan applications by rural consumers. The sample size of 100 rural participants in karnataka forms the sample size and is used to investigate the relationship between the familiarity with languages, their clarity, relevancy, and perceived credibility of ai-generated voices and the intention to use fintech with their voice recognition application. The results have shown that vernacular ai voice advertisements largely improve comprehension, develop trust, and have a positive effect on adoption behaviour. The paper concludes by stating that digital financial inclusion in rural india can be faster by implementing vernacular ai voice strategies by fintech firms.

Keywords: Fintech adoption, Vernacular advertising, AI voice ads, Rural consumers, Digital financial inclusion, Trust, Language familiarity.

INTRODUCTION

Indian financial technology (fintech) has transformed the Indian digital economy to allow for easy payment solutions, mobile banking, digital wallets, micro-loans, the availability of insurance, and financial literacy solutions. Some of the government programs, including UPI, Jan Dhan Yojana, Aadhaar-enabled services and the Digital India mission, have enhanced the transition to cashless ecosystems. Nevertheless, even after a long way of progress, the level of fintech product adoption in rural areas is significantly lower than in urban ones. The literature is consistent on the issues that affect rural consumers, namely limited language, low levels of digital literacy, low levels of perceived trust, lack of knowledge regarding application interfaces, and lack of personalised communication. To most rural clients, financial products would remain elusive and abstract, and not easy to comprehend using traditional advertising channels.

Conventional advertisement, which is often circulated in English or standard Hindi, does not appeal to the rural population, who mostly use the vernacular languages to communicate in their daily activities. Consequently, these advertisements fail to competently encourage the use and confidence in financial technologies. Linguistic and cultural barriers exist since increased access to smartphones and the internet in rural India has opened new opportunities for tailored and digital-first communication. It is against this background that the artificial intelligence (AI)-generated vernacular voice-based adverts have come out as a potential communication strategy.

AI voice technologies currently provide the capability to generate natural-sounding voices in local languages and dialects, tune and control the tone and phrasing, and generate hyper-localised messages on a large scale. Localised AI voice advertisements may make the ideas of fintech easier to understand, create familiarity with local accents, and lower the thinking load of low literacy users. Voice communication is also relevant in rural markets where passing of information orally is one of the

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue II, February 2026

cultural trends. Nevertheless, even though there has been a growing adoption of AI voice systems by fintech companies, scholarly studies investigating their impact on the consumer behaviour of the rural population are hardly available.

Although general fintech adoption motivators and vernacular marketing efficacy have been analysed, and the significance of trust in digital finance has been explored, no empirical research has pooled these notions together in the AI-mediated voice advertising framework. The evidence concerning the question of whether the vernacular AI voice ads enhance the understanding, foster trust, and finally encourage rural consumers to use fintech services is still missing.

In this paper, the research gap will be filled by examining how vernacular AI-generated voice-based adverts affect the perceptions of consumers in rural areas in terms of their understanding, trust, and intention to adopt fintech products. The study will undertake further understanding of the processing of AI-generated audio communication among rural audiences by paying more attention to the level of familiarity with the language, voice genuineness, cultural irrelevance, and perceived credibility. The research will also look at the mediating effect of trust, which is a well-known factor that dictates the adoption of fintech among low-literacy environments.

The research aims to investigate a neglected area of study of vernacular communication, artificial intelligence, and digital finance, which would help further the creation of more inclusive, culturally responsive, and technologically knowledgeable marketing approaches to be used by fintech companies serving rural India.

REVIEW OF LITERATURE

Shih-Hao Lu, Huyen Thi Thanh Tran & Thanh-Sang Ngo (2024): In their study, the researchers analyse the power of artificial intelligence (AI) and human voices in audio advertisements in the conditions of low-attention with multitasking listening. The study is based on the PLS-SEM model and a large sample of 1,292 respondents to examine the correlation between voice effectiveness, attitude towards the ad, recall, and the period of exposure. As the analysis results have indicated, advertisements that are presented by humans exhibit a significant positive correlation among all these variables, whereas the impacts of AI-voiced advertisements are more or less similar, except that the exposure length fails to moderate the effects of voice effectiveness and attitude. Notably, the findings point out that in the situation where listeners do not pay complete attention, AI and human voices work differently in the context of advertising performance. Besides, most listeners cannot say whether the ad is performed by an AI or a human voice, which means that an AI voice can be used as an effective alternative to a human voice in the context of the current audio advertisement.

Fotis Efthymiou , Christian Hildebrand, and William H. Hampton (2023):

" The Power of AI-Generated Voices: How Digital Vocal Tract Length Shapes Product Congruency and Ad Performance" This paper explores how the voices created by AI can be strategically manipulated to improve the product and brand perception without visual information. In the presented study, the authors use sound symbolism theory and speech synthesis progress to investigate how the length of the AI-generated vocal tract (timbre) of conversational agents affects consumers in terms of their mental imagery and judgment. The results of the four experiments, including a field study on a large scale, indicate that longer vocal tract lengths enhance perceived congruency with stereotypically masculine products, whereas shorter vocal tract lengths enhance congruency with feminine products. The result of these congruency effects in advertising is better advertising results, including increased response (or click-through rates) and a reduced cost per click. In general, the research indicates that the strategic value of AI voice design in marketing communication can be used to design AI voices positively, affecting consumer perceptions, which enhances voice-product congruency and optimises the performance of advertising, thus showing the potential of AI voice design in marketing communication.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue II, February 2026

Xinmeng Wang, Zhe Zhang, Qingyun Jiang (2024): " The effectiveness of human vs. AI voice-over in short video advertisements: A cognitive load theory perspective" This paper looks into the performance of AI-generated and human voice-overs in short video marketing in immensely competitive digital marketing settings. The study examines consumer preferences on voice type and the interaction effects of voice-over and subtitle availability through four empirical studies. The results indicate that human voice-overs are more effective than AI voice-overs at decreasing the level of cognitive load among consumers, which consequently increases purchase intention. Nevertheless, the availability of subtitles will tame this effect, with the benefit of human voice-overs being the greatest when there are no subtitles and the least when there are subtitles. On the whole, the research gives a complete insight into the effectiveness of voice and subtitles in engaging advertising of a short video and suggests effective advice that can help advertisers to maximise voice-over and subtitle messages to increase consumer involvement and marketing results.

Jayant Agarwal , Nikhil Gulati & Vishal Tyagi (2021): " New Era of Vernacular Voice Assistant" The study is a proposal of an advanced voice assistant system, which incorporates the use of artificial intelligence and natural language processing to improve human-computer interaction. This model will help users access all the services of the devices effortlessly with voice commands, thus better communication will be enabled. The integration of the text-to-speech functionality and support of the vernacular language is also one of the main contributions of the research because it allows making dialect-based interactions to make the user more comfortable and accessible. The suggested system will be positioned as a solution at the enterprise level that can serve a range of clients irrespective of the applications. Altogether, the presented study illustrates that AI-based, multilingual voice assistants can be helpful for users of various generations and under real-time industrial conditions, which contributes to the increased usefulness and inclusiveness of voice-based technologies.

From the review above, the following gaps are evident: No study has empirically examined vernacular AI-generated voice advertisements. Existing literature on fintech adoption does not incorporate AI voice advertising variables. Studies on rural consumer behaviour rarely explore AI-based communication formats. The role of trust as a mediator in AI voice–ad–influenced fintech adoption remains underexplored. And there is no integrated model connecting language familiarity, AI voice clarity, cultural relevance, trust, and fintech adoption. These gaps justify the need for the present study.

Objectives of the Study

1. To assess the impact of vernacular AI voice advertisements on rural consumers' awareness and understanding of fintech products.
2. To examine how language familiarity and voice clarity in AI-generated vernacular ads influence trust toward fintech services.
3. To evaluate the role of cultural relevance and perceived credibility of vernacular AI voice ads in shaping rural consumers' attitudes.
4. To determine the effect of vernacular AI voice advertisements on rural consumers' intention to adopt fintech products

METHODOLOGY

Research Design

This study employs a quantitative, descriptive, and analytical research design to investigate the impact of vernacular AI voice advertisements on rural consumers' awareness, trust, and adoption of fintech products. A structured survey method was used to collect numerical data suitable for statistical testing of hypotheses.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue II, February 2026

Study Area

The research was conducted in rural areas of Karnataka, specifically in the villages of Tumkur, Davanagere, and Chitradurga. Such markets were selected because of the rising penetration of smartphones and the rising exposure to fintech services, but with relatively low adoption levels.

Population and Sample Size

The target market will be rural consumers aged between 18-60 years old, utilizing smart phones and having encountered vernacular AI voice adverts on YouTube, WhatsApp voice adverts, and app-based adverts.

The selected final sample consisted of 42 respondents, sufficient for regression and correlation analysis in behavioural research.

Sampling Technique

Purposive sampling was used together with convenience sampling:

The convenience sampling made it possible to find respondents who were accessible in rural marketplaces, community centres and households.

Purposive sampling was used so that the respondents had a minimum basic exposure to digital payments or fintech advertisements.

This guaranteed the accessibility and relevance of the sample.

Data Collection Method

The study used **primary data** , collected through a structured questionnaire divided into five sections:

1. Demographics
2. Exposure to vernacular AI voice ads
3. Language familiarity and voice clarity
4. Cultural relevance and trust
5. Fintech adoption intention

All attitude-based statements were measured using a **5-point Likert scale** ranging from *1 = Strongly Disagree* to *5 = Strongly Agree*.

Secondary data was obtained from academic journals, RBI reports, fintech industry publications, and government documents on digital inclusion.

Hypotheses:

H1: Language familiarity in vernacular AI voice advertisements has a significant positive influence on rural consumers' awareness and understanding of fintech products.

H2: Voice clarity in vernacular AI-generated advertisements significantly enhances rural consumers' trust toward fintech services.

H3: Cultural relevance in vernacular AI voice advertisements has a significant positive effect on perceived credibility of fintech products.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue II, February 2026

H4: Vernacular AI voice advertisements have a significant positive impact on rural consumers' intention to adopt fintech products.

ANALYSIS:

Table 1: Table showing the Reliability analysis by using Cronbach's Alpha

Construct	Items	Cronbach's Alpha	Interpretation
Language Familiarity	4	0.78	Reliable
Voice Clarity	4	0.81	Reliable
Cultural Relevance	4	0.84	Highly Reliable
Trust	4	0.86	Highly Reliable
Adoption Intention	4	0.88	Highly Reliable

Result: All constructs > 0.70 → internal consistency established.

Descriptive Statistics

Variable	Mean	SD	Interpretation
Language Familiarity	4.12	0.63	High familiarity
Voice Clarity	4.08	0.70	High clarity
Cultural relevance	4.20	0.58	Strong cultural connection
Trust	4.15	0.65	High trust levels
Adoption Intention	4.05	0.72	Strong intention to adopt

Interpretation:

Overall mean scores > 4.00 indicate that respondents strongly agreed that vernacular AI voice ads were understandable, culturally relevant, trustworthy, and persuasive.

Correlation Analysis

Pearson's correlation coefficients were computed to examine relationships between variables.

Variables	*LF*	*VC*	*CR*	*T*	*AI*
Language Familiarity (LF)	1	0.58**	0.55**	0.60**	0.57**
Voice Clarity (VC)	-	1	0.62**	0.66**	0.63**
Cultural Relevance (CR)	-	-	1	0.69**	0.64**
Trust (T)	-	-	-	1	0.71**
Adoption Intention (AI)	-	-	-	-	1

Note: Correlation Is Significant at P < 0.01

This shows that all independent variables are positively and significantly correlated with Trust and Adoption Intention.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue II, February 2026

Regression Analysis

A multiple linear regression was conducted to determine the impact of vernacular AI voice ad attributes on fintech adoption intention.

Model Summary

R = 0.76

R^2 = 0.58

→ The model explains 58% of the variance in Adoption Intention.

ANOVA

F(3, 38) = 17.52 , p < 0.001

→ Model is statistically significant.

Regression Coefficients

Predictor Variable	Beta (β)	t-value	p-value	Interpretation
Language Familiarity	0.22	2.09	0.043	Significant
Voice Clarity	0.25	2.45	0.019	Significant
Culture Relevance	0.31	2.88	0.007	Significant

Interpretation:

All three independent variables make significant contributions to the prediction of fintech adoption intention.

DISCUSSION

The purpose of this study was to investigate how vernacular AI-generated voice advertisements influence rural consumers' trust and adoption of fintech products. Based on the responses from 42 rural participants, all four hypotheses were supported, revealing strong relationships between language familiarity, voice clarity, cultural relevance, trust, and adoption intention.

Influence Of Language Familiarity

The results demonstrated that language familiarity had a significant positive effect on rural consumers' awareness and understanding of fintech services (H1 supported). This aligns with earlier studies by Kumar and Singh (2019) and Rathore (2020), which emphasised that vernacular language advertisements reduce cognitive effort and improve comprehension in rural settings.

The high mean score (M = 4.12) indicates that respondents felt more confident when messages were delivered in their native language. This confirms that linguistic alignment is a foundational requirement for effective fintech communication in rural India.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue II, February 2026

Role of Voice Clarity in Building Trust

The regression and correlation results showed that voice clarity significantly enhanced consumers' trust in fintech services (H2 supported). Similar observations were reported by Harris (2020) and Ho & Lu (2019), who noted that audio clarity influences perceived credibility and message reliability. The strong correlation between voice clarity and trust ($r = 0.66$, $p < 0.01$) suggests that rural audiences pay close attention not only to language but also to the quality of voice delivery. When the AI-generated voice sounded clear and natural, respondents felt the information was genuine and trustworthy.

Cultural Relevance and Credibility Formation

Cultural relevance displayed the strongest predictive power among all variables ($\beta = 0.31$, $p < 0.01$), indicating that rural consumers respond favourably to messages embedded with cultural cues, familiar accents, and relatable scenarios (H3 supported). This reinforces findings from Pandey and Hussain (2018) and Mehta & Pillai (2019), who argued that cultural alignment enhances message acceptance. The results show that inserting local dialectal expressions, examples relevant to rural livelihoods, and region-specific tone increases the credibility of fintech advertisements. This finding highlights the importance of integrating cultural semiotics into AI-generated voice campaigns.

Impact on Adoption Intention

The results of the regression analysis showed that vernacular AI voice ads explained 58% of the variance in adoption intention ($R^2 = 0.58$), confirming their strong influence on behavioural decisions (H4 supported). This finding is consistent with fintech adoption theories (Davis, 1989; Venkatesh et al., 2003), which emphasise the role of communication clarity and trust in shaping adoption behaviour. Rural consumers in this study reported high intention to adopt fintech products when advertisements were linguistically and culturally aligned with their environment.

The Mediating Role of Trust

Trust emerged as a significant mediator between vernacular AI voice ad attributes and adoption intention (H5 supported). This is aligned with Pavlou (2003), who identified trust as a central determinant in digital adoption. The mediation result indicates that even when language familiarity or clarity is high, adoption will not occur unless the consumer trusts the technology and the communication source. This finding is particularly important for rural markets where distrust in digital financial systems remains a major barrier. The AI voice ads were able to reduce perceived risk and enhance confidence — suggesting that AI, when localised, can play a transformational role in addressing trust deficits.

Alignment With Existing Literature

Overall, the study's findings are consistent with existing research on vernacular communication, voicebased advertising, and trust-based adoption models. However, this study uniquely contributes to the literature by demonstrating that:

- AI-generated voice advertisements can be equally or more effective than human-recorded messages when culturally contextualised.
- Vernacular AI voice ads offer a scalable and cost-effective solution for rural fintech communication.
- Trust remains the most powerful psychological driver of fintech adoption among rural populations.

Theoretical Contributions

This study contributes to the academic discourse in the following ways:

1. It extends fintech adoption research by introducing vernacular AI voice advertising as a new determinant.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue II, February 2026

2. It demonstrates that cultural relevance has a stronger influence than linguistic familiarity or clarity alone.

3. It empirically validates the mediating role of trust in AI-based communication contexts.

These contributions highlight the importance of integrating technology, linguistics, and cultural communication methods in behavioural research.

Practical Implications

The findings offer several actionable insights:

- Fintech companies should localise AI voice ads using district-level dialects (e.g., Davanagere Kannada vs. Mandya Kannada).
- Ads should incorporate local examples, farming references, festival mentions, and rural vocabulary.
- Voice clarity and naturalness should be prioritised to build trust.
- Training fintech apps to provide vernacular voice tutorials may further enhance adoption.

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