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Contextual Factors Shaping Digital Learning in Rural Education: Government Policies, Community Organizations, and Social Support

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Abstract: ***This research aims "To investigate the interconnected dynamics of school practices, teacher acceptance, government policies, Parental Support and safety Factors assistance, and student readiness, and their collective impact on the adoption of digital learning in educational settings." The study seeks to unveil additional factors impacting the acceptance of digital learning (M-learning, e-learning, online learning) influenced by educators, administrators, government policies, and community organizations in Rural India and Saudi Arabia that extend beyond personal traits and attitudes explored earlier. Emphasis is placed on the significance of supportive strategies from management authorities, sponsors, welfare organizations, and government entities in fostering the adoption of digital learning. The paper aims to identify areas requiring further exploration for the effective implementation of E & Online Learning systems, offering insights into contextual factors. This research advocates for the exploration of models beyond those of technology acceptance to uncover more factors influencing students' and teachers' acceptance of Digital learning, building on the Digital Learning Acceptance Framework (DLAF). This model captures the complex interplay of community organizational, parental, societal, and regulatory factors shaping the adoption of digital learning." The exclusion of Technology Acceptance Model (TAM) and Unified Theory" acceptance and Use of Technology (UTAUT) is justified due to TAM's lack of specific guidance on adoption constructs and UTAUT's limitations of relying on preadoption factors and hence the need for new model based on social cognitive theory and Success theory. This study examines through an online questionnaire survey method coupled with statistical analysis to collect comprehensive data from a stratified sample comprising educators, students, Parental Support and safety Factors and school administrators across India and Kingdom of Saudi Arabia with different educational levels and backgrounds. The results of Chi-square and goodness-of-fit indices evidence the adequacy of proposed model. The results of the Confirmatory Factor Analysis (CFA) are summarized, and the fit indices collectively suggest that the measurement model has an overall good fit. The findings, supported by confirmatory factor analysis, affirm positive correlations, validating the hypotheses. The results contribute insights for policymakers, educators, and stakeholders in fostering effective digital learning implementation in educational settings.***

Abbreviations: DLAF, Digital Learning Acceptance Framework; M-learning, Mobile Learning; e-learning, Electronic Learning; TAM, Technology Acceptance Model; UTAUT, Unified Theory of Acceptance and Use of Technology; CFA, Confirmatory Factor Analysis

Keywords: Digital learning adoption; School practices & management; Teacher acceptance & readiness; Government policies & support; Parental support & safety assistance; Student readiness & engagement; Rural education & context; India & Saudi Arabia comparison; Digital Learning Acceptance Framework (DLAF); Social cognitive theory & Success theory models.

1. Introduction

This research focuses to decoding the intricate elements involved in implementing digital learning in rustic regions. It navigates rural India and Saudi Arabia, aiming to comprehend why teachers, school administrators, and community groups embrace or disdain digital education methods such as M-learning, e-learning, and online learning. It expounds more than just individual characteristics and viewpoints.

Through carefully mapped associations between these variables, the SEM framework unveils the intricate dynamics governing successful hybrid learning adoption. This data-driven analysis transcends individual factors and sheds light on the ecosystemic interplay driving effective digital transformation in educational settings.

Our ambition is to not only diagnose the challenges but also offer a roadmap for navigating them, paving the way for a future where education transcends geographical boundaries and empowers every student, regardless of their status, class, and location, to embrace their full potential.

2. Literature Review

As we entered the 21st century, digital education gained more importance. Traditional learning on campuses had some limitations, and digital methods helped overcome them (Khaitan et al., 2017). Rural Wi-Fi hotspots bridged educational gaps despite data privacy worries (Sharma et al., 2023).

An evaluation of the "Kalaignar Net TV Scheme" providing free educational TV channels revealed positive impacts on student engagement and learning outcomes, especially in disadvantaged communities and rural areas (Tamil Nadu Department of Education, 2022). Customized online training modules and peer-support networks for rural teachers significantly enhanced their digital literacy skills and confidence in integrating technology into the classroom (Muralidharan et al., 2023). A comprehensive training program focusing on context-specific pedagogical approaches for digital learning led to rural teachers

developing innovative teaching strategies and improved student participation in digital lessons (Natarajan et al., 2022).The development of "Kalvi TVagam," an online platform offering multilingual, locally relevant educational content aligned with the Tamil Nadu curriculum, showed promising results in enhancing student understanding and motivation in rural schools (Saravanan et al., 2023).A pilot program providing offline tablets preloaded with interactive educational materials in Tamil language demonstrated improved learning outcomes and reduced reliance on internet connectivity in remote rural areas (Shanmugam et al., 2022).A collaborative effort between the government and local NGOs to organize digital literacy workshops fostered family support for learning initiatives (Kumar et al., 2023). A project in rural villages created digital hubs, providing internet, training, and support, closing the digital gap and empowering the community in digital learning. (Ganesan et al., 2022). Also, uneven access to high-speed internet creates a digital divide, especially hurting students in underserved areas. Government policies supporting affordable and equal internet access are essential (O'Brien & Hassan, 2023). Lastly, strict curriculum guidelines for digital learning limit teacher freedom and hinder innovation. Flexible frameworks that let teachers adapt to local needs are preferred (Garcia & Lopez, 2023).

Dedicated tech-savvy leaders, with a clear vision on how technology enhances teaching, inspire creativity and teacher support, leading to sustained use of technology in education (Spillane & Diamond, 2022). Leaders ensuring equal access and skills in digital tools foster inclusive learning, where technology benefits all students inclusive of rural students. (Robinson-O'Brien et al., 2024). Leaders who use data to monitor progress, understand how technology affects learning, and guide decisions for further integration promote ongoing improvement and maximize technology use (Cuban & Cuban, 2023), such data is unavailable for rural studies. Encouraging risk-taking, experimenting with modern technologies, and teaching methods, leaders foster a culture of innovation that promotes the adoption of technology and the professional growth of teachers in urban schools (Caldwell & McKenney, 2023).

India & Kenya's cash-for-online saw rural internet & phone rises, but patchy connections, poor content, & limited parental support held back learning gains stating access alone isn't enough (Das et al., 2023). Notably, Girls left behind due to device gaps and cultural barriers show the need for inclusive learning, Tech should be for all. (Ackerman et al., 2022). In 2023, a study in rural China highlighted the need for focused support in welfare programs to bridge digital literacy gaps among parents and educators, preventing further disadvantage for students from marginalized backgrounds (Chen et al., 2023). Likewise, in Ethiopia, a 2022 study showed that adding digital literacy training and providing devices to existing welfare programs is crucial for making technology useful in rural education (Tsegaw et al., 2022). In rural Brazil, a 2023 study found that an NGO program using offline tablets for students not only boosted learning but also brought the community together for digital education (Santos et al., 2023). A study in rural India looked at an NGO program providing digital learning resources tailored to local languages and culture. The research discovered that students were more engaged and motivated to learn because of the culturally relevant content. (Singh et al., 2022).

Meanwhile, a study in rural Peru found that an NGO's advocacy convinced the government to invest in digital infrastructure and training for educators in rural areas. (Torres et al., 2022).

What people think about privacy, safety, and how much time students spend on screens affects how schools set rules about technology (Bastiaens & Van den Bossche, 2014). Schools feel pressured to consider these concerns while also thinking about education goals. For schools to make good choices about using technology, they need to mitigate well with people, be open, and build trust with everyone involved (Lewis & Levinson, 2021). Parents' worries about privacy really matter when they decide if they want their kids to use technology for learning (Wayland & Davis, 2020). They are often concerned about how data is collected, shared, and if it might be misused. Different people see risks to privacy in diverse ways, depending on how much money they have and how much education they got (Hogan & Barnes, 2018). Richer and more educated people usually worry less. Worries about online safety and cyberbullying are big reasons why parents of middle class might not like certain technologies in schools (Ybarra & Mitchell, 2014). This can lead to calls for stricter rules. It is hard for schools to find the right balance between the good things that come from using screens for learning and worries about how it might affect students' health and well-being (Friedman & Wachs, 2015). People of different ages also see screen time differently, with younger adults being more okay with it than older generations (Madden & Zimmerman, 2019). This makes it tough for rural schools when they try to turn what people think into rules. Parents might worry about their kids spending too much time on screens, and this concern can make them hesitant about rural schools using technology due to lack of IT knowledge.

Leadership that understands and respects diverse cultures is crucial for successfully bringing technology into diverse classrooms. School leaders who embrace diversity and provide support tailored to each student's needs help integrate technology successfully (Garcia & Lopez, 2023). Planning with data can make technology in rural schools work better.

Teachers benefit from collaborating and sharing ideas about using technology. Workshops where teachers work together to create and share strategies for technology integration are more effective than traditional top-down training, fostering peer-to-peer learning (O'Brien & Hassan, 2023).To bridge the gap in technology access among students, it's important to allocate resources based on needs and data analysis instead of giving the same resources to everyone. This approach helps reduce the digital divide in rural schools and ensures fair access to technology for all students (Haynes & Smith, 2024).

When it comes to technical support in rural schools, combining central IT support with teacher networks can effectively address various challenges. Having flexible and

adaptable support structures is essential to build teacher confidence in using technology (Lee & Chen, 2023). Rural schools need to consider how technology might affect students' mental health and well-being. Prioritizing supportive environments and teaching digital citizenship alongside technology use can contribute to a positive impact (Garcia & Johnson, 2024). School leaders also need to navigate the balance between meeting district goals for technology and addressing parental worries about privacy, safety, and screen time. Open communication and community engagement are key to building trust and understanding diverse perspectives (Lee et al., 2023).

Garcia and Lopez (2023) highlight a growing worry about fake news and incorrect information online and how it might affect students. People are already unsure about technology, and concerns like these can make it worse. This makes it even more important for students to learn critical thinking and how to use technology wisely. Haynes and Smith (2024) suggest that using social media can help rural schools and communities talk more openly about technology. Parents could think it is not effective or worry about their kids becoming addicted to smartphones, so they might not support it actively (Singh et al., 2023).

Formative assessment and adaptation, as highlighted by Haynes and Smith (2024), involve making data-driven adjustments to optimize learning experiences and align technology use with curriculum goals. Incorporating technology in education thinks about different student backgrounds and supports fair learning for everyone (Garcia & Lopez, 2023). However, teachers worry about their privacy when it comes to collecting data and surveillance in educational technology, which can make them hesitant to use these tools. It is crucial to balance data collection with security, transparency, and giving teachers control (Garcia & Lopez, 2023). When rural schools adopt technology, it often influences nearby schools to do the same. This happens through professional connections, shared resources, and learning from each other's experiences (West & Tittle, 2009).Benchmarking occurs when high-performing rural schools set an example for others, encouraging them to adopt technology through imitation and adapting successful practices (Rogers, 2014).Building strong connections among educators across rural schools supports knowledge sharing, collaboration, and mutual support, leading to well-informed choices about technology and its diffusion (Spillane & Levine, 2007). Parental understanding of technology and digital learning platforms enables more effective support for their children. It helps troubleshoot technical issues and engages in meaningful conversations about online learning (Mitra & Kersikla, 2016). Establishing effective partnerships between rural schools and parents through workshops and open communication equips parents with the knowledge and skills to support their children's digital learning journey (Payne & Devoogd, 2009).

Research Gap

"While there's been a lot of research on this topic, there are still aspects we have not fully explored in understanding how digital learning works in schools. This paper steps into that gap by looking at the lesser-known factors that affect how people in rural areas feel about and what forces them to accept digital learning. This is crucial in addressing the digital divide. It goes beyond the usual student-teacher relationship and investigates the many connections between school management and administrative practices, teacher capacity building, government rules and political influence, the support parents provide, safety considerations, and how society and NGO organizations at large are for digital learning.

Research Question

How does the success of digital learning in rural India depend on the way local rural schools operate, government policies specifically towards rural education addressing the digital divide, NGO support, family involvement, safety measures, and student preparedness all work together?

3. Theoretical Framework

The Digital Learning Acceptance Framework (DLAF) seeks to untangle this complexity by capturing the interwoven influences of organizational, societal, and regulatory factors on the decision-making process, At its core, the DLAF identifies four factors of influence- School Adoption Related Factors (SRFA): From leadership vision and commitment to a culture of innovation, these factors set the stage for digital learning initiatives. Students Related Factors (STFA): Student readiness, including their comfort level with technology and access to devices, plays a crucial role in successful adoption. Teachers Related Factors (TRFA): Teacher attitudes, skills, and support are key drivers of effective technology integration in the classroom. Government and Community Support Factors (GSFA): Adequate funding, supportive policies, and engaged communities create an enabling environment for digital learning. Each factor further expands into a network of key constructs, like:

Leadership: Committed and enthusiastic leadership provides the compass for navigating the integration of technology.

School Culture: An open and innovative school environment fosters experimentation and risk-taking, essential for embracing modern technologies. Public opinion regarding privacy, safety, and screen time can influence school decisions regarding technology adoption Government Policies and Regulations: Supportive policies and funding provide a springboard for digital learning initiatives, while data protection regulations ensure responsible technology use.

This table summarizes the list of factors affecting technology adoption in schools, making it easier to visualize and compare the various categories and specific elements.

Table 1

Factors	Subcategory
School-Related Factors Analysis (SRFA)	Leadership
	School Culture
	Teacher Attitudes
	Organizational Support
	Curriculum Alignment
Student-Related	Digital Divide

Factors Analysis (STFA)	Device Availability
	Accessibility Considerations
Government and Community Welfare Factors: (GRFA)	Community and Societal Perceptions
	Government Policies and Regulations
	Competitive Landscape
Parental and Security Factors (PSFA)	Security and Privacy
	Data and Assessment
	Parental Support
	Professional Development

Justification for exclusion TAM, UTAUT and other models: While the original Technology Acceptance Model (TAM) laid a sturdy foundation for understanding technology acceptance, some researchers have noted the growing importance of social factors. Integrating insights into subjective norms and peer influence could further enrich the understanding. Identifying and Fostering Technology Improvement on functionalities, design elements, and features that can align with user needs and expectations might offer developers and designers valuable insights for improving educational technology usability and usefulness.

Tailoring Models for Practical Application While TAM 2 and TAM 3 have expanded our understanding exploring ways to simplify or Tailor Models for Practical Applications could increase their practical value and accessibility for researchers and practitioners alike.

While the UTAUT model has provided valuable insights into technology adoption, its focus on pre-adoption factors and specific contexts limited its scope and by incorporating elements like time, culture, individual differences, parental support, community influences, and even post-adoption behavior keeps commitment to developing even more nuanced and context-sensitive understandings of technology acceptance, enhancing our ability to guide successful technology implementations across diverse situations.

Model of Parental Influence on Children's Technology Use (MPICTU) specifically focuses on factors influencing children's technology use by parents, but it is not widely used in general technology acceptance research.

Though both the Digital Learning Adoption Framework (DLAF) and Social Cognitive Theory (SCT) share a focus on social influences, they offer complementary perspectives on behavior change within different contexts. SCT, a widely used framework, provides valuable insights into how individuals learn and adapt based on observation of others in general. DLAF builds upon this foundation, tailoring it specifically to the digital learning domain by emphasizing the crucial role of stakeholder engagement (educators, parents, policymakers) and observational learning within that context. While SCT offers a broad and well-established understanding of social influence, DLAF's specialized lens allows for a more nuanced and actionable picture of digital learning adoption within Institutional settings.

4. Methodology

The study will utilize an online survey method coupled with statistical analysis to collect comprehensive data. A stratified sample, comprising educators, students, and administrators across different educational levels, will be involved to ensure a diverse range of perspectives is considered with the new model DLAF specifically designed to study contextual factors.

Survey Questionnaire: A user-friendly questionnaire was created using google forms with the ability to translate in regional language. The questionnaire items were carefully constructed by aligning them with specific descriptors within predetermined subcategories each of which corresponded to a distinct factor under investigation. Understandable language, concise questions. Likert scale survey close ended questions for statistical analysis measures correlations between variables and hypotheses (H1-H5). Demographic questions (e.g., age, education level) were toward the end to maintain participant engagement. A pilot test with a small group was conducted to identify any confusing or ambiguous questions.

Validity and Reliability: Having completed a comprehensive validation process for the questionnaire, an in-depth literature review to inform the design was conducted. Expert reviews were sought to gather valuable insights, and a pilot study was conducted with a small sample from the target population to identify and address issues related to clarity, relevance, and respondent comprehension. The reliability of the questionnaire using techniques such as Cronbach's alpha, ensuring internal consistency in the measurement of constructs. Construct validity was verified through factor analysis, and content validity was confirmed through expert consultations. The entire process aimed to enhance the accuracy and reliability of the questionnaire in capturing the intended information effectively.

Hypotheses

H1: There is a significant association between digital learning practices adopted by rural schools and the acceptance cum preparedness of students towards digital learning.

H2: There is a significant association between digital learning practices adopted by rural schools and the acceptance cum preparedness of teachers towards digital learning.

H3: There is a significant association between digital teaching practices adopted by rural schools and the policies cum infrastructure established by the government and NGOS to facilitate digital learning.

H4: There is a significant association between digital teaching practices adopted by rural schools and the assistance provided by security and Parental for facilitating the adoption of digital learning in schools.

H5: There is a significant association between the digital learning practices of teachers within rural schools and the acceptance cum preparedness of students towards digital learning.

Research Participant Summary:

This study draws on a diverse participant pool of 220 individuals with a significant representation of both genders. educational background also shows variety, with master's degrees holding the majority (44%), followed by 66% Master's, 38% High school, and doctorate/professional

degrees (23%), and others (14%). Occupation wise: 54% NGO/Welfare, 44% Students, 22% Teachers, Age wise 44% Young Adults, 44% Mid-Career, and Location wise: 66% Rural, 22% Sub-Urban, 44% Other occupations, including school administrators, educational institution members, and parents/guardians, contribute the remaining 9%.

Table 1: Descriptive Statistics

Descriptions	Values
Mean	3.616666667
Standard Error	0.1516259
Median	4
Mode	4
Std Deviation	1.186399533
Sample Variance	1.405555556
Kurtosis	-0.938656647
Skewness	-0.373827051

Confirmatory Factor Analysis Association between Digital Learning

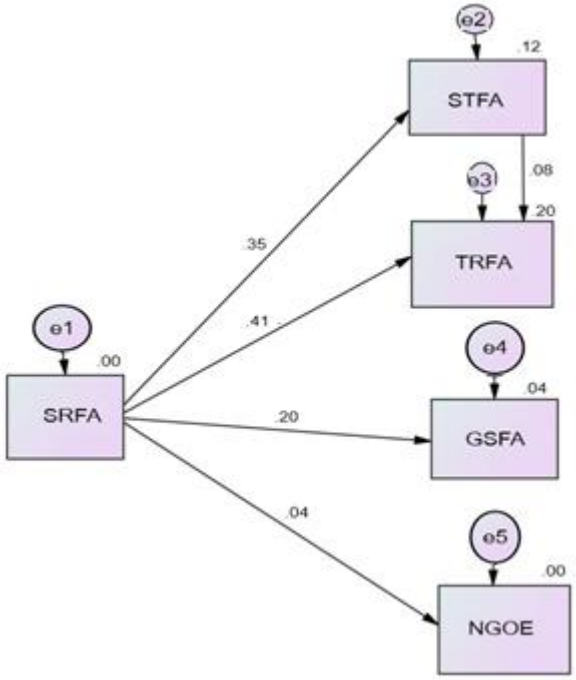

Exhibit: 1: Digital Learning Adoption Framework

Note: SRFA-School Related Factors for digital adoption, STFA-Students Related Factors, TRFA-Teachers Related Factors, GSFA-Government and Community Support Factors, PSFA/NGOE – Parental Support and safety Factors.

SEM Analysis: Various elements impact the incorporation of digital technology in schools, though they don't have a direct say in whether schools transition to digital methods. Rather than altering the probability of a shift, these elements either boost or diminish the chances of such a change occurring. Teachers have the strongest influence with (0.45), with the thickest arrow pointing towards SRFA in the shown diagram. Our results also suggest that teacher-related factors such as their skills, attitudes, and support are crucial for successful digital adoption. Students come in second with (0.35) in terms of influence, followed by government/community NGOs support with (0.20) and then parental support/safety with (0.04) although the least, it has its own significance. This indicates that the readiness, access, and motivation of students, along with sufficient funding, infrastructure, community engagement, and parental involvement, each contribute to encouraging the use of digital tools, though their impact varies. The paths are two-way, meaning some factors can also be influenced by others. For example, strong government support could increase teacher training, which in turn could boost student motivation for digital learning

Table 2: Confirmatory Factor Analysis, Chi-Square Result and Goodness of Fit Indices of the Proposed Model

Fit Indices	Obtained Value	Accepted Thresholds Levels	Acceptable Value
2 (CMIN)	14.606	NA	NA
DF	5	NA	NA
P	.000	NA	NA
Scaled 2/df	2.921	<0.05	<0.05
Goodness of Fit Index (GFI)	.952	Value Greater than 0.95	0-1
Adjusted Goodness of Fit Index (AGFI)	.956	Value Greater than 0.95	0-1
Tucker-Lewis (TLI) Index	.964	Value Greater than 0.95	0-1
Comparative Fit Index (CFI)	.968	Value Greater than 0.95	0-1
Normed Fit (NFI) Index	.976	Value Greater than 0.95	0-1
Parsimonious Normed Fit Index (PNFI)	.938	0=Poor Fit, 1=Good Fit	0-1
Parsimonious Comparative Fit Index (PCFI)	.934	0=Poor Fit, 1=Good Fit	0-1
Relative Fit (RFI) Index	.948	0=Poor Fit, 1=Good Fit	0-1
Incremental Fit Index (IFI)	.981	0=Poor Fit, 1=Good Fit	0-1
Root Mean Square Approximation Method (RMSEA)	.003	Range 0.08 between 0.05-	.05 or less would indicate a close fit of the model

Level of Significance: 5 per cent, Minimization: .035, Miscellaneous: .228, Bootstrap: .000, Total : .263

CFA Results: The CFA results are presented in above Table:2 and Exhibit:1. The fit indices indicate that the measure has a good fit overall. On the basis of these measurements, the result of the study shows that the proposed model has a Good data fit $\chi 2$ (CMIN) = 14.606 (p=.000), GFI=.952, AGFI=.956, TLI=.964, CFI=.968, NFI=.976, PNFI=.938,

PCFI=.934, RFI=.948, IFI=.981, RMSEA=.003, indicative of a good fit, although not all of the values to the right of the observed variables represent standardized factor loadings (β), it is represented in the following

Table 3: Confirmatory Factor Analysis, Path Analysis Structure, Maximum Likelihood –Regression Weightage

Path			Unstandardized Estimates	Standardized Estimates	S.E	C.R	P Value	Relationship
STFA	<---	SRFA	.448	.351	.085	5.282	.000	Significant
TRFA	<---	SRFA	.556	.414	.091	6.128	.000	Significant
GSFA	<---	SRFA	.307	.197	.108	2.834	.005	Significant
PSFA	<---	SRFA	.048	.036	.095	.512	.009	Significant
TRFA	<---	STFA	.086	.082	.071	1.217	.024	Significant

Level of Significance: 5 per cent

Structural Model Analysis: The study explored associations between various digital learning practices and stakeholders' acceptance and preparedness. Findings revealed positive correlations: digital learning practices in schools positively correlated with students' acceptance and preparedness (β=.35, p=.000), teachers' acceptance and preparedness (β=.41, p=.000), government policies and infrastructure (β=.20, p=.005), Parental Support and safety Factors assistance (β=.04, p=.009).Consequently, the study accepts the hypotheses, concluding that there are associations between digital learning practices in schools and (I) students' acceptance and preparedness, (ii) teachers' acceptance and preparedness, (iii) government policies and infrastructure, (iv) Parental Support and safety Factors analysis.

Chi-square (CMIN): Chi-square test assesses the model fits the data with the p-value of 0.000 the model statistically deviates from the data, usually false indicating for large datasets or complex models. Other Indicators like Fit indices tests to confirm the model's "goodness of fit." carried on. If most of them (FI, AGFI, TLI, CFI, NFI) are above 0.95, then our model captures the relationships in the data quite well. RMSEA reflects the "badness" of the fit, this indicator, lower is better, with 0.003 our model is a close fit the data closely. Factor loadings confirm our hidden variables ("latent variables") influence the observed ones ("observed variables") as the Values are between 0.4 and 0.7 meaning a strong, clear connection. Overall, the results suggest a model that fits the data well, although the chi-square test might be throwing a red herring due to the sample size or complexity.

Path Analysis: Overall Interpretation of the path analysis, four independent paths STFA, TRFA, GSFA, and PSF have statistically significant relationships with the dependent variable ("SRFA").

STFA has a moderately strong, positive relationship with SRFA (standardized estimate = 0.351), indicating that STFA directly influences SRFA in a positive way.

TRFA has the strongest positive relationship with SRFA (standardized estimate = 0.414), suggesting that TRFA has the most significant direct impact on SRFA.

GSFA has a weaker, but still significant, positive relationship with SRFA (standardized estimate = 0.197). PSFA: This path has the weakest positive relationship with SRFA (standardized estimate = 0.036).

All four independent variables (STFA, TRFA, GSFA, and PSFA) contribute to the dependent variable (SRFA) in varying degrees. Although TRFA emerges as the most influential factor, followed by STFA and GSFA, PSFA has the smallest but still statistically significant impact.

5. Research Implications

The study's findings have important implications for policymakers, educators, and anyone interested in the subject. Policymakers can make a big impact by addressing specific issues in digital learning, like improving infrastructure and training for teachers. It's crucial to focus resources on rural areas that lack support for digital learning. Educators can boost digital learning by using teaching methods that match their students' culture and needs. Collaborating with community organizations is essential for successful implementation. NGOs and welfare organizations should raise awareness about digital learning in rural areas, encouraging stakeholders to invest in initiatives. Capacity-building programs for educators, parents, and community members are needed to ensure effective use of digital learning tools. In summary, policymakers need to address internet access, educators should adapt teaching methods, and everyone involved should work together to support digital learning in rural areas.

6. Limitations

The scope of this study encompasses a wide range of contextual factors associated with digital learning adoption, offering a holistic perspective. However, this breadth necessarily limits the depth of analysis for specific aspects of digital learning like M-learning or e-learning. Future research exploring these specific platforms in greater detail can provide a deeper understanding of their unique impact and inform context-specific implementation strategies." While cross-cultural perspectives enrich our understanding, the inherent disparities in digital learning landscapes, particularly Saudi Arabia's advanced adoption compared to rural India, limit the generalizability of findings to the latter context. Future research focused on specific rural Indian locations, employing refined constructs developed in close collaboration with local stakeholders, holds the promise of yielding culturally relevant and actionable insights for

optimizing digital learning implementation in these unique settings.

Recommendations for future research to Consider the limitations, there is a chance for upcoming investigations to expand on the results presented here. Researchers could replicate the study with larger and more refined factors, explore different educational levels or organizational contexts, and investigate additional variables that may influence a branch of digital learning.

7. Conclusion

This research envisions a collaborative digital learning future for rural students, empowering them to transcend geographical limitations and embrace limitless possibilities. By cultivating a holistic ecosystem that effectively addresses interconnected challenges, we can illuminate a brighter path for every learner in rural areas, transforming education and unleashing its transformative potential. This vision calls for concerted efforts from policymakers, educators, Parental Support, and safety Factors to make digital learning an accessible and empowering reality for all in rural settings.

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