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Technology Diffusion in Informal Retail Ecosystems: A Bibliometric Review

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ABSTRACT
This paper aims to contribute to the diffusion and use of information and communication technology in the informal retailing of street vendors who significantly contribute to the economy. A street vendor sells to the public without having a permanent structure and instead relies on a temporary static structure or head-load, a definition included in the National Policy on Indian street vendors. Several studies have been done that aim explicitly at street vendors' challenges. This study uniquely synthesizes fragmented research on street vendor technology adoption and proposes a structured agenda for future research grounded in innovation and technology acceptance theories.. The methodology used was bibliometric analysis with the Vos viewer tool and Biblioshiny package in R software. Also, content analysis is done by selecting forty articles from the Web of Science Database. The areas for future research identified are; the study of the implementation of innovation analysis using the variables perceived usefulness, ease of use, technology readiness, perceived trust, and risk. Rejection or discontinuance may also hold a potential study area and practical implication for researchers and policymakers. These insights are particularly relevant for policymakers and development agencies aiming to design context-sensitive digital interventions that support financial inclusion and sustainable livelihoods in the informal retail sector.
Keywords: street vendors, technology adoption, bibliometric review, Vos viewer, Literature review, ICT adoption.

1. INTRODUCTION:

Street vendors have provided a vibrant colour as a market outlet to the streets of many Asian countries. They are an integral part of the urban economy as they provide a livelihood to many migrants and serve as a source of jobs and income (Mahadevia et al., 2014). A street vendor is someone who offers goods and services on the street in a temporary set-up like a stall, van, or the goods laid out at the roadway (Bhowmik, 2005). Here, the street vendor is part of the urban economy and occupies a place in the street to offer goods or move from place to place by carrying their products. The presence of an informal economy is evident in most Asian countries and developed countries such as the United States of America.

A street vendor is defined in the National Policy of Urban Street Vendors as "an individual who sells goods to the public with a temporary static structure or mobile stall (or head load) (GOI, 2004)".Street vendors may be static or mobile – they may occupy space either on the road or in public/private areas, or may move from place to place with their products on cycles or push carts or even carry baskets on their heads. Mobile vendors may also sell their goods in trains, busses, etc. In this study, urban street vendors include both traders and service providers (including vendors known by different local/regional names, such as hawker, majdoor, pheriwalla, rehri-patri walla, footpath dukandars, sidewalk traders and so on).

Despite their important economic role, street vendors often operate in uncertain conditions, with limited access to formal infrastructure and ongoing regulatory challenges. Insecure vending spaces, financial exclusion, and restricted access to formal credit and social protection schemes continue to shape their everyday livelihoods. Within this context, the spread of digital technologies offers both opportunities and constraints. Tools such as mobile phones, digital payment systems, and location-based applications can improve transaction efficiency, broaden customer reach, and reduce reliance on cash-based exchanges. However, effective adoption is frequently hindered by low levels of digital literacy, concerns related to trust and perceived risk, and the affordability of technology. Increasingly, street vendors are becoming part of phygital retail environments, where face-to-face interactions with customers are supported by digital interfaces such as QR-code payments and mobile banking services. Understanding how vendors perceive, adopt, and in some cases discontinue the use of these technologies is essential for capturing the dynamics of informal retail transformation. Such insights can help shape inclusive policy frameworks and targeted interventions that support sustainable livelihoods and enhance the resilience of informal urban economies.

Given these changes, there is a clear need to better understand how digital technologies are spreading among street vendors and what influences their adoption and continued use in informal retail settings. Although earlier studies have examined specific challenges faced by street vendors, existing research remains scattered, particularly in relation to technology diffusion, innovation readiness, and what happens after adoption. This study addresses this

gap by bringing together prior research through a bibliometric review supported by an in-depth analysis of selected articles. By identifying key research trends, theoretical approaches, and emerging themes, the study aims to offer a clearer picture of technology adoption among street vendors and to highlight important directions for future research. The next sections outline the methodology, present the findings, and discuss their implications for research, policy, and practice in informal and phygital retail environments.

Research questions

RQ 1- Which were the major theories used to study the adoption of ICT and technology. Significance of Technology Acceptance Model in the study of technology adoption in the informal segment.

RQ 2- How has research on digital technology adoption among street vendors and informal retail contexts evolved over time in terms of publication trends, influential authors, journals, and contributing countries?

RQ 3- What research gaps and future directions can be identified to support inclusive, sustainable, and policy-relevant digital transformation in informal retailing?

The article has the following sections: introduction, research methods, bibliometric network analysis, content analysis, and future research plans. The introduction and relevance of the informal sector in the country's economy are covered in the first section. Followed by bibliometric review and analysis.

2. Methodology

The study proposes presenting a combination of bibliometric analysis and content analysis. The bibliometric analysis is used for finding out the most significant area of research with the help of various tools. Bibliometric analysis is a well-known method for quantitative analysis based on articles similarity and bibliographic database. Web of Science database and Scopus Database are the source for collecting articles. Figure 1 explains the steps to filter the articles from the web of science and Scopus database.

Keywords for the search fixed were "street vending" and "technology adoption." Also, close synonyms of both these words are used with Boolean operators for extracting the most relevant documents from both the databases.

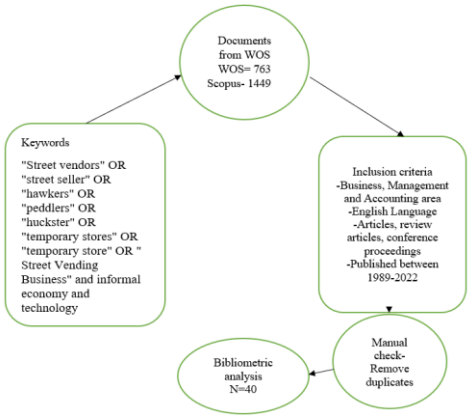

Figure 1 Steps in finalizing the articles

Table 1 shows how the procedure of the review has been undertaken. The database fixed was Web of Science and Scopus as it gives a comprehensive collection of articles of the said research area. Moreover, this facilitated coverage of publication over three decades. The tool used for bibliometric analysis is Vos-viewer software and Bibliometric package in R software

Table 1 Summary of literature search

Type of document	Journal article
Language	English
Database	WOS, Scopus
Technique	Bibliometric analysis
Software used for analysis	VOS-viewer, Biblioshiny
Duration of collection	1989–2022 January
Total number of articles	763&1449

2.1 Data Analysis

The data extracted from both the databases; the essential details are as per Table 2—the statistics derived from the bibilioshiny package from R software. The table shows the sources, number of documents, and the authors who contributed to the research area.

Database	Scopus	WOS
Timespan	1991:2021	1989:2022
Sources (Journals, Books, etc)	172	394
Average years from publication	5.44	8.83
Average citations per document	12.77	16.08
Average citations per year per doc	1.659	1.613
References	1	23743
article	179	588
Keywords Plus (ID)	288	1483
Author's Keywords (DE)	736	1741
Authors	485	1671
Author Appearances	560	1869
Authors of single-authored documents	64	181
Authors of multi-authored documents	421	1490

Single-authored documents	75	207
Documents per Author	0.507	0.369
Authors per Document	1.97	2.71
Co-Authors per Documents	2.28	3.03

Table 2 Main Information from search results

3. Bibliometric Analysis

The bibliometric analysis tries to identify the most influential aspects of the literature on street vending and technology adoption. As per table 2, more than 700 articles explain street vending and various technologies used by the street vendors or their consumers from the selected database.

3.1 Most significant contribution by authors

The web of science collection has a leading author Sarah Turner with more than 100 citations with seven publications. In Scopus collection, William cc, has published around 16 documents in street vending business. Followed by Seth Schindler with more than 100 citations with five publications.

Figure 2 represents the Vos-viewer co authorship map.

Author	Documents	Citations
Turner, Sarah	7	105
Munoz, Lorena	5	24
Schindler, Seth	5	101
Recio, Redento B.	4	14
Roitman, Sonia	4	23
Alarcon, Pablo	3	46
Brown, Alison	3	32
Cuvi, Jacinto	3	10
Eidse, Noelani	3	39
Fevre, Eric M.	3	46
Gelormini, Marcello	3	4
Hummel, Calla	3	24
Lucan, Sean C.	3	52
Lunet, Nuno	3	4

Table 3 Top authors with most cited documents

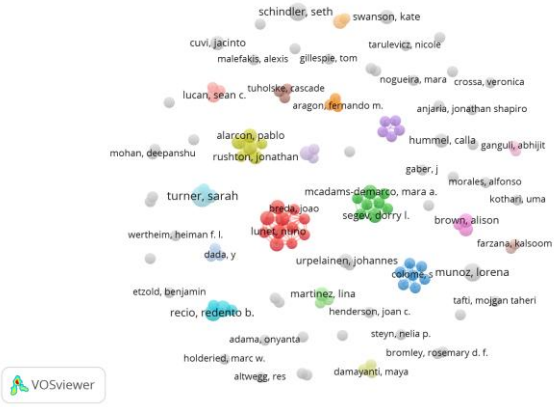

Figure 2 Most significant authors

3.2 Top Journals in Street vending business research area

There are around 394 journals in the web of science collection, fixing two journals as the threshold limit for the network diagram in Vos-viewer, a network map is as shown in figure 3. With nearly 500 citations food control journal top the list with seventeen documents.

Table 3 represents the most influential journals with the largest number of publications.

Source	Documents	Citations
Food Control	17	498
Cities	14	106
Urban Studies	14	336
International Development Planning Review	9	70
Bmc Public Health	8	67
Technological Forecasting And Social Change	8	125
World Development	8	290
British Food Journal	7	50
International Journal Of Urban And Regional Research	7	132
Plos One	7	70
Sustainability	7	43
Annals Of Tourism Research	5	174
Antipode	5	283
Environment And Planning D-Society & Space	5	121

Table 3 Top Journals

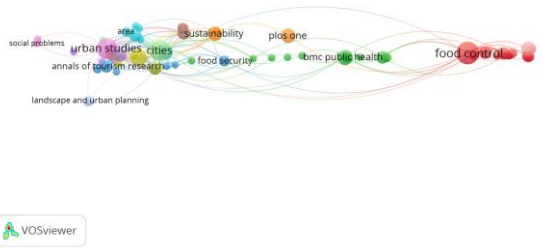

Figure 3 Network diagram of top journals

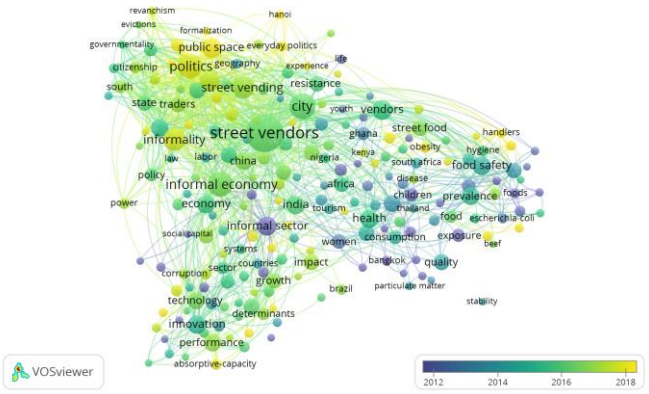

Figure 4 Top Keywords from Vos-viewer

3.3 Top keywords

There were 2941 keywords in Web of Science search results. In vos-viewer, the threshold of 648 had got for the network diagram. The figure 4 shows the keywords co-occurrence map in Vos-viewer. Most relevant author keywords as per the biblioshiny is also incorporated in figure 5. Technology and innovation are part of this set of keywords and shows the significance of the research area.

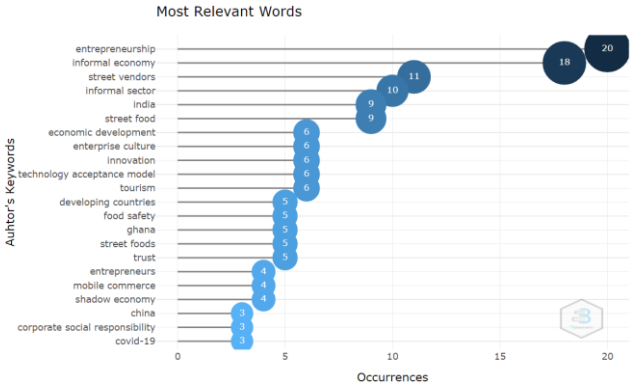

Figure 5 Author keywords from Scopus database results

Table 4 represents the keywords with most occurrences

Words	Occurrences
entrepreneurship	20
informal economy	18
street vendors	11
informal sector	10
india	9
economic development	6
enterprise culture	6
innovation	6
technology acceptance model	6
tourism	6
trust	5
entrepreneurs	4
mobile commerce	4

Figure 6 depicting the three-field plot of keywords with respect to countries and journals are derived from biblioshiny package form R software. The Scopus database results indicates the contribution of India and UK leading the chart. Informal economy and entrepreneurship is the most used keywords. Technology acceptance model and innovation are also most used keywords as per the three filed plot.

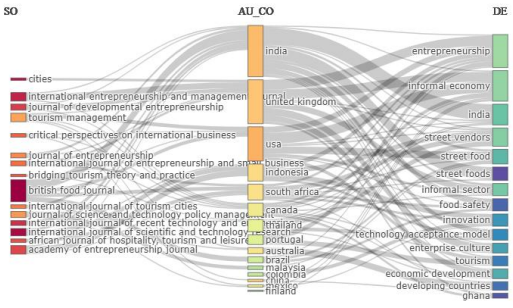

Figure 6 Three filed plot from biblioshiny

3.4 Top countries with significant contribution

The highly cited countries in the street vending sector in Web of Science is shown in Table 5. There are 98

countries which have contributed to the street vending sector and technology in Web of Science database. The network diagram of clusters has presented in figure 6. United Sates of America has contributed to the research area with more than 180 publications with 4259 citations. India stands at the fifth position with 49 articles and 427 citations. Other countries like Coumbia, Argentina have latest contributions post 2018 along with leading countries.

Country	Documents	Citations
USA	183	4259
England	69	1459
India	49	427
Peoples R China	48	718
South Africa	43	846
Australia	38	538
Canada	36	551
France	31	584
Germany	24	843
Japan	24	272
Spain	21	326
Ghana	20	450
Nigeria	17	118
Italy	16	157

Table 5 Top countries

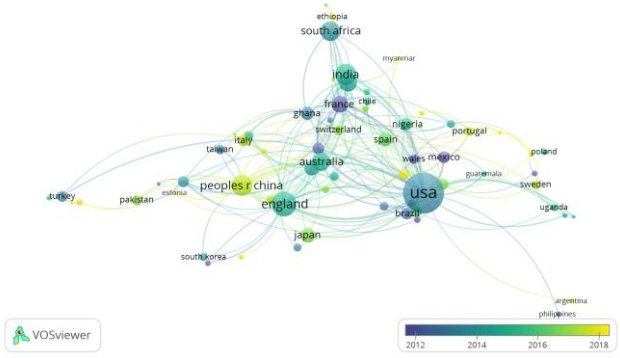

Figure 6 Top countries co-authorship map

4. In-depth Analysis

In the bibliometric analysis, the network diagram facilitated the visualization of top significant countries, journals, and authors. This highlighted the influential aspect of the United States of America in contributing to the literature. India also have contributed significantly in street vending sector. Hence the researchers have shortlisted forty research articles for in depth study of technology adoption in the informal economy. Hence the subsections of this section will be divided in to few sections related to technologies used in business in general.

The street vending business whether it be fixed stall or hawking, they contribute to the economy in large irrespective of the countries. (Koch, 2015)Koch had mentioned about the licensing of street food vendors at the United States helping in licensing in different settings. (Malasan, 2019)examines about having social infrastructure in street vending and the resistance from the street vendors specifically in a particular geographical area. Street vending in India (Szakonyi & Urpelainen, 2015)which insisted on energy poverty and the need for energy access to the informal sector of the country. (Prevolšek et al., 2021) Insisted on street food vending in technical and hygienic practices. (Huang et al., 2019) Again insisted on formalizing the street vending business with government technologies and other initiations. The use of Artificial neural network and other hybrid approaches in street vending market to examine the economic performance of these group(Wu et al., 2016). Again the very existence of the street vending is examined and how various technologies like Quick Response codes and mobile payment technologies can help supervise the street vending business.

Street vending businesses, whether operating through fixed stalls or mobile hawking, contribute significantly to urban economies across countries (Koch, 2015). Several studies have examined the role of regulatory frameworks and institutional arrangements in shaping street vending practices. Koch (2015) discusses licensing mechanisms for street food vendors in the United States, highlighting how regulatory approaches differ across urban settings and influence vendor legitimacy and compliance. Similarly, Huang et al. (2019) emphasise the role of government-led technological initiatives in formalising street vending operations, including digital registration and monitoring systems. However, the implementation of such regulatory technologies often encounters resistance, particularly when vendors perceive them as restrictive or misaligned with their operational realities (Malasan, 2019). These findings suggest that while regulation-enabled technologies can enhance governance and accountability, their effectiveness depends on trust, inclusiveness, and stakeholder engagement. More recent research has explored the application of advanced analytical tools to assess and enhance the performance of street vending businesses. Wu et al. (2016) employ artificial neural networks and hybrid analytical approaches to evaluate the economic performance of street vendors, demonstrating the potential of data-driven methods in understanding informal market dynamics. Such analytical tools can support decision-making related to pricing, demand forecasting, and resource allocation. In addition, the integration of digital transaction data generated through mobile payments and QR codes enables more systematic monitoring and supervision of street vending activities. While these technologies offer valuable insights for policymakers and planners, their adoption raises important concerns related to data governance, privacy, and equitable access.

4.1 Use of Social and Online media

The online and social media is gaining importance ever-since this has become popular among the people. (Chen et al., 2020)The pandemic had facilitated the merchants in utilising the scope of social media in business.(Cao et al., 2021) emphasized the benefits and cost in switching the peddlers coupled with the subjective norms and policy benefits. However, the success of the technology involvement lies in the hands of the people. (Majoni et al., 2020) explains about the women street vendors trust in using the technologies. The online marketing in the street vending sector has also been studied (Vita et al., 2021) recently using the technology acceptance model with respect to positive effect of YouTube platform. (Tsarwe & Mare, 2021) studied about the use of mobile phone by the informal street vendors in creating a virtual network for creating network of vendors for accessing collective credit, market intelligence and such other things. The articles selected is presented in Table 7.

Authors	Article Title	Methodology	theory	findings
(Cao et al., 2021)	Toward street vending in post COVID-19 China: Social networking services information overload and switching intention	SEM	push-pull-mooring framework	There is positive effect in perceived policy benefits, subjective norms, cost of switching
(Majoni et al., 2020)	Mose: A Mobile Application for Women Street Vendors in Cape Town	Interview	TAM	Favourable results from the women vendors using the mobile technologies
(Vita et al., 2021)	The online marketing of Indonesian street food in Jakarta	Smart PLS	TAM	Positive outcome in using the online media
(Tsarwe & Mare, 2021)	Mobile phones, informal markets and young urban entrepreneurs in Zimbabwe: An Exploratory Study	Semi-structured interviews	Theory of social network and collective action	Use of mobile phones and traditional banking platform for creating virtual network of vendors.

Table 7 Selected papers in Online and social media use in Street vending

4.2 Self Service Technologies in Street vending

The self-service technologies as per (Kumar Kaushik & Rahman, 2016) has negative relationship with innovation and technologies. Also they concluded gender being insignificant in self-service technologies adoption. (Ray et al., 2020) An Indian perspective of street vendors and use of technology as survival strategies against the organised sector. (Rumanyika et al., 2021) emphasized the need for mobile communications for the street vendors to better communicate with their consumers. (Gopaul, 2012) study in Mauritius had brought forward the limitations and setbacks faced by the informal street vendors and their inhibitions on accepting various technologies.

Authors	Article Title	Methods	theory	findings
(Kumar Kaushik & Rahman, 2016)	Are Street Vendors Really Innovative Toward Self-service Technology?	Interview	Consumer innovativeness to street vending	Negative relation between street vendors and self-service technology
(Ray et al., 2020)	The rise of corporate retailing and the impacts on small-scale retailing: the survival strategies of Kirana stores and informal street vendors in Durgapur, India	Interview	Qualitative study	The informal sector seems to be resilient as per the study.
(Rumanyika et al., 2021)	Mobile technology for street trading in Tanzania: A design science research approach for determining user requirements	Interview: focus group discussion	design science research framework	Technology need of the informal sector vendors, and their suitability.

(Gopaul, 2012)	An assessment of the use of information technology tools and E-business by informal sector entrepreneurs in Mauritius	Interview	Qualitative study	The gap in formal and informal sector technologies.
(Kazancoglu & Kursunluoglu Yarimoglu, 2018)	How food retailing changed in Turkey: spread of self-service technologies	Interview; SEM	TAM	PEU, PU, and TA affected intentions to use technologies

Table 8 Articles selected for the study of Self-service technologies

4.3 Mobile payment technologies in Informal sector

The mobile payments adoption in small and micro business in China and the non-adopters and the effect of the same in their livelihood(Wang, 2020). M-wallet technology acceptance have studied in India(Chopra, 2019), in respect of non-acceptance of technologies in terms of trust, security and security concerns. (Paas et al., 2020) Studied about the need of adoption of technology as well as the mobile technology maturity among the consumer groups. (Kapur et al., 2020) has interestingly put forward a mathematical model of adoption of technology. Table 9 is the set of articles selected for study. The adoption of digital payment technologies has emerged as a critical aspect of technological transformation in street vending. Tools such as mobile wallets, QR-code-based payments, and contactless transaction systems offer vendors improved transaction speed, reduced cash handling risks, and greater financial visibility. Recent studies highlight how mobile payment systems can support financial inclusion among informal vendors by creating digital transaction records that facilitate access to formal credit and banking services. The increasing reliance on cashless payment systems also positions street vendors within emerging phygital retail ecosystems, where physical sales are complemented by digital financial interfaces. However, barriers related to digital literacy, trust, and perceived risk continue to affect the widespread adoption of these technologies, particularly among smaller and mobile vendors.

Authors	Article Title	theory	findings
(Wang, 2020)	Mobile Payment and Informal Business: Evidence from China's Household Panel Data	difference-in-difference (DID) fixed effect	The positive effect of adopters of technology.
(Chopra, 2019)	M-wallet technology acceptance by street vendors in India	Technology acceptance model	Privacy, security and trust hindering the acceptance of m-wallet
(Paas et al., 2020).	Adoption of services and apps on mobile phones by micro-entrepreneurs in Sub-Saharan Africa	Acquisition pattern analysis	Drivers of mobile technologies maturity and adoption in consumer groups.
(Kapur et al., 2020)	Studying BHIM app adoption using bass model: An Indian perspective	mathematical model of adoption of technology	The model positively fits with the data.
(Björkegren, 2020)	Measuring informal work with digital traces: Mobile payphone operators in Rwanda	Exploratory study	Trends of digital traces in informal sector of poorest of countries.

Table 9 Articles with respect to mobile technology acceptance

4.4 M-commerce adoption in Informal sector

M-commerce area, as far as the street vending very few studies have seen from both the databases. (Pipitwanichakarn & Wongtada, 2019a)This article analyses the initial adopters and advanced adopters of technology in informal street vendors group. Here trust has a significant role on initial adoption and perceived usefulness is important in advanced stage of adopters. (Pipitwanichakarn & Wongtada, 2020) puts forward the results of an experimental study of m-commerce adoption among the street vendors with respect to ease of use and trust in service provider.(Pipitwanichakarn & Wongtada, 2019b) Studied about the technology acceptance model in adoption of mobile technology in street vendors and the predictive power among the street vendors are positive as per the research. Table 10 is the few articles based on m-commerce adoption in street vending.

Authors	Article Title	Methodology	theory	findings
(Pipitwanichakarn & Wongtada, 2019a)	Leveraging the technology acceptance model for mobile commerce adoption under distinct stages of adoption A case of micro businesses	Interview	TAM	Adoption of technology from initial stage to advanced stage of adoption where trust plays significant role in initial stage and usefulness plays significant at the advanced stage
(Pipitwanichakarn & Wongtada, 2020)	The role online review on mobile commerce adoption: an inclusive growth context	Experimental study	TAM	Experimental study of perceived ease of use and trust
(Pipitwanichakarn & Wongtada, 2019b)	Mobile commerce adoption among the bottom of the pyramid: a case of street vendors in Thailand	Pen-and-pencil study method	TAM	There is a strong predictive power in acceptance od technology in street vendors.

Table 10 M-commerce adoption among street vending

4.5 Growth of ICT in Street vending

The investment in information and communication technologies are significant in all the countries.(Jiyane & Mostert, 2010) asserted on the use of technologies helping the women vendors in assimilating information about the business and suggested on adult basic IT education among the vendors. (Morris, 2021) asserted on the digital working performs rather than on immobile working as it lacks dynamism. The significance of digital media in low skilled informal vendors and the technological involvement with technologies help in advancement in informational requirements and reducing the digital divide (Medina, 2018).(Abebe et al., 2018) tries to fill the gap in knowledge and behavioural bias in saving habit of vendors. Other articles focusing on information technology adoption and financial inclusion of street vendors are presented in table 11.

Authors	Article Title	Methodology	Theory	findings
(Jiyane & Mostert, 2010)	Use of Information and Communication Technologies by	Interviews-Focus group meeting	Exploratory study	The women vendors rely on technologies for

	Women Hawkers and Vendors in South Africa			getting business information
(Abebe et al., 2018)	Changing Saving and Investment Behaviour: The Impact of Financial Literacy Training and Reminders on Micro-businesses	Ancova analysis	Experimental Study	The gap in knowledge of financial literacy and savings
(Werber et al., 2015)	Computer literacy and use of ICT as key factors of micro-enterprise success	Interview	Model of factors dependent with annual turnover	Adoption of technology and financial success of the micro business
(Pathak, Xavier-Oliveira, et al., 2016)	Technology use and availability in entrepreneurship: informal economy as moderator of institutions in emerging economies	hierarchical linear model methods	Country level and individual level studies	proposed new technological development by entrepreneurial firms
(Pathak, Laplume, et al., 2016)	Informal institutions and technology use by entrepreneurs An empirical study across 18 emerging markets	Random-effect logistic regressions	hierarchical linear modelling methods	U shaped relation of the technology entrepreneurship in informal vendors of emerging economy
(Agwu, 2020)	Can technology bridge the gap between rural development and financial inclusions?	Mixed methods-multiple variables for analysis	Conceptual-Financial inclusion, technology and rural development model Source	The potential of the informal sector to be included in banking and financial services,
(Ilavarasan, 2019)	Present and future of the use and impact of information and communication technology in informal microenterprises: Insights from India	Cases	Cases	Positive- lowcost information technologies positively affecting the growth of informal enterprises.
(Mramba, Apiola, Sutinen, et al., 2016)	Empowering street vendors through technology: An explorative study in Dar es Salaam, Tanzania	Exploratory Study	qualitative content analysis	business skills, strategies to propose mobile technology improve street vendors' business prospects

(Mramba, Apiola, Kolog, et al., 2016)	Technology for street traders in Tanzania: A design science research approach	Survey	design science research	Technology innovations help the street vendors in collecting business information, record keeping and the like.
(Anenberg & Kung, 2015)	Information technology and product variety in the city: The case of food trucks	Consumer expense survey	Conceptual model	ICT complementing the consumption of street food and positive correlation in food expenditure,
(Ilahiane & Sherry, 2008)	Joutia: Street vendor entrepreneurship and the informal economy of information and communication technologies in Morocco	semi-structures interviews and observations	Ethnographic and cultural analysis	The vital role of street vendors in participatory marketing of digital electronic products

Table 11 ICT in Street vending

5. Future Research Direction

Reading from the refined articles, there are certain future research gaps identified are presented in table12. Also, theoretical framework of technology acceptance model and other innovation models need to be investigated thoroughly. Also, study if Technology acceptance Model holds in the case of street vendors in India. Making the street vendors part of the formal economy and compliances with the tax laws in the country concerned is also an area for further studies. Study of the implementation of innovation analysis using the variables perceived usefulness, ease of use, technology readiness, perceived trust, and risk with respect of various theories.

Another important direction concerns the integration of street vendors into the formal economic and regulatory system, including compliance with taxation, licensing, and digital reporting requirements. While digital technologies are often promoted as enablers of formalisation, limited research has examined vendors' perceptions of compliance technologies and the potential trade-offs between formalisation and livelihood security. Further studies should also explore innovation adoption using variables such as perceived usefulness, ease of use, technology readiness, perceived trust, and perceived risk across different informal vendor categories. In addition, the emergence of phygital retail environments presents opportunities to investigate how digital platforms, social media, and mobile payments reshape customer–vendor interactions, business performance, and resilience. Research on technology rejection, discontinuance, and resistance is equally important, as adoption is not always linear or permanent. Understanding why vendors abandon technologies can offer valuable insights for policymakers and technology providers aiming to design inclusive and sustainable digital interventions.

Research streams	**Future research directions**
Street vendors and ICT	Scope of ICT enablers and street vendors in Rural India
	Use of social media in street vending
	Tax and other compliance of street vendors-enquiry
	Role of mobile applications and social media platforms in customer engagement
Informal economy and financial system	Studying the characteristics of financial technologies in the informal economy
	Making the informal sector part of the compliance system of the country
	Strategies to deal with the problems of presence of informal economy
	Digital literacy and training interventions for informal vendors,

	Pathways for integrating informal vendors into national compliance systems
Digital payments and future of street vending business	Developing and promoting a sustainable e payment system
	Role of e-payments in compliance of street vendors
	Challenges and constraints in acceptance of digital payments
	Obstacles in digital financial technologies for inclusion of informal vendors in to the system
Rejection of technology and Discontinuance	Role of government in promoting various technologies for growth of street vending
	Role of government incentives and policy interventions in sustained adoption
	Post-adoption behaviour and long-term usage patterns
Gender and Social Inclusion	Gender-based differences in technology adoption and use
	Role of women vendors in digital and phygital retail transformation
Data, Privacy, and Governance	Data ownership, privacy concerns, and trust in digital systems
	Ethical and governance challenges of digital monitoring technologies

Table 12 Future research direction in street vending business

6. Conclusion

Study of technology adoption and the importance of innovation and technology across various informal vendors will also be helpful for the stakeholders such as bankers, marketers, and local government. Rejection or discontinuance may also hold a potential study area and practical implication for researchers and policymakers. There are limitations while studying the literature of street vending business. The articles extracted from the databases were mostly concentrated on emerging economies and under developed economies. The studies based on developed economies and licensed traders need to be covered as well for better understanding of the informal sector. The database selected were only Scopus and web of science. Wider scope of the databases such as google scholar and other databases would help extracting more literature on the research area. The findings reveal that although research on street vending and technology adoption has grown, it remains fragmented across disciplines and contexts. Digital payments, regulatory technologies, infrastructure access, and data analytics have emerged as key themes, yet significant gaps persist in understanding technology readiness, sustained usage, and technology discontinuance among street vendors. The review also highlights the limited application of established technology adoption theories, such as the Technology Acceptance Model and innovation diffusion frameworks, within informal retail settings. From a policy perspective, the study underscores the need for ecosystem-based digital strategies that balance formalisation with livelihood security. By identifying future research directions related to financial inclusion, governance, gender equity, and phygital retail integration, this paper provides a structured agenda for researchers, policymakers, and practitioners seeking to promote inclusive, sustainable, and resilient digital transformation in street vending and informal retail ecosystems.

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