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# BARRIERS IN ADOPTION OF FINTECH BY STREET VENDORS AND HAWKERS IN INDIA USING INTERPRETIVE STRUCTURAL MODELING

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**Abstract.** The adoption of financial technology (fintech) has the potential to make banking and financial services more accessible and convenient for all, but there are significant barriers preventing the adoption of fintech by street vendors and hawkers in India. This study aims to identify and analyse the barriers to fintech adoption using interpretive structural modelling (ISM). The research identified nine key barriers to fintech adoption, including perceived risk, lack of trust, lack of perceived benefit, social influence, lack of awareness, cash culture, lack of literacy, perceived ease of use, and lack of financial literacy. The study utilizes ISM to develop a hierarchy of these barriers and their interrelationships. The findings suggest that to promote the adoption of fintech, it is essential to build trust and awareness of fintech services through education and outreach programs. This research provides a comprehensive understanding of the barriers to fintech adoption among street vendors and hawkers in India and offers insights into how these barriers can be overcomed. The study contributes to the development of strategies that can help promote the adoption of fintech among marginalized populations and advance financial inclusion in India.

**Keywords:** fintech, e-commerce, online banking, digital payments, street vendors, hawkers, Interpretive Structural Modeling.

**JEL Classification:** E5, G2, E42, O3.

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## 1. Introduction

Cisco (HT Tech, 2022) discusses the implications of the growth of 4G connectivity for India's digital economy, including increased access to digital services such as e-commerce, online banking, and digital payments. It notes that the COVID-19 pandemic has accelerated the adoption of digital technologies in India, with many businesses and consumers turning to digital channels to conduct transactions and communicate. The Cognizant (2021) report highlights the growing importance of digital technologies in driving economic growth and competitiveness, and the need for businesses and governments to adopt a digital-first mind-set in order to stay relevant and competitive (Singh et al., 2023). Spulbar et al. (2022) investigated the linkage between digitalization and economic development considering the effect on poverty in the context of the COVID-19 pandemic. Nayak et al. (2021) analyzed the importance of virtual (online, digital) market space in an emerging country such as India using Virtual try on technology based on image integrative technology. Moreover, Samartha et al. (2022) examined the effect of digitalization and innovative technologies on the development of banking system in India. BFSI from Economic Times (2023), highlighted the fact that these cities have a large unbanked population, and therefore, present an untapped

market for financial services providers. Financial technology, or fintech, has revolutionized the way we manage our finances, with the potential to make banking and financial services more accessible and convenient for everyone (Jha et al., 2022). However, the adoption of fintech is not evenly spread across all segments of society. One group that is particularly affected by this disparity is street vendors and hawkers in tier 3 and tier 4 cities of India. Tier 3 cities are cities having a population of 20,000 to 49,999 and Tier 4 cities are cities having a population of 10,000 to 19,999.

The Clear Tax Chronicle (2019), discusses the role of fintech companies in the growth and development of Tier II and Tier III cities in India and highlights how fintech companies are disrupting the traditional financial services sector by leveraging technology to offer financial services to consumers in remote areas and thus promoting financial inclusion (Agrawal, 2022, 2016). Despite the potential benefits of fintech, there are numerous barriers that prevent street vendors and hawkers from adopting it. These barriers include perceived risk, lack of trust, lack of perceived benefit, social influence, lack of awareness, cash culture, lack of literacy, perceived ease of use, and lack of financial literacy (Srivastava & Vishnani, 2021).

Therefore, the current research was taken up to seek answers to the following research question:

RQ1: What are the key barriers in the adoption of fintech among street vendors and hawkers in the Tier 3 and Tier 4 cities of India?

RQ2: How are these identified key challenges interrelated in the context of promoting fintech adoption among street vendors and hawkers in the Tier 3 and Tier 4 cities of India?

RQ3: What is the hierarchical framework of key barriers that need to be addressed to promote the effective adoption of fintech among street vendors and hawkers in the Tier 3 and Tier 4 cities of India?

## 2. Literature review

### 2.1. Fintech in India

According to World Bank (2018), digital financial services have the potential to reach the unbanked and underbanked populations in India, particularly in rural and semi-urban areas. Boston Consulting Group (2019) stated that fintech can help bridge the gap between the demand and supply of financial services in India, particularly in Tier 2 and Tier 3 cities (Agrawal, 2022; Ratna, 2020; Tripathi et al., 2022; Agrawal, 2016). Garg and Sharma (2021) found that the lack of trust and awareness towards digital financial services is a significant barrier to their adoption among low-income households in India. As per Maniar (2019), the lack of financial and digital literacy is a significant hindrance to the adoption of digital financial services among low-income households and micro-enterprises in India. Bandyopadhyay and Banerjee (2020) noted that cash culture and lack of awareness towards digital financial services hinder the adoption of fintech among low-income households and micro-enterprises in India. While fintech has the potential to improve financial inclusion among street vendors and hawkers in Tier 3 and Tier 4 cities of India, its adoption is still limited due to several barriers.

### 2.2. Key barriers in adoption of Fintech among street vendors and hawkers in the Tier 3 and Tier 4 cities of India

#### *2.2.1. Perceived risk*

Perceived risk refers to the concerns and doubts individuals have about the use of new technologies and the potential risks associated with them (Bashir & Madhavaiah, 2021). Several studies have shown that perceived risk is a critical factor in the adoption of fintech (Saxena & Tripathi, 2021). For instance, Alalwan et al. (2018) found that perceived risk negatively affects the intention to use mobile banking among users in Saudi Arabia. Similarly, Karjaluoto et al. (2015) revealed that perceived risk is a significant barrier to the adoption of mobile payment services in Finland. It is the fear of losing money, and concerns about the reliability of fintech services (Bharadwaj & Singh, 2019).

#### *2.2.2. Lack of trust*

Trust refers to the confidence individuals have in the reliability and security of fintech services (Bharadwaj & Singh, 2019). Several studies have shown that lack of trust is a significant barrier to the adoption of fintech. Zhou et al. (2019) found that lack of trust is a significant barrier to the adoption of mobile payment services in China. Similarly, Alalwan et al. (2018) revealed that lack of trust is a critical factor that negatively affects the intention to use mobile banking among users in Saudi Arabia. This includes concerns about the reliability of fintech services, fear of fraud and security breaches, and lack of trust in financial institutions (Bashir & Madhavaiah, 2021).

#### *2.2.3. Lack of perceived benefit*

Perceived benefits refer to the extent to which individuals believe that the use of fintech services will provide tangible benefits to them (Gupta & Pandit, 2020). Chai et al. (2019) found that lack of perceived benefits is a critical factor that negatively affects the adoption of mobile payment services among users in Malaysia. Similarly, Wang et al. (2020) and Bashir and Madhavaiah (2021) revealed that perceived usefulness is a significant factor that positively affects the intention to use digital wallets in China.

#### *2.2.4. Social influence*

The influence of social networks and relationships has been identified as an important factor in the adoption of new technology (Venkatesh et al., 2003). In the context of fintech adoption, social influence can play a significant role in shaping individuals' attitudes and behaviours towards the use of these technologies (Chen & Li, 2021). Studies have found that social influence can positively impact the

adoption of fintech among various groups, including low-income individuals (Karim et al., 2022) and small business owners (Gan et al., 2019; Choudhury & Mondal, 2020). Venkatesh et al. (2003), found that negative social influence can deter individuals from adopting new technology and sometimes social stigma surrounding the use of technology for financial transactions also discourages individuals from adopting fintech (Choudhury & Mondal, 2020).

#### 2.2.5. Lack of awareness

Bandyopadhyay and Chatterjee (2019), stated financial inclusion campaigns need to be strengthened to improve the awareness level of individuals regarding fintech services. The authors highlighted that the lack of awareness among the people, especially those who are less educated and less affluent, is a major challenge for the fintech industry to penetrate the market. Ahmad et al. (2021), the lack of awareness about fintech services and their benefits is a major obstacle for street vendors and hawkers to adopt these services. Nambiar and Omar (2018) found that lack of awareness and knowledge about fintech services is a significant barrier for adoption among small business owners.

#### 2.2.6. Cash culture

Cash culture refers to a society's tendency to rely on physical cash transactions instead of digital payment methods (Kim & Lee, 2020). In India, the cash culture is deeply ingrained in the daily lives of individuals, including street vendors and hawkers (Das & Dutta, 2019). Kshetri and Mishra (2018) found that the cash culture is a significant barrier to the adoption of digital payment methods among micro, small, and medium-sized enterprises (MSMEs) in India. Singh and Srivastava (2021) found that the cash culture is a significant barrier to the adoption of fintech among street vendors in India.

#### 2.2.7. Lack of literacy

Sultana et al. (2021), the lack of financial literacy is a significant barrier in the adoption of fintech in developing countries, including India. The authors argue that individuals with low levels of financial literacy may find it difficult to understand the benefits of using fintech and may not have the skills to use these tools effectively. Medhi et al. (2021) highlights the importance of digital literacy in the adoption of fintech among small and medium enterprises (SMEs) in India. Bhatia et al. (2021) emphasizes the need for financial education and literacy programs to overcome the barrier of lack of financial literacy among street vendors and hawkers in India. Dasgupta et al. (2020) emphasizes the importance of considering the cultural context in which financial education and literacy programs are designed and implemented.

#### 2.2.8. Perceived ease of use

Venkatesh and Davis (2000) define perceived ease of use as "the degree to which a person believes that using a particular system would be free of effort." When users perceive that the system is easy to use, they are more likely to adopt it. Research has shown that perceived ease of use is

**Table 1.** Key barriers in adoption of fintech (source: author creation)

| SN | Name of Barriers | Brief Description | References |
|---|---|---|---|
| 1 | Perceived Risk | Risk of losing money. | Gerlach and Lutz, 2021; Patil et al., 2017; Muñoz-Leiva et al., 2017; Arifin et al., 2019; Huei et al., 2018. |
| 2 | Lack of Trust | Lack of confidence in technology while dealing with money matters. | Amofah and Chai, 2022; Cham et al., 2018; Nathan et al., 2022; Salman and Abd Aziz, 2015; Kim et al., 2015; Hu et al., 2019; Slazus and Bick, 2022; Haqqi and Suzianti, 2020. |
| 3 | Lack of Perceived Benefit | Lack of knowledge of potential benefit. | Al-Okaily et al., 2021; Patil et al., 2017; Chuang et al., 2016; Hu et al., 2019; Huei et al., 2018; Muñoz-Leiva et al., 2017; Setiawan et al., 2021; Shaikh et al., 2020. |
| 4 | Social Influence | Influence of friends, relatives and family about the use of fintech. | Slazus and Bick, 2022; Shi et al., 2022; Kim et al., 2015; Muñoz-Leiva et al., 2017; Singh et al., 2020; Sivathanu, 2017. |
| 5 | Lack of Awareness | Lack of information about technology and its usage in day to day life. | Haqqi and Suzianti, 2020; Das and Das, 2020; Nguyen et al., 2021; Shaikh et al., 2020; Chuang et al., 2016; Setiawan et al., 2021. |
| 6 | Cash Culture | Need for cash in day to businesses. | Mathur, 2022; Muñoz-Leiva et al., 2017; Singh et al., 2020; Shaikh et al., 2020; Setiawan et al., 2021. |
| 7 | Lack of Literacy | Lack of ability to read, write and count numbers. | Laidroo and Avarmaa, 2020; Shaikh et al., 2020; Singh et al., 2020. |
| 8 | Perceived Ease of Use | Lack of ability of to interpret the easiness in using technology. | Daragmeh et al., 2021; Arifin et al., 2019; Dzogbenuku et al., 2021; Huei et al., 2018; Kim et al., 2015; Muñoz-Leiva et al., 2017; Shaikh et al., 2020; Chuang et al., 2016; Setiawan et al., 2021. |
| 9 | Lack of Financial Literacy | No knowledge about banking and its use. | Hassan et al., 2022; Dzogbenuku et al., 2021; Huei et al., 2018; Kim et al., 2015. |

a significant predictor of technology adoption. Yang et al. (2012) found that perceived ease of use was positively related to the adoption of mobile banking in China. Lee and Turban (2001) found that perceived ease of use was a crucial factor in the adoption of e-commerce in the United States. Khan et al. (2019) in Pakistan found that the lack of perceived ease of use was a significant barrier to the adoption of mobile money among low-income individuals. Singh et al. (2020) in India found that the lack of perceived ease of use was a significant barrier to the adoption of mobile banking among rural customers.

#### *2.2.9. Lack of financial literacy*

Financial literacy refers to an individual's ability to understand and manage their personal finances effectively. Avgerou and Liang (2013) highlighted the importance of financial literacy in the adoption of electronic payment systems in low-income countries. The study found that lack of financial literacy and limited access to financial education were significant barriers to the adoption of electronic payment systems among low-income populations. Ouma et al. (2018) found that lack of financial literacy was a significant barrier to the adoption of mobile money services by small-scale traders in Kenya. Akingbola and Odunsi (2021) focused specifically on the role of financial literacy in the adoption of fintech by micro, small, and medium enterprises (MSMEs) in Nigeria.

## 3. Research methodology

In this study Interpretive Structural Modeling (ISM) method is used (Rana et al., 2019). Interpretive Structural Modeling (ISM) measures the inter-relationships among the variables chosen for the study. Interpretive Structural Modeling (ISM) uses the practical knowledge and experience of experts/respondents to design and develop a logical hierarchical structure of variables cited in the study (Al-Muftah et al., 2018; Agi & Nishant, 2017; Dubey & Ali, 2014; Janssen et al., 2019; Dwivedi et al., 2017; Bakshi et al., 2023).

The current study was done in the following manner: (a) literature review was done to identified the variables that were linked to the problem addressed in the research, (b) nine key barriers in the adoption of fintech by roadside vendors were identified (Table 1), (c) a series of zoom meeting were done with the respondents to collect the required data, to explore the contextual relationships between listed key barriers in the adoption of fintech, (d) a structural self-interaction matrix (SSIM) was created through pair-wise interactions between of listed barriers. (e) initial reachability matrix (IRM) was developed using structural self-interaction matrix (SSIM), (f) the initial reachability matrix (IRM) was then converted into final reachability matrix (FRM), to develop FRM, transitivity analysis was done, (g) Using final reachability matrix (FRM) partitioning of levels was done and (h) then an ISM model was developed.

The respondents included street vendors and hawkers in Tier 3 cities and Tier 4 cities across five states of India. These people were engaged in the selling of vegetables, fruits, toys, plastic goods, utensils, dairy products, saplings, quilts and carpets, fresh juice, and tea. We used convenience sampling method to identify the respondents. Selection of respondent was done from five different states of north India. The idea was to understand the perspective of people living in different regions of the country. This also helped in minimizing the local biases. These street vendors and hawkers were the ones who did not make use of fintech though they owned smart phones, used smart phones to watch video on youtube. 10 Uttar Pradesh, 10 in Uttrakhand, 10 in Madhya Pradesh, 10 in Bihar and 10 in Jharkhand were interviewed in order to collect data and to comprehend the inter-linkages among the chosen variables. These respondents were of age group of 35 to 55 years. In total 74 people were contacted but out of these 21 said they were not willing to take part in interviews, so 53 respondents were left. Out of the 53 people who agreed to given interview 3 were women so as the number was very insignificant we decided to eliminate their responses so finally responses were collected from 50 respondents.

## 4. Data analysis

### 4.1. Development of Self-Structured Interaction Matrix (SSIM)

After finalizing the barriers in adoption of fintech among the street vendors and hawkers in the Tier 3 and Tier 4 cities of India, a self-structured interaction matrix was developed to comprehend the contextual relations between each pair of barrier (Kumar et al., 2016; Rana et al., 2019). Four symbols are utilized (for making Table 2 for demonstrating the direction of interaction amid the two Barriers in Adoption of Fintech in Indian perspective (say, i and j) as follows: V – factor i influences factor j; A – factor j influences factor i; X – factor i and j influence each other, and O – factor i and j are unrelated. Through the respondent interaction and using the above four notations, self-structured interaction matrix for the Barriers in Adoption of Fintech among the street vendors and hawkers in the Tier 3 and Tier 4 cities of India displayed in (Table 2) was made.

### 4.2. Development of Initial Reachability Matrix (IRM)

The next step of Interpretive Structural Modeling is to design Initial Reachability Matrix. The Self-Structured Interaction Matrix shown above (Table 2) was further converted into Initial Reachability Matrix. In order to make Initial Reachability Matrix (Table 3) we used binary numbers (0 and 1) which replace the various symbols (V, A, X, O) in the self-structured interaction matrix. The basis of this replacement is given below:

- when there is symbols 'V' in SSIM we used '1' in (i, j) entry and '0' in (j, i) entry;

**Table 2.** Self-Structured Interaction Matrix (SSIM) (source: author creation)

| Code | Barriers | B9 | B8 | B7 | B6 | B5 | B4 | B3 | B2 | B1 |
|---|---|---|---|---|---|---|---|---|---|---|
| B1 | Perceived Risk | A | O | A | V | A | A | V | X | |
| B2 | Lack of Trust | A | O | A | V | A | A | A | | |
| B3 | Lack of Perceived Benefit | A | A | A | V | A | A | | | |
| B4 | Social influence | A | O | A | O | A | | | | |
| B5 | Lack of Awareness | X | V | A | O | | | | | |
| B6 | Cash Culture | O | A | A | | | | | | |
| B7 | Lack of Literacy | V | V | | | | | | | |
| B8 | Perceived ease of use | O | | | | | | | | |
| B9 | Lack of Financial Literacy | | | | | | | | | |

- when there is symbols 'A' in SSIM we used '0' in (i, j) entry and '1' in (j, i) entry;
- when there is symbols 'X' in SSIM we used '1' in both (i, j) and (j, i) entry;
- when there is symbols 'O' in SSIM we use '0' in both (i, j) and (j, i) entry.

## 4.3. Development of Final Reachability Matrix (FRM)

After making the initial reachability matrix the transitivity relations among the chosen barriers in adoption of fintech among the street vendors and hawkers in the Tier 3 and Tier 4 cities of India was measured and using that final reachability matrix (Table 4) was created. All the places where we found transitive relationship between two variable we replaced the value 0 with 1*. We were able to identify seven such incidents where transitive relationship existed between the two variables.

## 4.4. Partitioning of levels

In total four iterations were conducted to do the partitioning of levels. We used final reachability matrix to find the importance levels which was further used to develop the hierarchical structure of the barriers in adoption of fintech among the street vendors and hawkers in the Tier 3 and Tier 4 cities of India. To make various levels, we created the reachability set, antecedent set and intersection set. Reachability set composed of the barriers itself and the other barriers influenced by it. Antecedent set composed of barriers itself and other barriers that affect it. The common factors among the reachability set and the antecedent set was put in the intersection set. The level was as-

**Table 3.** Initial Reachability Matrix (IRM)(source: author creation)

| Code | Barriers | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 |
|---|---|---|---|---|---|---|---|---|---|---|
| B1 | Perceived Risk | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| B2 | Lack of Trust | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| B3 | Lack of Perceived Benefit | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| B4 | Social influence | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| B5 | Lack of Awareness | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |
| B6 | Cash Culture | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| B7 | Lack of Literacy | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| B8 | Perceived ease of use | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |
| B9 | Lack of Financial Literacy | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 |

**Table 4.** Final Reachability Matrix (FRM) (source: author creation)

| Code | Barriers | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 |
|---|---|---|---|---|---|---|---|---|---|---|
| B1 | Perceived Risk | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| B2 | Lack of Trust | 1 | 1 | 1* | 0 | 0 | 1 | 0 | 0 | 0 |
| B3 | Lack of Perceived Benefit | 1* | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| B4 | Social influence | 1 | 1 | 1 | 1 | 0 | 1* | 0 | 0 | 0 |
| B5 | Lack of Awareness | 1 | 1 | 1 | 1 | 1 | 1* | 0 | 1 | 1 |
| B6 | Cash Culture | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| B7 | Lack of Literacy | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| B8 | Perceived ease of use | 0 | 1* | 1 | 0 | 0 | 1 | 0 | 1 | 0 |
| B9 | Lack of Financial Literacy | 1 | 1 | 1 | 1 | 1 | 1* | 0 | 1* | 1 |

**Table 5.** Iterations for partitioning of the levels (source: author creation)

| Code | Barriers | Reachability Set (RS) | Antecedent Set (AS) | Intersection Set RS ∩AS | Level |
|---|---|---|---|---|---|
| B6 | Cash Culture | 6 | 1,2,3,4,5,6,7,8,9 | 6 | Level 1 |
| B1 | Lack of Perceived Risk | 1, 2,3 | 1,2,3,4,5,7,9 | 1,2,3 | Level 2 |
| B2 | Lack of Trust | 1,2,3 | 1,2,3,4,5,7,8,9 | 1,2,3 | Level 2 |
| B3 | Perceived Benefit | 1,2,3 | 1,2,3,4,5,7,8,9 | 1,2,3 | Level 2 |
| B4 | Social influence | 4 | 4,5,7,9 | 4 | Level 3 |
| B8 | Perceived ease of use | 8 | 5,7,8,9 | 8 | Level 3 |
| B5 | Lack of Awareness | 5,7 | 5,7,9 | 5,7 | Level 4 |
| B7 | Lack of Literacy | 5,7,9 | 7 | 5,7 | Level 4 |
| B9 | Lack of Financial Literacy | 5,9 | 5,7,9 | 5,7 | Level 4 |

signed based on the common factor in the reachability and the antecedent set. For example, 'cash culture' was assigned level 1, 'trust' and perceived benefit' were assigned level 2, 'social influence' and 'perceived ease of use' were assigned level 3, 'lack of awareness' 'lack of literacy' and 'Lack of financial literacy' were assigned level 4 (Table 5).

## 4.5. Development of ISM model

The next step was to create an Interpretive Structural Modeling (ISM) model. We used Table 6 showing levels assigned to barriers to develop the Interpretive Structural Modeling (ISM) based model (Figure 1).

The ISM model Figure 1 shows that the cash culture (B6) has attained the top position (i.e., level 1) in the ISM hierarchy so this needs to be focused at the most. The barriers that find their place at the level 4 in the current ISM model are Lack of Literacy (B7), Lack of Financial Literacy (B9) and Lack of Awareness (B5). Lack of Literacy (B7) seem to influence Lack of Financial Literacy (B9) as well as Lack of Awareness (B5). These three barriers Lack of Literacy

**Table 6.** Levels assigned to barriers (source: author creation)

| Iteration Number | Level | Barriers in Adoption of Fintech |
|---|---|---|
| 1st | 1 | Cash Culture (B6) |
| 2nd | 2 | Perceived Risk (B1) |
| | | Lack of Trust (B2) |
| | | Lack of Perceived Benefit (B3) |
| 3rd | 3 | Social influence (B4) |
| | | Perceived ease of use (B8) |
| 4th | 4 | Lack of Awareness (B5) |
| | | Lack of Literacy (B7) |
| | | Lack of Financial Literacy (B9) |

(B7), Lack of Financial Literacy (B9) and Lack of Awareness (B5) play very significant in impacting the adoption of fintech among the street vendors and hawkers in the Tier 3 and Tier 4 cities of India. These three barriers i.e., B7, B5, B9 lead to barriers at level 3 which include Social Influence (B4) and Perceived Ease of Use (B8). Further barrier

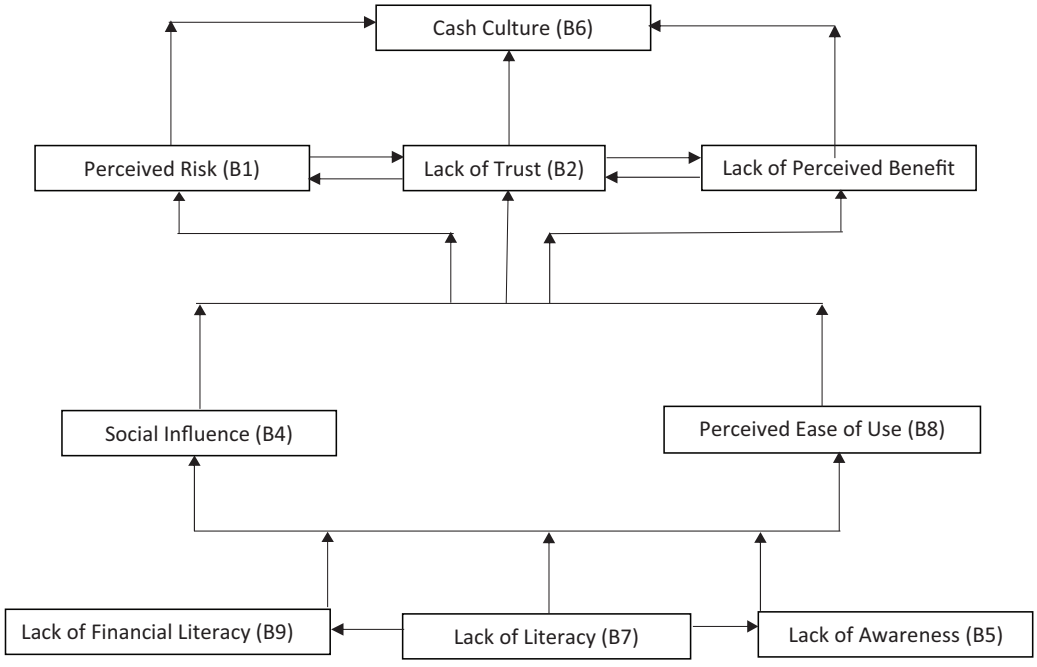


**Figure 1.** ISM model for barriers in adoption of Fintech by street vendors and hawkers in the Tier 3 and Tier 4 cities of India (source: author creation)

**Table 7.** Recommendation to improve adoption of Fintech

| Cash culture | Providing incentives to shift towards digital payment methods. |
|---|---|
| Perceived Risk | Providing clear and transparent information about the safety and security of fintech services, establishing reliable customer support services, and implementing effective fraud detection and prevention measures. |
| Lack of Trust | Establishing clear and transparent policies for data privacy and security, providing clear and simple information about the functionality and reliability of fintech services, and building trust through effective customer support and complaint resolution mechanisms. |
| Lack of Perceived Benefits | Raising awareness about the potential benefits of fintech services, providing incentives for using such services, and offering competitive pricing to make fintech services more accessible to low-income users |
| Social Influence | Recommendations from trusted individuals, can increase individuals' perceived benefits of fintech adoption |
| Perceived Ease of Use | Providing user-friendly interfaces and training programs tailored to the needs of this population may be helpful in overcoming this barrier. |
| Lack of Awareness | Policymakers and stakeholders should design and implement awareness campaigns that can reach the targeted audience to improve their knowledge and understanding of fintech services. |
| Lack of Literacy | Financial education and literacy programs that are culturally appropriate and sensitive to the needs and preferences of the target population. |
| Lack of Financial Literacy | Providing financial education and training programs to improve the financial literacy of street vendors and hawkers, enabling them to better understand and benefit from fintech services. |

Social Influence (B4) and Perceived Ease of Use (B8) are leading to Perceived Risk (B1), Perceived Benefit (B3) Trust (B2). These variable find their place at level 2 in the ISM hierarchy. And barriers such as Perceived Risk (B1), Perceived Benefit (B3) and Lack of Trust (B2) seem to further lead to the cash culture (B6) among the street vendors and hawkers in the Tier 3 and Tier 4 cities of India. It was also observed that Perceived Risk (B1) and Lack of Trust (B2) impact each other and Lack of Trust (B2) and Lack of Perceived Benefit also impact each other.

## 5. Findings & discussion

This study highlights that the cash culture is deeply ingrained in the Indian economy, which makes it challenging to shift to digital payment methods and this issue can be addressed by creating awareness about the advantages of using digital payment methods and incentivizing their use. Perceived risk is one of the primary barriers that prevent street vendors and hawkers from adopting fintech and their fear is payment might not be secure. The street vendors and hawkers are hesitant as they have a lack of trust and fear of fraudulent activities or misuse of their personal information. The street vendors and hawkers fail to see the advantages of using fintech over traditional payment methods. The street vendors and hawkers are influenced by their peers or community members who are resistant to change. They also fail to perceive the benefits of using fintech. They lacked awareness about the use of fintech in day-to-day business transactions. Lack of literacy and lack of financial knowledge also proved to be a great barrier to the adoption of fintech by street vendors and hawkers. Given below (Table 7) are some of the recommendations that can be used to promote fintech adoption among street vendors and hawkers, ultimately leading to a more efficient and inclusive economy.

Also, recommendations from trusted individuals can significantly influence the perceived benefits of fintech adoption so there is a need to collaborate with community leaders, influencers, and peers to advocate for fintech adoption, sharing success stories and positive experiences to encourage a positive perception within the community.

Providing user-friendly interfaces, financial education, literacy program, and tailored training programs are vital to overcoming barriers. Fintech providers should invest in user-friendly designs and conduct training programs that address the specific needs and preferences of street vendors and hawkers to improve knowledge and understanding of fintech services. Collaborating with government agencies, educational institutions, Financial Institutions, NGOs, and local community organizations is needed to design and execute digital literacy programs, and targeted awareness campaigns through various media channels, ensuring the information is accessible and culturally relevant.

## 6. Conclusions, implications, limitations and future research

This study provides a comprehensive understanding of the barriers to Fintech adoption among street vendors and hawkers in Tier 3 and Tier 4 cities of India. The findings of this study have significant implications for policymakers, financial institutions, and Fintech startups looking to promote financial inclusion and digital transformation in Tier 3 and Tier 4 cities of India. Addressing the identified barriers can help to create a conducive environment for the adoption of Fintech and drive financial inclusion among street vendors and hawkers.

The main limitations of this study are that this study might have a limited sample size, which may not be representative of the overall population of street vendors and hawkers in Tier 3 and Tier 4 cities of India. Thus, the findings of the study may not be generalizable. Another limitation is that ISM is a qualitative research method that is dependent on expert opinions. Therefore, the accuracy and reliability of the findings depend on the expertise and knowledge of the participants involved in the study.

There is a need to provide incentives so as to shift towards digital payment method and this can be achieved by involving government or private sector initiatives offering discounts, cashback, or other rewards for digital transactions. There is also a need to establish clear and transparent system as well as policies to ensure the data privacy, safety and security of fintech services, reliable customer support, and effective fraud detection & prevention system by involving Financial institutions and fintech providers who should invest in communicating privacy policies, robust security measures, educate users about safety protocols, and offer accessible customer support channels for prompt issue resolution. Offering competitive pricing can make fintech more accessible so there is a need to collaborate with businesses to ensure that pricing structures are competitive and appealing to the target audience.

For future scope. This study can be extended to other regions of India to compare the barriers to Fintech adoption faced by street vendors and hawkers in different parts of the country. The study may be replicated with a larger sample size to improve the generalizability of the findings. Also, the same study may be conducted with a mixed-method approach, combining both quantitative and qualitative methods, to provide a more comprehensive understanding of the barriers to Fintech adoption.

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