Opportunities to support Credit in Kirana Stores of India

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ABSTRACT

While modern trade has been growing in India over the last 25 years, small grocery stores (also known as kirana shops) continue to have over 90% of the market share. An interesting practice in these stores is that they provide credit to their customers, which is a major draw for some of their loyal customers. However, this practice often leads to a crunch of working capital for the shopkeeper. Could these traditional credit practices be better supported with the use of technology? In 2016, we conducted contextual inquiries with 119 users (including 71 shopkeepers and 48 customers) across a metro city, a small town and 4 villages, before and after demonetization in India. Our methodology included store visits, observations, contextual interviews with shopkeepers and customers and account-book studies. Our objective was to understand the drivers of such credit practices in kirana stores. We found that the shopkeepers have developed interesting strategies to maximize their business and mitigate risks. These practices and strategies varied based on the location and the type of customers that the shop entertained. We found that kirana stores were an essential part of the community. The shopkeepers feel the need to retain customers and to establish social goodwill by giving credit. Trust plays a vital role in the shopkeepers' decision-making process. Using these findings, we propose a "Trust-Credit model" that can guide future design interventions.

Author Keywords
Contextual Inquiry; User Research; Credit in Kirana Stores; Trust dynamics; Design for Development; Customer Behavior

ACM Classification Keywords
HCI; User Research; Customer Behaviour; Design for Development

INTRODUCTION

India is Asia's third-largest economy. As a 1.3 billion-people-strong nation, it is one of the largest consumer markets on the global canvas [1]. Retailing in India is one of the pillars of its economy and accounts for about 10 percent of its GDP. Although international brands of retail chains are growing at a humongous pace, a vast majority of Indians still procure their daily consumables and needs from the local stores (popularly known as kirana stores). A unique aspect of a kirana store is the prevalence of credit system (a practice of selling items on credit). Though a group of urban customers are shifted to the modern mega-marts for the purchase of daily consumables, 98% of the retail market is still controlled by kirana stores and the credit system is relevant [2]. Concurrently, India is experiencing a steady penetration of technology where the average selling price of smartphones is dropping and smartphone adoption in India has been increased, thereby giving a fillip to the number of mobile internet users in the country. Can new technologies abstract the societal norms of trust in a digital domain to make credit more accessible in kirana stores? We investigate work models of kirana stores, various modes of credit and different perspectives of credit. We conducted contextual interviews among the shopkeepers and customers, before and after demonetization in India to understand the operations. We propose a cultural model and a trust model of credit which can be valued for possible interventions that design and technology can bring to the practice.

The rest of the paper is organized as follows: We start with some background about kirana stores in India and demonetization in November 2016. We then provide an overview of a typical kirana layout in the modern era and its practices. Next, we write our objectives and follow with an account of the method used in this study. We then present our findings. It covers details of practice and operations of credit. Later, we discuss the cultural model and trust model constructed from our key findings. We conclude the paper with a review of contributions and the future implications.

KIRANA STORES IN INDIA

In the 1980s, the Indian retail industry was dominated by the unorganized sector i.e. peddlers, vendors, neighborhood kirana stores etc. Kirana stores were distributed across the neighborhood and market areas that usually sell groceries to communities, villages, and parts of urban and suburban communities. The store was usually located in the midst of the communities or in the market area where it was commonly accessible. Workers of kirana stores were either from the family running the store or natives of the locality. After post-liberalization of the Indian economy in 1991, the organized retail sector gained momentum as corporate houses raced to set up the retail stores. A 2007 McKinsey report estimated the Indian retail market to reach $1.3 trillion by 2018 at a compounded growth rate of 10% p.a. [3]. Traditional kirana stores will constitute 95% of it. Sharma et al. (2012) reported that there are more than 12 million kirana stores in India, which implies one store per 104 Indians, the average population density of India being 382 persons per sq. km. [4]. At present, rural unorganized retailers serve as an economic engine driving the Indian rural society. [5].

A typical kirana store layout is indeed unique and requires specialized conceptualizations. Studies on rural retailers in the western developed world which include the concepts like the central marketplace theory [6], out-shopping behavior by rural consumers [7][8] and the declining number of traditional retailers in rural areas, may not apply to the unorganized kirana stores in India. Kirana stores keep more number of non-perishable goods than the perishables. They also sell seasonal items during festive occasions. The items which they keep are dependent highly on customers' demand. They also keep non-grocery items based on customers' demand. For e.g. some kirana stores sell sanitary napkins. Rather they ask the shopkeeper and the shopkeeper gets it for them.

Kirana stores are small shops (typically 100-1000 square feet in size), which do not allow consumers to physically browse within their stores. [9] Rather customers ask the shopkeeper for a specific item and the shopkeeper gets it for them from the shop. Customers buy staple ingredients in bulk as supply for 3 months or more, or in retail depending on the financial capacity and requirement of the customer. Staple groceries vary according to the geography and the governing economics of the region and are bought from an agricultural organization or a super distributor. In rural areas, the store owner travels to the nearest town/city (where the agricultural organization: locally called 'Market yard') to order the stock once in a period. Indian consumers do most of their essential and daily shopping from the store next door; Proximity is one of the main reasons people prefer a store [10]. Since the customer is largely a patron, the store often provides home delivery in the neighborhood. Credit is prevalent practice in such kirana stores. Shopkeepers maintain a record of the items sold on credit, manually in a notebook (commonly known as khata). Customers also maintain and keep track of their credit accounts manually using another notebook. Mode of settlement is often in cash.

DEMONETIZATION IN INDIA

On Nov. 8, 86% of Indian currency was nullified due to demonetization move was taken by the Government of India. The move was aimed to curb black money.[11] All 500 and 1,000 rupee notes were instantaneously voided, and a 50 day period ensued where the population could (ideally) redeem their canceled cash for newly designed 500 and 2,000 rupee notes or deposit them into bank accounts.[12] In the beginning, the banks didn't have enough of the newly designed banknotes on-hand to distribute in exchange for the canceled notes, and there simply wasn't an adequate supply of smaller denominations in circulation to run the cash economy. Limited withdrawals were allowed from Automated Teller Machines(ATMs) and there were long queues. Since in India, around 2% of people use the debit card and credit cards [13], it was a challenge for everyone to sustain in this environment. However, the informal mode of credit (credit in kirana stores) was prevalent.

SECTORS OF CREDIT

Broadly, there are two sectors of credit namely, formal credit and informal credit. The credit supported by banks and co-operative institutions constitutes the formal sector of credit. A credit card is issued by these financial institutions. It allows borrowing money from the bank to make the purchase of goods and services. The cardholder is mandated to have a bank account and a sound source of income. Therefore, the average citizen and poor community are often departed from this service. On the other hand, informal credit is supported by small shops (mostly kirana stores). People can buy goods from these shops and pay later. There is no supervision from a regulatory body like RBI to enforce rules in this system. People don't even need a credit card and bank account to avail this service. How does this model work? This study reflects upon these operational aspects.

THE OBJECTIVE

Our goal of this study is to understand the operations of kirana stores including how and why they offer items on credit, the perception of the shopkeepers about this practice and the professed factors influencing their decisions, the various discernment and reasons as justified by the customers who purchase items on credit. We would like to develop a model that enables shopkeepers to give credit and customers to use it. We also aim to create opportunities for technology development and HCI (Human Computer Interaction) solutions.

METHOD

We conducted contextual inquiries with shopkeepers of kirana stores and customers in the metro city Mumbai, in a small town Dapoli and four villages namely, Harnai, Jalgaon, Murud, and Karde. These interviews were conducted in August 2016 with 103 users (including 61 shopkeepers and 42 customers). After the demonetization, we conducted 16 more contextual inquiries (including 10 shopkeepers and 6 customers) in December 2016. We initiated the project by understanding the typical settings of kirana stores, the kind of customers they attracted and the moral and financial dilemma the storekeepers experience when asked for credits. We approached the intricacies of the subject by dividing it into three broad areas of interest such as the kirana store operations, the role of the shopkeeper and the role of customers. There were 28 students (interviewers) distributed in five groups with different focii namely, credit practice and operations of kirana stores, shopkeepers' perceptions on credit, customers' perceptions on credit, factors influencing credit and trust dynamics, technology adoption to facilitate credit. Prior to the field visit, brainstorming sessions were conducted among the small groups to decide upon the focus of the contextual inquiry. The secondary research was done by the groups to gather information about the location, people, and preparation for the field trip. Our investigation emphasized on:

Maintenance of credit account

How do shopkeepers record the credit amount? How often is this amount tallied? How do they follow up for payment? How do they record closure? How many accounts do they typically have? How do they balance income and cash-flow?

Trustworthiness of customers

How does a shopkeeper decide whom to sell items on credit? What defines trust? What is the most important factor? How much risk are they willing to take and why? What were the past experiences? Were there cases when they faced problems?

Customers' reasons for buying items on credit

How often did they take credit? From how many stores do they take credit? How long have they been taking credit? How was their relationship with the shopkeepers? Was lack of cash the only reason? Were they ever refused credit?

Payment mechanisms

How often did customers pay up? Did they make part payments? Were they given receipts after payments? How do they remember to pay? Did the shopkeepers need to follow up? Do they keep track of how much they owe at any point in time? What information systems (ICTs) exist with the customers and shopkeepers? How can these be supported?

We observed interactions between the shopkeeper and the customers and the work-flow of each transaction. This was followed by detailed discussions with the shopkeepers, the workers or the customers. We conducted the interviews in Hindi, a widely spoken language in India. We visited around 70 stores. The participants were recruited on the spot, as we wanted to take the interviews in a natural setting. During the interviews, we took notes and recorded audio when permitted. With the consent of the shopkeepers, we also photographed key artifacts (a record of their daily sales, a record of items on credit, their account book: 'Khata', receipts given to customers etc.).

All the interviews were interpreted and analyzed to identify the important user statements, observations, insights, breakdowns, and design ideas. A few of the users were interviewed again, for follow-up questions resulting from the analysis session. After the fieldwork and analysis, a bottom-up affinity of the findings was built to discover patterns, resolve differences, and identify higher-level insights and design opportunities.

FINDINGS

Shops and customers profile

The stores in Mumbai typically had about 2-3 people catering to customers whereas in Dapoli the stores were run by usually 2 people and in the villages, it was usually only 1 person running the store. An image of a kirana store in Mumbai is shown in Figure 1. The shops in Mumbai employed both locals and outsiders. However, in Dapoli and the smaller stores in the villages, the stores were run only by locals, who were or have become a part of the community themselves. Age of the shopkeepers varied from 23 to 75 years. Education varied from less than primary school to graduates. Their years of experience ranged from 6 months to 45 years. Even though we sought variability in gender, we could only interview 7 female shopkeepers since a majority of kirana stores run by male shopkeepers. The stores in Mumbai usually handle about 2-3 customers at once and customers trickled in continuously in comparison to typically 1 customer at a time in both Dapoli and in the villages. The customers interviewed included a mix of males (24) and females (24) before and after demonetization. Their age ranged from 25 to 65 years. Almost all customers prefer to buy from the stores those are close to their homes or a location of convenience. Their educational background ranges from school level education to college graduates and they were from different income levels.

Figure 1. Demographics of a kirana store

A typical layout of a kirana store with 300 square feet size is shown in Figure 2. It consists of 3 areas namely, shopkeeper area, store and customer area. In reference to figure, the shopkeeper area is accessible to store area via a small door which is usually kept open during the operating hours. The shopkeeper can move in/out via a horizontal flap door between the counter and the store wall. This way, the counter is extended to more customer space. Shopkeeper keeps micro-groceries. Shopkeeper area is also shared by 1-2 assistants who help the shop by serving customers in weighing and passing the goods demanded. Store area contains goods like rice, wheat, cereals, pulses etc.

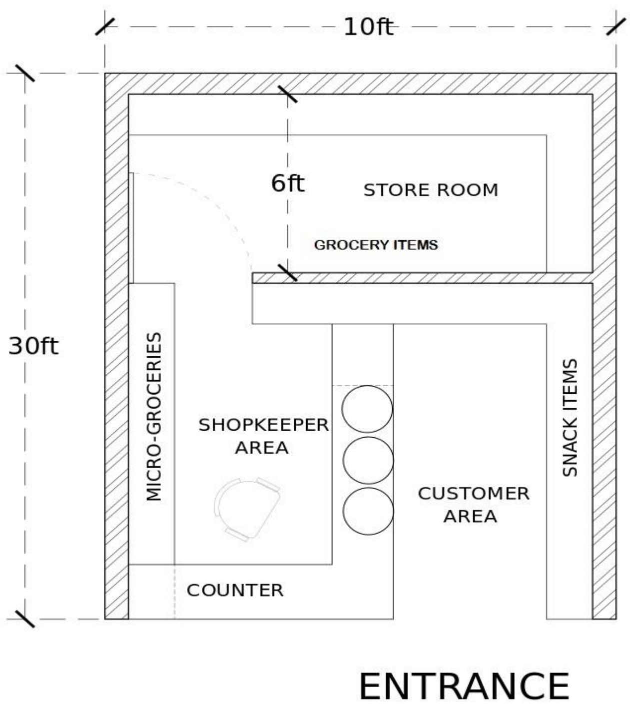

Figure 2. Layout of a kirana store

The counter in the shopkeeper area has account ledgers, bill books, calculators, pen kept above for easy maintenance of accounts. Cash collection boxes are usually below the surface with a lock. Cash counters also act as easy selling space for cheap goods like biscuits, candies, pens etc. These small items are also used as a form of change in the absence of small currencies like ₹2 or ₹5 or sometimes ₹10.

Customer space is relatively narrow where 4-5 customers can stand in a row along the counter separating the shopkeeper area and customer area. Customers have no access to pick up the items by themselves. However, during the busy hour, the shopkeeper allows the customer to get the packed snacks items only. This area is marked by snack items in the figure. Customers check their goods which are kept on the counter and pay the money at the frontier of the shop where accounting is performed and goods are delivered.

The practice and operations of credit

Prevalence of credit practice: Khata

We observed that the prevalence of the practice was largely a local phenomenon to where the store was situated. The shopkeepers are generally selective about the customers they offered credit to. This includes largely the customers who are either known to them for a long time and are regular visitors to their store. One of the shopkeepers said, "I give credit facility to this family because they have been purchasing from my shop for generations." The repayment time depends on the discretion of the shopkeeper and was seen to vary from a day to 3-4 months, and changed from case to case. A few of the shopkeepers also encourage an advance payment as a precursor to providing credits. Most of the kirana stores were found to have credit accounts for the customers. Shopkeepers maintain their details in a khata for each customer who buys items on credit. There, they write the customer's name in their own recognizable form along with the name of the items-the customer buys and price of each item. They ask the customer to pay either when the entire page of khata gets filled with the items or based on the customer's commitment to pay (mostly on monthly basis - during the first week of the month). Shopkeeper strikes off the item names from the khata after payment. Some of the customers also keep a record of their expenditures to control their expenses and cross verification. A typical khata of a shopkeeper and a customer is shown in Figure 3 and Figure 4 respectively. A few shopkeepers offered ad-hoc credits to few customers, without an account entry. This usually happened when a customer is either not carrying sufficient cash to buy the desired item or makes impromptu decision to buy more than planned.

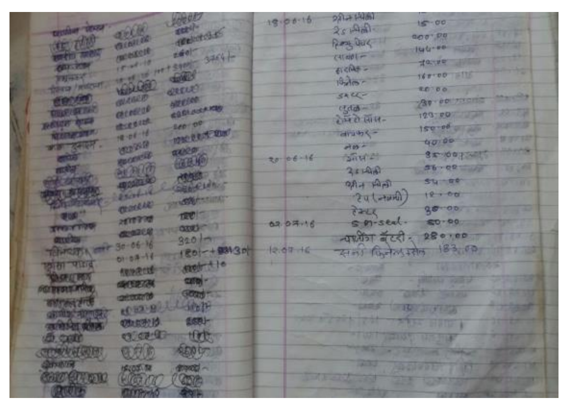

Figure 3. Khata maintained by a shopkeeper

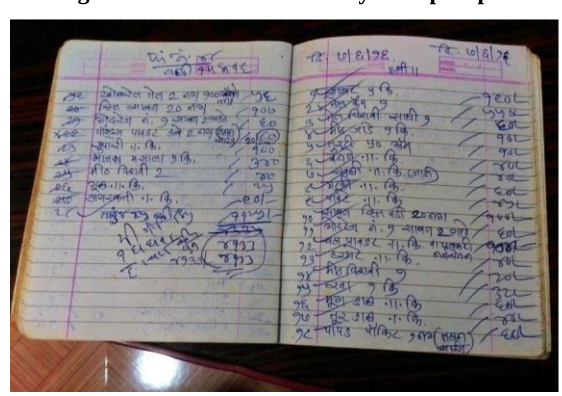

Figure 4. Khata maintained by a customer

Amount of credit

We noted that stores decide their own limit of credit value. This value was set by the owners themselves and depend on their own income and risk appetite. The amount however also varied based on the customer's relationship with the shopkeeper. Shopkeepers admitted to first evaluating a customer's paying capacity before deciding the amount. "If it is someone we trust, we can also give them ₹1000-1500 of credit. Our trust level determines the credit level", they say. This knowledge was claimed to have been acquired from the several tacit and explicit interactions that have happened between them and their customers, prior to the decision of disbursing items on credit. Usually, ad-hoc credits offered are of smaller amounts than khata credit. In a day a shopkeeper was ready to offer a cumulative amount of ₹50 or ₹500, depending on what was considered 'small amount' by each of them. We also noticed that some shopkeepers distributed the credit amount over a span of time, thus minimizing the impact of defaulted amount. They give small amounts at the beginning, but when the customer becomes regular over time, credit amount goes up.

Credit management

All the stores have a particular way to manage the accounts of the credit amount. Many of them maintain hand-written notes arranged by dates. Only a few keep record of the customers' contact details as it is assumed that they don't need follow-up. The stores that have computers do not rely on soft copies of the accounts and maintain a separate manual note for account entry. This is because they have to hire somebody who knows operating such technology and if that person doesn't come to the shop for a day, the account cannot be maintained. It was also noticed that a few shopkeepers do not keep any account at all and simply remember the amount. In this case, most of them also admitted to remembering only an approximate figure. They felt that losing a marginal amount was better than the trouble and hard work of maintaining accurate accounts. A few of the shopkeepers interestingly also felt that the time and effort needed to maintain customer credit accounts were deterrents to their decision of offering credits in the first place. The notes amount was in all cases, never cross-checked by the customers. The shopkeepers were fully responsible for maintaining the record and tracking it. The time of payment, however, was usually discussed and negotiated between the shopkeeper and the customer.

After demonetization shopkeepers observed a reduction in sales for several days. Some shopkeepers reported zero sales too. However, due to the underlying credit system, customers made purchases but in a modified buying cycle. Earlier, a concentration of sales was in the first part of the month, but after demonetization, they experienced a more spread out sales. People bought things in limited quantities across the whole month instead of buying them just once. There was also an 'anchoring' around the ₹2000 denomination. Customers made sales such that the billed amount neared either ₹2000 or a value comfortable enough for the shopkeeper to tender change. An interesting observation was regarding the practice of keeping the 2000 denomination as balance if the billed amount was too less for the shopkeeper to tender change.

Use of technology

Technology adoption was not seen to be very significant before demonetization. These kirana shops didn't have computers for account maintenance. Majority of kirana shops were not using digital payment methods like credit card, debit card, m-wallets, UPI etc. A few bigger shops had such systems but they were not used at large. In Mumbai, we observed an increased awareness of these digital payment systems after demonetization. Both customers and shopkeepers started to use these services but they were still reluctant to adopt them. This was because they felt it was too complex, needed a bank account and smartphone and was unsafe. However, customers were provided assurance and guidance by their trusted shopkeepers. Due to the increased cashless payments, shopkeepers have started maintaining digital ledgers of their business. They now generate a bill of every purchase.

Customers' perceptions about credit

The benefits of credit system were perceived differently by different customers, based on their nature, culture, need, purchasing ability, geographic locations etc. Customers in towns were found to be very open for taking items on credit whereas, in villages, most of the customers were reluctant for it. Village customers perceive it as an issue of pride and dignity. In this section, we outline findings of our conversations with various customers to understand these perceptions and influences of their buying behavior.

Credit to allow payment after earnings

Customers buy items on credit because they do not have the money to pay at the time of purchase. In this case, they have to wait till they receive their earnings and once they do, they pay the amount back to the shopkeepers. This happens with the low-income salaried people as well as people who earn on daily wages. There is a genuine cash-crunch faced by customers throughout the month and in order to run their households, they resort to the practice that helps them purchase items without payment. These customers were especially grateful to the shopkeepers for allowing them the amenity as compared to the other customers whose reasons were different. "Because of the shop-owner, I feel I can run my family, I will always be a loyal customer", expressed a customer, which clearly reflected a deep sense of loyalty felt. It was also noticed that these customers have indeed been regular customers in the shop that offered them the facility of credit and the shopkeepers acknowledged their patronage.

Credit to control monthly expense

It was found that many customers go by a strict budget and have dedicated expenditure plan for different aspects like groceries, medical bills, running expenses, entertainment, etc. Buying grocery items on credit, in bulk and paying at the beginning or end of month helped them control the budget. Last month bill allows planning next month purchase. Female customers expressed the need to be proactive about spending household budget wisely and mentioned that their expenditures usually aid them to draw a monthly pattern that is useful to plan for the next month. A few customers also mentioned that they got motivated by their friends and started using this method to control expenses.

Credit for cashless convenience

A lot of customers seemed to like the convenience of “cashless purchase” what the khata system offers. This they said, helped them to buy things they need at any point in time, without worrying if they have the cash to purchase items they want. They expressed a sense of freedom that it brings. A few also expressed that this convenience also makes them susceptible to buying extra items, but they still would regard the convenience more, even when payment is more than their expectations. It was also noted that the concept of convenience was more prevalent in cities rather than towns on villages as the customers were more exposed to using debit cards for buying from bigger stores. Customers said that one-time payment in bulk was convenient as they did not have to carry a smaller amount of cash and coins every time they buy something. They also felt that this mode of payment is not only convenient for them but also for the shop-owners who don’t have to return the exact change every time they cold something.

A few customers expressed that they like the freedom to buy as much as they want, whenever they want. More than just convenience of cashless purchase, it was about purchase without having to worry what and when they buy. This was true particularly for housewives who had to usually seek money from their husbands (Only earning member of the family) every time they bought something. These customers expressed, in this particular arrangement, they have to ask money from their husbands only once at the beginning of the month. They also added that, these items purchased are usually useful items for immediate need, like an ingredient of a special recipe or a stationary required at their children’s schools, where they do not need to seek exclusive permission from their husbands who would otherwise view these items are ‘extras’, that was not particularly required in the running of the household. The customers who used the credit system for this particular reason were observed to be from the city and smaller towns, as their husbands usually have the money to spare even for the ‘extras’ that they decide to buy.

Credit as a habit

A few customers expressed that there was no particular reason why they bought items on credit and attributed this practice to what they have been just doing for a long time. They mentioned that the practice has been followed usually in their community, their neighbors or others in their family and was ‘a way of life’. These customers mentioned that it does not matter if they have the money to pay or not, but combined payment at the end of the month was a regular thing to do. The customers added that sometimes it was indeed true that they didn’t have the amount and they had to buy on credit, but it was also true that often they did have the money and could pay it, but still chose not to pay in several parts. Does this block credit for other customers who are in a need? These customers however, did not binge shop and spent only as much as they plan to spend. “I buy the items first and pay at a later time, and that’s how most of us do it here”, stated a customer as a matter of fact. It was also noted that these customers usually were from small villages and also from residential areas of suburban Mumbai that had a long-term purchase relationship with the shop they purchased the items from.

Shopkeepers perceptions of credit

We encountered several views from shopkeepers for selling items on credit. This section outlines the pervasiveness of credit and analyses the drivers that this ecosystem thrives. We found that all shopkeepers understood the concept of credit. However, their view on the practice differed based on their past experience, their current priorities, and their monetary status. We also found several influencers that play an active role in the decision of providing items on credit. Some of them were unique across stores. A few of these were more pronounced than others depending on whether the store was located in an urban or semi-urban area. We talked to shopkeepers who sell items on credit along with the ones who don’t and the ones who have stopped doing so. The shopkeepers who do can continue to maintain a balance between their income and profit margins. The ones who stopped usually attributed this to loss due to non-payment by defaulters. The ones who don’t or never have, strongly believed that the inception of credit would depreciate their business.

Credit system enables competitive advantage

As per the shopkeepers, offering items on credit made their stores seem more attractive and increased business. In some cases, it was observed that the credit system was ‘a way of life’ and was an obvious business decision. This was usually the result of ‘demand and supply’ process where the larger customer base needed items on credit due to several factors and the shopkeepers had to relent. Some of this factors included cashless convenience, easy record-keeping of monthly expenditures and one-time payment. Fresh shopkeepers would then have to follow the same model to maintain and run their stores, without much choice. Hence, despite challenges and cash crunches faced, some of them still offered credits to sustain a competitive environment. In an area where many stores provide credits, it becomes almost mandatory to offer the same benefits. Shopkeepers also see it as a mechanism to retain existing customers by providing lucrative options like part payment, late payment, and interest-free payment.

Customer relationship more important than monetary gain

Many shopkeepers viewed customer relationship to be the primary driver of their business and also understood that maintaining the equilibrium of these relationships was more important than meeting their expectations consistently. It was observed that in some cases, shopkeepers reduced the credit amount granted than just saying no. Sometimes customers were also told of a fictional credit upper limit so that they don't demand too high and at the same time, the shopkeepers don't have to refuse. The mode and tonality of follow-up were also kept respectful and always done in private.

Social setup influences business model

The location of the store had great influence on the shopkeepers and the manner they run their business. The social fabric of the locality and the type of customer in the neighborhood, changed transaction practices, altered customer relationship and impacted the sense of profit. Stores located in smaller towns had a greater tolerance for delays and credits. It was noticed that if the customers in the locality did not have a regular income, the shopkeepers had to offer leeway in terms of payback time. If the neighborhood was not affluent enough, a larger amount of credit was offered and installment based payments were accepted. Similarly, if the neighborhood was prosperous, the shopkeepers would hardly offer credits.

Known and regular customers are given credit

We found that shopkeepers trust customers whom they personally know and the ones who visit their stores regularly. Familiar customers constitute of their neighborhoods, family, and friends. This often also includes customers who come with a recommendation from someone whom the storekeeper already knows. The level of trustworthiness of a customer also gained significance when he became familiar and regular. The sense of trust also comes from the fact that these customers can be contacted easily and hence the chances of defaulting are minimum.

Instinct and gut-feel play a pivotal role

We observed that a large number of shopkeepers relied on "gut-feel" and used it as a primary principle to filter customers. Many shopkeepers mentioned that this sense of judgment evolves after gaining experience in the business and explained that it's an intangible evaluation taking no effort at all and can be expressed as 'we know when we see them'. They also state that less experience aggravated monetary loss as their 'gut feel' did not mature or develop by then. "I have earlier incurred Rs.10-15 thousand loss during the start of my business because I didn't know who is worthy", an owner explained. Hence, it was observed that not many younger shopkeepers took decisions based on gut-feel as compared to the more experienced counterparts.

In fact, we found that shopkeepers evaluate customers on the basis of many factors. This included the way customers talk, dress or behave. "A lot says about the customer in the manner in which they talk. If they are well mannered, it matters", a shopkeeper responded. This also includes the customer's age, education, and occupation. Elderly customers were perceived to be more trustworthy than younger ones. The educated customers and the ones who have a stable job were assumed to be more dependable as they have guaranteed source of income. Past experience and record of a customer was also an indicator of their current credibility factor.

A genuine need is identified and served

It was also interesting to observe how shopkeepers perceive their stores to be an important part of the community ecosystem. More than monetary gain, oftentimes, they were observed to be empathetic towards the needy and bending the rules for them. The shopkeepers claimed to correctly identify these types of customers. It included medicinal provisions for the patient admitted to the emergency ward, or offering alimentary supplies to a poor family. It was noticed by the shopkeepers that such a decision has never disappointed them as these customers pay back whenever they are ready. Mutual trust, many feels, is a technique to run a satisfactory business.

Small loss acceptable towards a bigger business vision

It was noticed that almost all shopkeepers were ready to risk a seemingly 'small amount' in order to establish a viable business. "I don't keep track if it is ₹5-100", a shopkeeper said. This also included shopkeepers who did not do an accurate accounting of their stores as they felt that focusing on their business was more important than tracking each payment. This lost amount arose from keeping approximate estimates only, not maintaining records for ad-hoc credits, measured loss due to defaulting. A lot of the shopkeepers took it for granted that a small part of their credit amount will never be returned to them. The shopkeepers felt that they should be patient in their business and incurring minimum damage should not demotivate them from taking risks as they believe that small risks will lead to a greater gain in the future.

Follow up, late payments and defaults

Shopkeepers start to follow up from the first week of the month since this is the time when the customers get salaries. For non-salaried customers, the shopkeeper does follow up if the credit amount exceeds a certain limit. However, this credit amount varies from customer to customer and the amount of risk, the shopkeeper wants to take. "Some customers don't pay regularly and hence; we have to call them to get back the money. Sometimes we have to visit their houses", as stated by one of the shopkeepers. Some shopkeepers also mentioned the defaulters who left the place without paying the credit. "These customers were the migrants: not from the same locality", stated the shopkeeper. Shopkeepers state that once they 'learned a lesson', they didn't repeat the same mistake.

CULTURAL MODEL OF CREDIT

The cultural model shows the customers' and shopkeepers' perceptions of credit and their interpersonal relationship. Customers' common perceptions and preferences for credit are like getting cashless convenience, controlling the monthly expenses, getting the items on demand, locality, and transportation convenience, payment after earning and credit as a habit. Similarly, the shopkeepers' perceptions and influencing factors for credit are like credit as a common practice, natural deposition of trust, customer attraction and retention, social obligations and good will. However, there are common patterns and relationships that build a 'Trust Credit Model' and lead to the sustenance of the practice. In the section below, we have outlined this interplay of variation and parameters of trust that leads to deciding the credit amount.

Framework of Trust and Credit Trust hierarchy

Rules based trust

New customers who seek items on credit are usually tested by the shopkeeper based on his discretion. Sometimes shopkeepers give less credit in order to check the loyalty of the customer, at their own risk. If the customer meets their expectation, they are allowed a second credit. The second credit amount may also be restricted by the shopkeeper. Eventually, when the customer becomes regular and familiar they earn more credit and other benefits.

Knowledge based trust

The general customers of a kirana shop are the people staying in nearby localities. These people are diverse in their age, gender, culture, and profession. The shopkeeper has the knowledge of his customers' locality, their professions and so on. They also understand the taste and perceptions of the customers and a relationship is built between both the parties. Therefore, it becomes easy for a shopkeeper to make a credit decision when asked. In this case, the shopkeeper maintains a credit record in khata.

Relationship based trust

The customers who fall under this category are close friends, family members, relatives and people whom the shopkeepers trust. They are regarded as the premium customers and the shopkeeper has good bonding with them. In this scenario, the shop-owner thinks that its offensive to maintain khata as it may affect their relationship. So they try to remember the people and the credit amount. Some shopkeepers privately maintain a khata and they keep it confidential.

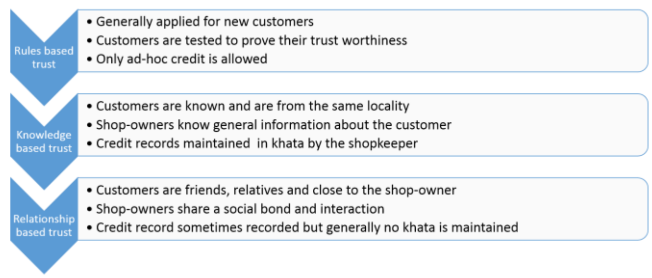

Figure 6. Trust Hierarchy

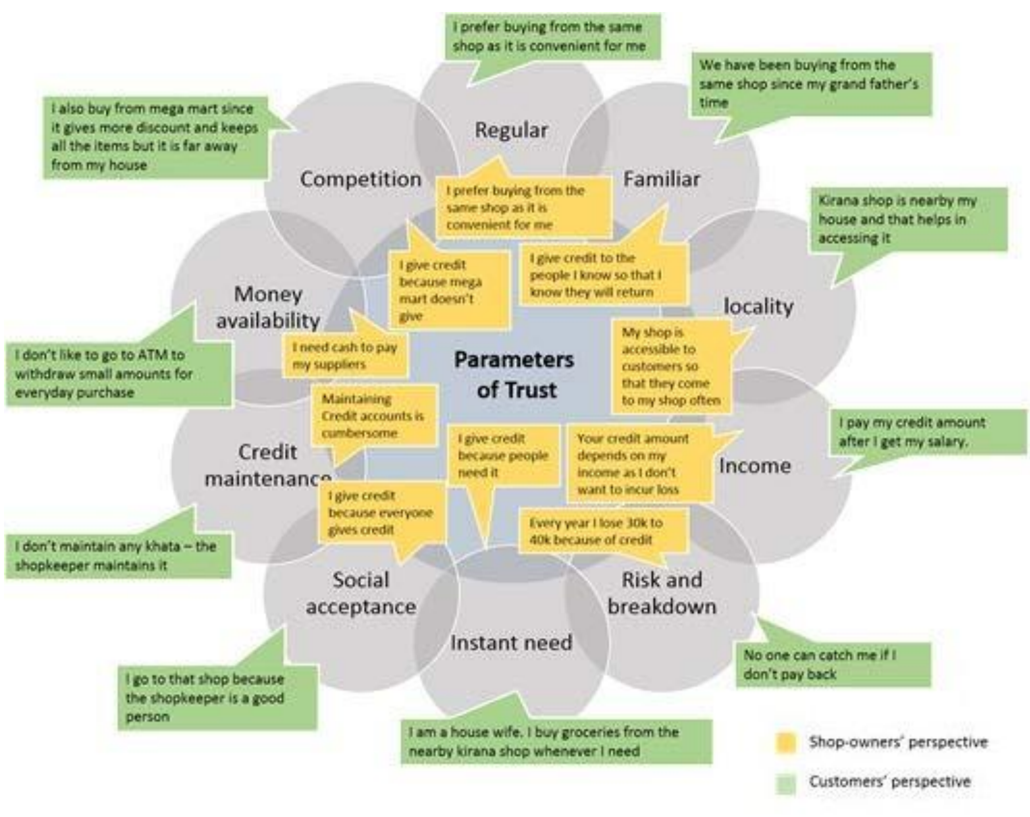

Figure 5. Cultural Model of Trust Parameters

The Trust-Credit model is developed with the concept of user usage model established by Balakrishnan et al. [14]. Trust model provides a relationship between different levels of credit with respect to different hierarchies of trust. The customers who belong to 'Rules based trust' category are often denied credit. There is a check-point where the shopkeeper reviews the behavior of the customer, any relevant referees they might have and their need for credit. If a customer passes this, he is granted credit on an ad-hoc basis. On the other hand, customers of 'Knowledge based trust' category experience only a negligible barrier in receiving ad-hoc credit. For 'regular' credits of small amounts, the shopkeeper checks for the customer's regularity, his gained knowledge of their personal and social details; their type of occupation, income etc. However, over time, these customers become more regular and hence eligible for getting large amounts of credit. The customers are then evaluated on their past relationship with the shopkeeper and their sincerity in paying back. People fall under 'Relationship based trust' always often easily get ad-hoc and small regular credits. For larger credits, they are checked for the strength of the relationship and past experiences. The interesting insight observed here is the number of customers based on relationship based trust is relatively less than the number of knowledge based trust customers. This is because the shop-owners find it more offensive to ask for payback to their family members and relatives rather than somebody with whom they are just familiar. Hence, he doesn't prefer these customers.

CONCLUSION

Kirana stores play a pivotal role in the rural societies in India. They have immense social as well as an economic importance. In a nutshell, local kirana shops form the backbone of an unorganized retail market in India. Although there are several views by shopkeepers and customers for practicing kirana based credit system, they meet at a common framework of trust. However, in our study, we found that establishing a foundation of trust and judging the trustworthiness is one of the key challenges. We arrived at a trust model which communicates various parameters of trust and their relationships with different types of credits seen in kirana stores. The cross-functional aspects between the shopkeeper and customer obtained through the cultural model of credit are very relevant to understand the social context of unorganized retail. We also found that after demonetization technology penetration in the retail market have been increased dramatically and their adoption by shopkeepers and customers is taking pace. However, the current technologies have least explored about the culture and hence, often becomes a challenge to fit in. This study reveals such aspects and brings an opportunity for designers and technocrats for designing successful technology interventions.

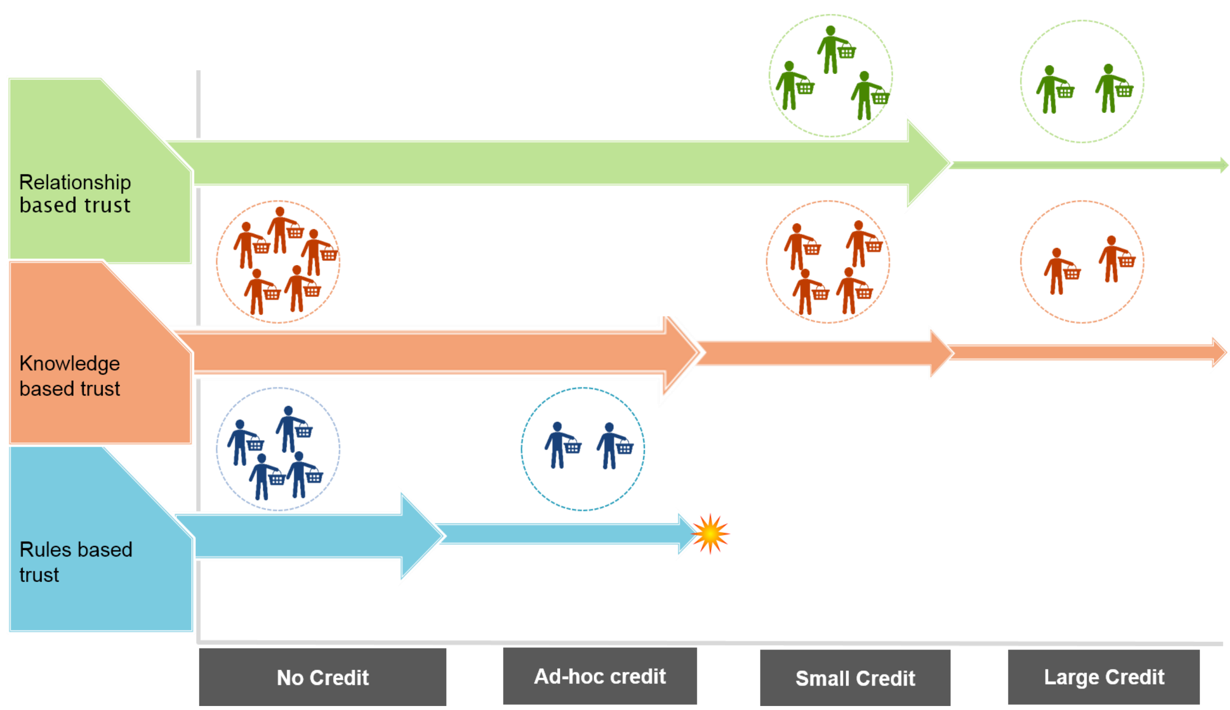

Figure 7. Trust Credit Model

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