



HAL
open science

In Technology We Trust? Human Skills & Intermediaries in Digital Retail Banking

Soumyo Das, Bidisha Chaudhuri

► **To cite this version:**

Soumyo Das, Bidisha Chaudhuri. In Technology We Trust? Human Skills & Intermediaries in Digital Retail Banking. IFIP Joint Working Conference on the Future of Digital Work: The Challenge of Inequality (IFIPJWC), Dec 2020, Hyderabad, India. pp.281-294, 10.1007/978-3-030-64697-4_21 . hal-03450713

HAL Id: hal-03450713

<https://inria.hal.science/hal-03450713v1>

Submitted on 26 Nov 2021

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution 4.0 International License

In Technology We Trust? Human Skills & Intermediaries in Digital Retail Banking

Soumyo Das¹ and Bidisha Chaudhuri²

¹ Center for IT & Public Policy, IIT Bangalore

² Center for IT & Public Policy, IIT Bangalore

Abstract. Increasing use of ICTs in organisations has contributed to a resurgence of automation anxiety centred around issues of human skills and employability. Prior work, however, shows that human skill and knowledge are necessary for supervision, adjustment, maintenance, improvement and expansion of new technologies. Through our ethnographic case study of work practices of Front-End Executives in three retail bank branches in India, we find that customers continue to rely heavily on both technical and functional skills of these bank employees even with the increasing presence of ICT-based self-service technologies. We argue that human skills and intermediation help in the process of adoption of digital technologies in banking and thereby retain trust in digital banking despite substantial disruption caused by new technologies. The aim of the paper is to reiterate the importance of human skill in enabling meaningful engagement with new technologies for diverse actors across different strata of society.

Keywords: automation · digital banking · human intermediation · skill · trust · work practice

1 Introduction

Brynjoffsson and McAfee [12] argue that rapid and accelerating digitalisation will have a significant impact on the way work would be done going forward. Recent developments in automation technologies has led to a wide range of fears and concerns around job loss and restructuring of labour and skill, a resurgence of what Akst [3] terms *automation anxiety*. Such anxieties are centred on the implications of technology adoption on human skills and employability, deskilling and the process of redesigning occupations around automation processes. While in general, introduction of new information communication technologies (ICTs) for automation are premised on minimal human intervention [24], studies have shown that automated systems need human intervention for supervision, adjustment, maintenance, improvement & expansion [11]. Accordingly, both organisational studies and information system research have emphasised on the importance of exploring the role of human skills and agency along with new technologies in an organisational context [40], [41], [54], [37]. In these studies, ICTs are not treated as external artifacts leading to change in work, but

as embedded in everyday work practices of employees within an organisational setup, shaping organisational relations, roles, and work practices [36], [38], [58].

When the implementation of new ICTs brings about changes in how people (customers, beneficiaries, etc) interact with services provided by an organisation, the role of intermediaries have been shown to become critical [28]. The role of human intermediaries in implementing new technologies is even more pertinent in developing countries, where social endowment gaps (such as, illiteracy, low levels of education, gender, class, caste inequalities etc), and inadequate infrastructures (e.g., connectivity, power systems etc) continue to impede effective use and adoption of ICTs [22], [13], [18], [14], [39], [31]. The process of intermediation has been shown to be dependent on both technical and social knowledge that allows intermediaries to negotiate the dynamic organisational contexts of their everyday work to stabilise the diffusion of new technologies [14].

In this paper, we explore the concept of ‘*trust*’ in human intermediation as a critical ‘*soft infrastructure*’ [15] necessary to stabilise and sustain the use of ICTs in Banking, Financial Services, and Insurance (BFSI) industries. ICTs, including online banking systems, platform finance systems, and technologies like Artificial Intelligence are heralding a new approach to providing banking & financial services to customers [1], [20]. With a significant volume of customers increasingly moving towards digital banking channels [50], questions are being asked about the viability of brick and mortar retail branches, and importance of retail banking employees in the digital era. Against the backdrop of this debate, we focus on the role of retail bank employees in retaining customers’ trust in banking despite facing the disruptive impact of new technologies. We specifically focus on the work practices of Front Desk Executives (FDEs)¹ and their interactions with customers. We argue that while ICTs allow for banking by bypassing retail branches, these very technologies bring a significant amount of customers to rely on FDEs within a physical bank branch.

The paper is organised into four major sections. In section 2, we capture relevant literature that establishes the relationship between trust, human intermediation and skill. We follow this up with a brief note on our methodological approach. We then present our findings on interpersonal trust through everyday interactions between customers and FDEs in section 4. In section 5, we present a multi-dimensional analysis of the skills of FDEs as a basis for continued trust in banking infrastructure despite disruptive technologies. We conclude by delineating the relevance and scope of our research.

2 Relevant Work: Trust, Human Intermediation, and Skill

The concept of trust has been of interest to scholars across disciplines. When viewed as an attitude or expectation, trust has been shown to include an element of expectation regarding behaviour or outcomes: “*expectations of fiduciary obligation and responsibility, that is, the expectation that some others in our social relationships have moral obligations and responsibility to demonstrate a special concern for others*’

¹ Front-Desk Executives are Retail Banking Employees who are responsible for providing financial services directly to customers.

interests above their own" [9, p.15]. Another definition of trust is the "*willingness to rely on an exchange partner in whom one has confidence*" [32, p.315]. Meyer, Davis and Schoorman [30] show that the ability, benevolence, and integrity of a human actor are key factors to building trust and trustworthiness. The concept of trustworthiness is critical as it highlights that trust is not a zero-sum game, but rather that the level of trust between a trustor and trustee is a spectrum. This concept of trust is generally understood as a continuum where the perception of trust does not merely emerge from the properties of a system or institution, but is rather enacted through interactions with multiple actors within a larger social context [7].

A critical conceptualisation of trust, especially in contexts of development, is the goal-oriented nature of trust. It can be perceived as "*the ability of the trustee to perform an important action and the expectation of the trustor that the trustee will perform as expected or can be relied upon*" [27, p.54]. This definition of trust works on the belief that an agent will help achieve an individual's goals in a situation characterized by uncertainty and vulnerability.

Studies on the interplay of trust and human intermediation have explored trust in internet kiosks and the intermediaries who mediate the services available [44], [21]; trust in ICT-enabled services or systems such as mobile banking or e-governance [33]; trust in information [15]; and trust in institutions, such as governments as providers of ICT services [26]. These studies have shown the relevance of institutional factors as a critical element of trust formation. For example, Rajalekshmi [44] argues trust to be dependent on perceptions of technology, information, or service provided, and the institutional mechanisms that secure transactions. She further shows how institutional membership of the intermediary is critical for successful e-governance service delivery. Similarly, Morawczynski and Miscione [33] discuss the emergence and sustenance of institutional trust in the context of mobile banking services (M-Pesa) in Kenya. When it comes to BFSI technologies, Ananda et al [4] shows that institutional awareness plays a significant positive influence on adoption of digital banking technologies in India. Zhou [57] shows the relevance of institutional reputation as important for trust-building. Similarly, Deventer et al [52], in their study of students' use of digital banking in the Philippines, shows that the perceived integrity of a banking institution plays a major role in rendering banking trustworthy. While convenience and enterprise image are considered to have positive effects on intention to use digital banking service [35], Sharma and Sharma [49] show how service quality plays a critical role in trust formation in online banking services in India. These studies indicate that skill of banking employees (especially those who are directly responsible for providing banking services to the customers) is intricately related to maintaining trust in banking institutions.

The term skill has often been clustered along with terminologies such as, ability and competency to signal a concept that enables an actor (human or technology) to have an influence within some specific domain [30]. Proctor defines skill as a "*goal-directed, well-organized behavior that is acquired through practice and performed with economy of effort*" [42, p.18]. In a more general sense, skill as a concept is used to define a level of performance, with a sense of accuracy and speed in carrying out particular tasks. It also underlines the trustor's perception of the knowledge and skill of

the trustee in a particular context [30]. We focus on how the different kinds of skills that a trustee, in this case FDEs, bring to their everyday work and how customers' perception of those skills builds and retains their trust in retail banking systems.

At a more general level, the implementation of ICTs are expected to lead to a direct substitution of jobs and tasks currently performed by workers, leading to unemployment and changes in organisational forms and functions [6], [23]. According to the World Bank [29], a significant volume of jobs are at risk in developing countries due to automation: 69% in India, 72% in Thailand, and 85% in Ethiopia. It is increasingly argued that digital technologies will eventually replace human service providers. For BFSI industries, increasing digitisation practices are raising the question of the relevance of retail banking employees in the 21st century - as intermediaries in the process of providing financial services to customers [2]. While our paper explores how employees' skill help retain customer trust, at a larger scale, our research highlights the importance of retail banking employees, and the importance of brick and mortar banking branches even in the era of digitalisation and automation of BFSI services, as necessary for customers, especially in developing regions.

3 Methodology

We study customer-Front-Desk Executive interactions in retail banking branches of Indian Standard Bank² and Indian Chartered Bank³ – two Public Sector Banks in India. Public Sector Banks in India are BFSI institutions owned & operated by the Government of India. Considered to be trustworthy institutions [47], these banks have a prime focus of providing financial products and services to all sections of the society in the country [45]. The organisational structure of a Public Sector retail bank, in general, consists of two layers – the client-facing Front-Desk Executives (comprising Tellers, Accounts Managers, Passbook Executives, Loans and Credit Officers and Customer Service Executives), and the back-end Administration Executives (comprising Operations Manager, Manager, Office Assistant etc). Both these categories of employees use ICTs - Core Banking System and other generic-use ICTs for office work (e.g., scanners, printers etc) to provide financial service to customers. Customers can also access financial services through three Self-Serviced ICTs - 1. Multi-Function Kiosks, 2. ATMs, and 3. Online Banking facilities.

This paper is based on an ethnographic case study [19] involving FDEs, support staff, customers, and retired employees of the banks. The fieldwork was undertaken between February and May 2019, and from October 2019 to January 2020, in three different retail banking branches of public sector banks located in Bangalore, Karnataka and in Kolkata, West Bengal. All three locations represent a diverse clientele, including people engaged in agriculture, construction, and other forms of informal work, as well as white collar workers and businessmen. The prominent languages spoken in field sites include Kannada, Bengali, Hindi and English. Our study adopted an exploratory single-case embedded design and included multiple data collection methods[10], [56] -

² Anonymised.

³ Anonymised.

including observations and interviews with key actors in the retail banking ecosystem and extensive interviews with customers.

Table 1. List & Count of Respondents.

No.	Respondent Type	Count
1	Front-Desk Executives	18
2	Administration Executives	6
3	Customers	23
4	Assistant to Customers	17

The interviews were mostly semi-structured; there were also several informal conversations that occurred during the observations. The interviews lasted anywhere between 30-45 minutes, while informal interactions were much shorter and were conducted in between observations. Interviews with the FDEs took place over multiple rounds, with observations in each round shaping the discussions in the subsequent round. Given the sensitive nature of financial physical ecosystems (in terms of privacy and security), no recordings (audio or video) were taken. Furthermore, names of respondents and our field-sites have been anonymised for reasons of privacy. Case notes were written down at the time of observation and during interviews, which were later analysed using open coding methods. We divided our findings first on the basis of the customers profiles, based on their ability to understand and use banking services and ICTs. We then mapped these customer profiles onto their interactions with FDEs, based on their banking needs. While analysing the data on interactions between customers and FDEs, we identified major themes that recurrently emerged during interviews and observations. In this paper we focus on two such themes: *trust* and *skill*.

4 Digital Retail Banking and Human Intermediation: An Everyday Account of Interpersonal Trust

To explore how customers come to rely on FDEs for their day-to-day banking service requirements, we focused on the everyday interactions within bank branches. We found two categories of customers who visit retail banks on a regular basis: those who lack the skills to undertake financial services by themselves due to significant social endowment gaps attributable to age, literacy, digital skill etc; and those who possess both banking knowledge and familiarity with digital technologies for banking, but still visit retail banking branches to feel “*more assured*” about their financial dealings. We elaborate on our observations across these two customer groups, through a few vignettes. These vignettes are chosen to provide the reader with an overarching understanding of retail banking processes and routine interactions that take place within a branch. They also provide a broader sense of the kind of problems people face in accessing services, their motivation to engage with bank employees and the ways they navigate ICTs in banking.

4.1 Customers with Limited Social Endowments

Interviews with our respondents highlight that a significant proportion of customers face issues with using digital technologies, which in turn impacts their ability to access financial services. Many elderly customers we interviewed argue that they do not have the necessary skills required to use digital technologies. Another set of customers reported to have limited literacy to undertake financial transactions by themselves.

Aman, a middle-school graduate and migrant construction labourer from Assam, who wanted to update the PIN number of his debit card, could not use the Multi-Function Kiosk as it displays instructions only in English - a language Aman was not quite comfortable with. After seeing him struggle, one of us (authors) tried to assist him with the process. Even after we translated the instructions for him, Aman was constantly unsure of how to proceed. It turned out that Aman had opened the bank account in Assam with his brother's SIM card and therefore, the OTP required to update the PIN would not reach him but his brother, thereby rendering futile, his effort to update the PIN without his brother's phone.. Aman said he had no idea that this was the process, or else he would have given his own phone number. At this point, the Accounts Executive intervened, and informed him that there is no way to bypass the OTP- PIN updating system, and following this, she took it upon herself to resolve the issue. As we observed the Account Executive assist Aman with updating his PIN, it became increasingly apparent that the process requires certain technical expertise and working knowledge of the system which would be difficult even for an educated person with significant levels of digital skill. Aman's case was not an aberration, rather a common occurrence where customers - illiterate/semi-literate, and/or with low/little digital literacy-struggle with digital technologies. Such instances highlight the need of FDEs to have a thorough knowledge of retail banking processes, technical skills, and to be aware of the diverse socio-economic backgrounds of their customers.

In another instance, Raghav, a customer, had come to the bank with his sister, Gayatri's passbook. He had attempted a withdrawal from her account at a nearby ATM the previous evening, but even though the money was debited from the account, the machine did not disburse the cash. The FDE informed Raghav of the process to be followed - which includes updating the passbook first in order to show that the money was indeed debited, and then filling up a form for further escalation. The Accounts Executive furthermore informed Raghav of the procedure that will follow, and reasoned to him that it will take up to seven working days to reimburse the money. A follow-up interview with Raghav reveals that he is not educated beyond middle school and Gayatri who works as a housekeeper is not literate. None of them are comfortable using digital technologies. Her employers prefer to pay her through bank deposit and not cash. Hence, Gayatri usually relies on Raghav for accessing an ATM to withdraw cash or to receive any financial services at the bank branch. During our discussion, Raghav says, *"Here it is easy - I can talk directly to Madam (referring to the FDE) and get my issues sorted."* - *"It is Indian Standard Bank, and hence the money will come back. Just that I wanted to know how much time it will take for the money to come back!"*

While Raghav's trust in the bank derives from its organisational reputation, on the ground it is mediated through his interactions with the FDEs. He feels reassured by the

words of an expert human intermediary, which help reduce his worry of a misplaced transaction, and retain his trust in the organisation.

4.2 Customers with Requisite Capacities

A significant footfall in a retail bank consists of customers who are by and large, capable of using digital technologies but still prefer to visit the branch. All of them were aware of Self-Service Technologies and in some cases have also tried to use these technologies. When asked why they still come to the branch instead of doing financial transactions by themselves in the comfort of their homes, they argue that digital technologies are not stable yet, and hence problems persist with their usage. One customer informs us that, “...they have this new app - ZOLO⁴...half the time it does not work!”, while one employee, accepting the limitations of digital technologies, humorously responds that, “...even the bank manager does not use internet banking!”.

There are customers such as Rishabh, who could open an account for his wife online, but still chooses to visit a retail bank as he prefers a more personalised service experience. Rishabh works as a construction worker in the Middle East, and has come to the bank with his wife to resolve some queries pertaining to the joint-bank account he has applied for. He brought with him all of his documents (identification documents, education documents including his undergraduate degree etc), and his wife’s identity cards, in case they need to be submitted. The FDE informed him that no further documentation is required; however, she added that Rishabh and his wife could have gone for a different type of account - a specific savings account meant for women. That kind of an account, she informed, would provide a much higher rate of interest, a debit card with higher withdrawal limits, and according to prevailing national and bank-specific policies, would be easier to get a loan if required. An excited Rishabh agreed to reapply for this new account and requested the Accounts Executive to initiate the process for opening the same. When he asked the Accounts Executive why this information is not available online - she responded that the information is there, but is not advertised well enough.

We found updating passbooks as one of the most high volume work practices within a bank branch. While technically this is a fully automated straightforward task that should be performed by customers on a self-serviced machine, in all three branches we found a person dedicated solely to this task, called the Passbook Executive. In all three cases, we found out that their role goes much beyond. They also help in interpreting and explaining data to customers. Passbook Executives recounted examples of customers asking why a certain amount was debited or credited, or for why people could not see their recent transactions and so on. One Passbook Executive narrates an interesting incident - an elderly woman had come to the bank branch and raised a query as to why her daughter, a resident outside the city, had not received the money which she had sent through her son. After updating the passbook, the Passbook Executive realised that there was no history of any such transaction. He asked to contact her son. Only after she contacted her son, did she get to know that he had indeed not sent the money yet. The Passbook Executive uses this example to say that updating the passbook

⁴ ZOLO is the digital banking app of Indian Standard Bank.

and getting a passbook with numbers on them mean nothing to the customers. Their requirements of coming to her are regarding the nature of the numbers - when a particular transaction was done/not done, whether the money was sent or not.

Above vignettes highlight the ways in which customers of various kinds and with diverse problems come to trust the retail banking employees. It is important to note that apart from the term ‘*trust*’, customers also used phrases including ‘*believe in*’ and ‘*know that they will*’ as local connotations of the term ‘*trust*’ to explain why they come to retail banks. Based on our study, we make a grounded argument that customers come to rely on the skills of these employees which shape the relationship of interpersonal trust between FDEs (as representatives of a trusted bank) and their customers. In the following section, we show how FDEs’ skills become crucial in enabling customers to conduct day-to-day banking despite customers’ limited understanding of ICTs in banking and hence, in retaining trust in banking institutions at large.

5 Digital Retail Banking and Human Intermediation: An Everyday Account of Interpersonal Trust

Skill allows us to achieve a specific goal with an economy of effort over a period of time [42]. With this understanding in mind, we categorise the skills of FDEs into two broad sets: technical skill and functional skill, and explain how each helps them gain trust of their customers. It is important to keep in mind, however, that these analytical categories of skill are not mutually exclusive and often overlap in practice.

5.1 Technical Skill

Williams et al [53, p.6] defines technical skill as the “*expertise or technical competence related to the field of work of an employee*”. Such a skill is associated with the use of tools and technologies for efficient work and target achievement, which, in addition, requires specific knowledge of the work being done [16]. In an organisational ecosystem, technical skills should ideally refer to procedures that are easy to observe, quantify, and measure [55], and can be taught [48]. Overall, technical skills provide employees with the ability to perform work in a technically competent manner [43]. In our study, we found technical skills of FDEs to include both technology skills and domain skills in retail banking.

Technology Skills: Technology skills of FDEs require them to operate ICTs in order to get a desired output effectively. With increasing digitisation, FDEs need to understand and be able to work on different software and tools to access databases, interpret and process data, and to create and provide documentation. Despite the heavy presence of Self-Service Technologies that can be used by customers independently, a majority of customers lack the necessary skills and desired comfort to operate these technologies, which brings them to rely on the technology skills of FDEs.

Age also stands out as a critical factor leading to customers’ lack of trust in digital technologies, due to the inability of elderly individuals (comprising a significant

percentage of retail banking customers) in understanding how ICTs work. For example, one of our interviewees responded that “...young people like you (referring to the researcher) have no problems with all these things - digital banking, internet banking, mobile phones - old people like me - I am not saying all of us - but most of us old people do not understand such things! And yet they expect us to use them?”. Some of them simply don't see any reason to use ICTs. “It is not that I do not know how to use computers or mobile phones - but tell me this, I have been getting everything done for the past 40 years by coming to a bank. And now you tell me I have to learn something new just to get the same thing done? Not at my age, never!” (Respondent)

It is this limited capacity coupled with anxieties of disruption on part of the customers that turns them to FDEs for help. In this sense, the very presence of ICTs in banking renders the human skill to navigate technology even more significant. For example, one respondent informs us that, “...they have been doing this for a long time, they know what to do. Some of them are young, but they work better with computers than we do!”. Similarly, another respondent argues that, “... (it) cannot be said (that) everyone is good, but they (referring to FDE) are by and by large capable people...everything is (done with) technology nowadays... they know what they are doing...not like earlier days...”.

Thus, technology skills of FDEs generate confidence and trust among customers. This interpersonal trust, one one hand, draws on the institutional trust of an organisation and on the other hand, strengthens institutional trust through everyday work practices of the bank employees. This intersection between institutional and interpersonal trust becomes evident when one of the customers commented,

“Indian Standard Bank is the most respected bank in India! They won't sit (give the job to) anyone unless and until they are trained to deal with such people (referring to customers who need high assistance because of their socio-economic backgrounds)”

Domain Skills: While the ability to use ICTs formed a significant part of their technical skill, FDEs also need to showcase their expertise in banking processes. They need to have specialised knowledge to understand what is a regular banking process, what rules and guidelines to follow, what constitutes an anomaly in financial transactions, and how to resolve specific problems as and when they arise. This knowledge, which Tricot & Sweller [51, p.266] term as ‘*domain knowledge*’, is defined as “*memorised information that can lead to action permitting specific task completion over indefinite periods of time*”. The ability to use domain knowledge in contexts of work is what Anderson [5] terms ‘*domain skills*’. While the technology skills of an individual are general order skills, that is, they can be used across work domains, domain skills are related directly to the domain of work of an individual [5]. For example, for an Accounts Executive responsible for assisting customers with signing up for bank accounts, the domain skill would be the ability to assist a customer choose the right kind of a bank account based on their knowledge of the options available in relation to the customer's profile. While this knowledge comes out of being trained through set procedure, the ability to use domain knowledge as a skill comes as a result of lived experiences [5], an ability to convert their theoretical knowledge to a skill necessary for providing effective financial services..

As we observed in the case of Rishabh and his wife above, domain skill helps FDEs to provide a much more personalised service to their customers. This case is even more striking as Rishabh was well-versed with technology and could pick his choice online and yet chose to seek the advice of the FDE. It is his reliance on the specialised skills of FDEs that brought him to the bank. Another customer argues, “...to be truthful, I can ask my colleagues to do these for me, but I trust them (referring to retail banking employees) in such matters (referring to online loan applications)...they know what to do”. Trust, in such circumstances, comes from customers’ confidence in FDEs’ domain expertise and the belief that they would use it effectively in the best interest of the customer.

5.2 Functional Skill

The official tagline of Indian Standard Bank is ‘*The Subcontinent Banks With Us*’, and it is probably only justified that FDEs of the bank would play host to one of the most diverse customer profiles with a very wide range of banking solutions. To this end, along with technical skills, FDEs need ‘*functional skills*’. Functional skills refer to general skills [8] or life skills [34] that fall outside the purview of formal technical training. These skills, while varying in quality depending on specific job roles and workplace environment, are widely required in all jobs in addition to technical skills [25], [46]. They include communication, creative thinking, problem solving, information management, leadership and organisational skills [34]. These skills are important for customer relation services and also for inter-organisational behavior among employees, including group effectiveness and teamwork capabilities [17].

Amongst the different forms of functional skills, communication and problem solving plays a key role, and becomes a critical reason behind people trusting one category of actors over another. In the case of Aman, who is unable to update a banking PIN on his own, the FDE not only showed technical skill but resolved the problem of their customer through creative thinking and effective communication. For example, since they could not speak in the same language, they managed to communicate through hand gestures and a smattering of commonplace English terms (‘*mobile*’, ‘*call*’, ‘*PIN*’ etc). It is also important to note that Aman could have asked anyone, including his colleagues who are more proficient with digital technologies. But he came all the way to the bank as he argues that since it is “*a matter of money, ...(he)...cannot even talk about it with anyone else*”, but a retail banking employee. We can argue that this is a case of Aman trusting the capability of employees to understand his situation, and trusting them for a safe solution.

Again, what we saw in case of passbook updating, the FDEs act as effective translators of the passbook, which ICTs alone cannot do. While FDEs’ domain skill allows them to translate data from raw numbers to information, it is communication skill that helps them effectively explain their meaning to customers. This process brings a significant number of customers to resolve their queries with them. One customer argued that, “...token is for all these counters (referring to Accounts, Loans, Credit etc), but almost everyone goes to her (referring to Passbook Executive)!” - highlighting the need for her intermediation in retail banking services. It is probably the reason why, in

all the three banks we studied, the queue at the Passbook Counter happens to be the longest - as a majority of customers strike a conversation with Passbook Executives, trying to get a better understanding of their transactional histories.

Furthermore, our respondents argue that long standing relations with retail banking employees is one of the reasons they trust FDEs, and the reason why they still prefer to access services in person from retail banking branches. One customer explained, “...they know me...I have been a customer here for a long time...the manager - we know him very well - he even came to our home this January during Saraswati Puj⁵”. Respondents argue that the long standing relations allow for greater interpersonal trust between the employees and the customers. This also meant that a strictly formal and transactional relationship was largely informal in practice, thereby allowing for greater personalised service provisioning. In many instances, customers discussed their personal experiences with FDEs and even sought financial advice from them. The functional skill of employees to negotiate and reduce organisational barriers in the formal relationship help them gain the trust of their customers.

We, therefore argue that FDEs provide much needed human intermediation to make digital banking more trustworthy for a diverse set of customers within public sector banks. The FDEs follow formal and informal methods of providing a financial service - by understanding a customer’s problem, solving it through creative means, and by providing feedback through effective communication. Furthermore, we argue that this multidimensional understanding of FDEs’ skills points out that a ‘job’ does not necessarily correspond to a single-skill entity – rather, even seemingly the most menial of jobs, such as passbook updating, consist of multiple intersecting skills in practice. In retail banking, such skill sets range from domain knowledge to knowledge of ICTs, from communication skill to logical reasoning, from creativity to relationship management. These human skills become even more significant with increasing use of ICTs in banking, especially in retaining customers’ trust in banking in the face of disruptive technological change.

6 Conclusion

Customers’ perception of Front-Desk Employees’ technical and functional skill forms the antecedent to building and retaining trust in them, and is a key reason why customers visited branches in person despite the ready availability of Self-Service Technologies for banking. Customers view these intermediaries not only as an extension of the retail banking ecosystem with adequate expertise and knowledge, but also as someone who can be trusted at a personal level to understand their needs and solve their problems. This trust becomes even more pronounced when FDEs help customers navigate through ICTs in banking, which often pose a barrier to their banking experiences.

Digital technologies such as, online banking, multi-function digital kiosks, are being introduced into a substrate of social relationships that lack both social and

⁵ A local Hindu festival involving the worship of Goddess Saraswati.

infrastructural resources to meaningfully engage with these technologies. FDEs fill in for this resource gap, and ensure successful utilisation of ICTs within given contexts. They become the ‘*soft information architectures*’ [15], a catalyst in sustaining trust in banking ecosystems post the introduction of new technologies. Such a role becomes even more critical in developing regions, especially in public sectors banks, where the clientele is diverse, and their socio-economic conditions often pose barriers for effective use of ICTs. Our study captures the everyday experience of retail banking in such a setup. We find interpersonal trust to be a key factor towards the adoption of digital technologies in banking and argue that human skills of FDEs retains and sustains the trust in both ICTs and the organisations within which such ICTs are introduced.

While increasing use of ICTs in organisations has contributed to a resurgence of automation anxiety centred around issues of human skills and employability [3], our study reiterates the importance and resilience of human skill in affixing trust in new technologies, and in enabling meaningful engagement with technologies for diverse human actors coming from a wide strata of society. We argue that when it comes to technological innovation, one needs to place a greater focus on exploring what creates trust in ICTs in organisations, and pay greater attention to the role & importance of human skills in contributing to the same.

References

1. How is digital changing the finance industry, <https://digitalmarketinginstitute.com/blog/how-is-digital-changing-the-financial-industry>
2. What is finance automation, why it matters, and how to make it work (Mar 2018), <https://www.teampay.co/insights/what-is-finance-automation/>
3. Akst, D.: Automation anxiety. *The Wilson Quarterly* 37(3), 65 (2013)
4. Ananda, S., Devesh, S., Lawati, A.M.A.: What factors drive the adoption of digital banking? an empirical study from the perspective of omani retail banking. *Journal of Financial Services Marketing* 25(1), 14–24 (2020)
5. Anderson, J.R.: Skill acquisition: Compilation of weak-method problem situations. *Psychological review* 94(2), 192 (1987)
6. Autor, D.H., Katz, L.F., Kearney, M.S.: The polarization of the us labor market. *The American economic review* 96(2), 189–194 (2006)
7. Avgerou, C., Masiero, S., Poullymenakou, A.: Trusting e-voting amid experiences of electoral malpractice: The case of indian elections. *Journal of Information Technology* 34(3), 263–289 (2019)
8. Awang, Z., Abidin, H.Z., Arshad, M., Habil, H., Yahya, A.S.: Non-technical skills for engineers in the 21st century: a basis for developing a guideline. Faculty of Management and Human Resource Development, Universiti Teknologi Malaysia, Skudai, Johor (2006)
9. Barber, K.S., Kim, J.: Belief revision process based on trust: Agents evaluating reputation of information sources. In: *Trust in Cyber-societies*, pp. 73–82. Springer (2001)
10. Benbasat, I., Goldstein, D.K., Mead, M.: The case research strategy in studies of information systems. *MIS quarterly* pp. 369–386 (1987)
11. Bibby, K., Margulies, F., Rijnsdorp, J., Withers, R., Makarov, I.: Man’s role in control systems. *IFAC Proceedings Volumes* 8(1), 664–683 (1975). [https://doi.org/10.1016/S1474-6670\(17\)67612-2](https://doi.org/10.1016/S1474-6670(17)67612-2)

12. Brynjolfsson, E., McAfee, A.: *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. WW Norton & Company (2014)
13. Cecchini, S.: Tapping ict to reduce poverty in rural india. *IEEE Technology and Society magazine* 22(2), 20–27 (2003)
14. Chaudhuri, B.: Paradoxes of intermediation in aadhaar: Human making of a digital infrastructure. *South Asia: Journal of South Asian Studies* 42(3), 572–587 (2019)
15. Chepatitis, E.V.: Soft barriers to ict application in development: trust and information quality in russia. *Journal of International Development: The Journal of the Development Studies Association* 14(1), 51–60 (2002)
16. Damooei, J., Maxey, C., Watkins, W.: *A survey of skill gaps and related workforce issues in selected manufacturing sectors: Report and recommendations*. Workforce Investment Board of Ventura County, USA (2008)
17. DeLange, G.: The identification of the most important non-technical skills required by entry level engineering students when they assume employment. *Journal of Cooperative Education* 35(2/3), 21(2000)
18. Donner, J., Gitau, S., Marsden, G.: Exploring mobile-only internet use: Results of a training study in urban south africa. *International journal of communication* 5, 24 (2011)
19. Fusch, P.I., Fusch, G.E., Ness, L.R.: How to conduct a mini-ethnographic case study: A guide for novice researchers. *The Qualitative Report* 22(3), 923 (2017)
20. Gandham, S.: How digital technological banks can be more effective in the future of banking industry in india (Mar 2020), <https://cio.economictimes.indiatimes.com/news/strategy-and-management/how-digital-technological-banks-can-be-more-effective-in-the-future-of-banking-industry-in-india/74683508>
21. Gomez, R., Gould, E.: The cool factor of public access to ict. *Information Technology & People* 23(3), 247 (2010)
22. Heeks, R.: *Information and communication technologies, poverty and development*. Development informatics working paper (5) (1999)
23. ILO, L.M.B.: *Ilo global estimates on migrant workers: Results and methodology*. Geneva: International Labour Organisation (ILO) (2015)
24. Kanade, T., Reed, M.L., Weiss, L.E.: New technologies and applications in robotics. *Communications of the ACM* 37(3), 58–68 (1994)
25. Kruger, S.: Developing non-technical skills through co-operative education. In: *The Third VT Vittachi International Conference* (2006)
26. Kuriyan, R., Ray, I.: Outsourcing the state? public–private partnerships and information technologies in india. *World Development* 37(10), 1663–1673 (2009)
27. Lee, J.D., See, K.A.: Trust in automation: Designing for appropriate reliance. *Human factors* 46(1), 50–80 (2004)
28. Lichtenthaler, U., Ernst, H.: Intermediary services in the markets for technology: Organizational antecedents and performance consequences. *Organization Studies* 29(7), 1003–1035 (2008)
29. Maloney, W.F., Molina, C.: *Are automation and trade polarizing developing country labor markets, too?* The World Bank (2016)
30. Mayer, R.C., Davis, J.H., Schoorman, F.D.: An integrative model of organizational trust. *Academy of management review* 20(3), 709–734 (1995)
31. Medhi, I., Menon, S.R., Cutrell, E., Toyama, K.: Beyond strict illiteracy: abstracted learning among low-literate users. In: *Proceedings of the 4th ACM/IEEE International Conference on Information and Communication Technologies and Development*. pp. 1–9 (2010)
32. Moorman, C., Deshpande, R., Zaltman, G.: Factors affecting trust in market research relationships. *Journal of marketing* 57(1), 81–101 (1993)

33. Morawczynski, O., Miscione, G.: Examining trust in mobile banking transactions: The case of m-pesa in kenya. In: IFIP International Conference on Human Choice and Computers. pp. 287–298. Springer (2008)
34. Munce, J.W.: Toward a comprehensive model of clustering skills. National Society for Internships and Experiential Education (1980)
35. NGUYEN, O.T.: Factors affecting the intention to use digital banking in vietnam. *The Journal of Asian Finance, Economics, and Business* 7(3), 303–310 (2020)
36. Orlikowski, W.J.: Using technology and constituting structures: A practice lens for studying technology in organizations. *Organization science* 11(4), 404–428 (2000). <https://doi.org/10.1287/orsc.11.4.404.14600>
37. Orlikowski, W.J., Barley, S.R.: Technology and institutions: What can research on information technology and research on organizations learn from each other? *MIS quarterly* 25(2), 145–165 (2001). <https://doi.org/10.2307/3250927>
38. Orr, J.: Talking about machines: An ethnography of a modern job. 1996. Cornell University
39. Parikh, J., Ghosh, K.: Understanding and designing for intermediated information tasks in india. *IEEE Pervasive Computing* 5(2), 32–39 (2006)
40. Pettigrew, A.M., Woodman, R.W., Cameron, K.S.: Studying Organizational Change and development: Challenges for future research. *Academy of management journal* 44(4), 697–713 (2001). <https://doi.org/10.5465/3069411>
41. Poole, M.S., Van de Ven, A.H.: Handbook of organizational change and innovation. Oxford University Press (2004)
42. Proctor, R.W., Dutta, A.: Skill acquisition and human performance. Sage Publications, Inc (1995)
43. Rahman,A.,Fauzi,M.: Perception Of Industry Towards Competencies Of German- malaysia Institute Graduates In Relation To Their Qualification For Highly Skilled Technician. Ph.D. thesis, Universiti Teknologi Malaysia (2000)
44. Rajalekshmi, K.G.: E-governance services through telecenters: The role of human intermediary and issues of trust. *Information Technologies & International Development* 4(1), pp–19 (2007)
45. Ray, D.: Development economics. Princeton University Press (1998)
46. Roger, M.: Non-technical essential skills handbook for apparel industry supervisors interpersonal communications (1996)
47. Roy, T., et al.: The economic history of India, 1857-1947. Oxford University Press New Delhi (2011)
48. Shakir, R.: Soft skills at the malaysian institutes of higher learning. *Asia Pacific Education Review* 10(3), 309–315 (2009)
49. Sharma, S.K., Sharma, M.: Examining the role of trust and quality dimensions in the actual usage of mobile banking services: An empirical investigation. *International Journal of Information Management* 44, 65–75 (2019)
50. Suneja, R.: The grand digitization of the finance industry: How technology is paving the path towards the future (Dec 2019), <https://economictimes.indiatimes.com/news/economy/finance/the-grand-digitization-of-the-finance-industry-how-technology-is-paving-the-path-towards-the-future/articleshow/72381230.cms?from=mdr>
51. Tricot, A., Sweller, J.: Domain-specific knowledge and why teaching generic skills does not work. *Educational psychology review* 26(2), 265–283 (2014)
52. Van Deventer, M., De Klerk, N., Bevan-Dye, A.: Influence of perceived integrity and perceived system quality on generation y students' perceived trust in mobile banking in south africa. *Banks and Bank Systems* 12(1-1), 128–134 (2017)

53. Williams, D.M., Medina, J., Wright, D., Jones, K., Gallagher, J.E.: A review of effective methods of delivery of care: skill-mix and service transfer to primary care settings. *Primary Dental Care* 2), 53–60 (2010)
54. Williams, R., Edge, D.: The social shaping of technology. *Research policy* 25(6), 865–899 (1996). [https://doi.org/10.1016/0048-7333\(96\)00885-2](https://doi.org/10.1016/0048-7333(96)00885-2)
55. Yahya, S., Ahmad, E., Abd Jalil, K.: The definition and characteristics of ubiquitous learning: A discussion. *International Journal of Education and Development using ICT* 6(1) (2010)
56. Yin, R.: Designing case studies. *Qualitative Research Methods* pp. 359–386 (2003)
57. Zhou, T.: Understanding users' initial trust in mobile banking: An elaboration likelihood perspective. *Computers in Human Behavior* 28(4), 1518–1525 (2012)
58. Zuboff, S.: *In the age of the smart machine* (2010).