



THE ROLE OF TRUST

in Increasing Women's Access to Finance Through Digital Technologies¹



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MOTIVATION

Access to financial services empowers women

Access to financial services, such as credit, savings, and insurance, are critical ingredients for women's economic empowerment.² Evidence of a strong connection between access to finance and economic empowerment indicates that:

- Financial services, including credit and savings, increase measures of women's economic empowerment, such as financial risk-taking, especially when offered in a suite or bundle.³
- Market-appropriate savings vehicles for all women, as well as credit and business management training for women-owned small and medium enterprises, are proven to increase productivity and earnings in developing countries.⁴
- Financial tools and services can contribute to empowerment by “giving [women] greater control over their financial lives.”⁵ Digital financial services (DFS) have the potential to empower women by giving them “greater control of ... financial decision making.”⁶

2 Women's economic empowerment is defined by the OECD as women being able to “contribute to and benefit from growth processes in ways that recognize the value of their contributions, respect their dignity and make it possible to negotiate a fairer distribution of the benefits of growth.” OECD Available from: <http://www.oecd.org/dac/gender-development/womenseconomicempowerment.htm>.

3 Buvinić, M., Furst-Nichols, R., & Courey-Pryor, E. A roadmap for promoting women's economic empowerment. UN Foundation. See also: Buvinić, M. & O'Donnell, M. Gender matters in economic empowerment interventions: A research review. CGD Working Paper 456.

4 Ibid.

5 Women and Financial Inclusion, CGAP. Accessible from <http://www.cgap.org/topics/women-and-financial-inclusion>.

6 N.A. (2015). Digital financial solutions to advance women's economic participation. GPF and The World Bank Group, 4. See also: Gammage, S., Kes, A., Winograd, L., Sultana, N., Hiller, S., & Bourgault, S. (2017). Gender and digital financial inclusion: What do we know and what do we need to know? ICRW.

Additional Evidence of the Positive Role of Access to Finance in Women's Empowerment



- Customizing an individual loan product significantly improved the delivery of credit to women entrepreneurs in Mexico who could not expand their businesses previously, according to Women's World Banking and Compartamos Banco.⁷
- "70 percent of women-owned formal SMEs are unserved or underserved in terms of access to credit, amounting to a \$285 billion credit gap," according to Goldman Sachs.⁸
- "Access to credit ... accompanied by financial and business education and by access to savings and insurance products" addresses "underlying constraints" to realizing women's economic empowerment.⁹

New digital delivery channels hold the promise to expand access to financial services to women around the world at a faster pace than traditional service provision. Digital technologies can be a powerful avenue to increase financial access and empowerment of women, for whom traditional financial services are often restricted by a number of factors, including the following (though it is important to keep in mind how diverse these circumstances can be in practice):

- **Distance:** The combination of household and child care responsibilities, cost, security issues associated with solo travel, and cultural mobility restrictions can make it difficult for women to travel to banks.
- **Cost:** Women may have less control over household finances or less cash to spend with fewer opportunities for earning; therefore, women may be more price-sensitive when it comes to adopting new and unfamiliar, unproven products.
- **Lack of identification:** Women are, in many places, less likely than men to have access to identification.¹⁰
- **Lack of collateral:** For credit products, proof of collateral is often a minimum requirement. In many

countries, however, land and other assets are often considered property of the husband or are not passed down generationally to women, making it challenging for women to obtain their own loans.

- **Social norms:** In every country in the world, there are specific socio-cultural beliefs about men's and women's roles in different spaces in society, including in the household, child rearing, education, workplaces, agriculture, finance, and so forth. These beliefs influence both men and women's scope of available opportunities and limitations in all these areas. Social norms, in fact, are at the root of all the specific challenges that women face in accessing traditional financial services noted above.

For example, in certain circumstances, women's access to education and other resources is limited by social norms prioritizing sending boys to school, which in turn closes off future opportunities for income generation, financial literacy, and financial autonomy. Without income and a certain level of confidence and ability with personal finance, traditional financial service providers are not likely to be places where women feel very comfortable.

7 Flaherty, M. (2016). Three steps to serving women-owned MSMEs. Women's World Banking. Available from: <https://www.womensworldbanking.org/news/blog/three-steps-serving-women-owned-msmes/>.

8 Goldman Sachs Global Markets Institute. (2014). Giving credit where it is due - How closing the credit gap for women-owned SMEs can drive global growth. As quoted in Women's financial inclusion: A driver for global growth. Women's World Banking.

9 Klugman, J. & Tyson, L. Leave no one behind: A call to action for gender equality and women's economic empowerment. UN Secretary General's High-Level Panel on Women's Economic Empowerment, 73.

10 <http://www.worldbank.org/en/programs/id4d>.

In some cases, it is not culturally appropriate for women to handle family finances. In addition, social norms may determine women's agency to speak with a male banker, travel to a bank, apply for an ID, and their right to build wealth through inheritance. Social norms also may dictate when and whether a financial service provider can serve a female customer or deny her eligibility for a loan.

Social norms are, therefore, not as much a specific barrier to women's access to traditional financial services, but rather a condition that informs and contributes to the specific barriers mentioned above. Social norms can manifest for women as limitations imposed externally (e.g., society making clear a woman's desire to have greater financial autonomy is not acceptable) or internally (e.g., a woman's belief she is not capable or that it is not appropriate for her to have financial responsibilities); in many cases it may be difficult to make a clear distinction. Either way, these norms do shape women's preferences regarding financial services and products, as well as the ecosystem of available choices, and so are important to understand. Arun et al. cites the significant body of anthropological work looking at "markets and finance as a social construction. From this work, it appears financial behaviors such as risk-taking are not inherent or innately gender-specific, but rather are "constitutive of cultural perceptions and shaped by social norms and expectations".¹¹

DFS cannot alone adjust social norms that prevent women from accessing the same opportunities for education, work, and advancement that men have and a full exploration of the impact of social norms is beyond the scope for this paper. There is reason to believe, however, that DFS is useful as a tool for overcoming some of the specific and tangible barriers to financial service access that women face. For example, digital services that can be accessed remotely are much more cost effective for a provider than building a rural bank

branch, allowing more services to be offered at a lower price point. The remote, digital nature of DFS may be preferable to women who are mobility-restricted, and who want to transact in private rather than in public. The flexibility of a mobile product may allow for new types of loan repayment schedules or terms that were not previously possible. These features may open up possibilities for financial service usage, such as savings with an individual mobile wallet or easy school fee payments that can build stability and even financial autonomy and empowerment.

Some evidence of the positive effects of DFS for women include:

- Research released in 2016 by Tavneet Suri of MIT and William Jack of Georgetown University on the popular Kenyan mobile money platform M-PESA, found that access to mobile money allowed individuals to protect themselves against income and health risks and has been effective in improving the economic lives of poor women and of members of female-headed households.¹²
- Research in Niger demonstrated that when women received unconditional cash transfers electronically, their financial autonomy and decision-making abilities increased.¹³
- Analysis of the World Bank's Global Findex indicates that between 2014 and 2017, financial account ownership increased, driven in Sub-Saharan Africa by the inclusion of mobile money wallets in the survey's definition of account ownership. Women's mobile money account ownership drove part of that increase, although the gender gap between women's and men's financial inclusion remained static.
- There are "early signs that mobile money accounts might be helping to close the gender gap" in account ownership.¹⁴

11 Arun, S., Anim, S. K., & Arun, T. G. (2016). 'Even' after access to financial services? Ricocheting gender equations. (IZA Discussion Paper 10099). Bonn, Germany: The Institute for the Study of Labor. For further discussion on the role of social norms in women's access to, preferences on and use of finance see: Johnson, S. (2014). Competing visions of financial inclusion in Kenya: The rift revealed by mobile money transfer (Bath Papers in International Development and Wellbeing Working Paper 30). Bath, United Kingdom: Centre for Development Studies, University of Bath. World Bank. (2014). Global Financial Development Report 2014: Financial Inclusion (Rep.). Washington, DC: World Bank.

12 Suri, T. & Jack, W. (2016). The long-run poverty and gender impacts of mobile money. *Science* 354 (6317), 1288-1292.

13 Aker, J., Boumijel, R., McClelland, A. & Tierney, N. (2014). As quoted in Digital financial solutions to advance women's economic participation. GPF and The World Bank Group.

14 Demirgüç-Kunt, Asli, Leora Klapper, Dorothe Singer, Sania Ansar, and Jake Hess. 2018. The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution. Washington, DC: World Bank. Available from <http://www.worldbank.org/en/programs/globalindex>.

A Gender Gap in Financial Inclusion Persists

Women continue to be underserved by traditional and alternative financial service providers. The World Bank's Global Findex reports that most developing economies have a gender gap in account ownership, though the size varies. In 2017 the Findex reported that women "account for 56 percent of people without access to a formal account."¹⁵ Despite the democratizing promise of technology, there is a demonstrated and persistent gap between women and men's digital financial inclusion, or "access to and ability to use at least one formal transactional account that can perform most, if not all, of payment needs; safely store value; and serve as a gateway to other financial services."¹⁶ For example, "in low- and middle-income countries, women are 36% less likely than men to have a mobile money account."¹⁷ The lag is not only in active DFS use in developing economies, but also present in the gap in technology ownership. There are 184 million more male cell phone users than female users, indicating that many women are missing out on the numerous DFS products available through mobile phones.¹⁸

DFS offers a solution to several of the aforementioned barriers to women's access to financial services. Nonetheless, DFS alone cannot address all barriers women face. Social norms, lack of literacy skills, lack of formal identification, lack of collateral, gap in technology use, and cost may continue to pose an obstacle to some women in accessing not just traditional finance but DFS as well; financial institutions and DFS developers are working to fully understand and address these challenges.

Accelerating women's active use of digitally delivered financial products and services requires a level of trust that DFS providers have yet to instill in their female customers. Trust is required for women to decide to acquire, invest in, and use new technology, especially when it relates to the sensitive, high-stakes arena of personal finances. There is a growing recognition of the role of trust, or its absence, in active DFS use. The Catalyst Fund developed a toolkit for DFS providers to

learn to design for trust. In the toolkit, the Catalyst Fund identifies five top drivers for providers to incorporate into their service design to increase the perception of trust by the customer: (1) competency, (2) appearance, (3) control, (4) transparency, and (5) commitment and benevolence. The approach to developing trust in DFS is not just a supply side or product design issue but should include targeted work to understand the diversity of female market segments that together make up around half the world's population, such as market women, traders, SME owners, smallholders, and the like.

This paper explores the importance and influence of trust in the adoption of new technologies, focusing particularly on how trust (or lack thereof) informs women's experiences with DFS. This paper examines ways to develop trust at the individual user, or micro, level while recognizing that issues at the community (meso) and policy (macro) levels may also influence access and use of financial services and technology by women.¹⁹ The purpose of the paper is to generate ideas and an approach to be tested by development actors committed to closing the gender gap in financial inclusion and to identify the efficacy of approaches to increase women's trust in DFS and, thereby, their active use. A variety of stakeholders in DFS product and program design can utilize our adapted model for technology adoption to test and better understand barriers to women's trust in DFS and to implement specific solutions that could overcome those barriers.

In Section 1, we lay out evidence of a trust gap in women's relationships with DFS. In Section 2, we present two models that have been used to evaluate and explain technology adoption decisions outside of DFS, demonstrating the value of using an analytical framework to understand the complex and multifaceted factors that influence the decision to adopt a new technology. In Section 3, we demonstrate that trust is an integral part of the classic Technology Adoption Model and suggest an adaptation that incorporates it. Finally, we utilize the adapted Technology Adoption Model to explore the ways that DFS providers and development actors could work to increase women's trust in DFS technologies.

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ Ibid.

¹⁸ GSMA (2018), The Mobile Gender Gap Report 2018, Available from https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2018/04/GSMA_The_Mobile_Gender_Gap_Report_2018_32pp_WEBv7.pdf

¹⁹ Gammage, et al., 7.

SECTION I:

Increased Adoption of DFS Requires Increased Trust

Defining Trust

Trust is the leap of faith needed to invest scarce resources (money, time, social capital) in a new technology. “Due to lack of complete information, an individual must take a ‘leap of faith’ when adopting a new technology. This leap of faith is trust ... both uncertainty and some degree of vulnerability would be necessary for trust to exist. After all, with complete certainty, no trust is necessary.”²⁰ A product must somehow inspire the customer or user to take this leap of faith; a magnificent product that does not achieve this will go unutilized. Trust has different meanings in different geographies and even among different people, and touches upon complex emotional and psychological layers of user experience. There is no straightforward technical intervention that is guaranteed to increase trust.

Emerging Findings on Trust and its Influence on Women’s Use of DFS

Data disaggregated by gender reveal that women, when faced with limited resources, vulnerable social positions, and high levels of household responsibility, may have heightened aversion to risk and, therefore, investment in new technologies. Women need to have significant trust in DFS before they will make the leap to adoption.²¹

20 Bahmanzari, T., Pearson, M., & Crosby, L. (2003). Is trust important in technology adoption? A policy capturing approach. *Journal of Information Systems*, 43 (4), 46-54.

21 Akter, S., Krupnik, T. J., Rossi, F., & Khanam, F. (2016). The influence of gender and product design on farmers’ preferences for weather-indexed crop insurance. *Global Environmental Change* 38, 217-229; Arun, S., Annim, S. K., & Arun, T. G. (2016). ‘Even’ after access to financial services? Ricocheting gender equations. (IZA Discussion Paper 10099). Bonn, Germany: The Institute for the Study of Labor; Delavallade, C., Dizon, F., Hill, R. V., & Petraud, J. P. (2015). Managing risk with insurance and savings: experimental evidence for male and female farm managers in West Africa (IFPRI Discussion Paper 01426). Washington, DC: International Food Policy Research Institute.

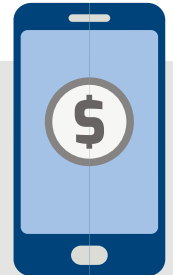
22 Penicaud Scharwatt, C. & Minischetti, E. (2014). Reaching half of the market: Women and mobile money. GSMA Connected Women Programme, 8.

23 Digital savings: The key to women’s financial inclusion? Women’s World Banking. Accessible from: <http://www.womensworldbanking.org/publications/digital-savings-the-key-to-womens-financial-inclusion/>.

24 Measuring women’s financial inclusion: The value of sex-disaggregated data. Global Banking Alliance for Women, 6.

Women’s DFS Trust Deficit

- According to the GSMA, “female customers tend to be more risk averse than men and take more time to trust the mobile money service.” They also have been shown to need to “make twice the number of interactions than men before they feel comfortable independently using financial services and are also more inclined to seek help from agents more often than men do.”²²
- “Women tend to adopt new financial services more slowly than men,” a Women’s World Banking report found, “suggesting that women need to clear a higher bar before investing in a technology, perhaps because in many contexts they have fewer resources and therefore experience risk more sharply.”²³
- The Global Banking Alliance for Women reports on a study that found “that one of the key commonalities across geographies was a higher lack of trust in the banking system among women. The research across 10 banks also showed that trust was the most important factor for women when choosing a bank.”²⁴
- A study in Mali and Côte d’Ivoire showed that the mobile money gender gap was widest before registration, and that men and women who had cleared the hurdles to getting mobile money accounts were equally likely to become regular users.²⁵



It is important for technologies to be able to evince trust when users are more vulnerable and in contexts where institutions or social structures are weak. In these settings, risk aversion is likely higher. So how do stakeholders, such as DFS providers or development actors, think about how to increase trust in new DFS

technologies, and particularly among women? We explore two frameworks on technology adoption as relevant to developing trust, and then discuss how one can be used to identify factors that would increase women's trust in and adoption of DFS technology.

SECTION 2.

Two Frameworks Help Explain Technology Adoption

1. Economists' Framework of Net Gain

The microeconomic perspective asserts that the most basic determinant of adoption of a new technology is the net gain the user will experience, after accounting for the cost of using the technology. This basic model suggests that catalyzing adoption is a matter of demonstrating the unrealized gains of adoption to women for whom the perception of net gain is incorrectly skewed lower than the perception of net cost. Intrinsic to this logic is the assumption that there is one true value of the technology and a correct and incorrect perception of net gain and net cost. The gap between registered mobile money accounts and active mobile money accounts, which GSMA quantified at 443 million in 2017, demonstrates this model is not sufficiently robust.²⁶

Economists' perspectives on technology adoption are critiqued for rendering into a simple cost-benefit decision what is complex, emotional, and potentially irrational. Indeed, there are both tangible financial costs to purchasing and maintaining (including charging) mobile phones and other digital technologies. But there

are also complex social costs, the value of which may be hard to assess; for example, one study in Kenya found that mobile money was "breeding suspicion and mistrust about spousal/partner fidelity, real family incomes, misuse of family resources, and remittances."²⁷ Further, trust is often built or taken away on an emotional basis. If trust was determined just by assessing pros and cons, it would not differ from estimation or taking an educated guess.²⁸ "To illustrate the role of emotion in trust, consider the reaction of an individual to a betrayal of trust. People are often ashamed, disappointed and angry. These reactions indicate that there is more involved in the decision to trust than expectations and predictions."²⁹ Although understanding the costs that DFS products incur to women is key to making the value proposition clear, the challenge of correctly assessing the full range of costs as well as accounting for less than "rational" behavior indicates that the net gain model should not be the only one used to design further approaches to advancing women's trust in DFS products.

25 N.A. (2017). Mapping the mobile money gender gap: Insights from Cote d'Ivoire and Mali. GSMA, 5.

26 GSMA (2018), 2017 State of the Industry Report on Mobile Money. Available from https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2018/02/GSMA_State_Industry_Report_2018_FINAL_WEBv4.pdf

27 Wandibba, S., Nangendo, S., & Mulemi, B. (2014). Gender empowerment and access to financial services in Machakos County, Eastern Kenya (Rep.). Irvine, CA: Institute for Money, Technology and Financial Inclusion, 10.

28 Bahmanziari et al. (2003).



Photo by Morgana Wingard/USAID

2. The Technology Acceptance Model – An analytic model that integrates psychological factors into the technology adoption choice

In order for new users to adopt an unfamiliar technology, they need to be sure that the technology will “work in their best interests and will perform its intended purpose reliably or predictably. The user’s experience with the technology must result in positive expectations with respect to its functionality, usefulness, and reliability.”³⁰ What factors, then, influence the perception or apprehension of positive outcomes?

The Technology Acceptance Model (TAM) is widely considered by scholars to be a “reliable predictor of technology adoption and usage.”³¹ The TAM places relative to one another the factors, especially

psychological, that influence the technology acceptance, adoption, and use decision. “TAM provides a basis with which one traces how external variables influence belief, attitude, and intention to use ... According to the TAM, one’s actual use of a technology system is influenced directly or indirectly by the user’s behavioral intentions, attitude, perceived usefulness of the system, and perceived ease of the system. The TAM also proposes that external factors affect intention and actual use through mediated effects on perceived usefulness and perceived ease of use.”³² The TAM has been adapted and tested in multiple fields and found in many cases to be a useful model for understanding and predicting technology adoption decisions.

The logical structure of the TAM is depicted in Figure 1.

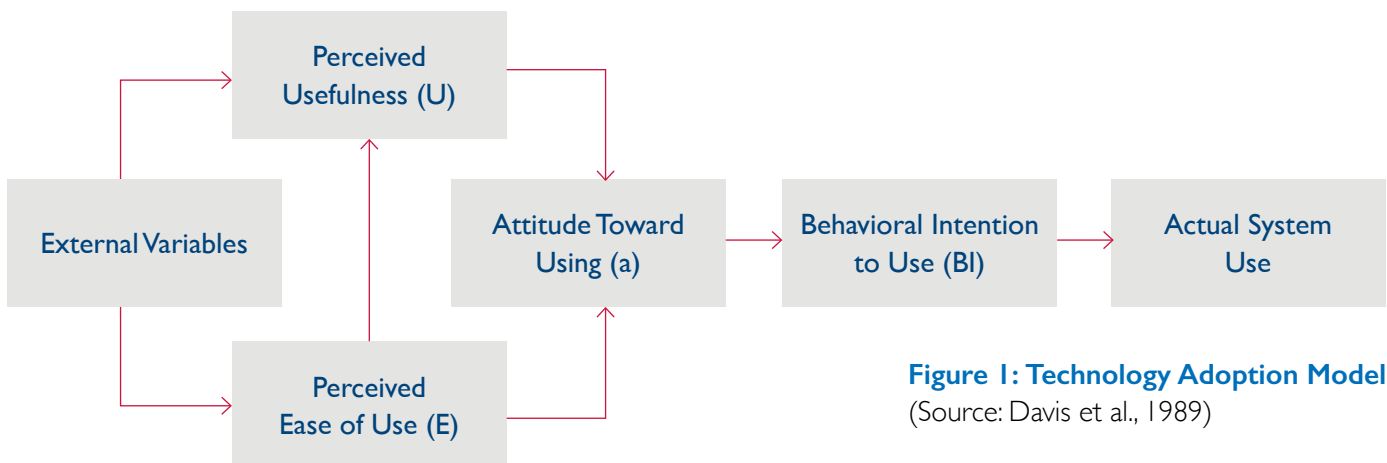


Figure 1: Technology Adoption Model
(Source: Davis et al., 1989)

29 Bahmanziari et al. (2003).

30 Isabiryte, N., Flowerday, S., Nanavati, A., & von Solms, R. (2015). Building technology trust in a rural agricultural e-marketplace: A user requirement's perspective. *The Electronic Journal of Information Systems in Developing Countries*. 70 (4), 1-20.

31 Bahmanziari, et al. (2003).

32 Park, S.Y. (2009). An analysis of the technology adoption model in understanding university students' behavioral intention to use e-learning." *Educational*



Photo by Nena Terrell/USAID Ethiopia

Examples of Applications of the TAM

- Mutahar et al. tested a version of the TAM to understand more about critical success factors that influence the intention to use a mobile banking service in Yemen. They found that the external variables they tested influenced “ease of use and usefulness perception of using mobile banking.”³³
- The TAM was used to explore how South Korean university students chose to adopt and use e-learning platforms; the authors found “TAM to be a good theoretical tool to understand users’ acceptance of e-learning.”³⁴
- Durodolu used the TAM as a framework to better understand the barriers to school teachers’ adoption of better digital and online information literacy skills. The author notes that the TAM “has had extensive relevance in explaining [information literacy] professionals’ response to IT use and adoption.”³⁵
- The TAM was applied and adapted with another theory, the Theory of Planned Behavior, to understand the variables that predict users’ adoption of cloud computing technology.³⁶



Public health relies significantly on behavior change and technology to deliver innovative methods of care to patients and to encourage patients to engage in accepted health practices. Trust is a major challenge for health-related technology providers and intervention designers just as in DFS; health and money are uniquely

critical to survival and wellbeing and, therefore, the premium placed on trust and the desire to avoid risk is often high in both areas. The TAM, including the addition of trust to the basic model, has been used to examine uptake of health care technologies.

Technology and Society. 12 (3), 150-162.

33 Mutahar, A., Mohd Daud, N., Ramayah, T., Putit, L. & Isaac, O. 2017. Examining the effect of subjective norms and compatibility as external variables on TAM: Mobile banking acceptance in Yemen. *Science International*. 29 (4), 769-776.

34 Park, S.Y. (2009).

35 Durodolu, O.O. (2016). Technology Acceptance Model as a predictor of using information system to acquire information literacy skills. *Library Philosophy and Practice* 1450, 19.

36 Booth, C. & Shuyuan M.H. (2017). Does the Cloud have a silver lining? Privacy concerns and perceived risk in cloud technology adoption. *iConference Submission*.

APPLICATIONS OF THE TAM IN HEALTH

<p>Extending the Technology Acceptance Model in Healthcare: Identifying the Role of Trust and Shared Information</p>	<p>Sabrina Terrizzi, Susan Sherer, Chad Meyerhoefer, Donald Levick</p>	<p>The authors incorporated trust and access to shared information into the basic TAM to look at the adoption of integrated electronic health records shared by multiple health care providers. They found a statistically significant effect of perceived usefulness on intent to use and a statistically significant impact of perceived ease of use on perceived usefulness.</p>
<p>Development of a Health Information Technology Acceptance Model Using Consumers' Health Behavior Intention</p>	<p>Jeongeun Kim, Hyeoun-Ae Park</p>	<p>The authors found that their adapted TAM was a valid model for describing health consumers' behavioral intention to use health information technology (HIT). This is an important finding since HIT only works when consumers have the behavioral intention to gather, store, and analyze their own health data.</p>
<p>e-HTAM: A Technology Acceptance Model for Electronic Health</p>	<p>Abdul Hakim H. M. Mohamed, Hissam Tawfik, Lin Norton, Dhiya Al-Jumeily</p>	<p>The study looked at factors affecting e-Health system acceptance (online systems that respond to patients' queries and concerns), including the traditional TAM constructs as well as trust, tangibility, masculinity, and uncertainty avoidance. They found these factors do correlate significantly with intention to use e-Health systems.</p>
<p>An Overview of Patient Acceptance of Health Information Technology in Developing Countries: A Review and Conceptual Model</p>	<p>Abd Rahman Ahlan, Barroon Isma'eel Ahmad</p>	<p>Health information technologies (HIT) use both computers and mobile devices to help consumers and health care providers exchange information for decision making. The authors added trust and perceived cost-effectiveness to the basic TAM model to explain HIT acceptance by patients in developing countries. They believe clinical testing of the model would help improve the low uptake of potentially life-saving HIT in developing countries.</p>

SECTION 3:

Five Trust Attributes Influence How Women Adopt Digital Finance

As previously noted, several studies highlight the important role that trust plays in the adoption and usage of DFS. Discussions with several mobile money service providers (MMSPs), including Tigo Cash Ghana and Airtel Money Malawi, indicated that a significant portion of their marketing and outreach activities were devoted to instilling trust in their product and their agent network. Although trust was not explicitly integrated in the first iterations of the TAM, many scholars, especially of IT systems, management sciences, and e-governance, more recently have acknowledged its critical interplay in the framework, though “studies of this form of trust are not definitive regarding which factors contribute to it the most.”³⁷

Though there have not been many studies using the adaptation of the TAM with trust, “those [that] have done so have found trust to be a determinant of intention to use.”³⁸ An important example of augmenting the TAM model with trust is the adoption of on-board monitoring systems for long-haul truckers. These systems provide real-time feedback in the form of auditory and visual warnings, e.g., forward collision warning, lane departure warning, and driver behavior warning. Adoption of these systems required both trust in the technology (will the system work as designed) as well as trust in the company (would the system be used as a safety tool rather than as a means of driver monitoring and enforcement). This study found that trust was a major determinant of intention to use, “suggesting that the acceptance model can be usefully augmented by this construct.”³⁹

New DFS are particularly susceptible to a trust deficit because they often involve an unfamiliar technology, an intimidating institution, and a high-impact use case. DFS is not monolithic and includes a broad range of financial services accessed and delivered through digital channels, including payments, mobile money e-money, and other stored value products such as credit, savings, remittances, and insurance. The digital channels used include internet-enabled devices, mobile phones (both smartphones and feature phones), ATMs, POS terminals, NFC-enabled devices, QR-codes, chips, electronically enabled cards, biometric devices, tablets, and any other digital system. DFS models typically employ agents and the networks of other third-party intermediaries to improve accessibility and lower the overall service delivery cost.⁴⁰ The primary impact DFS has had on financial inclusion is to lower channel and operational costs and to extend accessibility to previously unprofitable geographies and market segments. It is important to note, however, that although DFS lowers the cost of formal financial service delivery, it may be perceived as more expensive than cash, which is what poor women overwhelmingly use. Therefore, the actual application of these advantages and the acceptance of the service vary by gender. Research by GSMA’s Connected Women program, using customer journey analysis, found that there is a divergence in DFS uptake between men and women based on a variety of social, economic, and educational factors.⁴¹ This divergence in technology acceptance further justifies the use of a trust-adjusted TAM when analyzing the role of trust and DFS adoption by women.

37 Vancy, A., Elie-Dit-Cosaque, C., & Straub, D. (2008). Examining trust in information technology artifacts: The effects of system quality and culture.” *Journal of Management Information Systems*, 24 (4), 73-100.

38 Ghazizadeh, M., Peng, Y., Lee, J., & Ng Boyle, L. (2012). Augmenting the technology acceptance model with trust: Commercial drivers’ attitudes towards monitoring and feedback.” *Proceedings of the Human Factors and Ergonomics Society 56th Annual Meeting*.

39 Ibid.

40 AFI. (2016). Digital financial services basic terminology, Guideline Note No. 19.

41 Barrie, G. (2015). Women and mobile money: Insights from Kenya. GSMA Connected Women Programme.

TAM and Trust

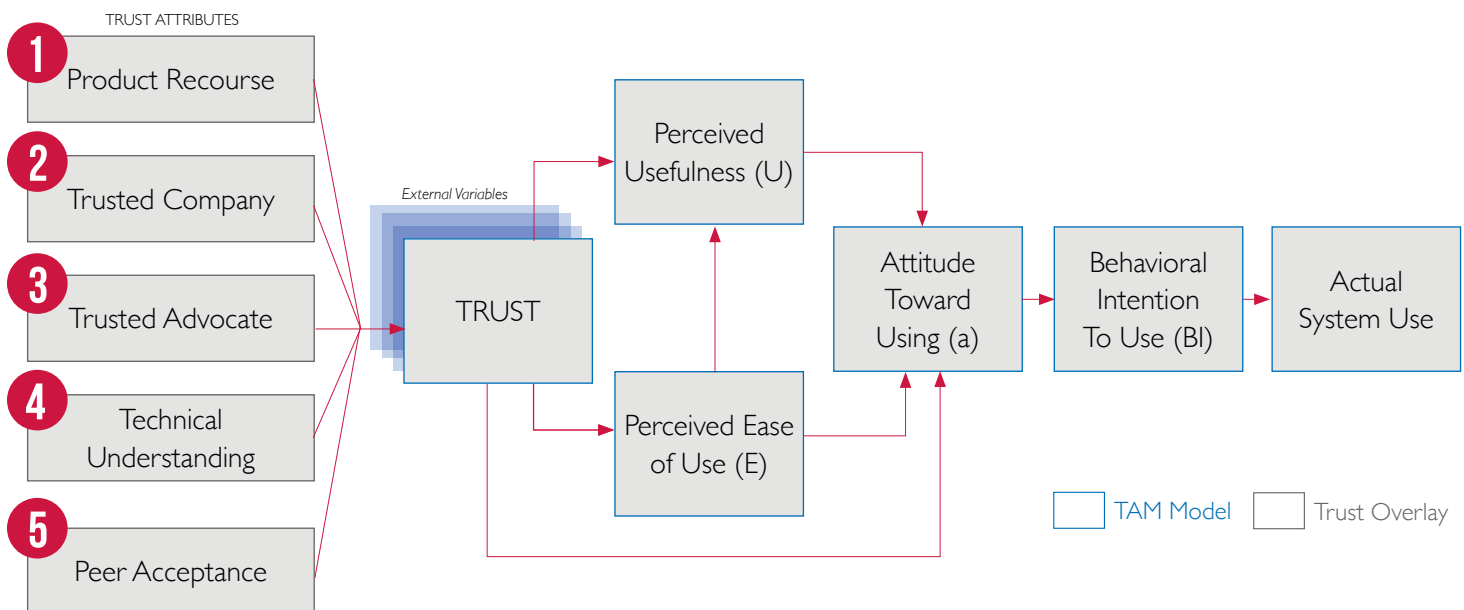


Figure 2: Trust and TAM for DFS (following Gefen et al. 2003), from Dahlberg et al. and SIA

As shown in Figure 2, we have overlaid trust and trust attributes into the TAM adoption framework. This figure highlights that trust is one of several critical external variables that influence perceived ease of use, perceived usefulness, and eventually system use. Other external variables include economic conditions, infrastructure, safety concerns, and social norms. A history of failed financial institutions plays a significant role in many markets as well; for example, in Ghana the collapse of many financial services providers resulted in the loss of savings for the poor and in confidence in the financial system; Tigo Cash in Ghana has worked to devote a significant portion of marketing and outreach activities to building trust as a result.

The figure further illustrates that in DFS there are several attributes, or levers of influence, that generate trust in a technology product; our model defines five. As more of these individual attributes are fulfilled and as they are fulfilled to a greater extent, overall trust will increase, positively affecting the elements of technology adoption further along in the model. These attributes may differ in importance for men and women and should be examined in the context of women's perceptions of DFS usefulness and ease of use, which

in turn drive intention to use and actual use. The attributes include:

1. **Product Recourse:** understandable transaction reversal policies and accessible customer service representatives who can resolve service issues in a timely and cost-effective manner
2. **Trusted Company:** the reputation of the organization in the community in terms of its responsiveness, integrity, and public responses to any issues or allegations
3. **Trusted Advocate:** a trusted entity, such as an NGO, that can act as an intermediary and inject a layer of trust into the adoption decision process
4. **Technical Understanding:** comprehension of how to use the product, increased through training and one-on-one marketing techniques
5. **Peer Acceptance:** the influence of peers on the perception of a product; this influence is even greater among people whose peer networks are relatively restricted, since they have experience with smaller cohorts and, therefore, fewer overall inputs to weigh

The value of breaking trust down into individual attributes is that stakeholders who work to increase women's use of DFS can more easily choose specific areas to work in, corresponding to particular attributes, which best complement their strengths. In addition, the comprehensive framework that defines trust in terms of attributes gives different stakeholders who want to work together a reference for potential division of roles without overlap. The trust attributes identified for DFS are as described below.

Trust Attribute 1: Product Recourse Assures Women that Addressing Issues Can Be Simple and Quick

Knowing that you can get your money back if you make a mistake and can talk with a customer service representative if there is an issue are two of the most important components in establishing trust.⁴² DFS regulations now commonly include consumer protection provisions that set standards for addressing customer complaints and resolving transaction errors. Global associations of financial regulators and DFS providers, including the Global Partnership for Financial Inclusion (GPFI) and GSMA, provide guidelines and codes of conduct on "responsible digital financial services." Principle five of GPFI's High-level Principles for Digital Financial Inclusion calls on G-20 countries to establish responsible digital financial practices to protect consumers. Eighteen of the 36 countries surveyed by the OECD/INFE survey of the "implications of digital financial services for financial education and related financial consumer protection issues" underscored that access to complaint-handling mechanisms represented a key challenge in their countries.⁴³ According to the Catalyst Fund, trust in DFS is further enhanced by providing consumers with control by giving them appropriate tools to manage their actions.

A CGAP Focus Note on risk in DFS cites two factors that limit understanding the Product Recourse



- Unclear, costly, and time-consuming redressal procedures
- Limited agent capacity in customer service⁴⁴

Product Recourse through the Gender Lens

Consumers' recourse to resolve service issues is especially important in financial services delivery to women who may be first-time users or skeptical of technology and its ability to safely store or transfer value and conduct transactions in real time.

- GSMA's analysis of women's mobile money journey in Kenya found that women are more likely than men to report they are worried about making a mistake and losing money when using mobile services.⁴⁵
- In a report to GPFI on DFS to advance women's economic participation, the co-authors (The World Bank Development Research Group, the Better Than Cash Alliance, the Bill & Melinda Gates Foundation, and Women's World Banking) note that "female consumers in particular should be educated about using and remembering their PINs, knowing the correct amount of money to be received during transactions, and what to do if something goes wrong."⁴⁶
- The GPFI report recommends better consumer protections for women, which it defines to include: financial literacy training; a legally authorized redress mechanism to dispute any unauthorized transactions; and policies to ensure financial service providers have clear and easily accessible information.⁴⁷

42 McKee, K., Kaffenberger, M., & Zimmerman, J. (2015). Doing digital finance right: The case for stronger mitigation of customer risks. CGAP Focus Note No. 103.

43 A total of 38 institutions from 36 countries and economies in Africa, Asia, Europe, and the Americas replied to the OECD/INFE stocktaking survey. OECD. 2017. G20/OECD INFE Report on ensuring financial education and consumer protection for all in the digital age at 30-31.

44 <https://www.cgap.org/sites/default/files/Focus-Note-Doing-Digital-Finance-Right-Jun-2015.pdf>

45 Barrie, G. (2015). Women and mobile money: Insights from Kenya. GSMA Connected Women Programme, 20.

46 N.A. (2015). Digital financial solutions to advance women's economic participation. GPFI and The World Bank Group, 37.

47 Ibid.

Trust Attribute 2: A Trusted Company is Needed to Assure Women of the Legitimacy of the Product Provider

According to the Edelman Trust Barometer, financial institutions in most markets receive low trust ratings. In some markets, mobile network operator sponsored mobile money products receive higher trust ratings than traditional financial institutions. Recent survey data from CGAP on smallholder farmers analyzed the levels of trust in banks, MMSPs agents for banks and MMSPs, and informal savings groups.⁴⁸ The results vary by market and in some markets, like Bangladesh, MMSPs and their agents had lower levels of trust than banks, their agents, and MFIs. Regardless, companies will gain trust by consistently ensuring that they are able to perform what they promised. Due to the reliance on agent networks for the delivery of many DFS products, “trusted company” can be expanded to mean “trusted agent.” In many communities, the DFS agent has significant control over a range of financial transactions and trust in their performance and ability to deliver as promised is critical to the adoption of service.

Trusted Companies through the Gender Lens

Working with a trusted company is particularly important to women, who may have less experience than men in working with large commercial entities. In addition, the specific level of experience with a product also influences the trust level.

- A GSMA study in Rwanda found “female regular users were more likely to report lower levels of trust in mobile money services than female power users (defined as users who initiate multiple transactions each month). Female regular users were more likely to attribute low levels of trust in the mobile money service to the fact that agents tend to be mobile and not have permanent addresses. This meant that, when mistakes were made, women were unable to locate the same agent who helped them perform the transaction. Female power users were more likely than female regular users to trust the service with their money.”⁴⁹

48 Hernandez, E., Ciacci, R., Bin Humam, Y., Benni, N., & Kaaria, S. (2017). Women smallholders in the financial inclusion agenda: Facing the gender and rural gap.

49 Hendricks, L. & Loupeda, C. (2017). How women help women gain control of their financial lives. Accessible from: <https://cfi-blog.org/2017/07/19/how-women-help-women-gain-control-of-their-financial-lives/>.

50 Minischetti, E. (2017). Examining the financial inclusion of women: the mobile money gender gap in Rwanda. GSMA Connected Women.

51 Ibid.

Testing Women Agents:

There is a growing movement to test the impact women agents have on service uptake by women.



Grameen Foundation has found that a woman often benefits from being able to work with a trusted agent who can directly help her understand and use the services available. Grameen has worked to develop women as banking agents in the Philippines. The all-female network now includes 862 trained agents, who bring digital financial services to more than 66,000 low-income clients.

Recruiting female agents benefits the end clients, but also the female entrepreneurs who become agents. They typically see an increase in their own income of at least 20 percent to 30 percent.⁵⁰

- Trust in mobile money services was not particularly mentioned as an issue for the majority of the men interviewed; male regular and power users were indeed more likely than women to trust the service with their money.⁵¹

Trust Attribute 3: Trusted Advocates Help Women Bridge Persistent Gaps in Trust of the Company or Product

NGOs consistently score higher on the Edelman Trust Barometer and have played an important role in advocating the benefits of DFS adoption for a variety of underserved market segments, including women. In addition, USAID and other donor organizations have used NGO implementing partners to advance financial inclusion objectives. Organizations such as Mercy Corps, MEDA, Grameen, and Oxfam have all developed and implemented programs that facilitate the relationship between a DFS user segment (e.g., women’s savings groups, small holder farmers, disaster relief beneficiary,

social welfare payment beneficiary) and a DFS service provider. As a further example, the USAID Mobile Money Accelerator Program (MMAP) in Malawi contained a work stream that supported a mobile money public awareness campaign that articulated and promoted the benefits of mobile money and the safety and security of the technology. The public awareness campaign was aligned with service provider TNM and Airtel promotions and complemented their marketing activities. New subscribers in the target regions indicated that information from the MMAP program was viewed as objective and contributed to their trust in the service and their willingness to register.

Trusted Advocate through the Gender Lens

Women-targeted programs of NGOs that work to build resilience through village savings and loans or improve agricultural livelihoods through agricultural extension workers are useful in providing a channel for education and developing trust for DFS.

- There has been a growing movement among NGOs that seek to improve the livelihoods of women to move savings groups through digital channels into formal accounts. NGOs, including Oxfam's Saving for Change Program and CARE's Banking on Change, have served as intermediaries and advocates for the introduction of mobile banking technology to the savings groups used by rural women. As reported in Oxfam's review of its program in Senegal, one group participant interviewed noted the "equally important factor was also the involvement and supervision of the technical and financial partner; in this case Oxfam, through capacity building, tools used, supervision missions, etc."⁵²
- The USAID-funded mSTAR program in Bangladesh worked to migrate USAID implementing partners to DFS. This included programs working with women entrepreneurs. In its work, mSTAR took on the role of helping to develop end user trust in DFS. Although mSTAR found that most program staff owned mobile

phones and were aware of mobile money, most did not use it or limited their use to basic products and services, such as personal transfers. mSTAR cites the broad lack of awareness of the intricacies of DFS and limited use as generating a lack trust. mSTAR helped build that trust through increasing DFS-specific knowledge.⁵³

- With the prevalence of women engaged in agriculture in developing countries, agricultural extension programs run by NGOs and other development organizations often support specific needs of women and are a trusted source of information on a range of topics (e.g., agricultural extension, nutrition, health). These programs also provide convening mechanisms that bring women together and enable them to share ideas.

By leveraging the unique position NGOs have with women, programs can incorporate financial inclusion objectives and DFS adoption targets into existing initiatives. There is an added benefit to this model, since NGOs may have the technical knowledge to screen products and are likely to take a critical reading on them before advocating that their beneficiaries or clients move to adoption.

Trust Attribute 4: Technical Understanding is a Needed Foundation of Self-Generated Trust

As previously noted, DFS products often contain technical elements (e.g., handsets, applications) that can be unfamiliar and intimidating to certain first time or newer user segments. Technical understanding is a requirement for self-generated trust, or trust developed without an intermediary, such as an agent or NGO, who can explain or convey why it is a worthy investment. Michael Joseph, in his 10-year look back on M-PESA, noted that trust is gained by ensuring that M-PESA's technology is the best, no money is ever lost, and that the customer is always protected. He added, "I always say to the team, you can't have a dropped call with

52 Dia, S.H. & Benga. H. (2016). Saving for Change mobile banking Senegal in-depth qualitative study report. Oxfam, 27.

53 Rahman, A. How mSTAR transitioned USAID IPs to DFS- Perspectives from mSTAR/Bangladesh. Accessible from: <https://mstarproject.wordpress.com/2017/08/22/how-mstar-transitioned-usaid-ips/amp/>.

mobile money.⁵⁴ Service providers have come to realize that more intensive below-the-line marketing activities and better trained and more engaged agents will result in more active DFS customers. Tigo Cash Ghana is currently involved in an intensive effort to better monitor and train its agent network. Explaining the technology and assisting in initial transactions is a key component of the initiative.

Technical Understanding through the Gender Lens

Reports that evaluate women's DFS use patterns indicate that women may require more instruction time and a greater number of agent-assisted transactions before they are comfortable executing a specific transaction on their own.⁵⁵ This reinforces the assertion that women may have had less exposure to digital technologies and, therefore, need a longer transition period or different approaches to incorporating these technologies in their daily lives. This situation is exacerbated by the fact that DFS involves important financial transactions and, therefore, the comfort level required is even higher than for less important services (e.g., text messaging). GSMA's finding that a gender gap exists before the time of registration with more men than women registering but that this gap disappears once registration is complete shows the evolution of women's technical understanding through use. Once registered, women were found as likely as men to try the service and become regular users (defined as users who have initiated at least one transaction a month) or power users. Women were found less likely to use the service as frequently as men and transact at lower amounts than men, which may prevent them from reaping the full benefits of the service.⁵⁶

Trust Attribute 5: Peer Acceptance Helps Women Break Trust Barriers Even When Technical Understanding is Low

As previously noted, women tend to exist in horizontal networks. They spend most of their time with peers who share common social and financial experiences. For many, the primary financial services exposure is through village savings and loan associations (VSLAs). These organizations are based on peer acceptance and peer monitoring. It can be inferred that for women, peer acceptance greatly increases trust levels for a service. Observing a peer have a positive experience with a DFS product greatly influences the acceptance of that product and increases the likelihood that other cohorts will also adopt that service. In this case, peers are not just friends; they may include other people with whom women interact with in relatively "equal" terms who use DFS, such as sellers in local markets.

Peer Acceptance through the Gender Lens

A survey conducted by Airtel Money in Malawi indicated that a word of mouth recommendation from a friend was the most important factor in influencing a decision to subscribe to mobile money. The survey further indicated that the reason such a recommendation was so effective was that it indicated that not only was the service valuable, but that the service was also understandable. Although the Airtel survey did not contain disaggregated gender information, anecdotal information obtained from the former Director of Airtel Money Malawi indicated that women are more influenced by a friend's recommendation than men.⁵⁷

54 <https://www.cnet.com/news/kenya-mobile-money-vodafone-mpesa-10-years/>.

55 Penicaud Scharwatt, C. & Minischetti, E. (2014). Reaching half of the market: Women and mobile money. GSMA Connected Women Programme, 8.

56 Hernandez et al.; Zollmann et al.; N.A. (2017).

57 Interview with Francis Matseketsa, Director Airtel Money Malawi, Lilongwe, October 2016.

SECTION 4: Moving the Needle From Negative to Positive on External Variables That Influence Trust for Technology Adoption

The trust-adjusted TAM is a framework that can be used to enable organizations to engage in program design to heighten the influence of external variables to create trust in DFS. These approaches can then be tested for their impact on trust and on how they influence women's paths on the DFS customer journey from registration through active use and ultimately financial inclusion. In its toolkit on developing trust for DFS providers, the Catalyst Fund suggests providers think about designing products for the totality of a "customer's journey" to foment trust. This means understanding the customer experience at each phase along the journey, including acquisition, activation, retention, and referral. Once trust is established, the TAM focuses on two key decision elements: Perceived Usefulness and Perceived Ease of Use. These elements are quite familiar to DFS practitioners and have been the focus of service provider marketing initiatives as well as donor organization interventions.

Perceived Usefulness – Gender-specific value propositions for specific DFS services must be developed and disseminated for women to switch away from cash. This does not always mean new products designed for women only, but could be achieved through correctly packaging the terms of service or through targeted marketing communication campaigns and use of trusted advocates and peers. The service terms, however, must address documented end user needs and must be delivered in a way that meets women's financial needs and supports known trust elements (e.g., Trusted Advocate, Peer Acceptance). In some cases, existing products could be tweaked with new design features

that speak to financial needs and price sensitivity; in some markets, where no base product exists, fresh design may be needed. Whether through rational or emotional methods, the TAM advocates that a pre-condition for adoption of DFS is that the user perceives that there are significant tangible benefits associated with the new service and that these benefits outweigh the financial costs. Data from CGAP's survey of smallholder farmers in five countries reveal there is high awareness of the perceived benefits of mobile money.⁵⁸ Despite the perception of benefits the data also show low use of mobile phones to conduct financial transactions and, when used, usage patterns dominated by person-to-person (P2P) transactions and air time top-up.⁵⁹

Perceived Ease of Use – In parallel to the usefulness decision, an end user also must decide on whether the adoption is worth the effort (i.e., Perceived Ease of Use). The Ease of Use question applies both to the transition from a current approach to a new approach, as well as on-going operational requirements associated with using the product. The perceived use decision also encompasses product risk (e.g., failed or incorrect transaction). As previously noted, trust again plays a critical role in understanding the true advantages and challenges with using the new product or services. Users must have confidence both in the reliability of the product features as well as confidence in their ability to understand and use the product and the availability of product recourse. The CGAP smallholder farmer survey data show that lack of understanding of how to open a mobile money account was among the top reasons reported for not having a mobile money account.

58 96% in Bangladesh, 94% in Uganda, 83% in Mozambique, 97% in Tanzania, 73% in Cote d'Ivoire.

59 In the countries surveyed by CGAP, the percentage of smallholder farmers who had not used mobile phones for financial activities ranged from 53% (Tanzania) to 76% (Bangladesh). In Cote d'Ivoire (26/42), Tanzania (52/53), and Uganda (76/66), women smallholder farmers reported higher level of use of mobile phones to conduct financial transactions than men.



Photo by Jake Lyell

For those without an account, however, they rated difficulty to use as one of their lowest concerns for not opening a mobile money account.

It is useful to view Perceived Usefulness and Perceived Ease of Use as two sides to a scale. If usefulness is viewed as high, then consumers will overlook operational challenges or work hard to become proficient and reduce ease-of-use difficulties. If on the other hand Perceived Usefulness is marginal, then any Perceived Ease of Use difficulties will be amplified and product adoption will be stalled. The TAM notes that the individual weighing of these two elements results in an overall Attitude Toward Using. From this Attitude Toward Using internal score consumers arrive at a Behavioral Intention to Use. This means that if there is opportunity, the end user is inclined to adopt the product. The final step in the TAM is actual system usage. It should be noted that DFS has a lengthy experience with the importance of distinguishing between registered customers and active customers. In the context of this paper, the TAM may need to be

evaluated separately at different points of the consumer journey to active DFS use. The decision threshold required may vary for registration to many DFS products versus the decision process required for active usage and use of DFS beyond the common use case of money transfers (P2P). Although recent GSMA findings in Mali and Cote d'Ivoire indicate that the gender gap is higher before mobile money registration than when active users are considered, the dramatic difference between registered customers and active customers in most markets supports a separate TAM threshold hypothesis. In addition, it should be noted that although trust primarily influences pre-attitude toward use decisions, trust can be lost at any point along the TAM. As is said many times with DFS, one bad experience can erase 100 good outcomes.

The final section of this paper highlights how a TAM modified to include trust can be used to identify attributes that could enable trust and inform potential interventions.

SECTION 5:

Suggested Approaches to Using the TAM to Improve Women's Adoption of DFS

Applying the risks women perceive with DFS to the trust attributes in the TAM will help to identify specific "levers" that can be "pulled" to increase trust and, therefore, increase DFS adoption and active use. The specific attributes and degree of influence on trust in DFS will vary for women by country and by context. A coordinated and comparative approach to testing different attributes will contribute to a broader set of lessons and case studies that can be used to develop a set of tools that can be used globally to reduce the gender gap in DFS.

Although it is important to recognize differences between men and women associated with trust and DFS adoption, it is also important that gender-focused initiatives are not divorced from the broader ecosystem. As Figure 3 indicates, gender-focused initiatives must adhere to fundamental principles. In addition, they must also be integrated into the broader ecosystem. As an example, though women agents may indeed promote trust among women customers, those agents who only support women customers are likely not to be viable and could defeat many of the broader benefits that a women agent program is designed to create.

We suggest below a menu of approaches to influence the external variables of trust through investment by DFS service providers and donors who seek to advance financial inclusion and women's economic empowerment. These approaches could be tested within existing or new programs by trusted advocates such as NGOs and development organizations that implement programs to economically empower women and increase the resilience of women living in poverty.

Figure 3



Source: DCED

1. Test levers to develop trust attributes that are likely to highly influence women's DFS account registration and initial use.

Initial DFS registration and use is highly related to the trust attributes of consumer recourse and company trust. This process requires agents and trusted advocates who can explain and facilitate registration. To close the gender gap that exists before registration, interventions that increase customer empowerment and the registration process should be tested. CGAP defines customer empowerment as a "process involving interactive relationships between the service providers and their customers that build trust and strengthen customer confidence; transparency and product recourse are critical pillars of developing customer empowerment."⁶⁰

60 Koning, A. & Cohen, M. (2015). Enabling customer empowerment: Choice, use and voice. CGAP Brief.



Photo by David Rochkind, USAID

Specific interventions could include:

- Undertake gender-informed market research or diagnostics to better understand drivers of women's lack of trust, as well as other barriers, social norms, legal regulatory, economic, time use, and the like that further inhibit women's uptake and usage of DFS.
- Apply a client-/women-centered design approach to design products that meet women's particular needs.
- Continue to advocate for responsible digital finance in a gender-aware approach. This includes activities such as consumer protection campaigns to activate awareness and use of consumer complaint mechanisms. Accion's Smart Campaign is a model that could be replicated for DFS providers.⁶¹ The Campaign aims to improve industry standards across microfinance institutions by educating them on and gaining their commitment on adherence to a well-defined set of Client Protection Principles. This should go beyond complaint mechanisms to providing customers with information that helps them make informed choices within their customer journey.
- Promote and invest in effective and innovative delivery of customer service for customer feedback and consumer recourse. This should include research and evaluation that provides quantitative evidence that investment in customer service and more liberal transaction reversal practices will result in more active women customers and improved bottom-line results.
- Rewarding agents and trusted advocates for facilitating registration and account use could also create incentives to explain and support registration for accounts and early usage. DFS providers differ in how they compensate agents with some that provide compensation for registration and others only for transactions after registration.
- Assisted digitization, in which special displays are designed to explain unfamiliar processes, is one way DFS providers can help "onboard" new and mistrustful customers.

61 <http://www.smartcampaign.org/>.

2. Identify and use advocates whom women trust to reach low and unregistered users of DFS and increase company trust.

Organizations such as Grameen, UNCDF, MMSPs, and banks are increasingly using and evaluating the role that women agents can play in driving DFS use generally and by women. The Cherie Blair Foundation found that women serve as excellent mobile sales agents and are “seen as being better at selling to both men and women in most markets.”⁶² In rural settings, where formal institutions do not have as significant a reach as do informal institutions and mobile money use lags, “group participation is likely to increase localized opportunities ... facilitating network formation and information sharing.”⁶³ VSLAs or other trusted groups may, therefore, be appropriate settings to introduce a new technology to women; village agents and VSLA group leaders can play key roles in introducing new products in ways that increase trust.

Specific interventions could include:

- Increasing these efforts beyond pilot or single-country programs and analyzing the results across programs. Research can be conducted that looks at the impact the introduction of women agents has on women’s adoption and usage of DFS and whether women agents are, in fact, more trusted by women and under which circumstances.
- DFS providers investing in partnerships to leverage relationships with NGOs to find out more about their potential customers’ needs, as well as the best strategies for interfacing with them. Research shows that “trustworthiness requires intensive engagement and listening to stakeholders, even prior to the execution of the project, to understand where they are starting from.”⁶⁴ NGOs are in a good position to facilitate this type of engagement.

- Incorporating access to finance and savings through DFS into donor-funded program objectives in more programs, particularly gender-based programs, especially using new evidence as it arises. The U.S. Global Food Security Strategy for 2017–2021 notes that the rise in digital payments, including mobile money, provides tools and knowledge to invest in financial infrastructure that fits the needs of rural households, providing them with the financial tools necessary to both weather shocks and seize economic opportunity. The strategy acknowledges that “this is critical since more than two billion people worldwide—who are predominantly female and live in rural areas critical to food security—currently lack relevant financial products that would enable them to save, in order to mitigate shocks that impact consumption, and invest, in order to increase profitability.”⁶⁵

3. Invest in research to develop insights and target technical assistance to promote ease of DFS use and target communication on products that match service offerings to the financial lifecycles and needs of women.

Specific interventions could include:

- Providing technical support to service providers to increase the emphasis on below-the-line marketing activities to improve technical understanding of DFS technical mechanics and product relevance beyond P2P transfers and airtime top-up.
- Human-centered research on whether the introduction of smartphones and more user-friendly DFS applications is impacting women, and on what types of messaging, marketing, and branding most resonates with women and allows providers to build trust with them.

62 <http://www.cherieblairfoundation.org/wp-content/uploads/2012/07/Women-Entrepreneurs-in-Mobile-Retail-Channels.pdf>.

63 Peralta-Sanchez, M. (2014). Impact evaluation of a multi-intervention development project: Effects on adoption of agricultural technologies and levels of trust. Michigan State University Department of Agriculture and Natural Resource Economics.

64 Bandewar, S. et al. 2017. The role of community engagement in the adoption of new agricultural biotechnologies by farmers: the case of the Africa harvest tissue-culture banana in Kenya. *BMC Biotechnology*, 17 (28).

65 U.S. Global Food Security Strategy 2017–2021, 4.



Photo by Morgana Wingard/USAID

CONCLUSION

The benefits of DFS and the advantages digital technologies offer in terms of its ability to reach underserved communities are well documented. Why certain segments choose to adopt DFS products while others do not is based on a complex decision process, rooted in both the particulars of the product and company itself as well as in external factors, such as the regulatory environment and social norms. This paper advocates that trust is a critical ingredient for any user to decide to acquire, invest in and use a new technology of any type, and models for developing trust provide useful guides for evaluating pathways to increasing the use of DFS. The paper further asserts that for women to adopt and use DFS products, trust is an even more important lever due to a variety of factors, often driven by social norms and policy, including:

- Unpaid household responsibilities
- Lower income levels than men
- Relatively less exposure to large commercial entities
- Limited exposure to technology and limited financial literacy
- Greater general vulnerability leading to higher risk aversion

As indicated above, there are DFS-specific trust factors that have been incorporated into the TAM. This modified TAM provides a framework to better understand the decision process associated with DFS adoption and a tool to design further research and pinpoint potential interventions.



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