

# Rethinking Social Security Protection with a Digital Mindset: Cases of PSSSF and NSSF in Tanzania

Joseph Cassian Pessa

Department of Human Resource Management, Academic Directorate, Institute of Social Work, Dar es Salaam, Tanzania

## Email address:

oespessa@yahoo.com, joseph.pessa@isw.ac.tz

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**Abstract:** This study examined the use of computerized systems in Social Security Funds (SSFs) in Tanzania. The primary data used for the study were derived using structured questionnaires. Descriptive statistics was used in data analysis. Using a case study design within the quantitative approach, this study examined the types of computerized systems used in Social Security Funds. Findings revealed that the Social Security Scheme in Tanzania is undergoing transformation. It is moving towards a 'Digital Pension.' In many SSF offices computers, networks, the Internet, and World Wide Web are increasingly used to capture, process, store, and track members' remittances. More specifically, computerized systems used include Members Management Information System (MMIS), Core Fund Management System (CFMS), "Mobile Taarifa" through mobile phones, Automated Finger Print Identification Systems, Information Kiosks, self-help portal, benefits calculators and Fund Identification Management System (FIMS). They relieve members from visiting and queuing for long hours at SSF offices for a service they would get in a minute all by themselves. Computerization is mostly used for improving the process of issuing benefits. There is a need for using technology for increasing coverage. The government should encourage citizens to use mobile phones to open their pension accounts linked to National IDs.

**Keywords:** Social Security, Social Protection, PSSSF, NSSF, Pension, Tanzania

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## 1. Introduction

Formal social security system in Africa and other developing countries is a product of colonialism [1]. In Tanzania, formal social security can be traced back to the period of Germans rule (1885- 1918) and British rule (1918-1961). This is when plantations and hut tax were introduced which forced the African people either to migrate into various economic enterprises or to participate in cash crop production [2]. It was during this time that some social security measures such as pension schemes and compensation payments were introduced. Workers who were injured while performing their duties including; the distribution of food to the rural population during years of poor harvest, the provision of health services, and education for serving colonial government officials were covered thus forming a nucleus of the present formal social security system [3].

Although access to an adequate level of social protection is a basic right for all people, this right is not realized by 80% of the global population as evidenced by article 22 of the

Universal Declaration of Human Rights. Formal social security institutions have not been fulfilling their main mission of broad-based coverage of the population [4, 5, 33]. Effective coverage in Africa is estimated to be as low as 17 percent of the total population. This has prevented the continent from reaping the benefits that social protection brings [34]. Findings from East Africa Community's (EAC's) social security indicate that Uganda, Tanzania, Rwanda, and Burundi cover less than 10% of their populations as contrasted to 15% from Kenya [6]. More specifically, in Tanzania, there is limited coverage in terms of membership, scope, and access to social protection benefits. The existing schemes cover less than 1% of the entire population and only 6.5 of the labor force of the total working population. This figure referred to the old institutions of the National Social Security Fund (NSSF), Parastatal Pensions Fund (PPF), Local Authorities Provident Fund (LAPF), and Public Service Pension Fund (PSPF) which have been merged into Public Service Social Security Fund (PSSSF) and NSSF and does not include the population covered by the National Health Insurance Fund (NHIF) [3, 7, 8, 9]. Apart from the

limited coverage, the Social Security Funds (SSFs) still have the problem of inefficiency characterized by corruption, mismanagement, and untimely provision of benefits to retirees due to “missing files”. In recent years, a great deal of attention has been given to the reform of social security systems in developing as well as developed countries [10]. Empirical findings from Rwanda, Uganda, and Kenya as evidenced by an actuarial evaluation revealed that the old social security system was scattered, costly, not coordinated, and characterized by the limited application of information technologies. This negatively affected the contribution remittance process and recordkeeping which has seen retirees lose their benefits or be paid late [11, 12]. Even though this perception may be changing, for a long time the social security system in Tanzania had structural, operational, and policy weaknesses [13]. Realizing these weaknesses, Tanzania also is transforming from traditional ways of security to modern ones. Many offices in SSFs use computers, networks, the Internet, and the World Wide Web to simplify work [1, 14]. However, this use of ICT in social security schemes does not allow the government and even private companies’ offices to be directly integrated with SSFs the same way they do with LAWSON to the treasury. Despite the advancement of ICTs applications in SSF, its contribution to the improvement of service delivery is not known. There is no empirical data on the extent of the use of ICT in service delivery in SSF [33]. Hence, the aim of this study is to examine how the use of computer networks, the Internet, and the World Wide Web transforms Social Security Schemes into ‘digital pensions’ in Tanzania. Such an understanding will accord the digitization of pensions especially the integration of employers and Social Security Funds the importance it deserves. The Government offices will be able to integrate their social security obligation with the SSFs. Thus, they will be able to upload new pensioners directly into the digital pension systems. In this way, they will increase coverage and enable people to use Digital Pension Accounts, mobile wallets, and mobile phones to open their pension accounts that are linked to their National IDs.

## 2. Statement of the Problem

In Tanzania, despite the increased use of ICT, government offices are not integrated with the Pension Department and do not upload new pensioners directly into the SSFs’ digital pension systems. Still, pensioners’ documents from their offices are submitted manually to the Pension Department. Also, in SSFs, there is a notable inadequacy in terms of using ICT for the management of members’ contributions records. Retirees, especially those who worked in different organizations for different years, face difficulties in reclaiming their contributions after retiring from work due to improper management of information about the members’ contributions. Despite the digital pension platform, the majority of people lack access to pension schemes where they can send their remittances as their retirement savings. Citizens’ use of their mobile phones to open their digital pension accounts that are linked to their National ID is non-existent. This is mainly due to a lack of support and awareness by top

management of the importance of ICT in improving social security coverage and records management. Political interference, lack of a records management program, and adequate funds, which result in the low application of Information and Communication Technologies are other hurdles [15, 18]. All these problems have their basis in the existing social security policy which is not elaborate enough to guide the effective functioning of the industry. Moreover, there are some structural, operational and policy weaknesses inherent in the social security system [1]. This clearly demonstrates the need to study the problem. This study, therefore, examined the use of computerized systems in managing members’ contribution information in Social Security Funds in Tanzania.

### *Objectives of the Study*

- 1) To examine the use of computerized systems in managing members’ contributions information in Social Security Funds (SSFs) in Tanzania.
- 2) To identify types of computerized systems used in Social Security Funds (SSFs) in Tanzania.

## 3. Literature Review

### *3.1. History of Social Security in Tanzania*

The formalization of social security can be traced back to the early 1940s when the Government Employees Provident Fund (GEPPF) which covered colonial masters was formed in 1942. This was followed by the establishment of the Local Authorities Provident Fund (LAPF) in 1944 which covered Africans who worked in the colonial government. Later in 1964, the National Provident Fund (NPF) which covered workers in the private sector was formed [2, 3]. In 2002 it was changed into the current National Social Security Fund (NSSF). In 1978, the Parastatal Pension Fund (PPF) which covered employees of government parastatals was established. This was after the Arusha Declaration which nationalized privately owned entities. In 1999 Public Service Pension Fund (PSPF) which covered central government employees was formed. This replaced the Pension Ordinance Act of 1954. In 2008, the Social Security Regulatory Authority (SSRA) was formulated to monitor and regulate the sector. The latest transformation in the social security sector in Tanzania occurred in 2018 which merged all the SSFs into two namely; Public Service Social Security Fund (PSSSF) covering the public sector and National Social Security Fund (NSSF) which covers the private sector [19, 20].

As pointed out above, each of these schemes covered a particular group of employees. Despite the good intention, the SSFs in Tanzania still cover very few people. The majority of self-employed and informal sector employees remain uncovered with any form of social protection. Just like South Asia, experiences across Africa in countries such as Uganda, Kenya, and Rwanda to mention just a few shows that over 90% of its citizens are excluded from pension schemes. These include farmers, workers in the private sector, domestic workers, and non-salaried individuals [20, 21]. The implication

here is that many people are vulnerable to economic and social security given the increased life expectancy, declined fertility rates linked to improved health systems, and poverty reduction. This means there is a projected growth in the number of older people over the next thirty years. Significantly, this will cause challenges at the individual economic level in terms of old-age poverty.

### 3.2. Challenges Facing SSFs

The world over, after retirement, all officers who have been working in pensionable offices are entitled to a pension. This is their retirement income. The pension industry forms one of the significant social security. Unfortunately, in many countries, there is a low level of retirement savings, with the majority of employees lacking access to pension schemes where they can send their remittances as their retirement savings. The majority of people are still not saving for their sunset years thus becoming prone to old-age dependency and old-age poverty. Apart from the challenges of increasing the retirement benefits coverage both in the formal and informal sectors, pension schemes around the world are also increasingly experiencing other problems like corruption, inefficiency in the Pension Department, and delay in payment of pension. Due to corruption, politicians are misusing pensions through politically driven investments [22]. Realizing this, some governments around the world are doing several reforms to improve pension schemes including automating the process of public pension and increasing transparency [23, 24].

### 3.3. Use of Digital Systems in Social Security Funds

Social Security Schemes are using Information and Communication Technology in their operations. In almost every office, starting from the reception to the office of the Director General, there is a computer that is being used and thus reducing the use of paperwork. Most offices are connected to Local Area Networks (LAN) and Wide Area Networks (WAN) which allow them to communicate and reduce unnecessary physical movement. Particulars and the number of customers who visit the office are captured on the computer [21]. Experience from Rwanda shows that it has launched a digital pension scheme locally known as '*Éjo Heza*' literally meaning a brighter future in English. Using their mobile phones and mobile money wallets people are able to open digital '*Éjo Heza*' accounts and contribute to long-term savings. The '*Éjo Heza Account*' is linked to a member's unique National ID. Members use either their National IDs, mobile phones, or computers to activate their '*Éjo Heza Accounts*.' How much and when they want to contribute and save is upon them to decide depending on their cash flow. Contributions are made using mobile wallets, bank accounts, and debit or credit cards [20]. The implication of this is that by using technology pension schemes will be able to radically improve comprehensive coverage of the pension program. In this way, the next generation of old people will lead a financially secure and dignified retirement and mitigate the

risk of old-age poverty. '*Éjo Heza*' is a good model of digital pension inclusion that uses technology to enhance financial inclusion. Governments across the world including Afghanistan, Kenya, and Uganda, to mention but a few, are changing their pension schemes from manual to modern, computerized systems. Government employees are trained in digital pension systems. Pension authorities are becoming more responsible and efficient. Using the electronic systems, employees in the Pension Department can now manage the workload easily and reduce bureaucracy. Eligible pensioners are registered and are biometrically verified. They no longer need to make follow-up visits to the Pension Department to receive service. The lengthy certification process has been reduced to shorter and more efficient reviews. The pension administration system has been more transparent while '*ghost*' pensioners and other irregularities are eliminated. In digital systems, pensions are paid on time and the Pension Department is able to account for every withdrawal or deposit of money at a twinkling of an eye. Corruption has been eliminated. The government offices are electronically connected to the Pension Department and can upload new pensioners directly into the system. In the past, pensioners had to submit their documents from their offices to the Pension Department. When the system was manual there was room for corruption. Some people took their pension twice. There were incidences of '*ghost*' workers. The computerization of the public sector pension system has significantly improved the administration of government pensions [23, 25].

### 3.4. Theoretical Framework

This study was guided by Resource Based View (RBV) propounded by Penrose [37], a theory that links ICT and the performance of organizations. Drawing from the theory this study explored how ICT as a strategic resource, given its various applications in companies, was sufficiently used to enhance performance in SSFs. Specifically, this study explored how General Purpose Technologies (GPTs) including widely used ICT tools such as mobile telephones, computers, Internet, and social media, and Enabling Technologies (ETs) such as cloud computing, artificial intelligence, and information systems [36] were used to generate, save, operate, transmit and even access information in SSFs. Mobile telephony is one of the most widely used GPT tools ever. It can provide transformative opportunities to users, particularly access to the Internet [35]. This study looked at how ICT-related GPTs, for example, smart devices (phone/computer), Internet, and social media help retirees to access online networks which in turn help them to be connected with their respective SSF. According to RBV, digital technology as a strategic resource determines a company's superior performance in service delivery.

## 4. Research Methodology

### 4.1. Area of the Study

The study was conducted in PSSSF and NSSF offices in

Dar es Salaam. These areas were selected based on the fact that they have computerized their offices across the country. Dar es Salaam has been chosen because, in terms of technological advancement, it has the highest ICT developments compared to other regions in the country. Despite the increased use of ICT in SSFs in Tanzania, no similar study has been carried out in the area under study.

#### 4.2. Populations of the Study

The population of the study comprised of SSF employees and Pensioners residing in Dar es Salaam. The pensioners constituted the core populace of the study.

#### 4.3. Sampling Technique

In this study, random sampling was used. The rationale for choosing random sampling was to ensure that all the respondents have equal chances of participating in the provision of data without bias. A multi-stage sampling procedure was used in selecting the respondents for the study.

Stage 1: All the two Social Security Funds of PSSSF and NSSF were included in the study.

Stage 2: SSF staff and pensioners from the two funds were then randomly selected from the TANGE Seniority list and a list of retirees in each SSF.

Stage 3: Sixty (60) PSSSF and NSSF staff plus retirees were then randomly selected from both SSFs from which data were collected for the study.

Sample size: A total number of 60 respondents were selected for the study. Out of which 24 were SSF staff and 36 were retirees (Table 1).

#### 4.4. Data Processing, Analysis, and Presentation

This research was basically quantitative. Data analysis was done by using descriptive statistics whereby frequencies and percentages were calculated. Statistical Package of Social Science (SPSS) software version 17 was used to enter and analyze data quantitatively. Prior to data entry and analysis, the questionnaire was carefully coded. To check consistency in data entry, a frequency run was carried out for all variables to check any values that may have been entered wrongly and inconsistently. Data were presented by using frequency distribution tables. Percentage and mean scores were also used to describe variables and ascertain the use of computerized systems for managing members' remittance records.

## 5. Results

### 5.1. Respondents' Demographic Information

Respondents' age ranged between 26 and 70 years, with a mean age range of 49 years. The majority (67%) of the respondents were aged between 55 and 70 years. 33% of the respondents were aged between 26 and 45 years. Of these, 58% were females and 42% were males. Overall, 60% of all the respondents were pensioners. Out of which 21 were females and 15 were males. Of all the females who participated in this

study, 10 were SSF staff. Based on the data, more women than men participated. However, this was not by design, but by choice. Women were more accessible and available for interviews than men. Age-wise findings of this study imply that the majority of the respondents were old, retired, and not actively involved in production. Findings further revealed that 13% of the respondents completed primary and certificate levels of education. 13% of the respondents completed secondary education, 28% completed Diploma, 33% completed first degree and 12% of respondents completed master's degree. Of all these, 20% of the respondents were retirees who had Diploma, first degree, and master's degree level. Based on the data, the majority of the respondents had adequate education.

### 5.2. Use of Computerized Information Systems in Managing Members' Contributions Records

SSFs are migrating to digital infrastructure. Virtually, they are engaging in reforms. They are rapidly transforming and embracing the future of innovation. Increasingly they are moving to advanced technology. Mobile phones and other related smartphone technologies are used as a vehicle for receiving and disseminating information in an easy-to-read format and easy-to-use self-service portal. In both SSFs, they are doing 'Pension Digitization.' As such, members' remittance records are computerized. More specifically, as pointed out by 75% of the respondents, electronic systems are used to keep members' contributions records while 25% of the respondents revealed that the traditional and manual system is also still being used (See Table 1).

Table 1. Systems used in managing members' contributions records.

S/No	System used	Frequency	Percentage
1	Electronic	45	75%
2	Manual	15	25%
3	TOTAL	60	100%

### 5.3. Types of Computerized Systems Used in SSFs

Findings revealed SSF has installed and used several computerized systems known as the integrated Members Management Information System (MMIS) to easily track and identify members' age, names, next of kin, employment date, and the number of credits contributed. More specifically, a Likert scale was used to establish the extent (that is 1. Most often 2. More often 3. Often 4. Least Often) to which SSFs use computerized systems to improve the management of workers' contributions' records and make them available for use.

Looking at the mean, it can be concluded that Core Fund Management System (CFMS), a computerized system, is increasingly being used for capturing members' contributions as well as processing members' payments in the SSFs. It has the highest mean of 4.16. This is followed by the use of mobile phones (M=4.04). By using "Mobile Taarifa" customers get information about their contribution balance through their mobile phones. It was also noted that Automated Finger Print Identification Systems- the biometric systems configured in Information Kiosks (M=4.02) are being used in SSFs.

Additionally, online services and Member Portal (M=3.75) are provided and used in SSFs. Members who have e-mails log in and view their statements by using the online statement. Moreover, users use the website and members' self-help portal to access and download different forms for registration, contribution, claim, and retirement benefits online.

On probing further, it was revealed that to fast track service delivery and communication, PSSSF has invested in Information and Communication Technology (ICT), through PSSSF 'Kiganjani' and PSSSF 'Popote Ulipo Mtandaoni-' literary meaning PSSSF Wherever You Are Online. It has also installed a PSSSF Member Portal- a system that enables the Member and Retiree to get various information about the Fund, this includes their personal information and the contributions submitted by their employer. For the Retirees, Member Portal enables them to review or audit their information. The PSSSF Billing Portal, on the other hand, enables the employer to make various payments.

Because of the increased computerization, customers use the Fund's Identification Management System (FIMS) (M=3.60) for accessing the information on their accounts electronically. This system was introduced in 2010 and now has become fully operational. The system relieves members from the problem of visiting SSF Offices or queuing for long hours at SSF offices for a service they would get in minutes all by themselves. Retirees also use a benefits calculator with the formula to calculate their contributions (See Table 2). The use of computerized systems has significantly improved the process of issuing benefits. From the date they received the particulars of the retired employees from their employers, SSF only takes less than three months to remit pension- lump sum amount to the retirees. Delays occur only when employers submit incomplete members' particulars. The above findings show that SSFs are reforming and automating their functions from manual to modern-computerized systems.

**Table 2.** Computerized systems used in SSFs.

S/N	Type of Electronic System	Mean	SD	Rank
1.	Core Fund Management System	4.16	1.162	1
2.	Mobile phones	4.06	.930	2
3.	Automated Finger Print Identification System	4.02	.941	3
4.	Online Services and Members Portal	3.75	1.056	4
5.	Website	3.70	1.350	5
6.	Fund's Identification Management System	3.60	.925	6

## 6. Discussion of Findings

Findings revealed that computerized systems such as Automated Finger Print Identification Systems are used in SSFs. The findings are in line with the study by Barozi [26] that because of using these biometric systems members are given smart cards to be used for accessing their information in the "info-kiosks". It was revealed further that these Information Kiosks are self-service terminals placed strategically in high-profile public areas where they provide easy access to information and remote services for many hours. KIOSKS help members to book appointments with their relevant inspectors for specific requests, avoiding the waiting process in long queues [26]. This correlates with Techno Brain's findings that the information KIOSKS act as virtual officers and inspectors, extending the reach of the traditional deskbound service to the members. They use an in-built biometric-based security feature to prevent misuse of services by non-members and protect the privacy of confidential member information. The KIOSKS are equipped with the smart-card reader and fingerprint scanner used by members to validate and authenticate their identity before being able to access their accounts. Realizing this, SSFs are replacing old membership cards with electronic ones by visiting their members at their respective workplaces. Employers' records in connection with employment, payroll, wages and remittance of contributions to the Fund are well managed to avoid inefficient service delivery and delays in the timely payment of members' benefits including pensions to retired

workers. Also, these systems provide members with easy access to information like statements, employers' remittances of employees' contributions to the Fund, and general information about the Fund without involving SSF workers. This is a self-service module. The biggest advantage of this system is that employees whose contributions were not remitted to the Fund would be able to make quick follow-ups with their employers before it got too late. Experience shows that some employers deduct money from their employees' salaries for SSFs contributions but don't take the money to the respective SSFs [27]. This correlated with the operational guide by the NSSF Director of Information Technology that the new technology, already in use in more than 11 countries in Africa, is widely expected to cut the incidence of inefficiency mainly the perpetually "missing files", corruption and mismanagement commonly affecting national social security funds [28-29].

Furthermore, the findings above confirm earlier studies by ISSA and PPF that Social Security Organizations in Africa are now at the forefront of innovative use of the web, mobile phones, and electronic banking technology [14, 30]. More specifically, SSFs in Swaziland and Morocco have introduced web systems to collect contributions from employers and to enable members to access information regarding their contributions online. Clearly, by using a transactional web server the Moroccan Collective Scheme for Retirement Allowances (CSRA) enables over 60% of its clients to use the Web for transactions and the submission of their claims online [31]. In Tanzania, these findings are consistent with those of the NSSF Operational Guide [28]. Customers now use website

visitor, without the need to register, to submit complaints and receive e-mail confirmation. The relevant department within NSSF handles the complaint and replies as soon as possible. The website and the members' self-help portal and the benefit calculator are used by customers to calculate their contributions online. The website also helps members to open electronic accounts and thus access information regarding their membership and their monthly remittance. It is evident that ICT enables customers to access and download different forms for registration, contribution, claim, and retirement benefits. All these attest to the fact that SSF uses cutting-edge technology to enable members to access information regarding their contributions. It was observed that technologies can enable SSF to curtail problems related to managing and reaching clients who are geographically dispersed.

Findings also showed that customers in SSFs use *Mobile Taarifa* to get information about their contribution balance through their mobile phones. These findings relate to ISSA and PPF studies that the Pension Funds in the United Republic of Tanzania and the Ugandan National Social Security Fund (NSSF) have introduced the members' access to their contribution balances online and by using SMS [29, 30]. Mauritania's National Health Insurance Fund (NHIF) in partnership with the Mauritanian Postal System, telecommunication operators, and the University of Aix-Marseille, uses SMS to reimburse its members and issue contribution statements electronically. Clients access their statements daily through electronic channels. Similarly, in the United Republic of Tanzania through the *TAARIFA* system, SSF members access services 24 h a day, seven days a week, regardless of their geographical location. By using PPF *Taarifa* members can view their contribution records, claims processes, and pension payments through their mobile phones and computers. Generally, SSF members indicate that they consider services through electronic channels to be quicker, cheaper, convenient, and customer-friendly. Mobile phones and social media are increasingly used in Africa. They, including other electronic technology which offer alternative methods of delivery that can help overcome geographical and infrastructure constraints [28].

The above findings are also in line with the findings from Cameroon and Algeria where SSF members can now request, make declarations of salaries and make contributions and access their Online Statements just online. Similarly, Social Security in Mauritius compels employers to file contribution returns and make payments online. Similarly, the SSF in Uganda introduced online applications for benefits. Members access their contribution balances and handle the claims process online. These, have substantially cut down the benefits processing time in the SSF from 105 days to 18 days [14].

Based on the data above, it is clear that SSFs have been strategically modernizing their ICT infrastructure to facilitate quality and efficient service delivery to their members against global benchmarks. As part of the ICT integration project, SSFs have successfully completed a major information

technology systems upgrade project covering the installation of Information Kiosks and Core Fund Management Systems (CFMS). They have also established a Directorate of Information Technology or Information Technology Unit with a data processing hub for the fund. The Directorate of Information Technology is expected to enhance SSFs' service delivery capacity through systems and process automation. This view was also shared by GEPF [32] that SSF has also established information technology units to guarantee the provision of quality and timely social security benefits through the use of modern information and communication technology. With the use of these systems, SSFs have scaled up their members' identification methods and records management. With the integration and modernization of the funds' ICT infrastructure, SSFs are systematically making a historical shift from the inefficient SSFs of yesteryear to modern Social Security Funds, which provide value to their members through centralized modern IT systems. NSSF has been actively stepping up its ICT infrastructures. The new and extraordinary use of Information and Communication Technology (ICT) in record-keeping comes primarily to reduce the pending files of beneficiaries demanding their pension money [28].

## 7. Conclusion

Based on the findings it can be concluded that SSFs use a state of the art technology such as computerized systems and well-trained staff to easily track, identify, capture as well as process members' payments. More specifically, key findings of this study revealed that computerized systems are used to manage and preserve members' contributions records. Not only do the Funds have installed and use an integrated Members Management Information System (MMIS) for easily tracking and identifying members' age, names, next of kin, employment date, and the number of credits contributed but also Core Fund Management System (CFMS) for capturing members' contribution as well processing members' payment. Also, SSF uses SMS to issue contribution statements electronically and members now have started using smart cards in the "info-kiosks."

## 8. Recommendation

Government offices should integrate their social security obligation with the SSFs. They should upload new pensioners directly into the PSSSF and NSSF digital pension systems. To increase coverage, SSFs should encourage people to use Digital Pension Accounts and mobile wallets and use their mobile phones to open their pension accounts that are linked to their National IDs. SSFs should ensure the sustainability of the computerized systems to easily track, identify, capture, and process members' payments and keep members' records. Although there are several challenges facing the Fund and its customers, SSFs should turn those challenges into business opportunities and develop strategies to overcome them and render better services to the members.

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