**Final Report**

# Digital Challenges and Opportunities for Agribusiness Enterprises in Cambodia: Implications for the Cambodian Economies

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# List of Abbreviations

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|---|---|
| AIS | Agricultural Input Supplier(s) |
| AMIS | Agricultural Market Information Service |
| AMO | Agricultural Market Office |
| BB | Battambang province |
| DFAT | Department of Foreign Affairs and Trade |
| ICT | Information and Communications Technology |
| KD | Kandal province |
| MAFF | Ministry of Agriculture, Forestry, and Fisheries |
| MEF | Ministry of Economy and Finance |
| PDAFF | Provincial Department of Agriculture, Forestry, and Fisheries |
| PV | Prey Veng province |
| RGC | Royal Government of Cambodia |
| SME | Small Medium Enterprise |
| SNEC | Supreme National Economic Council |
| SR | Siem Reap province |
| TB | Tboung Khmum province |
| TK | Takeo province` |

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# Executive Summary

**Background and objective:** Digital technology plays an important role in enabling economic growth, especially in creating significant impacts on job creation and labor market structure in Cambodia. This results in a pressing need to conduct an empirical analysis of the potential effects of digitalization in Cambodia, particularly on e-payments and e-commerce for business transactions. To contribute to the process of formulating a digital economy policy framework, the study provides an empirical assessment that will address some of the shortcomings that can potentially impact the uptake of digital economy. The study aims to analyze the current challenges and opportunities for agricultural input suppliers in adopting digital payment and e-commerce for their business transactions and to identify their implications for the Cambodia economy.

**Method and tools:** This study relies exclusively on secondary sources, policy reviews, complementary interviews, and enterprise surveys. Primary data collection was conducted in two phases in six major provinces in Cambodia via either face to face or phone interview. A total sample of 215 Agricultural Input Suppliers (AIS) was collected for the analysis.

**Policy and regulatory framework:** Key relevant laws related to e-commerce and digital payment have been implemented in Cambodia such as the 2015 law on telecommunications, the 2019 e-commerce law, the 2019 consumer protection law, and the draft cybercrime law. To advance the digital economy agenda, the government of Cambodia has formulated a working group to draft a digital economy policy led by the Supreme National Economic Council (SNEC) under the directions of the Ministry of Economy and Finance (MEF). Other ministries with significant in promoting digitalization are:

- Ministry of Commerce (MOC) leads in policy and regulatory development related to e-commerce and consumer protection laws;
- Ministry of Agriculture, Forestry and Fisheries (MAFF) leads in the formulation of policies and strategies for market development and agricultural marketing system;
- Ministry of Posts and Telecommunications (MPTC) leads regulators in ICT and internet development and provide an enabling environment for digital adoption; and,
- National Bank of Cambodia leads in regulations and projects development to develop FinTech in Cambodia.

**Initiatives of private sector and international organizations:** Private sector and NGOs such as Spien, Agribbuddy, AMK, Konrad Adneuer Stiftung, Oxfam, Feed the Future of Cambodia HARVEST II, IFAD, CAVAC, and USAID have implemented relevant programs to promote the uptake of e-commerce and digital payment in agribusiness in Cambodia. Likewise, there are key Internet actors to provide quality Internet services and coverage, and different banks have facilitated gateways for digital payment and e-commerce.

**Adoption of digital payment:** Access to financial services is not only identified as an enabler for poverty eradication but also plays a critical role in promoting the uptake of digital payments in Cambodia. The result of this study indicates a meager percentage of surveyed AIS implementing digital payment in business despite the progressive improvement of digital infrastructure and significant support interventions in the sector. The research shows that 90% of the surveyed AIS own a smartphone and have access to the internet either via mobile or Wi-Fi internet. Moreover, more than 80% of them experienced good quality of mobile and Wi-Fi internet. Among those who have access to the internet, 68% of them know how to search for information online; however, only 42% are interested in searching for agricultural-related information from online sources. Although 55% among

all surveyed AIS have access to formal financial services, and 23% of them used digital payment for business transactions, only 39% of them have installed mobile banking apps.

**Challenges and opportunities for adopting digital payment:**

Almost 70% of surveyed AIS who do not use mobile banking apps reported not using any banking services and mainly rely on cash payment for their business transactions. Limited knowledge of the financial technologies was also mentioned by 15% of surveyed AIS. In comparison, 5% are neither interested in financial technology nor find it relevant or necessary for their business. In spite of the challenges, 42 of those who have adopted digital payment (95%) reported improving their day-to-day operations, thanks to financial technology. Reducing the risk of monetary loss and theft (by 43%) and significant improvement of the company's financial management and cash flow (by 17%) are is the most important advantages of adopting digital payments in business operations as raised by AIS.

**Current state of E-commerce:** The level of e-commerce adoption among surveyed AIS is extremely low, accounting for only 7% of 225 surveyed AIS. The product sale and customer communication activities are mainly performed through Facebook and Messenger, while only one surveyed AIS use *Tonlesap App* for product display and sale. Facebook is the only means for marketing communication and online sale as it has become immensely popular among the general public in Cambodia. Moreover, the conventional websites are not popular amongst the surveyed AIS. Only three surveyed AIS have a company website. However, respondents exclaimed that the contents of their company websites are extremely limited only to the company's profile, product display, or technical description of the products. Unfortunately, product ordering, pricing information display, online communications with clients, digital payment, and online logistic arrangements are not embedded in their websites.

**Challenges and opportunities for adopting e-commerce**

E-commerce in the agricultural input business is relatively primitive and is underdeveloped. However, there is significant untapped market potential in the sector, driven by higher penetration of smartphones, improved internet infrastructure, the availability of many digital payment services, and a young growing middle class in Cambodia. E-commerce provides a substantial opportunity to streamline the agricultural value chain, reduce multiple intermediaries and transaction costs, improve transparency and accountability, and open access to wider markets. E-commerce development is an emerging opportunity in Cambodia because it has the potential to generate significant social and economic benefits, improve farmer livelihoods, boost productivity, and improve digital and financial inclusion in rural areas.

**Conclusion and recommendation:** The uptakes of digital financial services and e-commerce have been extremely limited among the surveyed AIS despite strong initiatives and the progressive improvement of these supporting digital infrastructures, the growth of affordable technologies, tools, and increased device ownership, particularly smartphone. These advances, however, have not been harnessed effectively to support the application of technologies for business transactions. The study concludes that the divide is no longer about access or not to technology, but rather about fluency or knowledge in using it effectively. Thus, the following are key recommendations stemming from the study findings:

- **Strengthen the enabling regulatory environment** by shortening the process for business registration and speeding up the licensing processes. These reforms will motivate more players in the sector and create a level playing field for all actors, including formal and informal enterprises, to fairly compete in the marketplace.

- **Improve access on quality digital infrastructure in rural areas** by investing in digital infrastructure development in rural coupled with focus on developing rigorous e-commerce ecosystem to create new business opportunities in the agricultural sector.
- **Focus on developing digital skills and improve digital literacy**. A digital literacy framework that integrates an inclusive literacy model should be developed to address the whole spectrum of digital literacy development in Cambodia.
- **Develop agriculture e-commerce framework.** Agriculture e-commerce framework should be developed, focusing on reshaping agriculture production, promoting trade exchange platforms, and improving markets and sales over the internet
- **Invest in viable services that create impacts:** Donors/society/investors should invest in the agriculture e-commerce business and start-ups, which can potentially generate both social and economic impacts. Additionally, they should engage private sector actors, especially apps to work directly with AIS and farmers as they have skills, experiences, and resources in the sector.
- **Invest more in incubators and acceleration programs:** Further investment and promotion of incubators and acceleration programs should be developed to inspire the current entrepreneurs and innovators in the sector.

# 1 Introduction

## 1.1 Background

Business digitization has been strongly a growing phenomenon in Southeast-Asian countries. In Cambodia, this trend is already pointing to potential impacts on job creation and the labor market structure. Such digital transformation will inevitably support a new model of economic growth to realize Cambodia's long-term vision of becoming an upper-middle-income country by 2030 and a high-income country by 2050.

In response to this trend , the Royal Government of Cambodia (RGC) has announced its plan to transform the country into a digital economy by 2023. To prepare for this plan, the RGC has developed relevant strategies, policies, and regulations for the purpose of this digital economy transformation purpose.

RGC has laid out in the Rectangular Strategy Phase IV which provides for the economic diversification in the Rectangle 2. Preparation in readiness for the development of a digital economy and Industry 4.0 is also recognized in Rectangle 3 of the strategy. The RGC has recognized the importance of the digital economy as the key driver of the growth, which will result in the creation of new jobs and businesses, providing an excellent opportunity for Cambodia to improve its economic structures (RGC, 2018).

At the same time, RGC has developed the Information and Communication Technology (ICT) Master Plan 2020 and ICT Development Policy 2020 to provide a roadmap for further policy development, coordination frameworks, and institutional arrangements for ICT development.

On the regulatory side, RGC enacted the Law on Electronic Commerce and the Law on Consumer Protection on 02 November 2019. These two regulatory measures aim to regulate domestic and cross-border e-commerce activities and to provide protection measures for consumers.

It is believed that rigorous digitization of the economy will drive innovations, spur entrepreneurship, create job opportunities, foster economic growth, and transform Cambodia's economic landscape. Despite these benefits, there could also be some negative consequences to those users of digital technologies. However, to guide this process there has been a lack of empirical analysis of the potential impacts of digitalization in Cambodia, particularly on e-payments and e-commerce for business transactions, and especially for agricultural input businesses.

Very little is known of the number of existing establishments who have applied digital payment and e-commerce for their business operations. Additionally, the extent to which extent the agricultural input suppliers have benefited from the current government policies and intervention programs of the governments about digital payment and e-commerce has not yet been studied.

## 1.2 Study objective

This study aims to conduct an empirical assessment of current challenges and opportunities for agricultural input suppliers to adopt digital payment and e-commerce for their business transactions and identify its implications for the Cambodia economy.

Based on this objective, the study will extensively review relevant government policies, legal frameworks, and key programs to identify the outcome of their program invention measures in promoting the uptake of digital payment and e-commerce in Cambodia.

To understand how digital payment and e-commerce are supported, the study will identify key stakeholders, including regulators, private sectors, and development partners working in this sector. The current status of agricultural inputs suppliers applying digital payment and e-commerce for their business transactions will be analyzed in order to identify to what extent they can benefit from digital technology and what can be improved to better their business situation. The study will also review whether the existing support system is conducive to the uptake of digital payment and e-commerce among agricultural input suppliers.

# 2 Methodology and Scope of Study

This empirical study employs qualitative and quantitative approaches to document challenges and opportunities for the uptakes of digital payment and e-commerce for business transactions amongst agricultural input suppliers.

To assess to the extent to which agricultural input suppliers have benefitted from the current policies, legal framework, and program interventions of RGC and key stakeholders, and to identify challenges and opportunities to promote digital technology, the study applies the following approach: i) policy review and stakeholder mapping; ii) Key Informant Interview (KII); iii) phone interview; and iv) enterprise survey.

## 2.1 Policy review and stakeholder mapping

To gain a comprehensive understanding of the extent to which the government has given her attention to support and promote the uptake of digital payment and e-commerce among agricultural input suppliers, the study team compiled and reviewed existing policies and legal frameworks, including the Rectangular Strategy IV, the Industrial Development Policy 2015-2025, other policies and program documents of developments partners and key actors in the sector.

The review of the current legal framework, including the Law on Electronic Commerce and the Law on Consumer Protection, was conducted for the following purposes:

- to discover how digital payment and e-commerce are supported;
- to identify key stakeholders including regulators, private sectors, and development partners who have been working in this sector; and
- to review the supporting ecosystem if its conducive for this uptake of the digital technology among agricultural input suppliers.

## 2.2 Key Informant Interview (KII)

This study also employs in-depth interviews with relevant stakeholders include regulators, private firms, and civil society organizations, to capture as many data sources as possible for analysis.

The research team approached representatives from the Department of Agricultural Legislation (DAL) and the Provincial Departments of Ministry of Agriculture, Forestry, and Fisheries

(PDAFF) to get updated data of existing registered agricultural input suppliers in each province. This data is used to explore the current state of agricultural input suppliers in Cambodia. The enterprise survey aims to identify the challenges and opportunities of agriculture input suppliers in adopting digital payment and e-commerce in their business transactions.

A stratified sampling method was applied for the survey. The selection of districts/provinces was made based on geographical location with a large production area for rice and vegetables, numbers of input suppliers, and existing infrastructure to support digital payment and e-commerce. Once the geographical location is identified, the AIS respondents were clustered based on the geographical area in each province and were randomly selected for the interview.

A criterion for selected AIS respondents were developed prior to the fieldwork, and all surveyed AIS were verified against the criteria list before being chosen for the interview. Only large and medium enterprises were selected for the study.

A 12-page structured questionnaire in the local language (Khmer) was used to capture the following data (1) Overview of supporting infrastructure for digital payment; (2) current state of digital payment adoption; (3) payment methods of agricultural inputs suppliers for business operation; (4) challenges and opportunities for adopting digital payment; (5) current status of e-commerce adoption; (6) barriers against and opportunities for adopting e-commerce in business transactions.

gives a summary of the key informants selected for the data collection.

## 2.3 Phone interview

This study used the phone interviews with agricultural input firms registered in MAFF as suppliers in the value chain to explore their adoption of digital payment and e-commerce with their clients.

According to MAFF (2019), there are 107 registered agricultural input firms in Cambodia. The research team contacted 80 out of these 107 firms for phone interviews. Among these 80 firms, 13 firms rejected to be interviewed, 27 firms could not be reached due to changes in contact information and firm address, and 40 firms accepted the phone interview. Out of these 40 firms interviewed, 65% are local companies, and 35% are international companies.

**Table 1:** Numbers of key informants interviewed for the study by sectors

| Type of respondents | Numbers | Interviewed Date |
|---|---|---|
| **Public sector** | **09** | |
| Department of Agricultural Legislation, Ministry of Agriculture, Forestry and Fisheries (MAFF) | 01 | October 01, 2019 |
| Agricultural Market Office (AMO), Dept. Planning and Statistics, MAFF | 01 | October 03, 2019 |
| Tboung Khmum (PDAFF) | 01 | December 05, 2019 |
| Battambang PDAFF | 01 | December 09, 2019 |
| Prey Veng PDAFF | 01 | March 12, 2020 |
| Kandal PDAFF | 01 | March 20, 2020 |
| Takeo PDAFF | 01 | March 25, 2020 |
| Siem Reap PDAFF | 01 | March 30, 2020 |
| Under-secretary of State, Ministry of Commerce | 01 | October 07, 2019 |
| **Private sector/civil society** | **03** | |

| Type of respondents | Numbers | Interviewed Date |
|---|---|---|
| Tonlesap App, AMK Microfinance Institution Plc. | 01 | October 04, 2019 |
| Department of Product Development and Department of Marketing, Agribuddy | 02 | October 4, 2019 |
| Development partners/NGOs | 02 | |
| Co-founder of Spien | 01 | October 11, 2019 |
| Feed The Future Cambodia Harvest II | 01 | October 08, 2019 |
| **Total** | **14** | |

## 2.4 Enterprise survey

The enterprise survey aims to identify the challenges and opportunities of agriculture input suppliers in adopting digital payment and e-commerce in their business transactions.

A stratified sampling method was applied for the survey. The selection of districts/provinces was made based on geographical location with a large production area for rice and vegetables, numbers of input suppliers, and existing infrastructure to support digital payment and e-commerce. Once the geographical location is identified, the AIS respondents were clustered based on the geographical area in each province and were randomly selected for the interview.

A criterion for selected AIS respondents were developed prior to the fieldwork, and all surveyed AIS were verified against the criteria list before being chosen for the interview. Only large and medium enterprises were selected for the study.

A 12-page structured questionnaire in the local language (Khmer) was used to capture the following data (1) Overview of supporting infrastructure for digital payment; (2) current state of digital payment adoption; (3) payment methods of agricultural inputs suppliers for business operation; (4) challenges and opportunities for adopting digital payment; (5) current status of e-commerce adoption; (6) barriers against and opportunities for adopting e-commerce in business transactions.

The research team conducted the enterprise survey in 24 districts in six provinces, namely Tboung Khmum, Battambang, Kandal, Prey Veng, Takeo, and Siem Reap. A total of 225 agricultural input suppliers in the five surveyed provinces were interviewed. The data collection for the survey was conducted in two phases—the first phase started between 16-27 December 2019, and the second one was conducted from 20 March to 27 April 2020.

In the first phase, a face-to-face interview method was employed for the entire enterprise survey. There was a total of 180 registered agricultural input suppliers, including small and large enterprises in Tboung Khmum and Battambang provinces, according to an updated list obtained from the Provincial Department of Agriculture, Fisheries, and Forestry in the two provinces.

In the second phase, the research team applied the face-to-face interview method and the phone interview method. In total, 129 interviews with AIS were conducted in this phase. The research team completed only 73 face-to-face interviews with AIS at their location, including 28 interviews in Kandal province and 45 interviews in Prey Veng province.

After the RGC introduced public health measures on the Covid-19 pandemic in Cambodia, the research team applied the phone interview method instead of the face-to-face interview with AIS in Takeo Province and Siem Reap Province. Unfortunately, many AIS in the Takeo and Siem Reap provinces refused to be interviewed by phone. Hence, the research team expanded

the survey coverage to other districts in the two provinces to obtain a sufficient sample size. Additional 56 AIS were interviewed by phone. Table 2 below illustrates the total numbers of selected samples for enterprise survey by districts.

**Table 2:** Numbers of selected sample for enterprise survey by districts/provinces

| Surveyed districts/provinces | No. samples | Methodology |
|---|---|---|
| ***Phase I (16-27 December 2019)*** | | |
| Auraing Aov | 9 | Face to face interview |
| Memuth | 17 | |
| Krong Tboung Khmum | 14 | |
| Tboung Khmum | 40 | |
| Moung Ressuey | 16 | |
| Thmor Korl | 18 | |
| Banon | 22 | |
| Battambang | 56 | |
| ***Phase II (20 Mar-27 Apr 2020)*** | | |
| Sa'ang | 15 | Face to face interview |
| Koh Thom | 13 | |
| Kandal | 28 | |
| Svay Antor | 23 | |
| Kampong Trabek | 14 | |
| Ba Phnom | 8 | |
| Prey Veng | 45 | |
| Samrong | 13 | |
| Bati | 5 | |
| Traim Kok | 9 | |
| Prey Kabas | 5 | |
| Takeo | 32 | Phone interview |
| Chikreang | 3 | |
| Soutr Nikom | 1 | |
| Pouk | 1 | |
| Kralanh | 5 | |
| Srei Snam | 4 | |
| Angkor Chum | 2 | |
| Varin | 4 | |
| Svay Lue | 2 | |
| Angkor Thom | 2 | |
| Siem Reap | 24 | |
| **Total** | **225** | |

## 2.5 Defining e-commerce and digital payment

Readers should note that "e-commerce" in this study applies a broad definition that refers to any part of trading or facilitation of trading transactions and the exchange of goods/services using computer mediation or electronic means. Thus, e-commerce takes place in any of these methods: (1) online product display/catalog for sale; (2) online purchase order of goods/services; (3) online payment including cash payment on delivering; (4) online coordination of delivery/logistics; and, (5) online customer services, including sale and after-sale services.

On the other hand, digital payment is technically defined as any payment method performed using digital instruments and electronic modes used to send and receive money between payer and payee. In this regard, digital payment for this study covers a wide range of methods, including debit and credit card (visa card, master union, etc.), internet banking, mobile banking, and QR payments.

## 2.6 Scope and limitation

Despite producing a significant amount of useful data, the study results reported herein are subject to several limitations.

First, only a few concerned ministries and stakeholders agreed to participate in the study. The research team contacted relevant stakeholders, including the Ministry of Post and Telecommunication, the National Bank of Cambodia, and the Working Group on Digital Economy and E-commerce on many occasions and by a variety of means. However, the research team did not receive their confirmation for interviews during the time of this study. The limited participation by these concerned ministries presents a particular challenge for the research team in attempting to make a comprehensive review of the existing support interventions from the Cambodian government and other development partners.

Second, there is also a methodological limitation in this study because of the phone interview method used to collect the data for the second phase. The phone interview method has a lower response rate and a higher rejection rate than the face-to-face interview. The surveyed AIS, who hang up before the interview, expressed the fear of telephone scams or fraud or concern about disclosure of their personal information through a telephone interview. The limited phone coverage in certain areas, lower response rates, and absence of visual or nonverbal cues to assist in the interview were another limitation to hinder more interactive interview and to obtain reliable data.

Third, the sample could speak AIS five major provinces, namely Battambang, Tboung Khmum, Kandal, Prey Veng, Takeo, and Siem Reap with only 225 samples of AIS, the finding is not readily conclusive. The finding is indicative rather than representative. Hence, the study only develops on initial understanding and basis for further investigation.

# 3 Assessment of Legal Framework and Policies on Digital Economy in Cambodia

## 3.1 Government policies and legal framework

In planning for the development of a digital economy, Cambodia has initiated, developed, and implemented several policies and legal frameworks for enabling digital business investment and digital infrastructure. Key relevant policies and regulations are summarized below.

***Rectangular Strategy for Growth, Employment, Equity, and Efficiency (mandate IV):***

This strategy acknowledges that the Industrial Revolution 4.0 (IR 4.0) will dominate every aspect of socio-economic development and trigger challenges and opportunities for the entire world. The digital economy will provide enormous opportunities for Cambodia economic structure due to increasing mobile phone and internet users (Rectangular Strategy for Growth,

Employment, Equity, and Efficiency Phase IV, 2018).

Rectangle 2 (Economic Diversification) of the government strategy focuses on logistics system improvement and transport enhancement, energy, and digital connectivity, as well as readiness for the digital economy and IR 4.0. The priority of the government is expanding fiber optic cable distribution network infrastructure, backbone fiber optic structure, undersea fiber optic cables, and modernization of mobile network coverage to ensure cost competitiveness for all people and business investment.

In preparation for the digital economy and the fourth industrial revolution, the emphasis of the government's Rectangular Strategy IV focuses on development and implementation of a long-term strategic plan for the digital economy, strengthening ICT infrastructure development, and pushing for a legal framework to support digital development to reinforce growth and prevent risks in the digital sector. The Rectangular Strategy aims to develop an entrepreneurial and digital ecosystem that is beneficial for new business start-ups. This strategy also promotes the digital business system and partnership cooperation with the private sector.

At the same time,, Rectangle 3 (Private Sector and Job Development) of the strategy puts priority on promoting small and medium enterprises (SME) and entrepreneurship in order to strengthen SMEs modernization, new enterprises establishment, and integration of new technologies to expand markets and enhance competition for Cambodian products(RGC, 2018).

***Industrial Development Policy 2015-2025:***

This policy was approved by the RGC in 2015 with the main objective to address structural challenges, invest in key industrial infrastructure for competitiveness and advantages of the industrial sector in Cambodia. There are three targets under the policy, including: (1) strengthening and transforming industrial structure in the national economy; (2) diversifying export products; and, (3) promoting SMEs.

The key strategy of this industrial development policy is to develop and modernize SMEs, innovate registered enterprises, improve technology development, and promote industrial linkages between domestic and foreign enterprises.

The policy aims to encourage all small enterprises to register so that the government can have accurate information of business contexts to initiate enabling supporting policies, enable credit access, and provide businesses advice to increase business improvement opportunities (RGC, 2015).

***Cambodia ICT Master Plan 2020****:*

This master plan is part of a strategy for ASEAN integration to build Cambodia as a nation with intelligent people, society, and government by ICT through four strategic drives of Empowering People, Ensuring Connectivity, Enhancing Capabilities, and Enriching e-Services.

Enhancing digital literacy under the "Empowering People strategy" will create a special division responsible for national digital literacy projects inclusive of ICT training, cooperation with relevant stakeholders, and development of a national plan for digital literacy promotion.

The plan aims to build a National ICT infrastructure for building up a nationwide internet service base nationwide and bridging the digital divide, improving cybersecurity for online customers, improving the e-commerce environment, and enhancing e-banking and financial networks (KOICA, 2014).

***Law on Telecommunications:***

This law has 15 chapters and 114 articles approved by the National Assembly in 2015. The objectives of the law is to ensure safe, reliable, quality, and affordable telecommunication infrastructure to fulfill the needs of social and economic development, ensure governance and regulation of the telecommunication sector, and protection of internet users.

Under the law, the Telecommunications Regulator of Cambodia (TRC) was established with the autonomous role to perform administration, regulation, and finance. TRC is independent of telecommunication operators and individuals involved in the telecommunication sector. The role of TRC is determined by a separate sub-degree.

Under the Law on Telecommunications, The Ministry of Posts and Telecommunications (MPTC) has essential authority to formulate policies and develop strategic plans and legal frameworks to regulate telecommunication infrastructure, networks, and operations. MPTC is a signatory government representative in international cooperation in the telecommunication sector (RGC, 2016).

***E-commerce law****:*

This law was approved in November 2019. The key objectives are to define the accuracy and reliability of electronic practice, encourage safe e-commerce implementation, reduce obstacles in e-commerce, facilitate electronic data storage for public institutes, and build trust in digitalization.

The approved law has chapters defining the legal processes and procedures of e-commerce implementation and the roles of relevant ministries in the facilitation of e-commerce applications. It states that individuals and companies engaging in e-commerce must get a license from the Ministry of Commerce for an e-commerce license and approval from the Ministry of Posts and Telecommunications for online service certification.

The law highlights criteria to protect consumers from purchasing products through online or e-commerce platforms, as well as fraud prevention and data protection. The roles and responsibilities of relevant ministries and consumers engaged in digital payment and transfer transactions are also highlighted in the law.

Illustration of authorities of relevant ministries and stakeholders in processing complaints and punishment of perpetrators who committed fraud and misconduct of any activities in e-commerce is also stated there.

However, the effectiveness of the law implementation including public awareness and understanding of its provisions as well as how the law provides benefits or drawbacks for e-commerce remain to be seen and require good cooperation between consumers, businesses, and regulatory institutions.

***Consumer Protection Law:***

This law was approved in November 2019 with the objectives of protecting the benefits of consumers, promoting transparent business competition, and building trust among enterprises and consumers.

The law defines clear authorities and the roles of relevant ministries in consumer protection who engage in online transactions and e-commerce platforms. It also defines and prevents fraud activities in business transactions, advertisement and fraud sales, outline procedures of complaints and investigation of fraud businesses, and other business-related frauds.

Similar to the E-commerce Law, the law's successful implementation and how it benefits consumers and relevant stakeholders engaged in online businesses, digital transactions, and e-commerce remains to be seen.

***Cybercrime law:***

This law is in the drafting process inclusive of 6 chapters and 40 articles with the objectives to combat all the kinds of the offenses committed through the use of computer systems and prevention of all legitimate interests in using and developing technology (RGC, 2014).

Under the draft, a National Anti-Cybercrime Committee (NACC) is formed chaired by the Prime Minister with 12 members from relevant ministries to draft strategies, action plans, and programs to protect cyber and online information for the government (KOICA, 2014).

There are some challenges encountered in the process of drafting the Cybercrime Law. These challenges are legislation harmonization, technical capacity, institutional arrangements, and cooperation that involves key leading ministries, including the Ministry of Interior/ Cambodia National Police, the Ministry of Posts and Telecommunications, and the Ministry of Justice (Ou, 2016).

The expected timeframe by which the law would be approved is uncertain due to its scope and sectors involved, including time taken for consultations with local and international experts (Chea, 2018).

**Table 3**: Summary of relevant policies and legal framework to promote the digital economy in Cambodia.

| Policies and regulatory framework | Approval Date | Objectives and Features |
|---|---|---|
| Rectangular Strategy for Growth, Employment, Equity, and Efficiency IV. | 2018 | Aims to develop entrepreneurship and a digital ecosystem that is beneficial for new business start-ups, promotes digital business systems, and partnership cooperation with the private sector. |
| Industrial Development Policy | 2015 | Aims to develop and modernize SMEs, innovate registered enterprises, improve technology development, and promote industrial linkages between domestic and foreign enterprises. The policy encourages all small enterprises to officially register so that the government is able to have accurate information of business contexts to initiate enabling supporting policies, enable credit access, and advise businesses on how to increase opportunities for business improvement. |

| | | |
|---|---|---|
| Cambodia ICT Master Plan 2020 | 2014 | Aims to develop national ICT infrastructure to build a nationwide internet service base and bridge the digital divide, improving cybersecurity for online customers, improve the e-commerce environment, and enhance e-banking and the financial network |
| Law on Telecommunications | 2015 | Aims to ensure safe, reliable, affordable, quality telecommunication infrastructure to fulfill the needs of social and economic development, ensure development, governance, and regulation of the telecommunication sector, and ensure the protection of internet users |
| E-commerce Law | 2019 | Aims to define the accuracy and reliability of electronic practice; encourage safe e-commerce implementation, reduce obstacles in e-commerce, facilitate electronic data storage with public institutes and build trust in digitalization |
| Consumer protection law | 2019 | Aims to protect the benefits of consumers, promote transparent business competition, and build trust among enterprises and consumers |
| Cybercrime Law | Draft | Aims to combat all kinds of the offense committed through computer system and prevent all legitimate interest in using and developing technology |

The RGC has made significant efforts to develop strategies, policies, and regulatory frameworks for a digital economy transformation in Cambodia. However, this study found no strategies or policies specifically focusing on digital payment, or e-commerce which is developed for the agriculture sector in Cambodia, although this sector is one of the key pillars of the Cambodian economy.

KIIs with agriculture-related private firms such as AMK, Agribuddy, and Spien also validated that there are only general strategies, policies, and regulations for digital payment and e-commerce. These stakeholders have no awareness of any specific strategies, policies, and regulations for digital payment and e-commerce for the agricultural sector.

A key informant from MoC stated that digital payment is under NBC management and coordination, but there is no payment gateway existed yet and raised that digital payment works better for larger scale business transaction. It is raised that e-commerce law could partly promote e-commerce adoption in Cambodia. Still, most challenges related to digital payment and e-commerce adoption are connected with the technical and digital literacy of users

## 3.2 Initiatives and Programs for Digital Economy

### 3.2.1. Government's Initiatives

**Policy and Regulatory Framework**

Digital economy is an impetus for economic and entrepreneurship development in Cambodia. RGC announced its policy framework and readiness to meet Cambodia 2023's digitization objective. Priorities include ICT development, human resource development, and access to technological advancement to enable the digitization. The Prime Minister of Cambodia stressed that Cambodia has diverse opportunities and potential to benefit from the fourth industrial revolution in ASEAN (Office of the Council of Ministers, 2018). In 2019, the Cambodian

government has set digital economy as a priority goal of the government and has been formulating policies to catch up with advanced technologies, promote business markets, and mitigate expected risks arising from the adoption of technological development.

The most recent critical action from the Cambodian government on the digital economy is the establishment of a working group to draft a digital economy policy for Cambodia led by the Supreme National Economic Council (SNEC). The working group consists of 31 members from relevant ministries and institutions with key roles to follow up on the trend of the digital economy nationally, regionally, and globally (Cambodia News Gazette, 2019). The working group will assess the strengths, weaknesses, opportunities, and threats (SWOT) of the digital economy to Cambodia. Besides, this working group will also work on building human capital for digital transformation in addition to their role in organizing conferences, meetings, and study tours to collect inputs and consultations on drafting Cambodia's Digital Economy Polity (KOICA, Cambodian ICT Masterplan 2020, 2014).

**Digital Economy Infrastructure**

The Ministry of Posts and Telecommunications works with related ministries to build a legal framework to support digital entrepreneurship to enhance local talents and opportunities in business development. Minister of Posts and Telecommunications stated that the ministry aims to reach total urban broadband coverage by 2020, in which at least 80 percent of Cambodians have a reliable Internet connection (KOICA, Cambodian ICT Masterplan 2020, 2014). E-payment gains incredible growth with high interest from investors for market expansion, but other segments of digital business need further support, especially business start-up funding (Vannak, Khmer Times, 2018). Mr. Kan Chanmeta, Secretary of State at the Ministry of Posts and Telecommunications, said that Cambodia initiated the plan to become a digital economy to enable citizens to use advanced technologies and digital tools for personal and professional enhancement (Manet, Khmer Times, 2018). Students' skills development in ICT is the key focus of the ministry.

**Enterprises Development**

The vision of the Cambodian government is to support small and large businesses in the country to grow and connect to global value chains through a robust digital environment with the implementation of a long-term strategic framework to support the business ecosystem and economic transformation. The World Bank's country director highlighted that "Cambodia's economic transformation would rely on the capacity to empower local entrepreneurs and citizens to engage and benefit from digital technology fully." According to the Cambodia ICT Master Plan, Entrepreneurship development and SME promotion focusing on entrepreneurial skills, business management through digital platforms, together with supporting legal and regulatory frameworks, are the key priorities of the government to strengthen the digital economy (KOICA, Cambodian ICT Masterplan 2020, 2014).

**Economic Competitiveness and Sector Development**

A senior official of the Ministry of Economy and Finance said at a Digital Economy and Entrepreneurship Forum that digital technology is a fundamental element for productivity increase and job creation (Vannak, Khmer Times, 2010). Looking at policy, strategy, human capital, and digital infrastructure, Cambodia needs time and commitment to adopt the digital economy fully. As stated by the Minister of Economic and Finance, there have been many new

businesses investing in digital payment, online services, and e-commerce sectors annually that enable Cambodian people to familiarize themselves with new technologies and adapt to changes (May, 2019). According to the Minister, "with current human capacity, digital infrastructure, and legal framework, Cambodia will be ready to fully transform into the digital economy with a technology-driven market" (KOICA, 2014).

The country director of WB suggested that the "Cambodian government needs to have targeted policies for a thriving digital economy and to close the digital divide. Cambodia has dynamic potential to grab the opportunities from Industrial Revolution 4.0, including its demographic dividend, increasing smartphone usage, technological spillover from foreign direct investment, and gradual digitization of key economic sectors" (KOICA, 2014).

### 3.2.2. Private Sector's Initiatives

Analysis from key informant interviews (KII) of NGOs, government institutions, and the private sector whose projects/programs contributed to promoting agribusiness digitalization in Cambodia shows that there are various projects and initiatives to support the uptake of e-commerce and digital payments in Cambodia.

#### *AMK's Tonle Sap App*

AMK, a private microfinance institution, developed its Tonlesap App to serve clients. Tonlesap App has three functions: 1) to disseminate agricultural extension services and market information, 2) to serve as an e-marketplace for agricultural products and agricultural inputs, and 3) to provide linkage to experts in agriculture to farmers.

AMK developed and launched this app as a part of its social mission with potential customers in the agricultural sector. In addition, the app helps AMK to support customers' capacity to pay back their loans. Farmers and agricultural input suppliers can use the app to share technical knowledge and information about technical agricultural information since the app is accessible free of charge.

The app provides the opportunity to link farmers and agricultural experts, who voluntarily join the program to provide advice while selling their farming products to farmers. Farmers can find agricultural input suppliers online and learn how to use those inputs better. AMK launched the app level II during late of 2019 that enabled farmers to place inputs order online while suppliers can display products for sale through the app.

As of October 2019, the App had 7,000 subscriptions. The Tonle Sap App project was funded by the Harvest II program and SNVIAP. AMK regularly share technical agricultural knowledge through the Facebook page that has 27,000 "Like" with contents responsive to the needs of farmers, agricultural cooperatives, and agricultural input suppliers.

AMK launched the new version of the Tonlesap App in December 2019. All products can be displayed and sold on the app; however, the payment can only be completed via cash on delivery (COD) model. The new Tonlesap App has functions, such as sharing knowledge on agricultural technique, vegetable plantation, and livestock raising; sharing experience from successful farmers; accessing to advice from agricultural experts to address farming issues; providing a platform for farmers to find farming tools from different input suppliers and

middlemen; and allowing farmers to access to updated information related to agricultural products prices through the app platform.

AMK was considering implementing digital payment through Tonlesap App in 2020.

***Agribuddy***

Agribuddy helps farmers utilize farmland and produce high yields crops by providing finance, knowledge, and services to farmers' doorsteps through its operation in seven provinces.

As part of e-commerce and digital payment promotion, Agribuddy implements an e-buddy wallet to facilitate agricultural value chain focus on corns, cassava, and rice. The program uses an e-buddy wallet app to link agricultural input suppliers to credit sources. Their integrated system also connects farmer groups to agricultural input suppliers, processors, crop buyers, inputs manufacturers, and credit sources. The company has buddy enterprises (Depo) at the commune level to coordinate credit contracts between farmers with credit sources and agricultural input suppliers. At the same time, the transactions are processed through the E-buddy wallet app.

***Spien***

Spien improves the agriculture supply chain in Cambodia regarding technical knowledge sharing through its Facebook page and YouTube channel. Moreover, this organization also allows products to display on its website and Facebook page. In the future, Spien plans to work directly with the agriculture cooperatives in Siem Reap province. Their payment method is mainly processed by bank transfer through the ACLEDA bank.

The organization has a safe vegetable collection point in Phnom Penh. It has implemented a research project on consumer behavior using QR codes, promote environmentally packaging, and sells QR agricultural products through retail shops with supply from 60 producers of Eco-farm.

Spien directly deals with agricultural input suppliers, but payments are made through bank transfer. The company plans to adopt e-commerce and digital payment through an application to promote the online sale of local products. The specific timeline to implement mobile payment is yet to be announced.

## 3.3 Stakeholders Mapping

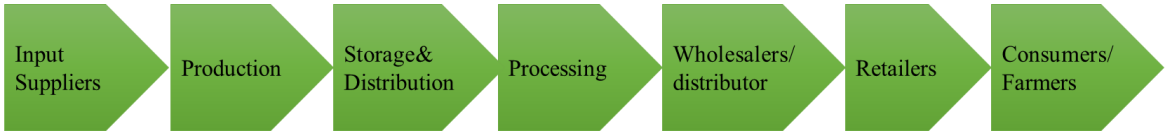



**Figure 1:** Roles of stakeholders in the agricultural value chain

**Table 4:** Key stakeholders, roles, and initiatives related to digital payment and e-commerce

| Key Stakeholders | Roles/Responsibilities |
|---|---|
| Government Institutions | |

| | |
|---|---|
| Ministry of Commerce (MoC) | ▪ Leads in developing policy/regulation on e-commerce, and consumer protection laws |
| Ministry of Economics and Finances (MEF) | ▪ Establishes and leads the national committee on digital economy development and manage agricultural diversification projects. |
| Ministry of Agriculture, Forestry and Fisheries, Agricultural Market Office (MAFF/AMO) | ▪ Formulates policies and strategies for market development and the agricultural marketing system. Manage standards of agricultural products leading to the export of agricultural products. Study and implement agricultural market development activities. Provide market information, services, and guide farmers on agricultural marketing and the agricultural economy.<br>▪ Gives licenses to agricultural input suppliers, lead policy-making groups on agricultural modernization, organize forums that bring information on agricultural modernizations for input suppliers and farmers.<br>▪ AMO provides agricultural market information and online product displays to connect farmers, wholesalers, and consumers through its website. |
| Ministry of Posts and Telecommunications (MPTC) | ▪ Lead regulator in ICT and internet development that will provide an enabling environment for digital implementation. |
| National Bank of Cambodia | ▪ Develop FinTech regulations and projects, and work in cooperation with FinTech Association of Cambodia |
| Private Sector/NGOs/Donors | |
| Agribuddy | ▪ Provides agricultural services and inputs to farmers' communities through rural credit for improving their income generation and livelihood. |
| AMK Microfinance Institution Plc. | ▪ Implements E-Farmer Support App Activity' through Tonle Sap App. The Tonlesap App objective is to provide agricultural technical knowledge and agricultural market information, key techniques in farming, livestock, and information in agricultural inputs as well as loan access for business expansion. |
| Spien | ▪ Connects agricultural products to consumers and wholesales shops through product display on the website. Focus on product promotion through website and Facebook page. It targetes B2B (business to business), and the next step is to target individual consumers. |
| Konrad Adeneuer Stiftung | ▪ Implemented digitization of economy program with different research projects, launched research on e-government in Cambodia. |
| Oxfam | ▪ Launched BlockChain for the project of Livelihoods for Organic Cambodian Rice (BlocRice) that introduced cashless payments to farmers. |
| USAID | ▪ Implemented and funded different projects related to modernization and digitalization of agriculture |
| Feed the Future of Cambodia HARVEST II | ▪ Provided co-funding support to AMK Microfinance Institution Plc. For the operation of E-Farmer Support App Activity' through Tonle Sap App. Promoted a market-led approach by connecting farmers to buyers, and provided funding to NGOs and the private sector to promote modern agriculture. |

| | |
|---|---|
| IFAD | ▪ Provided funds through the government to modernize the agricultural value chain in Cambodia |
| CAVAC | ▪ Introduced new payment systems for rural communities in partnership with financial institutions. |
| Internet Infrastructure (Providers) | |
| Ezecome | ▪ Provides internet services and quality to all consumers in Cambodia |
| Online | |
| WiCAM | |
| Metphone | |
| SEATEL | |
| Citylink | |
| Kingtel communication | |
| Banks with payment gateway | |
| Acleda Bank | ▪ Provides internet banking and App for digital/online money transfer |
| ABA | |
| Wing Bank | |
| Cathay United | |
| Canadia Bank | |
| Money Transfer Agents | |
| Wing | ▪ Provides non-digital money transfer between consumers and businesses |
| TrueMoney | |
| eMoney | |
| SmartLuy | |
| Bongluy | |
| Dara Pay | |
| PayGo | |
| Sabay Wallet | |
| Asia Weiluy | |


**Figure 2:** key stakeholders to support the uptake of digital payment and e-commerce

# 4 Overview of Benefits and Challenges in Business Digitalization

## 4.1 Benefits of Business Digitization

Digitalization is beneficial for business operations and cross-border trade. Business digitalization improves operational and cost efficiency and removes the physical distance between companies and countries. Digitalization reduces barriers for online and cross-border trade processes, but logistics infrastructure and regulations need improvement (Florian Hoppe, Tony May, Jessie Lin, 2018).

Various opportunities and benefits could be derived from technological digitization. Digitalization increases productivity, reduces cost, and enables businesses to grow unprecedentedly. A large percentage of small and medium businesses see e-commerce as enabling opportunities to increase online sales, reduce investment costs, and reduce barriers for SMEs startup. E-commerce platforms enable businesses to access larger suppliers, customers to access to diverse and quality products, and bridge business outsourcing (Florian Hoppe, Tony May, Jessie Lin, 2018).

It also enhances operations, promotes the adoption of technologies, and reaches different customers. Healthy competition in digital platforms is a key driver of business digitalization because it facilitates proper information access of products display for online sales (Study on MSMEs Participation in the Digital Economy in ASEAN, 2018). Besides, transformative

digital technologies enhance business productivity, produce sustainable growth, and create new skilled job opportunities (Accelerating Digitalisation in Asia , 2018).

Business digitization requires high-speed broadband infrastructure, qualified and skilled labor, and adoption of digital technologies. Furthermore, digital technologies application could transform the global economy and improve the operation of the private sector that significantly reduce production cost and expand markets. It reduces barriers for market entry, lowers transaction costs, and disperses information for companies to innovate new products and services to new markets. Cross-border e-commerce platforms allow businesses to access regional markets and international trade crucial for business expansion and enlarge customer pool (Accelerating Digitalisation in Asia , 2018).

Digital payment is more convenient and time saving for distance customers and sellers because of its integrated system using digital technologies. It enables entrepreneurs to commercialize business ideas with lower investment costs and save the resources for other beneficial innovative business activities (Sarah Box, Javier Lopez-Gonzalez, 2017).

Diverse opportunities for business innovation are created by digitalization. The situation creates wider engagement with customers about product quality, services, and customers' preferences. This information is advantageous for product innovation and competition. The digital platform enables customers to get better prices of products from various sources with better negotiation power with sellers (Opportunities and Policy Challenges of Digitalsation in Southeast Asia, 2017). Thus, digitalization of businesses provide diverse benefits and opportunities in business innovation, improve cross border trade, saving cost and time in business transactions, enable business growth with lower investment cost, and contribute to economic development and a smart society. However, business digitalization requires supportive and enabling policies and regulatory frameworks, good internet infrastructure, improved digital literacy among consumers and entrepreneurs, and public awareness and understanding of its benefits.

## 4.2 Challenges of Business Digitalization

Adopting new technology and digitalization adoption requires and enabling environment and capable human resources to embrace the potential benefits. The critical challenges for digitalization are limited knowledge and expertise in digital technology, underdeveloped internet infrastructure, lack of supportive and enabling policies and regulations, Lack of legal framework and protection, limited capacity of relevant stakeholders in using the online application, lack of trust in online transactions, and slow internet speed were highlighted as challenges by the key informants.

Inputs from the key informants interviewed in the survey highlighted different challenges for going digital in business operation as the following.

**Lack of Enabling Regulatory Framework and Logistics**

From Agribuddy, critical challenge is the difficulty in transporting agricultural inputs from AIS to farmers, who make orders through the digital system of Agribuddy. Challenges raised by officials from the Ministry of Commerce (MoC) and Department of Agricultural Markets of Ministry of Agriculture, Forestry and Fisheries (AMO/MAFF) are cheating on the online quality of products and delivery, limited logistics for delivery of an online purchase, and no

tracking information of the online businesses because of no regulatory enforcement of online business transactions. However, they think many challenges will be gradually addressed by good enforcement of the recently approved e-commerce law and the consumer protection law. The officials raised that limited public awareness of the benefits of e-commerce and digital payment and lack of guiding legal framework and protection discourage people from using digital payment transactions and e-commerce. Besides, there is limited supply of data inputs through websites and apps of the online market that discourage people from using the online market.

**Underdeveloped Internet Infrastructure**

The key indication is the Tonlesap app of AMK requires high-speed Internet through smartphones so users can access the information and use the app properly. However, only a small number of farmers use the app because many cannot afford high-speed Internet. The slow Internet speed is another challenge that discourages farmers from using the digital agricultural value chain system managed by Agribuddy. According to the key informant from Havest II Program, Internet speed and coverage to a rural area is highlighted as one of the challenges to implement e-commerce and digital payment transactions

**Limited Knowledge and Capacity of Stakeholders in Digital Application**

AMK experiences other challenges for the Tonlesap application, such as limited quality information to update in the app, lack of understanding of the app's benefits among agricultural input suppliers, and limited human resources to promote the app to broader target markets in Cambodia. Other challenges are the expensive operation cost to run the app due to limited local experts for the development and promotion of the app. Agribuddy that supports the agricultural value chain through its e-buddy wallet app stated that the critical challenge is that farmers have limited digital capacity to use smartphones and an e-buddy wallet system

**Lack of Trust and Confidence in Online Transactions**

Lack of trust in digital payments is challenging for Agribuddy online business operation. However, Agribuddy said farmers' trust in digital payment is gradually improved through its partnership. A challenge of Spien in adopting digital payments and e-commerce is a lack of trust in online transactions and admitted that bank transfer is more trustworthy. However, the representative of Spien believes that effective implementation and good public understanding of the e-commerce law and the consumer protection laws will increase users' trust in online transactions. A key informant from the Harvest II program highlighted that key challenges are more about farmers' limited capacity to afford a smartphone, and poor digital knowledge and trust in digital system.

Lack of legal framework and protection, limited capacity of relevant stakeholders in using the online application, lack of trust in online transactions, and slow internet speed were highlighted as challenges by the key informants.

## 4.3 Emerging Trends and Market Players in Cambodia's Digital Economy Ecosystem

With the plan to transform the economy to be more digitalized in the next ten years, the Cambodian government has been preparing legal frameworks, developing labor skills, and

improving ICT infrastructure. Digitization is in progress in different sectors, including e-commerce, transportation, and financial transactions. Electronic payment is blossoming with new investors such as PiPay, Wing, TrueMoney Cambodia, and UnionPay. UnionPay is a Chinese electronic payment service looking for bigger opportunities in the digital economy of Cambodia (Manet, 2018). This company has partnered with Mekong Bank to roll out QR-code payment services for its cardholders in Cambodia and expects to facilitate innovation in the financial sector (Khmertimes, 2018).

The Smart Axiata Digital Innovation Fund of Smart Company invests in the digital ecosystem to support ambitious entrepreneurs with start-up funds (Khmertimes, 2018). In March 2019, Business Incubation System was launched by the Ministry of Education, Youth, and Sport with the Korea International Cooperation Agency to improve business mindset through academic study, create a start-up ecosystem and market network for investors in Cambodia (KOICA, 2019). The project was part of human skill development in scientific and technological research to explore business ideas and increase jobs (KOICA, 2019). Joining and expanding e-commerce activities in Cambodia, the state-owned Cambodia Post planned to launch an online shopping platform after a one-year study on online shopping in Cambodia (Fresh News, 2020).

The Cambodia Post Company has a countrywide delivery and transportation service. The company expects to create a convenient online shopping platform for both sellers and customers in Cambodia. As part of the Government's commitment to becoming a digital economy, the prime minister announced during "the 2019 Cambodia Outlook Conference: Digital Transformation toward industrial 4.0" that the government will annually allocate 5 million dollars fund to strengthen the tech startup scene (via an entrepreneurship fund) in terms of financing, technical expertise, marketing, production and, training in Cambodia to facilitate the transition processes into a digital economy (Khmertimes, 2019).

*I think these were discussed already somehow in previous sections and appear to be a repetition of topics such as government's policies and programs etc as well as benefits and challenges.*

*It will be good to focus here on what the current players are doing and how are their actions are perceived in terms of supporting the digital economy ecosystem. For example, PiPay, Wing, TrueMoney Cambodia, and UnionPay—what are they doing? What initiatives do they have that contribute to the advancement of digital economy? Is their presence viewed positively? How's market competition being promoted? How relevant are these players in supporting the agriculture sector value chain?*

Along with initiatives to enable a digital economy, various barriers remain for Cambodia to be a competitive country vis-à-vis other ASEAN nations. The number of tech start-ups of various types has reached around 130 of various types, including financial technology, logistics, and online booking sectors. The evolution has progressively changing people's lifestyles and business operations.

One of the significant actions toward a digital economy was the 2019 Cambodia's First Digital Technology Conference and Exhibition participated in by different experts from line ministries, key officials from ASEAN countries and private sectors, who possess in-depth knowledge of digital technologies (Globe, 2019). The conference was arranged with five goals:

- establishment of a national platform for investment in digital and information technology,
- promotion of entrepreneurship-digital startups and digital innovation,
- exchange of experiences, trends, and challenges in the technology sector,
- discussion of the progress of the policies development, and
- exploration of the legal frameworks and education in Cambodia's digital economy and networking of entrepreneurs and startups with potential funding companies (KOICA, 2014).

According to the Ministry of Posts and Telecommunication, Cambodia has ongoing concrete strategy to develop telecommunications infrastructures and to strengthen the quality and reliability of the online systems and services to allow capitalization and adoption of digital technology (Globe, 2019). The Royal Government of Cambodia has formed an inter-ministry committee for compiling draft frameworks for the digital economy and digital government policies in September 2019, and the Digital Economy Policy Working Group has been established. A consultation workshop on the strategic framework, funded by Australia's Department of Foreign Affairs and Trade, was held in Phnom Penh in November 2019, organized by the government, Digital Economy Policy Working Group, and SET program. National Bank of Cambodia (NBC) has also initiated the integrated mobile payment app that enables users of registered banks to transfer cash or make payment across banks without service charges.

Only a small percentage of the Cambodian population had and used a bank account with only 13 percent use mobile payment system. Three percent have a bank card, and just 0.6 percent make an online purchase or pay bills online by the time of this study. Relevant policymakers and stakeholders in business digitalization have key roles in promoting public awareness on the benefits of having and using bank accounts and use digital payments and e-commerce. Of the total 19.5 million mobile phone subscribers in 2018, around 7 million had Facebook accounts, and 13.6 million used the Internet from their mobile phones. Banking penetration has been gradually increased that enable people to open bank account, use internet banking, payment through QR code scan, card payment without pin code, and cash transfer between accounts in the same banks as have been implementing by ABA bank, Wing, ACLEDA bank, and PiPay. This indicated that the digital economy in Cambodia has been progressing with supportive policies and regulatory frameworks, private initiatives and programs, and cooperation and consultation between relevant stakeholders. These actions would gradually address the digital challenges among various actors, build trust in online transactions, and pave the way for the digital economy within the next ten years.

# 5 Survey finding on digital challenges and opportunities of Agricultural Input Suppliers

## 5.1 Profiles of respondents and Agricultural Input Suppliers (AIS)

### 5.1.1 Profile of respondents

The research team managed to collect relevant and reliable data from respondents, which are relevant and reliable for this study.

First, the sample has a high level of gender balance. Among a total of 225 respondents, 127 male respondents (56%) and 98 female respondents (44%) were interviewed for the study. The proportion of male respondents is only 12% higher than the proportion of female respondents.

Second, the age and position of the surveyed respondents illustrate their in-depth knowledge about their business. The reported average age of the respondents engaged in the study is 41 years old, and 86% of respondents are above 30 years old. Most respondents (88%) interviewed in the study are the owner of their business. An additional 10% of respondents are General Managers. The respondents in these age groups and occupations have extensive experience and are able to provide reliable information about their business.

Third, the educational attainment of surveyed respondents indicates their understanding and adoption of digital technology. Almost 60% of respondents have completed middle school, followed by 28% who completed high school, and 15 % have pursued tertiary education. Business owners and managers with high educational attainment are believed to be more receptive to new technology than those with low education attainment.

**Table 5:** Profiles of respondents interviewed for the enterprise survey

| | TB | BB | KD | PV | TK | SR | Overall |
|---|---|---|---|---|---|---|---|
| ***Gender*** | | | | | | | |
| ▪ Male | 68 | 52 | 61 | 51 | 44 | 71 | 56 |
| ▪ Female | 33 | 48 | 39 | 49 | 56 | 29 | 44 |
| ***Age**** | | | | | | | |
| ▪ Below 30 | 15 | 20 | 14 | 16 | 17 | 9 | 16 |
| ▪ 31-40 | 25 | 46 | 50 | 30 | 34 | 48 | 38 |
| ▪ 41-50 | 33 | 22 | 11 | 23 | 38 | 26 | 25 |
| ▪ More than 50 | 28 | 11 | 25 | 30 | 10 | 17 | 20 |
| ***Position*** | | | | | | | |
| ▪ Owner | 88 | 86 | 82 | 83 | 88 | 93 | 88 |
| ▪ General Manager | 7 | 14 | 6 | 17 | 6 | - | 10 |
| ▪ Marketing/ Sale Manager | 5 | - | 6 | - | 3 | 4 | 2 |
| ***Education*** | | | | | | | |
| ▪ Primary school | 20 | 9 | 15 | 21 | 26 | 55 | 21 |
| ▪ Middle school | 40 | 42 | 31 | 40 | 39 | 9 | 36 |
| ▪ High school | 25 | 33 | 38 | 16 | 26 | 36 | 28 |
| ▪ Higher education | 15 | 16 | 15 | 23 | 10 | - | 15 |

**Average age: 43(TB, PV); 39(BB);41 (KD); 40(TK); 42(SR); 41 (Overall)*

### 5.1.2 Profiles of Agricultural Input Suppliers (AIS)

Selling multiple agricultural inputs is the common business for many AIS. The majority of the AIS sell more than two products. The top three products sold by the majority of surveyed AIS include fertilizer (80%), pesticides (72%), and seeds (39%). However, in the six surveyed provinces small numbers of respondents also reported selling animal feeds (21%) and machinery (24%).

As shown in Table 6, the majority (86%) of respondents reported selling agricultural inputs directly to farmers, while only 12% sell to other retailers who will distribute to farmers in their respective areas. Notably, very few respondents in Tboung Khmum and Kandal indicated they

are selling directly to wholesalers, and none of the respondents in Battambang, Takeo, Prey Veng, and Siem Reap sells to wholesalers.

**Table 6:** Profiles of Agriculture Input Suppliers (AIS) interviewed for the enterprise survey

| | TB | BB | KD | PV | TK | SR | Overall |
|---|---|---|---|---|---|---|---|
| ***Main products*** | | | | | | | |
| ▪ Fertilizers | 90 | 88 | 79 | 64 | 84 | 75 | 80 |
| ▪ Pesticides | 85 | 91 | 75 | 56 | 63 | 50 | 72 |
| ▪ Seed | 48 | 52 | 43 | 33 | 25 | 17 | 39 |
| ▪ Animal feed/medicine | 18 | 30 | 7 | 20 | 25 | 17 | 21 |
| ▪ Machinery | 35 | 29 | 21 | 29 | - | 17 | 24 |
| ▪ Others | 8 | 7 | 4 | 2 | - | - | 4 |
| ***Main clients*** | | | | | | | |
| ▪ Wholesalers | 3 | - | 7 | - | - | - | 1 |
| ▪ Retailers | 7 | 7 | 11 | 18 | 19 | 8 | 12 |
| ▪ Agricultural Cooperatives | - | - | - | - | 6 | - | 1 |
| ▪ Farmers | 90 | 93 | 82 | 82 | 75 | 92 | 86 |

All the surveyed AIS are classified as micro-enterprises according to the definition in the Small Medium Enterprise Development Framework 2005. The survey shows AIS employed, on average, three full-time workers for their daily operation. 71% of the AISs hired 1-2 full-time workers. In this study, AIS owner is also treated as an employee in this study as most of the surveyed AIS are family businesses that passes from one generation to another.

The survey shows that, on average, the AIS respondents have been operating their businesses for around ten years, on average. Amongst the 225 surveyed AISs, 36% have operated their business for less than five years, while 32% reveal they have been running their business between 6 to 10 years. Only 8% of surveyed AIS have operated a business for more than 20 years.

**Table 7**: Years of establishment and business size of the surveyed AIS

| | TB | BB | KD | PV | TK | SR | Overall |
|---|---|---|---|---|---|---|---|
| ***Number of employees**** | | | | | | | |
| ▪ [1-2 employees] | 72 | 80 | 71 | 60 | 75 | 58 | 71 |
| ▪ [3-4 employees] | 20 | 16 | 21 | 31 | 19 | 33 | 23 |
| ▪ [5-6 employees] | 5 | 2 | 4 | 7 | 3 | 8 | 4 |
| ▪ Over 6 employees | 3 | 2 | 4 | 2 | 3 | - | 2 |
| ***Years of establishment**** | | | | | | | |
| ▪ <=5 years | 28 | 38 | 32 | 30 | 47 | 52 | 36 |
| ▪ [6-10 years] | 28 | 27 | 32 | 44 | 23 | 43 | 32 |
| ▪ [11-15years] | 20 | 7 | 11 | 9 | 13 | 5 | 11 |
| ▪ [16-20years] | 10 | 20 | 11 | 12 | 13 | - | 12 |
| ▪ >20 years | 15 | 9 | 14 | 5 | 3 | - | 8 |

**average employee:2 (BB, KD);3 (TB, PV, TK, SR), 3(Overall)*
**average year of operation: 6 (SR), 9 (PV, TK),20 (BB), 22(TB, KD,10 (overall*

## 5.2 Access to smartphone and internet

Smartphones and the internet are the basic foundation for adopting e-commerce and digital payments. The survey shows that 90% of the AIS own a smartphone and have access to the

internet either via mobile or Wi-Fi internet, thanks to decreasing prices of smartphones and internet services.

Mobile internet penetration is double that of broadband internet penetration because of its convenience, price, and quality. Representatives of AIS explained that there are only a few suppliers of broadband internet service in their locations, with the connection requiring high set-up costs. According to the survey, 84% of respondents accessed the internet via mobile data, as compared to 41% for Wi-Fi internet while only 35% of respondents reported having access to both Wi-Fi internet and mobile internet.

To discover the level of digital literacy, all surveyed AIS were asked whether they know how to search for information online. The overall result indicates that 68% of the surveyed AIS know how to search for information online. However, only 42% of them search for agriculture-related information online. The results in each province show that the variation in digital knowledge is wide-ranging across the six surveyed provinces.

The majority (79-89%) of surveyed AIS in Tboung Khmum, Battambang, and Kandal indicated that they know how to search for information online. However, only 55% of respondents in Tboung Khmum and 63% in Battambang has experience in searching for agricultural inputs information online. Despite the highest rate of respondents searching the information online, only 46% of the surveyed AIS in Kandal have searched for agricultural inputs information online. On the other hand, the findings in Prey Veng and Takeo reveal that more than half of the surveyed AIS in respective provinces do search information online, but those who are interested in searching for agricultural input information online only account for 36% in Prey Veng, and 25% in Takeo. Among the six surveyed provinces, AIS respondents in Siem Reap are the least who search information online (less than 5%) —this accounts for only 38% of the respondents in this province.

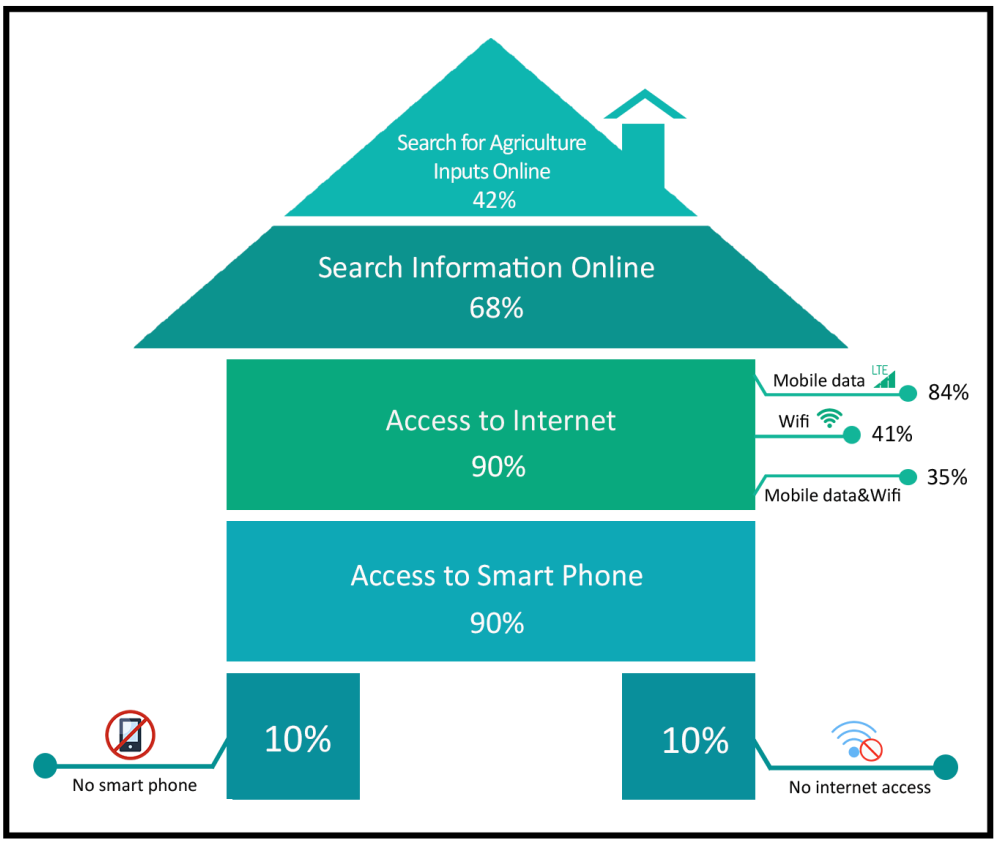



**Figure 3:** Access to smartphone and internet by surveyed AIS

In terms of gender, there are slight differences between male and female respondents regarding access to smartphones and the internet. Figure 6 shows that only 85% of female respondents own a smartphone, while up to 94% of the total male respondents reported having a smartphone. However, the use of mobile data internet among female respondents is comparatively lower than male respondents. Only 86% of female respondents have access to the internet, while 94% of the total male respondents have access to an internet account.

**Table 8:** Access to smartphone and internet service by surveyed provinces

| | TB | BB | KD | PV | TK | SR | Overall |
|---|---|---|---|---|---|---|---|
| Access to smartphone | 93 | 93 | 96 | 82 | 88 | 88 | 90 |
| Access to the internet (Wi-Fi or mobile data) | 93 | 93 | 96 | 84 | 88 | 88 | 90 |
| Access to mobile data | 85 | 86 | 96 | 71 | 84 | 83 | 84 |
| Access to Wi-Fi | 63 | 50 | 32 | 40 | 25 | 21 | 41 |
| Access to Wi-Fi and mobile data | 55 | 43 | 32 | 27 | 22 | 17 | 35 |
| Search information online | 83 | 79 | 89 | 60 | 50 | 38 | 68 |
| Search for agricultural inputs information | 55 | 63 | 46 | 36 | 25 | 4 | 42 |

Due to the high rate of smartphone ownership and internet access among both male and female respondents (86 to 94 percent) as illustrated in Figure 6, the study suggests the need to learn further more about digital behavior, and whether this digital revolution has been applied in their business operation.

The study shows an interesting finding that 76% of male respondents know how to search for information online, and only 47% of them search for agricultural input information. Whereas, female respondents who can search for information online represents about 58% of female respondents, but only 36% of them search for information related to agricultural inputs using their smartphone. The finding is anecdotal evidence that internet-connected mobile devices are mainly used for media entertainment and social networking rather than for business purposes.

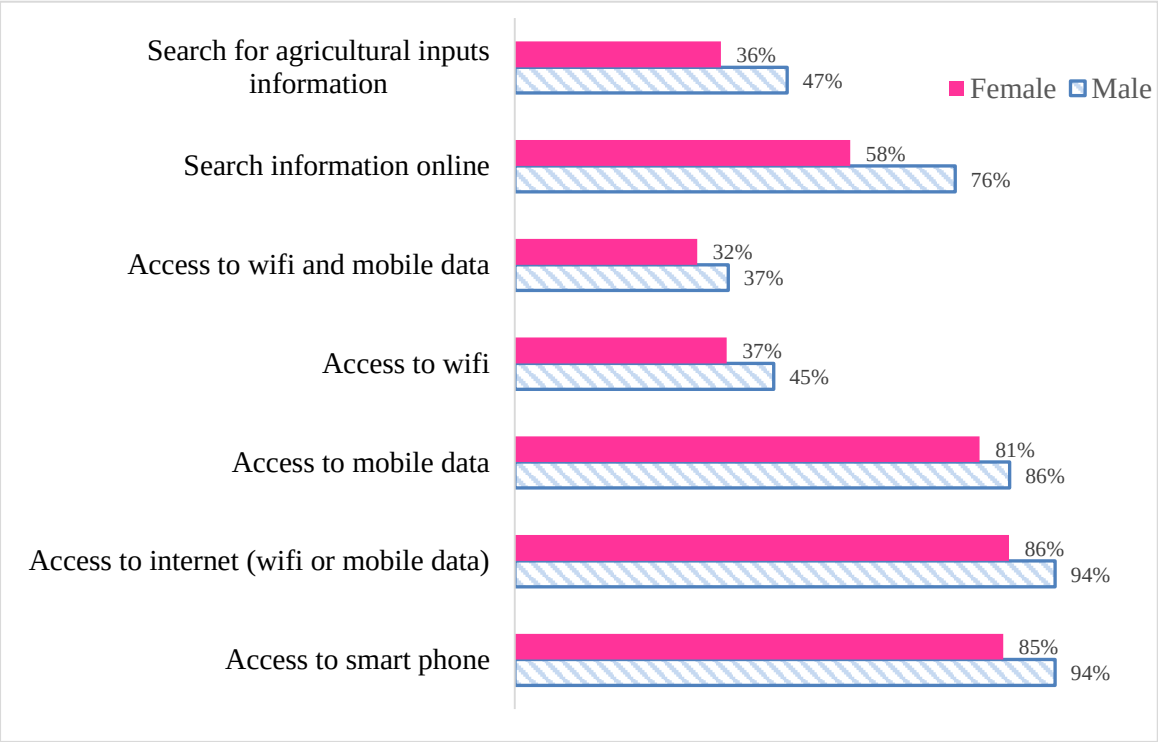



**Figure 4:** Access to smartphone and internet by gender of surveyed AIS

The hypothesis of whether age affects the digital knowledge of the surveyed AIS has been tested in the study, using t-Test assuming unequal variances. The result shows that age significantly influences the level of digital knowledge of the surveyed AIS. There is a significant difference (p-value < 0.05) between the average age of the respondents who can search for information online (40 years old) and those who cannot (45 years old). This analysis implies that the older the respondents have less capability in searching information online.

Of the 225 surveyed AIS, 188 of them (84%) reported using mobile internet, and only 93 AIS (41%) install Wi-Fi internet at home or at their stores. User experience on internet quality was also revealed. It showed a good quality internet infrastructure in the surveyed areas. According to figure 6, more than 80% of the respondents expressed having access to good quality of mobile and Wi-Fi internet.


**Figure 5:** Relationship between age of surveyed respondents and digital knowledge

t-Test: Two-Sample Assuming Unequal Variances

| | NO | Yes |
|---|---|---|
| Mean age of YES and NO | 44.5 | 39.9 |
| Variance | 98.9 | 122.1 |
| Observations | 65.0 | 151.0 |
| P(T<=t) one-tail | 0.0 | <5 percent |
| t Critical one-tail | 1.7 | |
| P(T<=t) two-tail | 0.0 | <5 percent |
| t Critical two-tail | 2.0 | |

Regarding Wi-Fi service quality, 6% of the surveyed AIS using home internet experienced excellent internet service (reliable connection and speed), while 33% reporting having particularly good Wi-Fi service, and 40% fairly good service. However, about 20% of surveyed AIS were dissatisfied with low Wi-Fi quality.

The quality of the mobile internet is sufficient for the daily operation respondents' businesses. More than half of the surveyed AIS who use mobile data indicated having 4G service, and another 29% have 3G service that enables them to watch online video without any disruptions. Only 17% of the surveyed AIS are dissatisfied with their mobile data internet speed.

Despite experiencing good quality of Wi-Fi and mobile internet, there were also many complaints about slow internet speed during peak hours, usually at nighttime, from 8 PM in most of the surveyed area. However, this peak-hour problem might not affect the use of mobile internet during business hours.

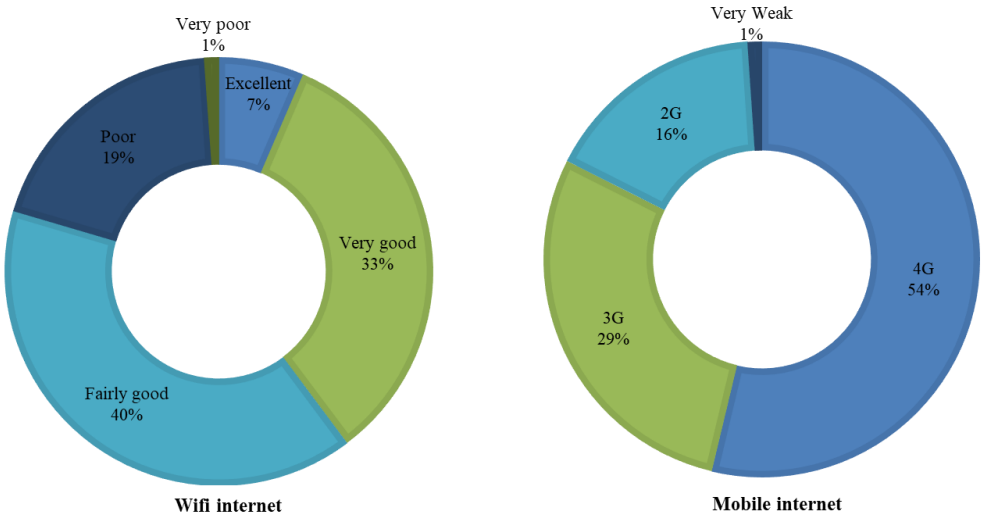



**Figure 6:**Perception of surveyed AIS on quality of Wi-fi and mobile internet

Of 225 surveyed AIS, 83 respondents (37%) have neither any social media account nor agricultural-related apps installed on their phones, whereas, 63% of them revealed having at least one social media/app account on their smartphones. 39% of the surveyed AIS reported having only one social media account/ app on their smartphones, and 14% having two accounts of social media/apps. However, those who have three accounts/apps installed represents about 5% of the total surveyed AIS.

Facebook is the most popular app installed by surveyed AIS, accounting for 61% of those who have a social account/app, followed by Telegram (13%) and Line (9%). However, the study reveals that only 6% of surveyed AIS have installed agricultural-related apps, of which 2% of surveyed AIS installed the Agribuddy App, and 4% for the Tonlesap App.[1] Furthermore, YouTube, Viber, Whatsapp are less popular among surveyed AIS, and only approximately 3% of surveyed AIS have each app installed on their phone.

[1] The Agribuddy App is a mobile phone app that offers a complete ecosystem to serve as a marketplace for companies and rural consumers to connect and engage in the agricultural value chain. Whereas, the Tonlesap App, owned by AMK, is a digital platform providing access to technical resources related to agricultural production, including horticultural crops, industrial crops, meat, and poultry, and bringing farmers to meet agricultural input suppliers, retailers, technical experts, and creditor.

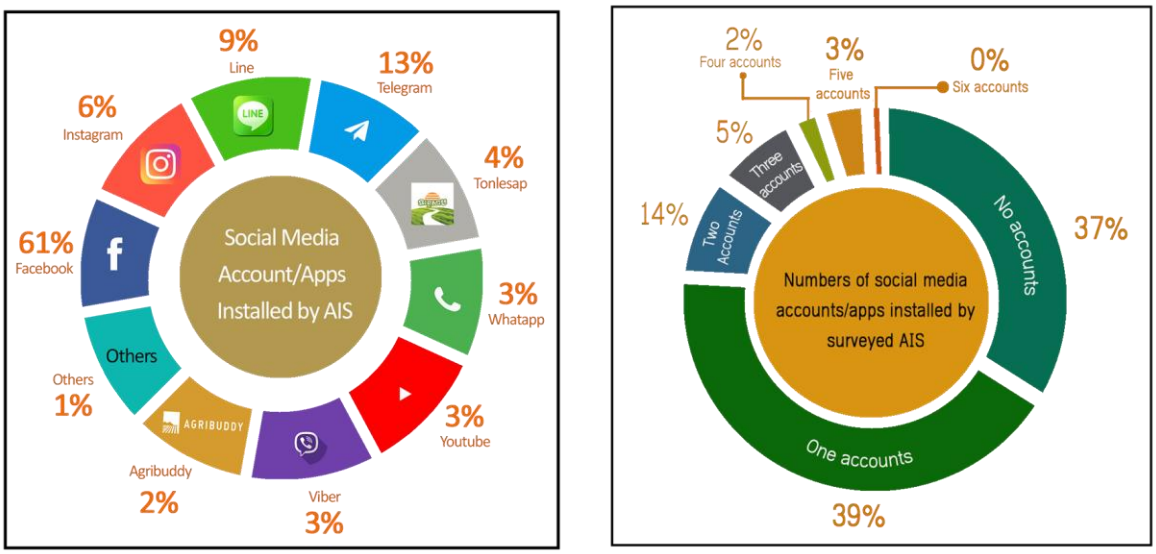



**Figure 7:** Types and numbers of media account/apps installed by surveyed AIS (percent)

## 5.3 Status of adoption of digital payment

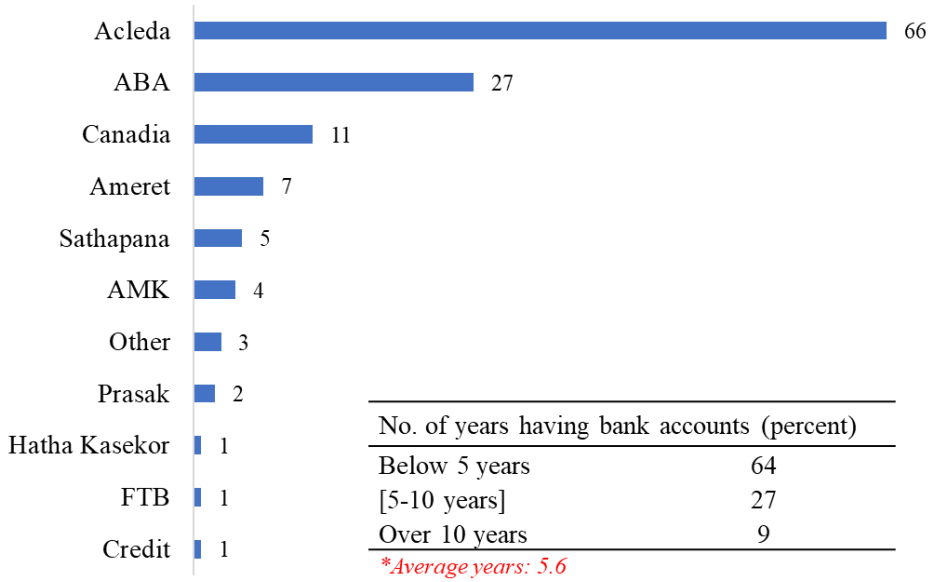
The study also aims to measure the level of digital adoption among those surveyed AIS and how this technology has improved their business operation. Access to financial services is not only identified as an enabler for poverty alleviation but also plays a critical role in promoting the uptake of digital payments in Cambodia. Much progress has been made by the Cambodian government to improve financial inclusion.

### 5.3.1. Access to formal financial services

Cambodia's financial sector has been growing rapidly in the past decade as indicated by the large number of private banks and microfinance institutions across the country. However, processing business transactions outside formal financial institution is still popular.

124 out of 225 surveyed AIS (55%) reported having either one bank account or borrowing account at a formal financial institution. The reported average duration of owning bank accounts is 5.6 years. It is also interesting to note that 64% of respondents had a bank account for less than five years and 27% have owned a bank account between five to ten years. Yet, very few (9%) AIS have a bank account for more than ten years. This data shows that access to formal financial services among surveyed AIS is remarkably high.

Acleda Bank is the most popular bank (used by 66% of 124 AIS having a bank account). ABA Bank and Canadia Bank are among the next most popular banks among surveyed AIS. 36% surveyed AIS reported having an ABA Bank account, 19% use Canadia Bank to settle financial transactions for their business.




| No. of years having bank accounts (percent) | |
|---|---|
| Below 5 years | 64 |
| [5-10 years] | 27 |
| Over 10 years | 9 |

*Average years: 5.6*

**Figure 8:**Bank name and average years of surveyed AIS having the bank account (percent)

Figure 10 breaks down the number of bank accounts owned by surveyed AIS in percentage since some of them reported having at least one bank account. Of the 225 surveyed AIS, 53% said they have a bank account. Out of these, 33% owns only one bank account, and 14% have two bank accounts with the formal financial institutions in their area. Very few numbers of surveyed AIS own more than three bank accounts. Among those surveyed AIS, 3% possess three bank accounts, and 2% own more than three bank accounts.

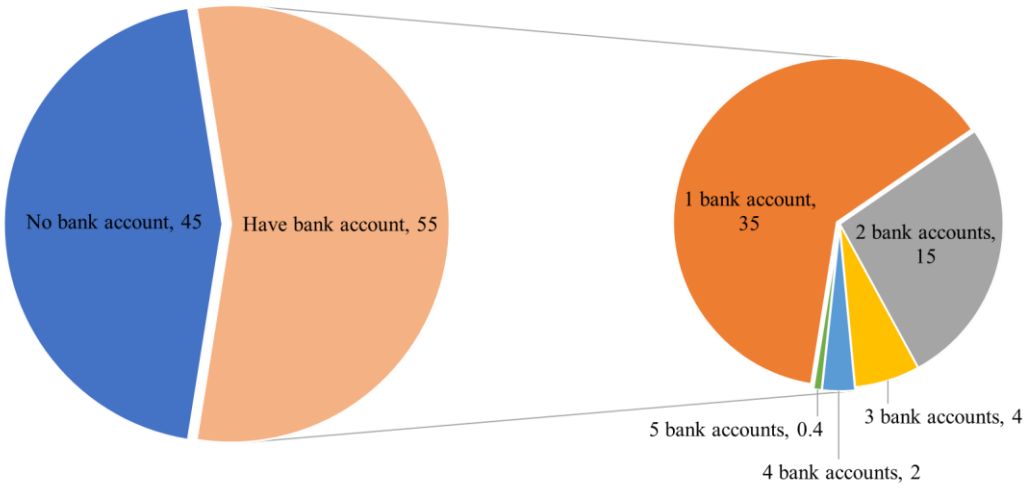



**Figure 9:** Number of bank accounts owned by surveyed AIS (percent)

Almost half of the surveyed AIS who do not use any banking services were asked about the critical barriers hampering them from using the financial service. The following are main reasons:

- 38% of surveyed AIS reported having a bank account is not necessary and useful for their business transactions since cash payment was used to settle financial transactions with their suppliers and clients at their stores. Cash remains the most popular payment method used by surveyed AIS since it is perceived to be very convenient and timesaving for payment settlement at their stores.
- The lack of money for bank deposits is the second major challenge raised by 30% of 110 respondents having no bank account. They commonly use cash for business transactions, so they need cash in hand to settle their business transactions. Thus, depositing money in the bank is perceived to be inconvenient.
- Lack of understanding of the banking system is the third major obstacle raised by 21% of surveyed AIS. In comparison, the other 6% reported that their family member already has a bank account, so they do not need many bank accounts, making them difficult to manage their financial transactions.
- The other reasons for not using the bank include having no interest in the bank, and the belief that access to the bank is time-consuming.

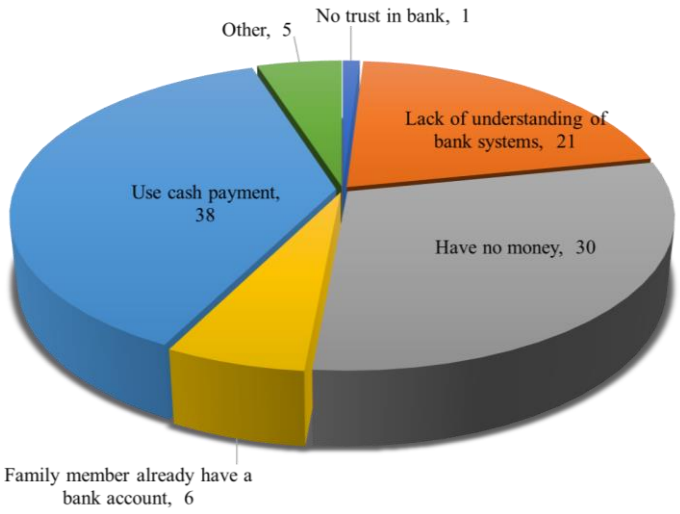



**Figure 10:** Reasons for not having a bank account of surveyed AIS by percentage

### 5.3.2. Adoption of digital payment

Although the access to formal financial services among surveyed AIS represents 55% of all surveyed AIS, only 88 surveyed AIS (39%) installed mobile banking apps on their smartphones. Only 51 surveyed AIS (23%) used digital payment for business transactions. This result suggests that the adoption level of digital payment for business transactions among surveyed AIS remains critically low.

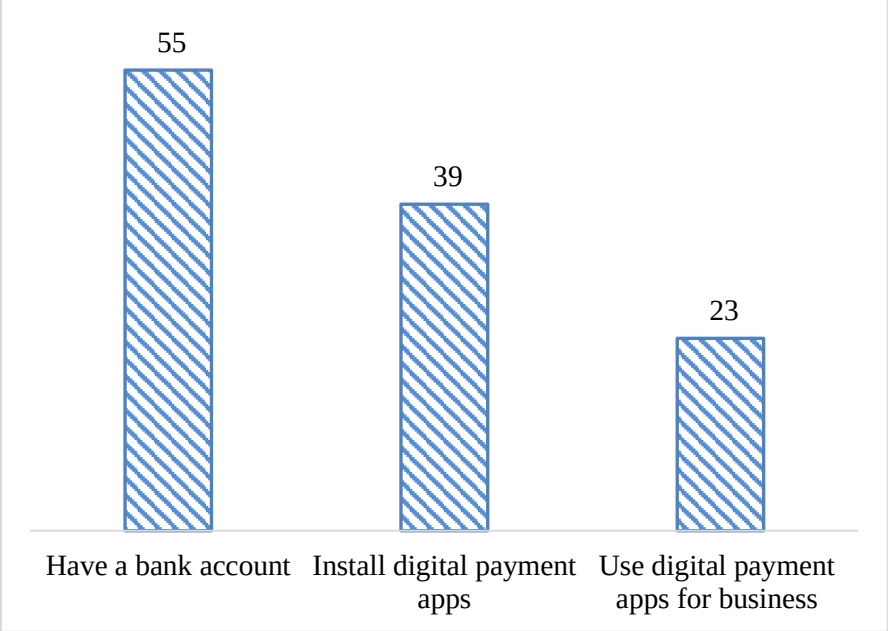



**Figure 11:** Percentage of surveyed AIS having a bank account and digital payment apps

The result shows there are geographical variations regarding the level of adoption of digital payment in the six surveyed provinces. The study found out more than 60% of the surveyed AIS in Tboung Khmum, Battambang, and Prey Veng own a bank account. Whereas, only 38 % of surveyed AIS in Siem Reap have a bank account, followed by 32% in Kandal and 28% in Takeo.

**Table 9:** Access to financial service and adoption of digital payment of AIS (percent)

| | TB | BB | KD | PV | TK | SR | Overall |
|---|---|---|---|---|---|---|---|
| Have a bank account | 70 | 73 | 32 | 62 | 28 | 38 | 55 |
| Install digital payment apps | 45 | 48 | 29 | 47 | 34 | 13 | 39 |
| Use digital payment apps for business | 30 | 32 | 14 | 31 | 3 | 8 | 23 |

Beyond the access to financial services, the study discovered that the percentages of surveyed AIS installing digital payment is significantly low and varies across the surveyed provinces. The study found out that Siem Reap has the lowest percentage of AIS installing payment and e-commece apps, which accounts for only 13% of the surveyed AIS in the province. Interestingly, in Takeo, only 28% of surveyed AIS have a bank account while up to 34% of surveyed AIS in Takeo installed digital payment apps on their phone. This is because users are not required by some service providers (i.e. Acleda and Wing) to have a bank account prior to accessing the digital banking apps.

The result related to the uptake of digital payment among surveyed AIS shows about 30% of surveyed AIS in Tboung Khmum, Battambang, and Prey Veng use the payment app for payment settlement in their business. In contrast, very few surveyed AIS in Takeo and Siem Reap use this financial technology for their daily business.

Among the 88 AIS, who installed a mobile banking app on their smartphones, the survey shows that 75% of respondents installed one mobile banking app and the other 16% have two banking

apps installed on their smartphones. Yet, very few surveyed AIS reported having more than three mobile banking apps

Figure 13 illustrates the most popular digital payment apps used by surveyed AIS. Toan Chet, a mobile banking app of Acleda Bank, is the most leading app used among those surveyed AIS. Toan Chet represents approximately 77% of the surveyed AIS, followed by ABA mobile banking app 20% and Wing app 19%. However, the least popular digital apps include Sathapana (3%), E-money app (2%), and FTB (1%).

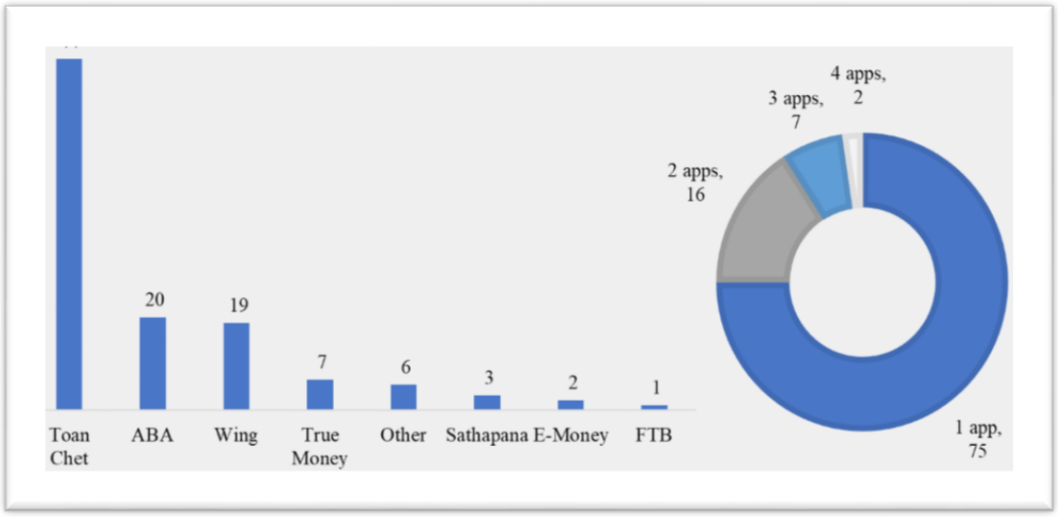



**Figure 12:** Number of digital payment apps installed, and name of apps used by surveyed AIS (percent)

What is interesting about the survey finding is that more than half of the surveyed AIS have used digital payment apps for more than 24 months, while 16% of other surveyed AIS have the apps between 13-18 months, followed by 12% reporting using the app between 7 to 12 months. About an additional 14% of surveyed AIS used the apps for less than six months.

**Table 10:** Number of month having digital payment apps installed/used by surveyed AIS (percent)

| ***Number of months having digital payment apps installed/used (percent)*** | |
|---|---|
| 1-6 months | 14 |
| 7-12 months | 12 |
| 13-18 months | 16 |
| 19-24 months | 6 |
| > 24 months | 52 |

50 surveyed AIS, who used a mobile banking app, were asked about what functions of the apps they used within the last month of the survey period. The survey revealed the following:

- Almost 90% of those who use the app check bank statements or transactions on their phones;
- 74% reported performing bank transfers using the app;
- 61% used mobile top-up function; and,

- 27% performed online purchases.

It is also noticeable that less of surveyed AIS settle bill payments (utilities or internet services) and use QR payment functions on their smartphones.

**Table 11:** App functions and frequency of mobile banking apps used for business transactions by the percentage of surveyed AIS

| ***Frequency of mobile banking app used by surveyed AIS*** | ***%*** |
|---|---|
| ▪ Always | 6 |
| ▪ Frequently | 39 |
| ▪ Sometimes | 26 |
| ▪ Rarely | 29 |
| ***App functions used last month by surveyed AIS*** | ***%*** |
| ▪ Check bank statement/ transaction | 90 |
| ▪ Bank transfer to own account/ any bank accounts | 74 |
| ▪ Mobile top-up | 61 |
| ▪ Settle bill payments | 14 |
| ▪ QR payment | 12 |
| ▪ Online purchase | 29 |

Among the 51 surveyed AIS using a mobile banking app, only 6% reported always using the app for business transactions, while approximately 40% of them described frequently use the app for business purposes. 26% of them sometimes use the app, and only 6% reported always use the app for business transactions. However, 29% of them rarely use it.

### 5.3.3. Payment methods for business transactions

To discover the adoption level of digital payment among surveyed AIS, all 225 surveyed AIS were asked about their payment methods with their suppliers and clients. Mobile banking app is used by 36 surveyed AIS (16%) to settle financial transactions with their suppliers. Whereas, 84% of the surveyed AIS reported using other non-digital payment methods, including cash 59%, followed by money transfer agent 14%, physical bank transfer 9%, and transfer via taxi 2%. The survey indicates cash-based payment remains heavily used by the surveyed AIS given the fact that suppliers or agricultural input firms normally send their staff to collect monthly payments directly at their stores.

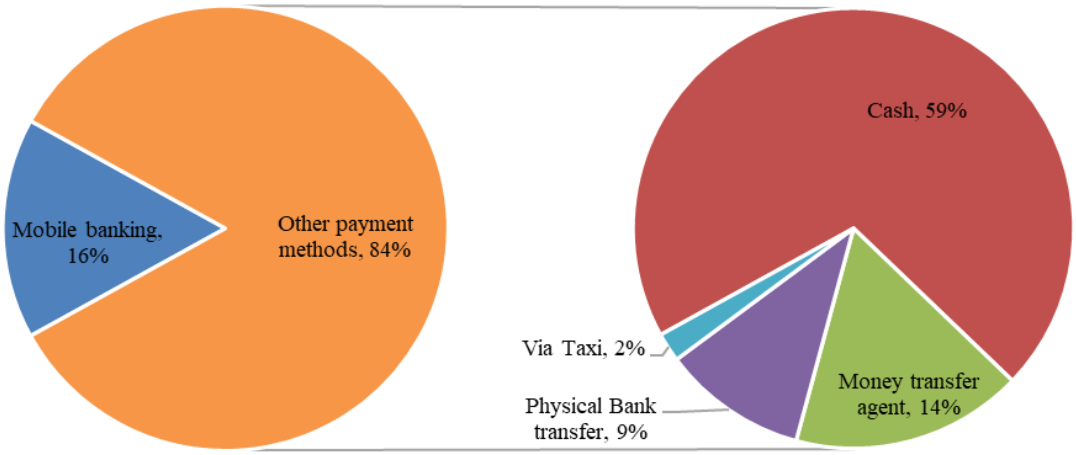



**Figure 13:** Payment methods employed with their suppliers by percentage of surveyed AIS

The study also noted how those surveyed AIS settle payments with their clients. The finding illustrates that only 21 surveyed AIS reported selling products to other wholesalers. However, only 8 of them (38%) apply mobile banking, while the other 12 AIS (57%) use mainly cash to settle payments with their clients, who are also wholesalers in the surveyed provinces. However, only one AIS uses money transfer agents.

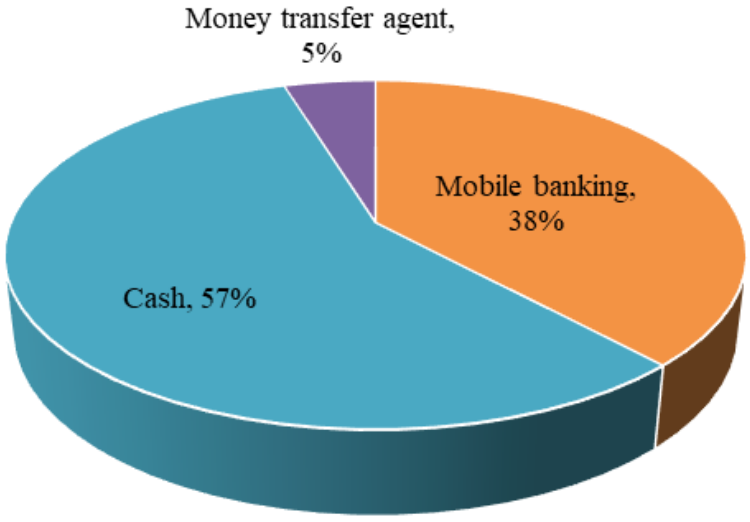



**Figure 14:** Payment methods employed clients as wholesalers by percentage of surveyed AIS

80 out of 225 surveyed AIS reported having contact with retailers as their clients. Out of these, only 5 of them (6%) settle payment via mobile banking app with other retailers, while another non-digital payment is adopted by the majority.

Cash-bashed payment is the most popular method among surveyed AIS and the retailers. 83% of the surveyed AIS use mainly cash to settle payments with their clients as retailers. Transfer via money agent is employed by 10% of surveyed AIS. Very few surveyed AIS reported settling payment via taxi transfer with their retailers.

All 17 surveyed AIS, who sold products to agricultural cooperatives, mainly use cash. The cash-based payment was reported as the most effective payment method between surveyed AIS and their clients.

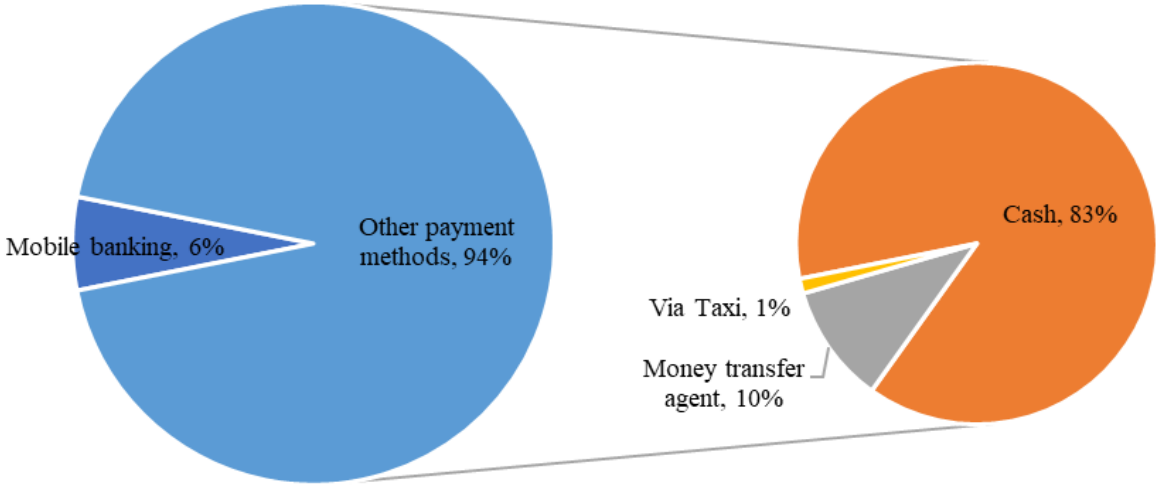



**Figure 15:** Payment methods used clients as retailors by percentage of surveyed AIS

All surveyed AIS reported selling their products directly to farmers. The survey indicates that only 02 surveyed AIS (1%) use mobile banking payment with farmers, while 97% of them use cash for payment settlement with farmers. Other payment methods, such as banks, transfer via taxi, and money transfer agent, were adopted. The majority of the surveyed AIS reported that half of their farmer clients purchase their agricultural inputs on credit. These farmers make payments after they harvest and sell the crop outputs. Thus, cash is greatly favoured between surveyed AIS and farmers for their business transactions.

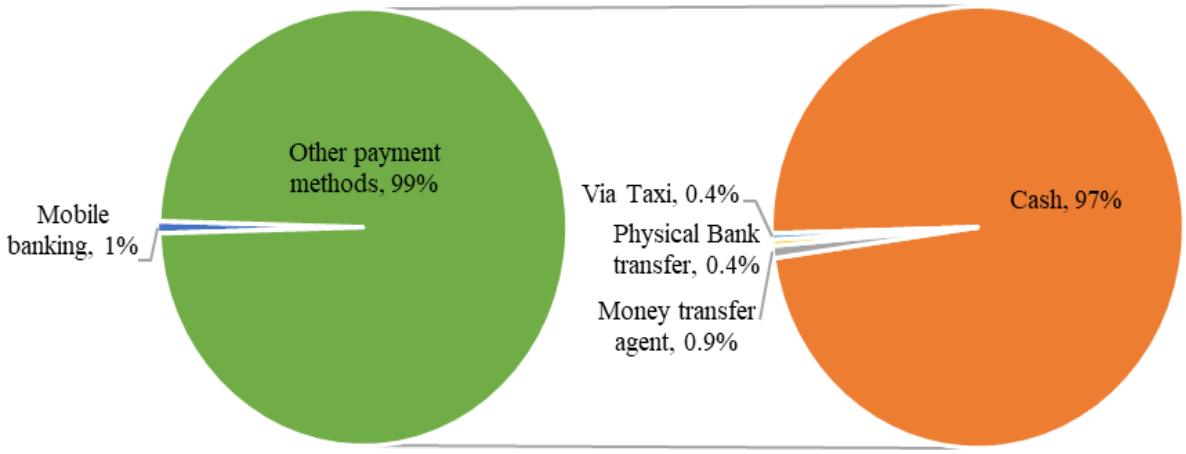



**Figure 16:** Payment methods employed with clients as farmers by percentage of surveyed AIS

## 5.4 Challenges and opportunities for adopting digital payment

### 5.4.1 Major challenges for adopting digital payment

#### A. Limited use of digital apps

The lack of bank account and know-how are AISs' top reasons for not installing digital payment apps. Of 225 surveyed AIS, 124 of them (55%) have a bank account, and only 99 have surveyed AIS installed the app. The study interviewed 154 surveyed AIS who do not install the app to discover their challenges hindering them from installing the apps; however, only 146 of them responded to the questions.

The first major hindrance for not installing the mobile banking app is they do not use any banking services for their financial transaction since they rely mainly on cash payment for their business. The challenge was reported by 68% of the surveyed AIS. While 18% of them do not know how to install or use the apps, the other 5% of them are neither interested in financial technology nor find it relevant or necessary for their business. Very few surveyed AIS raised any other challenges, such as having no trust or concerns over fraud/violation of privacy, no having a smartphone, or the convenience of cash payment. Having no smartphone to use the technology was raised by only 1% of surveyed AIS since the smartphones are now widely available at a low price.

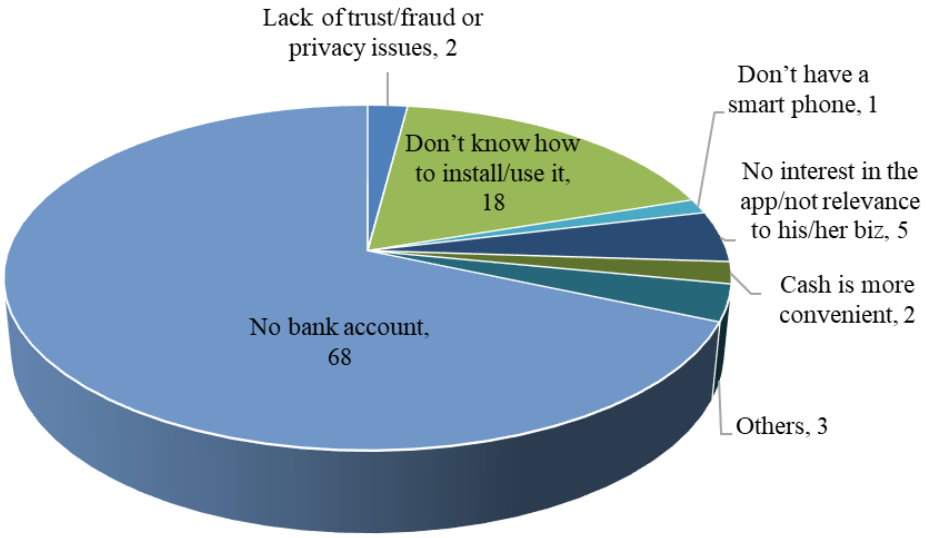



**Figure 17:** Reasons for not using digital payment apps of surveyed AIS (percentage)

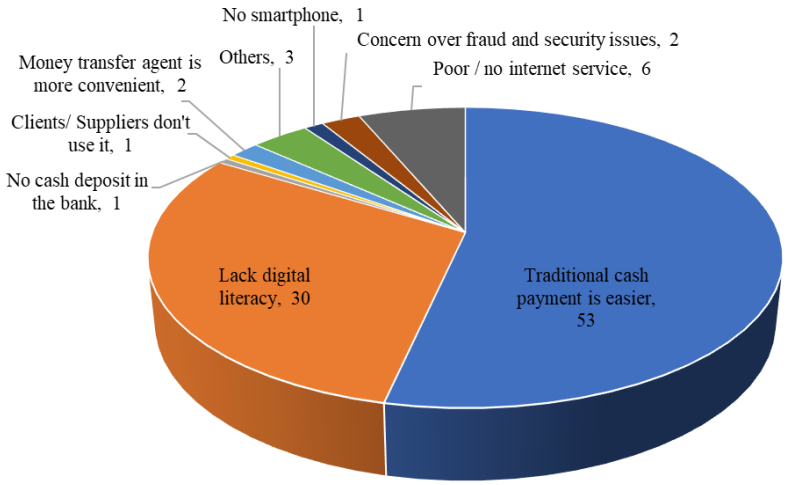
#### B. Businesses not adopting digital payment

The high convenience of cash is the main reason steering AIS from using digital payment for their business transactions. Based on the survey, more than half of AIS think having financial transactions by cash is more convenient than the digital payments. The digital payment

adoption in Cambodia has been growing; however, cash is still widely used and preferred by businesses and individuals, particularly in the provinces.

This indicates that this business remains heavily cash-based, and it demotivates them to apply this payment method since very few customers use this financial technology. Limited digital literacy, the second major challenge, was reported by 30% of the surveyed AIS. Additionally, 6% of them experienced poor or no stable internet connection in their area, making it difficult for them to access the apps. Other reasons for not using digital payment include having no cash deposit in the bank, no client/suppliers who use the technology, no smartphone, and concern over fraud and security issues. Each challenge was raised by less than 3% of surveyed AIS.

**Figure 18:** Reasons for not using digital payment for business by parentage of surveyed AIS




## C. Major challenges in using digital payment for business transactions

Among 50 surveyed AIS (23%) who use digital payment app for business transactions, only 43 surveyed AIS answered the questions related to challenges to using digital payment in their business. Out of these, 16 surveyed AIS (37%) experienced having no challenges in using financial technology for business transactions.

Figure 20 below demonstrates the critical challenges of using digital payment for business transactions by percentages of surveyed AIS. Surprisingly, 37% of them experienced no challenges at all when using digital payment apps. However, 40% suffered an unreliable internet connection, especially during busy hours. 12% of them revealed having extremely limited knowledge about the digital payment software/apps they currently use. The major reason behind this is some of them revealed having low education or struggling with the foreign language used in the apps. A problem of frequent technical problems/system errors of digital payment software/apps was raised by 7% of surveyed AIS, while very few AIS (2%) reported experiencing technical restriction by service providers.

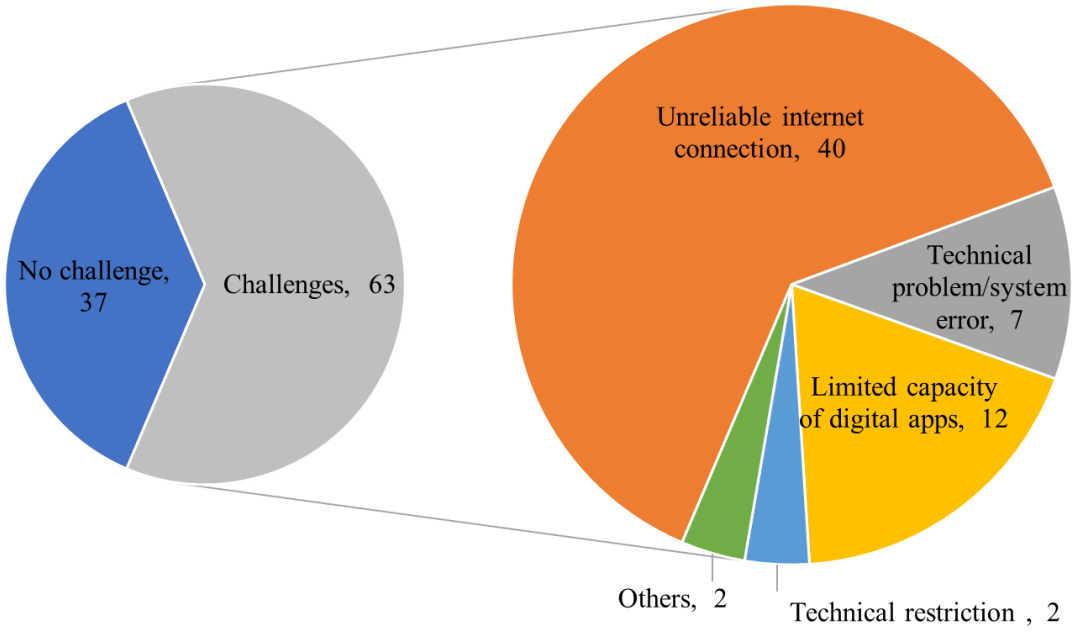



**Figure 19**: Major challenges for using digital payment for business by percentage of surveyed

### 5.4.2 Advantages of digital payment in business operation

The adoption of digital payment into a business transaction can bring many kinds of advantages to business operations. However, less than half of AIS surveyed were able to point out the advantages of digital payment. Without a good understanding of the advantages of digital payment, AIS are reluctant to adopt digital payment for their business. Stakeholders in digital payment should promote the application and advantage of digital payment to encourage more adoptions of digital payment among AIS.

Among those who have adopted digital payment, 42 of them (95%) reported improving their day-to-day operation thanks to the financial technology, while only 2 surveyed AIS disagreed with the statement. Figure 21 illustrates the key advantages of adopting digital payment in daily business transactions. Reducing the risk of loss and theft is the most important advantage in business operations raised by 43% of the surveyed AIS.

The second major benefit is an effective improvement of the company's financial management and cash flow. This major benefit was mentioned by 19% of the surveyed AIS. Moreover, 17% of them are able to reduce administrative and operational costs thanks to the financial technology. Another 17% of them also stated that the use of digital payment is time-saving and convenient. This enables them to have more time to focus on their businesses. This technology is extremely convenient because it does not require physical contact for payment settlement and reduce the risk of receiving counterfeit currency. It was also noticed that only 5% of the surveyed AIS expressed the view that digital payment help improves the relationship with their suppliers and clients since they can receive instant and efficient payments.

While the cash-based transactions are typically perceived as inconvenient, unsafe, expensive, inefficient, and lacking in transparency; digital payment remarkably outweighs the benefits of cash-based payment by reducing transaction cost through increased efficiency and speed,

improving transparency and security, enhancing accountability, and promoting financial inclusion and inclusive growth.

The digital payment provides not only mutual benefits for both payees and payers but also the Cambodian government since the financial technology improves traceability of all payment transactions through digital records of financial transactions performed by both parties. The requirements for stringent identification documents help the regulator to detect those ghost recipients or those engaging in money laundering. The benefits of digital payments not only go far beyond its convenience benefits but it also helps improve business operations and the financial conditions of those who use this technology.

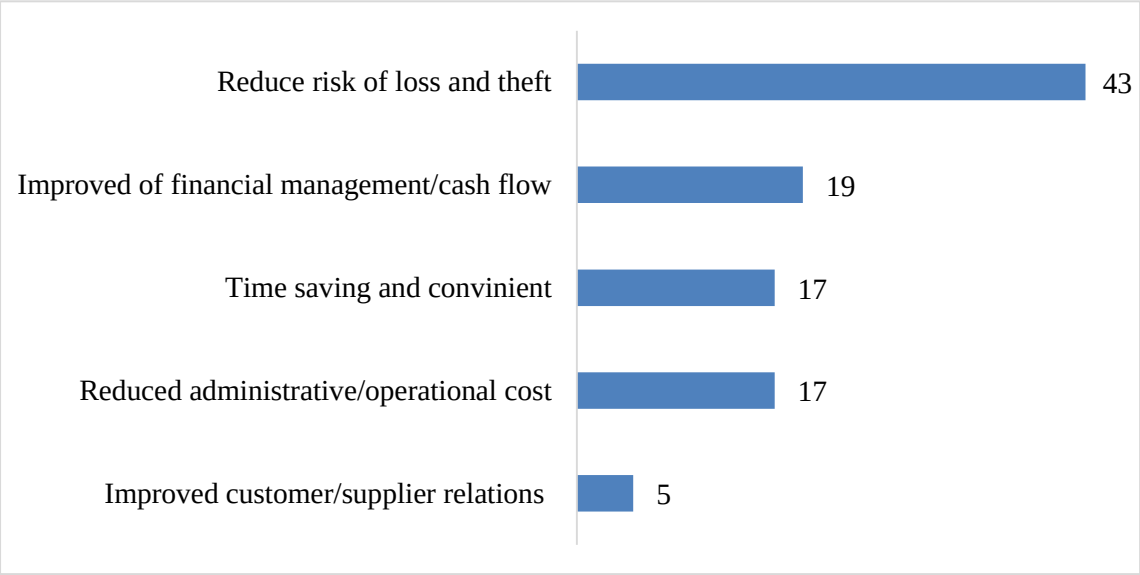



**Figure 20:** Advantages of digital payment in business operation received by AIS (percent)

The survey also confirmed that most AIS, who use digital payment for their business operations, have received a lot of benefits. Moreover, the overall assessment of the local digital payment ecosystem, according to the literature review and the perception of surveyed AIS, shows that the local internet infrastructure has improved such as broadband services and internet speed. Moreover, many service providers of financial technologies have been flourishing in the last five years, making it more conducive for surveyed AIS to adopt new financial technology.

Nevertheless, the adoption level of the new financial technology remained critically limited, according to surveyed AIS. The major hindrances for the uptake of the digital payment among those surveyed AIS include limited digital literacy, small number of suppliers/clients utilizing digital payment, and concern over fraud, security, and privacy violations. It can be concluded that the supporting infrastructure and the supply of the digital payment services are readily available, yet the local demand for these services, especially among agricultural input suppliers, has not been effectively utilized to achieve benefits in expanding business transactions.

## 5.5 Current status of the adoption of e-commerce

Despite tremendous efforts of the Cambodian government to adopt legal frameworks including e-commerce law and consumer protection law, e-commerce remains at an infant stage, and

influx investment from huge companies or major players in the region has not yet been fully exhausted. E-commerce in Cambodia is perceived as buying products online, especially from Facebook, while the payment is largely completed by cash on delivery model despite the flourish of digital payment such as Toan Chet, ABA, and other digital payment apps.

E-commerce relatively undeveloped in the retail sector, let alone the agricultural input sector. According to the enterprise survey, the level of e-commerce adoption of surveyed AIS is extremely low. 15 out of 225 surveyed AIS (7%) reported adopting e-commerce in their business operation.

Only one surveyed AIS uses Tonlesap app for product display and sale. Facebook is the only mean for marketing communication and online sale as it has become immensely popular among the general public in Cambodia. Interestingly, the conventional website is also not popular amongst the surveyed AIS. Only 3 out of 225 surveyed AIS maintain a website. Yet, the content of the company's website is extremely limited to only the company's profile, product display, or technical description of the products. Unfortunately, product ordering, pricing information display, online communications with clients, digital payment, and online logistic arrangements are not embedded in its website.

Amongst the 15 the surveyed AIS, none of them revealed generating any profit from their online sales, but strongly believe it is a good investment to promote more sales and trust from their customers in the future. Furthermore, 11 surveyed AIS stated that they have improved branding and marketing communication with their respective clients. Having an online platform serves as an opportunity for them to reach new clients and expand their market shares. In this regard, three surveyed AIS shows that online e-commerce helped increase their sales and market share. Only one surveyed AIS mentioned improving customer service through online communication or instant messaging to their potential clients. However, only one surveyed AIS found e-commerce useless and a waste of time since they cannot generate any profits from online business activities.

Given the slow adoption of e-commerce operating platforms, local entrepreneurs resorted to establishing informal e-commerce markets, especially online shops through social media and buying-selling from mostly Chinese e-commerce sites. This can be considered as progressing adoption and participation e-commerce platform in Cambodia while the government is working with relevant stakeholders to adopt and promote e-commerce that is part of the digital economy development of the nation. Supporting this, the MoC signed a Memorandum of Understanding with China on e-commerce cooperation in 2017 that China will provide technical advice to boost e-commerce in the Kingdom.

## 5.6 Challenges and opportunities for adopting e-commerce.

### 5.6.1 Major challenges for adopting e-commerce

Trust is cross-cutting concern in e-commerce adoption among AIS. Unlike paying in cash, in which AIS can meet the sellers or buyers in person, e-commerce leads them into a deal with a stranger or new customer over the e-commerce platform. AIS are concerned about being cheated by the customers on the e-commerce platform. Surveyed AIS, who adopt e-commerce, revealed that building and maintaining trust in products/branding has been the greatest challenge for them as counterfeit news, online fraud, and invasion of privacy issues on the

internet remain the critical concerns for online consumers, especially those who have limited digital knowledge.

On the other hand, 210 surveyed AIS (93%), who have not yet adopted e-commerce, were asked what hinders them from introducing e-commerce in their businesses. 130 surveyed AIS (62%) encountered technical/operational challenges, while 124 of them (59%) reported having social-economy and cultural challenges, and only 11 surveyed AIS (5%) faced law/regulation challenges.

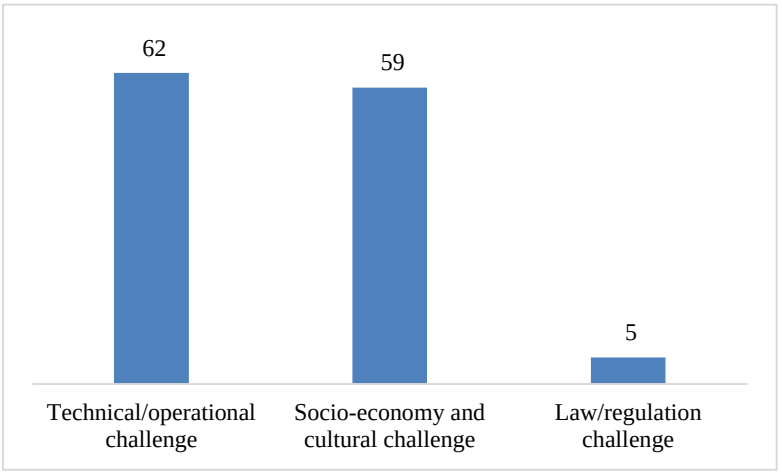



**Figure 21:** Challenges for AIS to adopt E-commerce by surveyed AIS (percent)

### A. Technical/operational challenges

Lack of technical staff or knowledge of e-commerce applications is the major challenge hindering AIS from adopting e-commerce with 61% of AIS are confronted with this challenge. Most AIS interviewed have just begun to use the internet by accessing social media networks such as Facebook. It might take more time for them to think about integrating e-commerce into their businesses. In addition, there is no any other dominant or outstanding e-commerce platform for the agricultural input market, which can help AIS to access to new markets. Therefore, the AIS respondents did not invest time to learn or explore the potential application of e-commerce.

The finding in this section also shows that 23% of AIS respondents experienced a lack of trust in e-commerce from their respective clients. On top of this, 5% of surveyed AIS expressed concern over the lack of trust in the digital payment of their clients. Other challenges, such as costly investment on website/app development, poor internet service, and the irrelevance of e-commerce in their business, were also raised by a small percentage of surveyed AIS.

**Table 12:** Technical/operational challenges hindering AIS from adopting e-commerce of surveyed AIS (Percentage)

| ***Technical/operational challenges (percent)*** | |
|---|---|
| ▪ No/Lack of technical staff or knowledge of e-commerce | 61 |
| ▪ Lack of trust in e-commerce | 23 |
| ▪ Lack of trust in digital payment | 5 |
| ▪ Others | 4 |
| ▪ Development of the website/mobile app is costly | 2 |
| ▪ Poor internet service | 2 |

| | |
|---|---|
| ▪ E-commerce is not relevant to business | 1 |

### B. Socio-economic and cultural challenge

Adopting an e-commerce solution for the AIS business is very challenging. Most of AIS's customers are farmers living in rural areas with limited knowledge about e-commerce. There is limited knowledge of clients on e-commerce in agricultural input business as stated by 36% of surveyed AIS. This has been served as a critical barrier for them to uptake e-commerce in their business-model. Among other reasons, 20% of them expressed major concern over the lack of customer's trust in e-commerce. What is interesting is that 15% of surveyed AIS stated that their product could not be sold online since their customer required consultation service and being able to see the products in the store. However, 10% of respondents revealed to have no time or interest in e-commerce, given the fact that the products are mostly sold on credit to farmers. 7% other surveyed AIS also stated they could not sell products online as they sell them on credit to farmers, who will pay back the loan after their harvest. Thus, an effective measure to ensure the customers pay back the loan must be developed if e-commerce is adopted.

**Table 13:** Technical/operational challenges hindering AIS from adopting e-commerce by the percentage of surveyed AIS

| ***Socio-economic and cultural challenge (percent)*** | |
|---|---|
| ▪ Customer and client lack of knowledge of e-commerce. | 36 |
| ▪ Customer's trust in e-commerce is extremely low | 20 |
| ▪ Customer needs consultation service/see products in store | 15 |
| ▪ No time/interest in e-commerce | 10 |
| ▪ Others | 8 |
| ▪ Customer buys on credit | 7 |
| ▪ E-commerce is extremely competitive | 3 |

### C. Law/regulation challenges

Only 11 surveyed AIS raised their concerns over law/regulation that hinders them from adopting e-commerce in their business model. Seven of those surveyed AIS expressed major concerns over the effective enforcement of the laws on e-commerce and consumer protection policy. Three surveyed AIS mentioned about the lengthy and expensive process of gaining licensing from competent ministries or local authorities.

## 5.6.2 Awareness and perception of e-commerce

### A. Awareness of laws on e-commerce and consumer protection

Given the fact the new laws on e-commerce and consumer protection were enacted in late 2019, the study also explored the level of awareness and perceptions of AIS on the new policies and regulations. The result surprisingly shows that 76% of the surveyed AIS did not know about the new laws. However, the majority of them (70%) agree with the idea that these laws will help improve the uptake of e-commerce in Cambodia. Yet, only 8% of surveyed expressed disagreement that the laws will help improve e-commerce, while the other 22% AIS did not know whether it obstructs or help promote this e-commerce in Cambodia.

### B. Perception of AIS on e-commerce

This study also analyzed AIS's perceptions of the benefit of e-commerce for their business and farmers' willingness to use e-commerce.

Only one-third of AIS think that e-commerce will fundamentally change how they do business in their industry in the next three years. 44% of AIS disagrees, and 23% of AIS are not sure. Many AIS think that a three-year time span is relatively short to see the change in the ecosystem of the agricultural value chain. They also think it is also difficult to change the knowledge and behavior of people within the next few years. The adoption of e-commerce needs collective actions from all stakeholders. For example, educating farmers to use e-commerce might be time-consuming and require a lot of resources.

On the impact of e-commerce on the company's ability to manage inventory, 38% of AIS agree, while 35% and 27% of AIS disagree or don't know. Many AIS think e-commerce is just an online marketplace where sellers and buyers exchange products. They do not have knowledge and experience about e-commerce services, which can help businesses on other tasks such as invention management, customer relationship management, marketing, and bookkeeping.

Another added value of e-commerce is the distribution of products from AIS to farmers' locations without requiring the farmers to visit an AIS shop. Almost half of AIS think that the difficulty in transporting product from their location to farmers' location in the most cost efficient way will limit the sale of products via an e-commerce platform. For one, the distance between the two parties is often considerable. Another reason is, an individual farmer's order is typically of a low quantity. In the current practice, farmers come to the urban area and purchase many kinds of products for transporting back to their village, so that they can maximize the cost efficiency of transport. AIS respondents believe if farmers organize as agricultural cooperatives and make an order as a group via e-commerce, the distribution issue from AIS to villages will be addressed.

The survey revealed that 65% of surveyed AIS did not believe that farmers were willing to buy products/services over the internet due to their limited digital knowledge and the practice of buying agricultural inputs on credit. Only 15% of the surveyed AIS agree that more farmers will buy agricultural products online with help from their younger family members and with further training on digital literacy.

Regarding the use of digital payment, 60% of surveyed AIS disagree that farmers are willing to use digital payment for product/service sales. The possible reason to support their arguments is that most farmers do not have a bank account and have limited knowledge of financial technology. However, the other 17% of the surveyed AIS believe that farmers are willing to use digital payment to settle their payments when they receive proper training on the new technology.

**Table 14:** Perception of surveyed AIS on e-commerce

| Perception of AIS on e-commerce | Agree | Disagree | Don't know |
|---|---|---|---|
| ▪ E-commerce will fundamentally change the way you do business in your industry in the next 3 years. | 44% | 33% | 23% |
| ▪ E-commerce will improve your company's ability to manage inventory system. | 35% | 38% | 27% |
| ▪ Distribution (logistics) issue will limit the sale of your company over the internet. | 38% | 49% | 13% |

| | | | |
|---|---|---|---|
| ▪ Farmers are willing to buy products/services on the internet. | 15% | 65% | 20% |
| ▪ Farmers are willing to use digital payment for product/service sales. | 17% | 60% | 23% |

C. **Perception of AIS on major hindrances for farmers in adopting e-commerce**

To understand why farmers are less likely to adopt e-commerce when they want to buy agricultural inputs, all surveyed AIS were asked about their perception of the possible hindrances for farmers to adopt e-commerce since they closely interact with them as their clients.

Digital illiteracy, low trust in production quality, and lack of useful information are the top three reasons hindering farmers from adopting e-commerce. Many farmers have just started accessing the internet in recent years with the use of social media platform such as Facebook and video streaming YouTube. Farmers are not yet aware of any e-commerce platform, which could address their needs. Farmers also prefer to see and check the product by themselves before they make the decision to purchase the products. As far as AIS knows, there are several e-commerce platforms such as Agribuddy or Khmer24.com; however, information available about these platforms is limited.

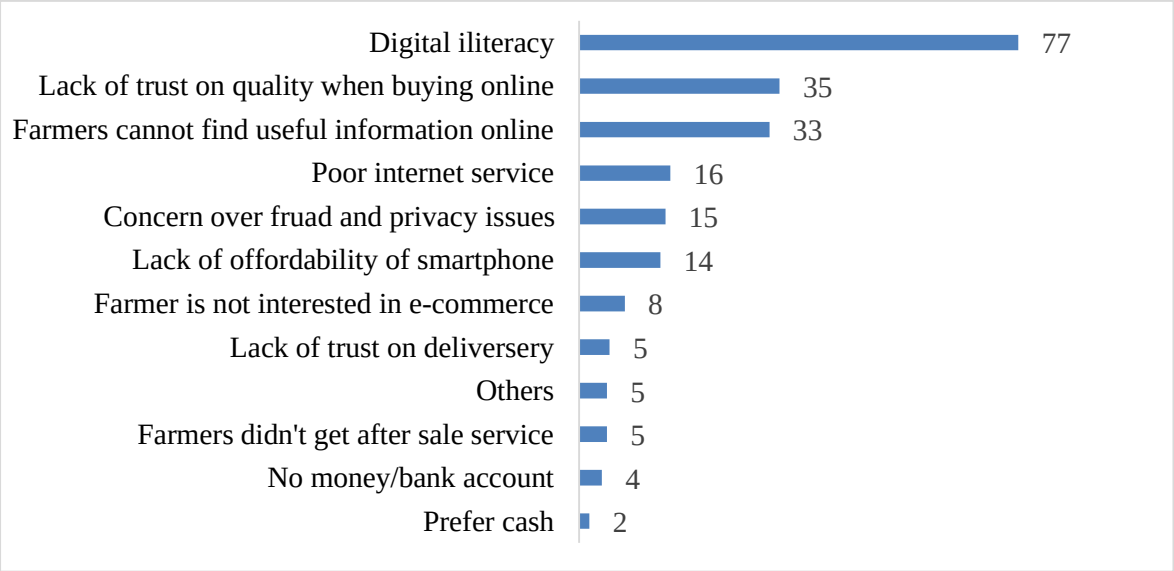



**Figure 22:** Perception of surveyed AIS on hindrance for farmers to adopt e-commerce

### 5.6.1. Opportunities for adopting e-commerce

All 210 surveyed AIS have not yet adopted e-commerce when asked about their plans and opportunities to adopt e-commerce for their business. Only 37% of the surveyed AIS plan to adopt e-commerce for their business for the next few years. Furthermore, 63% of the surveyed AIS did not have any plan to start e-business due to their limited digital knowledge of surveyed AIS and a perception that e-commerce is somewhat irrelevant or impossible to be implemented given the nature of their business. Significantly, a large proportion of the surveyed AIS believe that farmers are unlikely to adopt e-commerce due to a lack of digital literacy and proper training on new digital technology in the rural areas where they mostly reside.

Although the surveyed AIS adopting e-commerce has not yet generated any profits from their online sales, many of them strongly believe there is a potential opportunity for investment to enhance their business model given the fact that consumer behavior will also be changing to adapt to those new technologies. Social media has played a critical role in marketing communication and branding strategy among those adopting e-commerce.

# 6 Conclusion and Recommendations

E-commerce in the agricultural input business in Cambodia is relatively primitive and is underdeveloped. There is significant untapped market potential in the sector, driven by higher penetration of smartphones, the improved internet infrastructure, the availability of many digital payment services, and a young growing middle class in Cambodia. It substantially provides an opportunity to streamline the agricultural value chain, reduce multiple intermediaries and transaction costs, improve transparency and accountability, and provide access to wider markets. E-commerce in agriculture is an emerging opportunity in Cambodia because it has the potential to generate significant social and economic benefits, improve farmer livelihood, boost productivity, and improve digital and financial inclusion in rural areas. However, considerable investments to improve awareness of e-commerce, to develop a rigorous e-commerce ecosystem, and to establish an enabling regulatory environment that promotes a fair playing field for all actors in the new business model are all needed to facilitate a significant improvement in the new emerging business.

The uptakes of digital financial services and e-commerce have been extremely limited among the surveyed AIS despite some initiatives and improvement of supporting digital infrastructure and service providers. In general, Cambodians can afford digital technologies and tools such as smartphones that are not accessible before, but this does not necessarily mean that this device availability and ownership, especially smartphones, has been harnessed effectively to support the uptake of the digital activities for business transactions. One obvious conclusion is that the digital divide is no longer about access to technology but rather about digital literacy, technological knowledge and business application to maximize its effective use.

Limited digital literacy among the general public, especially farmers in rural Cambodia, lack of IT and digital technology skills, and the reliance on cash-based payment are a major hindrance in the adoption digital payments and e-commerce. E-commerce in agriculture, especially agricultural input business, is relatively primitive and is underdeveloped since very few e-commerce systems or apps (i.e. Agribuddy, Tonlesap, and CamAgriMarket) cater to agriculture. More importantly, an influx of investments from regional players has not yet been seen in this sector. The implication has resulted in the slow adoption of e-commerce and insufficient utilization in the sector,

Given the fact that the adoption of digital payment and e-commerce in the agriculture sector is relatively low, there is significant untapped market potential in this sector, driven by higher penetration of smartphones, improved internet infrastructure, the availability of many digital payment services, and a young growing middle class in Cambodia. The financial technology industry has provided many advantages by making payment services more effective, lowering transaction costs, creating higher integration, and improving financial inclusion, especially in rural Cambodia. On the other hand, e-commerce in agriculture will substantially provide an

opportunity to streamline the agricultural value chain, address shortfalls in the agricultural value chain, improve transparency and accountability, and access to wider markets. With regard to increasing the adoption of digital payment and e-commerce, the study highlights the following recommendations for key stakeholders in the ecosystem.

**Government:**

- ***Create an enabling regulatory environment.*** The government and regulators should create enabling regulations to drive the adoption of financial technology and e-commerce among AIS and farmers. An appropriate strategy would be to streamline the process of business registration and license for e-commerce, provide systems or database to permit access to digital identification and verification, and to create level playing field for all players, including formal and informal enterprises, to fairly compete in the markets.

- ***Improve supporting digital infrastructure quality and access***. The government should further invest in improving digital infrastructure, in supporting further mobile broadband rollout to the rural areas, and to ensure consistent quality of internet services. The government should support the private sector in developing a rigorous e-commerce ecosystem. Creating such an e-commerce ecosystem and building an entrepreneurship environment would create a new opportunity and employment in agricultural sectors.

- ***Focus on developing digital skills and improve digital literacy.*** A digital literacy framework for the public should be developed to address the whole spectrum of digital literacy development in Cambodia. Inclusive literacy models should be considered to provide equal and equitable access to literacy opportunities for everyone regardless of their social, cultural, and economic background. An inclusive model should focus on information literacy, and competency in finding, searching, and browsing for digital content as well as filtering, and evaluating it. Public awareness on digital technology and digital literacy should be enhanced, especially in rural areas. A comprehensive study of digital skills gaps and digital readiness should be undertaken to help the government formulate strategic direction and interventions to promote the adoption of e-commerce and digital payment in business operations.

- ***Develop agriculture e-commerce framework.*** The government should develop an agriculture e-commerce framework focusing on reshaping agriculture production, promoting trade exchange platforms, and improving marketing and sales over the internet.

**Private Sector and Donor Community:**

- ***Invest in viable services that create impacts.*** With the availability of funding, the private sector should be encouraged to invest in the agriculture e-commerce businesses and some start-ups including app developers that can generate both social and economic impacts, to work directly with AIS and farmers to transfer skills, technology, experiences, and resources.

- ***Invest more in incubators and accelerator programs***. The government, development partners, and other donors should work collaboratively with the private sector and major development partners to further invest in and promote more incubators and accelerator programs in this sector for aspiring the current entrepreneurs and innovators. These

programs will nurture new start-ups in tech innovation, especially in digital financial services and e-commerce sectors. For instance, Tonlesap App was developed by a private micro-finance institution, AMK, with funding support from donors such as SNV and Harvest II projects. This type of initiative will support new start-ups.

**Agriculture Input Suppliers (AIS)**

- **Develop digital skills and improve digital literacy**. AIS should participate in digital skills development programs initiated by relevant ministries/local authorities and private actors based on their level of digital skills and literacy. The inclusive opportunities and specific technical skills should be given based on the actual needs. The improved digital skills and digital literacy will also contribute to increase the adoption of online transactions among AIS.

- **Participate in public awareness and increase understanding of the benefits of digital payment and e-commerce.** AIS have to improve their understanding of the potential benefits of digital payment and e-commerce together with the increased digital skills and digital literacy since without their embracing of the benefits of, they might not likely to adopt the digital payment or participation in e-commerce even if they have the skills to do so. AIS have to value their time with active participation in the public awareness initiatives to increase their understanding of potential benefits and the existing related laws and mechanism. As a result, AIS lack of trust in digital business would be improved as well.

- **Increase trust in adopting digital payment and e-commerce.** AIS could do this by taking time the related laws and policies for digital payment and e-commerce. Besides, when the government and relevant actors thoroughly enforce and implement the e-commerce and consumer protection law and make it widely reach out to all AIS to increase their understand of the rights and privacy, mechanism for the online transactions that are free from theft, and procedures for resolve any online disputes/cheats effectively and timely then their trust will gradually increase. In the mean time, AIS should broaden their knowledge and understanding of business digitalization as a potential for business expansion and reach out to larger customers through digitalization in order to improve their trust and confidence in this sector.

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