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## **Microfinance Development in Cambodia: Challenges and a Case Study of AMK**

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## ABSTRACT

This study aims to explore the role of microfinance institutions in Cambodia through a review of microfinance development in Cambodia focusing on the current situation and challenges faced, together with a case study of a particular microfinance institution in Cambodia. Cambodia has a rapidly developing microfinance sector with funding from domestic and international operators. Moreover, microfinance institutions represent the main providers of financial services in rural areas. Still, there are several challenges including issues concerning external funding, financial regulations and political challenges, and credit access and signs of non-performing loans. A case study of Angkor Mikroheranhvatho Kampuchea (AMK), one of the major microfinance institutions in Cambodia, analyses access to credit for households to help understand the characteristics of AMK client and non-client households, and also to shed light on policy implications concerned with supporting financial inclusion in Cambodia.

**Keywords:** Microfinance Institutions, Credit Access, Financial Inclusion, Multiple loan sources

**JEL Classification:** G21, O1, R29

## **1. Introduction**

Microfinance initiatives have been implemented widely across Asia for almost four decades and the ideas generated have been adopted in many developing countries in other regions. The first microfinance institutions were established in the 1980s, such as the Grameen Bank founded by Muhammad Yunus, a Bangladeshi banking innovator awarded the Nobel Peace Prize in 2006. In the long history of microfinance there have been several developments and innovations in its operations enabled by favorable policy reforms. It is now one of the most common development tools used to fight poverty in many developing countries. Most financial services offered by microfinance institutions (MFIs) target the poor by solving market failure problems in rural credit markets, such as reducing monitoring costs and tackling asymmetric information issues. Some microcredit products provide more access to credit for low income people who do not have collateral by offering group lending. MFIs, therefore, have helped the rural population increase income and build up assets to assist in the mitigation of risks, such as illness and natural disasters, while facilitating the development of micro-enterprises. In essence, Cambodia's microfinance sector has played a major role in poverty eradication as well (Pidé, 2013).

In Cambodia, the poor, who are extremely vulnerable in rural areas, have no capacity to be empowered to escape from the poverty trap. People with limited resources or collateral are in need of access to credit in order to invest in projects which support their daily earnings from agriculture activities or small non-farming businesses. If such access is unavailable, they must allocate their scarce resources to alternative projects with diminished outcomes which may deepen their poverty. The high demand for credit remains a challenge for the poor living in rural areas of Cambodia, because there is a lack of financial

institutions which have expanded their services to rural areas incorporating door-to-door policies. Furthermore, the formal financial institutions and services available in Cambodia are mostly located in urban areas and provinces near the capital city rather than in rural areas. Most borrowers must have property or collateral in order to access loans from such institutions. Some rural provinces like Stung Treng, Rottanak Kiri and Mondul Kiri have very low access to financial services and most MFIs and banks are reluctant to locate in these provinces. This means that vulnerable and poor households in these areas depend on MFIs, private lenders or informal micro-lenders to secure needed credit to enhance their welfare and economic activities.

This study focuses on exploring recent developments within microfinance in Cambodia. There are challenges on both the supply and demand sides of credit markets in Cambodia that are also linked to the development of financial inclusion. Representatives of institutions responsible for the external funding of MFIs in Cambodia could potentially be alarmed at the cost of funds; as well as the financial regulations and political challenges which may raise some concerns regarding the sustainability of MFIs in Cambodia. On the other hand, access to credit, especially in rural areas, and signs of increasing non-performing loans in microcredit institutions represent challenges that require hasty attention from policy makers.

In addition to shedding light on the background of microfinance development in Cambodia and the challenges faced, this paper will also make a case study of Angkor Mikroheranhvatho Kampuchea (AMK), one of the major microfinance institutions in Cambodia. Household surveys, conducted by the AMK research department, are analyzed in pooled data to understand the characteristics of AMK client and non-client households, as well as other determinants of

access to microfinance and alternative sources of credit. This will potentially highlight policy implications for supporting financial inclusion in Cambodia.

The study is organized into five sections. Following the introduction, section 2 focuses on microfinance development in Cambodia. Section 3 discusses the challenges within Cambodian microfinance development. Section 4 offers a case study of AMK Microfinance and its background through survey data and household analyses, comparing AMK's clients and non-clients, as well as analyses of the characteristics of households and the determinants of access to AMK credit using econometric models. Finally, section 5 offers conclusions and policy implications, together with suggestions for future research.

## **2. Microfinance Development in Cambodia**

Due to innovations in rural financial services and the economic growth experienced since 1991, Cambodian economic growth has been led by SMEs largely based in rural areas. In 1992, initiatives concerning microfinance organizations in Cambodia were generated under the Ministry of Interior and the National Bank of Cambodia (NBC). Most microfinance institutions in Cambodia operate under Non-Governmental Organizations (NGOs) and their funding was acquired from multiple sources. However, some start-up activities and their financial projects tended to fail because of low levels of technical expertise and their clients' lack of financial literacy.

Cambodia represents one of the most rapidly developing microfinance sectors globally and is internationally recognized as embodying a success story by the World Bank (World Bank, 2009). Due to these successes, more NGOs have transformed into microfinance organizations and new

initiatives have been established concerning various products and services, especially in rural areas. These MFIs provide the same services as banks, however while banks focus on serving urban areas, MFIs are the main providers of financial services in rural areas.

With continuous rapid development in the banking system and microfinance sector, a new law targeting banking and financial institutions was introduced in 1999, and other Prakas (banking and financial regulations) on microfinance regulation in 2000 by the National Bank of Cambodia. Under the Prakas, MFIs with current reserves of at least KHR 100 million are required to register with the NBC, while those with loan portfolios over KHR 1 billion must be licensed.<sup>2</sup> These regulations encouraged many NGOs and MFIs to obtain MFI licenses by incorporating private limited companies registered with the Ministry of Commerce and obtaining the prerequisite licenses from the National Bank of Cambodia.

There are three kinds of micro-loan service providers operating in Cambodia's rural areas: NGOs or credit operators, microfinance institutions and informal individual lenders. As of 2016, there are seven microfinance institutions taking deposits, 64 microfinance institutions and 170 small rural credit operators or NGOs (NBC, 2017). The majority of the big microfinance institutions in Cambodia grew from initially being international NGOs sourced by funds from European Union countries. Other international NGOs are funded by GRET, Concern Worldwide, Vision Fund, World Relief (US), OXFAM and Catholic Relief Services (US). Essentially, the majority of the biggest MFIs in Cambodia were transformed from being initially either domestic or international NGOs programs.

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<sup>2</sup> [https://www.nbc.org.kh/download\\_files/legislation/prakas\\_eng/16.pdf](https://www.nbc.org.kh/download_files/legislation/prakas_eng/16.pdf)

Table 1. Microfinance Institutions and their Operations in Cambodia

No.	Microfinance Institutions	Number of Operational Areas				
		Provinces	Districts	Communes	Villages	Office
1	ACLEDA	25	76	1,590	13,778	258
2	SATHAPANA	25	197	1,539	10,282	161
3	PRASAC	25	197	1,611	13,576	181
4	AMRET	25	197	1,558	12,292	144
5	HKL	25	196	1,670	10,948	153
6	LOLC	25	183	1,662	10,672	73
7	AMK	25	197	1,605	12,479	151
8	VISION FUND	25	161	1,584	8,784	120
9	KREDIT	20	154	1,141	6,849	83
10	LYHOUR	15	85	494	2,245	25
11	AEON	23	157	835	9,206	8
12	WOORI	11	39	192	870	9
13	FIRST FINANCE	12	66	233	600	2
14	FARMER FINANCE	12	66	231	593	7
15	ORO	23	137	448	850	4
16	SAMIC	9	47	360	1,530	17
17	ACTIVE PEOPLE	2	4	37	75	4
18	NIRON	25	189	1,345	7,074	55
19	IPR	7	32	153	720	14
20	SAMRITHISAK	4	21	127	396	3
21	FUNAN	24	168	1,159	4,457	49
22	DELTA	20	90	355	1,351	12
23	SONATRA	3	15	358	327	6
24	MEGA LEASING	6	6	6	6	1
25	CHAMROEUN	16	106	673	3,991	34
26	MAXIMA	4	23	149	822	10

Source: Cambodia Microfinance Association (CMA), 2016

Most MFIs in Cambodia have been growing rapidly in terms of providing products and services, and delivering quality and quantity over the last few years. In 2016, there were 2,403,060 borrowers and 3,369,342 depositors using microfinance institutions (CMA, 2016). Moreover, the eight biggest microfinance institutions - Acleda, Sathapana, Prasac,

AMRET, HKL, LOLC, AMK, and Vision Fund - have branches located in all 25 provinces, while others have fewer branches (Table 1). Furthermore, due to high profitability, some microfinance institutions are currently being transformed into commercial banks, in particular Acleda Bank and Sathapana Bank.

### **3. Challenges for Microfinance Institutions in Cambodia**

One of the main challenges for MFIs in Cambodia concerns accessing funding from external sources, while additional constraints remain evident in other multiple areas. These additional challenges include costly funding and the need for long term loans, low levels of financial literacy, strong demand for different types of products, over-indebtedness, and interest rate cap constraints (CMA, 2017). In addition, political instability can also affect credit markets. This section explores more details of the challenges facing MFIs in Cambodia, categorized into the topics of external funding, financial regulations and political challenges, and credit access and non-performing loans within Cambodian MFIs.

#### *3.1 External Funding*

Although Cambodia's microfinance sector has been growing rapidly on the demand side, major challenges still remain on the supply side. As the microfinance sector flourished over the past decade, the number of key financial players – particularly funding agencies, including multilateral lending agencies, bilateral donor agencies, governmental bodies, and nongovernmental organizations - grew concomitantly. Interestingly, many of the largest MFIs in the country are now owned by international banks and rely on global investments or external sources for funding. In fact, the

fourth largest MFI, Hattha Kaksekar, was bought by Thailand's Bank of Ayudhya. Sri Lanka's leasing firm LOLC and Hong Kong's Bank of East Asia also bought Prasac Microfinance in 2016. This implies that the Cambodian microfinance sector has become increasingly dependent on external funding and stakeholders.

External funding involves certain shortfalls that can affect the development of the microfinance sector and availability of credit to the poor. In particular, funding from external sources tends to be costly in terms of interest obligations and administrative constraints. Since most of the MFIs in Cambodia have borrowed funds from many sources, both domestic and international, they need to pay back when the loans hit maturity. MFIs in Cambodia, therefore, encounter high interest expenditure to cover repayments, especially from international funds which have higher interest rates. In many cases, however, the microfinance institutions must share a portion of their income or dividends at the end of the loan maturity. These high interest payments and administrative costs shrink MFIs' growth opportunities, and thus their ability to extend services, as well as their contribution to poverty alleviation and to the development of the financial system as a whole.

### *3.2 Financial Regulations and Political Challenges*

To create sustainable growth in the banking and financial system, many factors must be taken into consideration. Conducive government policies and private sector development are generally cited as a significant part of this. To this end, the government of Cambodia has continuously committed to implementing various headwinds supporting sectorial reforms. For one, the Financial Sector Development Plans I and II have been included in the National Development

Plans I and II, with the objective of fostering efficiency, improving solvency ratios and creating a sound financial system.

In addition, the government has implemented financial regulation reforms. Since 1999, new laws and regulations have been issued in the anticipation of banking restructuring into a two-tier banking system, which involves the whole banking and financial system - from the National Bank of Cambodia to private players, including commercial banks, specialized banks and microfinance institutions. The new laws and regulations provide a framework for financial licensing, organization, operation and supervision. Other financial reform laws issued include a law on negotiable instruments and payment transactions passed in 2005, and the leasing law and financial leasing initiative passed in 2009. In the latter, the rights and duties of all parties, including microfinance institutions, involved in financial leases and operations are determined together with the actions that must be undertaken to protect those rights.

Despite these headwinds, other immediate risks, opportunities and constraints should not be neglected. Laws and regulations must be continuously reviewed and updated in order to keep up with sectorial development and growth. Most importantly, such processes should be based on the country's social and political context, so that financial inclusion can be ensured and that institutions are accountable for mitigating country and political risks.

In Cambodia's case, the implementation of a minimum interest cap on loans is a prime example of the connections between regulatory factors and the development of the microfinance sector. In March 2017, interest ceilings on loans was approved by the National Bank of Cambodia. With the looming election in 2018, the government also announced a minimum interest cap of 18% per annum for loans made in

rural areas in an attempt to put a limit on MFIs. The limit allows the poor, who represent the customers of MFIs, to reduce costs and progressively manage their financial obligations. In doing so, the poor can obtain better leverage on their financial resources and capacity, transforming their projects into income-generating activities and businesses. Furthermore, the population most impacted by the interest rate caps will be those who can only afford small loans, such as small farmers looking to purchase seeds and fertilizers. Given that 72.3% of the total population are farmers, the economy-wide impact is likely to be significant. Most importantly, the policy affects the incentives of the poor by reducing the cost of formal loans, leading them to turn to formal lending instead of relying on informal sources.

On the supply side, the minimum interest cap seems to have had a negative impact on MFIs, particularly those supplying small loans to the poor and/or to the population in rural areas, where transactional costs had already been high. MFIs have struggled with high costs, particularly administrative and funding. They immediately experienced less profits and some small NGOs are already at risk of bankruptcy, as interest income can no longer cover costs. At the same time, transactional costs have also increased with the reimbursement of interest rates on external funds. In addition, MFIs failing to comply with regulations and limit risks have to cease operations. In 2018 alone, the National Bank of Cambodia has already canceled the operating licenses of 11 rural credit operators for failing to comply with regulations. The 18% interest rate cap might not meet, or be, the break-even income point necessary to cover all MFIs transaction costs. This can lead to cases of both rural financial services and licenses being curtailed. If the situation on the supply side continues, poor rural households might lose the opportunity to access financial services from formal institutions.

All in all, political and regulatory factors affect the microfinance sector on both the supply and demand sides. Such factors affect domestic and international financing for microfinance institutions, particularly in the early stages of sectorial development. Because microfinance institutions are important suppliers of credit to the poor, strong financial policies incorporating appropriate motivational tools are a major prerequisite in economic development, for the sake of ensuring undisrupted growth paths.

### *3.3 Credit Access in Cambodia*

The expansion of the microfinance sector is reflected in the expansion of both the amount of credit and the number of service providers operating in the market. MFI branch networks have expanded across the provinces, districts, communes and villages. In 2016 MFIs operated, on average, in 60 out of 197 districts, 417 out of 1,621 communes, and 2,503 out of 14,073 villages. The above figures suggest that the expansion has been extensive, given that in 2011 just 30 MFIs operated in 49 districts, 408 communes and 2,381 villages (CMA, 2016; NBC, 2017).

Despite the extensive networks of banks and MFIs accessibility to credit is still being limited by collateral requirements, especially in the form of land titles. Even with a certain amount of assets, accessibility can still be limited as collateral cannot be a movable object, such as a vehicle. A survey conducted of six local commercial banks<sup>3</sup> found that in all of the banks surveyed possessing a suitable land title was a requirement to gain credit access.

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<sup>3</sup> The list consists of the Cambodian Public Bank, Canadian Bank, Acleda Bank, Foreign Trade Bank, Cathay United Bank, and Mekong Bank (Masis, 2014)

With high credit risk exposure, few banks are willing to lend to young companies, especially those that do not have at least a three-year track record of business profitability. In conjunction with this, the businesses themselves usually have poor quality accounting records and audited reports. New entrepreneurs usually lack accounting knowledge and financial literacy. There is a problem of suspected high credit risk and lack of inherent trust between financial providers and their clients.

Thus, a number of microfinance institutions in Cambodia offer small loans with only a national ID card and other small durables as collateral instead of a land title. However, the credit monitoring and enforcement system in Cambodia has been poor. SMEs and new entrepreneurs can obtain a loan with few supporting documents and little collateral, often only presenting a national ID, motor ID and durable certificate ID. In such cases, interest rates are high to compensate for the inflated risks. As a result, MFI clients are generally restricted to the poor, who tend to lack land assets, and/or borrowers living in rural areas, which tend to lack access to banking services.

There are three types of loan products for the poor in Cambodia: individual loans; solidarity loans; and community lending groups. An Individual Loan usually involves relatively high interest rates compared to the other two types of loan. This is because collateral and/or guarantors are not required for individual loans, but are required for the other two. Although solidary loans do not require collateral, they do require borrowers to form a solidarity group responsible for repayment if an individual within that group defaults. Finally, the third type involves community loans, in which the solidarity group must repay the loans of other group members in cases of default or late payment.

Nonetheless, the ability to secure credit, even from MFIs,

is still limited for the poor in rural areas. The amount the customers are able to secure is often small. For example, AMRET Microfinance only makes small loans with a maximum amount of US\$500 per person and an interest rate range of 1.9 to 2.2 percent per month. Such loans also need to be repaid within a year at the maximum. MAXIMA Microfinance only allocates loans between US\$100 and US\$4,950, based on the customer's income, with an interest rate of 1.45 percent to 1.50 percent per month (MAXIMA, 2019)<sup>4</sup>. In most cases, a borrower can secure a loan that is about two times their monthly salary, while the average income in the country is only about \$100 per month. Moreover, though there are many MFIs that give small loans to clients lacking collateral and the vulnerable poor, certain groups are still excluded, in particular, the poor without land titles and those without regular income. The problem is exacerbated by the risk of natural disasters, the inappropriate attitude and behavior of clients, clients' lack of knowledge, and particular geographical challenges.

In recent years, financial institutions, not only microfinance organisations, have operations functioning in all 24 provinces and cities in Cambodia (Table 2). Among these provinces and cities, Phnom Penh city has the highest number of financial institutions: 120 institutions lending to 232,130 borrowers, with a total outstanding loan amount of \$5,334.98 million (CBC, 2016).

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<sup>4</sup> More information on products & services and individual loans is available at <http://www.maxima.com.kh/>.

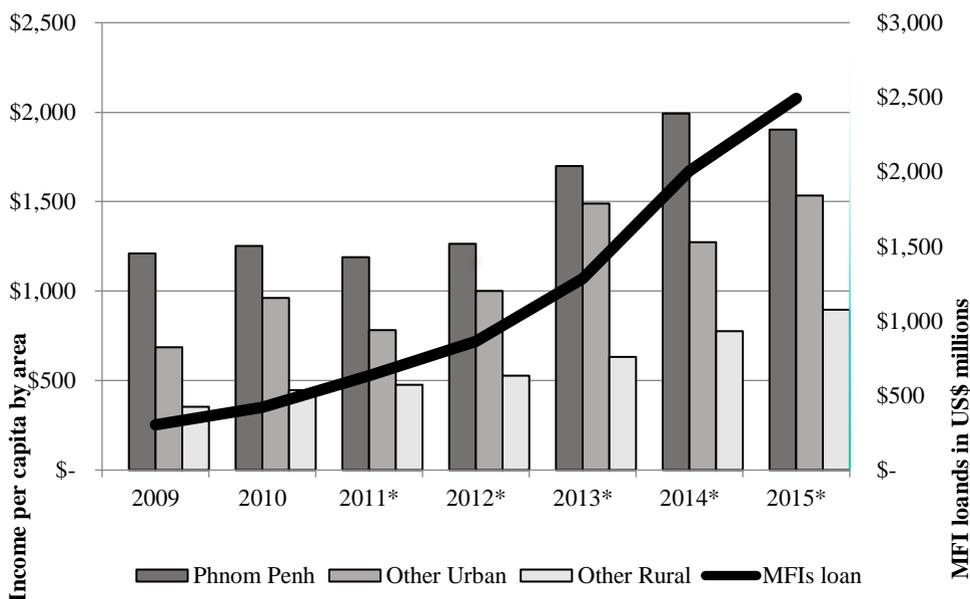
**Table 2. Financial Institutions, Outstanding Loans and Number of Borrowers by Province (2016)**

<b>Province</b>	<b>Financial Institutions</b>	<b>Outstanding Loans (Million)</b>	<b>Borrowers (Thousand)</b>
Banteay Meanchey	73	\$471.22	84.96
Battambang	86	\$676.32	137.95
Kampong Cham	92	\$545.50	140.5
Kampong Chhnang	64	\$155.41	60.52
Kampong Speu	89	\$458.28	145.96
Kampong Thom	83	\$317.17	105.34
Kampot	79	\$269.91	82.78
Kandal	112	\$734.50	181.83
Kep	36	\$19.19	5.67
Koh Kong	57	\$68.85	16.48
Kraties	57	\$172.37	51.89
Mondul Kiri	32	\$64.89	12.03
Otdor Meanchey	45	\$123.40	43.84
Pailin	41	\$71.98	12.7
Phnom Penh	120	\$5,334.98	232.13
Preah Sihanouk	69	\$236.03	33.08
Preah Vihear	35	\$86.97	31.93
Prey Veng	87	\$414.95	149.62
Pursat	70	\$212.34	62.15
Ratanak Kiri	36	\$129.14	28.7
Siem Reap	88	\$785.70	134.7
Stung Treng	32	\$58.25	16.38
Svay Rieng	75	\$260.65	87.07
Takeo	94	\$440.67	143.13

*Source:* Compiled from Credit Bureau of Cambodia data (2016)

Small provinces such as Kep, Stung Treng, Pailin, Mondul Kiri and Preah Vihear tend to lack access to financial services, as MFIs have difficulties reaching certain areas due to infrastructure and domestic issues. Stung Treng has 32 institutions, which provide 11.39% of outstanding loans compared to those in the plateau region, accounting for 16.38 thousand borrowers. Mondul Kiri consists of 32 institutions with \$64.89 million (12.68% compared to those in plateau region) and 12.03 thousand borrowers.

Figure 1. Income Per Capita by Areas and MFI Loans from 2009 to 2015

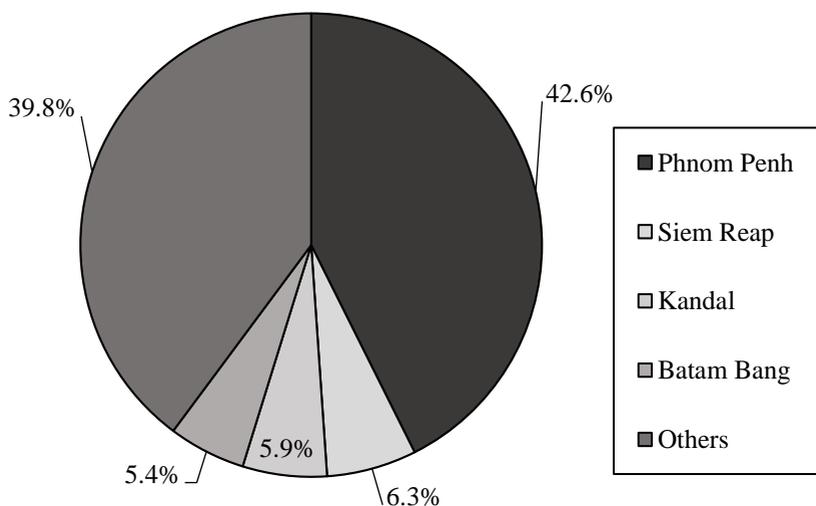


Source: National Bank of Cambodia and National Institute of Statistics (2016)

Essentially, the lack of financial access in small provinces and rural areas is a product of various issues, from urban and inclusive development, land administration and natural

resource management, to environmental sustainability. Appropriate public management should be able to alleviate some of these problems. In addition, creating good governance should also be able to influence the economic incentives of the poor.

Figure 2. Top Users of Loan from Banks and MFIs, Ranked by Cities and Provinces in 2016



Source: Credit Bureau Cambodia (2016)

From 2009 to 2015, income per capita growth had a positive relationship with outstanding loans in all areas, urban and rural alike (Figure 1). According to data from the National Institute of Statistics (NIS), GDP per capita in Phnom Penh increased from US\$1,212 in 2009 to US\$1,902 in 2015. Similarly, GDP per capita rose from US\$686 in 2009 to US\$1,534 in 2015 in other urban areas, and from US\$354 to US\$896 in rural areas. Over the same period, MFI lending

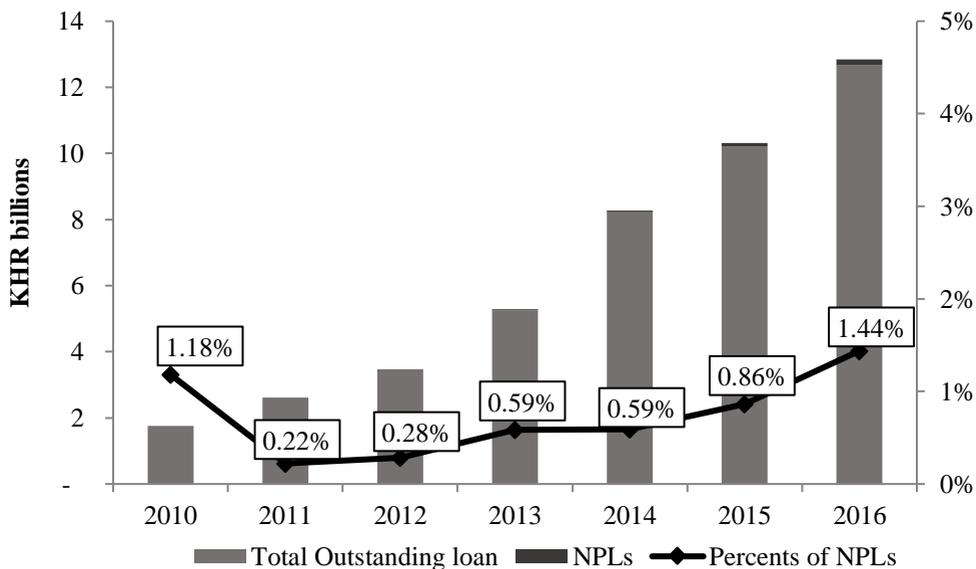
grew from US\$303 billion to US\$2,492 billion. According to the Credit Bureau of Cambodia, 2,097,853 people used credit products in 2016, with a total amount of US\$12.5 billion – around 43% of which were in Phnom Penh, followed by 6.3% in Siem Reap, 6% in Kandal and 5.4% in Batambang (figure 2).

### *3.4 Non-performing Loans and Over-indebtedness in Cambodian Microfinance Projects*

Along with the overall growth in credit, MFI portfolio risks have increased. There has been a rise in concerns over default risks. The significant outstanding loans of MFIs over their total assets and their late client reimbursements increased their defaults risks. Non-Performing Loans (NPLs) reflect increasing risks (Figure 3). Since 2010, the total outstanding loans of microfinance institutions have been increasingly plagued with non-performing loans. While NPLs are still low, they increased year by year between 2010 and 2016, which incurred increased costs to the operations of microfinance and outreach stakeholders involved. The relatively low levels of NPLs occurring in some cases were due to better risk management, central bank regulations, compliance with the Basel Accord, and portfolio diversification.

However, over-indebtedness continues to be one of the major challenges confronting Cambodia's microfinance sector. There are signs of over-indebtedness when looking at the average loan amounts offered by microfinance organizations (approximately USD\$1,610) compared to the Cambodian per capita gross national income (USD\$1,140) in 2016 (Thath, 2018). Moreover, data from NBC shows that microfinance loans used for household purposes substantially increased from KHR 185.83 billion (10.8% of total loans) in 2010 to KHR 5,818.6 billion (33.8% of total loans) in 2017.

Figure 3. The Growth of Outstanding Loans and NPLs of MFIs, 2010 to 2016



Source: Author’s calculations from the National Bank of Cambodia, 2010 to 2016.

This sharp increase in both loan amounts and proportions raise concerns regarding loan repayments by households. Additional evidence is from a survey on firm management and private stakeholders conducted by the Cambodia Microfinance Association (2016). Their results reveal that there are continuous signs of over-indebtedness in Cambodia, reflected by the growth in loan size and NPLs, higher competition, informal lending growth and increases in crowded loans. The survey also reveals that financial education is significant for all stakeholders in the analyses of sustainable growth in microfinance via over-indebtedness. It impacts their forecasts of operational targets, their ability to approach those targets, and their risks.

## 4. Case Study of AMK Microfinance Institution

We use data from a survey conducted by AMK as our case study of access to microfinance in Cambodia. The first part in this section will provide a background of AMK and explore the data used in this case study. Then, determinants of credit access will be explored using econometric models. Other challenges mentioned in Section 3 will be discussed at the end of the section. In 2016, AMK operated 25 provincial branches, 151 offices with 12,479 villages or 89% of the total villages of Cambodia (AMK, 2016). With a variety of products that support the poor and coverage across Cambodia, AMK represents a suitable example for a case study.

### *4.1 AMK (Cambodia) Microfinance: Background*

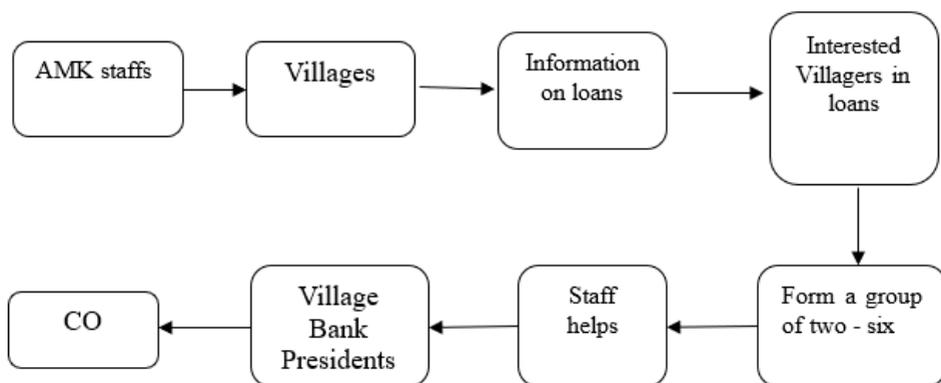
In 1997, AMK Microfinance Institution, now one of the leading MFIs in Cambodia, was transformed from a rural community program under the Concern World Wide organization to an MFI. To help the poor, AMK provides low-interest rates on all group loans, individual loans, and emergency loans, and more flexible installment plans for clients in rural areas. Furthermore, all AMK loans do not require solid collateral in order to be accessed. Other attractive services are available, such as mobile banking, emergency loans and micro-insurance, thus helping improve access to financial services and supporting financial inclusion in Cambodia. AMK's services and products<sup>5</sup> are more reliable

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<sup>5</sup>AMK (Cambodia) microfinance has offered many services, such as (i) loans: group loans, individual, and emergency loans; (ii) savings: Easy account, Lucky account, Smart Kid Account, Fixed deposits, Future Account, and Happy Old Age Account; (iii) money transfers; (iv) micro-

and are more diversified than other MFIs in rural Cambodia. AMK programs benefit clients by writing off loans if their clients pass away at the end of loan maturity, together with more flexible loan repayments.

Figure 4. Sample Process of a Loan Disbursement Mechanism to Clients



Source: AMK

According to AMK regulations, it takes three days for a group to receive a loan (Figure 4). Before approving a loan, AMK staff visit the village and announce details of the loan in a meeting at the village leader's house. After that, AMK officers call the poor who are interested in joining the loan group. On the second day, villagers form an official group of interested borrowers with a minimum of two to six members in each group. On the third day, a group leader is selected by members of the group to manage their savings. After that AMK staff or credit officers (COs) offer the loan. Each group is responsible for each other's installments, or have the option of seeking empowerment from the village bank president to

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insurance; (v) payment and payroll services; (vi) foreign exchange and fast services.

influence particular members to make repayments.

#### 4.2 Data and Descriptive Analyses

This study uses a set of survey data derived from a project conducted by AMK’s research department in 2007, 2012, 2013 and 2014. It included AMK clients and non-clients across 18 provinces of Cambodia. This cross-sectional data was gathered across 131 villages. Clients were randomly selected from a list of all AMK clients in each of village. Non-clients were randomly selected using a systemic random walk method. In each village, interviews were conducted with three non-client households for every 12 client households. In this context, non-client households are defined as those who do not have any loans with AMK, but might have loans with other banks, MFIs or other informal lenders. There was one client only within a particular household. For all four years of the data surveyed, there were a total of 1,601 households with 1,237 clients and 364 non-clients (Table 3). The proportions of non-client households are around 20-25% each year. We cannot identify if these households are the same across years, thus not constituting a panel dataset; hence, findings were analyzed using pooled data instead.

Table 3. Clients and Non-client Households by Year

<b>Group</b>	<b>2007</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Clients	281	235	361	360
Non-clients	71	59	114	120
<b>Total</b>	352	294	475	480

Source: AMK source

### *Household Characteristics*

The full summary of household characteristics and other information separated into non-client and client households can be seen in Appendix A1<sup>6</sup>. The average age of the household head among clients was 43 to 45 years old, while for non-clients it was 44 to 47 years old within the four series of surveys. Most household heads were male, with female heads at only around 23%. However, female clients stand at around 86% of total clients in the survey. The client household head has a statistically significantly lower literacy rate than non-client households, 70.9% compared to 75.6%, respectively, but the difference in average years of schooling completed between the two groups were not statistically significant. Client households have more household members, on average, than non-client households. Moreover, client households have relatively lower asset indices than non-client. Asset indices are calculated using factor analysis (FA) based on housing characteristics, some durable goods, transport vehicles, agricultural tools and other household factors.

The survey did not ask about the amount of income per household, but asked about the sources of income for household members. Client households tended to have more income from farm activities than non-clients. More members of client households worked as casual laborers (part-time jobs in farms and/or nonfarming sectors) and full-time factory workers. The proportion of households having businesses in the manufacturing and services sectors were not very different between client and non-client households, except for retail businesses in which non-client households were represented in greater amounts. Overall, client households are in the position of representing relatively poorer households.

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<sup>6</sup> Available online at <http://www.tresp.econ.tu.ac.th/index.php>

Similarly, information from savings is only surveyed to attain knowledge concerning types of savings, not the amount of savings. Cambodian households tend to save more in cash than in other types of assets (42% and 40% of the sample respectively). Less than one percent of surveyed households saved in MFIs or commercial banks. Both client and non-client groups have similar proportions of each type of savings.

For household expenditure, there are two main items that the survey asked about in terms of amount spent. Both client and non-client households spent on clothing and footwear similarly in terms of average amounts. However, non-client households had greater food expenditure than client households. Hence, overall non-client households have statistically significantly higher main household expenditure and per capita main household expenditure than client. This also supports the evidence that non-client households are more affluent than client households.

Moreover, the survey also asked about whether households purchased some specific items (but not in amounts). We observe that the majority (more than 95%) of surveyed households allocated money to social ceremonies and health-related expenditures. More client households incurred expenditure on schooling, farm inputs and re-investing in nonfarm activities than non-client. This could imply that AMK clients use loans to support these expenses. In addition, there is a statistically significant larger proportion of client households which experienced weather shocks<sup>7</sup> than

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<sup>7</sup> Three dummy variables were made to show households shocks. Income shock from the value of 1 if a household reported job loss and business downturned and 0, if otherwise. Weather shock takes the value of 1 if a household experienced crop failure or damage during natural disasters and 0, if otherwise. Individual shock takes the value of 1 if a household

non-client households.

To sum up, AMK clients comprise poor citizens who have a lower literacy rate and tend to work on farm activities or as casual laborers, living in a larger family and having lower asset levels. This sheds light on why AMK targets clients from relatively poorer households.

Table 4. Sources of Loans for AMK Clients and Non-clients

AMK clients	AMK	Other MFIs	Other NGOs	Aceda/Other Banks	Informal Sources
No	0	16.5%	1.1%	7.4%	9.9%
Yes	100%	20.7%	0.7%	6.3%	7.5%
Total	77.3%	19.7%	0.8%	6.6%	8.1%

*Source:* Author’s calculations based on AMK survey data.

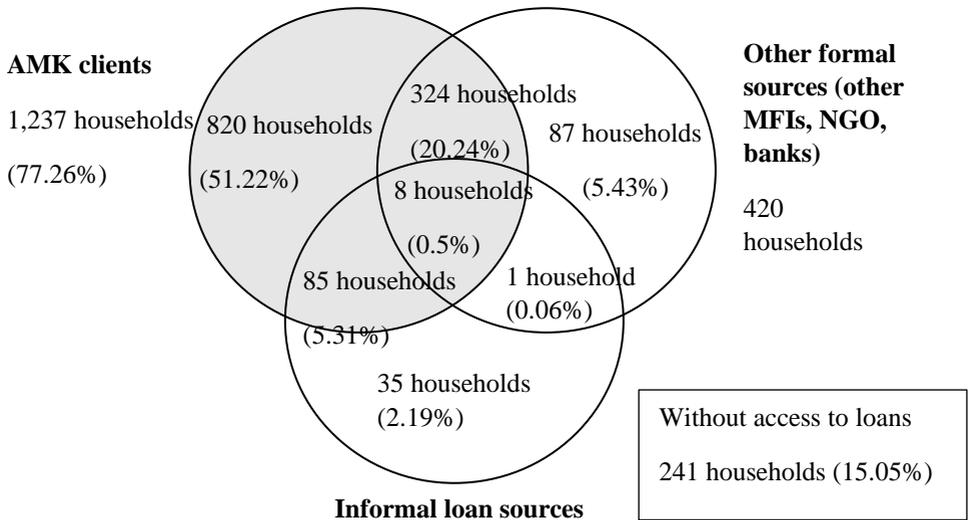
In terms of loan information, as AMK credit represents microfinance credit, the average amount of outstanding AMK loans is around KHR 441,304, with the maximum outstanding amount being KHR 8 million (approximately US\$2000). When considering total outstanding loan amounts, the difference in loan amounts between AMK client households and non-client households was not statistically significant. Of the households surveyed, 23.4% did not have any outstanding loans. The survey also asked about sources of loan with respect to three different loan sizes (large, medium and small). If we compare the sources of all three loan sizes between AMK clients and non-clients (Table 4), we can conclude that households in the survey data rely mostly on AMK (77.2%) and other microfinance institutions (19.7%). Besides other MFIs, 7.4% of non-client households have loans from commercial banks and 9.9% have loans from informal sources,

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member was injured or died or experienced loss of assets and 0, if otherwise.

which include moneylenders, traders, relatives or close friends.

Figure 5. Access to Different Sources of Credit



Source: Author’s calculation based on AMK survey data.

Since households can access several loan sources, Figure 5 shows how each source overlaps with other sources. We separate loan sources into three groups: AMK loan access, other formal loan sources, and informal loan sources. Around 15% of all surveyed households were still unable to access sources of credit. 51.22% of all surveyed households could only access AMK loans. Many AMK clients were able to also access other formal loan sources. There was not much overlap between other formal sources and informal sources, and less than 1% of respondents had loans from all three sources.

### *4.3 Determinants of Credit Access to AMK Microfinance Institution and Other Sources*

The survey data provides details of which households were able to access different sources of credits; in this section we will explore the determinants of credit access to different sources based on household characteristics, sources of income, types of savings, and exposure to shocks. This will allow us to be able to know more about the characteristics of those who are able to access credit in Cambodia. Table 5 shows the average marginal effects resulting from logistic regressions with dependent variables as a binary outcome on whether each household has access to that source of credit.<sup>8</sup> Since we pool the data across years, we also control for both yearly effects and provincial effects in the estimations. As we have no information on actual household income, we use household's main expenditure (food and clothing) as a proxy for household income instead.

Who can access AMK loans? The results show that poorer households (lower household main expenditure) would be more likely to have access to an AMK loan. The age of the household head positively and significantly determines the probability of access to credit from AMK, but the probability of access will decrease as the age of household heads increase. A greater number of members in the household also increases the likelihood of accessing AMK credit. However, education and asset indices are not statistically significant in determining access to AMKs loan from the model employed.

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<sup>8</sup> Results of the linear probability model, using ordinary least squares are reported in an appendix as a robustness check. Overall, the results of both models are similar.

Table 5. Average Marginal Effects of Logistic Regressions for Credit Access

<i>Variable</i>	<i>AMK</i>	<i>Other MFIs</i>	<i>Formal sources</i>	<i>Informal sources</i>
	<i>b/ (se)</i>	<i>b/ (se)</i>	<i>b/ (se)</i>	<i>b/ (se)</i>
Log (total clothes & food exp.)	-0.051** (0.0237)	-0.010 (0.0220)	-0.009 (0.0142)	-0.020 (0.0172)
Female head	0.063 (0.0394)	0.089*** (0.0219)	0.043*** (0.0158)	0.041* (0.0223)
Married	0.022 (0.0494)	0.006 (0.0316)	0.010 (0.0226)	0.016 (0.0161)
Head's age	0.015*** (0.0047)	0.019*** (0.0047)	0.003 (0.0040)	-0.002 (0.0037)
Head's age <sup>2</sup>	-0.0002*** (0.00005)	-0.0002*** (0.0001)	-0.000 (0.0000)	-0.000 (0.0000)
Head's literacy	-0.035 (0.0334)	0.028 (0.0275)	0.023 (0.0158)	0.001 (0.0153)
Head's highest education	0.005 (0.0042)	0.002 (0.0044)	-0.001 (0.0020)	-0.008** (0.0033)
Household size	0.012** (0.0046)	0.011* (0.0064)	0.011* (0.0059)	0.001 (0.0041)
Male as a primary income earner	-0.003 (0.0243)	0.057** (0.0227)	0.012 (0.0114)	0.013 (0.0123)
Asset index	-0.018 (0.0126)	-0.001 (0.0108)	0.000 (0.0085)	0.001 (0.0083)
Farm: Cropping	0.052 (0.0416)	0.046 (0.0424)	0.017 (0.0260)	0.009 (0.0275)
Farm: Livestock	0.078*** (0.0245)	0.015 (0.0509)	0.021 (0.0236)	-0.031 (0.0225)
Farm: Wood Collection	-0.051**	-0.007	0.008	-0.001

	(0.0227)	(0.0273)	(0.0179)	(0.0204)
Farm: Others	0.026	0.034	-0.002	-0.018
	(0.0212)	(0.0338)	(0.0125)	(0.0183)
Casual laborer	0.130***	-0.006	-0.016	-0.016
	(0.0225)	(0.0231)	(0.0144)	(0.0193)
Temporary migration	-0.043	0.002	-0.021	-0.013
	(0.0389)	(0.0488)	(0.0200)	(0.0225)
Government servant	-0.010	-0.029	0.006	0.010
	(0.0284)	(0.0304)	(0.0196)	(0.0324)
Factory service laborer	0.077**	-0.018	0.002	-0.005
	(0.0310)	(0.0364)	(0.0173)	(0.0169)
Food & beverages	0.020	-0.013	0.009	0.002
	(0.0269)	(0.0254)	(0.0195)	(0.0195)
Crafts	0.002	-0.024	-0.041***	-0.027**
	(0.0227)	(0.0250)	(0.0156)	(0.0132)
Textiles	-0.074	-0.036	0.002	(dropped)
	(0.0711)	(0.0551)	(0.0452)	
Other manufacturing	-0.052	-0.020	-0.016	0.015
	(0.0859)	(0.0718)	(0.0318)	(0.0834)
SME Sales	0.006	0.027	0.030***	-0.008
	(0.0204)	(0.0304)	(0.0104)	(0.0169)
Other services	0.035	-0.058	-0.010	0.011
	(0.0301)	(0.0412)	(0.0180)	(0.0202)
Remittances	0.021	0.003	0.002	-0.025
	(0.0319)	(0.0247)	(0.0152)	(0.0161)
Assets sold	0.002	0.059*	0.024	-0.039
	(0.0493)	(0.0323)	(0.0311)	(0.0457)
Assets pawned	-0.047	-0.091	0.020	0.008
	(0.0903)	(0.1428)	(0.0352)	(0.0410)

Saving money in gold	0.051* (0.0260)	0.055** (0.0214)	0.026 (0.0189)	-0.072*** (0.0267)
Saving money in cash	0.025 (0.0182)	-0.014 (0.0188)	-0.022* (0.0118)	-0.026* (0.0159)
Saving money in land	0.029 (0.0429)	0.127*** (0.0343)	0.049 (0.0340)	-0.001 (0.0430)
Saving money in other assets	0.056** (0.0229)	0.042** (0.0187)	0.035*** (0.0126)	0.029** (0.0117)
Saving money in MFIs or banks	0.030 (0.1091)	0.105 (0.0666)	-0.071 (0.0559)	0.101* (0.0539)
Individual shocks	0.010 (0.0209)	-0.007 (0.0116)	-0.005 (0.0111)	0.040*** (0.0085)
Income shocks	-0.021 (0.0365)	0.022 (0.0390)	0.009 (0.0168)	0.005 (0.0280)
Weather shocks	0.072** (0.0318)	0.049 (0.0378)	0.023 (0.0251)	0.037 (0.0228)
Log (other loans)	-0.001 (0.0010)			
Log (AMK loans)		0.002 (0.0016)	0.043*** (0.0053)	-0.003*** (0.0011)
Year dummies	Yes	Yes	Yes	Yes
Provincial fixed effects	Yes	Yes	Yes	Yes
Pseudo R <sup>2</sup>	0.0715	0.1952	0.7283	0.1690
N	1554	1541	1554	1441

\*, \*\*, and \*\*\* indicate statistically significant at 10%, 5%, and 1% levels, respectively.

Formal sources include AMK, other microfinance institutions, and commercial banks.

Informal sources include traders, moneylenders, relatives, and close friends.

Source: Author's calculations from AMK data

These insignificant findings concerning wealthier households and access to credit is in contrast to many studies,

such as Takahashi, Higashikata, & Tsukada (2010) where wealthier households gain more access to credit. This could mean that AMK successfully targets relatively poorer households to constitute their client base. Households with income from livestock activities, working as casual laborers, and salaried factory workers represent the group more likely to be able to successfully access AMK loans. Moreover, households with savings in gold and other assets will be more likely to access such finance. It is interesting to see that households with experience of natural disasters are more likely to have access to AMK loans, a similar result that we observed in our descriptive analysis.

There are some similarities and differences among the characteristics of those who can access other sources of credit. Household expenditure is not a strong determinant of being able to access other loans. If household heads are female, they will be more likely to gain access to other sources of loans. The age of a household head has a similar impact on access to other MFIs as on AMK. Although education does not determine any access to microfinance or overall formal credit, a household head with higher education will be less likely to receive loans from informal sources. A greater number of household members increases the likelihood of accessing other MFI credit and formal credit, but does not significantly determine access to informal loans. Households producing local crafts are less likely to receive credit from either formal (likely to be banks) or informal sources. On the other hand, households involved in small-medium enterprises increase the likelihood of formal credit access, which is likely to involve commercial banks. Households with savings in gold have more chance of accessing other MFI credit, similar to AMK, but will be less likely to choose informal loans as their source of credit. Having other assets in terms of household savings increases the probability of access to all sources of credit. It is

interesting to see that informal sources of credit is important for households with experience of individual shocks, while AMK loans are important for households with experience of weather shocks. We might say that AMK loans can be substituted with informal credit as households having more loans from AMK will be significantly less likely to access informal credit.

From the above analyses, we may separate the main characteristics of each loan client as follows. AMK clients represent those from poorer households at a younger age, pursuing farming (livestock) activities, or being casual, factory, or service laborers. There are some similarities with clients of other MFIs besides AMK. In both cases clients do not have significant savings in land. Moreover, household heads with higher education tend not to borrow from informal sources. Additionally, households with more AMK loans will be less likely to be informal loan clients. From these results, we can see some market segmentation in the rural credit market in Cambodia.

#### *4.4 Other Challenges for AMK*

In addition to access to credit, further challenges facing AMK are similar to challenges facing other MFIs. To generate sustainable growth, AMK must take into account income from loans and other non-interest income. In addition, AMK and other MFIs are generally taking advantage of indulgence loans from donors to finance their clients.

To make sure regular repayment installments are made by clients, AMK determines target clients and loan disbursement only among customers who have a sufficient level of income. AMK has apparently implemented its policies efficiently to ensure operationally sustainable income. AMK has rapidly increased its credit products and business services available to

potential consumers, allocating branches to every province in the entire country.

AMK has controlled loans and payments from clients by implementing surveys and undertaking multiple loan client studies in order to better understand client behavior and enhance decision making. When there are other potential immediate risks and defaults from individual clients, AMK will seek group membership instead. Sometimes, clients take other informal and formal loans in order to pay back AMK's loans whenever they face difficulty with repayments. On the other hand, according to an ILO (2015) study, among AMK clients 66% of respondents used financial products from other loan sources. These multiple loan sources will accumulate the principal involved and interest incurred for clients. Huge principals mean that borrowers need to reimburse large sums to microfinance institutions, even if interest rates are low (Thath, 2018). This burden adds more weight to clients livelihoods and signals over-indebtedness among such clients.

## **5. Conclusions**

From the case study of AMK, we can infer that microfinance institutions in Cambodia helps improve credit access for the poor. There are still some groups however that cannot access microfinance, and some groups such as the less educated which are more likely to gain access to informal loans. These groups might need to be further identified and informed about the role of microfinance, as well as educated in terms of financial literacy. Being female also represents a notable characteristics in terms of credit access in Cambodia as most Cambodian males are the main income earner in a household, while their wife has the role of housekeeper controlling the financial dealings of the entire family. Further investigation needs to be undertaken to understand more about

the impact of microfinance. Microfinance surveys on households should also focus on actual income, different types of expenditure and investment, in order to be able to better evaluate their impact.

Another possible concern for AMK concerns the issue of over-indebtedness of their clients. We see from the data that some AMK clients are also able to access other sources of loans and the average other loan amount of AMK clients is also high. Moreover, some clients wish to gain access to loans from AMK and provide that money to their own clients. This signals that linkages of over-indebtedness and financial risk can easily occur when intermediary financiers or retailers become involved when households face default payments or crises. Such cases can lead to clients becoming poorer than before. Policies to improve financial literacy might help empower the poor to better understand the principles underlying more effective financial management, such as avoiding multiple borrowing and over-indebtedness. To educate people to make the right decisions when making household expenditure and dealing with household loans might help them refrain from over-indebtedness in the near future.

In addition, the number of microfinance institutions and the services they offer are increasing rapidly. Some MFIs originated from NGOs and are backed up by their donors and members' budgets. The rapid development among MFIs have led to more branches, assets and loans being offered in order to meet the high loan demand within Cambodia. Meanwhile, some potential problems can occur, such as over-indebtedness, financial illiteracy, multiple-borrowing and issues concerning current interest rate caps and the allocation of funds (costly external funds and loans outstanding) which might cause a slowdown in the MFI sectors' success and operations if not handled effectively. The tradeoff impact of these challenges should be studied more by policy makers and other

stakeholders in order to achieve sustainable development.

Cambodian MFI policy makers should focus more on interacting with all of the stakeholders involved in order to draft and implement new policies supporting sustainable interest rates for small loans. In rural areas microfinance represents the main tool for fostering financial inclusion and development. To help the poor to be able to access credit, the government should cap interest rates lower in specific areas involving poor people and subsidize MFIs. The recent interest rate cap by the government in order to control MFIs should be investigated to ascertain its impact on all stakeholders.

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## Appendix

### A1. Summary Statistics between Client and Non-client Households

Variable	Non-client		Client		t-stat	p-value
	mean	SD	mean	SD		
<b>Household characteristics</b>						
Female Head	0.214	0.411	0.240	0.427	-1.022	0.307
Married Head	0.836	0.371	0.828	0.378	0.378	0.706
Head's age	44.892	13.471	43.833	11.833	1.445	0.149
Head's literacy	0.756	0.430	0.709	0.455	1.745	0.081
Head's highest education	4.281	3.468	4.057	3.368	1.098	0.272
Household size	4.753	1.861	5.045	1.919	-2.574	0.010
Male as a primary income earner	0.473	0.500	0.457	0.498	0.531	0.596
Asset index	0.106	1.051	-0.031	0.983	2.308	0.021
<b>Sources of income (dummy variable)</b>						
<b>Farm</b>						
Farm: Cropping	0.893	0.310	0.932	0.252	-2.474	0.013
Farm: Livestock	0.802	0.399	0.878	0.327	-3.681	0.000
Farm: Wood Collection	0.706	0.456	0.730	0.444	-0.899	0.369
Farm: Others	0.750	0.434	0.797	0.402	-1.928	0.054
<b>Labor</b>						
Casual laborer	0.379	0.486	0.563	0.496	-6.232	0.000
Temporary migration	0.132	0.339	0.116	0.321	0.798	0.425
Government servant	0.129	0.336	0.108	0.310	1.147	0.252
Factory service laborer	0.231	0.422	0.302	0.459	-2.660	0.008
<b>Manufacturing</b>						
Food & beverages	0.126	0.333	0.137	0.344	-0.542	0.588
Crafts	0.190	0.392	0.213	0.409	-0.953	0.341
Textiles	0.033	0.179	0.021	0.144	1.316	0.188
Others	0.019	0.138	0.012	0.109	1.023	0.306
<b>Services</b>						
Small business	0.176	0.381	0.189	0.392	-0.575	0.566
Transportation services	0.096	0.295	0.099	0.298	-0.139	0.889
Retail shops	0.126	0.333	0.093	0.291	1.864	0.063
Local service shops	0.014	0.117	0.013	0.113	0.118	0.906

Ceremonies & entertainments	0.022	0.147	0.027	0.161	-0.499	0.618
<b>Others</b>						
Remittances or gifts	0.236	0.425	0.247	0.432	-0.433	0.665
Assets sold	0.047	0.211	0.046	0.210	0.050	0.960
Assets pawned	0.016	0.128	0.012	0.109	0.642	0.521
<b>Savings (dummy variable)</b>						
Saving money in gold	0.157	0.364	0.192	0.394	-1.516	0.130
Saving money in cash	0.398	0.490	0.428	0.495	-0.995	0.320
Saving money in land	0.060	0.239	0.064	0.245	-0.236	0.813
Saving money in other assets	0.365	0.482	0.415	0.493	-1.687	0.092
Saving money in MFIs or banks	0.008	0.091	0.009	0.094	-0.117	0.907
<b>Expenditure</b>						
Clothes & footwear	696,442.9	682,791.5	647,110.9	697,651.13	1.192	0.234
Total annual food expenses	3,636,428.6	2,689,685.6	3,313,354.2	2,226,960.6	2.315	0.021
Total clothes & food (yearly)	4,332,871.4	3,023,338	3,960,465.2	2,671,360.4	2.267	0.024
Total clothes & food (per capita)	1,003,428.7	748,627.91	854,516.9	629,020.28	3.795	0.000
<b>(In dummy variable)</b>						
Schooling Expenditure	0.610	0.488	0.667	0.471	-2.012	0.044
Health Related Expenditure	0.953	0.211	0.955	0.208	-0.115	0.908
Farm Input Expenditure	0.788	0.409	0.854	0.353	-3.023	0.003
Reinvest Nonfarm Expenditure	0.615	0.487	0.664	0.473	-1.702	0.089
Social Ceremony Expenditure	0.984	0.128	0.989	0.102	-0.925	0.355
<b>Shock experience</b>						
Individual shocks	0.354	0.601	0.358	0.573	-0.108	0.914
Income shocks	0.071	0.278	0.065	0.288	0.396	0.692
Weather shocks	0.107	0.310	0.153	0.360	-2.192	0.028
<b>Loan amount</b>						
Total loans from all sources	1,300,419	4,290,493	1,362,990	2,765,900	-0.330	0.741
Total loans from AMK	0	0	441,304	476,514	-17.665	0.000
Other loans (not AMK)	1,300,419	4,290,493	921,686	2,698,641	2.028	0.043

Source: Author's calculations based on AMK survey data.

A.2 Linear Probability Model (LPM) of Access to Credit

<i>Variables</i>	<i>AMK</i>	<i>Other MFIs</i>	<i>Formal sources</i>	<i>Informal sources</i>
	<i>b/ (se)</i>	<i>b/ (se)</i>	<i>b/ (se)</i>	<i>b/ (se)</i>
Log (total clothes & food expenses)	-0.048* (0.0239)	-0.010 (0.0231)	-0.006 (0.0140)	-0.020 (0.0167)
Female head	0.063 (0.0380)	0.110*** (0.0274)	0.025 (0.0191)	0.035* (0.0194)
Married	0.020 (0.0476)	0.029 (0.0360)	-0.004 (0.0279)	0.013 (0.0133)
Head's age	0.016*** (0.0053)	0.015*** (0.0039)	0.003 (0.0043)	-0.002 (0.0033)
Head's age <sup>2</sup>	-0.0002*** (0.0001)	-0.0002*** (0.00004)	-0.00003 (0.0000)	0.00001 (0.0000)
Head's literacy	-0.036 (0.0325)	0.018 (0.0294)	0.030* (0.0161)	-0.008 (0.0138)
Head's highest education	0.005 (0.0045)	0.004 (0.0049)	-0.002 (0.0024)	-0.005** (0.0023)
Household size	0.010** (0.0046)	0.010 (0.0071)	0.006 (0.0059)	0.000 (0.0035)
Male as a primary income earner	-0.001 (0.0250)	0.058** (0.0227)	0.011 (0.0109)	0.011 (0.0148)
Asset index	-0.018 (0.0134)	-0.005 (0.0105)	0.004 (0.0061)	-0.001 (0.0088)
Farm: Cropping	0.055 (0.0472)	0.051 (0.0435)	0.038* (0.0216)	0.018 (0.0197)
Farm: Livestock	0.089*** (0.0287)	0.016 (0.0515)	0.029 (0.0224)	-0.020 (0.0218)
Farm: Wood Collection	-0.051** (0.0231)	-0.009 (0.0290)	0.002 (0.0202)	-0.005 (0.0188)
Farm: Others	0.028	0.029	-0.004	-0.021

	(0.0226)	(0.0324)	(0.0170)	(0.0179)
Casual laborer	0.133***	-0.004	-0.016	-0.009
	(0.0233)	(0.0223)	(0.0139)	(0.0203)
Temporary migration	-0.045	0.007	-0.019	-0.006
	(0.0420)	(0.0459)	(0.0190)	(0.0262)
Government servant	-0.010	-0.029	0.011	0.017
	(0.0312)	(0.0267)	(0.0245)	(0.0251)
Factory service laborer	0.074**	-0.016	0.007	-0.005
	(0.0302)	(0.0388)	(0.0161)	(0.0152)
Food & beverages	0.020	-0.006	0.016	-0.002
	(0.0269)	(0.0241)	(0.0207)	(0.0200)
Crafts	0.001	-0.022	-0.042**	-0.028**
	(0.0223)	(0.0215)	(0.0175)	(0.0122)
Textiles	-0.080	-0.041	-0.040	-0.072***
	(0.0842)	(0.0536)	(0.0384)	(0.0205)
Other manufacturing	-0.059	-0.024	0.013	-0.019
	(0.1095)	(0.0805)	(0.0501)	(0.0561)
SME Sales	0.005	0.030	0.028*	-0.007
	(0.0212)	(0.0307)	(0.0143)	(0.0173)
Other services	0.033	-0.053	-0.003	0.007
	(0.0289)	(0.0338)	(0.0155)	(0.0181)
Remittances	0.018	0.000	-0.003	-0.025*
	(0.0312)	(0.0233)	(0.0143)	(0.0134)
Assets sold	-0.002	0.072*	0.039	-0.025
	(0.0490)	(0.0366)	(0.0436)	(0.0342)
Assets pawned	-0.051	-0.068	-0.008	0.023
	(0.1108)	(0.0573)	(0.0679)	(0.0781)
Saving money in gold	0.049*	0.061**	0.018	-0.044***
	(0.0253)	(0.0273)	(0.0201)	(0.0124)
Saving money in cash	0.025	-0.014	-0.011	-0.021
	(0.0185)	(0.0179)	(0.0113)	(0.0129)
Saving money in land	0.030	0.164***	0.037	0.003
	(0.0438)	(0.0556)	(0.0457)	(0.0367)

Saving money in other assets	0.054** (0.0236)	0.047** (0.0201)	0.026* (0.0139)	0.032** (0.0131)
Saving money in MFIs or banks	0.023 (0.1016)	0.170 (0.1039)	-0.061 (0.0600)	0.110 (0.0974)
Individual shocks	0.009 (0.0207)	-0.004 (0.0137)	-0.006 (0.0147)	0.045*** (0.0106)
Income shocks	-0.020 (0.0391)	0.030 (0.0392)	0.008 (0.0211)	0.016 (0.0363)
Weather shocks	0.070** (0.0284)	0.058 (0.0498)	0.020 (0.0329)	0.032 (0.0196)
Log (other loans)	-0.001 (0.0010)			
Log (AMK loan)		0.003* (0.0014)	0.058*** (0.0021)	-0.003** (0.0011)
constant	0.874*** (0.2925)	-0.408 (0.3330)	0.080 (0.2389)	0.556** (0.2514)
Year dummies	Yes	Yes	Yes	Yes
Provincial fixed effects	Yes	Yes	Yes	Yes
R <sup>2</sup>	0.075	0.171	0.678	0.096
N	1554	1554	1554	1554

\*, \*\*, and \*\*\* indicate statistically significant at 10%, 5%, and 1% levels, respectively.