Mobile value added services for inclusive growth: A study of women micro-entrepreneurs in Fiji

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Introduction

The category of mobile value added services (MVAS) includes all services provided to end customers beyond standard voice calls (Deloitte 2011). The six prevalent themes in MVAS include: m-infotainment (entertainment), m-connectivity (communication related applications), m-health (health-related issues), m-education (educational content), m-enterprise (business-related applications), and m-commerce (retail, banking, and transactions over mobile phones). Women's micro-enterprises (WMEs) are concerned with the last two themes. Consequently, this study focuses on those themes.

WMEs are micro-enterprises owned and operated by women entrepreneurs. Section 2 of Fiji's *Small and Micro-enterprises Development Act 2002* (SMDA) defines a micro-enterprise as 'any enterprise which has a turnover or total assets not exceeding FJD$30,000[i] and not more than five employees'. We focus on WMEs given their importance from the standpoint of inclusive growth, i.e. growth that increases economic and social opportunities available to all sections of society. It is based on the idea that as growth differentially affects gender, ethnic, and geographic groups, it matters with whom and how people engage in the development process (Ranieri and Ramos 2013). The International Centre for Research on Women found that 'improving women's access to technology has the potential to spur their economic advancement and stimulate broader economic growth. Regrettably, technology has been underused in unlocking women's economic opportunities' (2010:2).

Mobile phones have the potential to accelerate growth through improved linkages to markets, and the Internet can deliver essential knowledge (AusAID 2008). We focus on Fiji (an island country in the Pacific Ocean) as its economic growth has contracted or only

marginally improved in recent years (World Bank 2013). Since a 2006 coup, Fiji has been under military rule. Fiji's population is about 900,000 with mobile penetration at 98% (World Bank 2013). The Fijian government acknowledges that much greater use of modern technologies is essential for the country's social and economic development as poverty has risen from 7% to 35% over the last four decades (GOF 2006). Our study would help women become stronger 'business women' as envisaged by the ICRW (2012) as access to finance improves and WMEs grow via increased use of MVAS.

Literature Review

The positive impacts of information and communication technology (ICT) can be large in developing countries (Andrianaivo and Kpodar 2011). Consequently, various technological innovations such as point of sale (PoS) devices in conjunction with magnetic stripe cards (Latin America), phones and PoS devices like WIZZIT (South Africa), and Smart Money (Philippines) have been introduced. Middle Eastern and North African countries have e-wallets linked to cards and mobile phones (Pearce 2011). The latest in the suite of innovations is the mobile phone-based M-PESA in Kenya. It is a money transfer and microfinance service offered by Safaricom and Vodacom rather than by banks. It demonstrates how unbundling (i.e. the provision of financial services by non-banks) can be used to reach poor people (Klein and Mayer 2011). Though technology is important to achieve inclusive growth, 'what we need is an appropriate business delivery model' (Chakrabarty 2011:5).

Academic studies in the area of MVAS usage are few, although some studies have examined particular aspects of MVAS. For example, the Board of Governors of the US Federal Reserve (2012) studied a subset of MVAS—mobile financial services—and assessed its impact on consumers. The study, among others, found that the 'under-banked' population in the US 'make comparatively heavy use of both mobile banking and mobile payments, with

29% having used mobile banking and 17% having used mobile payments in the past 12 months'. Similar studies in other countries of the world, such as in Kenya by Ngenga (2008), looked at usage of mobile phone banking and found dominance of ownership along gender lines: significantly more men use mobile phones for financial services than do women. Porteous (2006) has distinguished between additive impact (mobile phone as a channel parallel to conventional banking) and transformational impact (mobile phones targeted at those that are un-banked).

MVAS not only involves diffusion of innovation, but also adoption of technology. Consequently, three information sciences theories become relevant. The diffusion of innovation (DOI) theory (Rogers 2003) postulates that characteristics such as relative advantage, compatibility, complexity, trialability, and observability impact diffusion of innovation. Davis (1989) proposed the technology acceptance model (TAM) to determine what motivates users to adopt technology. Perceived ease of use, perceived usefulness, and attitude towards using the system were found to be major determinants of user acceptance or rejection of technology. TAM2 includes two additional processes: social influence processes, such as image and subjective norm, and cognitive instrumental processes, such as output quality and relevance to the job or task at hand. In the present study, we examine the impact of contextual, organizational, and individual characteristics of WMEs on the decision to adopt MVAS. The study is grounded in Kimberly and Evanisko's (1981) theory, which posits that individual, organizational, and contextual factors influence the adoption of innovation.

Following from the above, the central question that we address in this study is how MVAS could be leveraged for growth of WMEs in Fiji. Towards this end, we seek answers to the following questions: (1) What are the business, technological, and financial challenges faced by WMEs in Fiji?; (2) What is the attitude of WMEs in Fiji about the use of MVAS to meet the identified entrepreneurial challenges?; (3) What are the technological and

commercial drivers of successful implementation and scaling of MVAS solutions in Fiji in order to develop a conceptual model for MVAS adoption?; (4) What is the supply-side perspective on the barriers to the potential for use of MVAS to empower women entrepreneurs?; and (5) Is unbundling and disaggregating MVAS solutions (similar to M-PESA) feasible in Fiji's context? We adopted the following research procedures to answer these questions.

Methodology

The first stage involved review of relevant literature and collection of secondary data on the use of MVAS by WMEs. The second stage involved exploratory field work. A survey of 74 WME entrepreneurs and 10 semi-structured interviews of providers of MVAS content solutions (banks and technology vendors) and regulators and policymakers were conducted. The WMEs surveyed were selected using systematic random sampling from the list of WMEs made available by South Pacific Business Development (SPBD). Ethnographic methods of inquiry underpinned the study. The four female research assistants (research students at the University of South Pacific, Suva) who conducted the survey were briefed by the project leader about ethnographic procedures. The interview schedule had three parts: Part A included 37 questions relating to demographics, type of mobiles phones being used (since functionality available on the mobile phone varies by issues such as the brand, version, etc.), type of value added services being used, business challenges faced by WMEs specific to their business, and which of these challenges the WMEs thought could be addressed through MVAS. Some of these questions were open-ended. Part B included questions relating to the perceived usefulness of MVAS, social influence on the use of MVAS, attitudes towards use of MVAS, and behavioral intention to use MVAS. Part C included questions relating to business information, technology awareness, financial literacy, etc. Some of these questions were also open-ended. The rationale for designing the interview schedule was to enable us to

answer the first three research questions, that is, the challenges faced by WMEs, their attitude towards use of MVAS, and the organizational and individual characteristics that influence adoption of MVAS in the Fijian context. We also sought responses to information such as their financial literacy level, perspectives on perceived ease of use of mobile applications, etc., to get an in-depth understanding of the WMEs from an ethnographic perspective. The project leader accompanied the research assistants to interview WMEs in the initial phase. Accessibility of WMEs, travel involved, cost, and the safety of the research assistants were considerations kept in mind when selecting participants to be interviewed. Each research assistant interviewed 15-20 WMEs from July 23 to August 25, 2013, to obtain 74 usable responses.

To gauge the supply-side perspective, the team interviewed several policymakers at different institutions including the Permanent Secretary, the Ministry of Women's Development, the Government of Fiji, CEOs of the Consumer Council of Fiji, SPBD, and the National Council of Small and Medium Enterprise Development (NCSMED). The data collected helped us address research questions 4 and 5 above. The project leader and other team members conducted these interviews. The participants for the interview were selected keeping in mind their involvement in micro-enterprise related activities and our research objectives. In the last stage, a focus group discussion was held at the University of South Pacific, Fiji, involving various stakeholders to seek feedback on the issues encountered during the study. Finally, two seminars were held—one in Canberra and the other in Suva (Fiji)—to present the findings of the study and to chalk out future course of action.

We envisage that the findings of the study would help several stakeholders. The providers of MVAS would understand the challenges faced by WMEs and the MVAS solutions thereto. Policymakers would know what policy changes are required for WMEs business growth, and the WMEs may eventually receive affordable MVAS to grow their

businesses. Conceptually, the findings would contribute to Kimberly and Evanisko's (1981) model.

Analysis and Discussion of Findings

Of the 74 WME respondents interviewed, 64% were in wholesale/retail business activity, 11% in hospitality, 8% in other activities, and 1% in provision of social services (such as day care centers). Of the total respondents, 45% had been operating for less than two years and 66% had one or two persons employed in the business. 45% of the respondents owned Nokia phones, 20% owned Alcatel, 13% did not respond, while the rest owned other brands such as LG, Sony, and Motorola. 81% of the respondents had prepaid subscriptions. Of the total respondents, 48 were with Vodafone, 23 with Digicell, and 13 with INKK (the total is greater than 74 as 19 respondents were with more than one mobile network operator (MNO) as typically MNOs target a particular area for coverage and may not have coverage beyond that area. 58% of the respondents spent less than FGD$30 per month while 10% spent over FGD$30 per month. The WMEs considered that the cost was on the high side. The other respondents did not answer the question. Only 11% out of 74 respondents were using data service on their mobile phones while 50% were using SMS in addition to voice. Of the respondents using SMS, 27 were using it for business purposes or for accessing information. 26% of the respondents were accessing the Internet on their mobile phones.

RQ1: What are the business, technological, and financial challenges faced by WMEs in Fiji?

(a) The top five challenges faced by respondents were: access to credit, access to capital/savings, access to insurance, access to markets, and logistical limitations.

(b) 59% of respondents felt that if some of these challenges could be addressed then a medium to large increase in their businesses could be possible.

RQ2: What is the attitude of WMEs to adoption of MVAS solutions to meet the challenges and grow their business?

(c) 62% of the respondents stated that if there were a mobile application that could address the challenges identified as being most significant, they would be willing to use it.

(d) Access to business training, access to business networks, access to business resources, and access to business tools are challenges that the WMEs would like to address if suitable applications on mobile phone become available.

(e) Access to business mentorship and training were the top two applications that the WMEs were looking for.

RQ3: What are the drivers of successful implementation and scaling of MVAS solutions in Fiji to develop a conceptual model of MVAS adoption and these drivers?

We investigated the effect of contextual, organizational, and individual characteristics of WMEs on the decision to adopt MVAS. We draw on the work of Kimberly and Evanisko (1981) who found that individual, organizational, and contextual variables were better predictors of adoption of technological innovations. We focused on size (Ein-Dor and Segev 1978) as measured by revenue, information intensity (Porter and Millar 1985; Yap 1990) as represented by business type (some micro-enterprises may be more information intensive in their operations than others, such as, for example, a retail business), and competitiveness of the business (Link and Bozeman 1991; Porter and Millar 1985) as represented by the age of the business. In micro-enterprises the failure rate is generally very high. Consequently, those that survive are obviously competitive. Individual characteristics of relevance for our study include the CEO's (that is, the entrepreneur's) innovativeness as represented by age. Younger CEOs are more likely to be innovative as compared to their older counterparts. Koberg et al. (2003) found that as the age of the CEO decreased, incremental innovation increased, suggesting that younger CEOs were associated with higher incidents of incremental innovation. The CEO's IT knowledge was represented by education. Bantel and Jackson

(1989) found in the context of banks that more innovative banks are managed by more educated teams. In addition to the above business and individual related variables, we also include an external variable, viz. MNO used. The coverage of the MNO and availability of the MVAS through the MNO would obviously influence the decision to adopt MVAS.

Following from the above, the research model that we test can be depicted as follows:

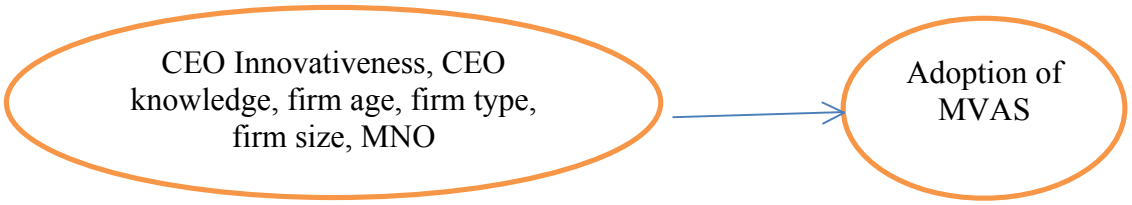

Figure 1: Research model of the study

We ran a logistic regression and found that only the entrepreneur's age and the MNO used had significant positive relationships with the dependent variable. This demonstrates that younger entrepreneurs are more willing to adopt MVAS and providers need to keep the needs of these entrepreneurs in mind while marketing their products. WMEs whose MNO was Vodafone were more likely to use MVAS. This may be because Vodafone has formal agreements with many content/service providers in Fiji such as the SPBD.

RQ4 What regulatory and competition policy and supply-side issues arise in designing MVAS solutions for WMEs in particular?

Several policy barriers and industry challenges came to the fore during semi-structured interviews and focus group discussions.

(a) No legislation to protect consumers and an absence of privacy laws: The CEO of the Consumer Council of Fiji (CCF) stated that the Telecom Regulation Authority that draws up the code of conduct pertaining to MVAS. However, the code was still being drafted. As

for the consumer rights, the CEO stated that they are not well protected. Consumer grievances vis-à-vis banks would be accepted by the Commerce Commission, but at this stage there is no ombudsman in financial services or in the telecom sector. Consumer and privacy laws are absent in Fiji. All banks in Fiji are foreign banks. Credit unions are present but their sphere of influence is limited.

(b) Absence of forum: The Consumer Council official opined that the mobile sector is not well regulated in Fiji, and there is no forum available to discuss issues related to mobile phone banking or MVAS in general. It discourages consumers from using MVAS.

(c) No protection for WMEs: WMEs are classified as 'business' and the borrowing is for business purposes that are outside the purview of the Consumer Credit Act. Consequently, WMEs have nowhere to go if they have any grievance with financial institutions.

(d) Overregulation of WMEs: Overregulation and policy bottlenecks are the main problems hampering the growth of WMEs. WMEs are not allowed to operate from home. For example, if a WME has to establish a day care center, it has to rent premises, which increases the operating cost and makes the business non-viable.

(e) Lack of political will: The CEO of SPBD stated that mobile phone banking is still young in Fiji and there are many hindrances. Interoperability is lacking. Even mobile towers are not shared by two major mobile operators, Vodafone and Digicell. The Reserve Bank of Fiji is trying to bring interoperability to the use of ATMs and PoS terminals, but cohesiveness is lacking and there is little political will to remove barriers.

(f) Misleading statistics of penetration: The CEO of SPBD stated that the statistics of mobile penetration are misleading. They are computed as a ratio of the number of mobile phones or SIM cards issued to the population, but many Fijians have more than one phone.

SIM cards are issued even to tourists, so obviously such penetration figures are misleading. A more effective method would be to count the number of mobile phone accounts.

(g) Infrastructure costs are prohibitive: The cost of building a mobile phone tower is prohibitive (FJD$750,000 to 1 million, approximately). Consequently, mobile phone banking is absent in rural areas. The Government of Fiji needs to consider subsidizing some of the costs if rural areas are to be covered by mobile phone networks.

(h) No special training programs for WMEs: The CEO of NCSMED stated that they don't have any special programs for WMEs. There is also lack of awareness about credit guarantee schemes for WMEs. He was of the view that MNOs like Vodafone need to conduct training programs for WMEs for rapid uptake of MVAS.

RQ5: Are unbundling and disaggregating MVAS solutions (similar to M-PESA called M-PEiSA in Fiji) feasible in Fiji's context?

M-PEiSA: The CEO of SPBD stated that there is a lack of uptake of M-PEiSA, due to the difficulty in finding suitable agents that are crucial for M-PEiSA and MVAS uptake. Major technological constraints are lack of network coverage, interoperability issues, and construction of towers. A non-technical constraint is the availability of suitable agents, especially in rural areas.

(a) What drives financial institutions in the provision of services through MVAS?: Cost savings, lower risk of fraud, liquidity management, and safety are some of the major drivers for financial institutions to push for MVAS, as was the case with SPBD. Sharing revenue with the MNO was never the objective of SPBD. Vodafone's dealings with SPBD were very transparent. It sends transaction reports twice daily to SPBD. Such transparency is not there with DigiCell, and consequently, the SPBD doesn't deal with them. For DigiCell, mobile banking and other value added services are not part of their core business.

Interestingly, both DigiCell and Vodafone were funded by Pacific Financial Inclusion Centre and the UNDP.

(b) Linkage of m-banking and M-PEiSA: Several participants in the focus group discussion stated that it is important to have linkage between m-Banking and M-PEiSA. It seems the Fijian government has recently mandated the use of M-PEiSA cards on buses, but it is too early to gauge the success of this scheme.

Questions for Future Research

During the focus group discussions and seminars, the following issues were raised that call for future research. It was suggested that the study needs to be extended to male entrepreneurs and to other Pacific island countries so that a comprehensive approach could be taken by aid agencies and Pacific governments to the various issues raised in the present study. Similarly, participants believed that it might be useful to forge linkages between M-PEiSA and MVAS. However, how this could be done is a subject matter for further research. Another issue that needs investigation is the correspondence between social and technological infrastructure, in particular, how individual characteristics impact payment choices.

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[i] FJD$30 is about USD$16