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Observing choice of loan methods in not-for-profit microfinance using data envelopment analysis



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ABSTRACT

Distributing loan using group lending method is one of the unique features in microfinance, as it utilises peer monitoring and dynamic incentive to lower credit risks in extending collateral-free loan to the poor. However, many microfinance institutions (MFIs) eventually perceive it to be costly and restricting loan growth thereby resorted to individual lending method to enhance profitability. On the other hand, village banking method was developed to boost outreach and to create self-sustaining village microbanks. We thus seek to empirically observe the loan method – efficiency relationship and to examine the best loan method regionally; focusing on not-for-profit MFIs that are widely regarded as best microfinance provider. Non-oriented Data Envelopment Analysis with regional meta-frontier approach is used for efficiency assessment of 628 MFIs from 87 countries in 6 regions, followed by Tobit regression. We also investigated factors affecting efficiencies such as borrowings, total donation, cost per borrower (CPB), portfolio at risk (PAR), interest rates, MFI age, regulation status, and legal format. The results support our argument that appropriate performance analysis should best be performed on regional basis separately as we find different results for different region.

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1. Introduction

Over the last few decades, microfinance has provided financial access to the poor households who would otherwise be left out of by traditional financial infrastructures. Whilst most of these 'unbankables' (Simanowitz & Walter, 2002) demand small loans which are infeasible for mainstream banking industry to serve given the transaction costs incurred (Armendariz de Aghion & Morduch, 2005), financial access is still denied to the rest albeit having collateral (Johnston & Morduch, 2008). Microfinance bridges this gap by opening financial access thereto, generating well-recorded contribution in poverty alleviation e.g. poverty reduction from 60% in 1970 to 11.5% in 1996 in Indonesia (Seibel & Agung, 2006), small businesses spur in many countries e.g. Argentina, Philippine, Kenya and Senegal (Robinson, 2001), households reconstruction in wartorn countries like Bosnia-Herzegovina (Matul & Tsilikounas, 2004) and in disaster-torn countries e.g. Sri Lanka (Becchetti & Castriota, 2011).

As poverty eradication instrument (van Rooyen, Stewart, & de Wet, 2012), MFIs face dual objectives of reaching out to the

(A. Emrouznejad), l.nastasakis@aston.ac.uk (L. Anastasakis). ¹ www.DEAzone.com. poorest whilst striving for long term sustenance as viable financial institution, i.e. a dual bottom line of outreach and financial sustainability (Marr, 2003). A trade-off is observed herein whereby outreach is attained at the expense of financial sustainability, e.g. in Hermes and Lensink (2007b), Hermes, Lensink, and Meesters (2011), Olivares-polanco (2005) and Schreiner (2002), prompting two approaches with different focus in microfinance: institutionalist approach on sustainability and welfarist approach on outreach (Robinson, 2001). Alternatively, Simanowitz (2007) suggested a middle way where trade-off can and should be managed. Perceiving dual objectives as relative measures, Widiarto and Emrouznejad (2015) thus observed using non-parametric data envelopment analysis (DEA) that these objectives can be pursued concurrently by best-practice MFIs in a region/frontier exercising appropriate strategy. Likewise, Miyashita (2000) and Cull, Demirguc-Kunt, and Morduch (2007) stress on the importance of MFI strategy formulation and credit design to manage this trade-off.

One central strategy is an appropriate lending methodology. The reluctance of mainstream financial institutions to finance the poor is due to *ex ante* adverse selection and *ex post* moral hazard (Hermes & Lensink, 2007a). Grameen Bank Bangladesh thus pioneered an innovative group lending scheme that mitigates these risks through joint liability; borrowers voluntarily form a small group whose members are jointly liable for each other's loan and are barred from future loans in the case of non-repayment

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(Ghatak & Guinnane, 1999), termed as dynamic incentives (Kono & Takahashi, 2010). A mutual and morally binding guarantee in lieu of collateral exists herein via a peer guarantee mechanism; members motivate and monitor each other whilst implant social sanctions to non-compliant ones (Varian, 1990), mitigating information asymmetry thus avoiding adverse selection and moral hazard problem (Godquin, 2004). Members thus have incentive to voluntarily assist potential defaulter in loan repayment (Abdul Rahman, 2007). The theoretical advantages of group lending has been discussed in depth, e.g. Armendariz de Aghion and Morduch (2005), Gomez and Santor (2001), Stiglitz (1990) and Ghatak (2000). Grameen Bank had proven the effectiveness of this method by having 98% repayment rate hence replicated globally (Anthony, 2005).

However, group lending may arguably induce agency problem that ironically omit the poorest from microcredit access, i.e. excluded in group formation as deemed risky (Marr, 2003) or rejected by MFI loan officer to avoid delinquency (Hulme & Mosley, 1996). Moreover, group meetings and trainings trigger higher costs that increases interest rates (Shankar, 2007) and group mechanism may limit borrowers with growing business (Madajewicz, 2011). Whilst group repayment is theoretically enhanced by exploiting local information (Ghatak, 2000), empirical evidences suggest that repayment is enhanced only if social homogeneity and personal trust exist between members (Cassar, Crowley, & Wydick, 2007; Karlan, 2007).

Conversely, Indonesia's BRI Unit Desa, the biggest MFI in the world, takes more commercial approach and employs individual lending akin to mainstream financial institutions (Helms, 2006), i.e. a bilateral loan agreement between an MFI and sole borrower based on her creditworthiness that is usually collateral-based (Dellien, Burnett, Gincherman, & Lynch, 2005). However, the risks herein are not assessed from document scrutiny; instead, ranging from visit to applicants' businesses and homes to loan guarantee and character reference from local village committee (Armendáriz de Aghion & Morduch, 2000; Churchill, 1999). Moreover, guarantor exercises social pressure for timely repayment (Jaunaux & Venet, 2009). Dynamic incentives is also implemented herein to mitigate ex post moral hazard and strategic default, i.e. borrowing without intention to repay the loan (Hermes & Lensink, 2007a; Kono & Takahashi, 2010). Individual lending indeed exhibits lower transaction costs with loan structure flexibility sans peer guarantee (Westley, 2004) that accommodates borrowers with growing businesses (Madajewicz, 2011), especially in relatively industrialized area and in transition economies (Armendáriz de Aghion & Morduch, 2000). Many group MFIs also offer individual loan to prevent progressing clients from moving to competitors and to attract new clients (Dellien et al., 2005), including pioneers e.g. Grameen Bank Bangladesh (Hermes & Lensink, 2007a). Some even shifted completely into individual lending, e.g. BancoSol Bolivia (Cull et al., 2007). Many Latin American non-bank financial institutions and banks employ this method (Servin, Lensink, & van den Berg, 2012), as well as MFIs in East Asia (Cull et al., 2007), Middle East (Abdelkader, Jemaa, & Mekki, 2012), and Eastern Europe (Armendáriz de Aghion & Morduch, 2000).

Nevertheless, attracting better-off clients with individual lending is often done at the expense of the poorest, i.e. mission drift (Armendariz & Szafarz, 2011; Cull et al., 2007). Individual lending tends to have lower outreach as collateral requirements deters poorest borrowers (Cull et al., 2007; Hermes et al., 2011). Comparison between group and individual lending are discussed comprehensively in Dellien et al. (2005), Lehner (2009), Madajewicz (2011), and Giné and Karlan (2014).

Separately, The Foundation for International Community Assistance (FINCA International) in Latin America pioneered village banking scheme: facilitating access to credits and savings through community-managed associations established at village level with 30-50 members - hence 'village bank' (Westley, 2004). It is typically facilitated by non-governmental organizations (NGOs) in channelling external capital from local commercial banks for subsequent financing to village bank members, which is tied to member's deposit (Morduch, 1999). Akin to group lending, peer pressure mechanism is herein implemented to ensure timely loan repayment to sponsors warranting continuous capital injections, whilst it contrarily adopts bylaws, elects president and treasurer, and manages its members' loans and savings independently. It preserves internal accounts from savings and time gap in interest and principal payment to its sponsors that can further be extended as extra loans (Westley, 2004). Its ultimate goal is internal capital accumulation to eventually graduate as an autonomous self-sustaining financial provider in three years (Morduch, 1999; Obaidullah, 2008). Village banking has been replicated mainly in Latin America and Africa (Obaidullah, 2008) where it contributed significantly to poverty alleviation effort in Latin America (Hiatt & Woodworth, 2006). It exhibits greater rural focus and lower average loan balance than other schemes (Westley, 2004).

Nevertheless, its transaction costs is higher due to selfmanagement and compulsory attendance at meetings, thus its real benefit for borrowers lies in savings and non-financial services instead of being an efficient credit facilitators; inflexible loan structure and forced saving requirement are also often problematic to growing clients (Westley, 2004). Furthermore, its target to become independent in three year time is often delayed due to slow savings and growing credit demands (Morduch, 1999).

Therefore, as all methods are not without setback, which one is relatively best to pursue dual objectives? Furthermore, is there a method that performs best in all regions? Empirical evidence is thereby indispensable considering that different regions face different demographics and, from institutional theory perspective, MFIs must adapt to the rules and belief systems in their environment to survive (Scott, 1995). We argue that differences in demographics may affect appropriate loan method, i.e. concept of best loan method is thereby relative rather than absolute. Consequently, separate assessment of best method in different regions is more appropriate than a global one.

This paper therefore seeks to observe loan method - performance relationship. It firstly assesses MFIs' efficiency as measure of relative performance toward benchmark MFIs in overall performance, financial sustainability and outreach in six regions, namely Africa, East Asia and The Pacific (EAP), Eastern Europe and Central Asia (EECA), Latin America and The Caribbean (LAC), Middle East and North Africa (MENA), and South Asia (SA) separately, thereafter examines their relationship to loan methods. Research questions explored are: (1) whether loan methods have different impact to MFIs' efficiency in different regions; (2) whether a method and/or combination offering relatively higher overall, financial, and social efficiency in all regions exist. Herewith, the focus will be on not-for-profit MFIs as it is regarded by many as best microfinance provider, e.g. Dichter (1996) and Haq, Skully, and Pathan (2010); though extended to those beyond NGOs, i.e. credit union/ cooperatives, non-bank financial institutions (NBFI), etc. We previously observed that not-for-profit MFIs showed generally higher efficiency in EAP, MENA and SA regions (Widiarto & Emrouznejad, 2015).

We propose a non-parametric method of Data Envelopment Analysis (DEA) to measure relative performance vis-à-vis social, financial, and overall efficiency of MFI, specifically a non-oriented DEA meta-frontier approach. The contribution are therefore three folds, i.e. (1) contributing regional-based evidence to microfinance and DEA literatures regarding social and financial efficiency and their relationship with loan methods; (2) contributing to literatures in the use of non-oriented DEA in microfinance performance assessment, which have not been utilised thus far; (3) constructing basis for policy recommendation to MFIs in different regions. Download English Version:

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