

# Utilizing Information Systems for Measuring Impact on Social Sustainability: Survey of Microcredit Organizations in Bosnia and Herzegovina

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**Abstract:** *Microfinance has been used as a tool for social sustainability and development since the 1970s. In microfinance, assessment of social sustainability is often conducted through client impact monitoring. This study explores the impact measurement practices of microcredit organizations in Bosnia and Herzegovina and their use of information systems in this process. We draw on the latest trends of using shared measurement systems for impact monitoring, to point out the potential of using such systems to achieve sustainable impact on wider social issues in Bosnia and Herzegovina. This paper outlines the roles and responsibilities that different stakeholders should play in the system development process.*

**KEYWORDS:**

*Microfinance, Microcredit, Bosnia and Herzegovina, Social Impact, Information Systems, ICT, Shared Measurement Systems.*

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## **Introduction**

Since its conception, microfinance has been promoted as an essential economic tool for social sustainability and poverty alleviation. Microfinance is based on a premise that providing financial services (most commonly in form of credit) to the most vulnerable populations, who would otherwise not have access to standard bank financing, would empower people to get out of poverty by capitalizing on their own skills and ideas. In developing and post-conflict countries, such as Bosnia and Herzegovina (BiH), microfinance has been used as a tool to raise employment and revive economic activity by targeting micro-business by microcredit organizations (MCOs). This 'bottom up' approach has received popularity as an alternative to the traditional top-down approach used by international aid organizations to stimulate economic growth and development through various projects and funds delivered to governments of developing countries.<sup>1</sup>

Even though microfinance has been around since the 1970, there is still no agreement on the real impact of microfinance. While many studies have shown results of positive economic and social impact of microfinance (Dunn, 2005) the appropriateness of different tools and methods applied is often questionable and makes them impossible to compare. This has contributed to growing criticism of microfinance in recent years (Bateman 2007, 2010, 2011). A recent study assessing the use of microfinance in BiH (Welle-Strand et al., 2010) concludes that microfinance is a better tool for improving individual economic performance of micro finance institutions (MFI) and their individual clients, than for achieving broader social goals. What is clear is that amidst such hard times and controversy, having a clear social mission and the ability to track and measure organizations realization of that mission and goals, is of increasing importance for individual MCO and the microfinance sector as a whole. It is also clear that major social issues such as poverty or equality cannot be solved by any single institution or type of organization. Collaborative efforts and sharing of information and knowledge are needed.

The increasing capability and availability of Information and Communication Technologies (ICTs), is allowing innovative solutions to be applied in this field supporting collaboration and resulting in resource and cost savings, while maximising outputs. The latest trends in impact measurement systems are the development of web-based systems which coordinate efforts of impact monitoring by many different organizations who share the same social goals.

The goal of this study is to assess the current practices and potentials of using information systems to support realisation of social mission and goals of microfinance organizations in Bosnia and Herzegovina. In order to do this, we focus on answering the following research questions: 1. Do MCOs have a systematic approach to measuring their social performance and impact? 2. Do MCOs have the necessary ICT infrastructure and capabilities to support impact monitoring? 3. How can information systems be used to more accurately and efficiently measure social impact of microcredit at the level of BiH?

We first provide an overview of microfinance as a tool of social sustainability and development and introduce the innovative ways in which ICTs are being used to facilitate/enhance the process of social performance and impact measurement. We then present the findings of an empirical study of social impact measurement practices among MCOs in BiH. Recommendations are given for strengthening social performance and impact monitoring practices of the microfinance sector in BiH by applying the most innovative ICT trends in the field.

## **Overview of Microfinance**

### **Social sustainability and microfinance**

Social sustainability is an element of sustainable development which “*occurs when the formal and informal processes, systems, structures and relationships actively support the capacity of current and future generations to create healthy and livable communities. Socially sustainable communities are equitable, diverse, connected and democratic and provide a good quality of life*” (Barron and Gauntlett, 2002, pp.18). At a practical level, social sustainability assessment is often conducted through social impact assessment by focusing on principles such as income and employment, education, skills, consumption or participation (Oman and Spangerberg in Colantonio, 2009).

Modern microfinance was pioneered in the late 1970's by a Bangladeshi banker and economist, Muhammed Yunus, who used small credits as a way to provide self employment to people (primarily women) who had talent but no money. Such people could not access regular loan facilities through banks as they had no collateral, were unemployed or worked in the informal sector hence could not prove income generation. Hence, they would often fall prey to loan sharks charging huge interest rates (Kumar, 2010).

The social objective most MCOs today is poverty alleviation, while many also focus on small business start-ups, employment generation, empowerment of women, increasing level of education among children and youth, etc. Poverty eradication is also the no.1 Millennium Development Goal (MDG) with a target of cutting extreme poverty in the world by half by the year 2015. To help achieve this goal, the UN designated 2005 as the International Year of Microcredit, with a goal of promoting access to finance to the poor.

It is now estimated that 160 million people in developing countries are today served by microfinance through MFIs which range from small nonprofit organizations to large commercial banks. In addition to microcredit, some offer other services such as deposit, saving accounts, financial and business advice or marketing and technology services. The average interest rate charged by MFIs is 27%, which is significantly higher than what is charged by the banks (CGAP, 2006). High interest rates are justified by higher risk profile of this client category and high administrative costs of serving clients in remote areas

Even though the terms 'social performance' and 'social impact' are often used interchangeably, it is important to stress the difference between the two. The Social Performance Taskforce defines social performance as "*the effective translation of an institution's mission into practice in line with accepted social values*" so it is concerned with effectiveness of internal organisational processes in order to achieve the organisational mission. Social impact, is the improvement in the lives of people that can be directly linked to organizations activities (SPT, n.d.). Social impact is therefore just one element of social performance.

## **Microfinance in Bosnia and Herzegovina**

BiH has a population of 3.8 million (BiH Agency for Statistics, n.d.). Microfinance was first introduced to BiH in 1996, shortly after the war ended, through a Local Initiatives Microfinance Project (LIP I) financed by the World Bank and a number of donor countries. First MCOs issued loans to micro-businesses (both formal and informal), who were affected by the war and otherwise had no access to regular credit lines.

Currently there are 23 MCOs registered in BiH, of which 19 are non-profit microcredit foundations (MCF) and 4 are profit microcredit companies (MCC). Both types of institutions are limited to providing credit services, while deposit taking is reserved only for banks. The Association of Microfinance Institutions (AMFI) was formally set up in 2003 as a network which promotes synergies and allows knowledge sharing and transparency between its members. Today, the 12 largest MCOs in BiH are members of AMFI and together they cover more than 98% of the market share in the country.

After 10 years of flourishing growth, end of 2008 marked the start of a crisis for the microfinance sector in BiH. The downturn closely followed the 2008 economic crisis. The most quoted reason for it by industry experts is the over-indebtedness of clients. The over-indebtedness was caused by concentrated market competition and erosion of MFI lending discipline (Chen, Rasmussen, and Reille, 2010). At the end of 2011 the total portfolio of the microfinance sector in BiH was at EUR 308 million, which is drastically down from its peak of EUR 699 million at the end of 2008. The sector is now showing signs of improvement and recovery. Total MCO sector has recorded a profit in 2011 (EUR 6.9 million), after two years of significant sector losses (Banking Agency of FBiH and Banking Agency of RS, 2012).

## **ICT Enabled Trends and Innovation**

There is quite a lot of guidance and information about tools and methods used for social performance monitoring (SIM Pilot project, 2008, pp.6), however there is very little about the use, effects and role of ICTs in supporting this process. As majority of MCOs operate in developing countries and remote areas they commonly have a problem with a lack of basic reliable ICT infrastructure and lack of local knowledge (Blantz, 2010).

Another common problem of effective outcome measurement is that it is made up of isolated efforts, using non standardised methods and indicators, producing results which cannot be compared. Major social issues such as poverty or child education cannot be solved by efforts of any single program or type of organization. There is also a lot of duplication of effort, time and resources as organizations with the same objectives try to measure and evaluate their outcomes. Such issues, combined with the advancements in ICT have led many organizations to develop innovative web-based systems for coordinating efforts in measuring performance and outcomes of hundreds or thousands of social enterprises within a field (Kramer, Parkhurst, and Vaidyanathan, 2009).

A report produced by FSG (Kramer et al, 2009) provides details of 20 such systems and groups them into three different categories, characteristics and benefits of which are summarised in the Table 1.

Table 1. Characteristics and benefits of shared measurement systems

Category	Description	Benefits
Shared Measurement Platforms (SMP)	Allows organizations to choose from a set of measures within their fields, and use web-based tools to inexpensively collect, analyze, and report on their performance or outcomes.	<ul style="list-style-type: none"> <li>- lower costs and greater efficiency in annual data collection,</li> <li>- expert guidance for less sophisticated organizations</li> <li>- improved credibility and consistency in reporting.</li> </ul>
Comparative Performance Systems (CPS)	CPS require all participants within a field to report on the same measures, using identical definitions and methodologies. As a result, users can compare the performance of different organizations and collect reliable field-wide data.	<ul style="list-style-type: none"> <li>- grantees can learn from each other's performance,</li> <li>- funders can make more informed choices.</li> <li>- field as a whole can more accurately document its scale and influence.</li> </ul>
Adaptive Learning Systems (ALS)	Based on a premise that major social issues (such as eradicating poverty) cannot be solved by any single organisation or project, ALS coordinate efforts of large number of different organisations working on different aspects of the same goal.	<ul style="list-style-type: none"> <li>- improved alignment of goals among the different organizations,</li> <li>- collaborative problem-solving.</li> <li>- formation of an ongoing learning community that gradually increases all participants' effectiveness.</li> </ul>

Source: adapted from FSG report

Such systems can provide numerous advantages to all organizations with a social mission and a need to measure performance and outcomes, including MFIs. Setting up such systems requires strong leadership and engagement of different organizations in the design phase. It also requires substantial funding through a multi – layer development period (Kramer et al, 2009). Participating organizations often pay a fee to have access to data a report generation, while they also input their own data into the system.

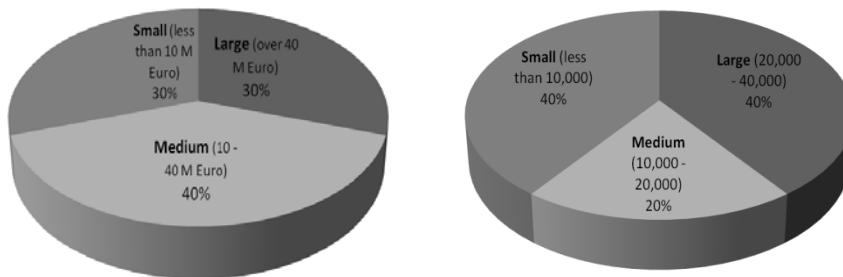
### **Research Methodology**

Current ICT capability and impact measurement practices of MCOs in BiH were studied using a survey questionnaire and follow-up interviews. The data was collected during March and April, 2012. The survey was sent to the person in charge of ICT (IT managers) in all 23 registered MCOs, however for most organizations marketing manager and IT managers both took part in completing the survey. The survey questions can be grouped in the following main areas: Organisational goals and services; ICT infrastructure, ICT use and management; Impact measurement process; Perceptions.

### **Analysis of Results**

We received a total of 10 survey responses of which 6 were followed up with phone interviews. The survey response rate of 43% is considered satisfactory as the survey was sent to all existing BiH MCOs and the 10 institutions that have responded cover 75% percent of the microcredit market in BiH. One of the respondents is registered as a microcredit company, while the others are microcredit foundations. Figure 1 shows the distribution of surveyed MCOs.

Figure 1. Size of MCOs according to portfolio size (left) and number of active loans (right)



### Organisational Goals

The prime target market for 60% of respondents is the low income population and hence their primary development goals are poverty reduction and employment generation. Second highly ranked target market are women, followed by micro-businesses. On average, 68% of clients are from rural areas. Average loan amount issued is EUR 1,123.

### ICT Infrastructure and Spending

Our results show that MCOs in BiH are overall well equipped with reliable ICT infrastructure. All credit officers and office staff have PCs and use PCs them in everyday tasks. 40% of organizations also supply their field credit officers with laptops and 30% with mobile or smart phones. All credit officers have e-mail accounts which they use daily and have access to internet at their offices. These are pleasing results considering that a survey of internet usage in BiH conducted by GFK in 2009, (UNDP, 2010, pp. 175) showed that only 30% of BiH companies have internet connections.

50% of MCOs have their offices linked via a VPN, while all offices have their PCs linked in a local network. MCOs employing over 50 staff, have IT/IS departments, whereas the smaller ones usually have one person in charge of all ICT in the organisation. Very little attention is paid to strategic use of information systems which is reflected by non existence of IT strategy in 70% of surveyed MCOs. Use of



cross functional information systems is also low. Enterprise Resource Planning system is implemented in one and Management Information Systems are used in 50% of the surveyed MCOs. None of the MCOs indicated use of CRM, GIS, DSS, KMS or Experts Systems.

### **Impact Measurement Practices**

Only two of the survey participants, collect information which is used in social impact measurement. MCF EKI (EKI) was found to have a systematic approach to measuring impact of microcredit on poverty – their primary development goal. EKI's strategic goal is to service 40% of poor clients, and at least 5% of these clients to achieve a significant improvement within 12 months of taking out a loan. In order to measure achievement of this end statement, EKI has developed its own poverty assessment method, which is used to categorise all clients at the time they first take out a loan. Indicators used in this categorization are: income, education, housing, formal employment, no. of children, place of residence and physical ability. A point scale is applied, and all client scoring over 6 points are categorized as poor. Twelve months later, a sample of 300 clients from the poor category are followed up in focus groups to assess whether there has been any significant improvement in their quality of life. To assess quality of life EKI uses a second set of indicators which include: monthly household income, possession of a car / PC / LCD, internet access, level of completed education, preventative healthcare, travel outside of place of residence, etc. EKI holds about 8 – 10 focus groups every year at different locations. The results are a combination of qualitative and quantitative data (MKF EKI, 2009). Field staff collects information from clients in paper form. Back at the office, the data is inputted into a web-based, in-house developed system for collecting and analyzing impact data.

MCF Partner (Partner) was founded by Mercy Corps in late 2000. Partner is focused on creation of jobs, increased income and creating a more stable environment. Partner's target population is rural (84.91% of active clients) and women (42.62 % of active clients) (Partner, n.d). Partner has initiated the incorporation of social performance management (SPM) into all business processes, which include: strategic planning, client relationships (loyalty and adjusting our service and product offer to clients' needs), financial management, human resources, information systems and organisational culture. Poverty measurement tools used by Partner are per capita household expenditure and per capita household income.

Another MCO, not included in our results, who has been actively managing its social performance and impact is MCF Prizma (Prizma). With 67,742 active borrowers, and employing over 250 staff, Prizma is also amongst the largest MCOs in BiH (Prizma MKF, n.d). Prizma explicitly targets poor entrepreneurs (primarily women). Like EKI, Prizma has developed its own poverty assessment scorecard which is used in poverty monitoring by assessing clients on entry and every time they take out a new loan. The following indicators are included as part of the poverty scorecard: education level of woman partner or household head, residence, employment status, family size, the frequency of the consumption of luxury foods (sweets and meat) and the ownership of a television, stereo and motor vehicle (IFAD, 2009, pp.35). Prizma also conducts exit monitoring twice a year, using semi-structured interviews. The third component of Prizma's social performance monitoring system are focus groups, used to obtain information on reaching, serving and impacting the target market (Crnkic, 2010). The Social Performance Management information system at Prizma is developed internally and consists of five core components: monitoring poverty outreach, monitoring the change of poverty status, exit monitoring, client satisfaction monitoring and focus group discussions.

### **Perceptions**

The final section of the questionnaire looks at participants perceptions regarding the effectiveness of the outcome measurement process within their organisation, the use of ICT by staff in general and use of ICT to support the outcome measurement process. Table 2 show the average answers to those questions. Scale: 1- strongly disagree, 5 – strongly agree.

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Table 2. Perceptions category averages

Question	Average
a) The results of measuring the impact of microcredit are of great importance to strategic planning in our organisation	3.8
b) The process of measuring impact is of crucial importance to our organisation	3.7
c) My organisation has effective, systematic approach to measuring social impact on customers.	2.1
d) My organisation is using ICT to support the process of social impact measurement in the best possible way	2
e) Employees of my organisation are highly capable in conducting their everyday work tasks using a computer.	4
f) Employees within my organisation are willing to accept new technologies and adjust to the new ways of carrying out their work.	3.8
g) MIS in my organisation is highly effective for collecting, analysing and reporting on our social impact.	3.3
h) The existing system for measuring impact of microcredit allows us for effective monitoring of the realisation of our strategic goals.	2.5
i) The existing system for measuring impact of microcredit allows us to effectively evaluate our existing products and develop new products.	2.5
j) Government of BiH should work more on setting up a system of social performance monitoring.	4.5
k) Having access to a central database of social performance measures at the level of Bosnia and Herzegovina would be of great value to our organisation.	4.5
l) We are willing to share the results of our measurements with other organizations for mutual benefits.	4.2

Some MCOs who in the previous section answered that they do not collect data that can be used for social impact measurement rated the effectiveness of their process and MIS in supporting the impact measurement process, fairly highly. We interpret this inconsistency as an indication of a lack of understanding of the social impact measurement process. A large majority of the MCOs agrees that a central database of social performance measures at the state level is needed (questions j. and k. in table 2). There is also a very high level of willingness to share the results of measurements with other organizations for mutual benefits (4.2). MCOs appear to have highly skilled IT staff and employees who are willing to embrace new technologies.

Respondents were asked to rate which of the given issues pose the biggest obstacle to the optimisation of the social impact measurement process for their organisation. Table 3 shows the total points awarded to each issue. Scale: 1 – smallest issue, 5 – biggest issue.

Table 3. Perceived obstacles for optimisation of the impact measurement process

Stated issue	Total Points
Lack of coordination at the level of the sector	44
Lack or inconsistency of legislation	42
Lack of human resources for conducting field studies	38
Lack of knowledge about impact measurement methods	36
Lack of accurate information received from clients	34
Lack of information about the benefits of impact studies for MCOs	32
Lack of awareness about the need to measure impact	30
Lack of financial resources	30
Lack of skilled IT staff	26
Lack of management support	20

Highest ranking issue was the lack of coordination at the level of the sector (44). This indicates that there is an agreement amongst MCOs about the need to pool efforts and minimise duplication. Lack of financial resources and field staff was rated as an issue by smaller MCOs. Lack of skilled IT staff and management support was consistently rated as a low issue across all MCOs.

## Discussion

Our results show that MCOs in BiH are overall well equipped with reliable ICT infrastructure. MCOs also appear to have (based on their perceptions) highly skilled IT staff and employees capable of using ICT to perform their business tasks and willing to embrace new technologies. However, very little attention is paid to strategic use of information systems which is reflected by non existence of IT policy in 70% of surveyed MCOs. ICTs should be viewed as one of key organizational resources and not just as a support function or a cost. This means that ICT can play a crucial role in realisation of organizational goals. Organizational goals (social and financial) have to be aligned with IT goals and applications must be developed and implemented according to those plans in order to ensure that goals are achieved most efficiently.

Overall, MCOs in BiH show a low commitment to systematically managing their social performance and measuring social impact. Majority do not have systems in place for assessing and tracking the realisation of their social mission. Reports and data presented on MCOs websites is focused on financial indicators, with social indicators being obviously neglected. MCOs need to put more effort into showing equal commitment to both elements of the double-bottom-line. This study found only three MCOs who have placed considerable amount of effort in systematically

managing their social performance. All three are funded by international aid agencies for whom social performance is a key issue. These MCOs have built notable internal expertise in managing social performance and two have developed their own measurement tools and methods such as the poverty assessment scorecard developed by MCF Prizma (IFAD, 2006 and Crnkic, 2010,) and MCF EKI (MKF EKI, 2009).

During phone interviews 4 MCOs said that they had to put in a lot of time and effort into conducting assessment of market potential studies, as no statistical data was readily available. Availability of measure such as (household income, average pay, level of education, etc.) would have cut down on time and duplication of effort across MCOs. BiH has undergone many changes over the last 20 years, especially after the war in early 1990s. The last census was conducted just before the war broke out in 1992. Many people have migrated since then or have been displaced. Because of this lack of centrally managed data, there is a lot of duplication of effort and resources in the MCO and NGO sector in general.

Centralised data is currently available through AMFI and the Central Bank of BiH. AMFI members quarterly report on financial data which is distributed to all members. The Central Credit Registry of Central Bank of BiH is a database off all individuals and legal entities in the country indebted with commercial banks, microcredit organizations, savings - credit organizations and Leasing. This registry is used for checking client credit history by the same institutions and the registry is updated daily since April 2012 (Public relations of CBBH, 2012).

## **Conclusion and Recommendations**

The goal of this research was to assess the current practices of using information systems to support realisation of social mission and strategic goals of microfinance organizations in Bosnia and Herzegovina. Our findings show that the existing ICT infrastructure capabilities are at a pleasing level but they are not being effectively used by MCOs for monitoring and evaluating their social mission. We recommend that the best way to achieve better results in this field is by developing a shared measurement system for impact monitoring at the level of microcredit sector in BiH. Use of such system would enable the coordination of efforts within the microcredit

sector which is necessary in order to achieve broader social goals. Further research is needed to investigate the most appropriate type of shared measurement system, impact measurement methodologies and measures that should be reported on.

Implementation of such systems is not an easy task and relies on commitment from various stakeholders. We will try to briefly outline the possible responsibilities of those different stakeholders. Donors and creditors can play a big part by funding different phases of shared system development. They can also influence MCOs to pay more attention to achieving their social mission, by putting more weight on evidence of social performance management practices when providing future financing to MCOs. The association of microfinance institutions in BiH – AMFI has a big role to play in promoting, educating and raising awareness about social performance management practices among its members. They should further promote the achievements that some of their members have made in this field and encourage collaboration. AMFI could also be the central coordinator for the planning and development of the shared system of impact measurement at the sector level. Another possible coordinating body could be the Central Bank of BiH. Whoever decides to take on this complex task needs to show good leadership and coordination ability.

A possible limitation could be the willingness of MCOs to provide social data on their clients and the regulatory limitations regarding privacy of information. Even though participants in our study indicated high level of willingness to share data, this should be further explored. Accuracy of data provided by clients may also be an issue, as indicated by participants of our study. Use of shared systems for impact measurement should be further explored by the microfinance sector in BiH as it has potential to play a key role in solving major social problems. Further research is needed to investigate the most appropriate type of shared measurement system, impact measurement methodologies and measures that should be reported on.

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#### (Endnotes)

- 1 The traditional top-down approach provides large sums of aid to governments of developing countries, with benefits expected to trickle down to citizens. However a large percentage of the aid is lost in costly logistics, political interference and corrupt practices. The bottom-up approach consists of issuing aid (in form of loans) directly to individual citizens.