Determinants of Microentrepreneurial Success in One of the Small Island Developing States of the Pacific: Evidence from Samoa

https://doi.org/10.33318/jpacs.2019.39(1)-04

Romalani Leofo[1]*, Afualo Wood Salele*[2]

Abstract

This study examines the attributes of Samoan microentrepreneurs to identify the important determinants of business success measured by income. Using survey analysis, we find a positive association between participation in social support network, age of microentrepreneurs, and business income. Additionally, we find weakly significant results that participation of microentrepreneurs in microfinance increases their business income. Furthermore, we find that social support network participation has a positive and significant impact on microbusiness income. Our findings extend the results of prior studies, and should be of interest to government authorities, non-government organisations and microfinance institutions for policy planning and future improvements in the microfinance sector. We recommend for microfinance policy makers and practitioners to value the importance of creating safe environments for microentrepreneurs to interact with each other and with various groups from the community for support and growth.

Keywords: microentrepreneur; microfinance; Samoa; Small Island developing states; social support

[1] Corresponding author: PhD Candidate, Research School of Accounting, College of Business and Economics, Australian National University, email: Romalani.Leofo@anu.edu.au
[2] Senior Lecturer, Department of Accounting and Economics, National University of Samoa, email: w.salele@nus.edu.ws

Introduction

In the past four or more decades, governmental and non-governmental authorities around the world, on the search for solutions to promote economic development, welcomed the microfinance pitch with great support. This was an idea with promising potential to improve the overall economic welfare of the poor and reduce poverty (Morduch, 1999; Ketchell, 2018). The main idea of microfinance is to allow people with low income and no assets that can be used as collateral to access funds through small loans from microfinance institutions at low or subsidized interest rates. Microfinance gave the poorest and most vulnerable people an opportunity to remove themselves from desperate poverty. Muhammad Yunus, the pioneer of microfinance, was even awarded a Nobel Peace Prize to recognise his work on fighting poverty and improving economic development through microfinance, particularly in developing countries. The microfinance industry expanded globally since the World Microcredit Summit in Washington, DC, in 1997. The Summit committed to the 100 million poorest households around the world to be financially supported and empowered through microfinance. A recently-published, ever-increasing amount of total funds in microfinance programs around the world amounts to $US34 billion (*The Conversation*, 2018).

While the number of microfinance studies increased in general, a large majority of these studies are based on microfinance in countries like India and Bangladesh where it originated before its rapid spread across the world. Field and Pande (2008); Imai, Arun, and Annim (2010); Leach and Sitaram (2002); and Morduch (1998) are a few examples of these studies. Some Small Island Developing states (SIDs) in the Pacific, such as Samoa, Fiji, and Papua New Guinea openly supported microfinance as a means to fight poverty for years (A. Yusuf, 1995; A. B. Yusuf, 1998). Nevertheless, there is limited evidence about the status of microfinance programs in developing countries in the Pacific. A. Yusuf (1995), and A. B. Yusuf (1998) report some early evidence of microfinance activities in the Pacific by conducting a survey of local entrepreneurs' perceptions about the barriers to starting and remaining in business, and the factors that help with business success. The findings of the impact of microfinance programs in India are less generalizable to Pacific countries like Samoa. For instance, World Bank (2019) reports drastic differences in poverty rates for Samoa relative to India and Bangladesh. Samoa currently has a poverty rate of 1.1 percent of its population living with less than $1.90 per day, while India and Bangladesh have poverty rates of 21.2 percent and 14.8 percent of their population respectively. The different levels of poverty between Pacific SIDs and South East Asian countries is one reason amongst others, such as the differences in resources,

that would make the results of studies based solely on microfinance in Asian countries less likely to hold for SIDs in the Pacific.

In this regard, our research contributes to the gap in literature by providing evidence about the status and impact of one of the local microfinance initiatives in Samoa. The main objective of this study is to provide insights about the status of microfinance in Samoa with respect to business profitability. For years, the Central Bank of Samoa, as the regulator of Samoa's financial system, listed an inclusive financial system for all of Samoa, including the poor and vulnerable groups, as one of their key priority areas (Central Bank of Samoa, 2017). Microfinance has been an important stepping-stone towards achieving this goal for Samoa. This paper is one of the first studies to conduct an impact assessment of the microfinance schemes in Samoa. The purpose of this study is not to evaluate the Nofotane project, but to examine the livelihood of individuals who were previous microfinance clients of the microfinance institutions (MFIs) discussed in this paper.

Our results indicate that project participants are predominantly unemployed females, earning extremely low levels of income and with many dependants to care for. Univariate tests through contingency tables indicate associations between factors such as age, gender and involvement in networks with the community and other entrepreneurial support groups are associated with business income. Further multivariate tests using ordinary least squares find a positive and significant relation between participants' involvement in community and business support networks and small business income. This result is consistent with Besser (1999) that small businesses benefit from involvement in the community, with higher likelihood to succeed as their involvement increases visibility and recognition of their businesses in the community. Participant age also has a significant and positive association with business income. However, female and employment variables have negative and significant associations with income, suggestive of gender inequity where female entrepreneurs earn less business income than males. Further, we find that when controlling for participants who are microfinance clients at the time that they joined the Nofotane project, there is no significant difference in business income for microfinance participants from non-microfinance participants. This result undermines the impact of microfinance programs to improve business income for their clients.

While this study has been performed to the best of our ability, it has a few limitations. First, the validity of the results depend on the truthfulness of the responses by the participants at the time the survey was conducted when the participants first joined

the project. Participants may choose not to state whether they have taken part in microfinance activities due to their pride, or fear of what others may think. This concern is partially minimised by participants' filling the survey form by themselves without others around. Second, it may be likely that participants' business income may be influenced by their participation in the Nofotane project. To alleviate this concern, we focus on participants' business income at the start upon signing up to the Nofotane project so that any effects of the project do not affect business income. We recommend that more studies are needed to examine other attributes of small business performance, as well as factors that inhibit or increase business performance.

The rest of the paper proceeds as follows. The next section reviews the relevant microfinance literature about the impacts of microfinance and the determinants of microfinance performance. Then we briefly describe the institutional background of the Samoan microfinance sector. Description of data collection procedures and research methodology is then set out and the results are discussed. Finally, the paper concludes.

Literature Review

Microfinance Theoretical Development

From its beginnings, microfinance has been seen as a tool for socio-economic development for the world's poorest households. Self-development (Morduch, 1999), marginal economic output (Lucas Jr, 1988), and social enterprise (Chell, 2007) theories motivate the results of prior studies that support microfinance. Self-development and social enterprise views of microfinance are comparatively similar in that they emphasize the social role of microfinance to help groups of people improve their livelihood. In contrast, the marginal economic output theory relates to the notion that, assuming market efficiency holds, microfinance is a viable business initiative for MFIs and a good investment for microfinance clients.

In terms of a practical microfinance model, the Grameen style model is the commonly used model by MFIs. This microfinance model operates through group borrowing, where all group members within the group bear the risk of non-repayment by other members. This unique characteristic of the Grameen model partially addresses the issue of clients lacking proper assets as collateral for their loans, as other members of the group carry the risk of other members. However, whether the model works is debatable. For instance, Selinger (2008) documents mixed evidence about the merits and limitations of the Grameen model by describing it as a

framework that is reductive because it reduces the ability to understand and assess different development programs. Some women found it less empowering.

A large body of literature supports a positive view of microfinance (Copestake, 2002; Hulme & Mosley, 1996; Khandker, 2005; Miled & Rejeb, 2018; Tedeschi, 2010). Hulme and Mosley (1996) note the great potential that microfinance has for improving poor households' livelihoods. Morduch (1999) presents similar reasoning by comparing microfinance against subsidised credit lines, explaining the costs and benefits of each technique. Morduch (1999) stresses how microfinance appears to be superior and more sustainable because it encourages self-development by the poor rather than depending on subsidies.

Other studies find that microfinance on average empowers women, and reduces violence against them (Bhatt & Shastri, 2018; Boehe & Cruz, 2013). In a study of microfinance projects in multiple Asian, Eastern European, and Latin American countries, Boehe and Cruz (2013) find that female participation in microfinance has positive impacts on microfinance institutions' (MFIs') performance. While their study suggests improved MFI performance to be positively related to female clients, it does not provide evidence about whether female entrepreneurs have better business performance outcomes by participating in microfinance. Our paper fits into this line of studies by providing evidence of how female participation in microfinance influences income from their businesses.

Microfinance Around the Globe

Despite the several theoretical papers detailing the positive prospects of microfinance, it has been confronted with criticisms about failing to achieve its mandate. Practitioners and academics from countries like Bangladesh and India criticised the programs on a two-fold basis (Biswas, 2010; Hassan & Sanchez, 2009; Schicks, 2010, 2014). Hassan and Sanchez (2009) find that microfinance schemes lacked positive outcomes, and are generally inefficient. Firstly, many clients defaulted on loan repayments, exacerbating financial situations from before. In an Indian state called Andhra Pradesh, about 30 million households took out microloans. A report showed the devastating effects of microloans leaving the poor trapped in debt, followed by coercive pressure from microfinance institutions to pay back loans (Biswas, 2010). In only a few months, about 80 people from this state took their lives after defaulting on micro loans. As a result, the booming microfinance industry in India was considered a crisis likened to the Global Financial Crisis in 2008 and the subprime mortgage demise in the United States. This is one extreme case in which

microfinance has been deemed to fail. Another criticism of microfinance discussed in the literature is that, while microfinance showed little or no effect on improving the economic welfare of the poor, the microfinance institutions lost billions of donor funds and struggled to meet at least 75 percent of their running costs (Harford, 2009; Terberger, 2012). Proponents of microfinance often ignore that micro loans come with risk just like any borrowing of any sort. There is a risk that clients' entrepreneurial activities may not turn out as well as they had expected for whatever reasons, so when their small businesses fail they end up with debts they cannot afford to pay and no source of income to meet basic needs. As a result, the livelihood of the poor may be worse off with microfinance schemes than their initial condition prior to becoming microfinance clients.

Microfinance in the Pacific

The microfinance literature about developing countries in the Pacific region is quite sparse, and there is a rising demand for future research to inform microfinance in these countries. Yusuf (1995) examines the perceptions of small business entrepreneurs about the factors that are critical for small business development in the South Pacific region. The study was conducted through a survey of 220 small business entrepreneurs from Papua New Guinea, Vanuatu, Samoa, Marshall Islands, and Fiji. The survey participants were asked to rank the stated factors in the survey in the order of importance. Of the listed critical factors in the survey, good management and access to finance were ranked as the top two factors for small business development. While the perceptions of entrepreneurs is important, our paper looks at outcomes of small business development and microfinance rather than mere opinions. Outcomes enable comparisons between entrepreneurs about their performance rather than their perceptions. Our paper extends Yusuf's (1995) study by focusing on a particular business outcome and identifies the critical factors to increasing business outcomes; in the case of our study, the outcome is business profitability.

Yusuf (1998) surveyed small entrepreneurs perceptions of the barriers to small business development and survival in the region. In addition to identifying the critical barriers to small business development, they proposed a framework to deal with the hurdles to enterprise creation. The survey results rank limited support and cultural practices as the top two barriers to small business development for entrepreneurs in the Pacific. This suggests that the top two reasons for why businesses fail are the lack of nurturing support from various segments of the community, and the various cultural obligations of entrepreneurs that inhibit business growth. For instance, most

small business owners' savings and business daily takings are spent on contributions to weddings, funerals, and title bestowal ceremonies rather than on reinvesting in the business for improvement. As a result, entrepreneurs with micro loans default on loan repayments because they have no savings and no money to meet business-operating costs. They end up out of business and no longer eligible for microloans given their loan-default history. Banthia, Tyroler, Schoeffel, and Saho (2013) echo the same results from focus groups held with women entrepreneurs indicating that their cultural and familial obligations impeded their ability to develop and sustain small businesses.

Our paper examines how business profitability is influenced by factors such as participating in a support group. Support groups include cultural groups such as a village women's committee, church and youth groups, and formal mentoring groups provided by MFIs. Thus, we provide evidence for how cultural support groups enhance business success. While our paper does not study multiple Pacific countries as in prior studies, Moustafa (2016) in the analysis of the Samoa Hardship and Poverty report points out that Samoa is relatively akin to other Pacific countries.

Microfinance Literature Summary

While social and economic theories propose microfinance to improve the economic and social welfare of the poorest individuals, prior studies provide inconsistent evidence. Some find evidence of greater issues faced by the poor, such as over-indebtedness (Biswas, 2010; Hassan & Sanchez, 2009; Schicks, 2010, 2014). Another study identifies critical contributing factors to small business success, including good business management and access to finance, while inhibiting factors include limited support and cultural practices (A. Yusuf, 1995; A. B. Yusuf, 1998). Our study extends prior studies by examining how business profitability, an outcome of business success, is influenced by factors such as clients' participation in cultural support groups in addition to formal support groups offered by MFIs.

Institutional Background: Microfinance Sector of Samoa

The microfinance sector in Samoa is largely liberalised and moderately regulated, with only four microfinance institutions and a few recently joined organisations whose primary focus is not microfinance, but provide limited microfinance services (Moustafa & Kumar, 2016).

South Pacific Business Development Microfinance Limited (SPBD)

The South Pacific Business Development Microfinance Limited (SPBD) is one of the very few major microfinance institutions in Samoa, and has operations in other Pacific island countries. Their mission is to eradicate poverty by empowering women in poor rural villages with the opportunity to start, grow, and maintain sustainable, income-generating microenterprises. SPBD provides small, unsecured loans to groups of rural women to operate small businesses using existing livelihood and skills. Clients are given training, on-going guidance, and support through frequent visits and inspections within the duration of the loans. SPBD also accepts loans for home improvement and children's education.

Women In Business Development Incorporated (WIBDI)

WIBDI is the second microfinance institution whose mission is to provide and empower vulnerable families with knowledge and skills through capacity building workshops, opportunities, and access to finance and markets. WIBDI encourages their clients to cultivate sustainable business practices that utilise agriculture and livelihood resources. WIBDI's operations is slightly different from SPBD in that it encourages client savings and allows limited client loans from their savings accounts. In addition, WIBDI collaborates with established local and international businesses to create markets for its clients' products.

Small Business Enterprise Centre (SBEC)

SBEC provides the core services of small business management training and advisory services, as well as advocacy and support services for microentrepreneurs. Part of SBEC's business model for business development combines business training, planning, and advice to facilitate access to finance from at least one of the five banks in collaboration with SBEC, Development Bank of Samoa (DBS), National Bank of Samoa (NBS), ANZ, Westpac, and Samoa Commercial Bank (SCB). One of the most important roles they provide for those unqualified for the banking system is a financial guarantee of up to 75% of the loan principal on behalf of the clients. They also facilitate business nurturing and support. According to SBEC's Business Training manager, the success rate of SBEC's clients is around 30% to 40%.

Development Bank of Samoa (DBS) in Collaboration with the Ministry of Women, Communities, and Social Development (MWCSD)

The Development Bank of Samoa (DBS) started this microfinance scheme in collaboration with Ministry of Women, Communities, and Social Development (MWCSD) in 2008. This scheme was designed specifically for women groups in communities and villages. Assistance given was mainly for agriculture, food processing, sewing, handicrafts, livestock, retail, and fishing. This microfinance program initially started with a women's committee. MWCSD provides training and workshops for women to teach them skills such as sewing, while DBS administers the microcredit and lending part of the scheme to women who have been recommended by MWCSD to be considered for loans. The major challenge for this programme was the poor loan repayment performance; a large number of clients were taken to court due to inability to settle their loans and outstanding repayments. Clients often used borrowed funds for contributions to cultural ceremonies, travel, or church donations rather than small enterprises or home improvements. It was reported that the success rate was only about 10% of the clients that were doing well. They have not been able to sustain success over time, and as a result the scheme is no longer operating (Motusaga, 2018).

Samoa Victim Support Group (SVSG) Nofotane Project

The Nofotane project, facilitated by the SVSG, enables the use of a control-group approach as used in prior studies to assess the impact of microfinance schemes (Duflo, Glennerster, & Kremer, 2007). The project provides a setting that makes it possible to explore an impact assessment of microfinance initiatives in the country. The overarching goal of the project is to empower women through self-development as an indirect means to combat violence against them. The project provided a series of workshops and training for the participants.

The purpose of this study is not to evaluate the Nofotane project. However, the project was opened to the public, and around 3800 men and women from all around the country participated and joined the workshops as the SVSG team went out to the village communities to conduct trainings on various livelihood and entrepreneurial skills. Thus, the participants included people who are microfinance clients and non-microfinance participants or people who have never taken microloans from microfinance institutions. This data is available as participants indicated whether they have or have not taken out microloans from any of the formal microfinance institutions.

Therefore, this paper explores this setting by comparing microfinance participants to non-microfinance participants as a way to isolate the average impact of microfinance activities. In addition to identifying important factors to entrepreneurial success for the full sample of participants, we use non-microfinance participants as a control group to test whether there is a significant difference between small business performance, measured by business income of microfinance participants relative to the control group using propensity score matching.

Data and Methodology

This paper employs a mixture of qualitative, semi-structured interviews, and quantitative survey analysis techniques to collect and analyse data from a sample of 1009 participants in the Nofotane Project. The dataset is from a survey completed by participants of the Nofotane project at the start of the project in 2017. While the name "Nofotane" means married women that are living with the husbands' families, the project included both male and female participants from all age groups. In total, there are about 3800 project participants.

We used multi-stage sampling by i) randomly selecting 11 out of 41 constituencies, and then ii) randomly selecting a number of participants from the chosen 11 constituencies based on their respective proportion of the total population. Table 1 shows the composition of the sample by constituency with Alataua West getting the most number of survey participants. The survey data had been obtained from Samoa Victim Support Group on a survey they conducted on all the participants at the start of the project, and we have permission to select a sample from their database for the purpose of this study only. Five semi-structured interviews were conducted with representatives from the main local MFIs. Two interviews were done with staff from SPBD, one from WIBDI, one from SBEC, and one with SVSG staff.

Table 1. Participants by Constituencies and Gender.

Island	**Constituency**	**No. of Females**	**No. of Males**	**Total No. of Participants**
UPOLU	Aana Alofi No. 2	11	37	48
	Aana Alofi No. 3	6	97	103
	Anoamaa West	19	79	98
	Vaimauga West	22	57	79
SAVAII	Alataua West	58	108	166
	Faasaleleaga No.1	8	54	62
	Faasaleleaga No.3	14	29	43
	Gagaifomauga No.3	32	80	112
	Itu Salega	9	65	74

Palauli East	37	95	132
Vaisigano No. 2	12	80	92
Total	**228**	**781**	**1009**

Source: Nofotane Project

The following model is used in Table 3 to run a multivariate Tobit regression to test potential factors that are important in predicting business income in Model 1. Model 2 in Table 3 includes one additional variable to control for microfinance status of the participants.

$$INCOME_i = SUPPORT\_NETWORK_i + FEMALE_i + SKILL_i + EMPLOYMENT_i + AGE_i + NUM\_CHILDREN_i + \varepsilon_i$$

where INCOME is a variable that takes values integers between one and six. One means lower income, while six means higher. Since the values of the dependent variable INCOME is somewhat bounded, a Tobit regression is suitable, so we report a Tobit regression of the above model and report the results in Table 3, Model 1. SUPPORT_NETWORK is a dummy equal to one if a participant is part of a business support network, zero otherwise. FEMALE is a dummy equal to one if a participant is a female, and zero otherwise. SKILL and EMPLOYMENT are both indicator variables that equal to one if a participant has a particular livelihood skill or if he or she is employed. AGE can take values in the range between one and six, with one representing less than 21 years, and six representing 70 plus years.

Results and Analysis

We will first discuss a summary of the attributes of participants. Then we will perform univariate analysis between participant attributes and small business income. Further, we will perform robust multivariate regressions of business income on various attributes of participants. Finally, we will use propensity score matching to analyse how microfinance status and participation in support network activities influences business income.

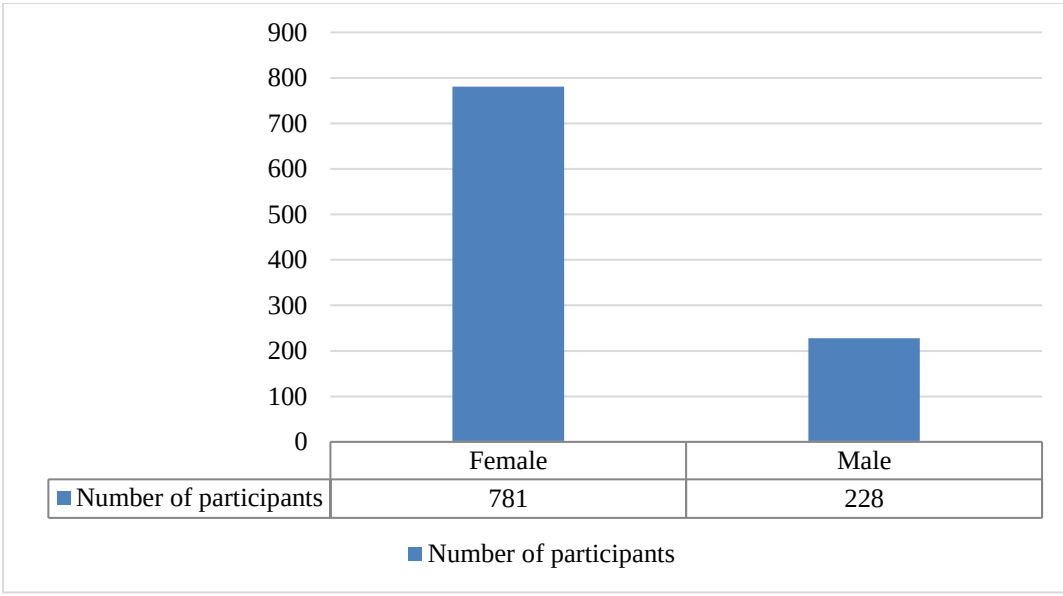
Summary of Participant Demographic Attributes

Of the 1009 participants in the sample, 781 are females (Figure 1) and 893 are unemployed (Figure 4). Of those unemployed, 228 are males and 665 are females. This is consistent with prior studies where unemployed females dominate microfinance and other social empowerment programs.

Based on Figure 2, the top four age groups with the greatest number of participants

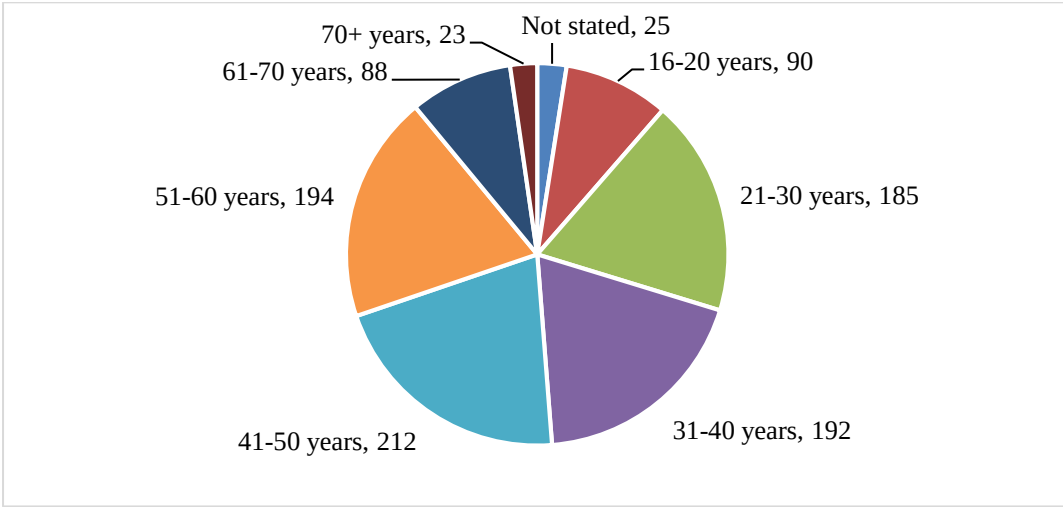
are 41 to 50 years (212 participants), 51 to 60 years (194 participants), 31 to 40 years (192 participants), and 21 to 30 years (185 participants). Figure 3 shows that 238 participants have no children, 163 participants have one or two children, 214 have three or four children, 222 participants have five to six children, while the rest have more than seven children.

Figure 1. Participants Gender Composition.



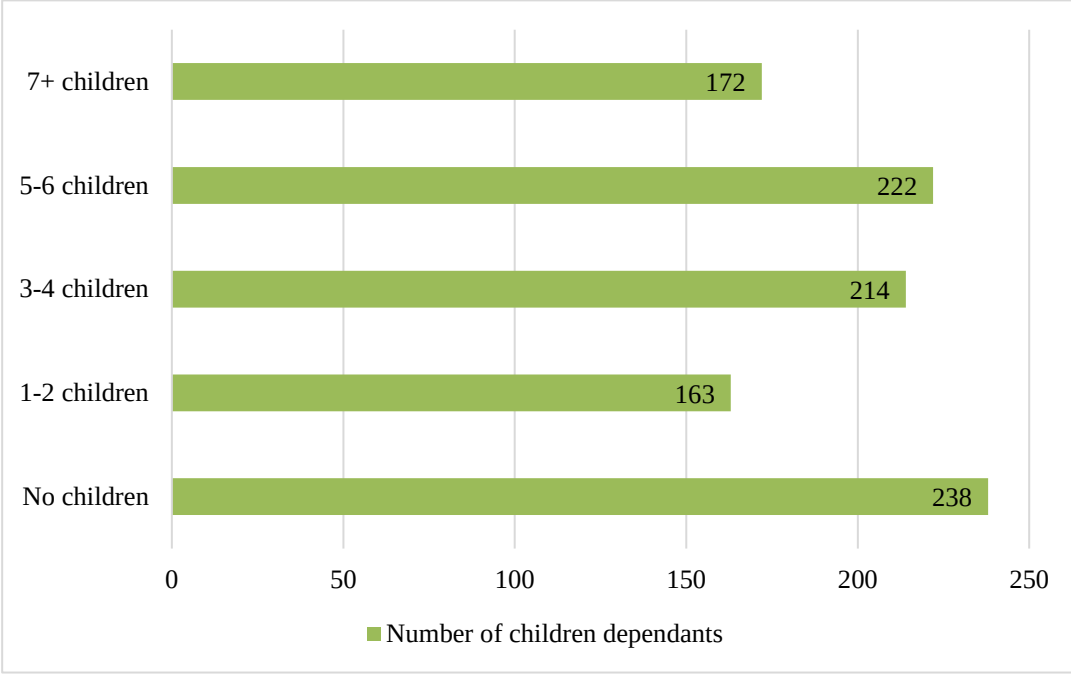
Source: Nofotane Project and Authors

Figure 2. Age Groups of Sample Participants.



Source: Nofotane Project and Authors

Figure 3. Number of Children Dependants



Source: Nofotane Project and Authors

Figure 4. Employment Status of Clients.

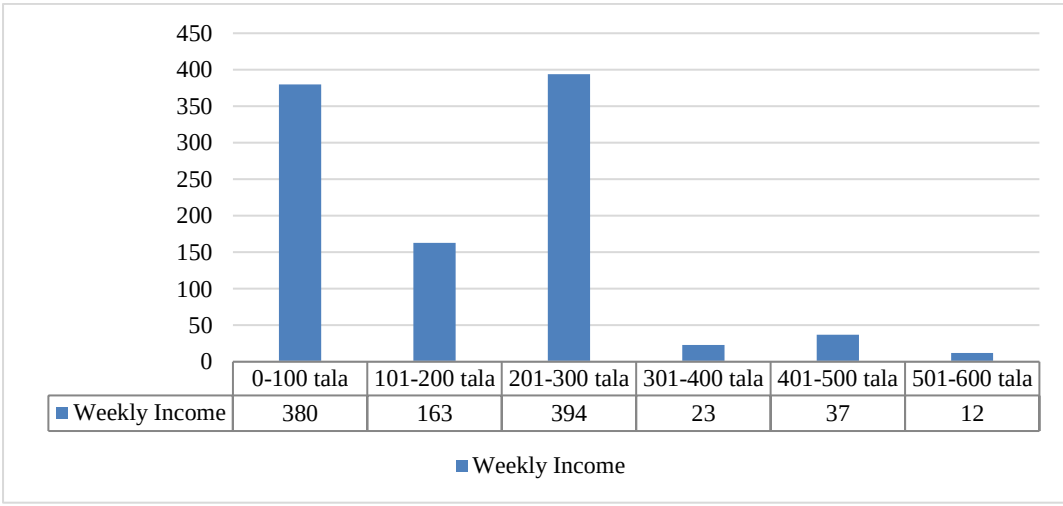
Source: Nofotane Project and Authors

Table 1 (above) presents the distribution of participants by constituencies. Four of the eleven constituencies are from the main island Upolu while the rest are from Savaii. Most of the constituencies are in the rural areas of both islands, except for Vaimauga West in Upolu, and Faasaleleaga No.1 and No.3 in Savaii. Prior studies show similar results that the target population for microfinance programs are often concentrated in the rural areas (Hashemi, Schuler, & Riley, 1996; Sibley, 2007). A vast majority of the total participants (858) operate businesses in the agricultural sector. Of this 858, 463 grow and sell vegetables, 115 run poultry and pigs farms, 228 grow plantations of crops such as taro, or banana, while the remaining run plant nurseries and sell potted plants. Other types of activities include handicrafts, commercial cooking, printing, and sewing.

Univariate Analysis Between Participant Attributes and Small Business Income

Business income is an important measure that reflects business success. Income in this study refers to income from microbusinesses only. Figure 5 shows the sample distribution of small business income and Figure 6 shows the type of business activity. 380 participants earn less than $100SAT per week, 163 participants earn between $101 and $200SAT, and 394 participants earn between $201 and $300SAT. Income is concentrated at the lower levels of income. By comparison, the average weekly household expenditure in Samoa is around $950.43SAT, while that of the lowest quintile of the population is $467.93SAT (Samoa Bureau of Statistics [SBS], 2014). This means that most of the participants earn well below the average weekly household spending and fall mostly in the lowest quintile.

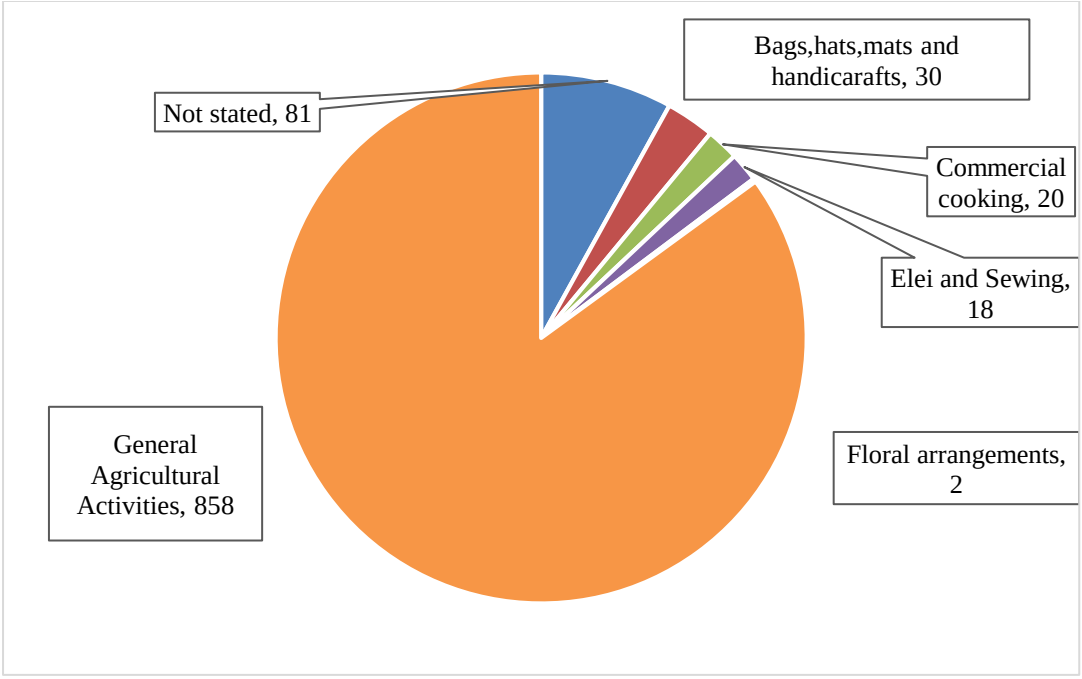
Figure 5. Percentage of Clients by Weekly Income.



Source: Nofotane Project and Author

Table 2 cross-tabulates business income with various attributes of participants. Table 2, Panel A shows that the highest proportion of male participants (85 out of 228) earn business income under $100SAT, while the highest number of female participants (316 out of 781) earn business income of between $201SAT and $300SAT. This suggests a potential for female entrepreneurs outperforming males.

Figure 6. Type of Business Activity.



Source: Nofotane Project and Authors

One of the reasons why female-owned businesses earn more income than males could be that females have better management and leadership skills than their counterparts (Bart & McQueen, 2013; Burke & Collins, 2001; Lee, Jasper, & Fitzgerald, 2010). Bart and McQueen (2013) find correlation with female managers and good corporate governance practices, while Burke and Collins (2001) show that women exhibit management traits and skills of the transformational leadership style, one where the leaders are inspired and motivated to innovate and create change to enable growth and future success of the business. However, we cannot make this conclusion solely based on univariate analysis. We need further tests that control for other possible determinants of business income that are also correlated with gender.

Table 2. Univariate Tests Between Business Income and Participants' Attributes.

Panel A: Business Income by Participant Gender							
BUSINESS INCOME							
GENDER	**$0-100**	**$101-200**	**$201-300**	**$301-400**	**$401-500**	**$501-600**	**Total**
Male	85	43	78	9	6	7	**228**
Female	295	120	316	14	31	5	**781**
Total	**380**	**163**	**394**	**23**	**37**	**12**	**1,009**
Panel B: Business Income by Participant Age							
BUSINESS INCOME							
AGE	**$0-100**	**$101-200**	**$201-300**	**$301-400**	**$401-500**	**$501-600**	**Total**
16 – 20 years	31	16	41	0	1	1	**90**
21 – 30 years	92	27	56	3	5	2	**185**
31 – 40 years	73	37	70	4	8	0	**192**
41 – 50 years	74	27	93	5	12	1	**212**
51 – 60 years	67	38	75	7	7	0	**194**
61 – 70 years	34	11	36	4	3	0	**88**
70 + years	2	5	14	0	1	1	**23**
Not stated	0	1	3	0	0	0	**4**
Total	**380**	**163**	**394**	**23**	**37**	**12**	**1,009**
Panel C: Business Income by Participant Support Network Involvement							
BUSINESS INCOME							
Support Network	**$0-100**	**$101-200**	**$201-300**	**$301-400**	**$401-500**	**$501-600**	**Total**
Yes	248	89	292	13	31	0	**673**
No	132	74	102	10	6	12	**336**
Total	**380**	**163**	**394**	**23**	**37**	**12**	**1,009**
Panel D: Business Income by Participant Employment Status							
BUSINESS INCOME							
Employment status	**$0-100**	**$101-200**	**$201-300**	**$301-400**	**$401-500**	**$501-600**	**Total**
Employed	63	0	49	3	1	0	**112**
Unemployed	317	163	345	20	36	12	**897**
Total	**380**	**163**	**394**	**23**	**37**	**12**	**1,009**
Panel E: Business Income by Number of Children Dependants							
BUSINESS INCOME							
Number of children dependants	**$0-100**	**$101-200**	**$201-300**	**$301-400**	**$401-500**	**$501-600**	**Total**
1 – 2 children	67	18	68	5	4	1	**163**
3 – 4 children	82	31	89	4	7	1	**214**
5 – 6 children	81	38	85	8	9	1	**222**
7+ children	58	34	66	3	11	0	**172**
No children	81	32	80	2	8	9	**212**
Total	**380**	**163**	**394**	**23**	**37**	**12**	**1,009**

Source: Nofotane Project and Authors

Multivariate Regression of Business Income on Attributes of Participants

Table 3 presents the results of the multivariate regression of business income of various attributes of participants. Model 1 shows the results of a Tobit regression model. The values of outcome variables are bounded between one and six. The coefficients for support network and participant age are positive and significant at less than one percent. This suggests that participants who are part of a business support network and older are associated with more business income. Microentrepreneurs' involvement in social networks for support is likely to improve business income by 0.455 percent, consistent with Cheston and Kuhn (2002), who find that entrepreneurs who join social networks have lower transaction costs and better access to resources to improve their businesses. Some examples of social networks can range from village women's groups to more specific social groups such as the local farmers' association. Social networking and participating in community groups helps people to learn from and share experiences with others to improve their skills and knowledge in running their individual businesses.

Table 3. Tobit regression model. *Dependent variable - income.*

	INCOME	
Independent variables	Model 1	Model 2
SUPPORT_NETWORK	0.4555***	0.4484***
	(0.001)	(0.002)
FEMALE	-0.2754*	-0.2797*
	(0.078)	(0.077)
SKILL	0.1568	0.1606
	(0.325)	(0.326)
EMPLOYMENT	-0.2996**	-0.3066***
	(0.012)	(0.009)
AGE	0.0713***	0.0715***
	(0.001)	(0.001)
NUM_CHILDREN	-0.0281	-0.0277
	(0.295)	(0.294)
MICROFIN_CLIENT		0.0594
		(0.549)
CONSTANT	1.8168***	1.8082***
	(0.000)	(0.000)
Observations	1009	1009
R-squared	0.025	0.029

*Notes: p - value in parentheses, ***, ** and * indicates significance at 1%, 5% and 10% level.*

Source: Authors' own estimation

The coefficient for female is negative and marginally significant. Our result is consistent with findings of prior gender studies that document evidence of gender inequity in different contexts. Our findings allude to a gender difference effect on business income, where female entrepreneurs earn 28 percent less business income relative to males on average. This result is more robust than univariate results discussed elsewhere in this paper.

Employment status of participants is negative and significant, suggesting that micro entrepreneurs that are employed earn less income from their businesses. This result is reasonable as people who have jobs are more likely to spend time working at their jobs and less time on developing their businesses. It is also possible that participants with jobs will let their relatives or hire employees to run their businesses while at their jobs. This could mean that their businesses bear agency costs from the separation of ownership and management that could manifest in lower business income relative to a similar business owned and managed by the same person.

Model 2 in Table 3 shows the regression results when the microfinance status of participants is added to Model 1 to test whether the microfinance status of participants is important in predicting business income. Microfinance status is captured through an indicator variable coded equal to one if a participant has previously taken out a loan from any of the formal MFIs discussed previously, zero otherwise. Similar results to Model 1 are observed in Model 2 for the variables support network, female, employment status, and participant age. However, the microfinance status variable is not significant. This indicates that there is no significant difference in business income for participants who took out micro loans from MFIs to those who have not borrowed from MFIs before. Our findings complement the results of studies that find weak or no evidence of positive outcomes of microfinance on clients (Hassan & Sanchez, 2009; Biswas, 2010).

Additional Test Using Propensity Score Matched to Test any Effect of Participant Microfinance Status on Business Income

Despite not getting significant results for microfinance status in Table 3, Model 2, there is a potential issue of self-selection bias. This is because it is possible that some participants participated in microfinance when they were already earning income and their business are reasonably stable. Thus, the impact of microfinance status on income is influenced by experienced microentrepreneurs already earning a good amount of business income self-selecting to participate in microfinance to expand their already established businesses. The wealthy microentrepreneurs, or people with

more entrepreneurship abilities are more likely to self-select into the program. Thus, microfinance status for participants is not random and is likely to be endogenous. The effect of this bias may mean that participants who participate in microfinance may have certain distinct characteristics from participants who have not become clients of the local MFIs. The bias should make it easier to find a positive significant result of microfinance status. However, we found no significant result in Table 3, Model 2 which means that the bias may not be serious.

Nonetheless, we follow prior research and use the propensity score matching (PSM) method to address selection bias (Setboonsarng & Parpiev, 2008). We construct a treatment and control group based on microfinance status. The first step is to run a probit model of the microfinance status dummy variable on non-treatment variables, which are the participants' background attributes. This regression computes propensity scores based on the non-treatment variables. These propensity scores will be used to match participants between the treatment and control groups. We implement the PSM method to match participants with the nearest (neighbour) with a calibre of 5%. This technique rules out any systematic differences between participants with microfinance status and those with none.

Based on Panel A (Table 4), we find that participation in social support networks and employment status of participants are significant predictors of their likelihood to be microfinance clients. Age, possession of a livelihood skill, and number of children are not significant explanations of microfinance status. After matching based on propensity scores, the treatment group contains 184 participants, while the control group has 657 participants with common support.

Table 4. Propensity Score matching - Dependent Variable: Dummy Variable for Microfinance Participants Status

Panel A: Effect of Microfinance Status of Participants on Income.			
VARIABLES	*MFClient_status*		
SUPPORT_NETWORK	0.7308***		
	(0.000)		
SKILL	-0.2542		
	(0.254)		
EMPLOYMENT_STATUS	0.3381**		
	(0.017)		
AGE	-0.0091		
	(0.761)		
NUM_CHILDREN	-0.0289		
	(0.428)		
CONSTANT	-1.0564***		
	(0.000)		
Observations	841		
Log likelihood	-419.19		
Chi square	41.80		
Pseudo *R*-square	0.0513		
p-values in parentheses			
Panel B: Effect of microfinance status of participants on business income			
VARIABLES	Treatment	Control	Difference (*t*-statistic)
No. of observations	184	657	
Income	2.245	2.098	0.1467
			(1.28)
Support network	0.906	0.906	(0)
Skill	0.971	0.971	(0)
Employment status	0.201	0.201	(0)
Age	3.152	3.135	(0.11)
Number of children	2.731	2.737	(-0.04)
Observations			841
R-squared			0.001

Notes: p - value in parentheses, ***, ** and * indicates significance at 1%, 5% and 10% level.

Source: Author's own estimation

Panel B shows that average income for the treatment and control groups are 2.245 and 2.098 respectively. Despite microfinance participants having higher average income than the control group, the difference is not statistically significant with a *t*-statistic of 1.28. Panel B also shows the descriptive statistics for the non-treatment variables of the treatment and control groups. We expect to observe no significant

differences between the mean of the covariates for the treatment and control groups. Accordingly, we observe that the means for support network, skill, employment status, age, and number of children for treatment and control groups are relatively similar and non-significant differences between the mean of both groups. This suggests that we have successfully implemented PSM. However, we do not find a significant evidence to support microfinance participants earning higher income than the control group.

Additional Average Treatment Effects Regression to Control for Self-selection Bias

Another technique that is often used by researchers to deal with selection bias and to make causal inferences in observational studies where the treatment variable is endogenous is to run an average treatment effects regression (Rosenbaum, 1989; Setboonsarng & Parpiev, 2008). We report the results of the average treatment effects regression in Table 5. Column 1 reports the main results for the model after controlling for the alternative explanation that the relation between business income and participation in microfinance may be driven by some other factor that affects both microfinance status and income. In our case, we argue that involvement in social and support networks may influence a participant's microfinance status as well as their income (Cheston & Kuhn, 2002). After doing this, the coefficient for microfinance (*MFCLIENT*) status is 1.1392, which is positive and significant at the 5 percent significance level.

Table 5. Results for Treatment Effects Regression to Address Selection Bias in Participation in Microfinance.

VARIABLES	(1) INCOME	(2) MFCLIENT	(3) HAZARD
MFCLIENT	1.1392**		
	(0.040)		
SKILL	0.2323	-0.2542	
	(0.158)	(0.256)	
EMPLOYMENT_STATUS	-0.4121***	0.3381**	
	(0.008)	(0.016)	
AGE	0.0658***	-0.0091	
	(0.006)	(0.773)	
NUM_CHILDREN	-0.0230	-0.0289	
	(0.435)	(0.427)	
SUPPORT_NETWORK		0.7308***	
		(0.000)	
LAMBDA			-0.6237*
			(0.055)
CONSTANT	1.6231***	-1.0564***	
	(0.000)	(0.000)	
Observations	841	841	841

Notes: p - value in parentheses, ***, ** and * indicates significance at 1%, 5% and 10% level.

Source: Authors' own estimation

This result means that microfinance participants earn 1.14 percent more income than non-microfinance participants do. Possession of specific livelihood skills does not explain income. However, employment is negative and significant, which is similar to the results in Table 3 that participants who are employed earn less income from their business because they spend less time on their business when they work, relative to participants who are unemployed and focus most of their time in developing their business. Participant age is another significant predictor of income, with older participants associated with more income. Experience and knowledge is positively related with age, so older participants have more experience and knowledge in business management.

Additional Test on the Relation Between Participants' Social Support Network and Business Income

We observe in the main results that the coefficient for social support network has been consistently positive and significant in relation with business income. Thus, to test any causal inference between participation in social support network and

business income, we perform propensity score matching with participation in social support network as the treatment variable. The results are reported in Table 6, following the same procedure as discussed previously, but with support network as the treatment variable. The probit model results are given in Panel A. Microfinance status, skill, age, and number of children explain participation in social support networks.

Table 6. Propensity score matching: Dependent variable : Dummy variable for Support network participation

Panel A: effect of social support network on income.			
	(1)		
VARIABLES	*SUPPORT_NETWORK*		
MFCLIENT	0.7362***		
	(0.000)		
SKILL	1.5125***		
	(0.000)		
AGE	-0.0858***		
	(0.004)		
NUM_CHILDREN	-0.0924**		
	(0.014)		
CONSTANT	-0.3953		
	(0.104)		
Observations	740		
Log likelihood	-386.25		
Chi square	104.86		
Pseudo *R*-square	0.1390		
p-values in parentheses			
Panel B: Effect of participation in Support Network activities on business income			
VARIABLES	Treatment	Control	Difference (*t*-statistic)
No. of observations	162	218	
Income	2.315	1.981	0.333**
			(2.78)
Microfinance client status	0.0866	0.0866	(0)
Skill	0.9685	0.9685	(0)
Employment status	0	0	(0)
Age	3.1496	3.1575	(-0.04)
Number of children	2.6614	2.6535	(0.04)
Observations			841
R-squared			0.1390

Notes: p - value in parentheses, ***, ** and * indicates significance at 1%, 5% and 10% level.

Source: Authors' own estimation

In Panel B, there are 162 participants in the treatment group, and 218 participants in the control group. The average income for the treatment group is 2.315 and 1.981 for

the control group. The difference in income between the groups is significant at the 5 percent level, with a *t*-statistic of 2.78. To confirm that the PSM has been implemented effectively, we compare the mean of the treatment group to the control group for each of the covariates or non-treatment variables. We find that the means for both groups are relatively similar, and the *t*-statistics for all covariates are not significant. These results imply a positive causal impact of entrepreneurs' participation in social support networks and ability to generate higher business income.

Summary of Results

Our results are generally consistent with prior studies. We find certain attributes of participants are related with business income as a performance outcome. We find a positive association between social support network, age, and business income. However, female participants and those with formal employment are negatively associated with income. When we controlled for microfinance clients in the model, it was not significant. However, in further robustness tests where we use propensity score matching and average treatment effects regression to control for self-selection bias in participants' choices to become microfinance clients, we find that microfinance client status is positively associated with income in both models, but it is only significant in the average treatment effects results in Table 5.

We conclude that the impact of microfinance participation on income is not convincing. In one of our additional sensitivity tests, we attempt to draw causal inference in the relation between participation in social groups and support networks, and micro business income. We find significant results that social support network participation has a positive impact on micro business income. Our findings extend the results of prior studies like A. Yusuf (1995), A. B. Yusuf (1998), and Moustafa and Kumar (2016). These studies analyse the perceptions of microfinance clients in the Pacific region by identifying the critical success factors and barriers to small business development. We provide evidence about small business success outcomes and the important determinants of small business income.

Conclusion

In conclusion, this study examines the participant attributes that are important determinants of business success. In doing so, we are able to observe a profile of an average participant. Using survey data from a local project in Samoa that includes microfinance and non-microfinance participants, we find consistent results with prior studies assessing the impact of microfinance in other countries. Specifically, we find

that project participants are predominantly unemployed females, earning extremely low levels of income, and with many dependents to care for. Univariate tests through contingency tables indicate associations between factors such as age, gender, and involvement in networks within the community and other entrepreneurial support groups are each associated with business income. Further multivariate tests using ordinary least squares find a positive and significant relation between participants' involvement in community and business support networks and small business income. Participant age also has a significant and positive association with business income. However, female and employment variables have negative and significant associations with income, suggestive of gender inequity where female entrepreneurs earn less business income than males. Further, we find that when controlling for participants who are microfinance clients at the time that they joined the Nofotane project, there is no significant difference in business income for microfinance participants from non-microfinance participants. This result undermines the impact of microfinance programs to improve business income for their clients.

The results of this study contributes to the literature in the South Pacific region and document a marginal positive association between participation in microfinance and profitability. Another interesting finding of this study is a positive relation between involvement in support and social networks with various segments of the community and entrepreneurial profitability. This relation has been tested under various model specifications, and we find consistent significant results. Our findings should be of interest to government authorities, non-government organisations (NGOs), and MFIs for policy planning and future improvements in the microfinance sector.

Based on our findings, we recommend for the government, NGOs, and practitioners whose goal is to promote economic development and empower the poor to value the importance of creating safe environments for microentrepreneurs to interact with each other and with various groups from the community to share their experiences and knowledge and turn to for support. MFIs also need to consider that microentrepreneurs are relational people who generally lack confidence and motivation. Thus, one way to improve microfinance services is to strengthen their focus on building genuine relationships with clients, as well as connecting them to the right support groups that will help them grow in not only their businesses, but also in other areas of their lives. There is a great need for future research on the impact of microfinance on other aspects of the lives of microentrepreneurs. Future studies may investigate non-financial outcomes of microfinance on microentrepreneurs.

References

Banthia, A., Tyroler, C., Schoeffel, P., & Saho, R. (2013). *Deepening financial inclusion for women in the Pacific islands: An assessment of the gender issues surrounding women's ability to access and control financial resources in Papua New Guinea and Samoa*. Women's World Banking. Retrieved from http://www.womensworldbanking.org/wp-content/uploads/2013/06/WWB-Pacific-Gender-Study-Research-Report-May2013-Final-A4.pdf

Bart, C., & McQueen, G. (2013). Why women make better directors. *International Journal of Business Governance and Ethics, 8*(1), 93-99.

Besser, T. L. (1999). Community involvement and the perception of success among small business operators in small towns. *Journal of Small Business Management, 37*(4), 16.

Bhatt, V., & Shastri, S. (2018). Measuring the impact of microfinance on women empowerment among women of Rural Gujarat. *International Journal of Reviews and Research in Social Sciences, 6*(3), 123-124.

Biswas, S. (2010). India's micro-finance suicide epidemic. *UK BBC*. Retrieved from www.bbc.co.uk/news/world-southasia-11997571.

Boehe, D. M., & Cruz, L. B. (2013). Gender and microfinance performance: Why does the institutional context matter? *World Development, 47*, 121-135.

Burke, S., & Collins, K. M. (2001). Gender differences in leadership styles and management skills. *Women in Management Review, 16*(5), 244-257.

Central Bank of Samoa. (2017). *National financial inclusion strategy for Samoa 2017 - 2020*. Retrieved from: http://www.pfip.org/wp-content/uploads/2017/01/NFISS-web.pdf.

Chell, E. (2007). Social enterprise and entrepreneurship: Towards a convergent theory of the entrepreneurial process. *International Small Business Journal, 25*(1), 5-26.

Cheston, S., & Kuhn, L. (2002). Empowering women through microfinance. Draft Paper 3/14/02. Retrieved from: http://chs.ubc.ca/srilanka/PDFs/Empowering%20women%20through%20microfinance.pdf

Copestake, J. (2002). Horizontal networks and microfinance impact assessment: A preliminary proposal. Working Papers #5, University of Bath. Retrieved from: https://ageconsearch.umn.edu/record/23749/files/wp020005.pdf

Duflo, E., Glennerster, R., & Kremer, M. (2007). Using randomization in development economics research: A toolkit. *Handbook of Development Economics, 4*, 3895-3962.

Field, E., & Pande, R. (2008). Repayment frequency and default in microfinance: Evidence from India. *Journal of the European Economic Association, 6*(2-3), 501-509.

Harford, T. (2009) Perhaps microfinance isn't such a big deal after all. Financial Times. (5 December 2009). Retrieved from: https://www.ft.com/content/ae4211e8-dee7-11de-adff-00144feab49a.

Hashemi, S. M., Schuler, S. R., & Riley, A. P. (1996). Rural credit programs and women's empowerment in Bangladesh. *World Development, 24*(4), 635-653.

Hassan, K. M., & Sanchez, B. (2009). Efficiency analysis of microfinance institutions in developing countries. Networks Financial Institute Working Paper 2009-WP-12. SSRN. Retrieved from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1492238.

Hulme, D., & Mosley, P. (1996). *Finance against poverty*. London: Routledge.

Imai, K. S., Arun, T., & Annim, S. K. (2010). Microfinance and household poverty reduction: New evidence from India. *World Development, 38*(12), 1760-1774.

Ketchell, M. (2018). Does microfinance really alleviate poverty? The 34-billion-dollar question. (2018, 10 January 2018). *The Conversation*. Retrieved from http://theconversation.com/does-microfinance-really-alleviate-poverty-the-34-billion-dollar-question-87475

Khandker, S. R. (2005). Microfinance and Poverty: Evidence using panel data from Bangladesh. *World Bank Economic Review, 19*(2), 263-286.

Leach, F., & Sitaram, S. (2002). Microfinance and women's empowerment: A lesson from India. *Development in Practice, 12*(5), 575-588.

Lee, Y. G., Jasper, C. R., & Fitzgerald, M. A. (2010). Gender differences in perceived business success and profit growth among family business managers. *Journal of Family and Economic Issues, 31*(4), 458-474.

Lucas Jr, R. E. (1988). On the mechanics of economic development. *Journal of Monetary Economics, 22*(1), 3-42.

Miled, K., & Rejeb, J.-E. (2018). Can microfinance help to reduce poverty? A review of evidence for developing countries. *Journal of the Knowledge Economy, 9*(2), 613-635.

Morduch, J. (1998). Does microfinance really help the poor? New evidence from flagship programs in Bangladesh. NYU Wagner Graduate School, New York. Retrieved from: https://wagner.nyu.edu/files/faculty/publications/1998-Does-MF-really-help-the-poor.pdf

Morduch, J. (1999). The microfinance promise. *Journal of Economic Literature, 37*(4), 1569-1614.

Motusaga, M. (2018). Reasons for the poor success rate of the Development Bank of Samoa microcredit scheme. Ministry of Women, Community and Social Development, Government of Samoa.

Moustafa, A. (2016). Samoa hardship and poverty report: Analysis of the 2013/2014 household income and expenditure survey. United Nations. Retrieved from: https://www.undp.org/content/dam/samoa/docs/UNDP_WS_SamoaHardshipAndPovertyReportFINALreduced.pdf

Moustafa, A., & Kumar, A. (2016). Financial services sector assessment for Samoa. Pacific Financial Inclusion Programme. Retrieved from: https://www.cbs.gov.ws/index.php/dmsdocument/5408

Rosenbaum, P. R. (1989). Optimal matching for observational studies. *Journal of the American Statistical Association, 84*(408), 1024-1032.

Samoa Bureau of Statistics (SBS). (2014). *Samoa household income and expenditure survey*.

Schicks, J. (2010). Microfinance Over-Indebtedness: Understanding its drivers and challenging the common myths. *Bruxelles: Centre Emilee Bergheim, Solvay School of Business, CEB Working Paper, 10*, 048.

Schicks, J. (2014). Over-indebtedness in Microfinance–an empirical analysis of related factors on the borrower level. *World Development, 54*, 301-324.

Selinger, E. (2008). Does microcredit "empower"? Reflections on the Grameen Bank debate. *Human Studies, 31*(1), 27-41.

Setboonsarng, S., & Parpiev, Z. (2008). Microfinance and the millennium development goals in Pakistan: Impact assessment using propensity score matching. ADB Discussion Paper 148. Retrieved from: https://www.adb.org/sites/default/files/publication/156741/adbi-dp104.pdf

Sibley, J. (2007). Financial competence as a tool for poverty reduction: Financial literacy and rural banking in the Pacific. *Development Bulletin, 72*, 23-29.

Tedeschi, G. A. (2010). *Microfinance: Assessing its impact on microenterprises*. UK: Mass. Elgar.

Terberger, E. (2012). The Microfinance Approach: Does it deliver on its promise? *Die Unternehmung, 66*(4), 358-370.

World Bank. (2019). Poverty indicators by country. Retrieved 25 August 2019, from World Bank https://data.worldbank.org/country/samoa?view=chart

Yusuf, A. (1995). Critical success factors for small business: Perceptions of South Pacific entrepreneurs. *Journal of Small Business Management, 33*(2), 68.

Yusuf, A. B. (1998). Small business development and survival in the South Pacific: Barriers and strategic responses. *The Journal of Entrepreneurship, 7*(1), 49-65.