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Junette Perez
Denmark Alarcon
Mar Andriel Umali

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Junette A. Perez
Denmark C. Alarcon
Mar Andriel S. Umali
De La Salle University
junette.perez@dlsu.edu.ph

Introduction

The total credit gap of the formal credit provided to small and medium enterprises (SMEs) and the estimated financing needs for SMEs in the ASEAN is currently placed at $52.8 billion (Valencia, 2016). The report cited that lack of access to bank financing obstructs growth of SMEs as bank requirements on collateral and business plants are strict. By 2014, the Asian Development Bank (ADB, 2015) reported that access to financing is one of the most burdensome factors to entrepreneurial growth. Among the several institutions in *Table 1, it* shows that access of bank financing stand at only 10.2%.

JEL Classifications: L26, D14, D92, G21, H63
Keywords: Access to Finance, Credit Risk Factors, Firm Performance in Micro Small and Medium Entreprises

Table 1

SMEs' Sources of Funding (% of current funding)

	SERDEF UPISSI	**WBES**	**ICPS ADB**	**PEP IFC**	**WBES**
	1992	2000	2004	2006	2009
Ownfund	78	52	60	69	76.4
Bank loans	15	11	19	10.2	-
Nonbank FI	-	-	-	-	0.9

Informal Credit	7	27	29	12	12.4
Total	100	100	100	100	100

Sources: ICPS-ADB = Investment Climate and Productivity Study, Asian Development Bank, PEP-IFC = Private Enterprise Partnership for the Philippines (PEP-Philippines) SME Financing Survey, International Finance Corporation, SERDEF-UP ISSI = Small Enterprise Research and Development Foundation-University of the Philippines Institute for Small Scale Industries; SME = small and medium enterprise, WBES = World Bank Enterprise Survey.
Sources: Khor, N, Jacildo, R., & Tacneng, R. (November 2015)

Table 2

Sources of Business Capital, selected CBMS sites, 2014-2015

Source	Frequency	Percentage
No Capital Needed	65	8.5%
Own Savings	561	73.0 %
Family Savings	115	15.0%
Loan from Family, Friends Relatives	55	7.2%
Loan from Bank or Commercial Institution	18	2.3%
Loan from Private Money Lender	36	4.7%
Loan Assistance from Government Institution	6	0.8%
Loan Assistance from NGO	6	0.8%

Source: CBMS Census in selected barangays in Manila, Cavite, Bago City, Lipa City and Marikina City, Philippines, 2014-2015

In contrast to Table 1, key findings in *Table 2* from CBMS (2015) selected areas in Manila, Cavite, Bago City, Lipa City, and Marikina City exhibit access of financing through bank loans at 2.3%.

Meanwhile in an ADB Pacific Private Sector Policy Brief on Access of Finance (2008), it stated that a good measure of access to finance is the ratio of private sector credit to the GDP. Although this indicator is an appropriate measure for a macro approach to evaluating access of financing, it is not be adequate to illuminate micro characteristics of entrepreneurs attempting to access financing.

Borrowing is a unique right of entrepreneurs to exercise while doing business. Although, this financial right is commonly available, it is nevertheless limited by the borrower's capability to pay,

such that an entrepreneur can only borrow if the creditor is willing to extend credit.

With that perspective, this paper explores a different take on access to debt financing as a measurement of the capability of entrepreneurs to pay for their loans. The idea is that the better the borrower's capability to pay, the wider his/her options to source capital from banks. Why debt? Reasons include it being the cheapest source of capital plus it's the easiest to avail.

To expand the idea, access to debt financing is equated with the borrower's characteristics and capability to pay. A borrower's individual and business characteristics including housing type, gender, education, share of income, business assets, number of appliances, marital status, among others can determine his chances to access debt financing.

Objectives

To demonstrate, the paper addresses two major problems:

I. What credit risk factors affect the business capital of the entrepreneurs and what factors determine his/her probability of accessing bank loans or access to debt financing?

II. Is access to debt financing significant to total sales performance of entrepreneurs?

The objectives include the following:

- Profile selected households engaged in entrepreneurial business using the credit risk factors;
- Determine the risk factors that affect the access to debt financing through multiple linear regression analysis;
- Estimate the probability of being granted bank loans (accessing bank financing) using logit model;
- Establish the significance of accessing debt financing in entrepreneurial activities by applying

simple linear regression; and

- Recommend policy and future research directions.

Methodology and Data

The data is from the Community-Based Monitoring System (CBMS) census in 2014-2015 conducted among households in selected villages/barangays in Manila, Cavite, Bago City, Lipa City collected by DLSP schools and by LGU Marikina City, Philippines.

The dataset used in this study covers all respondents per household who were interviewed for the CBMS Census and was asked additional questions on social protection to the informal sector and youth employment and entrepreneurship. For this specific study, only those respondents with business capital are taken. Table 3 shows the location of these smaller dataset for this purpose. Meanwhile, Table 4 exhibits the types of business. Majority of the businesses range from sari sari store, vendor, tricycle driver operator, *patahian*, buy and sell, and repair shops.

Table 3

Frequency of Location, selected CBMS sites 2014-2015

Location	Household	HHs with respondent for the study sample	Proportion
Manila (near CSB & DLSU)	927	74	7.98%
Dasmarinas & Maragodon, Cavite	591	16	2.71%
Bago City, Negros Occidental	10,823	193	1.78%
Lipa City, Batangas	319	24	7.52%
Marikina City	10,301	462	4.49%

TOTAL	**22,961**	**769**	**3.35%**
Women	45.7%		
Youth (15-30yrs)	7.4%		
Use own savings	73.0%		
Single type house	77.4%		
Homeowner	60.1%		

Source: CBMS Census in selected barangays in Manila, Cavite, Bago City, Lipa City and Marikina City, Philippines, 2014-2015

Table 4

Types of Business, selected CBMS sites 2014-2015

Business Type	Frequency	Percentage
Factory or Plantation	17	2.21%
Bank, Insurance Com	2	0.26%
Coml/Restaurant/Service Chain	114	14.82%
Construction Company	11	1.43%
Private Hospital/School	2	0.26%
Engineering Firm	3	0.39%
Farm, Small Workshop/Garage/Shop, Carenderia	235	30.36%
Online/Social Network	13	1.69%
Others:	**372**	**48.38%**
1.Sarisari store	84	
2. Vendor (cooked food)	33	
3.Vendor (dry goods, vegetables, fruits)	27	
4.Tricycle/Jeepney driver/operator	57	
5.Other types(patahian, buy and sell, repair shop,etc)	**118**	
6. Apartment for rent	10	
7. Undeclared	43	

Source: CBMS Census in selected barangays in Manila, Cavite, Bago City, Lipa City and Marikina City, Philippines, 2014-2015

To determine the significance of risk factors in accessing debt financing for entrepreneurial activities and the impact of debt financing to entrepreneurship, the paper uses exploratory and probabilistic

approaches. Aside from the descriptive analysis of data, the methodology is composed of three main stages:

Stage 1:

Determining the credit risk factors that affect business capital through multiple linear regression analysis:

Business Capital = *f*(housing characteristics, demography, education, business, share of income) . . . . . (1)

Stage 2:

Estimating the probability of getting an approved loan (access to debt financing) using logit model:

Occurrence of Loan from Banks = *f*(housing characteristics, demography, education, business, share of income) . . . . . (2)

Stage 3:

Establishing the significance of accessing debt financing in entrepreneurial activities (total sales) by applying simple linear regression:

Ln(Total Sales) = *f*(predicted probabilities of getting an approved loan) . . . . . (3)

The variable names are inscribed in the following symbols as exhibited in Table 5.

Table 5

Variables Names

Variable	Description
house_type_si~e	The type of house, if single detached
nbr	Number of Bedrooms
nofw	Number of Household Members who are OFWs

hpregind	Pregnant Household Member
uniparind	Solo parent household member
disableind	Disabled Household Member
resp_sex	Respondent's sex
resp_age_yr	Respondent's age
resp_educal_college	Respondent's education level (1=if college)
resp_njob	Respondent's number of jobs
tenur_owner	If house is owned
tenur_rent	If house is rented
imprnt	Estimated imputed rent per month
no_appliances	Number of appliances
emplyd_yrs	Number of years employed
totexp	Total expenses during the past 12 months
busasset	Present asset value of business
insurbus	Business related insurance
totin	Total household income
entrpstrt_yr	Number of entrepreneurial years
totsales	Total sales

K*ey *Findings

The overall test of significance at 95% level of confidence with the p-value of F-statistic (0.0000) shows that all risk factors used as independent variables in the regression model are jointly significant in predicting the business capital, on the average. The R-square (0.9100) indicates that the variation in risk factors used as independent variables explains about 91% of variation in the business capital, on the average. Business capital is assumed to be the current amount available during data gathering. Regression results in Table 6 show that having business capital is positively affected by the total sales and total expenses of the household entrepreneur. Business capital is normally infused to provide cash flow for business operations. To analyze the net effect of business' total sales and total expenses to the capability to pay and cash flow condition of the firm implies two options. One, if the

cash flow condition is stable, having adequate total sales (as an internal source of business capital) means a steady source of funding to cover for business expenses including payment of debt obligations. Second, if the cash flow is insufficient, business capital (from external source) would be needed to cover for total expenses including debt payments and servicing. This situation requires borrowing from all available funding source. Such condition characterizes micro, small, and medium enterprises where cash flows are tight and highly unpredictable. Results also indicate that the presence of a pregnant individual in the household has been found negatively significant to business capital. Deriving the analysis from the point of cash flows, this is expected as cash flows from sales and other inflows for business capital may be redirected for the requirements of the pregnancy in the household at the moment.

Table 6
Multiple Regression Results

buscapital	Robust Coeff.	Std. Err.	t	P>t	[95% Conf.	Interval]
house_type_single	-8982.417	15837.53	-0.57	0.571	-40108.63	22143.79
nbr	682.4332	1570.472	0.43	0.664	-2404.087	3768.953
nofw	2175.529	10728.24	0.2	0.839	-18909.16	23260.22
hpregind	-32562.19	14500.65	-2.25	0.025	-61060.97	-4063.406
uniparind	-15818.83	13426.35	-1.18	0.239	-42206.24	10568.58
disableind	-16330.09	11198.26	-1.46	0.145	-38338.54	5678.361
resp_sex	-8952.235	17443.19	-0.51	0.608	-43234.12	25329.66
resp_age_yr	353.2582	367.6309	0.96	0.337	-369.2637	1075.78
resp_educal_college	10759.49	16106.3	0.67	0.504	-20894.96	42413.93
resp_njob	2482.18	12465.57	0.2	0.842	-22016.97	26981.33
tenur_owner	20270.6	12451.12	1.63	0.104	-4200.16	44741.36
tenur_rent	13473.44	11672.75	1.15	0.249	-9467.56	36414.43
imprnt	1.886381	1.28462	1.47	0.143	-0.6383415	4.411104
no_appliances	621.4837	938.3434	0.66	0.508	-1222.685	2465.653
entrpstrt_yr	5.103476	8.362313	0.61	0.542	-11.33136	21.53831
totexp	-0.2057796	0.1198122	-1.72	0.087	-0.441252	0.0296928
busasset	-0.0018195	0.0038581	-0.47	0.637	-0.009402	0.0057629

insurbus	-6042.504	32357.56	-0.19	0.852	-69636.29	57551.28
totsales	0.3291029	0.0117576	27.99	0.000	0.3059951	0.3522106
_cons	-22165.02	20983.45	-1.06	0.291	-63404.76	19074.72

Second, the logit model is applied to calculate the probability that a borrower will be able to secure bank loans (access to debt financing). This model estimates the probability that a respondent will be able to acquire bank loans based on the risk factors identified in Stage 1. The overall test of significance at 95% level of confidence, the p-value of Chi square-statistic (0.0006) shows that all risk factors used as independent variables in the logit model are jointly significant in estimating the probability that a borrower will be granted the loan, on the average. The results of the logit regression in Table 7 indicate that the chance of being able to acquire bank loans or access debt financing is generally anchored on the collateral and capacity to pay characteristics of entrepreneur borrowers. This means that if the borrower owns his house, has business assets, and shows capability to pay through rental payments, his chances to borrow capital from banks is higher as compared to those without. The presence of a disabled in the household would more likely lessen his chance of being able to access bank financing.

Table 7

Logit Regression Results

cap_loanbank	Robust Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
house_type_single	-1.052033	0.7219014	-1.46	0.145	-2.466933	0.362868
uniparind	-0.7048822	0.9130546	-0.77	0.440	-2.494436	1.084672
disableind	2.064771	1.220325	1.69	0.091	-0.3270222	4.456564
nofw	0	(omitted)				
hpregind	0	(omitted)				
tenur_owner	14.43937	1.050321	13.75	0.000	12.38078	16.49797
resp_sex	0.4233165	0.7837708	0.54	0.589	-1.112846	1.959479

resp_age_yr	0.0013872	0.0323056	0.04	0.966	-0.0619305	0.064705
resp_educal_college	0.6142038	0.6478865	0.95	0.343	-0.6556304	1.884038
resp_njob	0	(omitted)				
tenur_owner	14.00561	1.016998	13.77	0.000	12.01233	15.99889
imprnt	0.0000125	0.0000147	0.85	0.397	-0.0000164	0.0000413
no_appliances	0.0648907	0.0339456	1.91	0.056	-0.0016415	0.1314229
entrpstrt_yr	-0.0002875	0.0002966	-0.97	0.332	-0.0008689	0.0002938
totexp	1.48E-06	1.71E-06	0.86	0.388	-1.88E-06	4.83E-06
busasset	6.93E-07	3.23E-07	2.15	0.032	6.09E-08	1.33E-06
insurbus	0.0336882	0.9116845	0.04	0.971	-1.753181	1.820557
totin	-5.76E-09	4.04E-08	-0.14	0.887	-8.49E-08	7.34E-08
_cons	-18.43119	1.580436	-11.66	0.000	-21.52878	-15.33359

Source: Author's calculations

Stage three evaluates the significance of access of bank financing to the total sales performance of the entrepreneurs. In Table 8, access of debt financing has been found significant to the total sales performance of entrepreneurs. This implies that having access of debt financing opens extended windows to secure business capital enhancing opportunities to increase sales performance.

Table 8

Significance of Access to Finance with Total Sales

lntotsales	Coeff.	Std. Err.	z	P>z	[95% Conf.	Interval]
phat	7.415926	1.55396	4.77	0.000	4.357717	10.47413
_cons	9.985337	0.1242033	80.4	0.000	9.740903	10.22977

Source: Author's calculations

It is essential that a sustainable source of debt financing at the cheapest cost possible be available to small scale household entrepreneurs. Whereas other informal sources of funding can be tapped, banks can actually serve that purpose more efficiently in contrast to other alternatives.

Table 9

Descriptive Statistics: Observations Without Bank Loan and with Bank Loans

Total		Min	Max	Mean	Std. Deviation
With Bank Loan	Household Income	92,300	1,140,000	573,247.61	257,578
	Business Sales	0.00	30,000,000	1,792,166.67	7,041,713
	Business Asset	0.00	50,000,000	3,115,555.56	11,712,920
	Business Capital	**1,000**	**10,000,000**	**777,277.78**	2,322,544
Without Bank Loans	Household Income	0.00	40,600,000	402,406.79	1,574,512
	Business Sales	0.00	6,000,000	95,533.36	338,259
	Business Asset	0.00	100,000,000	234,187	3,818,445
	Business Capital	**10,000**	**6,000,000**	**37,588**	**255,364**

Source: CBMS Census in selected barangays in Manila, Cavite, Bago City, Lipa City and Marikina City, Philippines, 2014-2015

Results in Table 9 further validate that entrepreneurs with bank loans has Php777,277.00 business capital in contrast to Php37,587.00 business capital for entrepreneurs without bank loans.

Conclusions and Policy Recommendations

The paper concludes that total sales, total expenses, and the presence of a pregnant woman in the household are the credit risk factors influencing the business capital of household entrepreneurs in this sample. The probability of access to debt financing is significantly influenced by the ownership of house, business assets, an ability of the borrower to cover rental payments and meet the requirements of a disabled individual of the household. These results confirm the need for a measurable collateral in sourcing bank capital or accessing debt financing. The study also found a positive effect of bank loans

or access to debt financing to total family income, total business sales, total business capital, and business assets of entrepreneurs.

The paper recommends the following: strengthening entrepreneurs' capability to pay, examining alternative sources of collateral and guarantees for MSME's access to debt financing especially at the barangay level, empowering resource stewardship and risk management skills at the household level, and championing for a credible source of information through a credit exchange bureau or comprehensive database center solely for MSME.

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