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IMPACT OF INCREASING OF FREQUENCY OF TRANSACTION IN BRANCHLESS BANKING PROGRAM TOWARDS HOUSEHOLD BUSINESS ACTIVITIES (Case Study In Bogor District, West Java, Indonesia)

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INTRODUCTION

o Demirgüç-Kunt et al. (2008):

- Financial sector is the parent of the development process.
- Development of the financial sector by providing financial services and products accessible to everyone is one way to overcome poverty.

 Banking sector has ability to distribute opportunities equally, including those in remote areas

 $_{\odot}$ However. ...



•World Bank survey data (2014):
> only about 50 percent of the world's adult population has access to formal financial institutions.

• McKay and Pickens (2010):

One form of potential financial delivery channels to serve "unbanked" and "underbank" people, who mostly live in rural areas is Branchless Banking.

• Branchless banking is:

Banking service provided by financial service providers to customers without having to come to the bank office.

>Bank uses a **third party or agent** as an extension of the bank.

 \succ 'Unbanked" people:

those who do not have ability to access the banking system due to the requirement set by the banks.

 \succ "underbanked" people:

those who have the ability to access the bank, but do not have access

- o Branchless banking for low-income communities is a **new financial delivery channel**,
 - > Banks bring its services closer to customers, especially in remote areas.
- Financial Services Authority (OJK) calls the program under the name of "Layanan Keuangan Tanpa Kantor Dalam Rangka Keuangan Inklusif "—the Non-Office Financial Services in the Framework of Inclusive Finance--or "Laku Pandai"

• The objective of the program:

To provide simple, understandable and appropriate financial products to meet the needs of those who are not able to reach current financial services, and

>with the increasing number of members of various community groups in different parts of Indonesia using financial services, then the economy of the community is expected to be more smoothly so that it can **encourage economic growth** and **equitable development** among regions in Indonesia, especially **between villages and cities** (OJK, 2015).

PROBLEM STATEMENT

 People in rural areas who most likely to save their surplus funds and borrowed credits are those who has productive activity.

Their success in production can be influenced by the availability of financial institutions as a driving force.

 By studying their economic behavior, namely economic decision making of business households involved in Branchless Banking program, then it can be obtained a description of the potential development of the program. Household economic decisions such as production decision, consumption decision, and the decision to take credit are influenced by the amount of household income received from various sources of income, formal and non-formal loans, as well as other factors such as household characteristics (Sayaka et al., 2011 and Bernadus, 2014).

- This study will analyze the economic behavior of business household who conduct their financial transaction at the agent in branchless banking program.
 - How the change of their economic behavior if there is a change in economic variable to determine the best scenario for the development of the branchless banking program.

HOUSEHOLD ECONOMIC MODEL

- The economic behavior of business household in branchless banking program in a rural area has the same characteristics as farm households economic behavior of Bagi and Singh (1974):
 - ➢Farm households are faced with problems in which one economic decision will depend on other economic decisions, both internal and external.
 - >The farm household economic model is a **dynamic model**.
 - The economic decisions of farm households are categorized into six decisions: (1) production, (2) consumption, (3) Marketed surplus, (4) labor usage, (5) investment, and (6) credit.

MODEL SPECIFICATION

0	Q	$= a_0 + a_1 INV + a_2 TK + a_3 P + a_4 VCOST + \mu_1 $	(1)
0	INV	$= b_0 + b_1 Cr + b_2 SU + b_3 SAV + b_4 PFIT + b_5 FCOST + \mu_2 \qquad \dots$	(2)
0	TKK	= $c_0 + c_1 AKK + c_2 W + c_3 SU + c_4 TKL + c_5 PFIT + \mu_3$	(3)
0	TKL	$= d_0 + d_1 W + d_2 SU + d_3 TKK + d_4 P + \mu_4$	(4)
0	TK	= TKK + TKL	(5)
0	MS	$= e_0 + e_1 P + e_2 Q + e_3 SU + \mu_5$	(6)

• SU	= $f_0 + f_1 INV + f_2 Cr + \mu_6$	(7)
• TRQ	= P x Q	(8)
• TBQ	= VCOST + FCOST	(9)
• PFIT	= TRQ – TBQ	(10)
• PRTBB	= PFIT + PLL	(11)
• YD	= PRTBB $-$ CS $-$ TAX	12)

0	CCPG	= $g_0 + g_1 YD + g_2 UK + g_3 SAV + g_4 TRSNIL + \mu_7$	(13)
0	CCNPG	$h = h_0 + h_1 YD + h_2 CCPG + h_3 SAV + h_4 ISDM + h_5 TRSNIL + \mu_8$	(14)
0	ISDM	= $i_0 + i_1 YD + i_2 AS + i_3 SAV + i_4 INVPEN + \mu_9$	(15)
0	SAV	= $j_0 + j_1 PFIT + j_2 YD + j_3 TRSNIL + \mu_{10}$	(16)
0	CR	= $k_0 + k_1 R + k_2 SU + k_3 YD + k_4 PFIT + k_5 SAV + k_6 TRSNIL + \mu_{11}$	(17)

METHOD

 $_{\odot}$ The study was conducted in Bogor District at 13 sub-districts.

- The tasks and functions of BB agents are homogeneous, that is an extension of the bank offices in rural areas that provide limited banking services.
- $_{\odot}\,$ 32 BB Agents are selected purposively.
- $_{\odot}$ 97 household samples are selected purposively.
 - > The selected business households are those known by the agents, and generally they are near or around the agent's business location.

MODEL IDENTIFICATION, ESTIMATION & VALIDATION

The model identification was performed using order condition (Koutsyiannis, 1977).
➤ If (K-M) ≥ (G-1), then the model is said to be identified or overidentified.

• The parameters is estimated using the **2SLS** (Two Stage Least Squares) method.

 The validation of the model is conducted to check whether the estimated model reflects the reality and fulfill the requirements of the model application objectives is using the Coefficient of Determination (R²) and U-Theil criteria

RESULTS

- The F-test analysis shows that **all structural equations have Pr F < 0.0001**
 - > all explanatory variables in each structural equation are simultaneously affect endogenous variables
- The result of the determination coefficient (R²) ranging from 27% 99.96
- Validation result shows that 88.24 percent of endogenous variables have R² values more than 30 percent, and 58.82 percent have a value of U-Theil less than 20 percent.
 - > the model reflects the actual state of the household economic behavior of business activity in branchless banking program.
 - > Therefore, it can be used to analyze the impact of changes of important economic variables to the household economic decision.

Table 5. Analysis of Variance of Structural Equations of Household Economics Model of BB Business Actors, 2SLS Method, and SYSLIN Procedure

0	Name of	Equation/Variabl.	DF	F Value	Pr > F	R ²
0						
0	Q	Production	96	164,58	<,0001	0,90042
0	INV	Investment	96	1457,04	<,0001	0,98766
0	TKK	Family Labor	96	18,97	<,0001	0,45194
0	TKL	Non-family Labor	96.	11,33	<,0001	0,33003
0	MS.	Marketed Surplus	96	79.066,40	<,0001	0,99961
0	SU	Business size	96	286,83	<,0001	0,85921
0	CCPG	Food Consumption	96.	44,31	<,0001	0,58834
0	CCNPG	Non-Food Consumption	96	27,21	<,0001	0,54192
0	ISDM	HR Investment	96	25.684,10	<,0001	0,99911
0	SAV	Saving	96	11,94	<,0001	0,27798
0	CR	Credit	96	27,72	<,0001	0,47209
0						

Impact of The Increase of Frequency of Transaction

- The higher the frequency of transactions indicates the level of confidence of the business actors to conduct financial transactions on the BB Agents, and describes the success of the program.
- Data: The average frequency of financial transactions is 27.59 transactions per year per households or 2 - 3 transactions per month per households.
 - Therefore, to achieve the success of branchless banking program towards households of business actors to increase their business capacity, it is necessary to increase the frequency of transactions in a large percentage.
- In this study, the scenario of increasing the value of transactions is **150 percent**.

Table 7. Impact of Increasing in Value of Transaction (TRSNIL)

0			
0	Endogen Variables 150% TRSNIL		150% TRSNIL
0		Base Value	%Change
0	Production (Q)	282.120.000	0,82
0	Investment (INV)	47.126.245	-1,56
0	Family Labor (TKK)	714	0,13
0	Non-Family Labor (TKL)	339	0,62
0	Total Labor (TK)	1.053	0,28
0	Marketed Surplus (MS)	278.220.000	0,83
0	Business size (SU)	369.550.000	-0,26
0	Total Revenue of Production (TRQ)	282.120.000	0,82
0	Profit (PFIT)	95.309.881	2,42

Table 7. Impact of Increasing in Value of Transaction (TRSNIL)

0			
0	Endogen Variables	150% TRSNIL	
0		Base Value	%Change
0	Total Revenue of BB Households (PRTBB)	112.760.000	2,04
0	Disposable Income (YD)	107.730.000	2,14
0	Total Consumption (TCONS)	26.459.785	7,55
0	Food Consumption (CCPG)	14.114.496	0,82
0	Non-Food Consumption (CCNPG)	2.345.290	15,26
0	HR Investment (ISDM)	5.297.866	0,04
0	Saving (SAV)	24.483.037	0,17
0	Credit (CR)	160.530.000	-0,07

• The result shows that an increase in transaction value by 150 percent:

has a high impact on an increase in non-food consumption expenditure (CCNPG), with the percentages 15.26.

➤The impact on investment (INV), business size (SU), and credit (CR) are negative, with value -1.56, -0.26, and -0.07 percent, respectively.

- The results are in line with the conditions at the study sites.
 - The presence of BB Agents in a branchless banking program is more commonly used for transactions related to non-food consumption expenditures, such as paying utility bills, purchasing electric or mobile vouchers, and transaction for online shopping payments.
 - >While transactions related to daily production activities such as savings and withdrawals through BB Agent are relatively rare, as the conditions described in Table 4.

Table 4. Frequency of Transaction

0			
0	Type of Transaction	Frequency/year	Percent
-			
0	Cash deposits	187	6,46
0	Withdrawals	144	4,84
0	Transfers	576	27,13
0	Electricity payment (pre/pos	t) 1.346	45,59
0	Buying mobile phone vouch	ers 422	15,98
0			

- The negative impact of an increase in the value of transaction by 150% on investment (INV), business size (SU), and credit (CR) is also supported by the condition in the study sites.
 - >BB Agent as an extension of bank office to provide limited banking services in the rural area is **only concern with the transaction** made through them.
 - >They do not know whether their existence encourages the business households or no.
 - >They also **do not have ways to approach the business households** around them to conduct the financial transaction through them.

- It was indicated in the research location that the BB agent practices moral hazard behavior, such as charging the customers at a tariff higher than the rate set by the bank.
- There exist other potential moral hazard behavior that can increase transaction costs.

CONCLUSION

- The frequency of transactions conducted by business households through BB Agents is still low. It indicates that the public confidence, especially for business households, to conduct the financial transactions through BB Agent as an extension of the bank in the rural area is still low.
- Increasing the frequency of transaction has a high impact on non-food consumption expenditure. This is supported by conditions at study site where the type of financial transactions conducted by household businesses through BB Agent is more to pay for electricity bills and buy mobile vouchers or electric vouchers. While transaction of saving and cash withdrawal, as the types of transactions related to production activities, are very rare.

CONCLUSION

- The result of simulation shows that the development of the Branchless Banking program which focuses only on increasing the frequency or value of transactions will have a negative impact on business sustainability in the long run.
- Moral hazard behavior practiced by BB agents can be an obstacle for the people in the rural area as the target program, especially for the business household to conduct financial transactions through BB Agent, since it will increase the transaction cost, which is very sensitive to the people in rural, and may hamper the program development.













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