Advances in Politics and Economic
ISSN 2576-1382 (Print) ISSN 2576-1390 (Online)
Vol. 2, No. 1, 2018
www.scholink.org/ojs/index.php/ape

Original Paper

Economic Incentives and Social Norms Can Lead Actors to Prosocial Behavior: An Evidence-Based Framework and Findings

Angbonon E. Kamalan[1*]

[1] Department of Economics, Alassane Ouattara University, Bouaké, Ivory Coast

[*] Angbonon E. Kamalan, Department of Economics, Alassane Ouattara University, Bouaké, Ivory Coast

Received: February 1, 2018 Accepted: February 16, 2018 Online Published: February 18, 2018

doi:10.22158/ape.v2n1p23 URL: http://dx.doi.org/10.22158/ape.v2n1p23

Abstract

This article attempts a search for economic, sociological and even psychological answers about the foundations of individual's prosocial behavior with a focus on economic incentives and social norms. First, we present an evidence-based approach of individual's prosocial behavior using the justification and the economies of worth of Boltanski and Thevenot (2006). After that, we analyze a prosocial behavior applied to the process of maturity repayment of individual loans. We propose two different methods to check the theoretical propositions: logit and probit method in one hand and fractional method of Papke and Wooldridge (1996) in other hand. The logit and probit method are estimated in the aim of better understanding of the influencing factors of the maturity repayment behavior of borrowers. Estimation of fractional method helps to learn about the probability of delinquency in loan repayment. The results attest the theoretical propositions.

Keywords

incentives, social norms, prosocial behavior, probit, fractional

1. Introduction

Both economic incentives and social norms influence individual behavior. Many authors including Nobel Prizes have shed light on this matter by providing excellent works specifically relating to behavioral economics (Note 1). The rational choice school of sociologists also recognizes the joint influence of social norms and economic incentives (Lindbeck et al., 1999). While economists have focused on economic incentives, sociologists have emphasized social norms.

Prosocial activities represent a substantial part of social life, including such actions as donating money for a cause or an organization, volunteering for a party during election times, voting, cleaning beaches, donating blood, etc. (Lacetera & Macis, 2010).

Understanding what motivates individuals to contribute to prosocial activities emerges, therefore, as a topic of increasing interest in economics as well as sociology and even psychology. The issue is made all the more pressing by the fact that, for many of these activities, supply is often below societal needs.

However, individuals might simply not find it worthwhile to engage in prosocial activities if the benefits fall short of the opportunity costs. If this is the case, then material incentives (composed of material cash-incentives also called explicit economic incentives, and material non-cash incentives) might be effective in increasing the number and frequency of prosocial acts. But, a large common idea is that, explicit economic incentives designed to increase contributions to public goods and to promote other prosocial behavior sometimes are counterproductive or less effective than would be predicted among entirely self-interested individuals. This may occur when incentives adversely affect individuals' altruism, ethical norms and intrinsic motives (Bowles & Polanía-Reyes, 2012).

Bénabou and Tirole (2006) enlightened this issue in their study of incentives and prosocial behavior and provided convincing answers which defined extrinsic incentives given by the society and the intrinsic incentives providing from personal motivation. They develop a theory of prosocial behavior that combines heterogeneity in individual altruism and greed with concerns for social reputation or self-respect.

To understand what kind of incentives might encourage prosocial behavior, however, one must first have an understanding of the motives behind altruistic behavior. In fact, recent empirical and theoretical contributions suggest that depending on what motivates individuals to contribute to prosocial causes, certain types of material incentives might backfire (Frey & Oberholzer-Gee, 1997; Ryan & Deci, 2000; Lacetera & Macis, 2010).

In addition, the effect of economic incentives and social norms in shaping of prosocial behaviors of individuals is explained in a sociological approach based on the theory of reciprocity that defines reciprocal behavior as a social preference (Simpson & Willer, 2008).

Although there are several types of social preferences in the literature, Fehr and Fischbacher (2002) provide the most common characteristics of social preferences. Particularly important types of social preferences are the reciprocal fairness (not driven by the expectation of future material benefit), the inequity aversion, pure and impure altruism; and self-identity preferences. In short, the sociological approach of prosocial behavior focus on three sets of theories addressing non-selfish motives or "other-regarding" behavior, namely: (1) the outcome-based prosocial preferences theories (inequity aversion, pure and impure altruism) that assume that an individual's utility depends directly on the utility of other people; (2) the theories of reciprocity (or conditional cooperation) that are based on the notion that individuals behave in a friendly manner when they are treated benevolently and, conversely, they act meanly when treated badly; and (3) the approaches stressing the importance of self-identity for

prosocial behavior. These theoretical frameworks are relevantly interpreted by Boltanski and Thevenot (2006) for better understand how actors can justify their behaviors using contradictory foundations.

This article requires a search for economic, sociological and even psychological answers about the foundations of individual's prosocial behavior with a focus on economic incentives and social norms. So the study combines economic theories and sociologic approach of prosocial behavior using field experiment. An illustration is provided using the maturity repayment behavior of loans in a specific context.

We propose a socioeconomic framework that clearly introduce to the understanding of the borrower's prosocial behavior regarding maturity repayment. Then, an empirical illustration of the theoretical propositions is given, based on a survey data.

The article is organized as follows. Section 2 presents an evidence-based approach of individual's prosocial behavior based on the justification and the economies of worth of Boltanski and Thevenot. Section 3 proposes the empirical evidence with different methods (logit, probit and fractional) used to check the theoretical propositions and provides results interpretation. Finally, section 4 concludes.

2. Evidence-Based Framework of Prosocial Behavior

2.1 Context and Issues

The study applies to the context in which a debt relationship exists between a lending institution represented by a credit manager and a borrower. The prosocial behavior being studied is the maturity repayment behavior of credit in microfinance institutions. Indeed, in Microfinance Institutions (MFIs) in West Africa, lending contracts are often drawn up taking into account the borrower's relationships with third parties, whether the borrower is in liability group lending or whether he is in individual lending (Besley, 1995). Individual lending is most concerned with endorsement and sponsorship relationships, which are known as non-market institutions applied for loans, Figure 1.

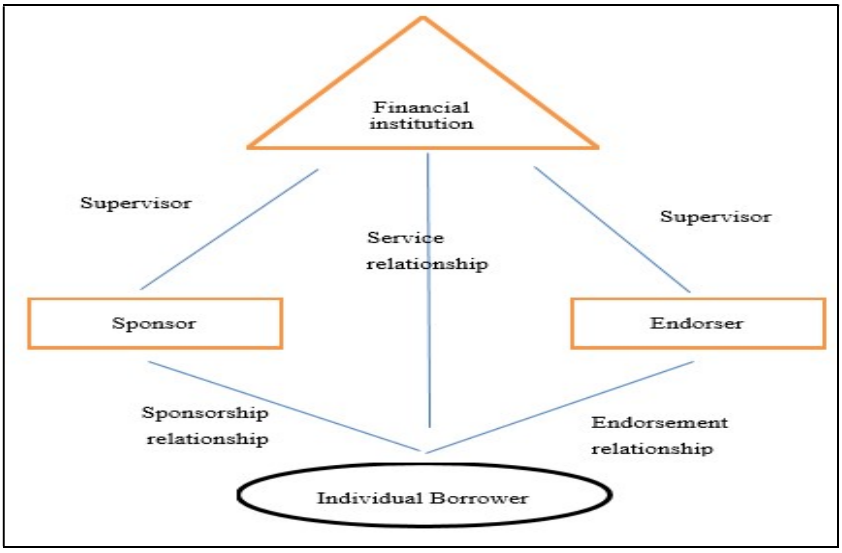


Figure 1. Relationship within Individual Lending

The endorsement and sponsorship practices are formalized as supervisory mechanism for better project selecting and monitoring of borrowers within lending contracts (Kamalan, 2018). The endorsement practice refers to relationships between an individual borrower who does not have personal material collateral and the third party, the endorser. The latter is usually a person close to the borrower, for example the spouse or member of the family lineage. The endorser provides a material asset as a collateral in return to the debt the borrower receives. The endorsement relationship engages the endorser to have the same level of commitment as the joint liability relationship.

The sponsorship is similar to the moral assistance that generally involves a testimonial process. It consists in the fact that, the third party close relative of the borrower, testifies the good probity and exemplary morality of the borrower in order to dispel any doubt that may remain with a credit manager (in a lending institution) when examining the borrower's loan application. In contrast to the endorser, the sponsor is simply a moral guarantor who commits his moral honor for the benefit of the borrower by testifying in his behalf. The sponsor makes himself available to the lending institution for assistance in recovering the assets, as long as the borrower does not fulfil his commitments.

If the endorser or the sponsor is not a borrower himself, he does not derive any direct benefit from his act; that is to be considered as a pure altruism. The main interest of endorser or sponsor is to assist the borrower in the credit application. Endorser and sponsor may be satisfied with offering an opportunity to a family member for whom they feel morally indebted because of first-born obligation for example.

In several cases, borrowers engaged in relationships with third parties such as joint borrowers in liability group have been known for having better loan repayment behavior (Armendáriz-de-Aghion & Gollier, 2000). This behavior for loan repayment is all time explained by the social pressure of the group members who want the credit to be granted repeatedly to each one in turn. But, the social

pressure is less effective and often inactive or counterproductive when the borrower has relationships with third parties who are not engaged in the same lending or who are outside the lending institution. This is the case for sponsorship and endorsement relationships. In this case, the design of lending contract and the repayment behavior must be analyzed using another prism: the prosocial behavior.

Answering the questions raised by the use of sponsorship and endorsement relationships within lending relationships, an interesting approach is provided by the theory of social capital originally defended by P. Bourdieu, J-C. Coleman and R. Putnam. Putnam's approach, in contrast to the Bourdieusian ones, provides a framework of social capital that makes social ties an essential endowment of a society. This feature makes resources available to members to be active within the functioning of the society. Putnam believes that a society can potentially have a significant endowment of social capital in the form of trust, reciprocity norms and civic engagement networks, for to facilitate voluntary cooperation between individuals in the sense of collaboration, knowledge pooling, skills and efforts sharing. This approach of social capital is closely in line with the early work of institutional economics.

Therefore, sponsorship and endorsement relationships are considered as societal attributes rather than individual assets. A problem is to effectively engage the attributes of a society and make them interact in the meaningful behavior of an individual, as observed in the lending relationship. It is clear that the individual's aim is to maximize earnings and expectations. Consequently, it will be asked to determine the process to be use to resolve conflicts between the collective aspirations of society induced by societal attributes and the rational expectations of individuals motivated by selfish interests. These issues are strongly addressed by Boltanski and Thevenot (2006) in their analysis of justification and the economies of worth.

2.2 Evidence-Based Practices that Shape Behavior

To better understanding the sponsorship and endorsement relationships within lending contracts and the connection to the economies of worth developed by Boltanski and Thevenot, we consider the sense of credit and the effects on behavior shaping. That opens up a normative dimension of the reasoning about the meaning of the lending for the actors involved, as stakeholders of the lending contract; particularly for the borrower. That's the justification of the behavior based on the foundations basically called "values", Kamalan (2019). We've matched the economies of worth of Boltanski and Thevenot with the values highlighted by the sponsorship and endorsement relationships, Figure 2.

Cities	Greatness	Ties		Values
Domestic	Confidence	Filiation	Domestic	Solidarity
Civic	Collective		Communal	Generosity
Market	Competition	Commitment		Competency
Industrial	Efficiency			Success
Fame	Opinion			Regard
Inspiration	Intuition			Belief

Figure 2. Foundations of Values Highlighted by Sponsorship and Endorsement

Let's only consider the cities of market, fame and inspiration defined by Boltanski and Thevenot (Note 2). Boltanski and Thevenot defined the city of "market" that uses competition as a greatness. This city highlights the personal advantages of the actor (the borrower) whose interests are freed from domestic and civic considerations. The link is no longer synonymous with identity filiation, but refers to a consumerist attachment. In this context, the borrower's desirable behavior is to be sought in the self-determination and self-sacrifice in preserving the financial relationship with the lending institution, no matter the costs and effort to be expended. Value takes on a sense of competence. Borrower is valuable because he or she is capable. The value of competency is all the more sought if it is rewarded. The credit renewal willingness with higher amount is one of the best tool used to test the impact of competency on maturity repayment behavior. That is defined as an economic material incentive.

In the city of "industry", greatness is revealed in a form of the individual's effectiveness in overcoming the challenges faced by all individuals. Value is based on the individual's success in overcoming these challenges. That value of success is all the more sought if it is rewarded. Lot of variables can be used to test the impact of the value of success in the behavior of maturity repayment: indifference regarding failure, appreciation of post-contractual opportunism, etc. There are defined as economic non material incentives.

In the city of "fame", greatness is reflected in the opinion that includes self-esteem and the reputation. That's the positive reputation or the looking-glass-self. An example is the fact that the more a borrower is motivated by self-esteem, the more he behaves in actions that are admired by those surrounding him and the higher is the maturity repayment. Finally, in the city of "inspiration", value refers to the religious notion of beliefs. Individuals have a moral commitment to comply with the high standards of a virtuous lifestyle as required by religious norms.

Some variables such us happiness/jealousy of neighborhoods, past shame experiences, etc. can be used to test the impact of the value of fame in the behavior of maturity repayment and marital or religious status are supposed to have benefic impact on the behavior of maturity repayment. All these variables are regarding social norms.

The next section proposes the empirical evidences in which theoretical analyses are illustrated with data from a field study in a West-African microfinance institution (PAMDE) in Benin (Kamalan, 2010).

3. Empirical Evidence

3.1 Data, Variables and Methods

In that section, we'll focused on a survey covered sample of 832 customers composed of 506 individual loans and 272 group loans, representative the population of 21146 in a microfinance institution called PADME in Cotonou (Benin). The survey includes only borrowers in process of credit. The survey was conducted in 2006 while PADME was considered to be one of the best microfinance institutions with higher repayment rate of borrowers. PADME has been selected because it gives opportunity to learn about the non-market institutions such as endorsement and sponsorship practices involved in lending contracts.

The methods used in that section are the logit and probit models and the fractional regression model of Papke and Wooldridge (1996). The logit and probit models are used to study the behavior for loan repayment. The variable of interest is the "delays" in loan maturity repayment which takes the value 1 if the borrower has no default in maturity repayment and takes the value 0 if at least one maturity repayment is defected. The explanatory variables are displayed in Figure 3.

Definition	Variable Name	modality
sponsorship	*sponsor*	1=borrower without sponsor
		0=borrower with a sponsor
endorsement	*guarant*	1=borrower without guarantor
		0=borrower with a guarantor
family support	*famsup*	1=borrower never asked for family financial support
		0=borrower often asks for family financial support
neigbourhood is happy	*hapneig*	1=unhappy neighborhood
		0=happy neighborhood
neigbourhood is jealous	*jealneig*	1=not jealous neighborhood
		0=jealous neighborhood
Post-contractual opportunism	*postopp*	1=understandable attitude, excusable
		0=punishable attitude, to be penalize
shame experience	*shamexp*	1=borrower has never experienced a shameful situation
		0=borrower has already experienced a shameful situation
indifference regarding failure	*indifail*	1=yes
		0=no, borrower is embarrassed
marital status	*maristat*	1=not maried
		0=maried
religious status	*relistat*	1=non current practicing
		0=current practicing
loan renewal	*loanrenw*	1=borrower does not expect loan renewal
		0=borrower expects loan renewal
type of loan	*loantyp*	1=group loan
		0=individual loan

Figure 3. Explanatory Variables

The fractional model helps to understand the probability of delinquency in loan repayment. This model is useful for situations where the variable of interest is continuous and restricted to the interval (0, 1)

and is related to other variables through a regression structure (Cribari-Neto & Zeileis, 2010). With the fractional method, we are interested in knowing about the behavior of the delay in repayment. It seems like delinquency in maturity repayment. First we generate the P probability corresponding to the situation where there is no delay. Then, we create the variable R=1-P corresponding to the probability of having at least 1 delay. We generate the R variable and we estimate the fractional regression model. That model is generally used for beta regression where variables are greater than zero and less than one, such as rates, proportions and indices.

3.2 Findings

3.2.1 The Influencing Factors of the Maturity Repayment Behavior

The Logit model estimate (Figure 4) shows that the factors that explain the maturity performance are: the indifference regarding failure, the marital status, the sponsorship, the willingness to renew the credit received, status and type of loan. Only significant variables are considered. These variables are supposed to have positive effects on repaying maturities without delay, in contrast to the type of loan and the marital status which have negative effects.

The Probit model (Figure 5) is more restrictive since marital status is not significant.

Logistic regression — Number of obs = 832; LR chi2(12) = 307.24; Prob > chi2 = 0.0000; Log likelihood = -422.92268; Pseudo R2 = 0.2665

delays	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
endorse	.2079762	.2155437	0.96	0.335	-.2144817	.630434
hapneig	.555103	.4105596	1.35	0.176	-.2495791	1.359785
jealneig	.1379401	.3114363	0.44	0.658	-.4724639	.7483441
indifail	.7921605	.2285467	3.47	0.001	.3442172	1.240104
shamexp	.0664903	.2095035	0.32	0.751	-.3441291	.4771097
maristat	-.5697063	.2987465	-1.91	0.057	-1.155239	.0158261
relistat	1.483343	1.136598	1.31	0.192	-.7443474	3.711033
sponsor	2.597394	.205262	12.65	0.000	2.195088	2.999701
loanrenw	.6551918	.3318552	1.97	0.048	.0047677	1.305616
postopp	.0836893	.1841911	0.45	0.650	-.2773186	.4446973
loantyp	-1.417239	.2424026	-5.85	0.000	-1.892339	-.9421381
famsup	-.0667715	.1809356	-0.37	0.712	-.4213988	.2878558
_cons	-3.733109	1.24912	-2.99	0.003	-6.18134	-1.284878

Figure 4. Logistic Regression

Probit regression — Number of obs = 832
LR chi2(12) = 307.89
Prob > chi2 = 0.0000
Log likelihood = -422.60067 — Pseudo R2 = 0.2670

delays	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
endorse	.1392684	.1313471	1.06	0.289	-.1181672	.3967041
hapneig	.3203205	.2428238	1.32	0.187	-.1556054	.7962463
jealneig	.0733384	.1786995	0.41	0.682	-.2769062	.423583
indifail	.4480144	.1351276	3.32	0.001	.1831691	.7128596
shamexp	.0397269	.123447	0.32	0.748	-.2022247	.2816785
maristat	-.2650423	.166067	-1.60	0.110	-.5905277	.0604431
relistat	.9220995	.6420364	1.44	0.151	-.3362688	2.180468
sponsor	1.560659	.1157665	13.48	0.000	1.333761	1.787557
loanrenw	.3775101	.1964478	1.92	0.055	-.0075205	.7625408
postopp	.0472681	.1081512	0.44	0.662	-.1647044	.2592406
loantyp	-.8213902	.1377351	-5.96	0.000	-1.091346	-.5514343
famsup	-.0522041	.106517	-0.49	0.624	-.2609736	.1565655
_cons	-2.322556	.7149657	-3.25	0.001	-3.723863	-.9212487

Figure 5. Probit Regression

Appendix 1 and Appendix 3 provide more details for the Logit and Probit models.

With regard to the marginal effects after logit and probit regression, the following results can be noted: the probability of having no delay increases by 18.92% (Appendix 2) and 17.24% (Appendix 4) when moving from a borrower which is indifferent regarding failure to another one who is very embarrassed. Religious status concerning non-current practicing to current practicing borrower increases the probability of having no delay by about 30%.

The willingness of loan renewal is also powerful in increasing the probability of having no delay by about 14%.

The most powerful tool that lead borrowers to increasing the probability of having no delay is the sponsorship by 54.82% when moving from one borrower without sponsor to another one who is sponsored. Finally, we note that probability of not being late decreases by 31.84% when moving from joint liability group loan to individual loan. That suppose that joint liability group loans are less risky than individual loans.

3.2.2 The Probability of Delinquency in Repayment Behavior

Several factors explain the probability of having at least one delay in repayment (Figure 6).

```
Fractional probit regression                    Number of obs     =        832
                                                Wald chi2(7)      =      83.48
                                                Prob > chi2       =     0.0000
Log pseudolikelihood =  -565.1106               Pseudo R2         =     0.0192
```

R	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
endorse	.0247069	.0489988	0.50	0.614	-.071329	.1207428
hapneig	-.4144738	.0913214	-4.54	0.000	-.5934605	-.2354871
jealneig	-.3493436	.0851817	-4.10	0.000	-.5162966	-.1823905
shamexp	.222241	.0572201	3.88	0.000	.1100916	.3343904
maristat	.2484953	.0877599	2.83	0.005	.0764891	.4205015
postopp	.0068026	.053586	0.13	0.899	-.0982241	.1118293
famsup	.1827017	.0518445	3.52	0.000	.0810883	.2843151
_cons	.349178	.1427209	2.45	0.014	.0694503	.6289058

Figure 6. Fractional Regression

The interpretations based on the conditional mean of R predicted in Appendix 5 give the conclusions above. The probability of having at least one delay decreases on average about 15.98% when moving from a borrower who consider the neighborhood not being happy of his or her financial situation to another borrower whose neighborhood is qualified as being happy. The reasoning is the same with the jealousy neighborhood variable (13.6% reduction). For the variables (shame experience) and (marital status), the probability of having at least one delay increases about 8% or 9% when passing from a borrower who has never experienced a shameful situation to another who has already experienced a shameful situation; or from a not married to a married borrower. Finally, moving from borrower who never ask for family financial support to another who often ask for family financial support increases about 7.2% the probability of having at least one delay in maturity repayments.

4. Concluding Remarks

Individual decisions concerning prosocial activates belong to the class of decisions where both economic incentives and social norms play a role. In this paper, we attempted to bring together social norms and economic incentives on an equal footing in a model of individual choice concerning prosocial behavior, especially related to maturity repayment. After describing an overview of economics and sociological theories that address the motives of individual's prosocial behavior, we proposed an evidence-based sociological framework of individual's prosocial behavior focusing on the justification and the economies of worth of Boltanski and Thevenot.

This article explores the frontier of economy and sociology by questioning the very foundations of individual's prosocial behavior. The study addresses the causal effect of economic incentives and social norms on individual moral hazard applied to maturity repayment behavior of loans. Without using

collateral as defined in the microeconomics of banking, we studied theoretically the effects of values used as the very bases of the reasoning that justify individual behaviors in various contexts. And we empirically tested the effects of theses values in the maturity repayment behaviors of borrowers in a specific context applied in Africa. We used the Logit, the Probit and the Fractional method.

These results invite to a socioeconomic approach which indicates that economic material and non-material incentives and social norms known as social preferences are likely to have important effects on shaping of prosocial behaviors of individuals. The results indicate that the probability of having no delay strongly increase with the use of the practice of sponsorship. We notice that the practice of endorsement is non-significant for knowing about the behavior in maturity repayment. That help us conclude that social norms (such as religious status, indifference regarding failure) and material incentives (loan renewal) and non-material incentives (sponsorship) are potentially powerful to lead borrowers to the prosocial act of maturity repayment of loans.

However, the logit and probit models explain only 26% of borrowers' behaviour towards maturity repayments. This recommends including additional explanatory variables in our models or looking for alternative models such as Poisson regression analysis.

References

Armendáriz-de-Aghion, B., & Gollier, C. (2000). Peer Group Formation in an Adverse Selection Model. *The Economic Journal*, *110*(465), 632-643. https://doi.org/10.1111/1468-0297.00557

Bénabou, R., & Tirole, J. (2006). Incentives and Prosocial Behavior. *American Economic Review*, *96*(5), 1652-1678. https://doi.org/10.1257/aer.96.5.1652

Besley, T. (1995). Non market Institutions for credit and risk sharing in low-Income. *Journal of Economic Perspectives*, *9*(3), 115-127. https://doi.org/10.1257/jep.9.3.115

Boltanski, L., & Thevenot, L. (2006). *On Justification, Economies of Worth*. Catherine Porter, French initial version: De la justification, les économies de la grandeur, Gallimard.

Bowles, S., & Polanía-Reyes, S. (2012). Economic Incentives and Social Preferences: Substitutes or Complements? *Journal of Economic Literature*, *50*(2), 368-425. https://doi.org/10.1257/jel.50.2.368

Cribari-Neto, F., & Zeileis, A. (2010). Beta Regression in R. *Journal of Statistical Software*, *34*(10), 1-24.

Fehr, E., & Fischbacher, U. (2002). Why social preferences matter-the impact of non-selfish motives on competition, cooperation and incentives. *The Economic Journal*, *112*(478), 1-33. https://doi.org/10.1111/1468-0297.00027

Frey, B., & Oberholzer-Gee, F. (1997). The cost of price incentives: An empirical analysis of motivation crowding-out. *American Economic Review*, *87*(4), 746-755.

Kamalan, A. E. (2010). Efficacité des contrats de dette pour les clients individuels en microfinance, le rôle des liens de clientèle, étude dans des institutions de microfinance oust-africaines. Lyon, Thèse

de doctorat en science économique. *Université Lyon*, *2*.

Kamalan, A. E. (2018). Supervisory incentives within contracts: A principal-supervisor-agent approach. *Journal of Finance and Bank Management*, *6*(2), 58-63.

Kamalan, A. E. (2019). Economics and Sociological Foundations of Prosocial Behavior: A Theoretical Survey. *American Journal of Humanities and Social Sciences Research*, *3*(1), 164-168.

Lacetera, N., & Macis, M. (2010). Social image concerns and prosocial behavior: Field evidence from a nonlinear incentive scheme. *Journal of Economic Behavior & Organization*, *76*(2010), 225-237. https://doi.org/10.1016/j.jebo.2010.08.007

Lindbeck, A., Nyberg, S., & Weibull, J. (1999). Social norms and economic incentives in the welfare State. *The Quarterly Journal of Economics*, *114*(1), 1-35. https://doi.org/10.1162/003355399555936

Papke, L., & Wooldridge, J. (1996). Econometric methods for fractional response variables with an application to 401(K) plan participation rates. *Journal of Applied Econometrics*, *11*, 619-632. https://doi.org/10.1002/(SICI)1099-1255(199611)11:6<619::AID-JAE418>3.0.CO;2-1

Ryan, R., & Deci, E. (2000). Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. *Contemporary Educational Psychology*, *25*(2000), 54-67. https://doi.org/10.1006/ceps.1999.1020

Simpson, B., & Willer, R. (2008). Altruism and Indirect Reciprocity: The Interaction of Person and Situation in Prosocial Behavior. *Social Psychology Quarterly*, *71*(1), 37-52. https://doi.org/10.1177/019027250807100106

Notes

Note 1. R. Thaler (2017, rationality and social preferences), R. Shiller (2013, Behavioral Finance), D. Kahneman and V. Smith (2002, cognitive bias, heuristic decisions, behavioral economics), H. Simon (1978, limited cognitive rationality).

Note 2. Further details concerning the cities, greatness and values are provided in Boltanski and Thevenot (2006) and Kamalan (2010).

Appendix 1

Logistic model for delays, goodness-of-fit test

```
      number of observations =       832
 number of covariate patterns =       159
           Pearson chi2(146) =       338.89
                 Prob > chi2 =         0.0000
```

Logistic model for delays

	True		
Classified	D	~D	Total
+	331	112	443
-	77	312	389
Total	408	424	832

Classified + if predicted Pr(D) >= .5
True D defined as delays != 0

Sensitivity	Pr(+| D)	81.13%
Specificity	Pr(-|~D)	73.58%
Positive predictive value	Pr(D| +)	74.72%
Negative predictive value	Pr(~D| -)	80.21%
False + rate for true ~D	Pr(+|~D)	26.42%
False - rate for true D	Pr(-| D)	18.87%
False + rate for classified +	Pr(~D| +)	25.28%
False - rate for classified -	Pr(D| -)	19.79%
Correctly classified		77.28%

Appendix 2

Marginal effects after logit
y = Pr(delays) (predict)
= .46990806

variable	dy/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
endorse*	.051812	.05364	0.97	0.334	-.053326	.15695	.41226
hapneig*	.1332654	.09298	1.43	0.152	-.048978	.315509	.956731
jealneig*	.0342094	.07681	0.45	0.656	-.116331	.184749	.894231
indifail*	.1892248	.05092	3.72	0.000	.089418	.289031	.813702
shamexp*	.0165782	.05227	0.32	0.751	-.085879	.119035	.216346
maristat*	-.1410714	.0721	-1.96	0.050	-.282388	.000245	.90024
relistat*	.3040212	.16111	1.89	0.059	-.011745	.619788	.990385
sponsor*	.5549829	.03232	17.17	0.000	.49163	.618336	.612981
loanrenw*	.1561585	.07361	2.12	0.034	.011893	.300424	.927885
postopp*	.0208265	.04578	0.45	0.649	-.068906	.110559	.653846
loantyp*	-.3390236	.05273	-6.43	0.000	-.442372	-.235675	.673077
famsup*	-.0166407	.04511	-0.37	0.712	-.105054	.071772	.653846

(*) dy/dx is for discrete change of dummy variable from 0 to 1

Appendix 3

Probit model for delays, goodness-of-fit test

```
       number of observations =       832
 number of covariate patterns =       159
           Pearson chi2(146) =       333.19
                 Prob > chi2 =         0.0000
```

Probit model for delays

	True		
Classified	D	~D	Total
+	329	115	444
-	79	309	388
Total	408	424	832

Classified + if predicted Pr(D) >= .5
True D defined as delays != 0

Sensitivity	Pr(+| D)	80.64%
Specificity	Pr(-|~D)	72.88%
Positive predictive value	Pr(D| +)	74.10%
Negative predictive value	Pr(~D| -)	79.64%
False + rate for true ~D	Pr(+|~D)	27.12%
False - rate for true D	Pr(-| D)	19.36%
False + rate for classified +	Pr(~D| +)	25.90%
False - rate for classified -	Pr(D| -)	20.36%
Correctly classified		76.68%

Appendix 4

Marginal effects after probit
y = Pr(delays) (predict)
= .46236814

variable	dy/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
endorse*	.055328	.05214	1.06	0.289	-.046866	.157522	.41226
hapneig*	.1236404	.08974	1.38	0.168	-.052243	.299524	.956731
jealneig*	.0290295	.07045	0.41	0.680	-.109049	.167108	.894231
indifail*	.1724996	.04951	3.48	0.000	.075457	.269542	.813702
shamexp*	.0157929	.04911	0.32	0.748	-.080466	.112052	.216346
maristat*	-.1054208	.06559	-1.61	0.108	-.233969	.023128	.90024
relistat*	.3090923	.15512	1.99	0.046	.00506	.613125	.990385
sponsor*	.5482105	.03145	17.43	0.000	.486577	.609844	.612981
loanrenw*	.144945	.07151	2.03	0.043	.004796	.285094	.927885
postopp*	.0187582	.04288	0.44	0.662	-.065279	.102796	.653846
loantyp*	-.3183615	.05019	-6.34	0.000	-.416741	-.219982	.673077
famsup*	-.0207464	.04235	-0.49	0.624	-.103753	.06226	.653846

(*) dy/dx is for discrete change of dummy variable from 0 to 1

Appendix 5

y = Conditional mean of R (predict)
= .51839399

variable	dy/dx	Std. Err.	z	P>|z|	[	95% C.I.	]	X
endorse*	.0098449	.01952	0.50	0.614	-.02842	.04811		.41226
hapneig*	-.1597509	.03332	-4.79	0.000	-.225057	-.094444		.956731
jealneig*	-.1363622	.03209	-4.25	0.000	-.199253	-.073472		.894231
shamexp*	.0879557	.02241	3.93	0.000	.04404	.131871		.216346
maristat*	.098741	.0345	2.86	0.004	.031114	.166368		.90024
postopp*	.0027111	.02136	0.13	0.899	-.039148	.04457		.653846
famsup*	.0727744	.0206	3.53	0.000	.032404	.113145		.653846

(*) dy/dx is for discrete change of dummy variable from 0 to 1