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Replication Article

Referral programs, customer value, and the relevance of dyadic characteristics☆

Guillermo Armelini [a], Christian Barrot [b,*], Jan U. Becker [b]

[a] ESE Business School, Universidad de los Andes, Santiago, Chile
[b] Kühne Logistics University, Hamburg, Germany

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ABSTRACT

Referral programs have become a popular tool to use the customer base for new customer acquisition. We replicate the work of Schmitt et al. (2011) who find that referred customers are more loyal and valuable than customers acquired through other channels. While our results confirm that rewarded referrals indeed reduce the risk of customer churn, we do not find that referred customers are necessarily more valuable. Analysis of the relationship between senders and receivers of referrals demonstrates that demographic similarity drives the referred customer value.

1. Introduction

In recent years, referral programs have gained popularity in many industries as a viable means for new customer acquisition. Likewise, referral programs have attracted considerable scholarly interest. Previous studies provide insights on, for instance, optimal reward designs (Biyalogorsky, Gerstner, & Libai, 2001), drivers of participation (Verlegh, Ryu, Tuk, & Feick, 2013), and instruments to stimulate rewarded referrals (Hinz, Skiera, Barrot, & Becker, 2011). One of the most significant contributions in that context was Schmitt, Skiera, and Van den Bulte's (2011; hereafter referred to as SSV) finding that customers from referral reward programs are more loyal and more valuable than those acquired through other marketing channels.[1] The purpose of this paper is to replicate SSV by analyzing the effect of referrals on churn and customer value using similar data from a company with a different product and referral incentive structure.

2. Data

To allow for a precise comparison with SSV, the replication also focuses on the financial services sector. While SSV is based on panel data from a German bank, we use panel data from 4718 customers of a Chilean direct bank. Specifically, we have information on a cohort of 1677 referred and 1971 non-referred customers as well as 1070 referral senders.[2] Similar to SSV, the data encompass information on customer demographics, contribution margins, and churn behavior over 27 months (2011–2013). Table 1 provides the key descriptives in comparison with SSV.

The bank operates a referral program that rewards every successful referral with vouchers that can be redeemed for a selection of popular consumer goods such as iPads, TV sets, or household appliances. In case of multiple referrals, customers can accumulate coupons to secure higher priced rewards. The fact that the average reward size is almost four times higher than in SSV's study reflects the substantially higher profitability. While compared with other countries, the German banking industry is highly fragmented and known for its high costs and low profits (Atkins, 2015), Chilean banks realize significantly higher margins. The bank promoted the referral program primarily on its website and through advertising in local newspapers. In addition, branch staff was encouraged to communicate the program to existing customers (similar to the bank providing the data for SSV).

3. Replication analyses and results

As in the original study, we first purified the data using the DFBETA criteria and eliminated extreme data points that might excessively

☆ *Acknowledgement*: The order of authors is alphabetical.
* Corresponding author. Tel.: +49 40328707 226; fax: +49 40328707 209.
E-mail addresses: garmelini.ese@uandes.cl (G. Armelini), christian.barrot@the-klu.org (C. Barrot), jan.becker@the-klu.org (J.U. Becker).
[1] The study was the 2011 winner of the MSI/H. Paul Root award and subsequently featured in HBR.

[2] Analog to SSV, the data only includes information on successful referrals.

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Table 1
Sample descriptives.

Sample characteristics	SSV	Our sample
Industry	Banking	Banking
Country	Germany	Chile
Year	2006–2008	2011–2013
Observation period	33 months	27 months
Customer sample:		
• Referred customers	5.181	1.677
• Non-referred customers	4.633	1.971
• Referring customers	—	1.070
• Outliers	3.3%	9.9%
Reward	25 Euros	96 Euros [a]
Observed influence of referral reward program on:		
• Churn	−	−
• Customer lifetime value	+	−

[a] Converted from Chilean Pesos (1 Euro = 753 CLP).

Table 2
Impact of referral program.

	Differences in daily contribution margins		Differences in customer churn		Differences in observed customer value		Differences in customer lifetime value	
	SSV	This study†	SSV	This study	SSV	This study†	SSV	This study†
Referral program	0.076***	−107.312***	−0.198***	−0.195**	49.157	−37,415.04***	39.906***	−58,440.54***
	(0.010)	(37.016)	(0.059)	(0.093)	(7.096)	(8203.48)	(7.512)	(22,273.380)
Age	0.003***	6.234***	0.011**	0.005	1.879	1552.239***	1.626***	4354.45***
	(0.000)	(2.118)	(0.002)	(0.005)	(0.283)	(469.447)	(0.285)	(1274.603)
Female	−0.009	−158.015***	−0.034	0.003	−4.459	−37.678.21***	−3.376	−104,249.90***
	(0.010)	(36.972)	(0.056)	(0.089)	(6.902)	(8193.791)	(6.958)	(22,247.080)
January 2011	0.172***	−642.605***	−1.828**	−0.658**	228.228	−6333.752	247.960***	−206,451.60***
	(0.039)	(103.176)	(0.201)	(0.262)	(31.589)	(22,882.62)	(31.666)	(62,128.920)
February 2011	0.063*	−536.241***	−1.365**	−0.525*	127.706	19,061.96	133.591***	−120,072.70*
	(0.031)	(114.452)	(0.160)	(0.295)	(24.172)	(25,383.46)	(24.411)	(68,919.000)
March 2011	0.089**	−488.967***	−1.155**	−0.121	136.393	23,993.01	135.755***	−101,667.20*
	(0.026)	(86.162)	(0.126)	(0.228)	(19.103)	(19,109.35)	(19.280)	(51,884.070)
April 2011	0.084**	−424.764***	−1.215**	−0.219	124.793	32,793.69*	123.153***	−68,925.72
	(0.027)	(86.747)	(0.140)	(0.239)	(18.753)	(19,239.14)	(18.895)	(52,236.460)
May 2011	0.082**	−325.015***	−1.529**	0.035	114.302	56,857.02***	119.426***	−35,642.64
	(0.025)	(78.692)	(0.150)	(0.213)	(16.791)	(17,452.53)	(16.909)	(47,385.610)
June 2011	0.066**	−420.713***	−1.016**	0.013	91.090	6,928.355	92.643***	−110,136.64**
	(0.022)	(80.538)	(0.122)	(0.226)	(14.326)	(17.861.99)	(14.475)	(48,497.330)
July 2011	0.062**	−276.847***	−1.026**	0.131	79.574	25,043.17	84.200***	−49,354.93
	(0.021)	(83.751)	(0.122)	(0.225)	(12.717)	(18,574,52)	(12.839)	(50,431.950)
August 2011	0.059**	−240.953***	−0.841**	0.016	69.213	17,969.54	73.167***	−29,331.02
	(0.020)	(77.335)	(0.119)	(0.223)	(12.111)	(17,136.13)	(12.233)	(46,526.550)
September 2011	0.077**	−305.006***	−0.679**	0.225	72.213	−7,909.078	76.352***	−94,106.96*
	(0.022)	(84.981)	(0.126)	(0.232)	(13.199)	(18,819.02)	(13.335)	(51,095.780)
October 2011	0.037	−385.503***	−0.434**	0.455**	36.602	−32,379.57*	39.391***	−166,569.50***
	(0.020)	(82.813)	(0.108)	(0.219)	(11.133)	(18,366.55)	(11.257)	(49,867.270)
November 2011	0.021	−284.172***	−0.217*	0.484**	19.252	−29,714.85	20.551	−124,388.50**
	(0.019)	(82.616)	(0.105)	(0.222)	(10.497)	(18,298.73)	(10.632)	(49,683.140)
Intercept	0.154***	991.118***			66.250	140,972.3***	120.949***	466,331.80***
	(0.040)	(92.224)			(26.742)	(20,439.3)	(26.937)	(55,495.020)
Observations	9,495	2,367	9,495	2,369	9,495	2,370	9,495	2,370
R^2	0.025	0.036	—	—	0.040	0.032	0.040	0.020
Log-likelihood	—	—	−11,715.6	−3,501.1	—	—	—	—

* $p < 0.1$.
** $p < 0.05$.
*** $p < 0.01$.
† Values in Chilean Pesos (1 Euro = 753 CLP). Standard errors in parentheses. The table only reports the results for the variables that are identical. The original models contained the additional variables "single," "married," "divorced," and "widowed." For interpretation of the monthly values, note that the focal banks are located in different hemispheres.

influence the results.[3] Consequently, we deleted 140 referred and 220 non-referred customers. To replicate the analysis of the churn behavior of referred versus non-referred customers, we estimate a Cox proportional hazard model. The results in Table 2 indicate that customers acquired through rewarded referrals indeed show a lower risk of customer churn (−0.195; $p < 0.01$). In line with SSV, this finding demonstrates that referred customers are more loyal.

Furthermore, we followed SSV's approach and calculated two measures of customer value in addition to the daily contribution. While the observed customer value shows the present value of all contribution margins during the observation period, the customer lifetime value (CLV) captures the present value of the observed and predicted contribution margins (see SSV, p. 49–50, for details). The regression models show interesting results: whereas SSV found an overall positive impact,

[3] DFBETA statistics are the scaled measures of the change in each parameter estimate. Large values of DFBETA indicate observations that are influential in estimating a given parameter. Belsley, Kuh, and Welsch (1980) recommend 2/sqrt(n) as a cutoff value.