



ROLE OF COSTLY SIGNALS IN BOP MARKETS

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ABSTRACT

Bottom of the Pyramid (BOP) markets cater to the needs of over 4 billion impoverished people in developing and low-income countries (Prahalad, 2006 & Sheth, 2011). In these markets, Adverse Selection (Rao and Mahi, 2003 & Heide, 2003) – a type of Information asymmetry - is one of the biggest market inefficiencies (Prahalad, 2006, Akerlof, 1970 & Heide, 2003). To resolve adverse selection, the buyer can only infer the true quality from signals – extrinsic cues that carry information (Kirmani and Rao, 2000) and create a separating equilibrium between low and high quality sellers (Spence, 1973) – that are provided by the sellers.

To eliminate adverse selection, institutions - such as product guarantees and brand names - are present in developed economies that ensure buyers of some expected utility and shift risk towards sellers. However, such institutions are extremely rare in BOP markets (London and Hart, 2004). Yet, despite the prevalence of information asymmetry (Prahalad, 2006), low-confidence in product quality (Karnani, 2007) and absence of institutions to reduce information asymmetry Akerlof (1970), BOP markets do not seem to fail - contrary to what Akerlof (1970) suggested. This raises a number of questions. Most importantly, are signals in use in the BOP markets that reduce information asymmetry? Are these signals different from those used in the developed economies?

Using results from a field study in a Pakistani cattle market, data on 1,073 purchases was recorded over 10 trading sessions over 10 weeks through dyadic level surveys of both the buyers and sellers after they made a purchase. Using these results, we will empirically analyze the role

of signals in achieving two of the most important seller outcomes (Akerlof, 1970): (A) reducing perceived purchase risk for buyers and (B) increasing pay-offs for sellers.

The regression results in model 1 (Table 1) using robust standard errors show that for (A) the impact of signals in reducing purchase risk, (1) using auction method to state prices decreases purchase risk, (2) the more times the buyer and seller meet at the same shed/location over time, even if they meet sometimes at the same location (versus always or never), a decrease in purchase risk is observed, (3) visible investments in product care in the form of feeding large amounts of fodder to animals decreases purchase risk and (4) not sharing information on competitors' product quality increases the risk of purchase. (5) Contrary to our hypothesis, not offering LPGs decreases purchase risk. The results for (B) the impact of signals in increasing seller pay-offs (model 2, Table 1) show that (1) longer buyer-seller relationship duration and (2) increasing % of purchase price allowed to be repaid later (payments on credit) leads to an increase in price (i.e. higher pay-offs). All other hypotheses in the signalling framework are rejected

The results show that signals that generate social, time and short term financial costs for the seller reduce buyer purchase risk, while signals that create long term financial costs for the seller increase seller pay-offs.

Appendix

TABLE 1
Regression outputs (Robust errors)

Model 1	Model 2
# of obs. = 1,052	# of obs. = 1,054
F(29, 1022) = 24.33	F(24, 1029) = 28.92
Prob > F = 0.0000	Prob > F = 0.0000
R-squared = 0.1949	R-squared = 0.4020
Root MSE = .66436	Root MSE = 33782
DV= Confidence in seller	DV= Price of animal

Independent Variables:

	Coefficient	(p value)	Coefficient	(p value)
Telling price through auction method	.27	(0.000)		
Middle location of cattle market			17358	(0.000)
# of times buyer came to market in last 4 weeks x # of times buyer met seller at same location in last 4 weeks	.04	(0.045)		
years of buyer-seller relationship			425	(0.036)
Buyer meets seller in same shed/location sometimes	.297	(0.000)		
Seller did not give information on other sellers quality at time of meeting buyer	-.21	(0.000)		
No low-price guarantee offered	.21	(0.001)		
Seller feeding medium amount of fodder to animals	-.245	(0.001)		
Seller feeding large amount of fodder to animals	-.315	(0.001)		
# of animals with calves attached	-.05	(0.000)		
% of purchase price to be repaid later			163	(0.043)
weight of animal in kilos			107	(0.000)
milk capacity of animal in litres	.02	(0.002)	4822	(0.000)
Price of animal	-0.00000148	(0.013)		
Buyer occupation: middleman	-.23	(0.013)		
Buyer occupation: trader and middleman	-.407	(0.000)		
Years buyer buying in market	-.016	(0.000)		
Vehicles: rented	-.149	(0.044)		
Don't keep record of business expenses	.26	(0.012)		

local pure cow breed	-0.13	(0.018)	-17765	(0.000)
foreign pure cow breed			-17637	(0.000)
local and foreign cross breed	0.185	(0.025)	-28554	(0.000)
local cross breed			-30187	(0.000)
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Constant	2.5	(0.000)		
Constant			71125	(0.000)

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