

# Vulnerability and Investment Behaviour in Senegal: the Role of the Extended Family

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# 1 Introduction

- Senegal: real growth 5% p.a. for last 14 years; fast growth in parts of manufacturing, services and construction.
- But Levy (2007) finds, for formal sector data, new firm creation rather than expansion of existing firms.
- To try to understand this, we formulate a simple model (formal or informal). Test on data for informal firms.

- Senegal informal sector dual structure:
  - (a) many units low VA, mostly no employees, low capital-intensity or in resale;
  - (b) make profit, hire employees, more capital-intensive; compete with formal firms.
- We are primarily concerned with (b) and with small formal firms.
- These firms rely on family – nuclear (NF) or extended (EF) - to finance investment.

- Hypothesis:
  - if lack of external finance and social protection
  - then investment by a (small) firm depends on entrepreneur's (*E*'s) family circumstances (poverty, vulnerability) as well as usual economic factors.
  
- Plan of Talk
  - Hypothesis
  - Empirical Analysis
  - Implications

## 2 Hypothesis

Given growing demand, why would  $E$  choose not to invest profits or other family funds in own firm?

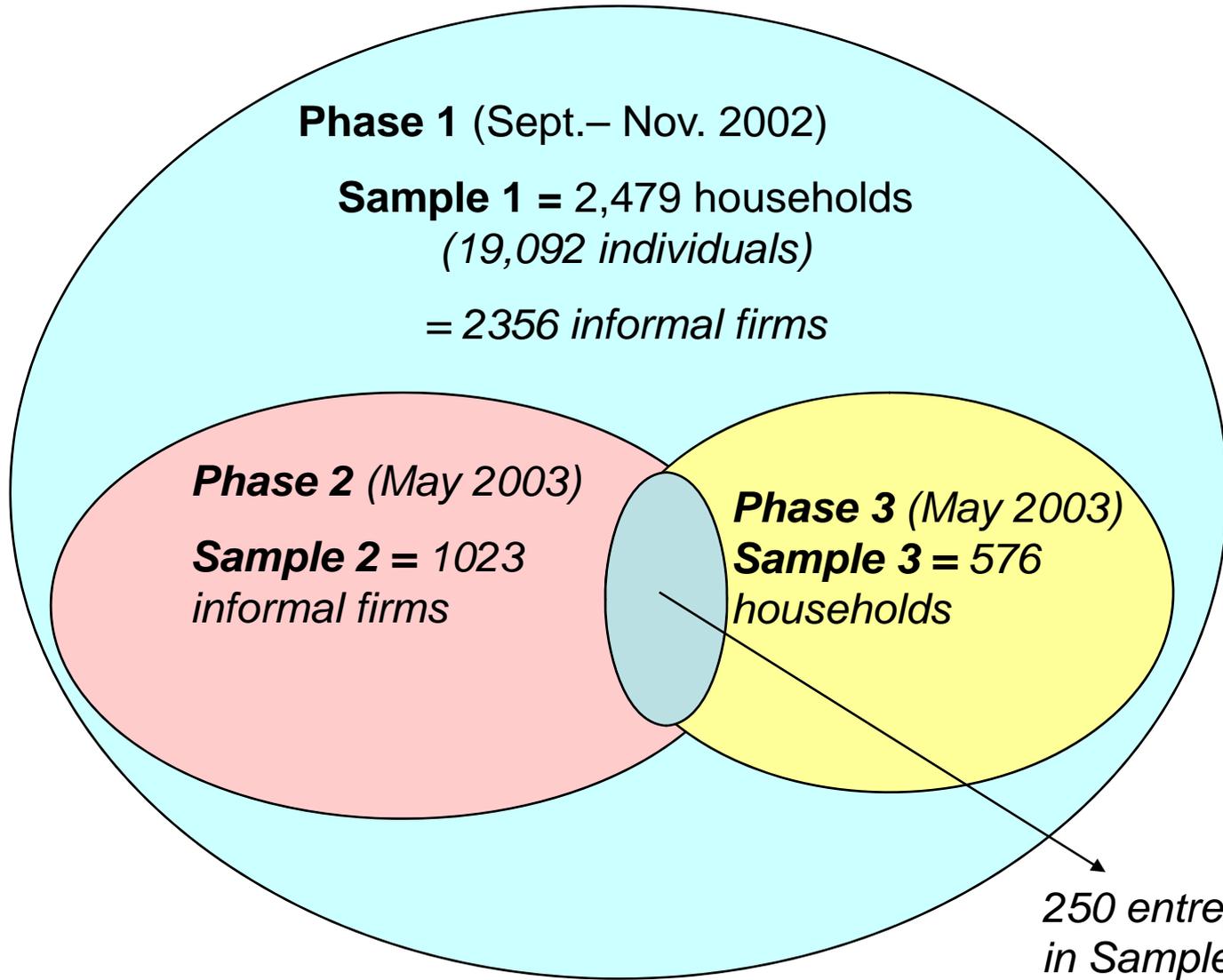
1. (a) If shocks compromise survival of family and no other source of funds available.  
(Likely, given high incidence of poverty; no social protection.)  
(b) General consumption needs of EF, which will ask for financial support from members (e.g., the  $E$ ) more likely to be able to pay.

2. Possibility of lending to member  $M$  of EF. Why do this rather than invest in own firm?
- (a) Diversifies  $E$ 's asset portfolio.
  - (b)  $M$  may therefore be willing to reciprocate in future if  $E$  (or  $E$ 's NF) has urgent needs then; may be generalized reciprocity.
  - (c) Indivisibility.  $M$ 's initial investment may be less lumpy than expansion of  $E$ 's business. As if less lumpy if other EF members share lending to  $M$ .  
Saving by  $E$  for larger investment problematic because of steady requests for help by EF
  - (d) Irreversibility/asset specificity may be less for loan to  $M$  to start business than expansion of  $E$ 's.

## 3 Empirical Analysis

Enquete 1-2-3: a three-phase survey on Senegalese households and their informal activities:

- **Phase 1**: Household composition, and characteristics of its members, including details about their livelihoods (Sample 1= total sample).
- **Phase 2**: Survey on Informal Firms chosen randomly from all informal firms owned by members of households in Phase 1: (accounting and financial operations + perception of markets and opportunities + business environment) (Sample 2).
- **Phase 3**: Households' expenditures (including consumption, gifts, spending on religious festivals and family-related events). Phase 3 survey covers a subset of Phase 1 households (Sample 3).



# Methodology:

- (I) Use Sample 3 to estimate the relationship between
  - family characteristics and
  - the probability of a (life-related) financial shock  
(= 'vulnerability,'  $V$ )(logit estimation).
  
- (II) Can use these estimates to assess the parameter  $V$  for each household in the total sample, Sample 1.  
Do this for the family of each of the  $E$ s in Sample 2.
  
- (III) Test whether the  $E$ s' investment behaviour is affected significantly by  $V$  and other family-related parameters:
  - a) decision to invest (logit estimation)
  - b) value of investment (OLS regression).

## (I) Likelihood of a financial shock

- From Phase 3 survey on HH expenditures:
  - Religious ceremonies: predictable, so spending deducted from available income
  - Family related events (weddings, funerals, birth ceremonies): treated as financial shocks
  - Gifts, transfers: not analysed empirically yet

## (II) Construction of Parameter $V$

- For each household in sample 1 we estimate, on the basis of their characteristics, a parameter  $V$ , reflecting their exposure to financial shocks.
- We know for each entrepreneur in Sample 2:
  - other sources of income in family, number of financially dependant family members, and  $V$ .
- Investment behaviour = decision to invest + value of investment.

### (III) Investment behaviour: decision to invest

- 35% of firms with positive net investment
- Logit estimation for decision to invest
- Two types of explanatory variables:
  - Profitability of investing
  - Family-related variables:  $V$  for exposure to financial shocks, other sources of income in family
- Results:
  - confirm hypothesis and model predictions: both significant
  - investment negative in  $V$
  - $V$  less influential for more profitable and larger firms
  - only positive effect of  $V$  is for entrepreneurs with no dependants

## Summary and Implications

- We analyse the determinants for investment by small firms in the context of a poor African country.
- Develop a simple model to explore how family-related events/circumstances affect the  $E$ 's decision to invest.
- Test empirically on data for Senegal.
- Results : investment behaviour depends on parameters related to family circumstances and vulnerability (as well as profitability).
- May help explain 'missing middle' in size distribution of firms.

- Consideration of poverty and vulnerability should be brought to foreground in analyzing firm behaviour.
- Vicious circle: poverty, vulnerability and a paucity of external finance limiting investment, resulting in low returns, and a continuing inability to break away from poverty and vulnerability.
- Policies such as social protection, aimed at reducing vulnerability, should be seen as complementary to policies such as support of microfinance, aimed at supporting investment.
  - Social protection can be seen as an additional catalyst for investment (maybe should allow for this in cost-benefit analysis of social protection measures).