



Introduction

The aim of this work is to investigate individual attitudes towards e-grocery services. By means of a web-based survey, the objective is to develop a provisional model that intercepts needs and expectations among consumers, providing information on real behaviours, and build an effective tool to evaluate demand of services and impact generated in urban areas.

Hypothesis and Methods

Decisions, in general, can be seen as a sum of upper-level dimensions that involve sub-choices, moreover strategies are also driven by unobservable variables (*latents*) typical for each individual. However, it's possible to define some common dimensions as **Selection, Access and Possession**.

Survey Layout

- Individuals Characteristics
- Current Behaviour (Revealed Preference)
- Three Steps Experiment (Stated Preference)
- Rating Conjoint task (5° grade Likert)

Observables Variables

- **Cart Composition** (VALUE, BULK and CASHBACK)
- **Accessibility** (VISITED STORES, ACCESS TIME and CONSTRAINTS)
- **Delivery/Collection** (LEAD TIME, SERVICE COSTS, and DELAY)

Latent Variables

- **Perceptions** (SAFETY; CONVENIENCE and TRUST)
- **Attitudes** (TIME and COST; INTERNET SERVICES)

STATED PREFERENCE:

- Current formulation is the result of a pilot study conducted on 40 people (both Italian and Spanish) about :
 - their current purchase scenarios
 - rating task (1-10) on attributes

- 3 different scenarios each
- Select Best Strategy among: Brick and Mortar; Multichannel and Online Shop
- Change or confirm decision valuing new variables

Standard DCM:

Using a MNL, data have been used to validate hypothesis. Coefficients signs result in line with expectation.

1st step: Cart Composition

Purchase attributes					
BRICK AND MORTAR	(shopping list includes fresh or chilled products)	(no. of bags)	100 % (brick and mortar)	120	5 %
PHYSICAL AND DIGITAL	YES	6	25 % (brick and mortar) 75 % (online store)	120	5 %
ONLINE SHOP			100 % (online store)	132	10 %

2nd step: Access and Constraints

(visited shops)	(all day open) (08:00-20:00)	(transport and access mode)		(hurry)
4	NO	car 15 min	foot ---	bus/metro ---
1		---	---	10 min YES

3rd step: Delivery/Collection

type	time	service charge (€)	(delay)
pick up point	waiting: 2 h collection: 10 min	free	---
home delivery	waiting: 1 h	free	YES

	STEP1					STEP2				STEP3		
	ASC_ B&M	Value (€)	BAGS	ASC_ MC	EG (%)	NR. STORES	PIE	CAR	HURRY	WAIT	C&C (€)	HD (€)
COEFF	-.585	-.341	-.184	-.2241	1.348	-.385	-.359	.068	.3718	-.0029	-.108	-.84
Std.Err	.1522	.0091	.1151	.1498	.4749	-.3742	.3502	.3633	.4553	.00045	.1287	.102
Z	-3.85	-3.74	-1.6	-1.5	2.84	-1.60	-.10	.19	.82	-2.63	-.83	-.82

Applications (on going...)

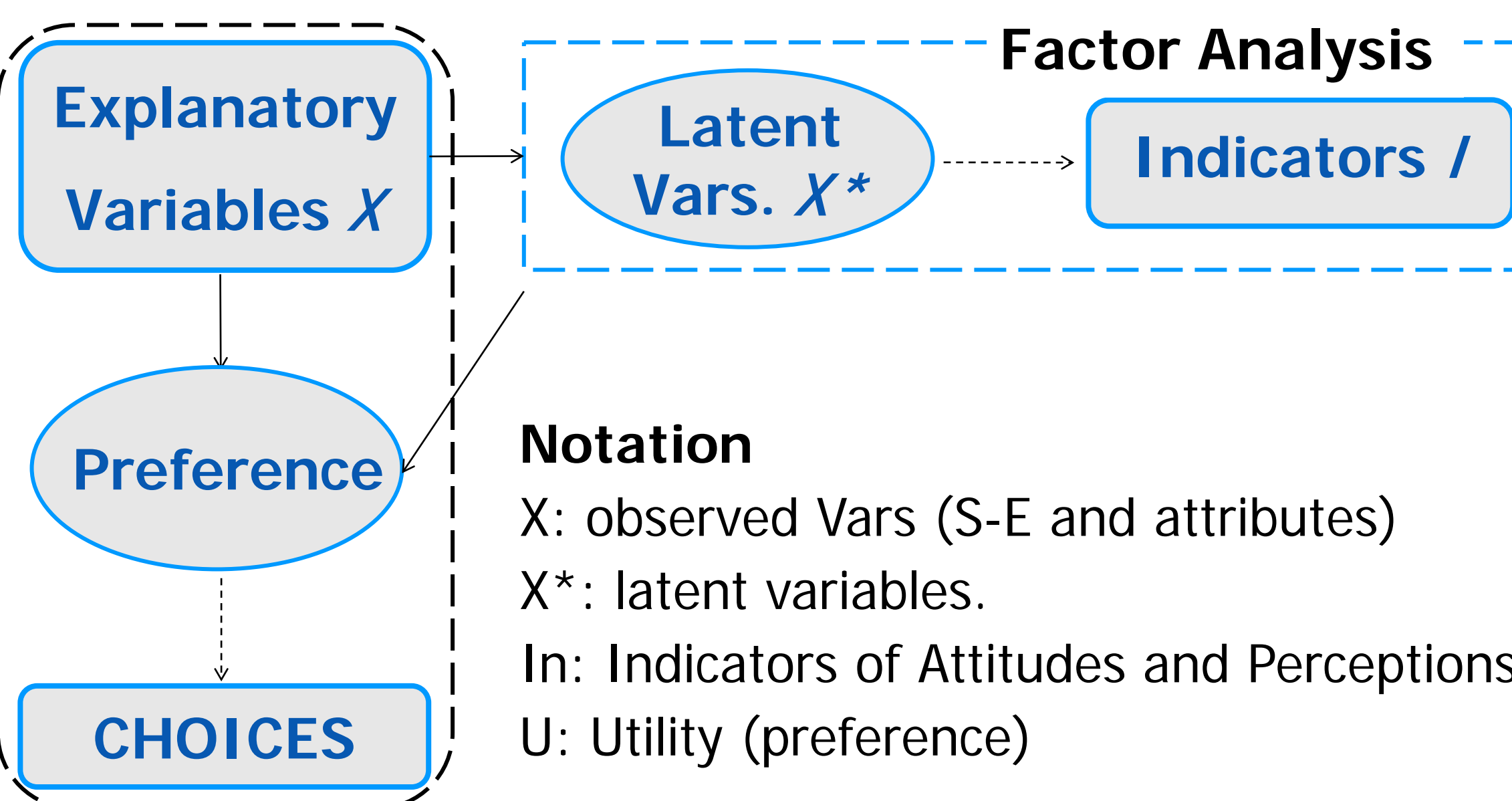
Since January the survey has been spread online using social networks; data collection is in progress. Available data has been used in a preliminary analysis on factors.

Info on Data

Sample:

- n ≈ 120 (IT 85%; 55% ♂)
- Class_{Age} = 25-44 (85%)
- Workers ≈ 75%
- Prev. E-grocery Exp. ≈ 57%
- Frequent Users ≈ 15%
- Hygiene and pet care
- Home Delivery

Framework



Preliminary Analysis

Before proceeding with a Explorative Factor Analysis and a PCA; variables have been tested.

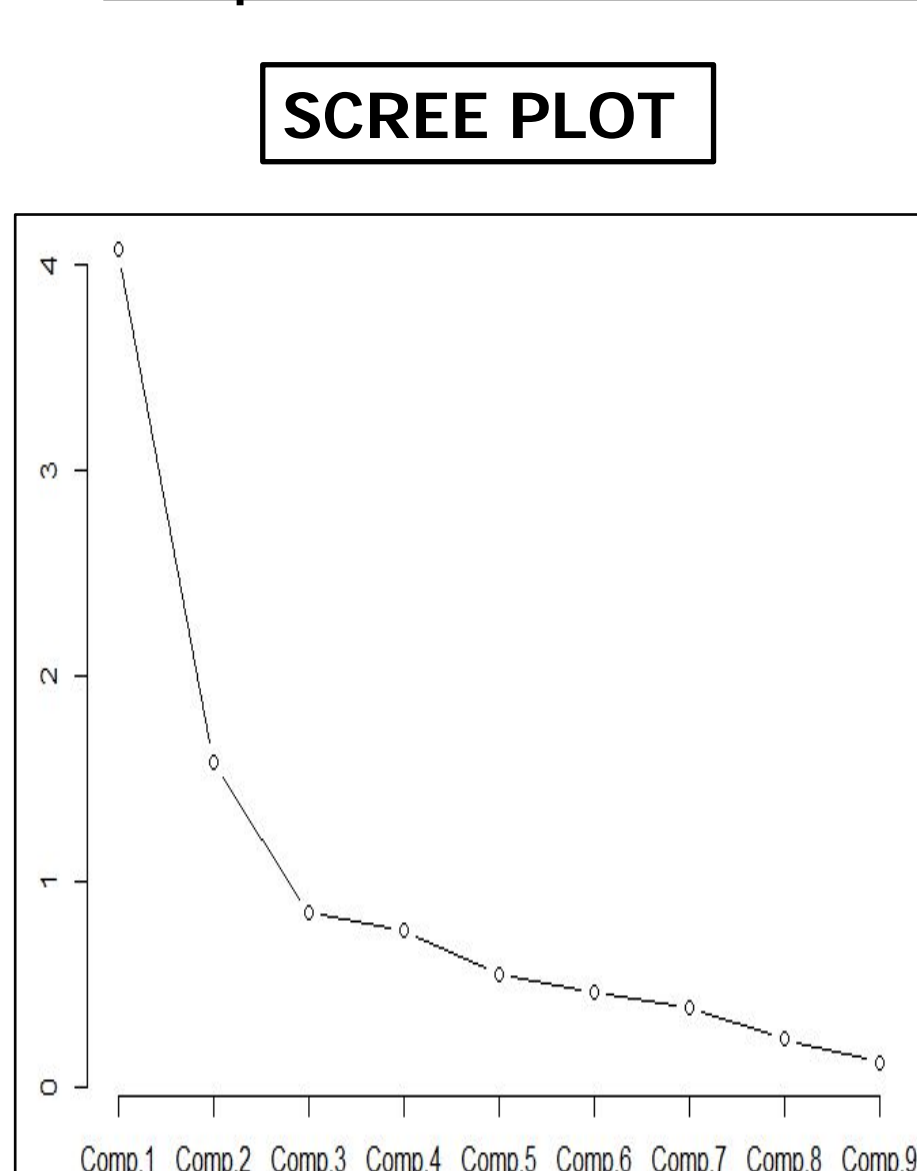
	SERVICES			INDIVIDUAL ATTITUDES		
	ONLINE	OFF	FPR	B&M	CONVENIENCE	DIGITAL ATT.
KMO	0.77	0.70	0.71	0.67	0.77	0.82
P-value	0.17*	0.09	0.01	0.03	0.011	0.17*
alpha	0.82	0.62	0.78	0.81	0.87	0.82

Factor Analysis

PARALLEL ANALYSIS			
ONLINE	3 FACTORS		
chi-sq	11.2	P-val	.51
RMSR	.04	RMSEA	.06
TLI	.98	---	---

ONLINE			
PCA	C_1	C_2	C_3
sdv	2.01	1.25	0.92
Var (%)	45	17	9

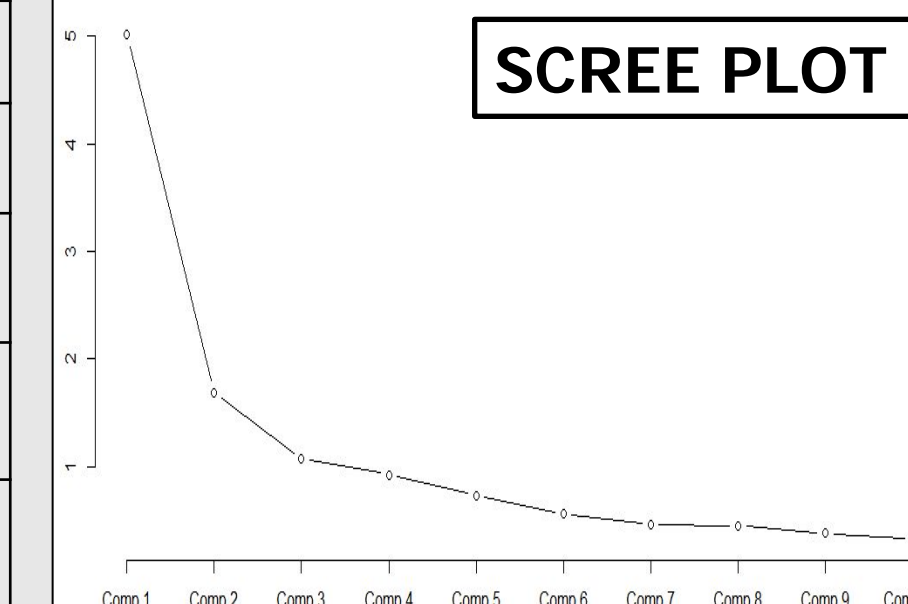
Outputs about Interest for Online Services



CFA output:
It has been possible to highlights three factors:

- Information
- User-friendly
- Warranty on prod.

PARALLEL ANALYSIS			
DIG_ATT	3 FACTORS		
chi-sq	34.4	P-val	.41
RMSR	.04	RMSEA	.05
TLI	.97	---	---



DIGITAL ATTITUDE			
PCA	C_1	C_2	C_3
sdv	2.24	1.30	1.03
Var (%)	42	14	9

PARALLEL ANALYSIS			
CONV_	3 FACTORS		
chi-sq	56.7	P-val	.06
RMSR	.05	RMSEA	.08
TLI	.91	---	---

Factors		
FC_1	FC_2	FC_3
Saving	Flexibility	Flex
Time	Possession	purchase

CONVENIENCE			
PCA	C_1	C_2	C_3
sdv	2.46	1.15	0.97
Var (%)	46	10	7

Evidence

- The simple use of Discrete Choice Model doesn't let us to explain choices;
- Agents with previous experiences prefer HD services;
- Free services meet consumers expectations.

Future developments

- Validation for Latent Variables and Class Model
- Use RP and attributes rating to validate a Mode Choice with Latent
- Specify an Hybrid model to measure effects of attitudes and market stimuli

