

Product availability insight as an omni channel strategy for retailers

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Where innovation starts



Background

Retail sector



- **Economic crises & online shopping**

➔ **decline in visitor numbers**

➔ **increase vacancy rates**



➔ **negative impact shopping centers' liveliness**



Background

Retail Research

→ **Methods and instruments to stimulate online purchases** (e.g., security & privacy warranties, short lead times, low shipping costs, product evaluation techniques)



Retail management

→ **attention off-line environment** (e.g., facility mix, social safety, accessibility, atmospherics, experiences)

? **Counterattack – increase off-line purchases**

Background

Channels should complement each other rather than compete

→ Coordination of channels



→ Increase customer service
→ provide customers with best of both worlds during their shopping process

Problem

Strategy?

Vacancy rates

Channel coordination

Strategy?

Vacancy rates

Channel coordination

Strategy?

Vacancy rates

Channel coordination



**Online product
availability insight**

Problem



Problem



Problem

A Web Page

http://www.jeans.com/

Back to overview

Jeans Blue

L

Advantage?

=

No product unavailability risk anymore

available
in store

Shopping cart icon

Research Question & Aim

Question:

How can an online product availability insight from offline stores affect omni channel consumers' shopping behavior such that offline commerce (number of visitors & sales) will be stimulated?

Aim:

- Provide information to retailers to improve their channel integration strategies**
- Provide urban managers with information how to attract more consumers to the shopping centers**

Factors influencing consumers' omni channel shopping behavior (Neslin et al., 2014)

- **Consumer characteristics** (e.g., Chocarro, et al, 2013; Konus, 2008; Heitz-Span, 2013)
- **Product characteristics** (e.g., Brynjolfsson et al, 2009; Thomas & Sullivan, 2005)
 - **Search and experience goods** (Nelson, 1970)
- **Situational factors** (e.g., Belk, 1975; Chocarro, et al, 2013; Verhoef & Langerak, 2001)
 - **Distance to store & time pressure**
- **Retailers' services** (e.g., Dabholkar et al, 1996; Brady & Cronin, 2001)

Stated Choice Experiment

- A technique for measuring individuals' preference and choice behavior for hypothetical alternatives
- Statistical experimental design
 - ➔ orthogonality between the attributes of an alternative

Stated Choice Experiment

Choice situation

Online purchase channel

- Delivery time
- Delivery appointment
- Delivery costs
- Retour effort

Offline purchase channel

- Travel time
- Friendliness of personnel
- Product availability insight
- Personalized service

No preference

- Product price



Stated Choice Experiment

Choice situation

Online purchase channel

- **Delivery time**
- Delivery appointment
- Delivery costs
- Retour effort

Offline purchase channel

- Travel time
- Friendliness of personnel
- Product availability insight
- Personalized service

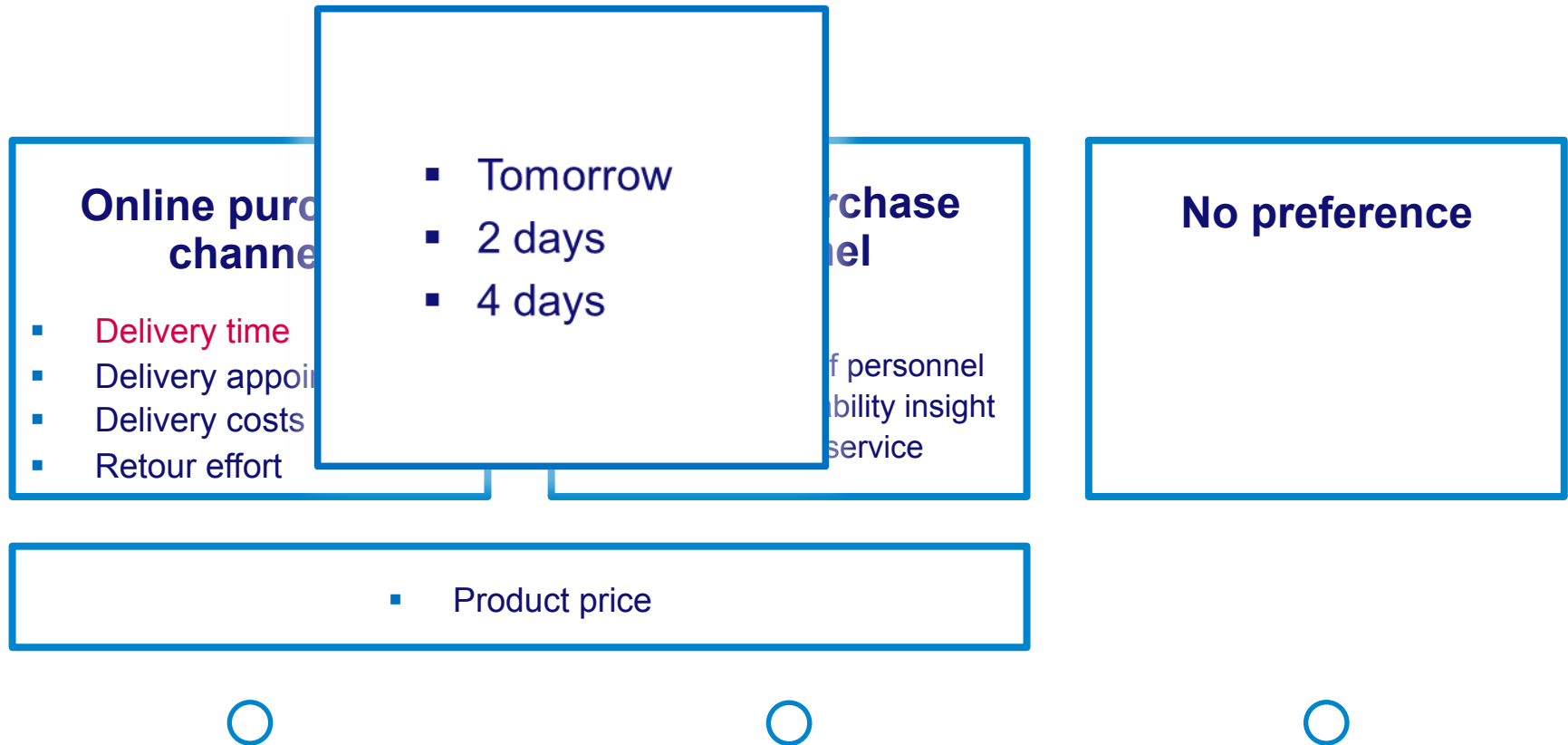
No preference

- Product price



Stated Choice Experiment

Choice situation

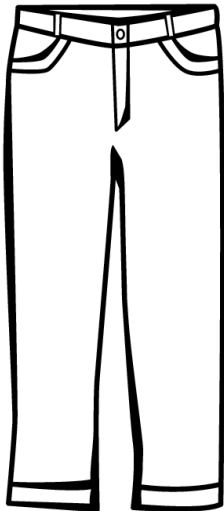


Stated Choice Experiment

Product categories

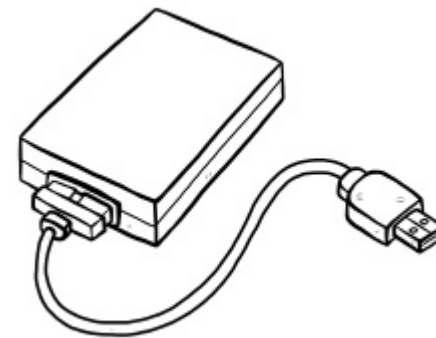
Apparel (jeans)

- Experience good
- High involvement



Electronics (external hard disk)

- Search good
- Low involvement good



Stated Choice Experiment

Which option do you prefer...,

Description of the situation

Web store		Physical store		No preference
Delivery time:	Tomorrow	Travel time:	15 min.	-
Delivery appointment:	Not possible	Friendliness personnel:	Normal	-
Delivery costs:	euro 5.00	Product availability:	5 products available	-
Retour effort:	Return point with retour costs	Personalized service:	Appointment possibility with stylist	-
Product price: 10% cheaper in web store				-

a) ... if you want to wear the jeans on Saturday night during a party (now it is Tuesday night 7 p.m.)?

Web store	Physical store	No preference
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

b) ... if you want to have the jeans because you are looking for such a jeans quite a while?

Web store	Physical store	No preference
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Data Collection

- **Web-based questionnaire**
- **end of November 2015, and January 2016**
- **680 respondents in total**
(18 choice situations per respondent:
9 jeans & 9 external hard disk
with & without time pressure
→ 22248 choice situations)

Additional Questions

- **Socio-demographics**
- **Psychographic characteristics**

(Konus et al, 2008)

- Innovativeness
- Loyalty
- Motivation to conform
- Shopping enjoyment
- Time pressure
- Price consciousness



Sample

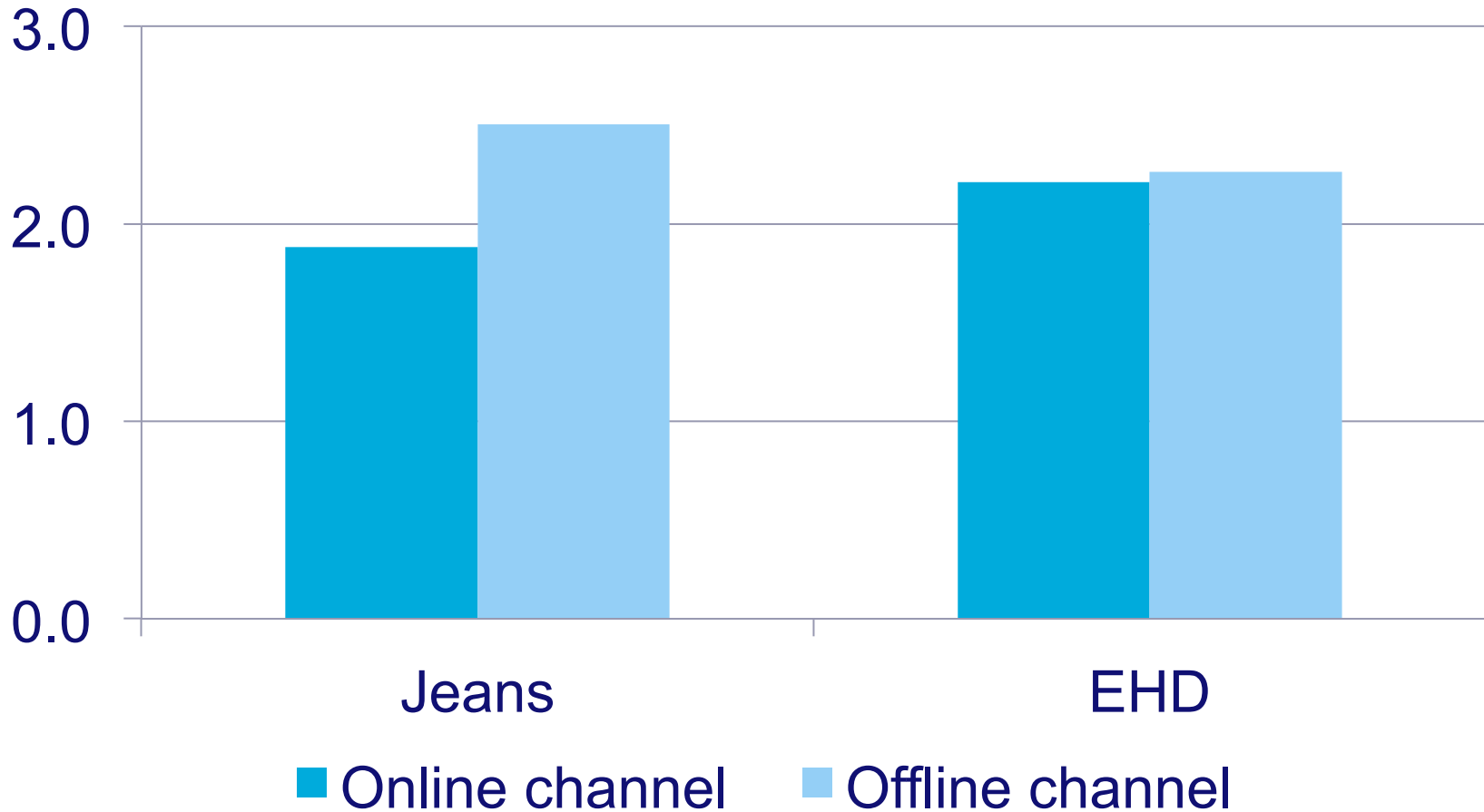
Demographics

Demographic variable	Category	Survey (N=618) %	Dutch population %
Gender	Males	48.7	50.2
	Females	51.3	49.8
Age	20 - 34 years old	33.8	30.5
	35 - 49 years old	35.8	33.7
	50 - 65 years old	30.4	35.8
Education	Low	14.6	22.8
	Middle	35.7	40.5
	High	49.7	36.7
Work	Full-time	55.0	38.1
	Part-time	24.9	31.0
	No job	20.1	30.9
Income	Low	22.3	21.7
	Average	39.4	34.4
	High	38.3	43.9
Household situation	Single	19.8	21.7
	Couple	27.0	34.4
	Household with children	53.2	43.9

- **Multinomial Logit model (MNL model)**
- **Latent class model (LC model)**
 - Look for clusters (or classes) of individuals with similar patterns of parameters

Results – MNL model

Purchase channels



Results – MNL model

Product availability

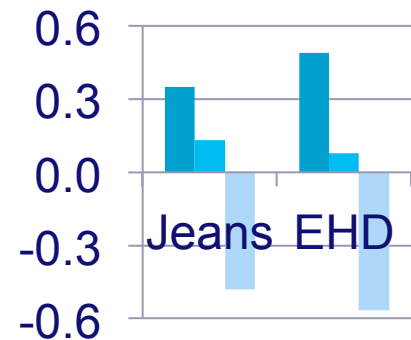


■ 5 products available ■ 1 product available
■ Unknown

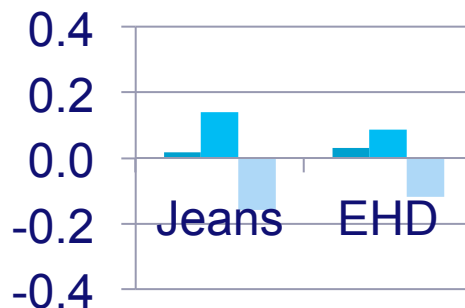
Results – MNL model

Online purchase channel

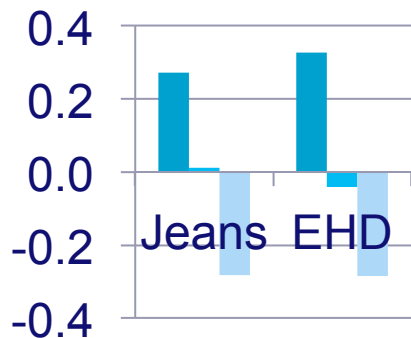
Delivery time



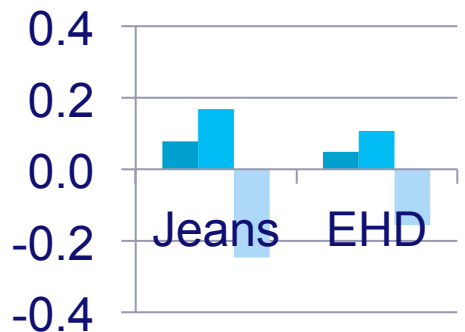
Delivery appointment



Delivery costs

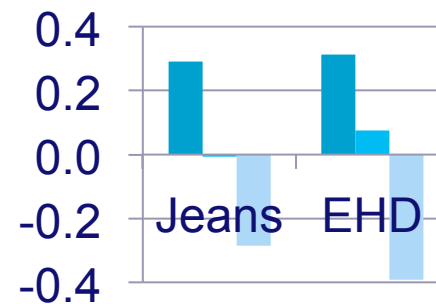


Retour effort

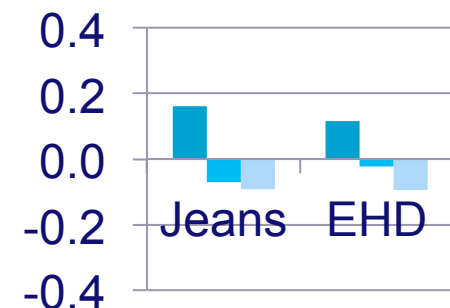


Offline purchase channel

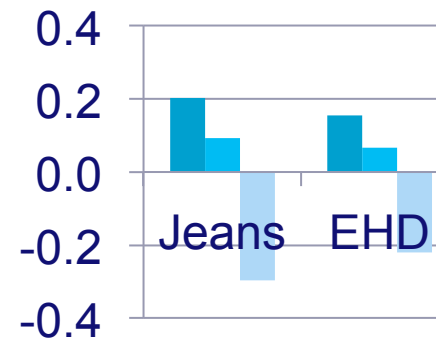
Travel time



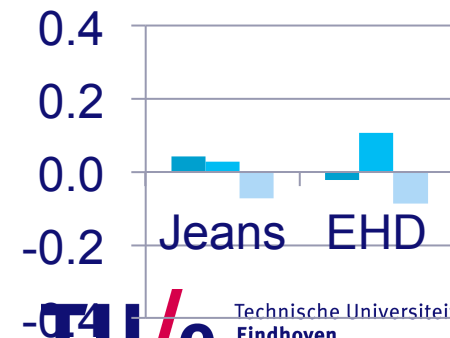
Product availability



Friendliness personnel



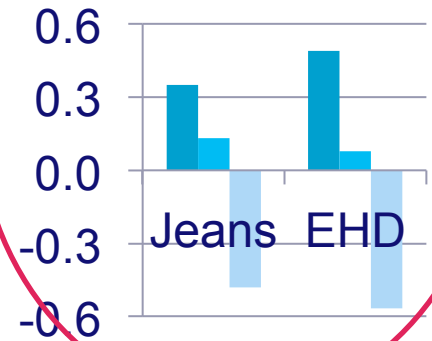
Personal attention



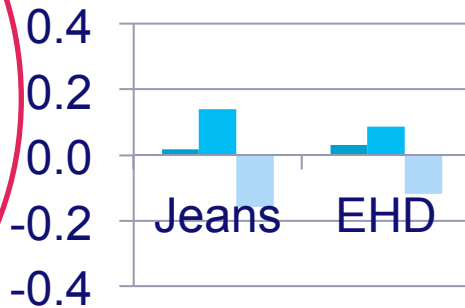
Results – MNL model

Online purchase channel

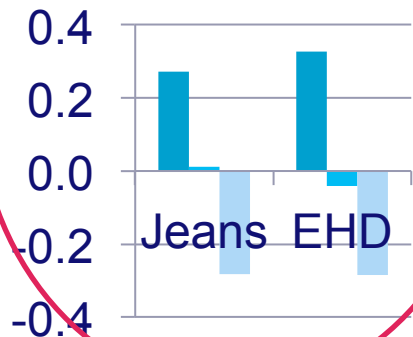
Delivery time



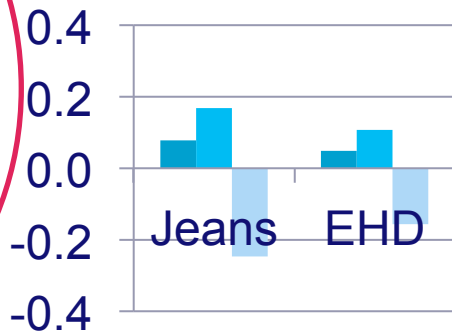
Delivery appointment



Delivery costs

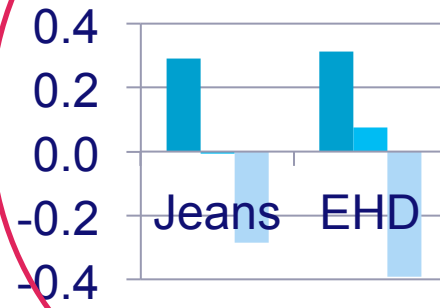


Retour effort

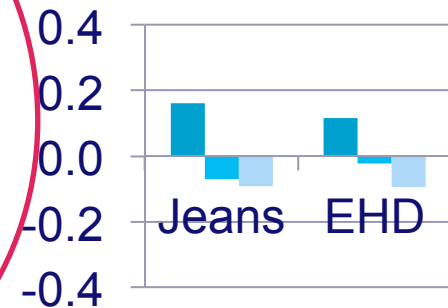


Offline purchase channel

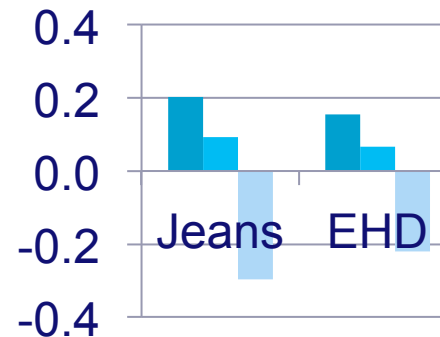
Travel time



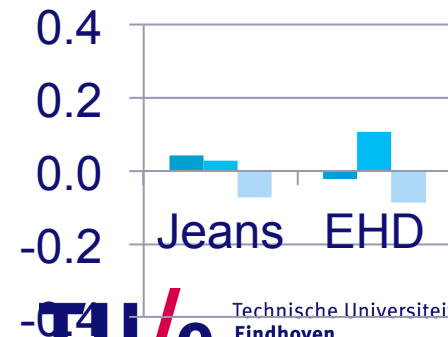
Product availability



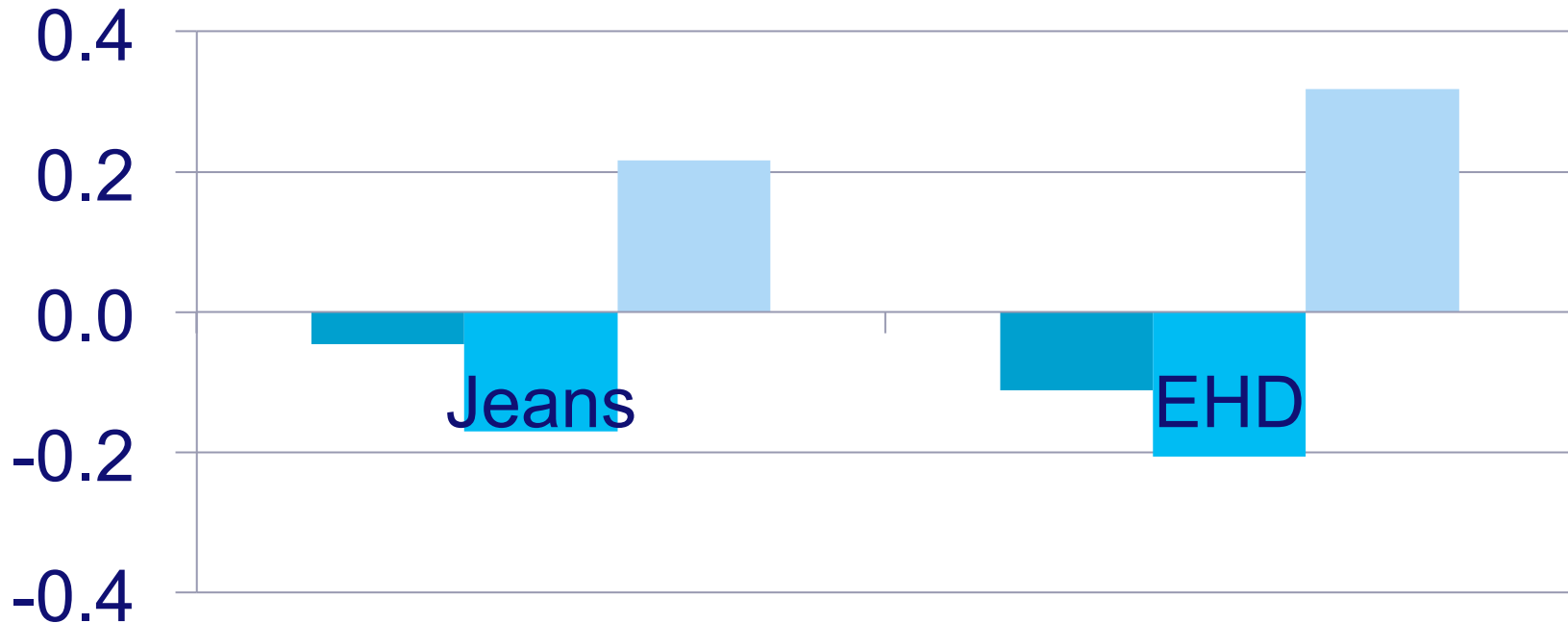
Friendliness personnel



Personal attention



Product price



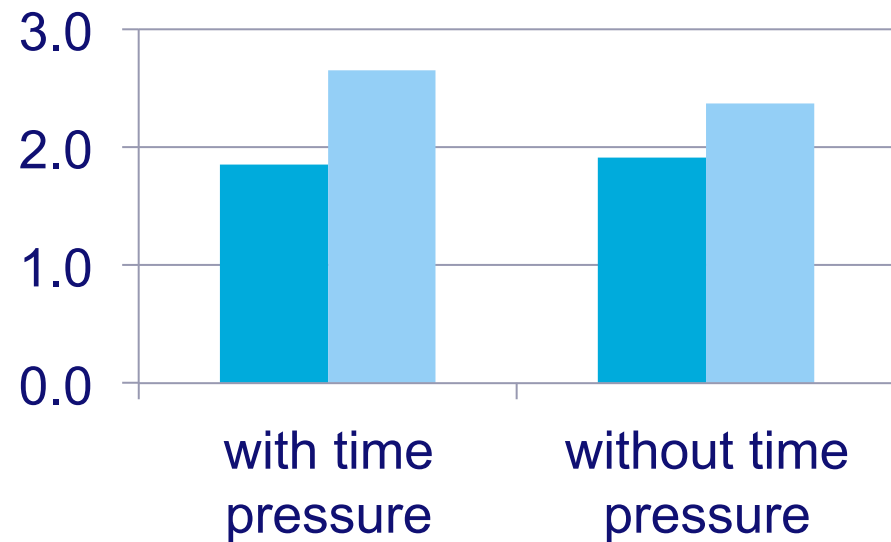
- No difference
- 10% cheaper in physical store
- 10% cheaper in web store

Results – MNL model

MNL model with & without time pressure

Jeans

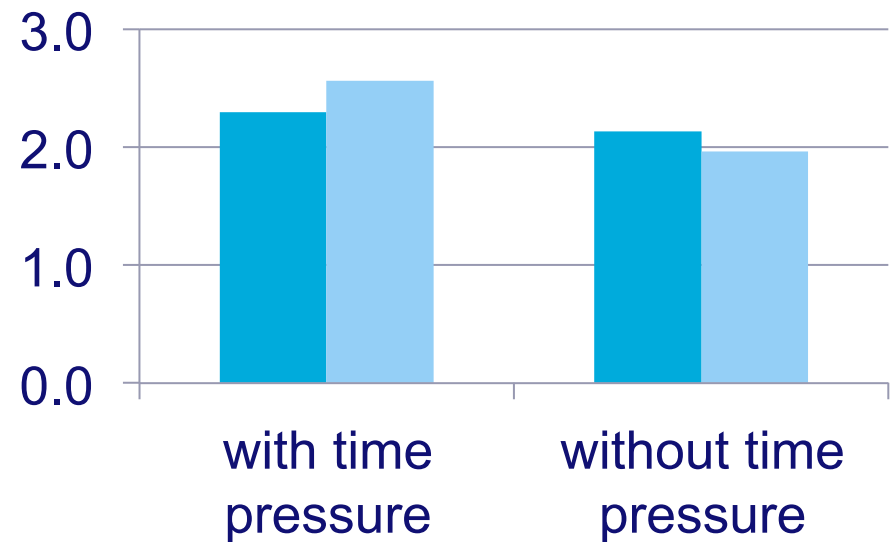
Purchase channels



■ Online channel ■ Offline channel

External hard disk

Purchase channels



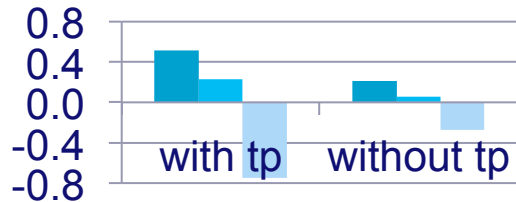
■ Online channel ■ Offline channel

Results – MNL model

MNL model with & without time pressure

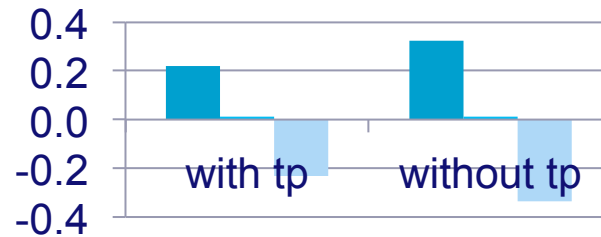
Jeans

Z Delivery time



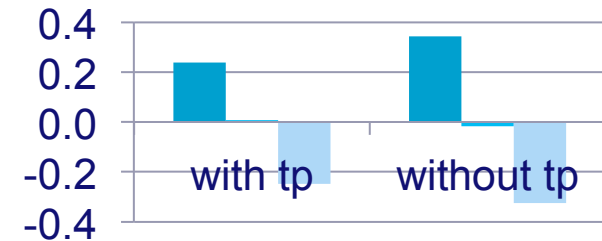
- Tomorrow
- 2 days
- 4 days

Z Delivery costs



- € 0.00
- € 2.50
- € 5.00

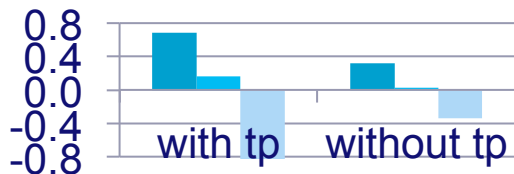
Z Travel time



- 5 min.
- 15 min.
- 25 min.

External hard disk

Z Delivery time



- Tomorrow
- 2 days
- 4 days

Results –LC model

Segments of the LC models:

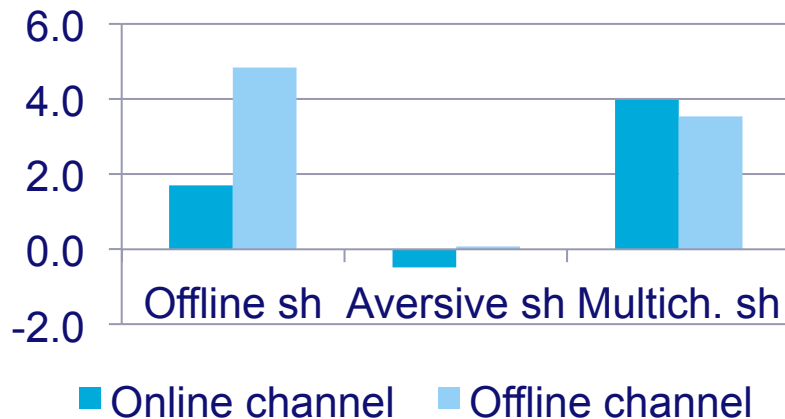
Jeans model

- Offline shoppers 40%
- Aversive shoppers 11%
- Multichannel shoppers 49%

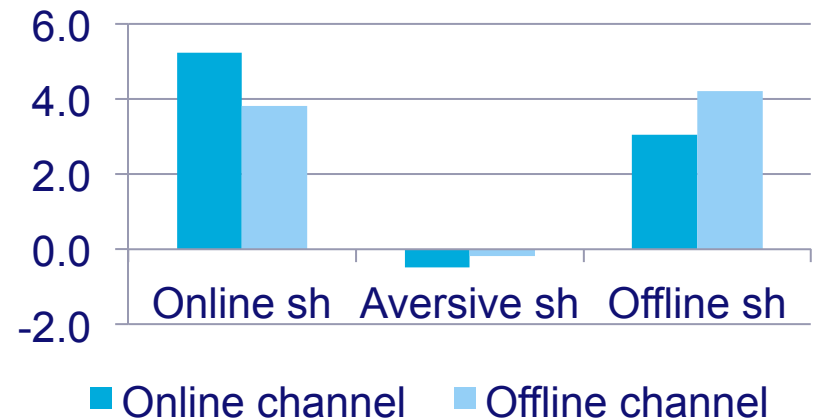
EHD model

- Online shoppers 40%
- Aversive shoppers 11%
- Offline shoppers 49%

Purchase channels



Purchase channel



Results –LC model

Jeans

Offline shoppers

- predominantly offline shoppers
- product availability would be effective
- price conscious
- many attributes are important
- more males than females
- slightly older

Aversive shoppers

- aversion against the online channel
- offline channel and 'no prefer.' are indifferent
- product availability would be effective
- mostly logical, low utility patterns
- personal friendliness is very important
- feel least pressured in time
- more females than males
- mostly middle aged

Multichannel shoppers

- equally prefer channels
- product availability would be effective
- feel most pressured in time
- overrepresented by females
- mostly younger

Results –LC model

External hard disk

Online shoppers

- prefer the online channel
- are price unconscious
- feel most pressured in time
- mostly highly educated
- mostly a full time job
- mostly high incomes

Aversive shoppers

- aversion against the online channel
- offline ch. and 'no prefer.' are indifferent
- **product availability wouldn't be effective**
- mostly logical, low utility patterns
- feel least pressured in time
- mostly middle educated
- many with no job
- many with low income, most average
- least innovative

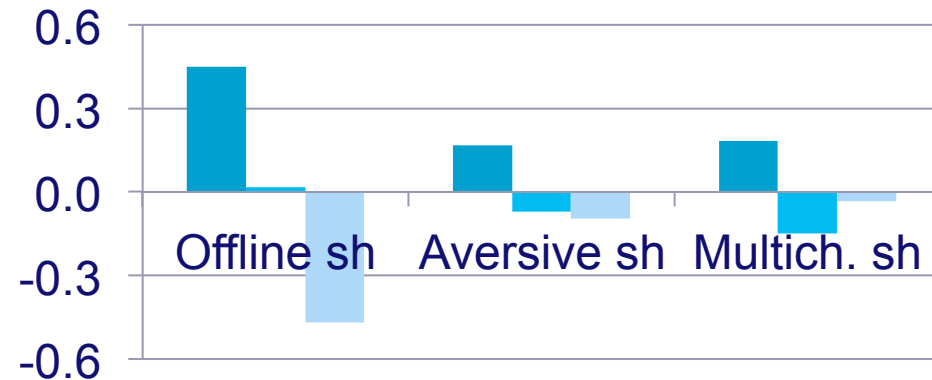
Offline shoppers

- prefer the offline channel
- **product availability would be effective**
- price conscious
- many attributes are important
- feel sometimes time pressured
- mostly high educated
- mostly a full time job
- not quite innovative

Results –LC model

Jeans

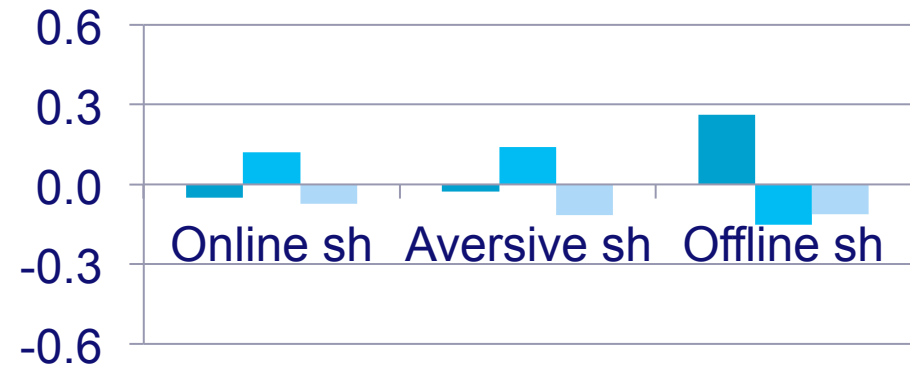
Product availability



- 5 products available
- 1 product available
- Unknown

External hard disk

Product availability



- 5 products available
- 1 product available
- Unknown

Stimulations for online commerce

Offline shoppers

- Offer free and fast delivery
- Product price discounts

Aversive shoppers

- Offer free delivery
- Provide a 'return product for free at a return point' retour possibility (*in case of apparel*)
- Provide an 'any desired part of day' delivery appointment possibility (*in case of simple electronics*)

Multichannel & online shoppers

- Provide different kind of services:
 - 'Any desired part of day' delivery appointment possibility
 - 'Return product for free at a return point' retour possibility

Managerial Implications

Stimulations for offline commerce

Offline shoppers

- Implement an online product availability insight
- Be physically close to them
- Supply stores with friendly personnel

Aversive shoppers

- Implement an online product availability insight (*only in case of apparel*)
- Supply stores with friendly personnel (*in case of apparel*)

Multichannel & online shoppers

- Implement an online product availability insight (*only in case of apparel*)
- Be physically close to them
- Provide appointment possibility with stylist (*in case of apparel*)
- Supply stores with qualified personnel that can give advice (*in case of simple electronics*)

Conclusion

- An **online product availability** insight would be an effective functionality for funneling consumers to the offline channel
- Especially when it concerns:
 - high involvement experience goods
 - consumers who shop both online and offline but prefer to shop offline