

Good afternoon, the paper I am presenting is entitled  
"Omnichannel Behavior: Definitions and Covariables" and has  
been written with my colleagues at the Public University of  
Navarre

Raquel Chocarro and Margarita Elorz.

It is still a work in progress, so any suggestions are welcome.



# Omnichannel Behaviour: Definitions and Covariables

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First, I am going to describe the motivation for this paper

# 1. Motivation

Nowadays we observed a full development of online channels, with nearly full penetration in companies (in the European Union approximately 80% of companies are selling their products online) and consumers are using a great variety of devices to access these channels any time in any place. For example, in Spain 43% of consumers have make an online purchase in the last 3 months and 90% have used a mobile phone to access to Internet

## Full development of online channels

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- Nearly full penetration of online channels in **companies**
- **Consumers** use a variety of tools in order to access these channels any time in any place



In this context the rise of the so-called "omni-channel promotion and distribution" is a top research priority both for the academia and for the industry.

## In this context: Omni-channel Research Top Priority

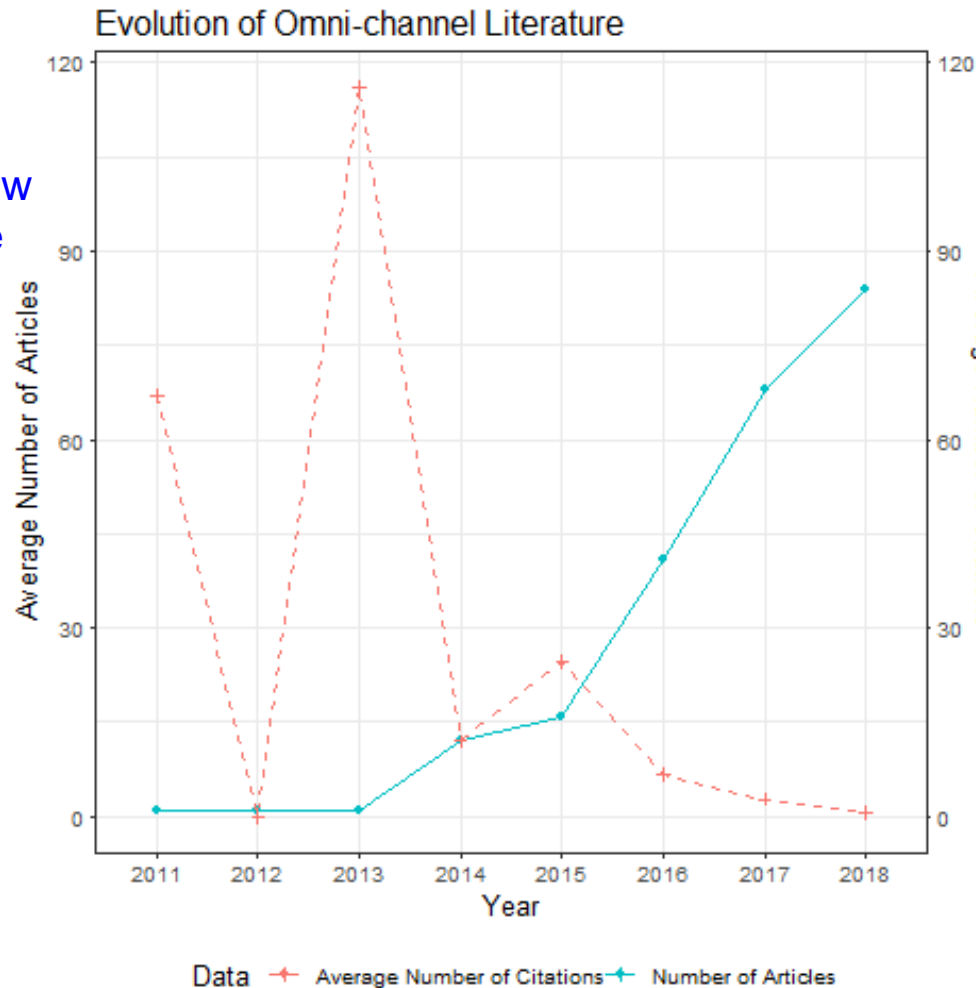


For example, as the image shows, is one of the top-five research priorities for the period 2018-2020 for the Marketing Science Institute

*Image Credit: Marketing Science Institute (2018), "Research Priorities 2018-2020" Cambridge, Mass.*

# Outburst in the use of the term "OMNICHANNEL": ISI search results

2011: Rigby, Harvard  
Business Review  
2013: Brynjolfson.  
MIT Sloan  
Management Review  
2015: Special Issue  
Journal of Retailing



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If we ask what exactly does omnichannel means, we find a consensus about the term omni-channel management, from the point of view of the firm, that according to Verhoef kannan and Inman in the Journal of retailing can be defined as the synergetic management of the numerous available channels and customers touchpoints, in such a way that the customer experience across channels and the performance over channels is optimized.

## But, what exactly does "omnichannel" mean?

### Omni-channel **management**

- The synergetic management of the numerous available channels and customer touchpoints, in such a way that the customer experience across channels and the performance over channels is optimized

- Verhoef, Kannan, Inman, 2015

However, we find a lower consensus level if we ask about what does omnichannel behavior (from the point of view of the consumer) means. We can distinguish two main different streams on the literature.

## What does omnichannel behavior mean? (Ailawadi and Farris, 2017):

### "Channel mix approach":

Combination and choices between channels of the same provider

e.g. Pauwels et al, 2011, Herhausen et al 2015, Fornari et al 2016, Kim and Chun, 2018

### "Customer journey approach"

Different stages in the same purchase process (possibly different providers)

e.g. Rapp et al, 2015, Gensler, Neslin and Verhoef, 2017, Kang, 2018, Park and Kim, 2018

the other one is what we call the "customer journey approach" in which the focus is the purchasing process of one product or services and its different stages. In this literature we find terms like "web rooming or showrooming"

However, there are still unsolved questions when we focus on analyzing the customer base of a retailer: mainly  
Are all customers omnichannel customers? How could we distinguish one purchase process from another? And the second one: how do these customers use the company's channels and services? Are there any differences between customers according to their omnichannel behavior

## One retailer and its customer base: Unsolved questions

- All customers are equally "omnichannel"?, how to distinguish one purchase process from another?
- **O1. Can we provide unambiguous rules for the classification?**
- How do they use company's channels and services? Are there any differences between customers according to their omnichannel behavior?
- **O2. Can we provide a sensible segmentation?**

In this paper, we try to address these unsolved questions by providing rules for classification and secondly by segmenting the customer base according to this behavior.



So, let's present our conceptual framework

## 2. Conceptual framework

We put the focus on one company studying its customers. It could be a retailer or a manufacturer with its own distribution channels. We take a dyadic perspective "customer-firm". We also focus in the particular case of two channels: brick and mortar and online, which is also frequent in the literature.

## Focus: One company studying its customers (manufacturer or retailer) with two channels






- Dyadic perspective customer-firm
- Two channels: brick and mortar and online

e.g. Brynjolfsson and Hu, 2011, Chopra, 2016, Bell, Gallino and Moreno, 2018...

# Distribution services

- Core concept for the understanding of the omni-channel behavior
- The provision of **distribution services** (DS) is the core function of distribution channels:

Categorization:

-  accessibility to the product
-  information
-  breadth and depth of assortment
-  assurance of product delivery in time and form
-  ambiance

(Kopalle and Lehman, 2006, Betancourt et al 2007)

We rely on the concept of distribution services as the core concept for understanding the omnichannel behavior of the firm customers.

The provision of distribution services is the core function of distribution channels. These distribution services are produced by retailers in order to facilitate the purchase process of the consumers.

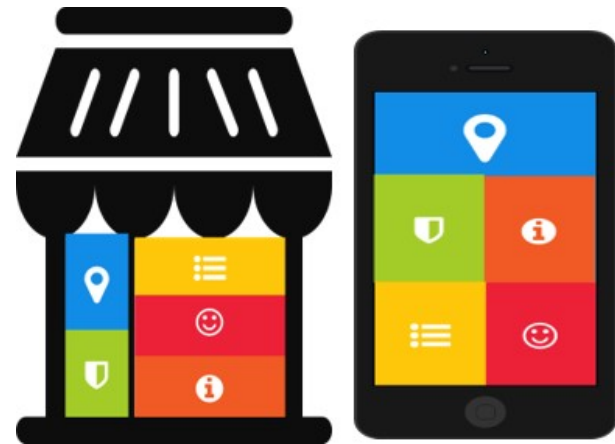
Distribution services can be categorized in five different categories: accessibility to the product, information, assortment, including breadth and depth, assurance of product delivery in the desired time and form and ambiance

The concept of distribution services can be applied to explain strategies of channel mix, also known as multichannel strategies as the simultaneous offer of different channels allows the company to attend different demands of distribution services for different customers and/or situations.

## Channel mix and Distribution Services (I)

- The combination of both channels allows the company to attend **different demands of DS** for different customers or different situations
- Both channels offer different combinations of distribution services more suitable for some customers and/or situations
- "Channel-mix perspective"

This perspective is the approach in the papers that we call "the channel-mix perspective"



The online channel and the physical channel offer a different combination of distribution services so some customers may find each channel more suitable to fill their needs. For example, some customers may feel more attracted by the assurance of product delivery at the store, while others may prefer the convenience of the online store.

But, the provision of distribution services has suffered a fundamental change due to the capabilities of Information Technologies, as IT has made possible the separation of the production, distribution and consumption of distribution services in time and space, creating for example, assortment at the web that a person consumes in other time and place

## Channel mix and Distribution Services (II)

- IT have brought a **BIG** change: the **separability** of DS in time and space (Betancourt et al 2016)
- Separability makes it possible for customers to **combine DS** from different company's channels
- The combination of both channels allows the company to attend **demands of combinations of DS** for some (or all) customers
- "Customer journey" perspective






















Is this separability which allows consumers to combine distribution services of different channels in the same purchase process

And so, the combination of channels allows the company, not only to attend different demands of a combination of DS (at the store or the web) but also to create different combinations of DS through the combination of the channels.

This perspective includes as particular cases some of the phenomenon included in the customer journey perspective as the webrooming or the showrooming phenomena

For example, a customer that purchases at the company's retail store after getting information about the products in the company's web site is making full use of all the distribution services at the store and also uses the information and ambiance from the web. Also, when a customer purchases products at the company's web site and asks the product to be delivered to one retail store located close to her/his office, he or she uses all the distribution services from the web and also accessibility of location and ambiance at the store

## Examples

Examples	Store	Web
A customer purchases at the company's retail store after getting information about the products in the company's web site	    	 
A customer purchases products at the company's web site and asks the product to be delivered to one retail store located close to her/his office	 	    
A customer never purchases products online and never visits the company's website	    	—
...	...	...

In case a customer never purchases products online, he/she will only use the distribution services at the store.

With this perspective we could characterized other possible combinations of distribution services

In this setting, we define:

- A **customer**: Someone that has bought from one of the company's channel during a given period of analysis.
- A **user**: A company's customer that interacts with the company (use the DS provided by the company) through one channel during the period of analysis.

And so, we distinguish three types of customers: customer that only purchase and use one channel that we will call Type I: monochannel customers, customers that only purchase in one channel but use both channels, that we will call Type II: omnichannel users and finally, customers that make purchases and use both channels, that we will call omnichannel purchasers or Type III

We distinguish three types of customers in a certain period of time:

Purchase Channel	Service Channel	Type
● ○ Monochannel Customer	● ○ Monochannel User	Type I: Monochannel customer
● ○ Monochannel Customer	● ● Multichannel User	Type II: Omnichannel User
● ● Multichannel Customer	● ● Multichannel User	Type III: Omnichannel Purchaser



Now I will present our empirical application to check the applicability of our conceptual framework

## 3. Empirical Application

As I said before, the empirical application has two objectives, the identification of the segments in the multichannel operation of a company with two channels and the explanation of how customers self-select into these three segments according to their evaluation of distribution services, channel policies and personal characteristics.

# Objectives

- O1. Identification of the **segments** in the multichannel operation of a company with two channels (web and store)
- O2. Explanation of how customers self-select into these **three segments** according to evaluation of DS, channel policies and personal characteristics

We collect data of customers of a well-known global fast fashion retailer company  
We use an online panel to collect the data of customers that have bought a product from the company in the last 6 months, obtaining 450 valid responses.  
The questionnaire measure aspects of shopping behavior, evaluation of distribution services, channel policies, attitudes and consumer characteristics.









## Empirical setting

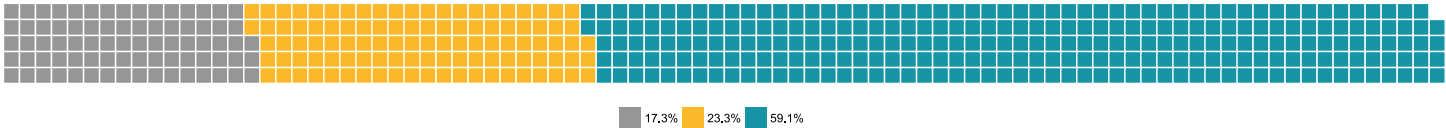
- **Population Definition:** Customers of a well-known global fast fashion retailer company
- **Online Panel Survey:** 450 valid responses from firms' customers in the last six months
- **Measures:**
  - (1) Shopping behavior
  - (2) Evaluation of DS at the store and at the web
  - (3) Channel policies
  - (4) General attitudes
  - (5) Consumer characteristics

Here we show the results of segmenting the sample according our criteria using visits to both channels in the last 12 months.

We find 78 customers that have visited only one of both channels (63 have visited only the store, and 15 have visited only the web site) This is our Type I segment. 106 customers have visited both channels but have bought only in one of them. This is Type II segment.

# Segmentation based on behavior (visits and purchases) in the last year: Results

Purchase Channel	Services	Type	Number		
		Type I: Monochannel Customers	78	63	15
		Type II: Omni-Channel Users	106	87	19
		Type III: Omni-Channel Purchasers	266		



Finally, the biggest segment is (nearly 60%) is that of customers that have visited and purchase in both channels. We don't think that this results may be applicable to any situation as this is a leading brand in Spain with a great market share and these are customers form an online channel but it is an illustration of the importance of the omnichannel phenomenum

Here we  
show  
descriptive  
statistics  
for the  
whole  
sample

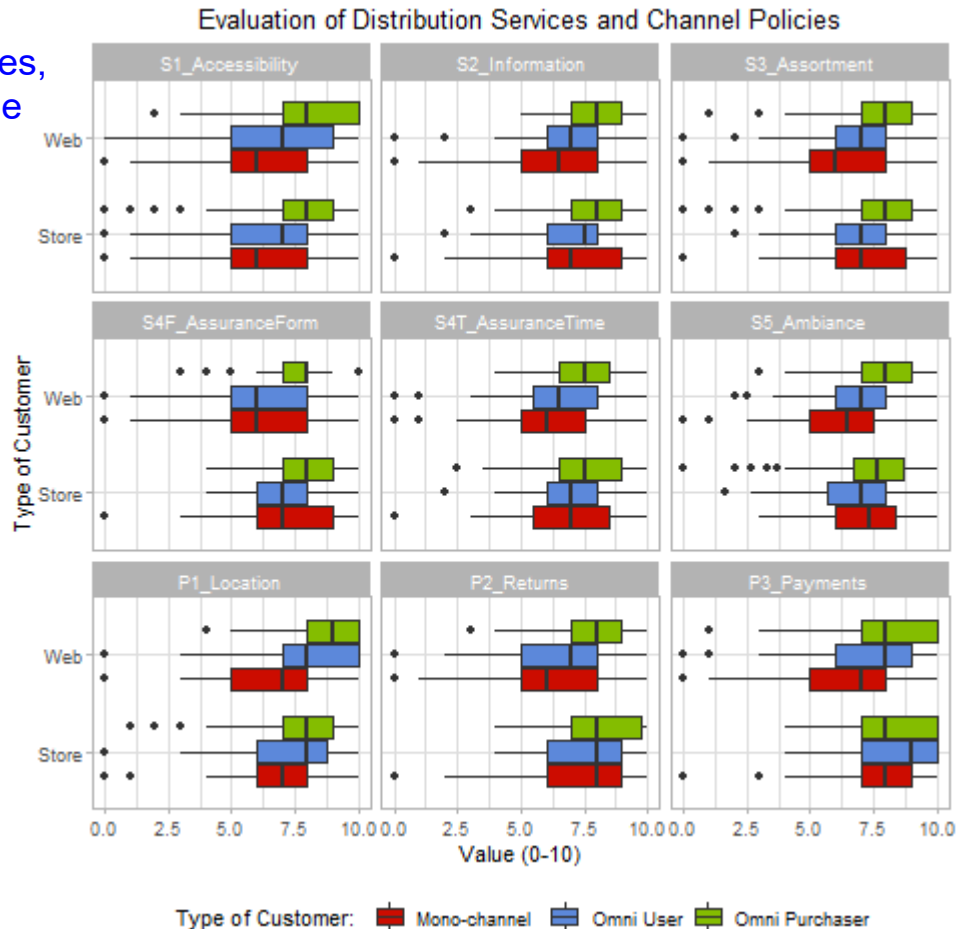
shortname	fullname	N	Min	Max	Mean	SD
S1_S	Convenience of location access point (S)	450	0	10.0	6.99	2.29
S1_W	Convenience of location access point (W)	450	0	10.0	7.50	2.15
S2_S	Amount of product information (S)	450	0	10.0	7.62	1.72
S2_W	Amount of product information (W)	450	0	10.0	7.39	1.82
S3_S	Available assortment at time of purchase (S)	450	0	10.0	7.41	1.74
S3_W	Available assortment at time of purchase (W)	450	0	10.0	7.23	1.96
S4F_S	Assurance of product delivery in the desired form (S)	450	0	10.0	7.60	1.58
S4F_W	Assurance of product delivery in the desired form (W)	450	0	10.0	7.02	1.93
S4T_S	Assurance of timely product delivery (S)	450	0	10.0	7.38	1.57
S4T_W	Assurance of timely product delivery (W)	450	0	10.0	7.02	1.84
S5_S	Shopping ambiance (S)	450	0	10.0	7.38	1.65
S5_W	Shopping ambiance (W)	450	0	10.0	7.37	1.76
P1_S	Ease of access according to location (S)	450	0	10.0	7.58	1.88
P1_W	Ease of access to the webpage (W)	450	0	10.0	8.12	1.91
P2_S	Compliance with product return policy (S)	450	0	10.0	7.78	1.75
P2_W	Compliance with product return policy (W)	450	0	10.0	7.19	2.18
P3_S	Compliance with accepted modes of payment (S)	450	0	10.0	8.16	1.66
P3_W	Compliance with accepted modes of payment (W)	450	0	10.0	7.64	2.11
P4_W	Confidence in online privacy and security policy (W)	450	0	10.0	7.38	1.93
P5	Price differential with respect to similar brands	450	0	10.0	6.21	1.74
P6_W	Transport cost differential with respect to similar brands	450	0	10.0	5.76	1.84
A1	Innovativeness (0;1)	450	0	1.0	0.39	0.49
A2	Importance reducing purchasing time	450	0	10.0	5.60	2.40
C1	Gender (Male) (0;1)	450	0	1.0	0.40	0.49
C2	Age	450	18	73.0	37.00	11.39
C3	Income (1 to 10)	450	1	10.0	3.86	2.19
C4	Distance to the store (minutes)	450	2	206.0	19.91	18.96
L1	Percentage of purchases	450	0	9.5	3.63	2.23
L2	Share Store	450	0	10.0	6.09	2.61
L3	Share online	450	0	10.0	4.81	3.11

Here we show the differences in the evaluation of distribution services and channel policies both for the web and the store in the three segments

## Differences between segments (I)

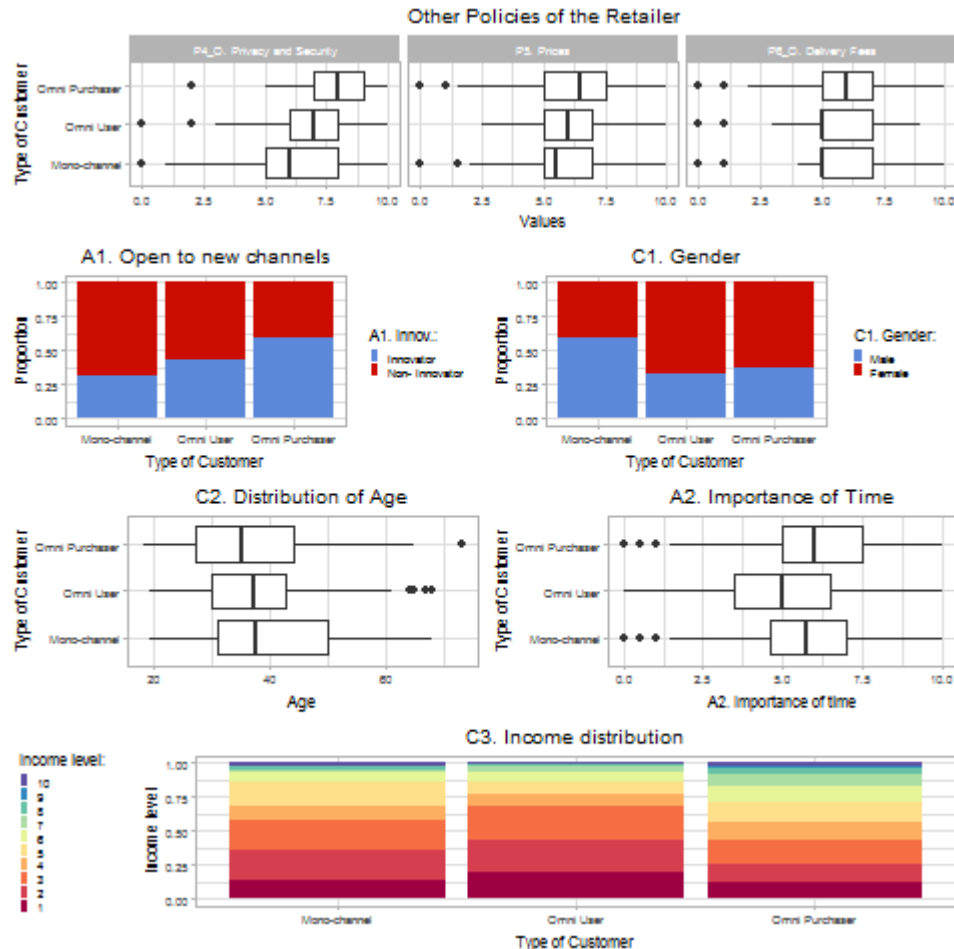
We see that , in most cases, the omni purchasers (Type 3) evaluate better both channels.

There are exceptions as payments at the store for Type II customers



# Differences between segments (II)

We also see how Type III value better online privacy and security, the prices and delivery fees. Also, they are more opened to the use of new channels. The proportion of males is greater among monnochannel customers. Type III are younger, and we also observe differences in income levels.



In order to test for the significance of these differences between segments, we estimate a multinomial logit model, where the independent variables are the evaluation of the services, channel policies and customer characteristics.

## Segmentation Analysis: Multinomial Logit Model

$$U_i = x_i\beta + u_i$$

where  $i = 1, 2, 3$

$1 = TypeI, 2 = TypeII, 3 = TypeIII$

$x_i$ : variables used to describe the services offered by both channels, channel policies and consumer attitudes and demographics

$u_i$  is the error term.



Here we show the results of the parameters comparing type II and Type III segments with Type I  
However, in order to ease the interpretation of the model, we compute marginal effects

Variable		Mono	Omni User		Omni Purchaser	
			$\beta$	t val	$\beta$	t val
	Constant	-	-0.191	-0.139	-2.604	-1.923
S1_S	Convenience of location access point (S)	-	0.028	0.307	0.193	2.026
S1_W	Convenience of location access point (W)	-	-0.144	-1.154	-0.102	-0.804
S2_S	Amount of product information (S)	-	-0.057	-0.347	-0.180	-1.125
S2_W	Amount of product information (W)		-0.053	-0.297	-0.192	-1.081
S3_S	Available assortment at time of purchase (S)	-	-0.108	-0.706	-0.169	-1.085
S3_W	Available assortment at time of purchase (W)	-	0.042	0.264	-0.088	-0.561
S4F_S	Assurance of desired mode of product delivery (S)	-	-0.077	-0.429	-0.266	-1.465
S4F_W	Assurance of desired mode of product delivery (W)	-	-0.191	-1.150	0.194	1.113
S4T_S	Assurance of timely product delivery (S)	-	0.147	0.803	0.200	1.072
S4T_W	Assurance of timely product delivery (W)	-	0.018	0.097	0.104	0.563
S5_S	Shopping ambiance (S)	-	-0.357	-2.071	-0.291	-1.644
S5_W	Shopping ambiance (W)	-	0.134	0.685	0.221	1.079
P1_S	Ease of access according to location (S)	-	0.066	0.589	0.145	1.316
P1_W	Ease of access (W)	-	0.345	2.797	0.377	2.915
P2_S	Compliance with product return policy (S)	-	-0.085	-0.564	-0.065	-0.398
P2_W	Compliance with product return policy (W)	-	-0.018	-0.149	0.198	1.453
P3_S	Compliance with accepted modes of payment (S)	-	0.220	1.236	0.030	0.167
P3_W	Compliance with accepted modes of payment (W)	-	0.143	1.073	0.170	1.173
P4_W	Confidence in online privacy and security policy (W)	-	0.108	0.653	0.185	1.105
P5	Price differential with respect to similar brands	-	0.238	1.733	0.271	2.020
P6_W	Transport cost differential with respect to similar brands	-	-0.251	-1.746	-0.379	-2.686
A1	Innovativeness (0;1)	-	0.655	1.616	1.282	3.379
A2	Importance reducing purchasing time	-	-0.069	-0.834	-0.013	-0.152
C1	Gender (Male) (0;1)	-	-0.823	-2.273	-0.693	-2.050
C2	Age	-	-0.010	-0.614	-0.036	-2.288
C3	Income (1 to 10)	-	0.029	0.298	0.282	3.179

Marginal effects are the change in the estimated probability of belonging to one segment when the independent variables increases or decreases in one unit. Here we show graphically the results only for the significant variables

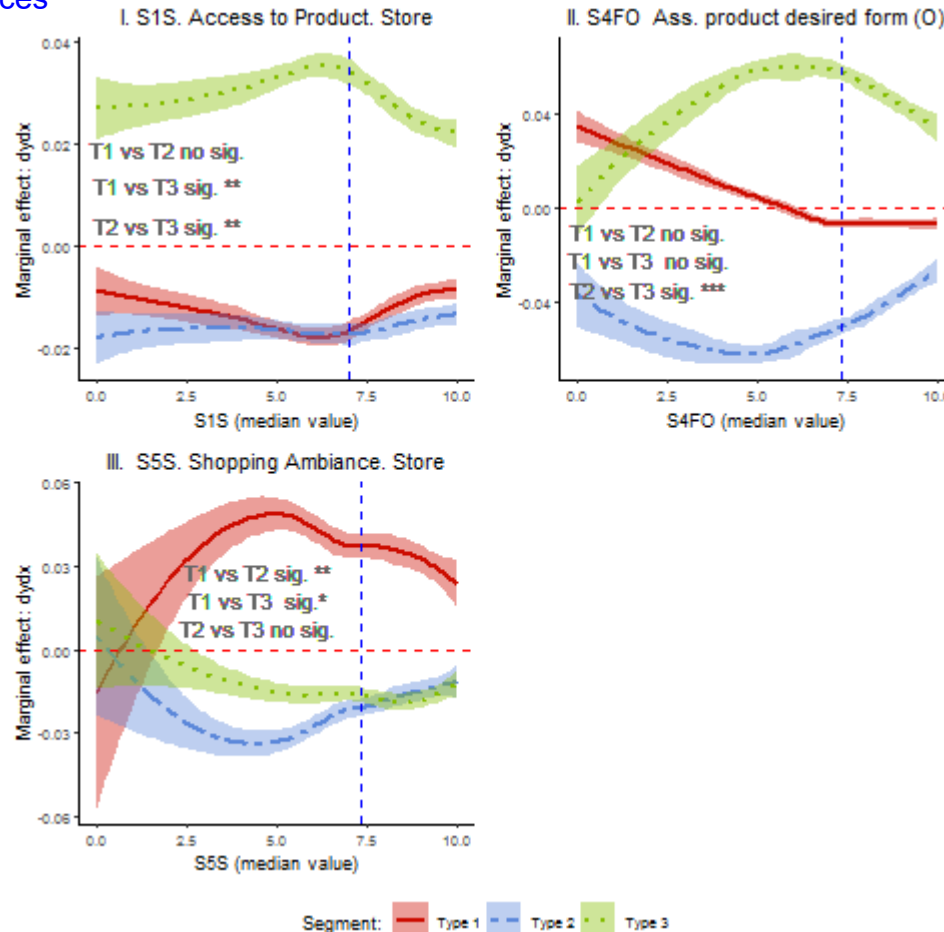
## Marginal Effects (I): Distribution Services

We find three distribution services having an impact on the probability of belonging to one segment

First, the evaluation of the accessibility to the product increases the probability of being an omnichannel purchaser and its effect is similar for type I and Type II customers

Assurance of product delivery in the desired form through the web increases the probability of Type III and decreases the probability of belonging to type II segment

Shopping ambiance at the store is important for being Type I



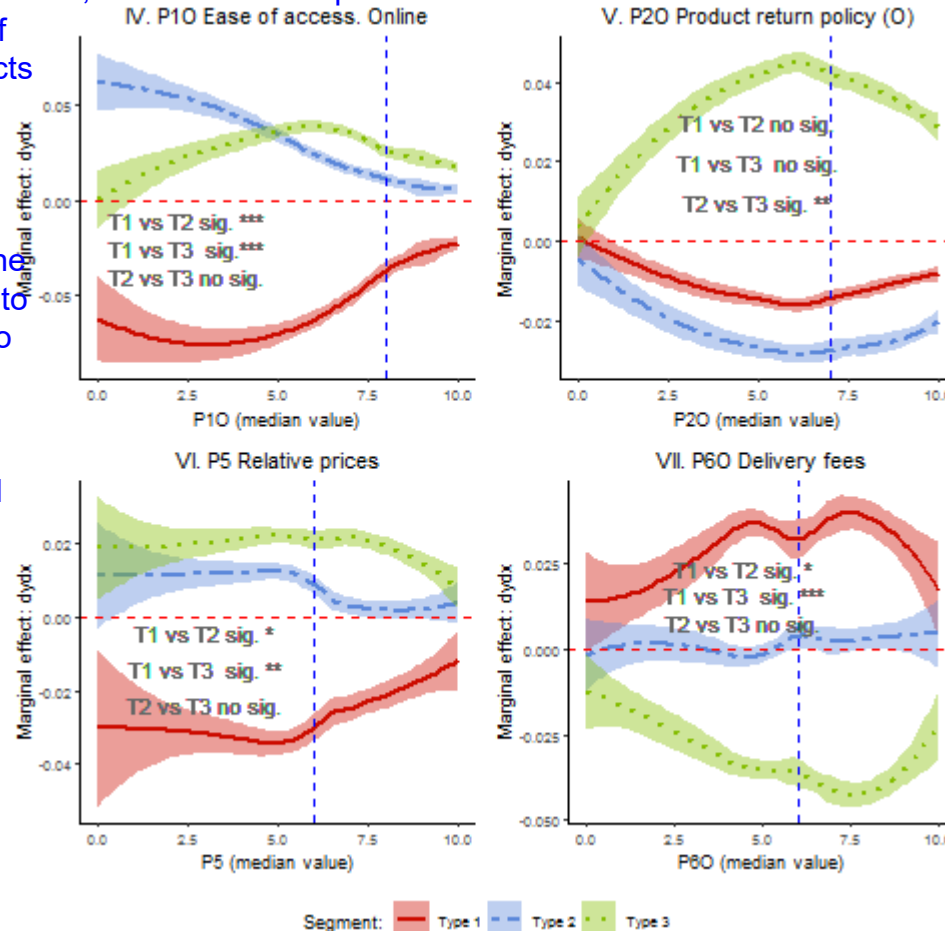
# Marginal Effects (II): Channel Policies

With regard to channel policies, there are four important elements

The evaluation of the ease of access to the web store affects the probability of belong to Type i segment.

Secondly, the policies regarding product return at the web page affects positively to the probability of belonging to type III segment

Thirdly, monochannel customers value worst brand prices and perceive higher delivery fees.

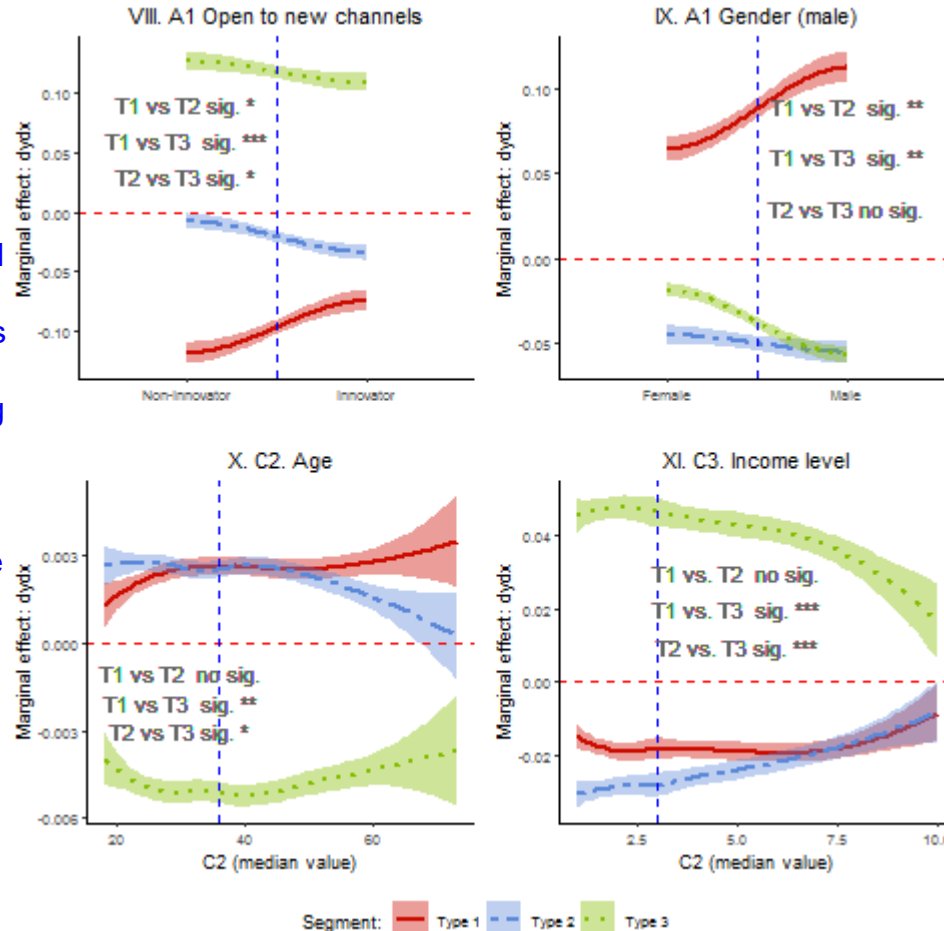


# Marginal Effects (III): Customer Characteristics

And finally, regarding customer characteristics we have four significant variables:

- The attitudes to new channels, affecting Type III customers and negatively to monochannel customers
- Gender, with males being more probably monochannel customers
- Age, with younger people being more type III customers

And finally income, affecting also positively to the possibility of being and omnichannel purchaser



# Summary

## Type I: Monochannel Customers: Differences with the other two segments:

- Value better ambiance at the store ⬆ value provided by the store
- Value worse accesibility of the web page ⬇ visiting the web
- Value worse brand prices ⬇ shopping from the brand
- Value worst sending fees ⬇ shopping online
- Less innovators
- More men

## Type II: Omni-channel Users: Differences with the other two segments:

- Value worse assurance of product delivery in the desired form online ⬇ shopping online
- Value worse return policy online ⬇ shopping online
- Lower income

## Type III: Omni-channel Purchasers: Differences with the other two segments:

- Value more access to the product through the store ⬆ value of both channels, they can make use of the service in purchases through both channels
- Value more assurance of product delivery in the desired form online, online devolution policies and online sending fees ⬆ shopping online
- Personal characteristics: more innovative, younger and higher income levels

So, in order to conclude, we can say that we have implemented a conceptual definition of omnichannel behavior with managerial and research implications and we have shown its applicability with an empirical application for fast fashion retailer usefull in guiding decision making

## Concluding remarks

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- › Conceptual definition of omnichannel behavior with managerial and research implications
- › Empirical application for fast fashion retailer useful in guiding decision making

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A n y q u e s t i o n s ?

# Thank you



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paper at SSRN



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