

**CSATORNA PREFERENCIÁK A NAGYÉRTÉKŰ  
ELEKTRONIKAI CIKKEK VÁSÁRLÁSI FOLYAMATÁBAN  
A VÁSÁRLÓI ATTITÚDDEL ÖSSZEFÜGGÉSBEN A  
HAZAI VÁSÁRLÓK KÖRÉBEN**

**CHANNEL PREFERENCES IN THE HIGH-VALUE  
ELECTRONIC DEVICE PURCHASE DECISION  
PROCESS REGARDING THE PURCHASE ATTITUDE  
AMONG DOMESTIC BUYERS**

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**Kulcsszavak:** *vásárlási attitűd, ügyfélmény, fizikai érintés szükségessége, tudatosság,  
kényelem*

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## ÖSSZEFOGLALÓ

*Az ügyfélélményt a teljes vásárlási döntési folyamat befolyásolja, amely a szükséglet felismerésétől kezdve a vásárlás utáni szakaszig tart. A kiskereskedelmi ágazat informatikai fejlesztése lehetőséget ad, és egyben arra kényszeríti az ágazat szereplőit, hogy többszatornás stratégiát valósítsanak meg, és lehetőséget adjanak fogyasztóiknak arra, hogy az adott pillanatban az igényeiknek leginkább megfelelő csatornákat használják, ezzel is emelve a vásárlási élmény szintjét. A tanulmány célja annak feltárása, hogy a magyar válaszadók vásárlási attitűdje hogyan befolyásolja csatornahasználati preferenciáikat (bolti, online nagy- és kisképernyős) a vásárlói út különböző szakaszaiban a nagy értékű elektronikai eszközök vásárlásakor. Ennek érdekében a kutatás először homogén válaszadói csoportokat azonosított a vásárlási attitűd faktorok alapján, majd feltárta a vásárlási attitűd alapján elkülönített vásárlói csoportokban a csatornapreferencia-mintázatok különbségeit a vásárlási folyamat különböző szakaszaiban. A vásárlási attitűd mérése Likert-skála történt 7 elsődleges meghatározott dimenzióban, beleértve a fizikai érintés igényét, az impulzivitást, az innovációs képességet, az ár- és márkatudatot, a kényelmet és a vásárlási élményt. A kutatás 415 hazai válaszadó kvantitatív online megkérdezésével összegyűjtött adatok feldolgozását és elemzését mutatja be. A válaszadókra a web-roaming viselkedési minta volt jellemző. A vásárlási attitűd faktorok alapján elkülönített homogén válaszadói csoportok csatornahasználati preferenciái szignifikánsan eltértek egymástól.*

## ABSTRACT

*Customer experience is influenced by the total purchasing decision process starting at the need recognition and ending at the post-purchasing stage. The IT development of the retail industry provides an opportunity and at the same time forces retailers to implement multi-channel strategies and give their consumers the opportunity to use the channels that best suit their needs at a given time for an enhanced shopping experience. The purpose of the study was to examine how Hungarian respondents' purchasing attitude influences channel usage preference (instore, online big- and small screen) at different stages of customer journey when purchasing high-value electronic devices. For this purpose, the paper first identified homogenous respondent groups based on*

*purchasing attitude factors, then explored the differences in the channel preference patterns at different stages of the purchasing process in customer groups separated by purchasing attitude. The purchasing attitude was measured using Likert scale in 7 priori dimensions including need of physical touch, impulsiveness, innovativeness, price and brand consciousness, convenience, and shopping experience. The research analyses collected data by quantitative online survey of 415 domestic respondents. The examined sample showed web-rooming behavior pattern and the homogeneous groups identified based on the purchasing attitudes of our respondents differed significantly in their channel usage preferences.*

## **INTRODUCTION**

Retailing changed dramatically in the last two decades due to the advent of the online channel and ongoing digitalization. The significance of IT solutions is continuously growing everywhere. The rapid emergence of newer and newer technologies (Inman & Nikolova, 2017), the ubiquitous digital environment beyond the time and space have changed retail business models (Sorescu et al., 2011), the execution of the retail mix (Grewal, Roggeveen & Nordfält, 2017; Roy, Balaji & Nguyen, 2020) and shopper behaviour, as well as the needs and demands (Pantano & Servidio, 2012; Huang & Hsu Liu, 2014; Rese, Schreiber & Baier, 2014; Kang, Mun & Johnson, 2015; Quach, Thaichon & Jebarajakirthy, 2016). Beside these trends, the customers' confidence in digital channels is also continuously on the rise, which further reinforces these processes (Verhoef, Kannan & Inman, 2015).

Retail System Research contends that “the retail industry is at an inflection point the likes of which it hasn't seen since the introduction of POS scanning” (Baird & Kilcourse, 2011 p.24). With POS scanning the realized purchases can trace what the customers have bought, but not what they wanted to buy (even or instead of the purchased product). The web-based search, smart mobile apps, and social media information now complement merchandise product movement data and

take the retailers much closer to the understanding of the differences between what consumers are looking for vs. what they buy (Baird & Kilcourse, 2011).

To counter the effects of IT on retailer industry and consumers, many retailers have initiated multi-channel and omni-channel strategies to provide their consumers to use the channels that best suit their needs at a given time to have an enhanced shopping experience (Beck & Rygl, 2015; Verhoef, Kannan & Inman, 2015). Companies are making significant efforts to broaden the channels through which they can interact with their customers (Timoumi, Gangwar & Mantrala, 2022), who now move freely between channels and demand a seamless shopping experience (Barwitz & Maas, 2018).

These changes increase the complexity of the shopping process and force companies to innovate in their channel offerings and the ways they manage these channels (Verhoef, Kannan & Inman, 2015). Coordination and cooperation of online channels with offline channels, and the integration of new touch points with existing ones have become essential.

The image of a business in customers can be consistent if their experiences are the same at all touch points (in terms of choice, information, and services), i.e., the company provides the same experience, no matter which channel the customer prefers to use. This is the holistic approach which is the essence of omnichannel system. Omnichannel retail refers to the integration of different channels and touchpoints like stores, online, and mobile into a single, seamless experience for consumer, allowing them to move freely through all channels (von Briel, 2018; Cotarelo et al., 2021). The omnichannel retailing provides a seamless retail world to customers where they can shop across channels, anywhere and at any time (Beck & Rygl, 2015). In omnichannel interactions, customers use multiple online and offline channels to conduct information gathering, communications, and transactions for a single purchase (Verhoef, Kannan & Inman, 2015).

Besides the impacts of technological improvement on business solutions and consumers, the COVID-19 pandemic situation (lockdowns and restrictions that at least partially closed brick and mortar retailers, the increased concerns of consumers) accelerated changes both in consumer behaviour (e.g., increasing adoption of digital touchpoints) and retailer industry to seize every possibility to lower costs and improve agility through technology (e.g., expansion of “click-and-collect” options) (Gasparin et al., 2022).

Earlier research of authors examined the channel preferences of convenience samples of Hungarian customers during the clothing purchasing decision process. The study aimed to identify homogenous groups of buyers based on their purchasing attitudes. This paper aimed at similar research objectives for a different product group.

The research includes two different areas: the one is about the influence of the respondents' purchasing attitudes, and the other deals with their technological readiness on channel preferences in different stages of the purchasing decision process of high-value electronic devices.

The purpose of this study is to examine the first area: Similarly, to the mentioned previous research on clothing purchasing decision, the objective was to classify the respondents based on their attitude toward purchasing high-value technical devices. Several considerations justified the examination of this product category:

- The Global Data (2021) predicts that by 2025 online sales penetration in electronics product category will reach nearly 50% (49,6%), the highest rate among product categories.
- The valuable electronic devices represent a large sum in the buyers' budget which increase the level of involvement. The greater the involvement of consumers the more important it is for them to choose the best option according to their shopping needs, and thus perceive a higher level of uncertainty in the purchase.

- In Hungary in 2021 the average basket value by online orders was the highest in consumer electronics and computing categories, and the ratio of Hungarian respondents who ordered online household electronics, mobile phones, entertainment electronics and computing equipment over the past year were 28 – 22 – 21 - 19 % in the order of the mentioned product categories (eCommerce in Hungary 2021 Country Report)

This study focuses on the following research questions:

RQ1. How the different dimensions of purchasing attitude affect the channel usage preference in the different stages of the purchasing decision process? Within the channel preferences 3 categories were examined, the traditional in-store channel, small and large screen online channels from the pre-purchase phase (information gathering, comparison of alternatives) at the various stages of the purchase decision, through the purchase (payment, payment) steps, to the post-purchase phase (return, use of advice, expression of opinion). To reduce the distorting effect of close correlation among variables, the number of variables were reduced with factor analysis.

RQ2. Can be distinguished homogeneous customer groups in the sample based on the purchasing attitude factors? What demographic differences can be identified among these clusters?

RQ3. What differences can be identified in the channel preference patterns at different stages of the purchasing process in customer groups separated by purchasing attitude?

## **THEORETICAL BACKGROUND**

### **Customer Experience**

Customer experience is formed across all moments of contact with the firm through several channels(Sousa & Voss, 2006). CX encompasses every aspect of a company's offering such as the quality of customer care, product and service

features, ease of use, reliability, etc. It includes internal and subjective reactions in any direct or indirect relationship of customers with the company (Schwager & Meyer, 2007). Value creation takes effect along arising in customer interactions as they occur in the pre-purchase stage (need recognition, information search, consideration or evaluation of alternatives), the purchase stage (choice, ordering, payment), and the post-purchase stage (consumption, use, engagement, service requests) (Lemon & Verhoef, 2016).

Literature in customer experience area defines and examines different CX dimensions. Schmitt, (1999) defined five different types of experiences, that marketers can create for customers. These are the sensory experiences; affective experiences; creative cognitive experiences; physical experiences, behaviors and lifestyles; and social-identity experiences that result from relating to a reference group or culture. (Gentile, Spiller & Noci, 2007) assumed as dimensions of CX were: sensorial, emotional, cognitive, pragmatic, lifestyle and relational factors. Brakus, Schmitt & Zarantonello (2009) distinguish several experience dimensions and construct a brand experience scale that includes four dimensions: sensory, affective, intellectual, and behavioral. De Keyser et al. (2015) suggest the following definition: “Customer experience is comprised of the cognitive, emotional, physical, sensorial, and social elements that mark the customer’s direct or indirect interaction with a (set of) market actor(s)” (De Keyser et al., 2015. p.14).

### **Channel Usage Pattern**

Phygital – merging of physical + digital - is a marketing term, it involves blending digital experiences and physical experiences, providing a unique interactive experience for the user (Banik, 2021; Mele & Russo-Spena, 2021). According to (Prior, no date) the omnichannel is one from the five elements of phygital, which means that managers must view their organizations as single organisms. “Processes require cross-channel design, as do objectives, roles, and

responsibilities. Competition between the organization's channels isn't your friend here.” (Prior, no date)

The omnichannel system allows customers to switch between online and offline channels at different stages of their customer journey, using the channel combination that best suits their needs and expectations, increasing customer shopping convenience and experience.

Due to the seamless interchangeability of channels usage different channel usage patterns have emerged.

Webrooming behaviour means the practice of researching items online, and then buying them in store (Flavián, Gurrea & Orús, 2016; Santos & Gonçalves, 2019) is the most common behaviour. In contrast, the showrooming behaviour means that consumer inspects a product first in the brick-and-mortar store and then buys it online (Mehra, Kumar & Raju, 2013; Balakrishnan, Sundaresan & Zhang, 2014; Verhoef, Kannan & Inman, 2015; Frassetto & Miquel-Romero, 2021; Wang & Wang, 2022).

Showrooming behaviour is becoming quite common today, and competitive vs. loyal showroom behaviour can be traced in the literature. Competitive showrooming behaviour - searching offline at a retailer and purchasing online from another retailer - is the most common pattern, which means a loss for the retailer as the customer benefits from the services it provides during the pre-purchase stage, but the actual revenue goes to others (Chiu et al., 2011). Van Baal & Dach (2005) defined this phenomenon as ‘free riding’ behaviour ‘when consumers use one retailer's channel only to obtain information and evaluate products and switch to another supplier to place their business’ and examined it in a multichannel environment.

In contrast, another channel usage pattern is the loyal showrooming behaviour - customer searching offline at a retailer store and purchasing online from same retailer - is also a possibility (Neslin & Shankar, 2009; Gensler, Neslin & Verhoef,

2017; Schneider & Zielke, 2020; Frassetto & Miquel-Romero, 2021; Wang & Wang, 2022).

According to (Gu & Tayi, 2016) the pseudo-showrooming refers to the consumer behaviour when consumer inspecting a product at a seller's brick-and-mortar store before buying a related but different product at the same seller's online store. Webrooming and showrooming together are manifestations of the behaviour of "research shopping", defined by Verhoef, Neslin and Vroomen (2007) as using one channel to search for information and another one to purchase.

Buy Online and Pick up in-Store (BOPS) is also a fast-growing buying pattern, wherein customers buy the product online and pick it up from the physical store at their convenience (Saha & Bhattacharya, 2021; Kusuda, 2022).

### **Multitude of Influencing Factors**

The channel preference of customers is influenced by a wide variety of factors (personal-, channel- and product characteristics simultaneously and interacting), as a result there are a wide range of considered variables on this area. The search tool of Science Direct presents 155 articles from 2021, and 115 items from 2022 (although it is only the result of a half year) for the term 'omnichannel customer behaviour'. To present only a few examples for different factors scholars considered in the last two years:

(Cui et al., 2022) examined the relationship of channel interactivity and cross-channel consistency with consumer value co-creation and brand involvement. Rahman et al. (2022) developed a measurement model - including dimensions such as: social communications, value, personalization, customer service, consistency of both product availability and prices across channels, information safety, delivery, product returns, and loyalty programs – to capture multiple omnichannel evaluation dimensions. Nguyen, McClelland and Thuan (2022) conducted qualitative interviews with millennials and found that key factors affecting channel choices during switching are product attributes, trust/perceived

uncertainty, social influence, customer characteristics, review culture, and time constraints.

Tueanrat, Papagiannidis and Alamanos (2021) investigated customer co-creation behaviour, customer response and customer experiential values as critical aspects of the customer journey and examine their impact on the level of customer journey satisfaction. They classified their respondents according to their journey pattern and examined the impact of the three predictors of customer journey satisfaction which varied across customer segments.

## **METHODS**

Data was collected by online survey with convenience sampling. The Google form was shared on Facebook, and among the students of 2 Hungarian universities (Budapest Business School and Hungarian University of Agricultural and Life Science - MATE). The questionnaire was available between 10th of February and 29th of March in 2022. During this period 415 responses were collected. Within the employed convenience sampling method university students were intentionally overrepresented in the sample as the use of omnichannel buying behavior is more typical for young generations. Measurement included the purchasing attitude of respondents based on dimensions and statements included in Table 1. To compile the list of statements in the questionnaire, the authors selected a shorter series from many purchase attitude statements collected from literature sources (referenced below the Table 1.) in such a way as to collect information for each of the attitude groups in the first column of Table 1. The selected statements were translated into Hungarian, then further reduced the number of statements with a pilot survey conducted on a small sample to avoid our respondents losing interest in the filling-in process.

The channel preferences of respondents were measured by usage frequency of different channels (offline and online) in different stages of the high-value electronic device purchasing decision process.

**Table 1. Priori Dimensions of Purchasing attitude and the statements**

Priori Dimensions	Statements
Importance of Physical touch	Ph 1. It is more convenient for me to make a purchase decision if I can first physically inspect the product.
	Ph 2. If I can't touch the product in the store, I'm reluctant to buy it.
Impulsiveness	I 1. I often make unplanned clothing purchases.
	I 2. I like to purchase things on a whim.
	I 3. I think twice before committing myself to purchasing something.
	I 4. I always stick to my shopping list.
Innovativeness	Inn 1. I like to take chances.
	Inn 2. I like to experiment with new ways of doing things.
Brand Consciousness	B 1. I usually purchase brand name products.
	B 2. All brands are about the same.
Price Consciousness	P 1. I usually purchase the cheapest item.
	P 2. I usually purchase items on sale only.
	P 3. A person can save a lot by shopping for bargains
Importance of Convenience	C 1. I hate to spend time gathering information on products.
	C 2. I do not like complicated things.
	C 3. It is convenient to shop from home.
Shopping is experience	Ex 1. I like shopping.
	Ex 2. Buying things makes me happy.

*Source: The statements compiled by authors based on studies of (a. Peck and Childers, 2003; b. Brashear et al., 2009; c. Rodríguez-Torrico, San José Cabezudo & San-Martín, 2017)*

The examined stages were the information search - evaluation of alternatives – purchase – payment - product return - post-purchase service (e.g. advice) - review / opinion share, and the examined channels were instore /offline channels; small screen (mobile) online channels and big screen (tablet, PC) online channels.

The statement of purchasing attitude and the channel usage frequency were measured on a 5-point Likert scale. In attitude measurement scale 1 means “I totally disagree” while 5 means “totally agree”, while in channel usage frequency measurement 1 means “I never use it” while 5 means “I always use it”.

The last part of the questionnaire examined demographic questions such as gender, age group, education level, residence, perceived income level.

SPSS 28.0 was used for data analysis. Beside descriptive statistics (frequency, mean, std. deviation) we examined association between nominal variables by Chi square test, between variables measured on Likert scale by variance analysis. To

reduce the distorting effect of close correlation among purchasing attitude variables, factor analysis was conducted. Based on purchasing attitude factors we classified our respondent with K-means cluster method.

**Table 2. Demographic distribution of the sample**

Gender n (%)	Male 161 (39,5)				Female 251 (60,5)		
Age group n (%)	18 or younger 1 (0,2)	19-24 233 (56,1)	25-30 t 34 (8,2)	31-40 34 (8,2)	41-50 74 (17,8)	51-60 29 (7,0)	60 or elder 10 (2,4)
Educational level n (%)	Completed 8 classes 1 (0,2)	Qualification 8 (1,9)	Graduation 220 (53,0)	Post-grad. certificate 57 (13,7)	BA/BSc certificate 70 (16,9)	MA/MS certificate 46 (11,1)	PhD/DLA 13 (3,1)
Region n (%)	Western Transdanubia 14 (3,4)	Central Transdanubia 16 (3,9)	Southern Transdanubia 19 (4,6)	Pest 228 (54,9) on which Budapest 140	Southern Great Plain 21 (5,1)	Northern Hungary 101 (24,3)	Northern Great Plain 16 (3,9)
Income level n (%)	Well below average 7 (1,7)	Below average 32 (7,7)	Average 227 (54,7)	Above average 133 (32,0)	Well above average 16 (3,9)		

*Source: based on our research*

The survey was completed by 415 respondents. Two third (60,5%) of our respondents were female, and students from the two mentioned Hungarian universities represented a large part of the sample, which is also reflected in the sample distribution of respondents according to age groups and place of residence.

## RESULTS

The aim of this paper is to examine how the different dimensions of purchasing attitude affect the channel usage in different stages of the purchasing decision process (RQ1). For this purpose, the number of variables was reduced with factor analysis to lessen the distorting effect of close correlation among variables.

The Kaiser-Meyer-Olkin test and the Bartlett's test of sphericity were used to check the suitability of our sample for factor analysis. The KMO Measure indicates middle level adequacy (0,675), while the Bartlett's sphericity with 0,000 significance level indicates that a factor analysis would be useful with these data. 18 variables measured the purchasing attitude (Table 1). The factor analysis reduced the 18 variables into 7 factors with 68,93% of the cumulative percentage of variance, which means, that the 7 factors explain nearly 69% of the variability of the original 18 variables. (Tab. 5.)

All the 4 statements belong to the Impulsiveness dimension in the priori classification stay together in the 1st factor. It shows a positive relationship with a thoughtful, follow-the-list purchase, while a negative relationship with an impulsive decision – factor labelled by Consciousness shopping.

The 2 statements of „Shopping is experience” priori dimension also belong to the same factor – labelled with the original dimension name: Shopping is experience. The 3rd factor sits on 3 variables, from these 2 belong to the “Importance of Physical touch” priori dimension and shows positive relations with these statements, and 1 belongs to “Importance of Convenience” priori dimension, and it shows negative relationship – labelled by Importance of Physical touch.

The 4th factor sits on 2 from the 3 statements of “Price Consciousness” priori dimension. These statements emphasize the role of price discounts; therefore, this factor got the Bargain hunting label.

The 5th factor sits on 2 Brand Consciousness and 1 Price Consciousness statements. These statements perceive that brands are similar and prefer low prices – labelled by Price sensitivity.

The 6th factor sits on 2 from 3 “Importance of Convenience” statements, which reject the complicated and time-consuming decisions, therefore it is labelled by Simplification.

The 7th factor sits on the 2 Innovativeness statements, it is positively related to giving chance to new ways and new things labelled by Innovativeness.

Distribution of statements among factors according to priority dimensions, excludes 2 factors. In 3rd and 5th factors there are overlaps among the priori dimensions. Beside the positive relation with statements of Physical touch importance priori dimension, the 3rd factor has negative association with a convenience variable (it is convenient to shop from home): It is not surprising as online shopping does not allow physical touch, so the buyer must choose between the comfort of home and the preference of physical touch.

The mixing of priori dimensions in the 5th factor also provides logical explanation, since where the buyer does not perceive differences among brands, the price plays a bigger role in the purchasing decision.

K-means cluster analysis was performed to reveal homogeneous customer groups among the 415 respondents (RQ2.) In the first approach from 2 to 6 clusters solutions were examined. The sample distribution among clusters was balanced in different cluster solutions up to the 6-cluster solution, therefore variance analysis among clusters of the 2-5-cluster solutions was conducted based on the 7 purchasing attitude factors. The variance analysis showed significant difference among clusters in case each of 7 factors at 4- and 5-cluster solutions, therefore these two clusters were further investigated. Examining the deviation of factors from the factor centre in different cluster solutions, the 4-cluster solution proved to be the best to interpret.

Cluster characteristics were described on basis of the deviation of factors from the factor centre in different groups of 4-cluster solution.

Members of the 1st cluster purchase thoughtfully, physical touch is very important for them, but shopping is not considered a source of enjoyment. The

need for physical contact is probably a sense of security for them – Security seekers.

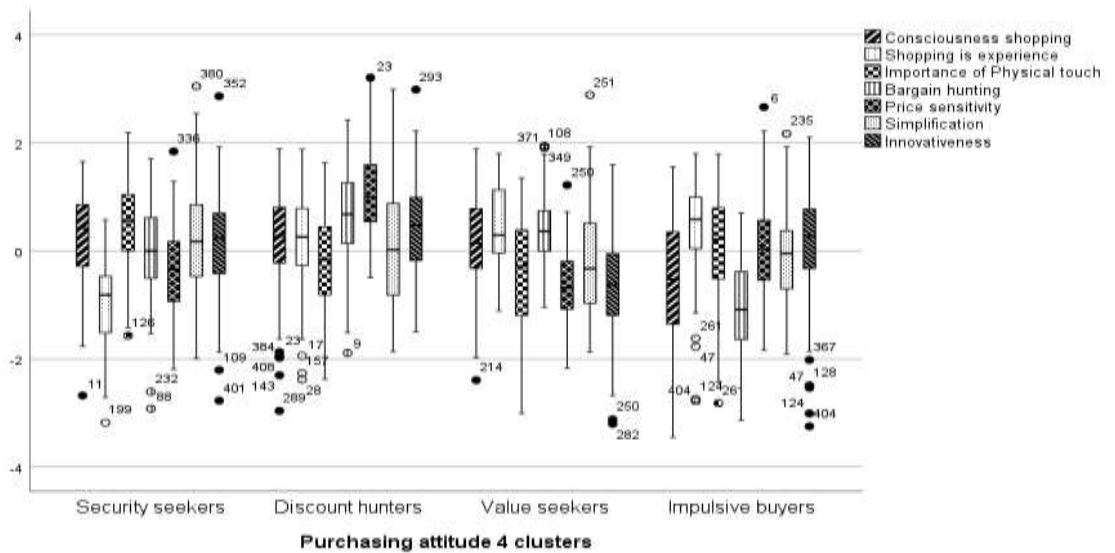
**Table 3. Rotated Component Matrix for Purchasing attitude**

No of Statements*	Factors						
	Conscious shopping	Shopping is exp.	Imp. of Phys.touch	Bargain hunting	Price sensitivity	Simplification	Innovativeness
I 3.	0,795	-0,005	0,117	0,070	0,000	-0,001	0,053
I 4.	0,754	-0,015	-0,012	-0,014	0,142	0,090	-0,042
I 1.	-0,677	0,185	-0,013	-0,071	0,088	0,178	0,220
I 2.	-0,593	0,382	0,071	-0,077	0,138	0,203	0,269
Ex 1.	-0,086	0,918	-0,023	0,031	-0,008	-0,046	0,067
Ex 2.	-0,169	0,884	0,035	0,080	0,005	0,015	0,011
Ph 2.	0,039	-0,008	0,862	0,013	-0,012	0,126	-0,040
Ph 1.	0,088	0,055	0,861	0,100	-0,104	-0,008	0,010
C 3.	0,269	0,367	-0,457	0,261	-0,281	0,116	0,247
P 2.	0,045	-0,015	0,050	0,835	0,263	0,013	0,031
P 3.	0,082	0,127	0,018	0,818	-0,129	0,116	-0,055
B 1.	0,086	0,176	0,245	0,126	-0,677	0,182	0,090
P 1.	0,063	0,009	0,088	0,410	0,662	0,159	0,222
B 2.	0,045	0,129	0,038	0,052	0,616	0,252	0,069
C 1.	-0,165	-0,015	-0,060	-0,024	0,086	0,818	0,077
C 2.	0,047	0,004	0,174	0,193	0,068	0,758	-0,143
Inn 2.	-0,034	0,131	-0,022	0,077	0,016	-0,124	0,855
Inn 1.	-0,418	-0,055	-0,075	-0,130	0,132	0,107	0,648
Extraction Method: Principal Component Analysis.							
Rotation Method: Varimax with Kaiser Normalization.							
a. Rotation converged in 8 iterations.							
*No of statement in Table 1.							

*Source: Based on our research*

Members of the 2nd cluster are price sensitive, bargain hunters, they don't deter from novelty and the shopping means experience for them – Discount hunters.

Members of the 3rd cluster shopping thoughtfully, and it means source of enjoyment for them, they bargain hunters, but they don't search for the cheapest products, and more loyal to their preferred brands, it is more difficult to persuade them to try novelties – Value seekers.



**Figure 1. The boxplot of purchasing attitude factors for the 4 clusters**  
*Source: based on survey*

Members of the 4th cluster enjoy the shopping, physical touch is important to them, but not for security reason, because this group is less thoughtful about shopping, they don't search for discounts, and they are open to try new things – Impulsive buyers.

Examining the demographic composition (gender, age groups, residence, educational level, perceived income level) of clusters significant (significance level is less than 0,01) relationships were found between demographic variable and cluster membership in case of genders and perceived income level.

The highest proportion of women (32,7%) belong to the Value seeker cluster, while the lowest proportion (16,5%) of males belong to this group. The male's distribution among the other 3 clusters is balanced (28-28-27,4 %), while

distribution of females is varied, and their proportion is lower in each other cluster compared to the male proportion.

**Table 4. Composition of clusters based on genders of respondents**

Gender	Security seekers	Clusters n (% within Gender)			Total
		Discount hunters	Value seekers	Impulsive buyers	
Male	46 (28,0%)	46 (28,0%)	27 (16,5%)	45 (27,4%)	164 (100)
Female	61 (24,3%)	52 (20,7%)	82 (32,7%)	56 (22,3%)	251 (100)
Total	107 (25,8%)	98 (23,6%)	109 (26,3%)	101 (24,3%)	415 (100)

*Source: based on survey*

The age groups, residence and educational level did not show significant relationship with cluster membership. The reason of it may have been that in these demographic parameters, the sample is unevenly distributed. Nearly 80% of the respondents was from Pest County and Northern Hungary, more than the half of the sample is between 19-24 years, because of the high ratio of students of the two universities in the sample.

**Table 5. Means and standard deviation of the income position of respondents in different clusters**

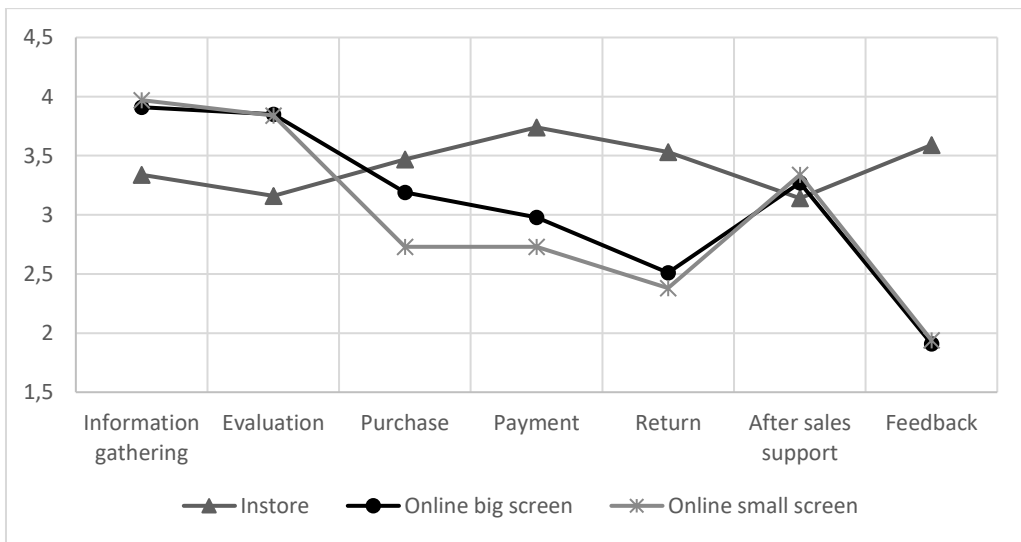
Clusters	Mean	N	Std. Deviation
Security seekers	3,13	107	,802
Discount hunters	3,16	98	,728
Value seekers	3,38	109	,678
Impulsive buyers	3,48	101	,672
Total	3,29	415	,734

*Source: based on survey*

The perceived income level of respondents was measured on a Likert scale (1-well below average and 5 -well above average). The relationships between the income level and cluster membership were examined by variance analysis.

ANOVA test shows 0,002 significance level, which means statistical relationship between the variables.

The 3rd objective was to examine the identifiable pattern in customer channel preference at different stages of the purchasing process in the different respondent groups separated by purchasing attitude (RQ3.). Frequency of channel usage in different stages of purchasing decision process of the whole sample shows similar pattern in case of the two (small- and big-screen) online channels.



**Figure 2. The average usage frequency of the 3 different channels in the different stages of purchasing process by our total sample**

*Source: based on our research*

These two channel usage patterns differ only in purchase and payment stages, where the usage of big screen in our sample is higher. In the first stages of the purchasing decision process (information search and evaluation) the usage of online channels is more frequent than the offline channel usage. The offline channel usage became more frequent in latter stages of the process (purchase, payment, return and review). The frequency of channel usage in after-sales support stage is similar, only slightly more frequent the online channel (both big

and small screen) usage. Fig. 2. represent the channel usage pattern of our sample, which outlines webrooming behaviour in high value electronic devices.



**Figure 3. The average usage frequency of the 3 different channels in the different stages of purchasing process by the 4 different clusters**

*Source: Based on our research*

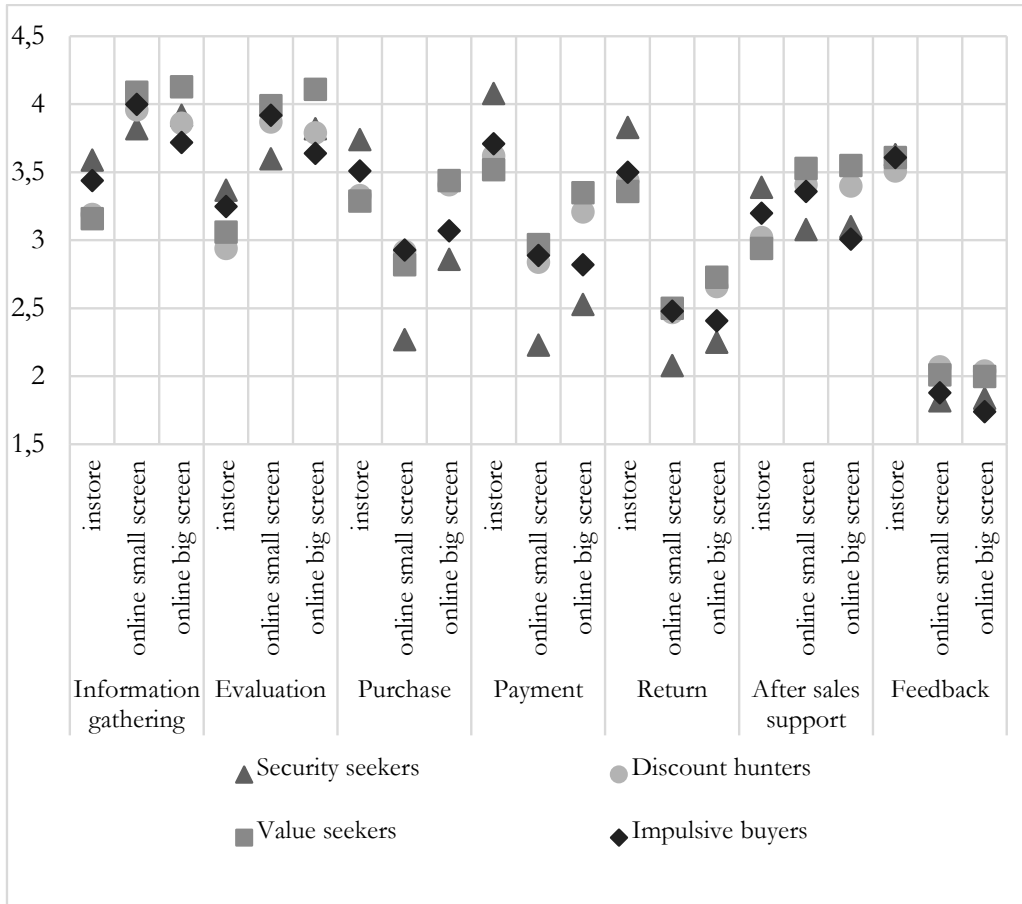
Fig. 3. shows the patterns of channel usage of different clusters. Security seekers use online and offline channels with similar frequency at the beginning of the purchasing decision process (information search, evaluation), while in latter stages they prefer the offline channel, and this cluster uses the online channels least frequently in the latter stages.

Members of the impulsive buyer group more frequently use mobile online channels during information search and evaluation than the big screen online and

offline channels, while in latter stages, as purchase, payment and return they more frequently use the offline channel. Both previous clusters use each of the examined channels for after sales service.

The channel usage pattern of discount hunters and value seekers are similar. They more frequently use offline channels at information search and product evaluation, for purchase they use offline and big screen online channels with similar frequency while the mobile online channel usage is less frequent. The difference between the 2 clusters, that discount hunters more frequently use the traditional instore payment (pay at delivery), while value seekers use similarly the offline and big screen online channel for payment. For return both latter clusters prefer the offline channel.

Fig. 4. shows the 4 clusters channel usage in another approach, where the purchasing decision stages and the 3 examined channels are on X-axis, while the channel usage frequency stay on the Y dimension. This chart shows that the security seeker group is the one that uses the offline channel most often at each stage, while they use the mobile online channel the least. The value seekers use most frequently both online channels in information search and evaluation stages, and the online channel usage in the latter stages also more frequent (they are in the first or second in the frequency ranking of clusters) compared to usage frequency of other clusters. In comparison with the other clusters the value seekers use least frequently the offline channel in each stage of purchasing decision (except the evaluation stage, where the discount hunters even less frequently use the offline channel).



**Figure 4. Frequency of channel usage in different stages of purchasing decision by the identified clusters**  
*Source: Based on our research*

## DISCUSSION

RQ1. The objectives of this study were to examine how the purchasing attitude affect the channel usage preference in different stages of the high-value electronic device purchasing decision process. To reduce the distorting effect of close correlation among purchasing attitude variables, factor analysis was conducted which determined 7 factors (in a distribution very similar to the a priori dimensions).

RQ2. Based on the shopping attitude factors, this article identified 4 clusters that showed unique attitude patterns, and there was a significant difference among these clusters based on perceived income level and gender.

RQ3. The sample of this study showed webrooming behavior which means that during the customer journey preferred the online channels during the pre-purchase stages, and they do the purchase rather instore. Each clusters showed this pattern with greater or lesser differences in channel usage frequencies.

In the rush of information, it is increasingly difficult to attract and maintain the attention of customers. The distinctive value is what the seller can use for this purpose. But what is the distinctive value for the different groups of customers? The answer doesn't sound complicated: Make shopping more convenient and provide a better experience for your customers. Achieving this end is quite difficult. The seller must know which factors play the most important role in the stages of the customer's journey. What makes customers feel more confident, and what factors cause uncertainty and frustration. Based on these, the seller can strengthen the buying factors that improve the feeling of security, while eliminating disturbing factors.

The IT development of the retail industry provides an opportunity and at the same time forces retailers to implement multi-channel strategies and give their consumers the opportunity to use the channels that best suit their needs at a given time for an enhanced shopping experience. The wide variety of alternative channels promote retailers to allocate their resources according to the benefits of these touchpoints.

Respondents of this study showed the webrooming behavior, which means that retailers of electronic devices should optimize their online channels mainly for the decision support of their customers at the pre-purchase stages (information search and evaluation) and improve the instore purchasing experiences directly related to the purchase steps (purchase, payment). In the post-purchase process, the after sales support require both online and offline channels.

The limitation of this study is that our sampling method was non-probability (convenience) sampling, where the 19-24 age group (university students) and Pest County and Northern Hungary were overrepresented. To be confirmed our above proposals, representative and larger sample results would be needed in the future.

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