

The Evolvement of Online Consumer Behavior: The ROPO and Reverse ROPO Effect in Poland and Germany

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Abstract

Purpose: The aim of the study was to find out whether the online shopping behaviors ROPO and Reverse ROPO Effect differ between Poles and Germans.

Methodology: The author conducted quantitative research among Polish and German students (129 questionnaires). The measures for this study were hypotheses that tested in mean and comparative analysis.

Findings: In the context of online consumer behavior, the results indicate that consumers display different preferences for ROPO or Reverse ROPO Effect. These differences trace back to cultural differences, particularly different uncertainty avoidance levels, and different stage of e-commerce markets maturity.

Research implications: E-commerce markets constantly evolve and so does online consumer behavior. While immature e-commerce markets follow their mature counterparts, their respective online consumer behavior also evolves, currently displaying different tendencies in ROPO and Reverse ROPO Effect between markets.

Limitation: Respondents that cover all age groups would be more representative of the respective countries of analysis. Moreover, instead of a cross-sectional, one should conduct further research with a time-series study to capture trends in behavior adoption, which effect from the evolving nature of the e-commerce retail market.

Keywords: uncertainty avoidance, online consumer behavior, ROPO effect, Reverse ROPO effect

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Introduction: Online Consumer Behavior in the Polish and German E-Commerce Market

When online shopping was still less common a few years ago – particularly in Poland, to a lesser extent in Germany – consumers only used the Internet for research purposes, and eventually bought at stationary retailers. Marketing describes this phenomenon as “ROPO Effect” – “research online, purchase offline” – or formerly as the Research Shopper Phenomenon (Heinrich and Thalmair, 2013; Nunes and Cespedes, 2003). However, since online shopping became generally more accepted and consumers became used to handle online shopping thanks to widely improved online shopping conditions, one should ask: “Is the ROPO Effect still valid?” Moreover, today’s consumer is better informed when buying a product and engages into a purchase with a more rational approach, particularly the digital natives who are more confident and technology-savvy in online shopping (Bhatnagar et al., 2004; Constantinides, 2004; Hu et al., 2010). Hence, one could assume that the “educated” consumer could go a step further and first analyze the product in-store to buy it online later. As a result, a study from 2013 by the Bamberg Research Group “Retourenforschung” found proof for the so-called “Reverse ROPO Effect:” “research offline, purchase online.” More than 60% of the survey participants stated that they went visiting a conventional retail store to get professional product consultation or to test a product in-store and purchased it later online (Retourenforschung, 2013; Heinrich and Thalmair, 2013). Hence, the current study aims to investigate the two effects.

With a 15.6% growth rate in 2016, e-commerce is currently the fastest growing retail market in the B2C sector in Europe (Centre for Retail Research, 2017). Also in 2016, online sales in Poland amounted to € 5.96bn, equaling a 17.8% growth rate and, thus, far above the European average. In contrast, Germany’s online retail sales amounted to € 61.79bn, hence maturing in comparison to their European counterparts. Therefore, it becomes particularly interesting to compare Germany and Poland, as the latter still is immature, contributing only 3.3% to the entire European e-commerce retail market (Centre for Retail Research, 2017). However, the differences in online consumer behaviors arise not only from the maturity level of the e-commerce market but also from cultural differences.

When it comes to culture, the difference between Poland and Germany is uncertainty avoidance – one of Hofstede’s cultural dimensions – which can, thus, serve as an explanatory factor for potential differences in online consumer behavior. Thus, we should validate and assess the two specific online consumer behaviors and their applicability to Polish and German online consumers to enhance theoretical knowledge in the field

and expand the current understanding of online consumer behaviors between immature and mature e-commerce markets.

Online Consumer Behavior

Consumer behavior theory, including the decision-making process, is increasingly developing in the online context. Ever since decision-making science emerged, it substantially evolved and changed over the decades. What was fundamental for decision-making science was the theory of bounded rationality by Simon (1957). The bounded rationality view assumes that the decision-maker is not purely rational and, thus, does not maximize utility at minimum effort (Simon, 1957). Rather, the decision-maker involuntarily enters a stage of bounded rationality, hence is affected by limited time, the complexity of circumstances, limited information availability, information overload, and inadequate mental computational power (Buchanan and O'Connell, 2006). This allows us to assume that online shoppers base their purchase decision-making not on purely rational grounds, but are more likely influenced by irrational circumstances that depend on consumer preferences and interests, affected by an uncontrollability of factors. Nevertheless, Koufaris remarks that online consumers are still more "powerful, demanding and utilitarian in their shopping expeditions," as they are in charge of the purchasing process and must actively search for the information they need. In contrast, the offline shopper often awaits information (2002). As a result, online customers demand more control, convenience, and higher efficiency when shopping for certain products, while showing less loyalty to the retail channel (Jarveenpa and Todd, 1997a; 1997b; Novak, 2000).

Factors Influencing Consumer Behavior

According to Constantinides, online consumer behavior is influenced by both controllable and uncontrollable factors (2004). External and personal factors form the group of uncontrollable factors, while product and service characteristics, medium characteristics, and merchant characteristics form the group of controllable factors (Solomon et al., 2008). Despite the interdependency between these factors, what significantly impacts online consumer behavior are uncontrollable elements like the social, cultural, economic, psychological, and demographic factors (Constantinides, 2004). These exceed the retailers's control and, thus, form the uncontrollable factors (Solomon et al., 2008).

Hofstede's Uncertainty Avoidance Factor and Perception Towards Online Shopping

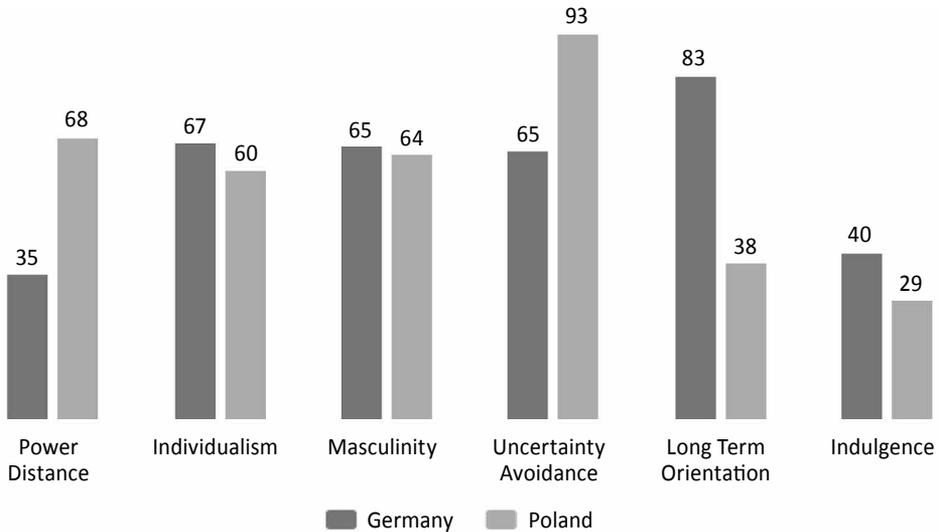
Despite their uncontrollability, demographics along with other elements – like social, cultural, economic, and psychological factors – strongly influence online consumer behavior (Boyd et al., 2002). The cultural aspect becomes particularly interesting, as online shop retailers could potentially address anyone in the world with access to the Internet to buy from their online shop. However, we know that we may influence cultures in regard of their sensitivity, for instance, to security, easy check-out procedures, higher conversion rates, and lower return rates (Boyd et al., 2002; Smith et al., 2013). In this way, culture as a demographic factor serves to explain differences in consumer online behavior.

Hofstede's Cultural Dimensions Theory serves to explain the effects of a nation's culture and value system on one's behavior. Thereby, Hofstede proposes six different dimensions that range from 0 to 100 (Hofstede, 1980; Hofstede and Minkov, 2010). For this study, the uncertainty avoidance dimension is particularly interesting. Uncertainty avoidance describes how people in a society or culture deal with uncertainty and ambiguity, as well as the uncertainty of the future (Hofstede, 1980). In essence, the term describes the need for well-defined rules of prescribed behavior: the higher the uncertainty avoidance score index, the fewer individuals want to be confronted with ambiguous or uncertain situations (Soares, Farhangmehr and Shoham, 2007). Hence, in an immature e-commerce market, in which online shopping is not so popular, it can be perceived as ambiguous and risky. Moreover, research by Bhatnagar, Misra, and Rao suggests that uncertainty avoidance and risk aversion varies across users due to cultural factors (2000). As a consequence, the consumer derives a variance in expected utility or convenience from online shopping. Thus, we assume that culture impacts perceptions, which influence different purchasing behaviors (Kim, Ferrin and Rao, 2008; Heinrich and Thalmair, 2013).

As visible in Figure 1 Germany ranks moderately with the uncertainty avoidance score of 65, as reflected in the common attitudes to think, plan, and present things, thus relying on expertise to attain certainty. In contrast, Poland with an index score of 93 has a very high preference for uncertainty avoidance. Typical for that are rigid codes of belief, emotional need for rules, as well as resistance to innovation (Hofstede, 1980). Particularly, the resistance to innovation further affects the slower introduction of online purchases, as the electronic retail environment still imposes uncertainty in an immature e-commerce market. By looking at both Hofstede factors, "uncertainty avoidance" as well as "resistance for innovation," it can be assumed that these cultural factors have

a potential impact on the Technology Acceptance Model (TAM). In other words, these cultural factors have an impact on a consumer's willingness to adopt a new technology or engage in online shopping (Koufaris, 2002).

Figure 1. Hofstede's Matrix of Poland and Germany



Source: The Hofstede Centre (2017).

In this way, TAM finds its way into online consumer behavior since the online shopper is not only a consumer but also a computer user (Koufaris, 2002).

Online Information Search and the ROPO Effect

Due to technological advancements online, shopping became more intuitive and easier, counteracting the complexity of online purchase decision-making. A good example of reducing consumer search costs for product and price information are shopbots. As a result, shopbots, search engines, customer reviews, and similar tools contribute to the online information search effect, also known as “Research Shopper Phenomenon” (Johnson et al., 2004; Verhoef, Neslin and Vroomen, 2007). According to Verhoef, Neslin, and Vroomen, the research shopper phenomenon is the tendency of consumers to research a product in a single channel like the Internet and, then, conducting the purchase through another channel like a stationary retailer (2007). Heinrich and Thalmeier (2013) also refer to this effect as the “research online, purchase offline” effect, or in short “ROPO Effect.”

On the one hand, the research shopper phenomenon is a single independent executed behavior that makes consumers only accumulate knowledge about certain products (Nunes and Cespedes, 2003). It is irrelevant for this consideration whether they actually engage in a purchase at the online shop, in which they found the required information. On the other hand, certain scholars regard the behavior of acquiring information about a product as part of a two-stage process of online purchasing behavior like the buyer's decision-making model (Engel, Kollat and Blackwell, 1973). This model assumes a sequential relationship between acquiring certain information and conducting a purchase. Hence, acquiring information promotes purchasing in general (Pavlou and Fyngenson, 2006).

According to Verhoef, Neslin, and Vroomen, the common belief was that the offline channel is better for purchase as it appears less risky option for conducting a purchase (2007). However, today this perception is longer true, hence the ROPO effect should be less common, especially among certain socio-demographic groups in mature e-commerce markets. Therefore, motivated by the constant evolvement of the Internet's character, the perceived usefulness, and convenience of online shopping should outweigh its perceived risk among the advanced Internet users, particularly from less risk-averse cultures in mature e-commerce markets. In contrast, the more risk-averse cultures in more immature e-commerce markets may still show the ROPO Effect and not yet the Reverse ROPO Effect (Heinrich and Thalmer, 2013).

The Reverse ROPO Effect

The Reverse ROPO Effect represents the form of online consumer behavior that is still very new and unexplored (Heinrich and Thalmer, 2013). As opposed to the ROPO Effect that shows low conversion rates, one cannot determine whether the actual Reverse ROPO Effect behavior takes place because no online shopper declares whether he or she searched offline for product information. However, the behavior also evolved due to the technological advancements in the e-commerce sector and the educated, utility-seeking consumer. With the aid of a smartphone, the consumer seeks better deals while physically present in the shop. The study by the Bamberg Research Group "Retourenforschung" well exemplifies that particularly students in a mature e-commerce market engage in that behavior (Shopbetreiber Blog, 2013). Thus, this behavior could not only be a particular behavioral phenomenon but also a commonly accepted practice among the future online consumers.

After distinguishing the online shopper according to their uncertainty avoidance factor, we may assume that they are more risk-averse and, thus, more likely to engage in the ROPO Effect; as they gather information online and purchase offline at a later point in time. In contrast, online shoppers with low uncertainty avoidance and higher utilitarian nature avoid purchasing offline. Instead, they find a product offline but are motivated to purchase it online at a lower price, or with the convenience of getting a free home delivery.

Importantly, it is much more challenging to obtain data for the Reverse ROPO Effect, because there is hardly any real data on offline shoppers who research offline and then do not purchase offline or actually purchase online. This is also the main motivation of this study, since one may easily obtain online shopping cart abandonment, but not for the shoppers who acquire information about products offline and actually never engage in the offline purchase, yet potentially execute the purchase at an online shop later.

The understanding of the new evolving online consumer behavior paves way for further research. The awareness of the ongoing changes in online consumer behavior and cultural differences allows international online shop operators to better assess how to approach their target customers. Despite abundant research on online consumer behavior and the perception of online shopping behavior, there are nearly no studies that solely focus on the ROPO and Reverse ROPO Effect. Since the Reverse ROPO Effect is nearly absent from studies, the author collected new primary data to address this limitation. This study challenges the existing beliefs and results about new forms of online consumer behavior and test their applicability across two different e-commerce markets; thereby ultimately answers the following research question: To what extent does online consumer behavior vary between Poland and Germany? Is one of the cultures more prone to engage in the ROPO or Reverse ROPO behavior?

As a result, the author formulates the following four hypotheses:

- H1:** The ROPO Effect is known to online consumers.
- H2:** The Reverse ROPO Effect is known to online consumers.
- H3:** The ROPO Effect differs between nationalities.
- H4:** The Reverse ROPO Effect differs between nationalities.

Methods

Instrument and Data Collection

The author designed a cross-sectional study in the form of an online survey, which she disseminated and collected over a period of four weeks. Respondents stem from two major universities located in Warsaw, the capital of Poland (n=68), and in a major big city in the mid-west of Germany (n=71). In total, there were 129 respondents, sixty-eight Poles and seventy-one Germans. The student population was appropriate for several reasons. Even though many challenged the representativeness of student samples for the whole population, noticeable studies found their perception and behaviors generalizable (Mitra, Reiss and Capella, 1999; Pope, Brown and Forrest, 1999). Next to this, scholars consider student population the most experienced Internet users with respect to online shopping (Lee, 2002), which makes them the appropriate sample for conducting online consumer behavior research (Yoo and Donthu, 2001).

Measurement Development

Due to the ordinal nature of the data in seven-point Likert scale questions, the author only used non-parametric tests like Spearman, Mann-Whitney U, and Chi-Square. Furthermore, the study tested independent variables for correlation to eliminate those unwanted causalities, followed by a mean analysis to give an overview of the ROPO and the Reverse ROPO Effect among the entire studied population. Finally, the author conducted a comparative analysis to compare and contrast the identified sub-segments of the sample.

Analysis

ROPO and Reverse ROPO Effect: Mean Analysis

Table 1 shows the differently ranked ROPO factors according to their mean. Generally, the perceived Reverse ROPO factors range from 2.95 [I would like to try them on before buying] to 5.4 [I wonder if I could find them offline for a better price]. Thus, only one ROPO factor [I would like to try them on before buying] received a mean below the median value of 4.0 on the seven-point Likert scale. There emerged a grand mean of 4.27 and grand standard deviation of 1.236. ROPO factors with a mean outside of one standard deviation of the grand mean do exist for [I would like to try them on before buying]. Hence, a significant difference between the ROPO factors exists and, thus, **H1** can be partially supported.

Table 1. ROPO Effect – Factor Means, Mean Analysis

Descriptive Statistics			
	N	Mean	Std. Deviation
[I would like to try them on before buying]	129	2.95	2.509
[I wonder if I could find them offline for a better price]	129	5.40	2.357
[I prefer to go to a shop in town and buy them there]	129	4.46	2.733
Valid N (listwise)	129		

Source: own elaboration.

Table 2 shows the differently ranked Reverse ROPO factors according to their mean. Generally, the perceived Reverse ROPO factors range from 2.46 [I wonder if I could find it online for a better price] to 3.8 [I wait and buy it online once I get home]. Thus, all Reverse ROPO factors received a mean rating below the median value of 4.0 on the seven-point Likert scale. There emerged a grand mean of 3.263 and a grand standard deviation of 0.7086. There exist Reverse ROPO factors with a mean outside of one standard deviation of the grand mean. Hence, there is a significant difference in the Reverse ROPO factors perception and, thus, **H2** receives support for the Reverse ROPO Effect.

Table 2. Reverse ROPO Effect – Factor Means, Mean Analysis

Descriptive Statistics			
	N	Mean	Std. Deviation
[I wonder if I could find it online for a better price]	129	2.46	2.368
[I check on my phone if I find a better deal online]	129	3.53	2.837
[I wait and buy it online once I get home]	129	3.80	2.824
Valid N (listwise)	129		

Source: own elaboration.

Nationality Versus the ROPO Effect

Before the Mann Whitney U test, the Chi-square tests the data for normality. This always allows for better judgment when considering the applicability of the sample results to the population. The central tendencies of Germans and Poles significantly differ with respect to the ROPO Effect ($U(71,58) = 129, z = -7.822; -10.582; -10.530; p = 0.000$)

Table 3. Mann-Whitney U Test Nationality vs. ROPO Effect

Test Statistics ^a			
	[I would like to try them on before buying it]	[I wonder if I could find them offline for a better price]	[I prefer to go to a shop in town and buy them there]
Mann-Whitney U	643.000	1690.500	297.500
Wilcoxon W	2354.000	3401.500	2008.500
Z	-7.301	-2.005	-9.040
Asymp. Sig. (2-tailed)	.000	.045	.000

a. Grouping Variable: Nationality

Source: own elaboration.

Table 4. Mann-Whitney U Test Nationality vs. ROPO Effect

Ranks				
	Nationality	N	Mean Rank	Sum of Ranks
[I would like to try them on before buying it]	German	71	84.94	6031.00
	Polish	58	40.59	2354.00
	Total	129		
[I wonder if I could find them offline for a better price]	German	71	70.19	4983.50
	Polish	58	58.65	3401.50
	Total	129		
[I prefer to go to a shop in town and buy them there]	German	71	89.81	6376.50
	Polish	58	34.63	2008.50
	Total	129		

Source: own elaboration.

As visible in Table 4, the German mean ranks for the ROPO factors are higher than Polish. However, [I wonder if I could find them offline for a better price] is barely significant, indicating that both nations disagree agree with that statement. In contrast, [I would like to try them on before buying it] and [I prefer to go to a shop in town and buy them there] clearly diverge between the two nations. Therefore, **H3** receives statistical support from all three ROPO effect factors, despite the fact that [I wonder if I could find them offline for a better price] is nearly not significant.

Nationality Versus the Reverse ROPO Effect

The results for the MWU Test appear in the appendix. The central tendencies of Germans and Poles significantly differ in the Reverse ROPO Effect ($U(71,58) = 1\ 29$, $z = -7.822$; -10.582 ; -10.530 ; $p = 0.000$).

Table 5. Mann-Whitney U Test Nationality vs. Reverse ROPO Effect

Test Statistics ^a			
	[I wonder if I could find it online for a better price]	[I check on my phone if I find a better deal online]	[I wait and buy it online once I get home]
Mann-Whitney U	720.000	37.500	.000
Wilcoxon W	3276.000	2593.500	2556.000
Z	-7.822	-10.582	-10.530
Asymp. Sig. (2-tailed)	.000	.000	.000

a. Grouping Variable: Nationality

Source: own elaboration.

As visible in Table 6, the German mean ranks for the ROPO factors are lower than Polish. However, [I wonder if I could find it online for a better price] does not differ as much as other factors, which indicates that there is a tendency for common agreement about that factor. In contrast, [I check on my phone if I find it for a better price] as well as [I wait and buy it online once I get home] clearly diverges between the two nations. Consequently, **H4** receives statistical support.

Table 6. Mann-Whitney U Test Nationality vs. Reverse ROPO Effect

Ranks				
	Nationality	N	Mean Rank	Sum of Ranks
[I wonder if I could find it online for a better price]	German	71	46.14	3276.00
	Polish	58	88.09	5109.00
	Total	129		
[I check on my phone if I find a better deal online]	German	71	36.53	2593.50
	Polish	58	99.85	5791.50
	Total	129		
[I wait and buy it online once I get home]	German	71	36.00	2556.00
	Polish	58	100.50	5829.00
	Total	129		

Source: own elaboration.

Discussion

The study strongly confirms that Germans and Poles know of the ROPO and Reverse ROPO Effect. Moreover, the segmentation of the population set by nationality revealed the differences between Germans and Poles in the application of the ROPO and Reverse ROPO. However, only one ROPO factor received a value below 4.0 [I would like to try them on before buying it], which partially supports Hypothesis H1. Hypothesis H2 surfaced as statistically significant due to the presence of the Reverse ROPO factors with a mean outside of one standard deviation of the grand mean and, thus, the hypothesis could be supported. This implies that the population already seeks better deals online when standing in a shop. Obviously, it is difficult to predict the final actions of respondents.

Both H3 and H4 hypotheses received statistical support. In general, the ROPO Effect applies to Germans less than to Poles. However, what is particularly interesting is that [I wonder if I could find them offline for a better price] does not apply to both cultures. This factor should not come as a surprise since – with the introduction of e-commerce shops – the general opinion is that one may find better deals online than offline; regardless where one prefers to go shopping. Moreover, Poles agree with the statement [I would like to try them on before buying], while Germans do not. This could be easily explained

by the common notion of Hofstede's uncertainty avoidance factor, implying that a purchase is preferred if one can be sure that the item will actually fit (Hofstede, 1980).

Conclusion

Motivated by the constant evolvement in online consumer behavior, this study investigated the differences between Polish and German online consumer behavior. Culture, particularly Hofstede's uncertainty avoidance factor, served as the main constituting factor that explains the differences between the two cultures (Hofstede, Hofstede, and Minkov, 2010). Uncertainty avoidance also refers to the willingness to adopt innovations, such as online purchasing behavior. The tested behaviors found statistical support, which indicates that the ROPO effect no longer applies to Germans, while it still partly does to Poles. In contrast, we can state the opposite of the newly emerging Reverse ROPO Effect.

The results of this research permit the conclusion that online consumer behavior, above all the ROPO Effect, is no longer valid to the extent it might have been some years ago. This general finding shows that German and Polish online consumer behavior differs. Finally, this study depicts only a snapshot of the e-commerce market situation in Poland and Germany at the time, while constantly changing. The Polish e-commerce market very fast moves from its immature market position to the mature stage. What reflects this situation are the increasingly more secure payment possibilities, the entrance of global e-commerce retailers on the Polish market, the improved customer usability and customer service; finally, the faster and free delivery catching up to the stage of the German e-commerce market. Hence, the findings of this research suggest that the Reverse ROPO Effect might slowly replace the ROPO Effect as a natural evolvement of online consumer behavior. The results support this notion, as Polish online consumer behavior depicts similar tendencies as the German one. For instance, the Reverse ROPO Effect factors are perceived similarly, but more strongly apply for Germans than Poles. This allows us to assume that Poles will sooner or later catch up and adopt similar online shopping behaviors as be currently visible in Germany. This makes the Reverse ROPO Effect even more important for the future academics and practitioners.

Academic Contributions

This study is the first to investigate the ROPO Effect and the Reverse ROPO Effect among Poles and Germans along with the role of culture, particularly Hofstede's uncer-

tainty avoidance dimension and the respective online consumer behaviors. The results imply that the high uncertainty avoidance factor for Poles translates into the stronger ROPO Effect, while the lower uncertainty avoidance of Germans strengthens the Reverse ROPO Effect. As such, this paper contributes to the understanding of the differences in online shopping behaviors. Beyond that, the author supports scholars and managers by shedding light on the cultural differences that impact online consumer purchase behaviors (Smith et al., 2013; Belkhamza and Wafa, 2014).

Limitations

As the author only surveyed higher educated consumers, it is only representative of Polish and German student populations. Nevertheless, the study is interesting since students and higher educated young workers often equal early adopters and, thus, the observed behaviors apply to other consumer groups at a later stage of innovation adoption.

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