Replicating the Advertising-Empowerment-Model: Does Drug Advertising Empower Consumers?

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Cite as:
Koinig Isabell, Diehl Sandra, Mueller Barbara (2022), Replicating the Advertising-Empowerment-Model: Does Drug Advertising Empower Consumers?. *Proceedings of the European Marketing Academy*, 51st, (107505)

Paper from the 51st Annual EMAC Conference, Budapest, May 24-27, 2022

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Abstract:

Due to current trends, such as aging populations, and shifts in the status of medications from prescription to over-the-counter (OTC) drugs, the OTC drug sector is steadily gaining in importance. These developments are accompanied by a commercialization of the health domain, which has led consumers to seek greater control over their health. A neglected aspect in the marketing literature is advertising's contribution to consumer empowerment. The present paper seeks to replicate a previous study, investigating whether consumers' level of empowerment as obtained from pharmaceutical advertising has changed over time. Using the Advertising-Empowerment-Model, data from 2013 and 2021 were compared. Results indicate that it was possible to largely replicate the Advertising-Empowerment-Model. In conclusion, implications and limitations are addressed.

Keywords: OTC drug advertising, empowerment, replication study

Track: Consumer Behavior

1. Introduction: Empowerment in Health Communication

Due to current trends, such as aging populations, and shifts in the status of medications from prescription to over-the-counter (OTC) drugs, the OTC drug sector is steadily gaining in importance. These developments are accompanied by a commercialization of the health domain, which has led consumers to seek greater control over their health. A neglected aspect in the marketing literature is advertising's contribution to consumer empowerment. Empowerment exceeds traditional forms of compliance, where patients obey treatment regimens set by medical practitioners; instead, definitions of empowerment place an individual's capacity to arrive at rational decisions and accept control over their health outcomes at the core (Salmon & Hall 2003).

Individuals are empowered by better access to education and an increasing number of information sources. One such information source can be pharmaceutical advertising, "defined as messages created by marketers of pharma products that attempt to inform, persuade and even entertain the target audience with the goal of influencing recipients' attitudes – and ultimately behavior – in a favorable manner" (Diehl et al., 2008, 100). While most empowerment research has focused on the patient-provider relationship (Anshari et al. 2012), both the role and relevance of promotional materials have received limited attention. This investigation presents a replication study of the previously developed Advertising Empowerment Model (the authors, 2017), and intends to establish the contribution of OTC drug promotions to consumer self-empowerment.

When useful information about products is communicated, consumers are empowered to assess products more accurately (Brennan & Gallagher, 2002). Pharmaceutical advertising – in the case of this paper, we explicitly refer to non-prescription drug advertising – can familiarize consumers with new and improved drugs that allow them to manage medical conditions without the assistance of a healthcare provider, granting individuals an increased say in how their bodies are treated (Iriart et al., 2011). Advertisements are useful in that they enable consumers to evaluate the promoted product, and to compare it to competing brands. Ultimately, by providing useful information, advertisements can help consumers to develop more confidence in using the product (message empowerment), in their self-medication skills (self-medication empowerment), and ultimately with regards to their health in general (health empowerment). Message empowerment, self-medication empowerment and health empowerment constitute the core components of the Advertising-Empowerment model.

2. On the Necessity of Replication Studies

As data from two points in time (2013 and 2021) is compared, the present contribution represents a replication study. In general, a replication study describes "a duplication of a previously published empirical study, and is concerned with assessing whether similar findings can be obtained upon repeating the study" (Hubbard and Armstrong 1994: 236). Calls for replication studies have increased (Eisend et al., 2016; Royne, 2018). Despite the fact that replication studies are sometimes criticized for not making a "new" contribution (Royne, 2018), they are useful in ensuring the robustness of results and conceptual models (Eisend et al., 2016), as well as upholding existing knowledge (Nosek et al., 2012). Additionally, problems associated with single investigations can be overcome (Eisend et al., 2016). The present study qualifies as an inter-study replication, meaning that the subsequent study was conducted at a later point in time, by the same authors, using identical stimuli (Easley et al., 2000). This approach is especially useful in testing for the reproducibility of results, making it the strongest form of replication (Sternthal et al., 1987).

3. Conceptual Model

The Advertising-Empowerment Model (the authors, 2017), which follows hierarchy of effects (HOE; Lavidge & Steiner 1961) reasoning, suggests that individuals develop a certain level of empowerment as a result of exposure to an advertisement. For the present study, consumer responses to a fictitious OTC drug advert will be tested.

Message empowerment – i.e. recipients' ability to arrive at qualified product evaluations on the basis of information contained in an ad - is seen as being positively influenced by ad credibility (H1a) and ad comprehensibility (H1b). The empowerment derived from the advertising message is then predicated to fuel other forms of empowerment, namely self-medication empowerment (H2a), whereby adverts are predicted to strengthen individuals' self-medication skills, and health empowerment (H2b), in which the perceived usefulness of the information included in the ad is expected to allow consumers to play an increased role in managing their health care. In addition, message empowerment (cognitive/knowledge) is presumed to have an impact on both ad evaluation (affective/liking; H3a) and product evaluation (affective/liking and preference; H3b). The conceptual model is illustrated in Figure 1.

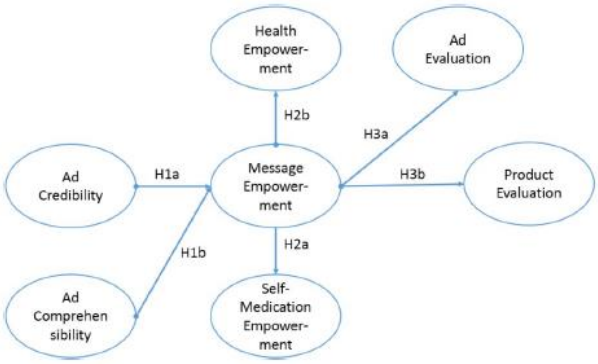

Figure 1: Advertising-Empowerment Model (the authors, 2017)

4. Empirical Study

Study Purpose: The rationale for this study is three-fold: first, few studies have addressed consumer responses to pharmaceutical advertising in one or more pharma markets (the authors, 2017); second, limited research has been conducted in the area of OTC drug advertising; and third, replication studies addressing consumer empowerment over time are missing from the debate.

Method: A structured questionnaire was employed, which was based on established marketing and health scales (available upon request). Subjects were asked several general questions regarding health and their health-related media usage before being exposed to one of two ads, which differed in their ad appeal. Afterwards, they were asked to provide evaluations of the advertisement, the product, and the pharmaceutical manufacturer. The degree of empowerment drawn from the ad was measured on three levels. Sociodemographic questions concluded the questionnaire.

The replication study presented in this paper focuses on two appeal types: a mixed and a CSR appeal. The mixed appeal was chosen, since it is commonly utilized by marketers to promote both prescription and non-prescription drugs, and has also been found to lead to the highest degree of empowerment (the authors, 2017). Though the CSR appeal's empowerment potential has been found to be rather low (the authors, 2017), its inclusion seems to be warranted, given that consumer interest in CSR activities is on the rise throughout the world (Deloitte, 2018; Nielsen, 2018). Moreover, a recent study (the authors, 2021) demonstrated that CSR activities in pharmaceutical industries can indeed positively shape product evaluations and purchase intentions.

Study Population: For the first study, conducted in 2013, 243 subjects were recruited in Germany, and 120 subjects were recruited in the United States. For the replication study, conducted in 2021, a total of 194 subjects were recruited in Germany, while 170 subjects were recruited in the United States. In terms of age, respondents were between 18 and 93 years old (M_{2013}= 35 yrs., M_{2021}= 33 yrs.). Female/male participation was almost equally distributed in both datasets.

Rationale for Country Selection: The countries examined are Germany and the United States. The largest share of OTC drug revenues in Europe was generated by Germany, which represented 18.2% of the continent's total market value, and a market value of € 3.7 billion in 2019. By 2023, the market is expected to be worth € 3.8 billion (Statista, 2019). In the United States, the OTC revenues are estimated at more than $ 27 billion for 2021 and are expected to reach $ 35 billion by 2025 (Statista, 2021).

Stimulus Ad Design: An ad was designed to promote a fictitious pain reliever with the brand name Senza, produced by the fictitious pharmaceutical manufacturer ProSante. The messages for the two appeal types used for this study – a mixed and a CSR appeal – were almost identical in their composition, combining elements of both informative and emotional messages (the authors, 2017). The CSR appeal advert contained an additional (fictitious) CSR message. Its inclusion in the ad was intended to raise awareness of Tetanus. For every package of Senza sold, one crucial vaccination to reduce maternal and infant morbidity would be donated. This health-related cause, a humane-oriented CSR appeal (Diehl et al., 2015), was seen as a good fit for a pharmaceutical marketer. Adverts and questionnaires were translated from English into German via the translation/back-translation method.

5. Results

Measurement Model: We first conducted a confirmatory factor analysis (CFA) to assess the measurement model, which showed good model fit.

Structural Equation Model: The model shows acceptable global fit measures (CFI = .942; IFI = .943; CMIN/DF = 3.071; RMSEA = .041). The factors within the SEM are latent constructs measured by observable variables (items).

Hypothesis H1a proposed that if consumers believed the ad to be credible, this would enhance their evaluations of the information contained in the message (i.e. message empowerment). For the mixed appeal ad, path coefficients were significant in 2013 (r_{GER}=.940/r_{USA}=.479) and 2021 (r_{GER}=.939/r_{USA}=.977). For the CSR appeal ad, path

coefficients were significant in 2013 (r_{GER}=.855/r_{USA}=.792) and 2021 as well (r_{GER}=.866/r_{USA}=.936). Hence, hypothesis H1 is confirmed for both datasets.

Hypothesis H1b predicted that if respondents regarded the ad as comprehensible, this would enhance their evaluations of the information contained in the ad. While path coefficients confirmed the proposed relationship in 2013 for the mixed appeal ad (r_{GER}=.241/r_{USA}=.300), path coefficients were not significant in 2021 (r_{GER}=.024/r_{USA}=.101). The trend is reversed for the CSR appeal ad: whereas path coefficients were significant in 2021 (r_{GER}=.137 (only at a 10%-level) /r_{USA}=.140), they were not in 2013 (r_{GER}=.100/r_{USA}=.192). As in the first study, hypothesis H1b is only partially supported in the replication study.

Hypothesis H2a claimed that if respondents experienced a high degree of message empowerment, this would also enhance their self-medication empowerment. This assumption was confirmed in 2013 (r_{GER}=.748/r_{USA}=.579), and again in 2021 (r_{GER}=.804/r_{USA}=.710) for the mixed appeal, as well as for the CSR appeal ads (2013: r_{GER}=.830/r_{USA}=.647; 2021: r_{GER}=.700/r_{USA}=.550). Consequently, hypothesis H2a is accepted for both datasets.

Hypothesis H2b suggested that the perceived message empowerment would also enhance individuals' health empowerment. Path coefficients were significant in both 2013 (mixed: r_{GER}=.667/r_{USA}=.491; CSR: r_{GER}=.689/r_{USA}=.778) and 2021 (mixed: r_{GER}=.636/r_{USA}=.742; CSR: r_{GER}=.575/r_{USA}=.609). Hypothesis H2b is supported by both datasets.

Hypothesis H3a assumed that if consumers had experienced some form of message empowerment, this would lead to more favorable ad evaluations. For the mixed appeal ad, paths are highly significant (2013: r_{GER}=.855/r_{USA}=.481; 2021: r_{GER}=.889/r_{USA}=.888). Similar results were reported for the CSR appeal ad (2013: r_{GER}=.860/r_{USA}=.585; 2021: r_{GER}=.772/r_{USA}=.953). While critical ratio (CR) comparisons are not significant for other hypotheses between the two time points, they support significant differences for the presumed relationship in H3a in the two datasets (mixed appeal: CR_{USA} = 2.492***; CSR appeal: CR_{GER} = -2.073***; CR_{USA} = 2.968***). Hypothesis H3a is corroborated by both data sets.

Hypothesis H3b was based on the assumption that if consumers felt empowered through OTC ad content, this would lead to a greater likelihood of purchasing the advertised OTC drug. Overall, consumers appeared more likely to consider purchasing from pharmaceutical companies if they had experienced message empowerment. Path coefficients were thereby significant for the mixed appeal ad in 2013 (r_{GER}=.751/r_{USA}=.741) and 2021 (r_{GER}=.884/r_{USA}=.827). Similar results were obtained for the CSR appeal ad (2013:

r_{GER}=.872/r_{USA}=.632; 2021: r_{GER}=.787/r_{USA}=.808). Thus, hypothesis H3b received support for both ad appeals and both datasets.

Tables A1 and A2 in the Appendix provide an overview of the coefficients and significance levels for the hypotheses proposed in this study for both appeal types at two points in time.

6. Implications and Limitations

The purpose of the present study was to replicate the Advertising-Empowerment model and explore again whether consumers can be empowered through exposure to pharmaceutical advertising messages, which could be confirmed. Data from two points in time (2013 and 2021) was compared and revealed that the results are robust. With one exception (the influence of ad comprehensibility), scores did not vary significantly between 2013 and 2021. The developed model, as well as the empowerment potential of OTC drug promotions, could be confirmed, which was aided by message credibility and comprehensibility, however interestingly only by comprehensibility in the mixed appeal, but not by comprehensibility for the CSR appeal advert. This is an interesting finding that needs further research, as credibility seems to be more important than comprehensibility for message empowerment for CSR ad appeals. Future researchers may want to replicate this investigation with a larger sample size and collect data in additional countries. While consumers feel that they can get empowered by pharmaceutical advertising, it would be interesting to explore whether they understand the information presented in the advertisements correctly and are able to critically reflect on the information provided by pharmaceutical companies.

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Appendix

Path			Hypothesis	2013	2021
Ad Credibility	→	Message Empowerment	H_{1a}	.940 *** (GER) .479 *** (USA)	.939 *** (GER) .977 *** (USA)
Ad Comprehensibility	→	Message Empowerment	*H 1b*	.241 *** (GER) .300 ** (USA)	.024 n.s. (GER) .101 n.s. (USA)
Message Empowerment	→	Self-Medication Empowerment	H_{2a}	.748 *** (GER) .579 *** (USA)	.804 *** (GER) .710 *** (USA)
Message Empowerment	→	Health Empowerment	H_{2b}	.667 *** (GER) .491 *** (USA)	.636 *** (GER) .742 *** (USA)
Message Empowerment	→	Ad Evaluation	H_{3a}	.855 *** (GER) .481 ***(USA)	.889 *** (GER) .888 *** (USA)
Message Empowerment	→	Product Evaluation	H_{3b}	.751 *** (GER) .741 *** (USA)	.884 *** (GER) .827 *** (USA)

*** p < 0.01 ** p < 0.05 * p < 0.10

Table A1: Results of the structural equation model for the two independent data sets (mixed appeal)

Path			Hypothesis	2013	2021
Ad Credibility	→	Message Empowerment	H_{1a}	.855 *** (GER) .792 *** (USA)	.866 *** (GER) .936 *** (USA)
Ad Comprehensibility	→	Message Empowerment	*H 1b*	.100 n.s. (GER) .192 n.s. (USA)	.137 * (GER) .140 ** (USA)
Message Empowerment	→	Self-Medication Empowerment	H_{2a}	.830 *** (GER) .647 *** (USA)	.700 *** (GER) .550 *** (USA)
Message Empowerment	→	Health Empowerment	H_{2b}	.689 *** (GER) .778 *** (USA)	.575 *** (GER) .609 *** (USA)
Message Empowerment	→	Ad Evaluation	H_{3a}	.860 *** (GER) .585 *** (USA)	.772 *** (GER) .953 *** (USA)
Message Empowerment	→	Product Evaluation	H_{3b}	.872 *** (GER) .632 *** (USA)	.787 *** (GER) .808 *** (USA)

*** p < 0.01 ** p < 0.05 * p < 0.10

Table A2: Results of the structural equation model for the two independent data sets (CSR appeal)