FACULTEIT ECONOMIE EN BEDRIJFSKUNDE

UNIVERSITEIT GENT

Invitation

You are cordially invited to the public defense to obtain the academic degree of

DOCTOR OF BUSINESS ECONOMICS

by Leen De Schaepdrijver

How Browsing Data Can Advance Television Advertising

Supervisors: Prof. Dr. Steve Muylle, Prof. Dr. Philippe Baecke & Prof. Dr. Koen Tackx

Wednesday, 22nd of March 2023 at 18h
Chapel, Vlerick Business School, Reep 1, 9000 Ghent
Please confirm your attendance no later than 12 March by e-mail to
Leen.deschaepdrijver@UGent.be

EXAMINATION BOARD

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Abstract

Context

This PhD research focuses on the value of additional data sources, and more specifically web browsing data, for television advertising. With the rise of digital media and the disruptive evolution of big data, the media landscape has gone through turbulent times. Technology is developing more rapidly than ever, and we are now able to collect and process data in volumes and formats that we never could before. Digital companies were the first to jump on this train of technological revolution and are harnessing the power of data, thus attracting a large portion of the overall advertising spending worldwide. This has inspired the television advertising landscape to come up with new technologies such as addressable advertising, allowing to target specific households via their set top box. Addressable advertising might provide an answer to the predominance of the digital advertising giants. In order to really move to an addressable approach however, several challenges still lie ahead. Our research focuses on three of those challenges. The first paper focuses on the availability of data, what influences consumers to share their personal data, and how companies can convince consumers to share their data with them. The second paper focuses on improving measurement capabilities by using web browsing data to measure online response after TV advertisements. The third paper focuses on improving targeting capabilities by using browsing data as input for predicting online response after TV advertisements.

Study 1

The new technology of addressable advertising on TV opens the door to better targeting and measurement of TV advertising campaigns. However, gaining access to consumer data is paramount for this new technology. This article aims to understand consumers' willingness to disclose personal information in the context of addressable advertising by applying privacy calculus theory. The authors administered a survey to 1,858 participants, examining the influence of both personal and situational factors on consumers' willingness to disclose information. Personalization value is the strongest antecedent of willingness to disclose data, followed by privacy concerns and institutional trust. Moreover, the authors suggest how situational factors such as type of data and customer benefits—controllable by companies—influence individuals' willingness to disclose information and how they might balance out each other.

Study 2

Measurement capabilities are an important reason for marketers to favour online advertising channels over TV. This paper investigates whether web browsing data can be used to close the TV advertising loop. We combine TV viewing data and web browsing data of 1846 customers of a European telecommunications company over three months with a data set of advertisement characteristics spanning over 300 TV commercials by 118 brands. This approach allows a disaggregate analysis of the effect of TV advertising on online response in the form of web visits. This is an improvement from the current best practice of measuring online response to television advertising which is based on aggregated measurement of pre and post time windows. Our contributions to the literature are two-fold. Firstly, we reinvestigate earlier findings on the relationship between television advertising and online visits in a disaggregate way. Our research setup additionally allows to study how this effect diminishes over time. Secondly, we provide insights into which ad characteristics influence web visits. Both TV advertising content and media-placement related characteristics impact online response on the short and the long term. The effects of the first position in the break and of advertising during prime time and live sports however only seem to exist on the short term.

Study 3

A third challenge for TV advertising is the lack of targeting capabilities. New set top boxes make it technically possible to distribute specific content to specific households, but profiling of audiences is still very limited. We add historical web browsing behaviour to a response model that predicts response to television advertisements. Our response model consists of a recurrent neural network that uses an embedding layer and an LSTM (long short-term memory) layer. We show that adding such historical URL data drastically increases the predictive value of our response model compared to the benchmark model that only contains media placement-related data, and that 250 historic URLs are sufficient to optimize the model's predictive performance. In addition, we investigate whether a model based on real-time data has added value compared to a model with batch processing of the data. Although the results differ per advertiser, there seems to be an overall increase in model performance. Companies that want to invest in facilitating a real-time approach can hence further improve the predictions of their response model by adding the most recent surfing behaviour.

Curriculum vitae

Leen De Schaepdrijver (°1992, Gent) holds the degrees of Bachelor in Law (2013, UGent), Master in Law (2015, UGent), and Master in Marketing Management (2016, Vlerick Business School). She joined the marketing area at Vlerick Business School and the department of marketing, innovation, and organisation at Ghent University (Faculty of Economics and Business Administration) in 2018 as a PhD student and obtained funding under a Vlerick Knowledge Partnership. The first chapter of her dissertation was published in a peer-reviewed journal, Journal of Advertising Research, in June 2022. The second chapter has been submitted to Journal of Marketing in January 2023. Leen presented her research at several international conferences, including the 2021 INFORMS Annual Meeting (Anaheim, CA, held virtually), the American Marketing Association's 2022 AMA Winter Academic Conference (held virtually), and the 44th ISMS Marketing Science Conference (Chicago, IL, held virtually). Besides the PhD project, Leen has tutored in the Vlerick online MBA programme in Digital Strategy and helped to develop and deliver a learning journey guiding companies in developing a data and analytics driven strategy.