



Data Acquisition Form 2021

Project Title: An investigation of the influence of individual differences on susceptibility to product placement

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Collection

Questionnaire-Based Study

Abstract

Product placement increased in popularity in 1982 when Reese's Pieces Chocolate was included in E.T. the film, which led to a 65% increase in sales. Still to this day product placement is omnipresent within our cultural climate and research has supported that it enhances our purchase intentions. However, what remains unknown is how individual differences may influence product placement susceptibility. To address this gap, the current study investigated whether individual differences in cognitive capabilities, inhibitory control, age, familiarity, gender and timepoint enhance/reduce the likelihood of individuals' purchasing intentions being influenced by product placement. To do this, 55 participants (23 younger adults ($M_{age} = 61.62(8.70)$) and 22 older adults ($M_{age} = 21.75(0.68)$) were presented with images of four cups of coffee and asked to rank their purchase intentions/familiarity with the products. Following this, participants watched three scenes from Coronation Street, with the second clip including a product placement (Costa Coffee). Approximately 48 hours later, participants completed another purchase intentions questionnaire on the same four cups of coffee. The results highlighted that purchase intentions increased immediately post-clip; however they decreased 48 hours post-clip. Therefore, advertisers may use this information to discover ways in which the consumer can easily purchase the product immediately post-clip e.g. through QR codes. In regard to all other variables, no other significant relationships were found. Thus, it cannot be suggested to advertising agencies that product placement targeted to individuals who fulfil a given criteria (e.g. older adults, etc) will achieve optimal results when compared to non-targeted product placement.

Keywords

Product placement, individual differences, cognitive capabilities, inhibitory control, age, familiarity, gender, timepoint, purchase intentions

Method

Design

The present quantitative study adopted a repeated measures design. There were several predictor variables: overall cognitive capabilities (including executive functioning; as assessed by the ACE-III; Hsieh et al., 2013), inhibitory control (as assessed by the Stroop effect), age, familiarity, gender, and



g for green, b for blue, and y for yellow). Participants first completed four practice trials followed by 40 test trials.

Cognitive Functioning

Cognitive capabilities were measured using an adaptation of the Addenbrooke's Cognitive Examination (ACE-III; Hsieh et al., 2013). The original version assesses the participants' attention, memory, fluency, language, and visuospatial abilities and has a combined score of 100. Although the adapted version examines the same five cognitive domains, it has a combined score of 77, the reason being that some questions were removed, as they were not deemed suitable for an online study – the first two questions on attention, the first two questions on language, and the first three questions on visuospatial abilities. The original version's pre-validated cut off point was 88 (88%) and therefore the adapted version's was 68 (88.31%). The participants who scored below the pre-validated cut off point were removed prior to analysis to ensure that the presence of cognitive impairment would not confound the subsequent analysis.

Demographic and Health Characteristics

Demographic information, including age, ethnicity, and gender, and background health information, including whether the participant had a current or history of a diagnosis of any cognitive, neurological, visual, or psychiatric impairments, was collected through an online Qualtrics Questionnaire.

Purchase Intentions Questionnaire

Prior to the questionnaire, participants were presented with the name and an image of each of the four cups of coffee. Purchase intentions of the four cups of coffee were then measured using a 7-point Likert scale. Participants were asked to rate on a scale of 1-7, 1 being 'Extremely unlikely' to 7 being 'Extremely likely', how likely they were to purchase a cup of coffee from: Caffè Nero, Costa Coffee, Greggs, and Starbucks.

Comparably, familiarity was also measured using a 7-point Likert scale. Participants were asked to rate on a scale of 1-7, 1 being 'Extremely unfamiliar' to 7 being 'Extremely familiar' with how familiar they were with each cup of coffee from Caffè Nero, Costa Coffee, Greggs, and Starbucks.

Purchase intentions and familiarity were measured using a 7-point Likert scale, rather than the commonly used 5-point Likert scale, as the inclusion of several options enhances the likelihood of acquiring a more accurate response (Joshi et al., 2015).

It was important that purchase intention and familiarity of Costa Coffee was assessed alongside alternative brands, so that it was not made apparent that the study was focusing upon the participants' purchase intention ranking of Costa Coffee only. Therefore, Caffè Nero, Greggs, and Starbucks were chosen alongside Costa Coffee, because according to a survey conducted by Lock (2022), they are the UK's top four leading coffee shop chains. The images were provided by Adobe Stock (2019) and Dreams Time (2019a, 2019b, 2019c).

Product Placement Video

The British TV Soap Coronation Street was selected, as prior research (e.g. Armstrong, 2018) suggests that it is popular amongst both younger and older adults (YouGov, 2011). The first clip chosen was a scene from 8th January 2018 Part 1, lasting 1 minute 16 seconds. The second clip chosen was a scene from 29th January 2018 Part 1, lasting 1 minute 15 seconds. The third clip

A flowchart of part one tasks.

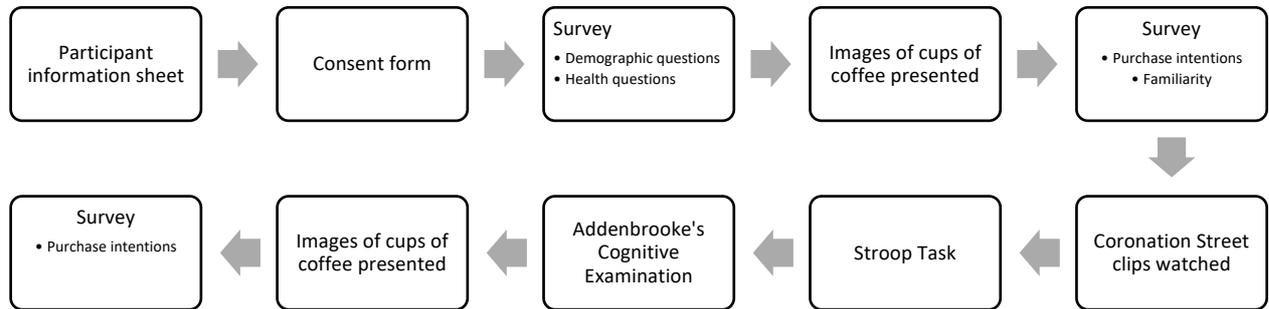
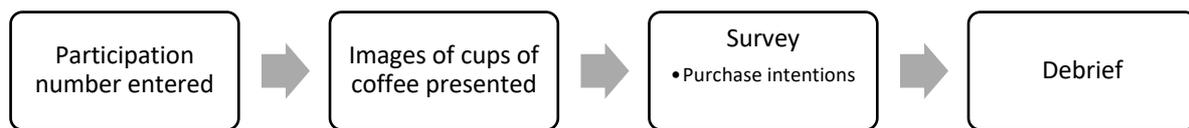


Figure 2.

A flowchart of part two tasks.



Data Processing

Inhibitory Control

Participants raw Stroop data were downloaded from Psytoolkit into a Microsoft Excel file and saved in an encrypted files on a password-protected computer. From this raw data Stroop effect (the average incompatible conditions response time (ms) - compatible conditions response time (ms)) and percentage error rate (which involved adding the total of incorrect and timed out responses and dividing it by 40 (number of trials)) were calculated. Stroop effect and percentage error rate were used as an indicator of the participants inhibitory control capabilities. Specifically, a high Stroop effect would suggest less difficulty in inhibiting interference and a higher error rate would suggest reduced inhibitory capabilities.

Cognitive Functioning

The scores of the ACE-III were added and entered into the Microsoft Excel file, which was saved in an encrypted files on a password-protected computer. A higher score was indicative of superior cognitive functioning.

Demographic and Health Characteristics

To ensure all demographic and health data was readable by R-Studio all variables were dummy coded using numerical values. So, for instance, to determine the participants' gender, they were asked 'What gender do you identify' and given the option to choose from one of several responses. Each response was allocated a number, for example, 1 = Man, 2 = Woman, etc, and this was entered into the Microsoft Excel document.



Susceptibility to product Placement (change in Purchase Intentions)

To investigate the susceptibility to product placement, two difference in purchasing behaviour score were calculated (one for short duration, one for prolonged duration). To calculate these values, the likelihood of purchasing the product value prior to watching the clip was subtracted from likelihood of purchasing the product value after watching the clip (either immediately post-clip or 48 hours after). A positive difference meant that purchase intentions had increased following placement clip. A negative difference meant that purchase intentions had decreased following placement clip. A difference of zero meant that the placement clip had failed to alter purchase intentions

Familiarity

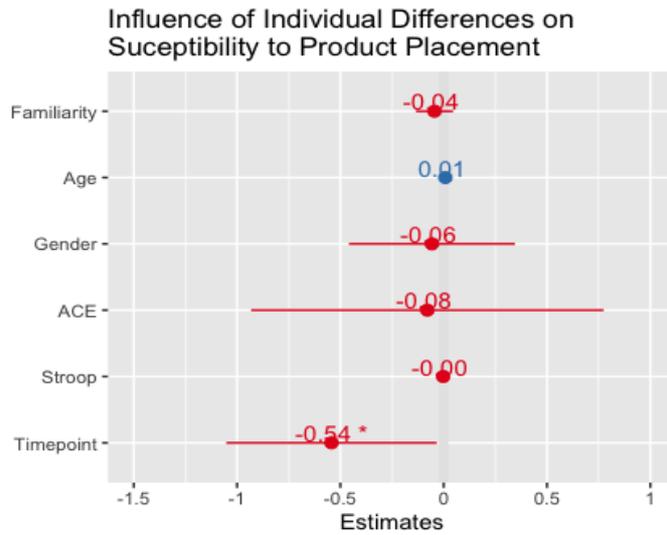
The familiarity ratings of Costa Coffee were entered into the Microsoft Excel file, which was saved in an encrypted files on a password-protected computer. The higher the score, the more familiar the participant was with the product.

Data Analysis

To analyse the data, a linear mixed effects model was chosen. The reason being that the current study employs a repeated measures design, and a linear mixed effects model permits an analysis of hierarchically structured data (Baayen et al., 2008).

Results

To explore the effect of the overall cognitive functioning (including executive functioning), Stroop effect (inhibitory control), age, familiarity, gender, and timepoint on susceptibility to product placement (as measured through changes in purchase intentions), a linear mixed effect model was fitted with susceptibility to product placement as the dependant variable, ACE (overall cognitive functioning; including executive functioning), Stroop effect (inhibitory control), age, familiarity, gender, and timepoint as fixed effects, and participant as random intercepts. Overall, timepoint was the only variable that significantly influenced susceptibility to product placement ($\beta = -0.54$, $SE = 0.25$, $t(34) = -2.17$; $p < .01$). Specifically, change in purchase intention was mildly positive immediately after viewing the video (i.e. participants stated they were more likely to purchase a Costa Coffee immediately after viewing the video than they were before viewing the video; $M = 0.24$; $SD = 0.83$). Whereas, 48 hours after viewing the clip, participants change in purchase intention was mildly negative (i.e. participants sated they were slightly less likely to purchase a Costa coffee 48 hours after initial purchase preference rating; $M = -0.30$; $SD = 1.63$). All other variables did not significantly influence susceptibility to product placement (see Figure 3). Figure 3. A plot regression model of the influence of individual differences on susceptibility to product placement.



Notes. * indicated significance at the $p < .05$ level.

Format of data

Data/RStudio.csv

Rights

Open

Relation

N/A

Language

English

Type

Data

Supervisor Name: Megan Readman

Project Level

Undergraduate

Masters



- Latent Class Analysis
- Linear Mixed Effects Modelling
- Log-Linear Analysis
- MANCOVA
- Monte Carlo Simulations
- Multi-Dimensional Scaling
- Power Analysis
- Psychometrics
- Qualitative
- Qualitative (Conversation Analysis)
- Qualitative (Discourse Analysis)
- Qualitative (Thematic Analysis)
- Regression
- Signal Detection Theory
- Structural Equation Modelling
- T-Test
- Other

If you selected "Other" and the statistical analysis used in your project is not listed above, please state your analysis/analyses in this box

Data Files

Please ensure that you attach the documents listed below alongside your data acquisition form and provide the names of the files for ease of identification.

Blank Consent Form: Consent Form

Data File(s): ED_FinalDataa

Codebook: Codebookc

Data Analysis Code: Data Analysis Code

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