Do All Good Things Come in Threes?

Assessing the Relationship between Product Claim Quantity in Advertisements, Consumer Scepticism, and Message Persuasiveness

Master's Thesis

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by

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Management Summary

Firms spend a considerable share of their marketing budgets on advertising to ultimately convince the consumers of the superiority of the company's products. Although much research has been conducted on the factors contributing to advertisement persuasiveness, the optimal number of product claims to be used in marketing messages has yet to be determined. While there is a general consensus in the social psychology literature that increasing the amount of convincing information in a message increases its persuasiveness, in a marketing context, this effect does not necessarily seem to hold. In fact, consumers dispose of persuasion knowledge that helps them identify marketers' persuasion tactics and guides them in their judgement of marketing messages. Detection of such a persuasion tactic might cause for the message to be perceived as too obtrusive, trigger consumer scepticism, and result in a more unfavourable attitude towards the presented product. Recent research has provided first evidence for the notion that presenting three claims seem to be optimal for persuasion when consumers are aware of the persuasive intent of the message—the so-called *charm of three*. Moving beyond three claims has been shown to cause inference of a persuasion tactic and undermine the effectiveness of the ad.

The aim of this study was to shed more light on the persistence of the *charm of three* across various settings. To this end, we used a different type of product presented in the ad. In addition, we investigated if consumers' issue involvement (i.e., the personal relevance of the ad) potentially alters this effect. In an online experiment with 297 participants, we manipulated both the number of claims in an advertisement for a portable speaker as well as subjects' issue involvement to assess the relationships between *Product Claim Quantity* and *Scepticism towards the Ad* (moderated by the level of *Issue Involvement*), as well as the effect of *Scepticism towards the Ad* on *Attitude towards the Product*. The gathered data were analysed by means of ANOVA, Preacher-Hayes bootstraps tests, and Structural Equation Modelling.

We show that *Scepticism towards the Ad* mediates the relationship between *Product Claim Quantity* and *Attitude towards the Product*, however the effect of scepticism on attitude is moderated by the number of claims again. Put differently, scepticism only has a negative effect on attitude when four or five claims are presented. When two or three claims are presented, there is no indirect effect on attitude through scepticism. However, given that the direct effect is positive and stronger than the indirect effect, consumers' attitudes towards the product presented in the ad get more favourable each time a claim is added for up to four claims. In sum, we show that the *charm of three* does not hold for all marketing communications. As for involvement, we show that the perceived personal relevance of the ad does not moderate the relationship between *Product Claim Quantity* and *Scepticism towards the Ad*.

Preface

Every day and across the globe, companies reach out to potential customers by sending advertising messages through various media channels, hoping to convince them of the firm's offerings. Hence, it comes as no surprise that message persuasiveness is a very prominent topic in the marketing literature. Before you lies the thesis "*Do All Good Things Come In Threes? – Assessing the Relationship between Product Claim Quantity in Advertisements, Consumer Scepticism, and Message Persuasiveness*", which aims at shedding more light upon how the number of positive product claims presented in firms' advertisements can influence consumers' product evaluations.

This thesis combines the different steps of the research process which I have conducted over the past five months in order to obtain the degree of Master of Science in Marketing Management. However, this paper does not only serve as a mere presentation of *how I have been spending my days recently*. It also symbolises closing the chapter on being a student at Tilburg University—a period which, quite frankly speaking, was tough and challenging at times, but which also taught me a great deal about Marketing and about myself; a period which I am grateful to have been given the opportunity to experience.

Writing this thesis would not have been possible without the support of the people in my environment. First and foremost, I would like to thank my supervisor Elke Schrover for her guidance and critical review of my thesis throughout the process. Her comments, suggestions, and academic insights really helped me progress and improve the quality of my work. In addition, I would also like to give thanks to my friends and fellow students for their words of encouragement, mental support, as well as the coffee and lunch breaks during our joint day (and sometimes night) shifts at the library. Last but not least, a special thank you goes out to my dad for always supporting me in whatever I do!

I hope you will enjoy reading this thesis!

Philipp Hubert

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1. Introduction

1.1. Problem Indication

Day after day, companies across virtually all industries reach out to potential buyers through different media channels and try to draw customers' attention towards their products. Considerable parts of marketing budgets are invested into advertising; in fact, global advertising spending added up to US$493 billion in 2016 (MAGNA, 2016). In view of these large numbers, advertising is a very prominent topic in the marketing literature; it can be defined as "any form of paid communication by an identified sponsor aimed to inform and/or persuade target audiences about an organisation, product, service, or idea" (Fennis & Stroebe, 2016, p. 2).

It seems fair to assume that the ultimate goal of a company is for their advertising efforts to result in the generation of (incremental) sales by persuading the customer of the superiority of the products relative to those of competitors. Hence, in the light of the significant allocation of firms' monetary resources into advertising discussed at the outset of this chapter, it is inevitable to contemplate on what makes for an advertising message to be persuasive in order to ensure efficient usage of these resources. It therefore comes as no surprise that message persuasiveness in marketing settings is a well-studied field, and that for more than a century, many researchers have sought to identify and explain factors contributing to the persuasiveness of a message. According to Petty & Cacioppo (1986a) persuasion is defined as any change in beliefs and attitude "that result from exposure to a communication" (p. 5). Drawing on this definition, it is important to evaluate a message's ability to change the attitude of a consumer. An attitude is "a psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour" (Eagly & Chaiken, 1993, p. 1).

The current literature abounds with insights into factors influencing attitudes, such as argument/message quality (Petty & Cacioppo, 1986b), source credibility (e.g. Tybout, 1978), message framing (e.g. Block & Keller, 1995), contextual influences (e.g. Petty & Cacioppo, 1986a), and processing fluency (e.g. Reber, Schwarz, & Winkielman, 2004) to only name a few. And still, the question of *how many positive claims* a persuasive marketing message should contain has yet to be answered (Nordmo & Selart, 2015). In spite of the general agreement in the social psychology literature on the fact that the higher the amount of information a message comprises, the more persuaded individuals seem to be (Tormala & Petty, 2007), this notion might not necessarily be true in the context of advertising. According to the Persuasion Knowledge Model (PKM; Friestadt & Wright, 1994), consumers dispose of beliefs as to how persuasion should function and in cases where consumers perceive a marketer's action as a *persuasion tactic* rather than a means to inform, they are likely to disengage from the content, react with increased scepticism, and discount the message. Recently, the Persuasion Knowledge Model has been employed to investigate the effect of the number of product claims in a message on consumer's product evaluation when their persuasion knowledge is active. Shu and Carlson (2014) have found first evidence for an effect they refer to as *the charm of three*: while attitude towards the product first increases as more claims are added to the message, there seems to exist a

point where increasing the number of claims in the set causes for consumers' product evaluations to deteriorate. Over several experiments, the authors have shown that this happens as the number of claims moves beyond three. The reason for this might be that, as the list of product claims gets longer, consumers tend to infer a persuasion tactic on the marketer's part. This inference is likely to result in increased scepticism towards the veracity of the information in the message, and thus also likely to cause more negative product evaluations (Shu & Carlson, 2014).

The use of consumer persuasion knowledge is highly dependent on the cognitive resources allocated to the message processing (Friestadt & Wright, 1994; Campbell & Kirmani, 2000; 2008). As per the Elaboration Likelihood Model of Persuasion (ELM; Petty & Cacioppo, 1986), processing of a persuasive communication can occur through one of two routes—the *central* and the *peripheral* route. The difference between the two routes is the amount of careful processing or *elaboration* of the message the consumer engages in. More specifically, these two routes differ significantly in terms of the mental effort an individual engages in when processing the message. An important determinant of the depth of message processing, amongst other factors, is an individual's issue involvement (i.e., how personally-relevant the information in the ad is). The higher the level of involvement with the ad, the larger someone's likelihood to engage in ample message processing (Petty, Cacioppo, & Schumann, 1983).

Considering that the use of consumer persuasion knowledge is dependent on the cognitive resources allocated to the message processing, one might raise the question of whether or not involvement has a moderating effect on the relationship between the number of claims in an ad and consumer scepticism. In other words, do consumers who are highly involved view an increased number of product claims with more scepticism given they process the message more elaborately? Does the *charm of three* apply to both high-involvement settings and to low-involvement situations? These questions will be addressed in the present study.

1.2. Problem Statement

The aim of this research can be summarised in the following central problem statement:

What is the effect of product claim quantity in an advertisement on attitude towards the product, mediated by a consumer's scepticism towards the ad, and what is the moderating effect of issue involvement on the relationship between product claim quantity and scepticism towards the ad?

1.3. Research Questions

The central problem statement will be answered by building on the following research questions:

- How is attitude towards the product defined in the literature?
- What is consumer scepticism towards the ad?
- How can issue involvement be defined?
- What is the effect of product claim quantity on scepticism towards the ad?
- What is the relationship between scepticism towards the ad and attitude towards the product?

- To what extent does issue involvement moderate the relationship between product claim quantity and scepticism towards the ad?

1.4. Research Method

Firstly, an in-depth literature study was conducted for the purpose of identifying and defining relevant constructs. Previous research findings on the topics were used to outline relationships between these constructs so as to formulate the empirical research hypotheses. Secondly, we conducted an online experiment with a 4x2 factorial design, in which the independent variable *Product Claim Quantity* (PCQ: 2, 3, 4, 5) as well as the moderator *Issue Involvement* (Inv: high/low) were manipulated, resulting in 8 experimental conditions. Participants were randomly assigned to one of the eight conditions and were presented with an ad of a portable speaker from a fictitious brand. Afterwards, participants were asked to fill in a questionnaire to determine their attitude and scepticism scores in order to compare these across the treatment groups. Once the data had been gathered, it was analysed by means of ANOVA, Preacher-Hayes bootstraps tests, and structural equation modelling.

1.5. Relevance

1.5.1. Academic Relevance

From an academic point of view, this research is relevant for four reasons. First, in its broadest sense, it contributes to the existing research bodies on attitude formation, advertising, and message persuasiveness. In fact, given that companies shift towards more advertising-dominated promotion strategies, “the importance of the research efforts in this field cannot be overstated” (Indibara, 2017, p. 1).

Second, while past research has mainly addressed scepticism as a *predispositional* character trait of an individual, rather than as a *situational* state of a consumer triggered by certain message characteristics (Briñol, Rucker, & Petty, 2015, also cf. Kim & Lee, 2009), this study will further investigate how the number of product claims in an advertisement can result in *situational* scepticism, regardless of a consumer’s overall tendency towards disbelief of marketing claims. Since persuasion can only occur if the message receiver deems the content of the message plausible (Eagly & Himmelfarb, 1978), situational scepticism caused by certain aspects in the message design might hinder persuasion. More specifically, although there is general agreement in the literature that increasing the amount of persuasive information causes for the message to be more convincing (Tormala & Petty, 2007), Nordmo and Selart (2015) state that, in marketing communications, “it is not altogether clear how many claims are optimal for persuasion” (p. 2). The present study aims to shed more light on this issue.

Third, since the level of issue involvement influences the overall processing of a message (Petty et al., 1983), it might also influence the extent to which consumers use their persuasion knowledge. While Petty and Cacioppo (1979) state that higher involvement can facilitate (hinder) persuasion in the presence (absence) of strong arguments, it might be the case that this interferes with consumers persuasion knowledge, for instance in the sense that presenting *too many* strong arguments could be seen as a persuasion tactic.

Fourth, owing to the fact that Shu and Carlson (2014) provided “the first empirical examination that has found broad consistent support for the notion [that three claims are optimal]” (p. 138), this study will also assess the robustness of the so-called *charm of three* in a different setting. In particular, it will be tested with a different product and manipulated for issue involvement, aiming to make another step towards generalisability of this theory.

1.5.2. Managerial Relevance

Not only is this study relevant from an academic perspective, it will also provide valuable insights for managers. First, in a broader sense, findings of this study should contribute to an efficient usage of advertising budgets in companies. It seems fair to assume that advertisements should be as convincing as possible; after all, positive attitudes, considered as a predictor of behaviour (Sheppard, Hartwick, & Warshaw, 1988), might translate into increased sales for the company. Findings of this study should help practitioners to advertise products as persuasively as possible, which, in turn, contributes to an efficient utilization of company resources.

Furthermore, marketers can use the results at tactical level, for instance when designing their ads. As a matter of fact, consumers are more often than not aware of the persuasion attempt of a marketing message, and companies, being convinced of their product’s superiority relative to competing products, tend to make as many positive claims as possible (Shu & Carlson, 2014). However, according to Nordmo and Selart (2015), over-communicating can trigger consumer scepticism when the targets are aware of the persuasive intention of the message, which might result in less favourable attitudes towards the advertised products than desired. It is thus crucial to determine message characteristics that might trigger scepticism so that the believability of the marketing communications is not weakened. Therefore, it is highly important to further elucidate the influence of product claim quantity on attitude towards the product in order that marketers can design an advertisement as persuasive as possible, while keeping scepticism towards the ad as low as possible.

Lastly, by assessing if issue involvement moderates the relationship between product claim quantity and scepticism towards the ad, the findings can shed more light on how consumers react to different numbers of product claims, for instance when personal relevance is particularly high (e.g., in personalised direct mailing or online advertisements generated based on retargeting). Again, these insights should be helpful for marketers when designing such communications.

1.6. Structure of the Thesis

The overall structure of this thesis takes the form of five chapters. In the following chapter, we will begin by laying out the theoretical dimensions of this research and define the concepts used throughout this paper. In addition, we will assess the relationships between the variables in order to draw up research hypotheses. Afterwards, in chapter three we provide an outline of the research methodology. After that, in chapter four, we will zoom in on the results of the empirical part of this study. Lastly, in chapter five, we will discuss the findings, provide theoretical and practical implications and conclude this thesis by discussing its limitations and recommendations for future research.

2. Theoretical Framework

In this chapter, we set the theoretical framework for the present study. We will conceptualise the variables *Attitude towards the Product*, *Scepticism towards the Ad*, *Product Claim Quantity*, and *Involvement*, which are used throughout this paper. In addition, based on prior research findings, we will assess in which way these variables are interrelated. Thus, the aim of this chapter is a review of the body of literature to develop research hypotheses that will be empirically tested.

2.1. Attitude towards the Product

2.1.1. Conceptualisation

One of the first definitions of *attitude* was drawn up by Louis Leon Thurnstone as early as in 1928; he defines this concept as the "total sum of a man's inclinations and feelings, prejudice or bias, preconceived notions, ideas, fears, threats, and convictions about any specified topic" (Thurstone, 1928, p. 531). These days, according to Fennis and Stroebe (2016), the conceptualisation which is most widely-accepted is Eagly and Chaiken's (1993) definition, referring to an attitude as a "psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour" (p. 1). According to the authors, a *psychological tendency* is an internal state of a person, which can either be rather short-lived or more enduring. This inner state predisposes the person towards an evaluative response which expresses *some degree of favour or disfavour*. The *particular entity* that is evaluated can also be referred to as the attitude object, "some entity or thing that is the object of the evaluation" (p. 4). An attitude object can practically be anything discriminable—from more abstract concepts (e.g., democracy, Christianity) to concrete items (e.g., a laptop computer, a table). Building on this definition, in the present study, we will assess consumer's *Attitude towards the Product* presented in an advertisement.

It seems fair to assume that marketing communications are intended to convince consumers of the superiority of the marketer's products over those of competing firms in the marketplace (cf. Obermiller & Spangenberg, 1998). Thus, when constructing such a message, it is important to shift the focus towards the message recipient and to understand the factors and mechanisms that result in a change in consumer's attitudes. Exposure to a marketing message that results in a change in attitude is referred to as *persuasion* (Petty & Cacioppo, 1986a) and many researchers have sought to identify and explain factors influencing message persuasiveness. Hence, the current literature abounds with examples of determinants of the success of attitudinal change, such as argument/message quality (e.g., Petty & Cacioppo, 1986b), source credibility (e.g. Tybout, 1978), message framing (e.g. Block & Keller, 1995), contextual influences (e.g. Petty & Cacioppo, 1986), and processing fluency (e.g. Reber et al., 2004), to only name a few. Another factor to consider is consumer scepticism which might influence the way consumers evaluate the product in the ad. It is therefore crucial to investigate its impact on message persuasiveness given that it might weaken the efficiency of a firm's marketing efforts.

2.1.2. The Impact of Scepticism towards the Ad on Attitude towards the Product

In general, scepticism can be defined as someone's inclination towards doubting, disbelief, and questioning (Boush, Friestadt, & Rose, 1994; Forehand & Grier, 2003). Consumers use scepticism to defend themselves against deceptive and uncandid marketing tactics (Kim & Lee, 2009). Forehand and Grier (2003) suggest that, in marketing contexts, we can distinguish between two forms of consumer scepticism. *Predispositional scepticism* is viewed as an overall tendency (i.e., a character trait) to mistrust the truthfulness and sincerity of marketing communications in general (e.g., Boush et al., 1994; Obermiller & Spangenberg, 1998). If a customer's predispositional scepticism is high, he tends to dislike advertising in general and disregard its value (Obermiller, Spangenberg, & MacLachlan, 2005). Given that this type of scepticism is rooted in an individual's personality, controlling for it seems to be beyond a marketer's control. *Situational scepticism*, on the other hand, is temporarily triggered or heightened (Briñol et al., 2015), for instance by changes in the message design (Forehand & Grier, 2003). In the present study, we assess consumers' *Scepticism towards the Ad*, which is suggested to be a form of situational scepticism. We define this variable as the extent to which subjects doubt, disbelief, or question the information presented in the advertisement.

In order to assess the way in which scepticism influences attitudinal change, it is important to briefly discuss the formation of attitudes. According to Fishbein (1963), an attitude entails the beliefs about the attitude object (e.g., *What are its characteristics?*) and the evaluation of these aspects (e.g., *Are these characteristics deemed good or bad?*). The message receiver's beliefs can only be changed if he views the message content as plausible (Eagly & Himmelfarb, 1978). Therefore, one might argue that, in general, if people do not believe the positive product claims in the ad, their persuasive impact is marginal or might even have a negative effect (cf. Obermiller & Spangenberg, 1998). For instance, Skarmeas and Leonidou (2012) have found that the disbelief of a firm's corporate social responsibility claims has a negative effect on the attitude towards the firm making the claims. Positive claims were thus discounted by consumers and had the opposite effect on their attitudes. Along those lines, Wathen and Burkell (2002) state that the receiver's perception of the believability of the information is crucial in the persuasion process, implying that scepticism and persuasive impact of a message seem to be closely related. If positive advertising claims about a product are doubted or disbelieved, exposure to the ad is unlikely to result in a more favourable attitude of the message receiver.

In fact, situational scepticism has been shown to decrease the persuasive impact of a marketing message. Consumers who are sceptical about the information in the ad tend to perceive the claims as being less truthful (Holbrook, 1978), which results in a lower acceptance of the claims (Fishbein & Ajzen, 1975). In addition, unfavourable thinking about an advertisement has been shown to cause a decrease in attitude towards the product (Li & Miniard, 2006). Similarly, Shu and Carlson (2014) have found that sceptical thoughts about the claims in a marketing message may have a negative effect on consumer's product evaluations. On these grounds, one might argue that if consumers show signs of scepticism towards an advertisement, they tend to respond more negatively to the product in the ad. Therefore, the following hypothesis has been formulated:

H1: *Scepticism towards the ad has a negative effect on attitude towards the product. Hence, higher scepticism causes for the attitude towards the product to decrease.*

2.2. Factors Influencing Scepticism towards the Ad

Situational scepticism may be reduced or heightened depending on the message design (Forehand & Grier, 2003). Hence, it is crucial to understand which message characteristics trigger scepticism in order that marketers do not weaken the believability of their advertisements (Kim & Lee, 2009). To shed more light upon these message characteristics, we draw on the Persuasion Knowledge Model (PKM) by Friestad and Wright (1994). The PKM suggests that in the course of their lives, consumers come to generate views on how persuasion works and whether a certain persuasion tactic (e.g., an attractive source, a shop assistant complimenting a customer, repeated exposure to a message) is acceptable (Briñol et al., 2015; Campbell & Kirmani, 2000; 2008). Hence, consumers seem to dispose of knowledge helping them in identifying "how, when, and why marketers try to influence them" (Friestadt & Wright, 1994, p. 1). In other words, consumers can detect persuasive attempts by making use of their persuasion knowledge and use it to respond to these attempts accordingly. When targets start to interpret a marketer's behaviour as a *persuasion tactic*, rather than merely as an *action*, a *change of meaning* occurs. For instance, a shop assistant flattering a customer and emphasising how good the piece of clothing looks on the latter might be understood as persuasion tactic (Campbell & Kirmani, 2000). Additionally, this notion might be linked to attribution theory stating that humans constantly try to give meaning to events and behaviour of others to form causal judgement (Fiske & Taylor, 1991). Therefore, one might argue that certain selling techniques or types of message design might be attributed to a persuasion tactic. The change of meaning prompts a consumer's utilisation of coping strategies, which might be expressed in disengaging from the content, deciding it is not worth considering the message, or making inferences about the product (Friestadt & Wright, 1994). Thus, consumers are likely to view the arguments presented in a more sceptical light as a change of meaning might disrupt "the overall coherence of a story the marketer is trying to tell, or a logical argument the marketer is trying to make" (Friestadt & Wright, 1994, p. 13; also cf. Nordmo & Selart, 2015).

The above discussion calls into question in which situation a change of meaning can occur. In previous studies, message framing (Kirmani & Zhu, 2007), repeated exposure to an ad (Kirmani A. , 1997), or attention-getting advertising tactics (Campbell, 1995) have been identified as tactics which consumers associate with persuasive attempts. Similarly, the amount of information presented in an ad might have an effect on consumer scepticism. For instance, Nordmo and Selart (2015) suggest that, when the target recognises a persuasive attempt, a high amount of information might make the persuasive goal of the message "more transparent or heavy-handed" (Nordmo & Selart, 2015, p. 2). More specifically, the number of product claims presented in an ad has been found to have an impact on consumer scepticism towards the ad (DeCarlo, 2005; Campbell & Kirmani, 2000; Shu & Carlson, 2014). If the number of claims is too high, people seem to be able to see through the persuasive intent, infer a persuasion tactic, and become sceptical towards the ad. For example, research by Shu and Carlson

(2014) provided evidence for the assumption that the longer the list of claims in marketing communications, the more consumers seem to view it as a persuasion tactic rather than a means to inform. Therefore, presenting a particularly long list of product claims does not seem to best practice when trying to persuade.

With the aim of shedding more light upon the *ideal* number of product claims in marketing communications, Shu and Carlson (2014) have examined the extent to which the number of positive product claims influences consumer scepticism. The authors hypothesised that "three is an important number for perceived completion" (p. 129), which is, for instance, reflected in the fact that consumers believe that three options make a complete consideration set (e.g., Uslay, Altintig, & Winsor, 2010), or in people's tendency to refer to a sequence of events as a streak once they have witnessed a third event (Carlson & Shu, 2007). In the aforementioned study (Shu & Carlson, 2014), participants were asked to imagine they were shopping at a supermarket and the cereal brand they sometimes bought caught their eyes due to its new package design. In addition, they were told that, along with the new package, the brand also claimed the product itself had been changed. After that, participants were presented with a list of claims about the new product (e.g., healthier, higher quality ingredients, better tasting); the amount of claims was manipulated across several experimental conditions. Compelling evidence was found for the notion that scepticism remains stable for up to three positive product claims, and increases for each additional claim added to the message.

In other words, the findings propose that the previously discussed *change of meaning* seems to occur as the fourth product claim is added. It also implies that moving beyond three positive claims makes the persuasive attempt seem too obvious and heavy-handed, and as more claims are added to the set, scepticism increases steadily. Thus, the following hypotheses have been drawn up:

H2a: *There is no effect of product claim quantity on scepticism towards the ad for up to three positive product claims.*

H2b: *When product claim quantity is four or larger, there is a positive effect on scepticism towards the ad. In other words, four or more product claims in an advertisement will cause for scepticism towards the ad to increase for each additional claim.*

2.3. Product Claim Quantity and Message Persuasiveness

Having assessed the relationship between product claim quantity and scepticism towards the ad, we will now move on to discuss how the amount of product claims in an ad can influence the persuasiveness of a message.

Early persuasion studies have generally supported "the idea that additional positive information increases liking" (Normo & Selart, 2015, p. 2). For instance, in a study from the field of social psychology carried out by Stewart (1965), participants were presented with a set of character traits about a person and it has been found that impression of that person steadily increased in positivity when another positive claim was added. Likewise, in an experimental study by Anderson (1967), it was shown that

larger sets of information produce stronger responses; this effect is referred to as the *set-size effect*. In the same way, Pelham, Sumarta, and Myaskovsky (1994), referring to this as the *numerosity effect*, argue that the amount of convincing information in a message is closely related to its persuasive impact. Calder (1978) proposes that this effect might stem from the fact that the larger the quantity of positive arguments in a message, the more its receiver has to think about the latter, and the more positive thoughts are generated. He describes attitude as a function of increasing information, suggesting that as the number of positive arguments in a message increases, attitude increases as well. Evidence for this has also been found in a study conducted by Calder, Insko, and Yandell (1974), in which, during a simulated jury trial, the amount of positive and negative arguments was changed in the case materials that the different jury members were provided with. The authors found that the extent to which the individuals were persuaded by the information was dependent on the amount of positive arguments presented. Other scholars have come to the same conclusion (Eagly & Warren, 1976; Norman, 1976; Maddux & Rogers, 1980). Thus, the higher the amount of persuasive information in a message, the more persuaded people tend to be.

H3: *There is a positive direct effect of product claim quantity on attitude towards the product.*

Conversely, the positive relationship between the amount of information and message persuasiveness discussed above might not always hold. In fact, it is valuable to note that evidence for the set-size effect chiefly stems from research in the field of social psychology and general persuasion (cf. Nordmo & Selart, 2015) and that these findings might thus not be readily applicable to persuasion in marketing communication settings. To illustrate, Nordmo and Selart (2015) claim that, when postulating the set-size effect, it is important to consider the characteristics of the communication source (i.e, the *communication agent*) and the agent's intentions behind the message conveyance. In fact, there seem to exist crucial differences in the way a message receiver processes a message when the communication agent is perceived to have a persuasive intent, rather than merely wanting to inform (Nordmo & Selart, 2015). To assess this form of processing in more detail, we draw on the previously discussed Persuasion Knowledge Model (Friestadt & Wright, 1994) again, which suggests that consumers hold beliefs about how persuasion functions, and that these beliefs are likely to influence the way in which they react to a marketing message. In particular, consumers seem to be able to detect *persuasion tactics* used by the communication agent, which may prompt a *change of meaning* and elicit scepticism towards the information presented (cf. Chapter 1.2 for a more detailed explanation).

In the light of this, it is important to consider in which situations consumers use their persuasion knowledge when assessing a message. In fact, the utilisation of persuasion knowledge is premised on the assumption that the consumer recognises a persuasive attempt (Friestadt & Wright, 1994). But when does a consumer actually recognise that he is being persuaded? Campbell and Kirmani (2008) suggest that, generally speaking, customers have become more conscious of marketers' intentions given the omnipresence of advertising in their everyday life. Along similar lines, Shu and Carlson (2014) claim that consumers are typically aware of the fact that marketing messages are aimed at

persuading them. Thus, when it comes to marketing communications in general, the consensus view seems to be that consumers are aware of the persuasive intention of the agent (Kirmani & Campbell, 2009; Shu & Carlson, 2014; Briñol et al., 2015). Therefore, it seems fair to assume that, when exposed to an advertisement—as will be the case in this study—, consumers' persuasion knowledge should be active and is likely to be relied upon when making judgements about the message.

In this study, the question under discussion is the effect of the number of product claims in an advertisement on consumers' attitude towards the product. As has been outlined previously, Shu and Carlson (2014) have shown that attitude towards the product first increases as more claims are presented, then peaks at the three-claim mark, and eventually deteriorates steadily for each additional claim added. Attitude thus takes the form of an inverted U as the number of claims increases—an effect the authors refer to as the *charm of three*. In addition, we have discussed that scepticism is triggered as the list of claims presented gets too long, and can consequently negatively influence consumers' attitudes (cf. Shu & Calson, 2014). This implies that in an advertising context, higher product claim quantity will only improve the persuasiveness of the message up to a certain inflection point (Nordmo & Selart, 2015). Thus, we hypothesise the following relationship:

H4: *Scepticism towards the ad mediates the relationship between product claim quantity and attitude towards the product.*

We also hypothesise that for up to three claims (i.e., for two or three claims), consumers will not detect a persuasion tactic, and will therefore not perceive a change of meaning. The claims presented in the ad should be regarded as informative rather than a ploy to get consumers to buy the product. If that holds, then scepticism should remain stable for up to three claims and, in line with the set-size effect (Anderson, 1967), adding more positive information (i.e., going from two to three claims) should result in a more favourable attitude.

H4a: *Scepticism towards the ad remains stable for up to three product claims, resulting in the attitude towards the product to increase with each additional claim presented in the ad for up to three product claims.*

Lastly, drawing on the change-of-meaning principle (Friestadt & Wright, 1994) as well as on the prior research findings indicating that increasing the number of claims heightens scepticism (DeCarlo, 2005; Campbell & Kirmani, 2000; Shu & Carlson, 2014), we also presume that consumers will consider a larger list of claims as a persuasion tactic used by the advertiser. From an attribution-theory (Fiske & Taylor, 1991) perspective, one might argue that consumers might infer that the marketer presents more claims because he wants to persuade the message receiver. This inference is likely to result in the generation of sceptical thoughts as to the veracity of the information in the ad. At that point, consumers should make use of their coping strategies (i.e., elicit scepticism towards the ad), and consequently form a more unfavourable attitude. In line with Shu and Carlson's (2014) findings, we expect the change of meaning to occur as soon as the fourth claim is presented. It is also presumed that

increasing the number of claims will cause for a steady increase in scepticism. In sum, we expect scepticism to increase as soon as four claims are presented, and go up steadily as more claims are added (cf. Figure 1).

H4b: *Scepticism towards the ad is triggered as the fourth product claim is added and consequently increases for each additional product claim. As a result, attitude towards the product deteriorates as the fourth claim is added, and further decreases with each additional claim.*

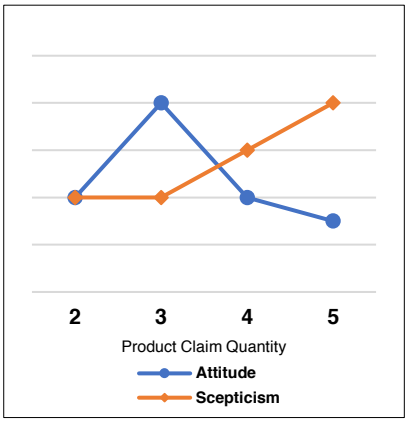


Figure 1: Predicted Effects

2.4. The Moderating Role of Issue Involvement

A theoretical framework that has frequently been cited in the persuasion literature is the Elaboration Likelihood Model (ELM) by Petty and Cacioppo (1986b). In brief, the ELM suggests that message processing happens on a continuum between two routes—the *central* and the *peripheral* route. In essence, these two routes mainly differ in the amount of the cognitive resources allocated to the message processing, which is high in the central route and low in the peripheral route. The higher the amount of cognitive resources allocated, the deeper the processing of the message. The depth of message elaboration is determined, amongst other factors, by a consumer's perceived personal relevance of the information referred to as *issue involvement* (Petty et al., 1983). According to Andrews, Durvasula and Akhter (1990) issue involvement is "based on the ideas that issues, situations, or messages can have significant consequences on, or be personally relevant to, one's life" (Andrews et al., 1990, p. 30), for instance because the issue concerns a product that will soon be sold in the home country of the person seeing the ad (cf. Petty and Cacioppo, 1981).

To illustrate, a study by Wright (1973) has shown that participants in the high-involvement conditions engaged in more cognitive thinking than those in the low-involvement conditions, presumably because the former perceived the information in the ad to be more relevant to them. Along the same lines, Petty and Cacioppo (1979; 1986b) state that the amount of cognitive resources allocated to message processing depends on the level of involvement.

If the amount of cognitive resources allocated to the processing of the message differs according to the level of issue involvement, the latter concept might have an impact on the use of persuasion knowledge, too. In fact, prior research has shown that using persuasion knowledge requires cognitive capacity (Campbell & Kirmani, 2000). For instance, in studies where consumers' cognitive capacities were restraint, subjects were less likely to use their persuasion knowledge (Williams, Fitzsimons, & Block, 2004; Shu & Carlson, 2014). The more cognitive resources are available, the more a consumer is able to use his persuasion knowledge when being exposed to a marketing message (Campbell & Kirmani, 2009). Hence, unless consumers allocate sufficient cognitive resources to the message processing, they are unlikely to carefully contemplate on what exactly it is that motivates marketers to

communicate with customers the way they do. The reason for this is that, in order to infer a persuasion tactic, abstract and attributional thinking are required (Campbell & Kirmani, 2008).

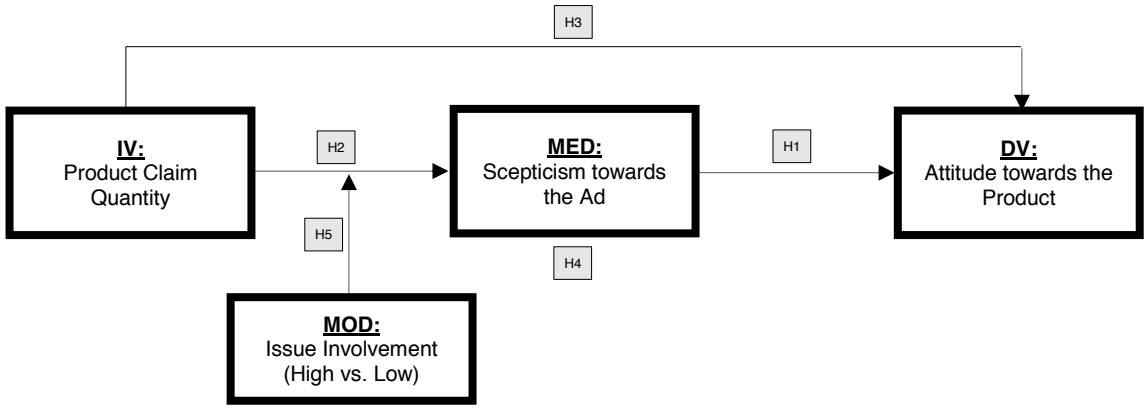
Hence, if low cognitive effort hinders use of persuasion knowledge, it seems reasonable to presume that the opposite might hold for high cognitive effort. In fact, increasing the depth of message elaboration also increases the cognitive resources allocated to the message processing (Petty & Cacioppo, 1979). Likewise, the likelihood of a consumer scrutinising the message before forming an overall evaluation is higher when issue involvement is high compared to when it is low (Petty & Cacioppo, 1986a). By the same token, one might thus reason that higher (lower) involvement might also lead to more (less) thoughtful consideration of the marketer's persuasion tactic in a particular ad. If that holds, then the change of meaning of a marketing message should shift according to the level of a consumer's issue involvement.

We presume that highly-involved subjects will process the ad diligently and engage in relatively high thought generation, more so than do low-involvement participants. In the previous sections, we discussed the influence of the number of product claims on a consumer's scepticism towards the ad; more specifically, we outlined how the number of claims can cause a change of meaning of the message to occur and we hypothesised that this occurs as soon as three claims are presented. Under high involvement, we expect the change of meaning to occur earlier (i.e., when fewer claims are presented). By contrast, we expect the change of meaning to occur later (i.e., when more claims are presented) when under low involvement:

H5: *Involvement moderates the relationship between product claim quantity and scepticism towards the ad.*

2.5. Conceptual Model

Based on the relationships described above, the following conceptual model has been drawn up:



3. Research Methodology

After a thorough review of the existing body of literature on the concepts and expected relationships for this study, we will now zoom in on the research method that was chosen to validate the hypotheses established. Hence, in this chapter, we will discuss the process of designing the experimental study and outline the two pilot studies which were carried out, define the population and sample for this research, and conclude by presenting the final version of the questionnaire.

3.1. Experiment

The aim of the present study is to measure the effect of *Product Claim Quantity* on *Attitude towards the Product* and assess the mediating role of *Scepticism towards the Ad* in this relationship. In addition, we want to find out to what extent *Issue Involvement* mediates the relationship between *Product Claim Quantity* and *Scepticism towards the Ad*. Consequently, the most suitable research design was an experimental study. In fact, experiments allow, on the one hand, for causality to be established between the dependent and the independent variable, and, on the other hand, to measure, manipulate, and control variables in the model (Stevens, Loudon, Ruddick, Wrenn, & Sherwood, 2005). In other words, it allowed us to manipulate the number of product claims in the advertisement and the level of issue involvement by allocating the respondents to different experimental conditions, so as to establish the extent to which changes in these two variables influence a consumer's attitude towards the product.

There are three types of experiments, namely the laboratory experiment, the field experiment, and the online experiment (Reips, 2000). Laboratory experiments are, as the name suggests, carried out in an artificially-created environment. This enables the researcher to tightly control extraneous variables, such as confounding or contaminating influences, in order to assess the actual causal effect of the independent variable of interest in the respective study. By contrast, a field experiment is carried out in a setting as natural and as close to reality as possible (e.g., in a shop), generally resulting in an increased difficulty to control for extraneous influences, but in more generalisability (Sekeran & Bougie, 2016). The third form, the online experiment, is carried out on the Internet and is enjoying increasing popularity amongst researchers. While it might well be harder to control the process (e.g., one subject might participate in the experiment several times by using multiple devices with different IP addresses), two considerable advantages of such an experiment are the ease of reaching a vast number of people within a relatively short time, as well as its lower costs compared to laboratory or field experiments (Reips, 2000).

When considering which type of experiment to employ, one must not forget that trade-offs concerning the internal and external validity of the study will have to be made. *Internal validity* refers to the extent to which the manipulated variables in the experiment did indeed cause for changes in the independent variable, or whether there were other factors present which accounted for this change. *External validity* describes the degree to which the results of the respective study are generalizable (e.g., to other

situations, settings, or geographic areas; Stevens et al., 2005). In other words, increasing the internal validity of an experiment decreases its external validity and vice-versa (Sekeran & Bougie, 2016).[1] Taking the discussed advantages and disadvantages into account, we will now move on to discuss the type of experiment used in the present study and the reasons for this choice.

3.1.1. Experimental Design

The type of experiment which was chosen for our study is the online experiment. It seemed fair to assume that this type of design was advantageous over the other types, mainly for the following two reasons. Firstly, it provided the opportunity for a vast and diverse sample to be reached in a convenient way (Birnbaum, 2004), which was believed to increase generalisability of the results. In fact, a *diverse* sample may help obtain a more accurate representation of the actual population (Reips, 2000), while a *larger* sample typically results in higher statistical power (Birnbaum, 2004). Secondly, the fact that respondents were able to participate in the experiment in a familiar surrounding was believed to increase external validity, too (Reips, 2000).

As previously discussed, this experimental design does not come without disadvantages. However, factors posing threats to the validity of the research were alleviated as much as possible; (a) by running pre-tests to make sure the experiment is well-designed (see sections 3.3.2 and 3.3.3) and (b) by random allocation of the participants to one of the experimental condition, aiming to control for extraneous influences as much as possible. Indeed, random distribution of participants helps accounting for influences beyond the researcher's control by also randomly dividing these influences over the various experimental conditions, hence spreading out the risk of these influences confounding the findings over several groups (Reips, 2000). Lastly, the likelihood of a subject to participate more than once was deemed rather small, given that, generally speaking, participation in experiments is not "that thrilling" (Reips, 2000, p. 110).

In our online experiment, a 4x2 factorial, between-subjects design was used; the two treatment variables were *Product Claim Quantity* (2 / 3 / 4 / 5) and *Involvement* (low / high). The subjects were randomly assigned to one of the eight experimental conditions. The factorial design enabled for the effect of both treatment variables to be measured, both individually (main effect) and jointly (interaction effect; Sekeran & Bougie, 2016). The rationale for the between-subject design (i.e., exposure to one treatment only) was based on three factors. First, it was believed to prevent the so-called *demand effect*, whereby, when exposed to more than one treatment, participants might detect the researcher's intention and adapt their responding behaviour either consciously or unconsciously (Rosenthal, 1976; White, 1977), as they might feel prompted to do so due to the change in the experimental conditions (Charness, Gneezy, & Kuhn, 2012). Secondly, this type of design alleviates the danger of having *carryover effects*, which can occur if participants gather experiences in one condition that influence their behaviour when exposed to the following condition (Christensen, 2007). Thirdly, a single exposure to the experimental condition was closer to what would happen in real life. To illustrate, consider

[1] Appendix I provides an overview of the advantages and drawbacks of the various types of experiment

an ad in a magazine, for instance, where consumers are more likely to be exposed to one single version of the respective ad, rather than seeing a four-product-claim version of the ad on page 24, and a two-product-claim version on page 52. Hence, performing such a variation in the experiment might have resulted "in decisions that do not represent natural preferences because the manipulation itself is unnatural" (Charness et al., 2012, p. 4).

3.2. Population and Sample

The population of this study are European adults who are 18 years or older. This lower limit was set because it was assumed that, as of this age, consumers diligently think about their buying decision, much more so than do younger adolescents. To determine the sample size, the program G*Power was used. Presuming an effect size of $f = 0.25$, an error probability of $\alpha = 0.05$, and power of 95%, the aspired sample size was 279 respondents, that is approximately 35 respondents in each of the experimental condition. This also satisfied Sawyer and Ball's (1981) rule of thumb, which indicates that at least 30 participants are needed per experimental condition.

Subjects for the main experiment were approached by means of convenience sampling from the personal network of the researcher because it provided relatively easy and efficient access to the required data (Sekeran & Bougie, 2016). Invitations to take part in the experiment were sent to the participants via Facebook, LinkedIn, and email.

3.3. Stimulus Design

As stated previously, in this experimental study, two variables were manipulated: *Product Claim Quantity* and *Issue Involvement*. In the following paragraphs, we will outline the process of designing the experimental stimulus by zooming in on the type of product featured in the advertisement, the selection of the claims, as well as the way in which issue involvement was manipulated.

3.3.1. Product Featured in the Ad

The product shown in the advertisements was a portable speaker. In choosing this product category, consumer buying decision behaviour was taken into account. In fact, for products associated with low cost/low perceived risk, consumers tend to engage in a shallow decision making process characterised by a rather low amount of thought and time devoted to the purchase decision, while the opposite holds for high cost/high perceived risk products where more time and thinking is involved in making the buying decision (Solomon, 2011). We assumed that the decision making process for a portable speaker is neither very shallow, nor extremely elaborate in nature, which is why this type of product would allow for involvement (i.e., the extent of considerate evaluation of the ad) to be manipulated into both directions. By contrast, this would have been fairly difficult if the product in the ad had been associated with either a very elaborate decision making process (e.g., a car), or a very shallow one (e.g., toothpaste), as a floor or ceiling effect would have been likely to occur.

The overall design of the ad was rather generic, featuring a product image, a set of product claims (i.e., two, three, four, or five), the logo of the fictitious brand *YOURsound* which was specifically designed for the purposes of this study, as well as the phrase, *"The new and improved PWR-BX portable speaker."* Rather than using an existing brand, towards which participants might have held existing attitudes that could have distorted their response patterns, subjects were led to believe that the ad comes from the fictitious brand *YOURsound.* The product image, however, did show an existing product (i.e., *Ultimate Ears Mini Boom;* Ultimate Ears, 2017), which is why we assessed brand recognition prior to conducting the main experiment. To this end, the product image was shown to 18 people from the researcher's personal network and they were asked if they recognised the brand. None of the subjects asked was able to correctly assign the image to the brand *Ultimate Ears*, which allowed us to conclude that the product image was suitable for the main experiment.

3.3.2. Selection of Product Claims

In order to ensure the ad versions shown across the experimental conditions merely vary in terms of claim *quantity* rather than claim *importance*, selection of the claims was based on a pre-test conducted amongst students at Tilburg University. Participants were approached on campus and given a questionnaire[2] stating 13 product claims, which had been selected based on the screening of product listings in online web-shops (i.e., *bol.com, mediamarkt.nl, amazon.com*). First, participants were asked to imagine the purchase of a portable speaker and had to rate each claim's importance on a 7-point semantic differential scale (1 = *very unimportant* / 7 = *very important*). After that, they were requested to choose the three most important claims from the overall set. 44 subjects took part in the pre-test, of which 21 were male and 23 were female. The mean age of the participants was 23.82 (SD = 3.17).

Once the data had been entered into SPSS, the mean importance score for each product claim was calculated based on the responses gathered from the first question. In addition, we counted the amount of times each claim was mentioned (frequency) to be amongst the three most important claims from the set (Table 1). So as to validate if ranking the claims by mean importance scores yields approximately the same order of importance as when the claims are ranked by frequency, in a separate dataset, we determined the Pearson correlation between the mean importance and the frequency for each claim. This yielded a correlation of 0.923 ($p < 0.001$), pointing towards validity of the mean importance scores obtained from the first question. In the following stage, Repeated Measures ANOVA was used to identify those claims which did not differ significantly from each other in terms of their mean importance. Six of the thirteen product claims did not differ significantly from each other (p-values ranging from 0.060 to 0.941); these claims were: (1) *now waterproof*, (2) *shorter charging cycle*, (3) *buttons to control songs/volume*, (4) *stronger bass performance*, (5) *wider Bluetooth connection range*, and (6) *longer warranty time*.[3] To sum up, the pre-test provided valuable insights regarding

[2] Please refer to Appendix II.a. for the full questionnaire.
[3] Please refer to Appendix II.b. for a more detailed overview of the analyses

product claim importance so as to ensure that, during the main experiment, the six claims presented across the various conditions were all equally important.

Pre-Test: Product Claim Importance

	Claim	*Question 1*		*Question 2*	
		Impor-tance	Std. Dev.	Fre-quency	Per-centage
1	*… now produces clearer sound.*	6.39	0.813	27	61.36%
2	*… now has a longer playtime.*	6.18	0.870	21	47.73%
3	*… now produces more powerful sound.*	6.00	1.220	16	36.36%
4	***… is now waterproof.***	**5.43**	**1.437**	**12**	**27.27%**
5	***… now has a shorter charging cycle.***	**5.41**	**1.369**	**10**	**22.73%**
6	***… now comes with buttons to control songs/volume.***	**5.39**	**1.498**	**8**	**18.18%**
7	***… now has a stronger bass performance.***	**5.36**	**1.222**	**10**	**22.73%**
8	***… now has a wider Bluetooth connection range.***	**5.32**	**1.377**	**10**	**22.73%**
9	***… now has a longer warranty time.***	**4.89**	**1.368**	**9**	**20.45%**
10	*… now has a lighter design.*	4.52	1.691	3	6.82%
11	*… now has an LED light indicating the battery status.*	4.32	1.308	3	6.82%
12	*… now comes in a variety of colours to choose from.*	3.82	1.742	3	6.82%
13	*… now has a built-in radio.*	3.64	1.881	0	0.00%

Table 1: Product Claim Importance

3.3.3. Involvement Manipulation

To determine suitable manipulation for the second treatment variable (i.e., issue involvement), we conducted another pre-test, using a questionnaire[4] on the online platform *Qualtrics*. Sampling for this pre-test was done through a snowballing method: people from the personal network of the researcher were contacted and asked to share the survey with members of *their* personal network. The reason for this was to ensure minimal interference with the main sample of the main experiment later on in the research process.

As for the procedure of the pre-test, after a short general introduction outlining the purpose of the questionnaire, participants were shown a piece of text introducing them to the ad exposure. By changing the wording slightly, we attempted to induce a higher (lower) level of involvement in the different conditions. To illustrate, in the high-involvement condition, the instructions read:

> *You are about to see an advertisement of the brand **YOURsound**. Their new and improved portable speaker called **PWR-BX** will soon be introduced in your home country and will be available in a wide number of shops. Therefore, the brand would like to hear what you, as a potential future customer, think about the product. After looking at the ad, you will be asked to answer a few questions concerning your product evaluation. Please take a moment now to look carefully at the advertisement.*

By contrast, low-involvement subjects saw the following text:

[4] Cf. Appendix III.a. for the full questionnaire

> *You are about to see an advertisement of the brand **YOURsound**. Their new and improved portable speaker called **PWR-BX** will soon be introduced in Argentina. Therefore, the brand would like to hear what you think about the product. After looking at the ad, you will be asked to answer a few questions concerning your product evaluation. Please take a moment now to look at the advertisement.*

Afterwards, all subjects saw the same ad version (version 3.3, cf. Appendix IV.b.) and were asked to answer three sets of questions. Even though the aim of this pre-test was merely to check the involvement manipulation, *Attitude towards the Product* was also measured in order to alleviate what Nichols and Maner (2008, p. 51) call the *good-subject effect*, implying that participants possessing knowledge about the hypotheses of a study might adapt their response behaviour insofar as to accord with what they believe would be beneficial for the experimenter. In other words, by asking them to evaluate the product first, subjects' attention was somewhat drawn away from the focus of this pre-test, the measurement of the perceived personal relevance. Therefore, the first set of questions concerned participants attitude towards the product, which they were asked to indicate on a three-item, 7-point semantic differential scale (cf. section 3.4.3). The second set sought to identify participants' perceived personal relevance of the information in the ad by expressing their degree of agreement with ten statements (e.g., "*When I saw the ad for the portable speaker, I felt the information might be important/meaningful/useful to me.*") on a 7-point Likert scale (1 = *strongly disagree*; 7 = *strongly agree*). The questionnaire was concluded with two demographic questions about the age and nationality of the participants.

In total, 48 respondents participated in the pre-test. The mean age of the respondents was 26.17 (SD = 7.27), with the youngest respondent being 19, and the oldest one being 55 years old. Respondents were from eight different European countries, with the majority being German (n = 16 and Dutch (n = 15). A comparison of the mean scores for perceived personal relevance through an Independent-Samples T Test yielded a significant difference between low-involvement (M = 3.86) and high-involvement (M = 4.57; t(45.911) = -2.175; $p < 0.05$) subjects. These results led to the conclusion that subjects in high involvement conditions did actually perceive the ad to be of greater personal relevance than did those subjects in the low involvement condition.

3.3.4. Final Stimulus

The sum up, the experimental manipulation consisted of a description to induce high/low issue involvement as well as the exposure to the actual advertisement showing either two, three, four, or five product claims. These claims were chosen from a set of claims with approximately equally importance when customers were imagining to purchase a portable speaker. In order to further control that potential variation in attitude was caused by the *number* of claims in the ad rather than the absence or presence of a certain *type* of claim, we created four ad versions for each level of *Product Claim Quantity* with different claims, resulting in 16 ad versions in total (4 levels x 4 versions)[5]. A randomisation tool on the Internet was used to determine the claims presented in each of the ad versions, also ensuring that each claim is represented in each main condition.

[5] Appendix IV presents an overview of the various ad versions

3.4. Scales and Procedure

After having designed the experimental stimuli, the main experiment for the present study was constructed. In this section, we will focus on the measurement of both the focal and control variables as well as the conduction of the manipulation check, before ending this chapter with an overall explanation of the set-up of the final questionnaire.

3.4.1. Measurement of Main Variables

The focal variables in the experiment, *Attitude towards the Product* and S*cepticism towards the Ad* were measured with the aid of existing marketing scales. We will now outline the scales and the corresponding scale items used, and provide explanations as to why these particular scales were chosen.

Attitude towards the Product — In order to select a scale for *Attitude towards the Product* for the present study, the scale used by Shu and Carlson (2014) was reviewed as their study was similar in nature to the present research in that they also investigated the relationship between *Product Claim Quantity* and *Attitude towards the Product* mediated by *Scepticism towards the Ad*. For their dependent variable, *Attitude towards the Product,* they employed a three-item, 7-point semantic differential scale with *good/bad*, *favourable/unfavourable*, and *positive/negative* as end points. The scale yielded a high Cronbach's alpha ($\alpha = 0.93$), indicating excellent internal consistency (cf. George & Mallery, 2003). Given these factors, the scale was used as the measurement instrument for this study, too.

Scepticism towards the Ad — Again drawing on Shu and Carlson's (2014) research for the same reasons mentioned above, in our study, *Scepticism towards the Ad* was measured by means of agreement with two scepticism claims ("*The portable speaker can't possibly be as great as the company makes it out to be"* and *"The product claims presented in the ad are just a trick to get me to buy the portable speaker"*) on a 7-point Likert scale (1 = *strongly agree* / 7 = *strongly disagree*). In the initial research (Shu & Carlson, 2014), this scale yielded a Cronbach's alpha of 0.75, which, according to George and Mallery (2003), is considered acceptable.

3.4.2. Manipulation Check

It is essential that, in experimental studies, the manipulation be checked and reported in order to achieve "a convincing interpretation of the results" (Perdue & Summers, 1986, p. 325). To this end, we included a direct manipulation check for *Issue Involvement* in the main experiment. The scale we used was identical to the one used in the pre-test (cf. section 3.3.3), measuring the *Perceived Personal Relevance* of the message based on agreement with ten claims on a 7-point Likert scale (1 = *strongly disagree* / 7 = *strongly agree*). It originates from a study by Laczniak and Muehling (1993) where the authors reported a Cronbach's alpha of 0.96, which is considered excellent (George & Mallery, 2003).

3.4.3. Control Variables and Demographic Data of Participants

Alongside the focal variables, three control variables have been included in several stages of the questionnaire, providing the opportunity to employ them as covariates in the analysis process. The first one aimed at finding out if the subject owns a (or multiple) portable speaker(s). The second control variable's aim was the measurement of the extent to which participants had knowledge about portable

speakers. To this end, we utilised Flynn and Goldsmith's (1999) five-item, 7-point Likert scale (α = 0.93) measuring *Product Class Knowledge* by indicating agreement with five statements. The last control variable used was consumer *Scepticism towards Advertising*. This was measured based on Obermiller and Spangenberg's (1998) 7-point Likert scale (no α reported), where consumers indicate their agreement with nine statements (e.g., *"I believe advertising is informative*" and *"Advertising is generally truthful"*). In line with the discussion about *predispositional* and *situational* scepticism in Chapter 2, this variable was added to assess if scepticism towards advertising *in general* might have an impact on the results of this study.

3.4.4. Set-up of the Experiment

The set-up of the main experiment was equal across all groups and comprised seven stages. The questionnaire[6], constructed in the online software *Qualtrics*, started with an overall introduction to the study, after which the respondents were asked if they knew what a portable speaker was. If they did not, they were presented with a description to ensure that all participants knew what the term *portable speaker* referred to. In addition, participants were asked if they owned a portable speaker and requested to indicate their *Product Class Knowledge*. Then, subjects were randomly allocated to one of the eight experimental conditions and exposed to the stimulus (i.e., involvement manipulation and advertisement), before *Attitude towards the Product* and *Scepticism towards the Ad* were measured. After that, we measured participants' *Perceived Personal Relevance*—to be able to assess the effect of the involvement manipulation—, as well as their *Scepticism towards Advertising* in general. Before ending the questionnaire with the collection of demographic information about the participants, another control question, asking respondents if they had recognised the brand in the advertisement and if so, what its name was, was incorporated. This was done to be able to determine if participants had actually recognised the product shown in the ad to stem from *UltimateEars*. On the final page, participants were informed that they had reached the end of the questionnaire, and were thanked for their taking part. The sequence of the experiment can thus be summarised in the following overview:

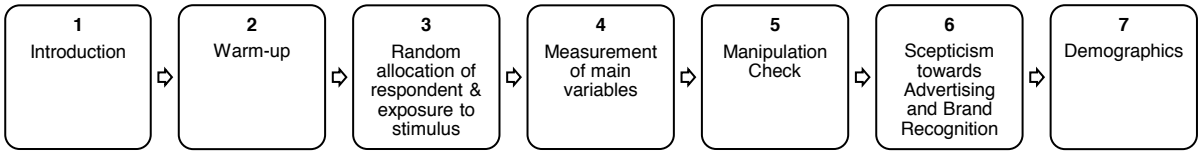


Figure 2: Set-up of the Experiment

[6] Cf. Appendix V for the entire questionnaire

4. Results

This chapter outlines the results of the data analysis. First, we zoom in on the process of preliminary data analysis, during which we focussed on the sample structure and the reliability of the measurement scales, assessed the success of the manipulation, and checked the assumptions for ANCOVA and mediation analysis. Second, we will present the key findings of the study by focussing on the main effects between the variables in the conceptual model, as well as the hypothesised moderating and mediating effects. Thirdly, we conclude this chapter by summarizing the findings and by providing an overview of the hypothesis tests and their results.

4.1. Preliminary Data Analysis

4.1.1. Data Inspection and Sample Structure

Within a period of three weeks, 303 respondents completed the online questionnaire. A preliminary inspection of the dataset[7] revealed that all respondents met the requirement regarding the minimum age (i.e., they were 18 or older). However, given the population for this study consisted of European consumers, five participants with a non-European origin were removed from the sample. In addition, one respondent indicated to have recognised the image in the advertisement to stem from the brand *UltimateEars*, which is why this subject was deleted from the dataset, too. Inspection of a boxplot of the mean scores for *Scepticism towards the Ad* and *Attitude towards the Product* revealed no significant outliers. Therefore, the sample size for the analyses was n = 297. Each experimental condition had been assigned to a minimum of 36 and a maximum of 39 participants, therefore the treatment groups were fairly equal in size.

As for the sample structure[8], 55.6% of the respondents were female (n = 165) and 44.4% were male (n = 132). The mean age of the participants was 27.06 (SD = 7.56), with the youngest respondent being 18, and the oldest being 65 years old. In total, 82.2% (n = 244) of all participants were 30 years old or younger. The subjects were from 15 different countries; the two most-widely represented nationality groups were the Germans (51.2%, n = 152) and the Dutch (27.6%, n = 82), resulting in 78.8% of all participants holding either of these two nationalities. Regarding the level of education, with 72.1% (n = 214) of the participants having completed either a Bachelor's or a Master's degree, the sample consisted of fairly highly-educated subjects. In sum, a possible explanation for these demographic factors might be the fact that mainly people from the personal network of the researcher were invited to participate in the experiment. One final interesting observation concerns the relatively low mean score for *Product Class Knowledge* (M = 3.37; SD = 1.19) within the sample, indicating that the subjects had limited knowledge about portable speakers. For a more detailed overview of the sample structure, please refer to Appendix VI.b.

[7] Cf. Appendix VI.a. for the boxplots and tables
[8] Cf. Appendix VI.b. for more information on the sample structure

4.1.2. Reliability of Measurement Scales

Before conducting the data analysis, the reliability of the multi-item measurement scales was assessed to check whether it would be appropriate to summarise the different scale items into one variable with a mean score. To this end, Cronbach's alpha for each of the five multi-item measurement scales used in the questionnaire was evaluated (*Attitude towards the Product*: $\alpha = 0.767$; *Scepticism towards the Ad*: $\alpha = 0.829$; *Product Class Knowledge*: $\alpha = 0.858$; *Perceived Personal Relevance*: $\alpha = 0.912$; *Scepticism towards Advertising*: $\alpha = 0.887$)[9]. When looking at the scores, it becomes evident that all scales provide at least acceptable internal consistency (i.e., $\alpha \geq 0.7$), three of them good internal consistency (i.e., $0.9 > \alpha \geq 0.8$), and one of them even excellent internal consistency (i.e., $\alpha \geq 0.9$; cf. George & Mallery, 2003). This enabled us to continue the analyses with the mean scores of the scale items.

4.1.3. Manipulation Check

As previously mentioned, the experiment consisted of eight conditions (four levels of *Product Claim Quantity* × two levels of *Issue Involvement*). Within each condition, we counterbalanced the types of claims used, which resulted in four different versions of each condition (cf. Chapter 3.3). To evaluate if the manipulation had the intended effect, we assessed two factors. First, we checked whether, within each main condition (e.g., two claims/low issue involvement), the four sub-conditions with different types of claims (e.g., condition 1A, 1B, 1C, and 1D) were equal in terms of their mean attitude scores so that they could be treated as the same main condition. To this end, we conducted a one-way ANOVA with the sub-condition as the independent variable and attitude as the dependent variable. Post-hoc comparison revealed that, within each main condition, the sub-conditions did not differ significantly from one another.[10] Hence, it was concluded that the attitude scores measured were not influenced by the *type* of claims presented. This enabled us to treat them as the same main condition.

Second, we compared the *Perceived Personal Relevance* (PPR) that participants experienced in the low involvement conditions vis-à-vis the high involvement situations. The mean PPR scores for low and high involvement were $M = 3.82$ ($SD = 0.915$) and $M = 4.41$ ($SD = 0.957$) respectively, pointing towards the conclusion that subjects in the high involvement conditions did indeed perceive the ad to be of greater personal relevance than those in the low involvement conditions. To verify this assumption from a statistical point of view, an Independent Samples t-Test was carried out, which revealed a significant difference ($t(295) = -5.46$; $p < 0.01$) between the two levels of *Issue Involvement*. In sum, we concluded the overall manipulation to have been successful.[11]

4.1.4. Randomisation

In our experiment, we used eight different conditions with a randomised design. For reliability and validity purposes, we assessed if there were significant differences in terms of participants' demographics between the experimental groups that might have confounded the results.[12] To this end,

[9] Cf. Appendix VI.c.
[10] Cf. Appendix VI.d. for the statistical comparisons
[11] Cf. Appendix VI.d. for the statistical comparisons
[12] Cf. Appendix VI.e. for the statistical comparisons

a one-way ANOVA with age as the dependent variable was performed, which revealed no significant differences between the groups ($F(7) = 0.627$, $p = 0.734$). In addition, we checked for differences in gender, nationality, and level of education by means of several chi-squared tests (cf. Table 2). The results pointed towards no differences between the eight groups concerning gender and nationality, however they groups did differ in terms of nationality. Given this finding, we conducted two one-way ANOVAs—one with *Scepticism towards the Ad* and one with *Attitude towards the Product* as the dependent variable—to assess if the nationality of the participants might have confounded the results. This analysis revealed insignificant differences between the groups for both the scepticism ($F(14) = 0.373$; $p = 0.982$) and the attitude measurement ($F(14) = 0.984$; $p = 0.470$), indicating that nationality had no impact on the results. In sum, the randomisation was deemed successful.

Participants per Experimental Condition

Test Variable	χ^2	df	Sig.
Gender	2.894	7	0.895
Nationality	124.264	98	0.038
Level of Education	24.215	35	0.915

Table 2: Chi-squared Tests for Gender, Nationality, and Level of Education between Groups

4.1.5. Checking Assumptions for ANCOVA

In order to be eligible for ANCOVA, four assumptions with regards to the data had to be checked: independence of observations, equality of error variance between treatment groups, the normality assumption, and the homogeneity of regression slopes (Hair, Black, Babin, & Anderson, 2014).[13]

First, given the between-subjects design of the experiment, the observations were assumed to be independent. Second, we were interested in the equality of the error variances across the different treatment groups (i.e., homoscedasticity). Levene's Test of Equality of Error Variances revealed heteroscedasticity for both *Attitude towards the Product* ($F(7, 289) = 4.59$, $p < 0.001$) and *Scepticism towards the Ad* ($F(7, 289) = 2.90$, $p < 0.001$); in other words, we observed different error variances across the treatment groups. However, according to Hair et al. (2014), "a violation of this assumption has minimal impact if the groups are of approximately equal size" (p. 685), which was the case in our dataset. Third, it was verified if the observations followed a normal distribution. Assessment of the significance levels of the Kolmogorov-Smirnov as well as Shapiro-Wilk test (both $p < 0.001$ for both variables) revealed violation of the normality assumption for *Attitude towards the Product* as well as *Scepticism towards the Ad*. However, according to Norman (2010), for samples with more than five observations per sub-group, the analysis is likely to yield accurate results even if the normality assumption is violated. The fourth and last assumption we checked was the homogeneity of regression slopes, implying that there were no differences between the groups regarding the regression slope of the covariates on the dependent variable. The three covariates that were used in the analysis were

[13] Cf. Appendix VI.f. for an overview of the statistical tests carried out to check for the assumptions

Product Class Knowledge (PCK), Scepticism towards Advertising (SAdv), and *Owning a Portable Speaker (PSown)*. None of the covariates had a significant interaction effect with the independent variable (*Product Claim Quantity*) on *Attitude towards the Product*, nor on *Scepticism towards the Ad.* Therefore, the fourth assumption was met, which enabled us to use ANCOVA.

4.1.6. Checking Assumptions for Mediation Analysis

Along with the assumptions for ANCOVA, we also checked for homogeneity of regression; that is, we assessed if there was an interaction between the independent variable and the mediator, which is not desirable for mediation analysis. To this end, a two-way ANCOVA was conducted with *Attitude towards the Product* as the dependent variable, which revealed significant main effects for *Product Claim Quantity* ($F(3) = 5.659$; $p < 0.001$) and *Scepticism towards the Ad* ($F(11) = 7.512$; $p < 0.001$). In addition, we also established an interaction effect between these two variables ($F(26) = 2.860$; $p < 0.001$).[14] This finding pointed towards the fact that the hypothesised model was incomplete in two possible ways. Either, in our study, *Scepticism towards the Ad* was not a mediator of the relationship between *Product Claim Quantity* and *Attitude towards the Product*, or the relationship between *Scepticism towards the Ad* and *Attitude towards the Product* was moderated by the independent variable again. Bearing in mind that the model might thus contain conceptual flaws, we nonetheless proceeded with the assessment of the hypothesised model to check the hypotheses developed based on the literature review, before investigating other potential relationships. When interpreting these results, however, it should be taken into account that the overall validity of the proposed model seems to be rather low and that the results should be viewed with caution.

4.2. Main Analysis

To get first insights into the data structure, we assessed the significance of the covariates and analysed the relationships separately by means of ANOVA. After that, the entire model was tested with a Preacher-Hayes bootstraps test.

4.2.1. Significance of Covariates

The impact of the covariates (*Product Class Knowledge*, *Scepticism towards Advertising*, and *Owning a Portable Speaker*) was assessed by means of ANCOVA in order to evaluate whether it would be interesting to include them in the main analysis. All three covariates were insignificant when we assessed the effect of *Product Claim Quantity* on *Attitude towards the Product*, as well as on *Scepticism towards the Ad*[15]. Therefore, they were omitted during the remainder of the analysis.

4.2.2. Examination of the Relationships

The next step consisted of the examination of mean scores of *Scepticism towards the Ad* and *Attitude towards the Product* to get a first view on the results.

[14] Cf. Appendix VI.g. for the SPSS output
[15] Cf. Appendix VI.h. for the outputs of the ANCOVA

Product Claim Quantity—Scepticism towards the Ad (Moderated by Involvement)

Inspection of the mean scores for scepticism (Table 3) revealed that, overall, scepticism decreased from two to three claims, and then increased as we moved to four and five claims. Assessment of the mean scores for the different levels of involvement showed no clear pattern; that is, for some levels of PCQ, consumers were more sceptical when under high involvement (e.g., for two and four product claims), whereas for other levels, scepticism was higher under low-involvement (e.g., for three and five product claims).

	Scepticism towards the Ad		
PCQ	*Low Inv.*	*High Inv.*	*Mean*
2	3.68 *(σ = 0.97)*	3.92 *(σ = 1.00)*	3.79 *(σ = 0.98)*
3	3.77 *(σ = 1.25)*	3.50 *(σ = 1.00)*	3.64 *(σ = 1.13)*
4	4.08 *(σ = 0.90)*	4.22 *(σ = 1.13)*	4.15 *(σ = 1.02)*
5	4.49 *(σ = 1.53)*	4.15 *(σ = 0.92)*	4.32 *(σ = 1.27)*

Table 3: Mean Scepticism Scores and Standard Deviation by Level of Involvement and Product Claim Quantity

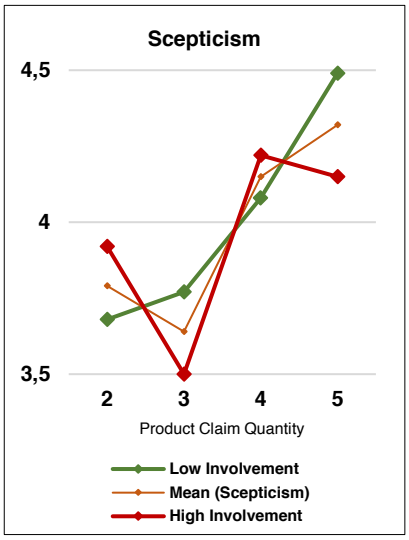


Figure 3: Scepticism Measurement (For Low/High Involvement and Mean)

Then, we ran a two-way ANOVA[16] with *Scepticism towards the Ad* as the dependent variable ($R^2 = 0.071$). The results showed a significant main effect of the number of claims on the mean scepticism score ($F(3) = 5.934$; $p = 0.001$; $\eta_p^2 = 0.058$). Consumers' scepticism thus differed depending on the number of claims in the ad. Per contra, both the main effect of *Issue Involvement* ($F(1) = 0.204$; $p = 0.652$), and the interaction of *Product Claim Quantity* and *Issue Involvement* ($F(3) = 1.236$; $p = 0.297$) were insignificant. Hence, involvement did not moderate the effect of *Product Claim Quantity* on *Scepticism towards the Ad*. In sum, while the amount of claims in the ad did have an impact on consumers' scepticism scores, these scores did not change significantly depending on the level of issue involvement. Based on these findings, we rejected hypothesis 5.

Aiming to clarify what happened as the number of claims increases from two to three, from three to four, and so on, we ran a post-hoc test and compared the mean difference between the levels of the independent variable. Participants presented with two product claims expressed the same level of scepticism ($M_{2\ claims} = 3.79$; $SD_{2\ claims} = 0.98$) as those who saw three positive claims ($M_{3claims} = 3.64$; $SD_{3\ claims} = 1.13$; $MD_{2\ vs.\ 3} = 0.156$; $SE = 0.182$; $p = 0.392$), lending support to hypothesis 2a. In contrast, subjects who saw four product claims ($M_{4\ claims} = 4.15$; $SD_{4\ claims} = 1.02$) indicated higher scepticism than those who saw two claims ($MD_{2\ vs.\ 4} = 0.360$; $SE = 0.181$; $p < 0.05$) or three ($M_{3\ claims} = 3.64$; $SD_{3\ claims} = 1.13$; $MD_{3\ vs.\ 4} = 0.516$; $SE = 0.182$; $p < 0.01$) claims. Moving from four to five claims, however, had no impact on subjects' scepticism ($MD_{4\ vs.\ 5} = 0.171$; $SD = 0.182$; $p = 0.347$), whereas the mean differences between two and five claims ($MD_{2\ vs.\ 5} = 0.531$; $SE = 0.182$; $p < 0.01$) as well as between three and five claims ($MD_{3\ vs.}$

Pairs (PCQ)	*Absolute Mean Difference*	*Sig.*
2 vs. 3	0.156	0.392
2 vs. 4	0.360	**0.048**
2 vs. 5	0.531	**0.004**
3 vs. 4	0.516	**0.005**
3 vs. 5	0.687	**0.000**
4 vs. 5	0.171	0.347

Table 4: Paired Comparisons (Scepticism)

[16] Cf. Appendix VI.i. for the output of the ANOVA

$_5$ = 0.687; SD = 0.687; p < 0.001) were significant. In sum, we established no significant differences between the two and three-claim conditions, nor between the four and five-claim conditions; all other differences were significant. These findings lent partial support to H2b insofar as four and five product claims caused for consumers to express a higher level of scepticism compared to when two or three claims were presented, however the increase from four to five product claims was not significant. At a later stage in the analysis process, we attempted to validate these findings by means of a Preacher-Hayes bootstraps test (cf. section 4.2.3).

Product Claim Quantity—Attitude towards the Product

Contrary to the hypothesis that attitude would deteriorate as we move beyond three claims, inspection of the mean scores (Table 5) showed an overall, almost linear, increase in attitude as the number of claims grew. Similar to what was observed for scepticism, the interaction between *Issue Involvement* and *Attitude towards the Product* showed no clear pattern, either. To illustrate, for two, three, and five product claims, low involvement resulted in a slightly higher attitude whereas when the ad contained four product claims, attitude was higher in the high-involvement conditions (cf. Table 5; Figure 4). To check this from a statistical point of view, we conducted a two-way ANOVA[17] with *Attitude towards the Product* as the dependent variable (R^2 = 0.06). The results showed a significant main effect of *Product Claim Quantity* (F(3) = 5.558; p = 0.001; η_p^2 = 0.055), however neither a main effect of *Issue Involvement* (F(1) = 0.240; p = 0.624) nor an interaction between the number of claims and the level of involvement (F(3) = 0.878; p = 0.453). Post-hoc comparisons (Table 6) revealed differences in attitude scores between two ($M_{2\ claims}$ = 4.88; $SD_{2\ claims}$ = 0.78) and four claims ($M_{4\ claims}$ = 5.26; $SD_{4\ claims}$ = 0.76; $MD_{2\ vs.\ 4}$ = 0.382; SE = 0.126; p < 0.01), between two and five ($M_{5\ claims}$ = 5.36; $SD_{4\ claims}$ = 0.52; $MD_{2\ vs.\ 5}$ = 0.480; SE = 0.127; p < 0.001), as well as between three ($M_{3\ claims}$ = 5.07; $SD_{3\ claims}$ = 0.96) and five claims ($MD_{3\ vs.\ 5}$ = 0.287; SE = 0.127; p < 0.025). Therefore, in sum, we observed an overall increase in attitude the more claims participants were presented with.

	Attitude towards the Product		
PCQ	*Low Inv.*	*High Inv.*	*Mean*
2	4.89 *(σ = 0.68)*	4.87 *(σ = 0.89)*	4.88 *(σ = 0.78)*
3	5.15 *(σ = 1.03)*	4.99 *(σ = 0.90)*	5.07 *(σ = 0.96)*
4	5.17 *(σ = 0.76)*	5.35 *(σ = 0.76)*	5.26 *(σ = 0.76)*
5	5.45 *(σ = 0.54)*	5.27 *(σ = 0.48)*	5.36 *(σ = 0.52)*

Table 5: Mean Attitude Scores and Standard Deviation by Level of Involvement and Product Claim Quantity

Pairs (PCQ)	*Absolute Mean Difference*	*Sig.*
2 vs. 3	0.193	0.129
2 vs. 4	0.382	**0.003**
2 vs. 5	0.480	**0.000**
3 vs. 4	0.189	0.137
3 vs. 5	0.287	**0.025**
4 vs. 5	0.098	0.438

Table 6: Paired Comparisons (Attitude)

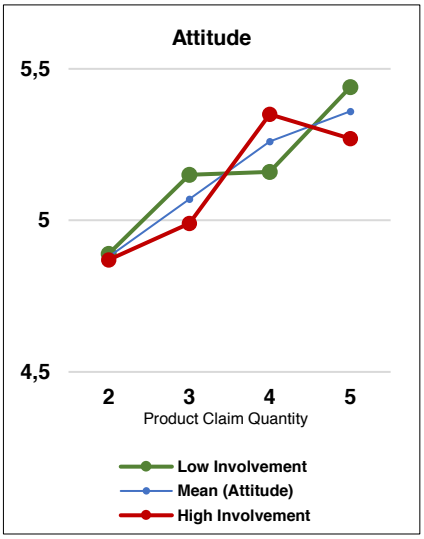


Figure 4: Attitude Measurement (For Low/High Involvement and Mean)

[17] Cf. Appendix VI.i. for the output of the ANOVA and the paired comparisons

Interim Conclusion

The above findings showed an increase in attitude as the number of claims increased. In addition, we found a significant increase of scepticism as the number of claims moved beyond three, and a significant decrease in attitude as consumers became more sceptical. This suggested a negative indirect effect. Contrary to what was hypothesised, *Issue Involvement* had no moderating effect. To test the entire model and to assess if the proposed mediation was indeed established, we ran a Preacher-Hayes bootstraps tests in SPSS.

4.2.3. Preacher-Hayes Bootstraps test

Since we did not expect a linear relationship between the number of claims and attitude, we looked at the different number of claims separately by entering the independent variable as multi-categorical into the PROCESS macro (Model: $R^2 = 0.071$; $F(7, 289) = 3.141$; $p < 0.01$)[18]. In doing so, we chose the two-product-claim level as the base level, which is why the coefficients in the output had to be interpreted in terms of increase or decrease relative to the base level. The results revealed a significant a-path only for five claims ($a_5 = 1.379$; $t = 2.423$; $p = 0.016$). By contrast, the other dummies were insignificant ($a_3 = 0.598$; $t = 1.046$; $p = 0.296$ / $a_4 = 0.506$; $t = 0.884$; $p = 0.377$), which indicates that, compared to the two-claim conditions, scepticism only increased significantly when five claims were presented. The interaction between number of claims and involvement was insignificant for all levels of the independent variable ($a_3 \times d = -0.507$; $t = -1.392$; $p = 0.296$ / $a_4 \times d = -0.103$; $t = -0.283$; $p = 0.777$ / $a_5 \times d = -0.571$; $t = -1.571$; $p = 0.117$), implying that the level of involvement did not change the impact of the number of claims on the scepticism measurement. In addition, the main effect of involvement on scepticism was insignificant ($e = 0.237$; $t = 0.926$; $p < 0.356$).

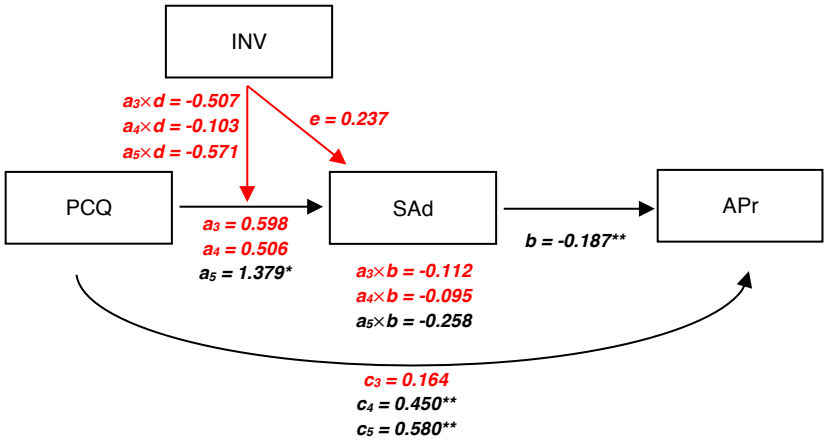


Figure 5: Mediation Analysis (PROCESS macro Model 7; Base Level: 2 Claims)
*(** p < 0.01; * p < 0.05)*

As for the effects on *Attitude towards the Product* (Model: $R^2 = 0.123$; $F(4, 292) = 10.212$; $p < 0.01$), the b-path was significant and negative ($b = -0.187$; $t = -4.758$; $p < 0.001$), indicating that scepticism indeed had a negative effect on attitude, which lent support to hypothesis 1. The direct path was insignificant for an increase to three claims ($c = 0.164$; $t = 1.337$; $p = 0.183$), but significant for an increase to four ($c = 0.450$; $t = 3.670$; $p < 0.001$) and to five claims ($c = 0.580$; $t = 4.680$; $p < 0.001$). Given that one level of *Product Claim Quantity* had a significant negative a×b-path (i.e., two compared

[18] Cf. Appendix VI.j. for the outputs of the Preacher-Hayes bootstraps test (PROCESS macro)

to five claims) and a positive c-path, we concluded that there is competitive mediation (Zhao, Lynch, & Chen, 2010).

To assess if the other levels of *Product Claim Quantity* differed from one another, we ran the Preacher-Hayes bootstraps test three more times, changing the base level to three, then to four, and then to five claims. As for scepticism, no significant differences of the levels other than between two and five were found. However, in addition to what we found in the first bootstraps test (i.e., significance for 2 vs. 4 and 2 vs. 5 claims), we also found significant increases in attitude between three and four claims ($a = 0.286$; $t = 2.303$; $p = 0.022$), as well as between three and five claims ($a = 0.416$; $t = 3.303$; $p < 0.01$). Other levels were insignificant.

Comparison between ANOVA and Bootstrapping Results

Interestingly, when comparing the results of the ANOVA post-hoc test with those of the bootstrapping, there were some contradictions as to the differences between the levels of *Product Claim Quantity* and their impact on scepticism or attitude. For instance, while the post-hoc test indicated that there were significant differences in scepticism for two versus four claim, the bootstraps test revealed no differences for these two levels. Likewise, according to the post-hoc test an increase from three to four claims caused no differences in attitude, while the results of the bootstrapping show otherwise (cf. Table 7). That being the case, it was chosen to base the conclusions of the findings on the results provided by the bootstrapping test, given that, generally speaking, it has more statistical power and provides more accurate results (DiCiccio & Efron, 1996).

Pairs (PCQ)	*Scepticism*		*Attitude*	
	ANOVA	*Bootstraps test*	*ANOVA*	*Bootstraps test*
2 vs. 3	insignificant	insignificant	insignificant	insignificant
2 vs. 4	**significant**	insignificant	**significant**	**significant**
2 vs. 5	**significant**	**significant**	**significant**	**significant**
3 vs. 4	**significant**	insignificant	insignificant	**significant**
3 vs. 5	**significant**	insignificant	**significant**	**significant**
4 vs. 5	insignificant	insignificant	insignificant	insignificant

Table 7: Comparison of ANOVA with Bootstraps Results

Summary

In sum, the results show that *Scepticism towards the Ad* influences a consumer's attitude in a negative way, which is why H1 was accepted. Moreover, consistent with H2a, there was no change in scepticism when going from two to three product claims. In fact, we only established a significant increase in scepticism when moving from two to three product claims not for any of the other levels of *Product Claim Quantity*, which was inconsistent with H2b. Given the almost linear increase of *Attitude towards the Product* as more claims are added (also cf. Figure 6), we accepted hypothesis 3. With regard to the mediating effect of *Scepticism towards the Ad*, we concluded that the latter variable indeed mediates the relationship between the number of claims in

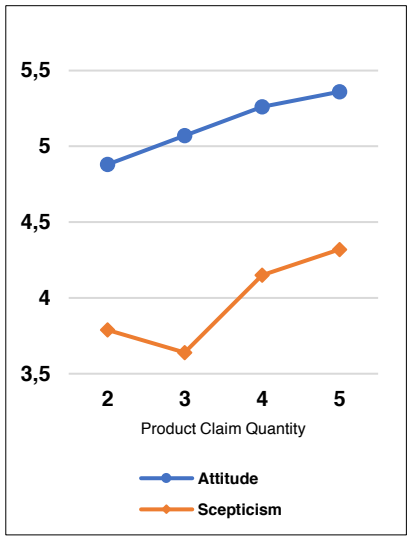


Figure 6: Mean Attitude and Scepticism

the ad and consumers' attitudes—and therefore accepted H4—, however the total effect of the relationship was in contrast to what was hypothesised. In fact, while scepticism remained stable for up to three claims, attitude did not increase significantly between two and three claims, thus contradicting H4a. In addition, while scepticism generally increases as of three claims, it did not cause for a decrease in attitude and the hypothesised *charm of three* was not found. Therefore, H4b was rejected. Lastly, an assessment of the interaction effects between *Product Claim Quantity* and *Issue Involvement* revealed no impact of the proposed moderator on the effect on *Scepticism towards the Ad*, which is why H5 was also rejected.

In evaluating these results, it should also be borne in mind that, when checking the assumption for mediation analysis, we found a significant interaction between the independent and the mediating variable. Hence, the overall validity of the model analysed above seems to be rather low, which is why these results should be viewed with caution.

H1	*Scepticism towards the ad has a negative effect on attitude towards the product. Hence, higher scepticism causes for the attitude towards the product to decrease.*	**ACCEPTED**
H2a	*There is no effect of product claim quantity on scepticism towards the ad for up to three positive product claims.*	**ACCEPTED**
H2b	*When product claim quantity is four or larger, there is a positive effect on scepticism towards the ad. In other words, four or more product claims in an advertisement will cause for scepticism towards the ad to increase for each additional claim.*	**REJECTED**
H3	*There is a positive effect of product claim quantity on attitude towards the product.*	**ACCEPTED**
H4	*Scepticism towards the ad mediates the relationship between product claim quantity and attitude towards the product.*	**ACCEPTED**
H4a	*Scepticism towards the ad remains stable for up to three product claims, resulting in the attitude towards the product to increase with each additional claim presented in the ad for up to three product claims.*	**REJECTED**
H4b	*Scepticism towards the ad is triggered as the fourth product claim is added and consequently increases for each additional product claim. As a result, attitude towards the product deteriorates as the fourth claim is added, and further decreases with each additional claim.*	**REJECTED**
H5	*Involvement moderates the relationship between product claim quantity and scepticism towards the ad.*	**REJECTED**

Table 8: Overview of Research Hypotheses and Findings

4.2.4. Additional Findings

To gain additional insights into the relationships, we investigated the interaction that was established between *Product Claim Quantity* and *Scepticism towards the Ad* in predicting consumers' attitudes. To this end, we employed Structural Equation Modelling (SEM) in AMOS to estimate the model presented in Figure 7, which includes a moderated b-path. When estimating the model, we employed dummy variables for the different levels of *Product Claim Quantity* and used two claims as the base level, which is why the coefficients had to be interpreted in relation to that base level. The overall

model fit was rather low (TLI = -0.515 / CFI = 0.026 / RMSEA = 0.712)[19]. The variable *Issue Involvement* was omitted given its insignificant impact in the previous analyses.

Assessment of the standardised regression weights showed that the c-path was positive and significant for an increase to three ($c_3 = 0.338$; $p < 0.001$), four ($c_4 = 0.434$; $p < 0.001$), and five ($c_5 = 0.426$; $p < 0.001$) claims. Hence, we established a positive direct effect of *Product Claim Quantity* on *Attitude towards the Product*.

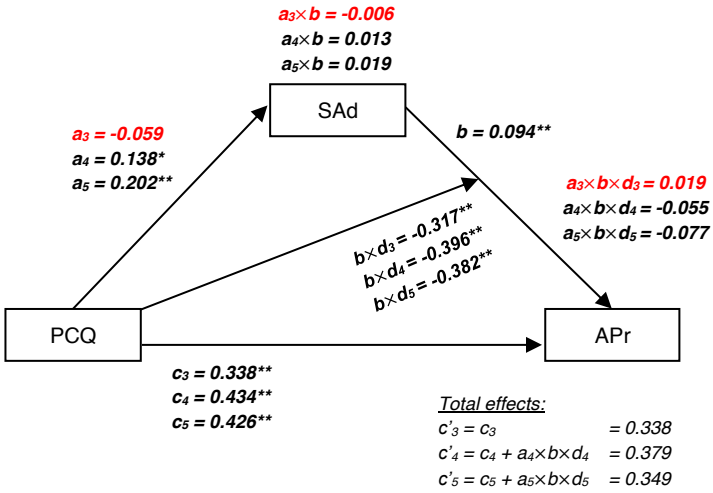


Figure 7: SEM Path Analysis
(Standardised Regression Weights; Base Level: 2 claims);
**p < 0.01; *p < 0.05)

As for the indirect effect, we observed an insignificant a-path for an increase to three claims ($a_3 = -0.059$; $p = 0.293$), but a significant increase in scepticism for four ($a_4 = 0.138$; $p = 0.015$) and five claims ($a_5 = 0.202$; $p < 0.001$). In addition, the b-path was significant ($b = 0.094$; $p < 0.001$). Therefore, it was established that, overall, *Scepticism towards the Ad* mediates the relationship between *Product Claim Quantity* and *Attitude towards the Product*. However, given the insignificant a×b-path for three-claim dummy, the indirect effect only seems to hold for the four and five-claim conditions.

To further analyse the relations in the model, we assessed the moderating effect of *Product Claim Quantity* on the relationship between *Scepticism towards the Ad* and *Attitude towards the Product*. All interaction terms between the dummy variables of *Product Claim Quantity* and scepticism were negative and significant ($\beta_{PCQ3*SAd} = -0.317$; $p < 0.001$ / $\beta_{PCQ4*SAd} = -0.396$; $p < 0.001$ / $\beta_{PCQ5*SAd} = -0.382$; $p < 0.001$)[20]. These coefficients indicate that for three, four, and five claims, the positive effect of scepticism on attitude ($b = 0.094$) was reversed in sign, and amplified in absolute value. In sum, the moderated a×b-path for three claims was insignificant, but it was significant and negative for four ($a_4 \times b \times d_4 = -0.055$) as well as for five claims ($a_4 \times b \times d_4 = -0.077$). This being said, although scepticism causes for a slight decrease in attitude for four and five claims, the total effect is positive for all dummy variables of *Product Claim Quantity* ($c'_3 = 0.338$; $c'_4 = 0.379$; $c'_5 = 0.349$).

Put in more practical terms, this means that when the number of claims in the ad increased from two to three, scepticism did not influence the attitude measurement; we only observed a positive direct effect on attitude (c3 = c'3 = 0.338). As the number of claims increased further (i.e., to four and five), scepticism slightly reduced consumers' attitude towards the product, given the negative and significant

[19] Schreiber, Nora, Stage, Barlow, and King (2006) recommend reporting these three model fit indices. For the other indices, please refer to Appendix VI.I. The benchmarks used to assess the model fit are: TLI > 0.95, CFI > 0.95, RMSEA < 0.06 (Hu & Bentler, 1999).
[20] The reason for the overall coefficient of the d-path in our model not being reported is that, in the SEM, the interaction terms (PCQ*SAd) were incorporated by means of manually-calculated variables (i.e., PCQ3 x SAd, dummy for PCQ4 x SAd, etc.)

indirect effect in the model. However, given for all dummies, the total effect was positive, we did not observe an overall decrease of attitude when three, four, or five claims were presented instead of two.

As the last step of the analysis, we ran the model three more times, changing the base level to three, then to four, and then to five claims.[21] Comparisons of the different coefficients of the dummy variables revealed that, as the number of claims increased from two to three, as well as from three to four, consumers' attitudes became more favourable when an additional claim was presented. An increase from four to five claims had no impact on attitudes. Concerning scepticism, we found no differences between two and three, nor between four and five claims. The other pairs (i.e., 2 vs. 4, 2 vs. 5, 3 vs. 4, and 3 vs. 5) differed significantly from one another (see Table 9).

Pairs (PCQ)	*Scepticism*	*Attitude*
2 vs. 3	insignificant	**significant**
2 vs. 4	**significant**	**significant**
2 vs. 5	**significant**	**significant**
3 vs. 4	**significant**	**significant**
3 vs. 5	**significant**	**significant**
4 vs. 5	insignificant	insignificant

Table 9: Comparison of Levels of Product Claim Quantity on Scepticism and Attitude

4.3. Summary of Findings

Since the first conceptual model we tested revealed an interaction effect between *Product Claim Quantity* and *Scepticism towards the Ad*, it seemed to be invalid, or rather incomplete. Therefore, we employed SEM to test the model depicted in Figure 7, which included the moderating effect of the independent variable on the effect of scepticism on attitude. This model facilitated a better understanding of the relationships between the variables.

All findings considered, in our study *Scepticism towards the Ad* mediated the relationship between *Product Claim Quantity* and *Attitude towards the Product*, however the effect of scepticism on attitude was moderated by the number of claims again. Put differently, scepticism only had a negative effect on consumers' attitudes when four or five claims were presented. When two or three claims were presented, there was no indirect effect of *Product Claim Quantity* on *Attitude towards the Product* through *Scepticism towards the Ad*. However, given that the direct effect was positive and stronger than the indirect effect, consumers' attitudes towards the product presented in the ad became more favourable each time a claim was added for up to four claims. Lastly, we found that *Issue Involvement* did not moderate the relationship between *Product Claim Quantity* and *Scepticism towards the Ad*.

[21] Cf. Appendix VI.m for the comparisons of the coefficients of the different dummies

5. Conclusion, Discussion, and Outlook

In this last chapter, the most important findings of this research are presented and discussed on the basis of existing literature. In addition, we discuss their theoretical and managerial implications. Lastly, we touch upon limitations of this study and give recommendations for future research.

5.1. Conclusion

The central question of this study was: *What is the effect of product claim quantity in an advertisement on attitude towards the product mediated by a consumer's scepticism towards the ad, and what is the moderating effect of issue involvement on the relationship between product claim quantity and scepticism towards the ad?* More specifically, we tested the different effects of two, three, four, and five product claims in an advertisement of a fictitious brand on consumer's attitudes towards the product presented in the ad. It was hypothesised that, overall, attitude takes the form of an inverted U. In other words, we presumed that increasing the number of claims would first lead to consumers liking the product more, until a change of meaning happens where consumers perceive the ad as being too obtrusive. This change of meaning was hypothesised to occur as four claims were presented, given that consumers would become more sceptical towards the ad, resulting in a more unfavourable evaluation than when fewer claims were presented. In addition, we aimed at finding out if the level of issue involvement changes the impact of an additional claim being added to the set on consumers' scepticism towards the ad. Before checking the proposed conceptual model, a violation of the homogeneity-of-regression assumption was detected, which is why interpreting the model in its totality was likely to lead to erroneous conclusions. Hence, we employed SEM to incorporate the interaction effect between scepticism and attitude, which provided a better depiction of the relationships.

One main finding of this study is that *Scepticism towards the Ad* mediates the relationship between *Product Claim Quantity* and *Attitude towards the Product*. Overall, scepticism is triggered as the fourth claim is presented. The more sceptical a person is towards the ad, the less favourable his attitude towards the product presented in the ad gets. It is important to note, however, that this effect only seems to hold for situations in which four or five claims are presented. When the ad contained two or three claims, no indirect effect through scepticism was present.

When looking at the overall effect of the number of claims on attitude formation, on the other hand, our findings are somewhat contradictory to the hypothesised effect. In other words, although increasing the number of claims in the ad also increased scepticism, the *total* effect of *Product Claim Quantity* on participants' attitudes was positive and almost linear. In other words, overall, increasing the number of claims increased the persuasiveness of the advertisement (for up to four claims). As the fifth claim was added, there was no effect on attitude—hence also no decrease.

Lastly, it was established that issue involvement does not weaken nor strengthen the relationship between the number of claims and the scepticism measurement. In other words, there is insufficient evidence for the fact that issue involvement has an impact on the change of meaning of the ad.

5.2. Discussion

The above conclusions concerning the empirical part of this study are somewhat contradictory to the findings of the literature review and thus call for a discussion. While we did observe that scepticism is triggered as the number of claims moves beyond three, and that *Scepticism towards the Ad* mediates the relationship between *Product Claim Quantity* and *Attitude towards the Product*, our findings conflict with Shu and Carlson's (2014) presumption of the *charm of three*. In fact, while scepticism increased, attitude did not deteriorate as more than three claims were presented. One possible explanation for this could be that the *charm of three* does not hold for all types of marketing messages. To illustrate, Shu and Carlson (2014) showed participants text passages, in which they were asked to imagine that they were shopping at a supermarket (or reading a magazine), when a newly-designed packaging of a cereal brand (or an ad of a new brand of shampoo) catches their attention. The number of claims was manipulated at the end of the text, saying that the packaging/ad also presents new aspects about the product itself (e.g., healthier, higher quality, better tasting). The product packaging or the ad themselves were not shown to participants. Therefore, the conflicting results might be attributed to the use of a different experimental stimulus (i.e., an actual advertisement) in our study.

In addition, the products used in Shu and Carlson's (2014) study were all low cost/low perceived risk products (e.g., cereal, shampoo, ice cream). In the present study, by contrast, a portable speaker, which is considered to be higher in both cost and perceived risk associated with the product, was used, and the effect did not hold. In fact, for such products, a consumer engages in more complex decision making than for low cost/low perceived risk products (cf. Bloch, 1982). Although this study does not provide compelling evidence for this notion, it might be the case that the *charm of three* does not hold for advertisement that present products associated with more complex decision making processes. Hence, the *charm of three* does not seem to be generally applicable to all persuasion situations in marketing or to all product categories, which is an important contribution to the literature.

Another explanation for the fact that attitudes did not decrease could be that a high number of claims was not *obvious* or *obtrusive* enough to cause for an overall decrease in attitude. Linking this to the Persuasion Knowledge Model (Friestadt & Wright, 1994), this finding might imply that a longer list of claims per se does not necessarily cause for the detection of a persuasion tactic and cause a change of meaning of the ad.

Consistent with the literature, we have shown that changes in a message's design can indeed increase situational scepticism. More precisely, the number of positive product claims in a message has an impact on the extent to which a consumer is sceptical towards the advertisement. This finding is in line with previous research on factors triggering situational scepticism (e.g. Briñol et al., 2015).

In addition, we have shown that issue involvement had no impact on the relationship between *Product Claim Quantity* and *Scepticism towards the Ad.* In other words, contrary to what was hypothesised, high-involvement consumers did not react more sceptically to the addition of a new claim. Therefore, the level of issue involvement does not seem to change the way in which consumers make use of

their persuasion knowledge, which is another contribution to the research around the Persuasion Knowledge Model (e.g., Campbell & Kirmani, 2000; 2008; Briñol et al., 2015).

5.3. Practical Implications

This research offers some implications for practitioners in understanding message processing and consumer inferences. First, in the light of the discussion on how many product claims are optimal, we have found that three claims are not always the best. Shu and Carlson (2014) were the first to show empirical evidence for the so-called *charm of three* across a variety of persuasion settings. In this study, however, we have used a product associated with higher cost/higher perceived risk, for which the *charm of three* did not hold. In fact, attitude was the highest for five claims. For marketers, this means that they should not limit themselves to presenting only three claims in cases where communicating more claims is deemed important, provided that the claims are fairly equal in importance.

Yet, since scepticism towards the ad did get higher as more than three claims were presented, marketers should still be wary about the amount of persuasive information presented. This means that while, overall, attitudes did not *decrease* when an additional claim was added, increased scepticism might still have an impact on other factors, for example the overall credibility of the communication agent (i.e., the brand). Although assessment of the effect of scepticism on consumer inferences about the brand were beyond the scope of this research, it might be the case that scepticism towards the ad could translate into, for instance, decreased brand attitudes.

Furthermore, we have shown that people's issue involvement (i.e., how personally-relevant the information is) does not alter persuasion in the sense that highly involved subjects tend to be more sceptical as the number of claims increases. For marketers, this means that the persuasive impact of a message with two to five positive product claims is not undermined when the message is perceived to be personally relevant, for instance in personalised marketing such as direct (electronic) mailing or advertisements based on retargeting on the Internet.

5.4. Limitations and Recommendations for Future Research

As do most empirical studies, also this one does not come without its limitations, some of which offer interesting opportunities for future research. The first limitation is caused by our sample. Due to the convenience sampling method, only people from the personal network of the researcher have participated in the study. This resulted, for instance, in a low mean age of the participants and an overrepresentation of German and Dutch participants. In sum, the sample is not representative for the researched population (i.e., European people), resulting in limited generalisability of the findings.

Secondly, due to a restriction in time and monetary resources, the study was based on a self-administered online questionnaire, which did not allow us to control for extraneous influences, but which would have been possible in a lab setting. In spite of the diligent design of the questionnaire, we were

not able to control, for instance, if consumers paid enough attention to the instructions in the questionnaire and if they filled it in a conscious manner. This might have caused some inaccuracies in the data.

Thirdly, it is debatable if consumers actually employed their persuasion knowledge when evaluating the product in the ad. In fact, the Persuasion Knowledge Model (Friestadt & Wright, 1994) postulates that subjects recognise a persuasive intent. While we assumed that consumers' persuasion knowledge would be active as soon as they are exposed to our ad in the experiment, this might not have necessarily been the case. Perhaps this was even caused by the rather generic ad which was used during this experiment. In the future, researchers should (a) include control variables to assess if consumers recognised the persuasive intent of the message and (b) use more genuine-looking advertisements.

Fourthly, given the limited scope of this research project, the maximum number of claims used was five. In addition, we only addressed on product type. As for the number of claims, we observed an increase in scepticism towards the ad when five compared to two claims were presented, which is why future research could extend our experimental design by incorporating higher quantities of product claims to assess what happens as the number of claims moves beyond five. Likewise, researchers could include different types of product in their research to assess the impact of product characteristics (e.g., convenience goods vs. durable products) on the *charm of three*.

Lastly, given that we merely assessed *Attitude towards the Product*, it might be interesting to investigate if *Product Claim Quantity* mediated by *Scepticism towards the Ad* has an effect on other dependent variables such as attitude towards the brand. While the present study did not investigate this, it might be the case that the disbelief of the claims made by the communication agent negatively influence brand attitudes, and therefore undermine the overall credibility of the firm making the claims.

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Appendices

I. Advantages and Disadvantages of Experimental Designs

	Advantages	***Disadvantages***
Laboratory Experiment	*High Internal Validity:* possibility to control for factors influencing the dependent variable; higher degree of confidence with regard to the causal effect	*Threats to External Validity:* subjects might not act 'naturally' in a lab setting, making it harder to generalise the results
Field Experiment	*High External Validity:* results tend to be more generalizable to similar settings	*Limited Internal Validity:* uncertainty about causal effect of IV on DV; difficult to control for extraneous influences
Online Experiment	*Generalisability:* access to a wider and diverse sample; more natural setting as participants participate in experiment in a natural environment (e.g., at home, at work) *Cost and Convenience:* associated with lower costs and higher convenience, as it is easy to reach a large sample in a relatively short period of time	*Control issues:* participants might take part more than once by using multiple devices; impossible for researcher to interact with participants in case of questions; more difficult for researcher to control for extraneous influences

Table 10: *Internal and External Validity per Experimental Design (Stevens et al., 2005; Sekeran & Bougie, 2016; Reips, 2000)*

II. Pre-test for Product Claim Importance

II.a. Questionnaire

Dear participant,

Thank you for agreeing to take part in this study. As I am currently working on my master's thesis for the programme Marketing Management here at Tilburg University, I am running this pilot study which will help me design the main experiment for my research project. Your help in this process is therefore much appreciated! Filling in this questionnaire will take no longer than 3 minutes.

Please take a moment to carefully read the instructions before proceeding to answering the questions:

*Imagine you are considering the purchase of a **portable speaker** to listen to your music. While reading a magazine, an advertisement of a company selling portable speakers catches your attention. Below you will find a list of product claims that the company uses in their ad in order to inform the customers of what is new about the product.*

***QUESTION 1:** For each product claim, please indicate **how important** it is for you personally.*[22]

	The product …	Very unim-portant	**1**	**2**	**3**	**4**	**5**	**6**	**7**	Very impor-tant
1	**… now has a longer playtime.**		0	0	0	0	0	0	0	
2	**… now has a lighter design.**		0	0	0	0	0	0	0	
3	**… now produces clearer sound.**		0	0	0	0	0	0	0	
4	**… now has a stronger bass performance.**		0	0	0	0	0	0	0	
5	**… now comes in a variety of colours to choose from.**		0	0	0	0	0	0	0	
6	**… now has a longer warranty time.**		0	0	0	0	0	0	0	
7	**… now has a built-in radio.**		0	0	0	0	0	0	0	
8	**… now produces more powerful sound.**		0	0	0	0	0	0	0	
9	**… now has an LED light indicating the battery status.**		0	0	0	0	0	0	0	
10	**… is now waterproof.**		0	0	0	0	0	0	0	
11	**… now has a wider Bluetooth connection range.**		0	0	0	0	0	0	0	
12	**… now comes with buttons to control songs/volume.**		0	0	0	0	0	0	0	
13	**… now has a shorter charging cycle.**		0	0	0	0	0	0	0	

[22] In total, four versions of this questionnaire were designed with randomised order of the product claims presented

QUESTION 2: *From the above list of claims, please choose the three claims you find most important.*

Claims: _____ _____ _____

Your gender: ( ) male / ( ) female Your age: _____

Thank you very much for your contribution.

Philipp Hubert

M.Sc. Marketing Management Student

II.b. Results

Participants

Gender		Age	
Male	21	*Min*	18
Female	23	*Max*	32
Total	44	*Mean*	23.82
		Std. Deviation	3.17

Table 11: Participants of Pre-test for Product Claim Importance

Product Claim Importance

		Question 1		*Question 2*	
		Impor-tance	Std. Dev.	Fre-quency	Per-centage
1	*3. … now produces clearer sound.*	6.39	0.813	27	61.36%
2	*1. … now has a longer playtime.*	6.18	0.870	21	47.73%
3	*8. … now produces more powerful sound.*	6.00	1.220	16	36.36%
4	*10. … is now waterproof.*	5.43	1.437	12	27.27%
5	*13. … now has a shorter charging cycle.*	5.41	1.369	10	22.73%
6	*12. … now comes with buttons to control songs/volume.*	5.39	1.498	8	18.18%
7	*4. … now has a stronger bass performance.*	5.36	1.222	10	22.73%
8	*11. … now has a wider Bluetooth connection range.*	5.32	1.377	10	22.73%
9	*6. … now has a longer warranty time.*	4.89	1.368	9	20.45%
10	*2. … now has a lighter design.*	4.52	1.691	3	6.82%
11	*9. … now has an LED light indicating the battery status.*	4.32	1.308	3	6.82%
12	*5. … now comes in a variety of colours to choose from.*	3.82	1.742	3	6.82%
13	*7. … now has a built-in radio.*	3.64	1.881	0	0.00%

Table 12: Product Claim Importance (Questions 1 and 2)

Correlations

Pearson Correlation: Frequency – Mean Importance	0.923**	*Sig. (2-tailed)*	0.000

Table 13: Pearson Correlation Coefficient for Frequency and Mean Importance

Paired Comparisons

Pairs			Mean Difference	Std. Dev	Sig.	95% Confidence Interval for Difference	
						Lower	Upper
4 Waterproof	***5***	***Charging Cycle***	.023	.299	**.940**	-.580	.625
	6	***Buttons***	.045	.315	**.886**	-.590	.681
	7	***Bass Performance***	.068	.259	**.794**	-.454	.590
	8	***Connection Range***	.114	.270	**.676**	-.432	.659
	9	***Warranty Time***	.545	.295	**.072**	-.050	1.141
5 Charging Cycle	***4***	***Waterproof***	-.023	.299	**.940**	-.625	.580
	6	***Buttons***	.023	.288	**.937**	-.558	.604
	7	***Bass Performance***	.045	.272	**.868**	-.503	.594
	8	***Connection Range***	.091	.287	**.753**	-.487	.669
	9	***Warranty Time***	.523	.271	**.060**	-.024	1.069
6 Buttons	***4***	***Waterproof***	-.045	.315	**.886**	-.681	.590
	5	***Charging Cycle***	-.023	.288	**.937**	-.604	.558
	7	***Bass Performance***	.023	.306	**.941**	-.594	.640
	8	***Connection Range***	.068	.277	**.806**	-.490	.626
	9	***Warranty Time***	.500	.308	**.111**	-.120	1.120
7 Bass Performance	***4***	***Waterproof***	-.068	.259	**.794**	-.590	.454
	5	***Charging Cycle***	-.045	.272	**.868**	-.594	.503
	6	***Buttons***	-.023	.306	**.941**	-.640	.594
	8	***Connection Range***	.045	.266	**.865**	-.491	.582
	9	***Warranty Time***	.477	.251	**.064**	-.028	.983
8 Connection Range	***4***	***Waterproof***	-.114	.270	**.676**	-.659	.432
	5	***Charging Cycle***	-.091	.287	**.753**	-.669	.487
	6	***Buttons***	-.068	.277	**.806**	-.626	.490
	7	***Bass Performance***	-.045	.266	**.865**	-.582	.491
	9	***Warranty Time***	.432	.280	**.131**	-.134	.997
9 Warranty Time	***4***	***Waterproof***	-.545	.295	**.072**	-1.141	.050
	5	***Charging Cycle***	-.523	.271	**.060**	-1.069	.024
	6	***Buttons***	-.500	.308	**.111**	-1.120	.120
	7	***Bass Performance***	-.477	.251	**.064**	-.983	.028
	8	***Connection Range***	-.432	.280	**.131**	-.997	.134

Table 14: Output for Pairwise Comparisons (Repeated Measures ANOVA)

III. Pre-test for Involvement Manipulation

III.a. Questionnaire

Introduction

Dear participant,

Thank you for agreeing to take part in this study. As I am currently working on my master's thesis for the programme Marketing Management at Tilburg University, I am running this pilot study which will help me design the main experiment for my research project. Your help in this process is therefore much appreciated!

Filling in this questionnaire will take no longer than 2 minutes. The data collected will only be used for the purposes of the present research project, and will be treated confidentially and anonymously.

Please answer as openly and truthfully as possible - there are no right or wrong answers!

Thanks again for your help!

Kind regards,

Philipp Hubert

Involvement Manipulation

High Involvement:

You are about to see an advertisement of the brand YOURsound. Their new and improved portable speaker called PWR-BX will soon be introduced in your home country and will be available in a wide number of shops. Therefore, the brand would like to hear what you, as a potential future customer, think about the product. After looking at the ad, you will be asked to answer a few questions concerning your product evaluation. Please proceed to the next page and take a moment to carefully look at the advertisement.

Low Involvement:

You are about to see an advertisement of the brand YOURsound. Their new and improved portable speaker called PWR-BX will soon be introduced in Argentina. Therefore, the brand would like to hear what you think about the product. After looking at the ad, you will be asked to answer a few questions concerning your product evaluation. Please proceed to the next page and take a moment to carefully look at the advertisement.

Exposure to Advertisement

1st Set of Questions (Attitude towards the Product)

Please rate the portable speaker which you have just seen in the advertisement based on the following adjectives:

	1	2	3	4	5	6	7	
Good	0	0	0	0	0	0	0	Bad
Negative	0	0	0	0	0	0	0	Positive
Favourable	0	0	0	0	0	0	0	Unfavourable

2nd Set of Questions (Personal Relevance)

When I saw the ad for the portable speaker, I felt the information …

	Strongly disa-gree	**1**	**2**	**3**	**4**	**5**	**6**	**7**	Strongly	agree
… might be important to me.		0	0	0	0	0	0	0		
… might be meaningful to me.		0	0	0	0	0	0	0		
… might be "for me".		0	0	0	0	0	0	0		
… might be worth remembering.		0	0	0	0	0	0	0		
… might be of value to me.		0	0	0	0	0	0	0		
… might be relevant to my needs.		0	0	0	0	0	0	0		
… might be useful to me.		0	0	0	0	0	0	0		
… might be worth paying attention to.		0	0	0	0	0	0	0		
… might be interesting to me.		0	0	0	0	0	0	0		
… would give me new ideas.		0	0	0	0	0	0	0		

3rd Set of Questions (General Questions)

What is your age? _____

What is your nationality? _____

III.b. Results

Participants

Nationality		Age	
German	16	*Min*	19
Dutch	15	*Max*	55
British	8	*Mean*	26.17
Italian	3	*Std. Deviation*	7.27
Belgian	2		
Spanish	2		
French	1		
Swedish	1		
Total	48		

Table 15: *Overview of Participants Pre-test for Involvement Manipulation*

		Perceived Personal Relevance			
		n	*Mean*	Std. Dev.	Std. Error Mean
Level of Involvement	*Low*	24	3.8583	1.10293	0.22513
	High	24	4.5667	1.15256	0.23527

Table 16: *Level of Perceived Relevance across Involvement Conditions*

Independent Samples Test for Perceived Personal Relevance

Levene's Test for Equality of Variances			*t-test for Equality of Means*						
								95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	0.009	0.927	-2.175	46	0.035	-0.70833	0.32563	-1.36379	-0.05287
Equal variances not assumed			-2.175	45.911	0.035	-0.70833	0.32563	-1.36383	-0.05284

Table 17: *Test for Equality of Means (High vs. Low Involvement)*

IV. Experimental Stimuli

IV.a. Conditions and Corresponding Ads Used

	Involvement	
Product claim quantity	Low	High
2	*Condition 1*	*Condition 2*
3	*Condition 3*	*Condition 4*
4	*Condition 5*	*Condition 6*
5	*Condition 7*	*Condition 8*

Table 18: Overview of Experimental Conditions

Ad Versions and Level of Involvement per Experimental Condition

	Condition 1	Condition 3	Condition 5	Condition 7
	1A: 2.1	3A: 3.1	5A: 4.1	7A: 5.1
Low Involvement	1B: 2.2	3B: 3.2	5B: 4.2	7B: 5.2
	1C: 2.3	3C: 3.3	5C: 4.3	7C: 5.3
	1D: 2.4	3D: 3.4	5D: 4.4	7D: 5.4
	Condition 2	Condition 4	Condition 6	Condition 8
	2A: 2.1	4A: 3.1	6A: 4.1	8A: 5.1
High Involvement	2B: 2.2	4B: 3.2	6B: 4.2	8B: 5.2
	2C: 2.3	4C: 3.3	6C: 4.3	8C: 5.3
	2D: 2.4	4D: 3.4	6D: 4.4	8D: 5.4

Table 19: Overview of Ad Versions per Experimental Condition

Product Claim Quantity and Claims Used

Ad Version	**2**	**3**	**4**	**5**
1	*C3 and C6*	*C5, C6, and C2*	*C6, C2, C4, and C3*	*C1, C6, C5, C3, and C2*
2	*C1 and C4*	*C2, C4, and C1*	*C1, C5, C3, and C4*	*C5, C2, C4, C1, and C6*
3	*C2 and C5*	*C5, C3, and C6*	*C2, C3, C1, and C6*	*C1, C4, C5, C6, and C3*
4	*C4 and C2*	*C3, C1, and C4*	*C5, C1, C2, and C6*	*C3, C5, C2, C6, and C4*

Table 20: Overview of Ad Versions and Corresponding Product Claims

Overview of Claims for Experimental Conditions	
C1	*Now waterproof*
C2	*Shorter charging cycle*
C3	*Buttons to control songs/volume*
C4	*Stronger bass performance*
C5	*Wider Bluetooth connection range*
C6	*Longer warranty time*

Table 21: Claim Number and Corresponding Product Claim

IV.b. Overview of Ads

Ad Version 2.1

Ad Version 2.2

Ad Version 2.3

Ad Version 2.4

Ad Version 3.1

Ad Version 3.2

Ad Version 3.3

Ad Version 3.4

Ad Version 4.1

Ad Version 4.2

Ad Version 4.3

Ad Version 4.4

Ad Version 5.1

Ad Version 5.2

Ad Version 5.3

Ad Version 5.4

V. Set-up of the Main Experiment

Stage 1: Introduction

Dear participant,

I am about to finish my Master's degree in Marketing Management at Tilburg University. To this end, I am currently conducting research on consumers' product evaluations with the aid of this survey.

Your support in this process is much appreciated, so first of all, I would like to thank you for agreeing to participate in this study! Completing the questionnaire will take no longer than 5 minutes.

On the following pages, you will be asked to answer a few questions. Please answer the questions as truthfully as possible. There are no right or wrong answers!

The data collected through this questionnaire will only be used for the purposes of the present research project, and will be treated confidentially and anonymously.

In case you have any questions or remarks, please feel free to contact me at p.hubert@tilburguniversity.edu.

Thanks again for your help!

Kind regards,

Philipp Hubert

Stage 2: Warm-Up Questions/Control Variables

2.1 Do you know what a portable (loud)speaker is?

( ) Yes
( ) No

→ If answer was “No”, participants saw the following description:

A portable speaker is a loudspeaker with a built-in rechargeable battery, allowing for the product to be used without a power source. The speaker can be connected to devices such as phones or computers to play and listen to music, either via a Bluetooth connection or with an audio cable.

2.2 Do you own a (or multiple) portable speaker(s)?

( ) Yes
( ) No

2.3 Please indicate your agreement with the following statements:

	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
Among my circle of friends, I'm one of the "experts" on portable speakers.		0	0	0	0	0	0	0	
I know pretty much about portable speakers.		0	0	0	0	0	0	0	
I do not feel very knowledgeable about portable speakers.		0	0	0	0	0	0	0	
Compared to most other people, I know less about portable speakers.		0	0	0	0	0	0	0	
When it comes to portable speakers, I really don't know a lot.		0	0	0	0	0	0	0	

Stage 3: Random Allocation and Exposure to Stimulus

a. Involvement Manipulation

High Involvement (Conditions 1, 3, 5, and 7):

You are about to see an advertisement of the brand YOURsound. Their new and improved portable speaker called PWR-BX will soon be introduced in your home country and will be available in a wide number of shops. Therefore, the brand would like to hear what you, as a potential future customer, think about the product. After looking at the ad, you will be asked to answer a few questions concerning your product evaluation. Please proceed to the next page and take a moment to carefully look at the advertisement.

Low Involvement (Conditions 2, 4, 6, and 8):

You are about to see an advertisement of the brand YOURsound. Their new and improved portable speaker called PWR-BX will soon be introduced in Argentina. Therefore, the brand would like to hear what you think about the product. After looking at the ad, you will be asked to answer a few questions concerning your product evaluation. Please proceed to the next page and take a moment to carefully look at the advertisement.

b. Exposure to Advertisement

Two product claims (Conditions 1 and 2)

Three product claims (Conditions 3 and 4)

Four product claims (Conditions 5 and 6)

Five product claims (Conditions 7 and 8)

Stage 4: Measurement of Main Variables (A_Product and Scepticism towards the Ad)

4.1. Please rate the portable speaker which you have just seen in the advertisement.

In my opinion, the portable speaker is …

	1	2	3	4	5	6	7	
Good	0	0	0	0	0	0	0	Bad
Negative	0	0	0	0	0	0	0	Positive
Favourable	0	0	0	0	0	0	0	Unfavourable

4.2 Please indicate how much you agree with the following statements.

The portable speaker can't possibly be as great as the company makes it out to be.

	1	2	3	4	5	6	7	
Strongly disagree	0	0	0	0	0	0	0	Strongly agree

The product claims presented in the ad are just a trick to get me to buy the portable speaker.

	1	2	3	4	5	6	7	
Strongly disagree	0	0	0	0	0	0	0	Strongly agree

Stage 5: Manipulation Check (Perceived Personal Relevance)

5.1. Please indicate below how much you agree with the following statements concerning ***the information*** *in the advertisement.*

When I saw the ad for the portable speaker, I felt the information …

	Strongly disagree	**1**	**2**	**3**	**4**	**5**	**6**	**7**	Strongly agree
… might be important to me.		0	0	0	0	0	0	0	
… might be meaningful to me.		0	0	0	0	0	0	0	
… might be "for me".		0	0	0	0	0	0	0	
… might be worth remembering.		0	0	0	0	0	0	0	
… might be of value to me.		0	0	0	0	0	0	0	
… might be relevant to my needs.		0	0	0	0	0	0	0	
… might be useful to me.		0	0	0	0	0	0	0	
… might be worth paying attention to.		0	0	0	0	0	0	0	
… might be interesting to me.		0	0	0	0	0	0	0	
… would give me new ideas.		0	0	0	0	0	0	0	

Stage 6: Scepticism towards Advertising and Brand Recognition

*6.1. Please indicate below how much you agree with the following statements concerning **advertising in general**.*

	Strongly disagree	**1**	**2**	**3**	**4**	**5**	**6**	**7**	Strongly agree
We can depend on getting the truth in most advertising.		0	0	0	0	0	0	0	
Advertising's aim is to inform the consumer.		0	0	0	0	0	0	0	
I believe advertising is informative.		0	0	0	0	0	0	0	
Advertising is generally truthful.		0	0	0	0	0	0	0	
Advertising is a reliable source of information about the quality and performance of products.		0	0	0	0	0	0	0	
Advertising is a truth well told.		0	0	0	0	0	0	0	
In general, advertising presents a true picture of the product being advertised.		0	0	0	0	0	0	0	
I feel I've been accurately informed after viewing most advertisements.		0	0	0	0	0	0	0	
Most advertising provides consumers with essential information.		0	0	0	0	0	0	0	

6.2. Did you recognise the brand in the advertisement?

( ) Yes
( ) No

→ If answer was "Yes", the following question was:

6.3. What is the name of the brand?

_____

Stage 7: Demographics

This last set of questions relates to you as a person.

7.1. What is your age? _____

7.2. What is your nationality? _____

7.3. What is your gender?

( ) Male
( ) Female

7.4. What is the highest degree or level of school you have completed?

( ) No schooling completed
( ) Secondary school
( ) Bachelor's degree
( ) Master's degree
( ) Doctoral degree
( ) Prefer not to answer

End of the Questionnaire

You have reached the end of the questionnaire and your answers have been stored.

Again, thank you very much for your help!

Philipp Hubert
p.hubert@tilburguniversity.edu

VI. Results

VI.a. Data Inspection

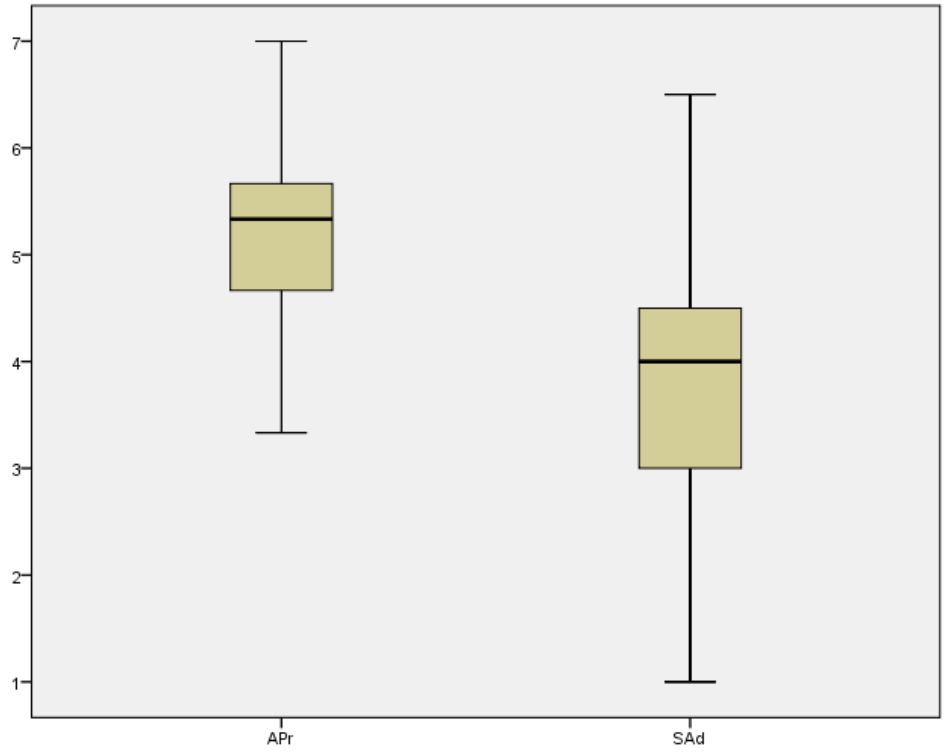


Figure 8: Check for Outliers in the Data Set

Participants per Experimental Condition

Condition	Frequency	Percent
1	39	13.1
2	36	12.1
3	37	12.5
4	36	12.1
5	36	12.1
6	39	13.1
7	38	12.8
8	36	12.1

Table 22: Overview of Participants in Experimental Conditions

VI.b. Sample Structure

Sample Structure

Gender		Age		Nationality			Highest Level of Education		
Female	165	*Min*	18	*German*	152	51.2%	*No schooling*	1	0.3%
Male	132	*Max*	65	*Dutch*	82	27.6%	*Secondary school*	70	23.6%
Total	297	*Mean*	27.06	*British*	15	5.1%	*Bachelor's degree*	149	50.2%
		SD	7.554	*French*	15	5.1%	*Master's degree*	65	21.9%
				Belgian	5	1.7%	*Doctoral degree*	3	1.0%
		18-30	82.2%	*Swiss*	5	1.7%	*Prefer not to answer*	9	3.0%
		31-40	10.8%	*Turkish*	4	1.3%			
		41-50	4.7%	*Bulgarian*	3	1.0%			
		51 or older	2.4%	*Italian*	3	1.0%			
				Norwegian	3	1.0%			
				Swedish	3	1.0%			
				Austrian	2	0.7%			
				Finnish	2	0.7%			
				Irish	2	0.7%			
				Russian	1	0.3%			

Table 23: Demographic Data of Participants

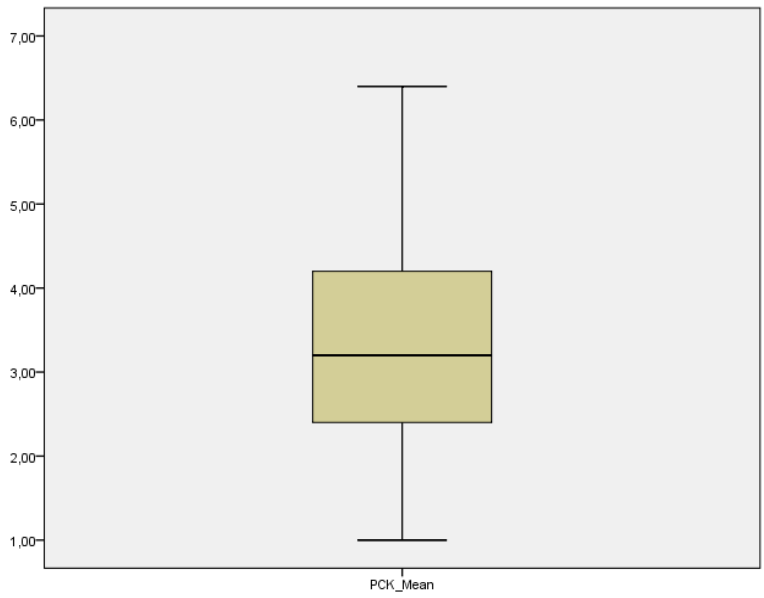


Figure 9: Boxplot for Product Class Knowledge

Product Class Knowledge

Min	*1.00*
Max	*6.40*
Mean	*3.37*
SD	*1.19*

Table 24: Descriptives for Product Class Knowledge

VI.c. Reliability of Measurement Scales

Overview of Cronbach's Alpha for Multi-Item Measurement Scales

Attitude towards the Product	Scepticism towards the Ad	Product Class Knowledge	Perceived Personal Relevance	Scepticism towards Advertising
3 items	*2 items*	*5 items*	*10 items*	*9 items*
α = 0.767	*α = 0.829*	*α = 0.858*	*α = 0.912*	*α = 0.887*

Table 25: Cronbach's Alpha for Multi-Item Measurement Scales

VI.d. Manipulation Check

Condition		n	Mean APr[23]	Comparison of Sub-Conditions		
				Combination	Mean Difference	Std. Error	**Sig.**
1				*1A - 1B*	-.126	.325	**.700**
	1A	*10*	4.800	*1A - 1C*	-.067	.316	**.834**
	1B	*9*	4.926	*1A - 1D*	-.167	.316	**.601**
	1C	*10*	4.867	*1B - 1C*	.059	.325	**.856**
	1D	*10*	4.967	*1B - 1D*	-.041	.325	**.901**
				1C - 1D	-.100	.316	**.754**
2				*2A - 2B*	-.067	.442	**.881**
	2A	*8*	4.833	*2A - 2C*	-.093	.453	**.839**
	2B	*10*	4.900	*2A - 2D*	.019	.453	**.968**
	2C	*9*	4.926	*2B - 2C*	-.026	.428	**.952**
	2D	*9*	4.815	*2B - 2D*	.086	.428	**.843**
				2C - 2D	.111	.439	**.802**
3				*3A - 3B*	.086	.494	**.863**
	3A	*9*	5.186	*3A - 3C*	.037	.506	**.942**
	3B	*10*	5.100	*3A - 3D*	.000	.506	**.999**
	3C	*9*	5.148	*3B - 3C*	-.048	.494	**.923**
	3D	*9*	5.185	*3B - 3D*	-.085	.494	**.864**
				3C - 3D	-.037	.506	**.942**
4				*4A - 4B*	.148	.438	**.737**
	4A	*9*	5.111	*4A - 4C*	.037	.438	**.933**
	4B	*9*	4.963	*4A - 4D*	.296	.438	**.504**
	4C	*9*	5.074	*4B - 4C*	-.111	.438	**.801**
	4D	*9*	4.815	*4B - 4D*	.148	.438	**.737**
				4C - 4D	.259	.438	**.558**
5				*5A - 5B*	.330	.358	**.364**
	5A	*10*	5.367	*5A - 5C*	.319	.384	**.413**
	5B	*9*	5.037	*5A - 5D*	.200	.349	**.570**
	5C	*7*	5.048	*5B - 5C*	-.011	.393	**.979**
	5D	*10*	5.167	*5B - 5D*	-.130	.358	**.720**
				5C - 5D	-.119	.384	**.759**

[23] APr = *Attitude towards the Product*

Condition		n	Mean APr	Comparison of Sub-Conditions			
				Combination	Mean Difference	Std. Error	**Sig.**
6				*6A - 6B*	.141	.363	**.701**
	6A	*9*	5.407	*6A - 6C*	.041	.363	**.911**
	6B	*10*	5.267	*6A - 6D*	.041	.363	**.911**
	6C	*10*	5.367	*6B - 6C*	-.100	.354	**.779**
	6D	*10*	5.367	*6B - 6D*	-.100	.354	**.779**
				6C - 6D	.000	.354	**1.000**
7				*7A - 7B*	.156	.259	**.552**
	7A	*9*	5.556	*7A - 7C*	.122	.259	**.640**
	7B	*10*	5.400	*7A - 7D*	.148	.266	**.581**
	7C	*10*	5.433	*7B - 7C*	-.033	.252	**.896**
	7D	*9*	5.407	*7B - 7D*	-.007	.259	**.977**
				7C - 7D	.026	.259	**.921**
8				*8A - 8B*	-.222	.233	**.347**
	7A	*9*	5.148	*8A - 8C*	-.222	.233	**.347**
	7B	*9*	5.370	*8A - 8D*	-.037	.233	**.875**
	7C	*9*	5.370	*8B - 8C*	.000	.233	**1.000**
	7D	*9*	5.185	*8B - 8D*	.185	.233	**.432**
				8C - 8D	.185	.233	**.432**

Table 26: Comparison of Sub-conditions

Group Statistics

	Involvement	
Perceived Personal Relevance	Low	M = 3.816; SD = 0.915
	High	M = 4.409; SD = 0.957

Table 27: Perceived Personal Relevance in Low vs. High Involvement Conditions

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% CI of the Diff.	
	F	Sig.	t	df	Sig.	Mean Diff.	Std. Err. Diff.	Lower	Upper
Equal variances assumed	*0.001*	*0.972*	*-5.459*	*295*	*.000*	*-.593*	*.109*	*-.807*	*-.379*
Equal variances not assumed			*-5.459*	*293.756*	*.000*	*-.593*	*.109*	*-.807*	*-.379*

Table 28: Comparing Means for Perceived Personal Relevance in Low vs. High Involvement Conditions

VI.e. Randomisation

AGE

Descriptives: Age

					95% Conf. Int. for Mean			
Cond.	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
1	39	28.31	7.767	1.244	25.79	30.83	18	53
2	36	26.06	6.832	1.139	23.74	28.37	18	48
3	37	27.49	7.658	1.259	24.93	30.04	20	56
4	36	26.11	6.580	1.097	23.88	28.34	21	54
5	36	26.94	7.917	1.320	24.27	29.62	20	62
6	39	28.49	10.790	1.728	24.99	31.98	20	65
7	38	26.11	5.584	.906	24.27	27.94	22	47
8	36	26.83	6.125	1.021	24.76	28.91	18	48
Total	297	27.06	7.554	.438	26.20	27.93	18	65

Table 29: Age by Experimental Condition

ANOVA (Condition → Age)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	252.578	7	36.083	.627	.734
Within Groups	16637.207	289	57.568		
Total	16889.785	296			

Table 30: ANOVA (Condition → Age)

GENDER

Gender of Participants per Condition

	1	2	3	4	5	6	7	8	Total
Male	16	16	14	16	15	17	18	20	132
Female	23	20	23	20	21	22	20	16	165
Total	39	36	37	36	36	39	38	36	297

Table 31: Distribution of Male/Female Participants per Condition

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.894	7	.895
Likelihood Ratio	2.889	7	.895
Linear-by-Linear Association	1.494	1	.222
N of Valid Cases	297		

Table 32: Chi-Square Tests for Gender Distribution across Conditions

NATIONALITY

Nationality of Participants per Condition

	1	2	3	4	5	6	7	8	Total
Austrian	*0*	*0*	*0*	*0*	*0*	*2*	*0*	*0*	*2*
Belgian	*0*	*1*	*1*	*0*	*0*	*0*	*1*	*2*	*5*
British	*1*	*1*	*0*	*7*	*2*	*2*	*0*	*2*	*15*
Bulgarian	*0*	*0*	*1*	*0*	*0*	*0*	*1*	*1*	*3*
Dutch	*8*	*12*	*8*	*9*	*11*	*11*	*15*	*8*	*82*
Finnish	*0*	*0*	*1*	*0*	*1*	*0*	*0*	*0*	*2*
French	*3*	*0*	*3*	*0*	*4*	*1*	*2*	*2*	*15*
German	*23*	*19*	*20*	*18*	*16*	*21*	*18*	*17*	*152*
Irish	*0*	*0*	*0*	*1*	*0*	*1*	*0*	*0*	*2*
Italian	*0*	*0*	*1*	*0*	*0*	*1*	*0*	*1*	*3*
Norwegian	*2*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*3*
Russian	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*1*
Swedish	*2*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*3*
Swiss	*0*	*1*	*0*	*1*	*2*	*0*	*1*	*0*	*5*
Turkish	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*3*	*4*
Total	*39*	*36*	*37*	*36*	*36*	*39*	*38*	*36*	*297*

Table 33: Nationality of Participants per Condition

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	124.264	98	.038
Likelihood Ratio	112.999	98	.143
Linear-by-Linear Association	1.760	1	.185
N of Valid Cases	297		

Table 34: Chi-Square Test for Nationality and Condition

ANOVA (Nationality → Scepticism towards the Ad)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6.940	14	.496	.373	.982
Within Groups	375.167	282	1.330		
Total	382.108	296			

Table 35: ANOVA (Nationality → Scepticism towards the Ad)

ANOVA (Nationality → Attitude towards the Product)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.606	14	.615	.984	.470
Within Groups	176.144	282	.625		
Total	184.750	296			

Table 36: ANOVA (Nationality → Attitude towards the Product)

DEGREE

Level of Education of Participants per Condition

	1	2	3	4	5	6	7	8	Total
No schooling completed	0	0	0	0	0	0	0	1	1
Secondary School	9	6	6	10	10	13	7	9	70
Bachelor's Degree	19	22	18	16	17	18	22	17	149
Master's Degree	9	7	11	7	7	8	8	8	65
Doctoral Degree	1	0	0	1	0	0	0	1	3
Prefer not to answer	1	1	2	2	2	0	1	0	9
Total	39	36	37	36	36	39	38	36	297

Table 37: Level of Education of Participants per Condition

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	24.215	35	.915
Likelihood Ratio	23.755	35	.925
Linear-by-Linear Association	1.720	1	.190
N of Valid Cases	297		

Table 38: Chi-Square Test for Level of Education and Condition

VI.f. Assumptions for ANCOVA

Levene's Test of Equality of Error Variances

Scepticism towards the Ad				Attitude towards the Product			
F	*df1*	*df2*	*Sig.*	*F*	*df1*	*df2*	*Sig.*
2.897	7	289	0.006	4.587	7	289	.000

Table 39: Check for Homoscedasticity

Tests of Normality

Scepticism towards the Ad						Attitude towards the Product					
Kolmogorov-Smirnov			Shapiro-Wilk			Kolmogorov-Smirnov			Shapiro-Wilk		
Statistic	*df*	*Sig.*	*Statistic*	*df*	*Sig.*	*Statistic*	*df*	*Sig.*	*Statistic*	*df*	*Sig.*
0.142	297	0.000	0.971	297	0.000	0.107	297	0.000	0.976	297	0.000

Table 40: Check for Normal Distribution

Tests of Between-Subjects Effects (Dependent Variable: Scepticism towards the Ad)

	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power
Corrected Model	281.005[a]	204	1.377	1.253	.110	.735	255.703	.999
Intercept	1543.099	1	1543.099	1404.160	.000	.939	1404.160	1.000
PCQ	8.599	3	2.866	2.608	.056	.078	7.825	.623
*PCQ * SAdv*	122.754	106	1.158	1.054	.400	.548	111.702	.980
*PCQ * PCK*	86.648	82	1.057	.962	.571	.462	78.846	.945
*PCQ * PSown*	8.136	4	2.034	1.851	.126	.074	7.404	.542
Error	101.103	92	1.099					
Total	5082.250	297						
Corrected Total	382.108	296						

Table 41: Homogeneity of Regression Slopes (Scepticism towards the Ad) [R Squared = 0.735 (Adjusted R Squared = 0.149)]

Tests of Between-Subjects Effects (Dependent Variable: Attitude towards the Product)

	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power
Corrected Model	141.540	204	.694	1.477	.017	.766	301.362	1.000
Intercept	2603.140	1	2603.140	5542.515	.000	.984	5542.515	1.000
PCQ	4.533	3	1.511	3.217	.026	.095	9.651	.724
*PCQ * SAdv*	67.344	106	.635	1.353	.069	.609	143.387	.998
*PCQ * PCK*	52.657	82	.642	1.367	.072	.549	112.114	.996
*PCQ * PSown*	1.650	4	.413	.878	.480	.037	3.513	.270
Error	43.209	92	.470					
Total	8042.580	297						
Corrected Total	184.750	296						

Table 42: Homogeneity of Regression Slopes (Attitude towards the Product) [R Squared = 0.766 (Adjusted R Squared = 0.248)]

VI.g. Assumptions for Mediation Analysis

Tests of Between-Subjects Effects (Dependent Variable: Attitude towards the Product)

	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	71.907	43	1.672	3.749	.000
Intercept	296.223	1	296.223	664.149	.000
PCQ	9.916	3	3.305	7.411	.000
SAd	27.603	11	2.509	5.626	.000
PCQ * SAd	**33.467**	**26**	**1.287**	**2.886**	**.000**
SAdv[24]	.147	1	.147	.329	.567
PCK[25]	.027	1	.027	.060	.807
PSown[26]	.010	1	.010	.023	.880
Error	112.843	253	.446		
Total	8042.580	297			
Corrected Total	184.750	296			

Table 43: Check for Homogeneity of Regression [R Squared = 0.389 (Adjusted R Squared = 0.285)]

[24] SAdv = Control Variable: *Scepticism towards Advertising*
[25] PCK = Control Variable: *Product Class Knowledge*
[26] PSown = Control Variable: *Owning a Portable Speaker*

VI.h. Significance of Covariates

Tests of Between-Subjects Effects (Dependent Variable: Scepticism towards the Ad)

	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power
Corrected Model	27.920	10	2.792	2.254	.015	.073	22.545	.920
Intercept	256.042	1	256.042	206.749	.000	.420	206.749	1.000
PCQ	21.822	3	7.274	5.874	.001	.058	17.621	.952
INV	.201	1	.201	.162	.687	.001	.162	.069
*PCQ * INV*	4.391	3	1.464	1.182	.317	.012	3.545	.316
CVSAdv	**.003**	**1**	**.003**	**.002**	**.962**	**.000**	**.002**	**.050**
PCK	**.000**	**1**	**.000**	**.000**	**.987**	**.000**	**.000**	**.050**
PS_own	**.772**	**1**	**.772**	**.623**	**.430**	**.002**	**.623**	**.123**
Error	354.188	286	1.238					
Total	5082.250	297						
Corrected Total	382.108	296						

Table 44: Output ANCOVA (PCQ → SAd) with Covariates [R Squared = 0.073 (Adjusted R Squared = 0.041)]

Tests of Between-Subjects Effects (Dependent Variable: Attitude towards the Product)

	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power
Corrected Model	12.777	10	1.278	2.125	.023	.069	21.249	.901
Intercept	417.234	1	417.234	693.883	.000	.708	693.883	1.000
PCQ	9.929	3	3.310	5.504	.001	.055	16.513	.938
INV	.156	1	.156	.260	.611	.001	.260	.080
*PCQ * INV*	1.605	3	.535	.890	.447	.009	2.669	.244
CVSAdv	**.072**	**1**	**.072**	**.120**	**.729**	**.000**	**.120**	**.064**
PCK	**.645**	**1**	**.645**	**1.072**	**.301**	**.004**	**1.072**	**.178**
PS_own	**.560**	**1**	**.560**	**.931**	**.335**	**.003**	**.931**	**.161**
Error	171.973	286	.601					
Total	8042.580	297						
Corrected Total	184.750	296						

Table 45: Output ANCOVA (PCQ → APr) with Covariates [R Squared = 0.069 (Adjusted R Squared = 0.037)]

VI.i. Examination of the Relationships

PRODUCT CLAIM QUANTITY → SCEPTICISM TOWARDS THE AD

Tests of Between-Subjects Effects (Dependent Variable: Scepticism towards the Ad)

	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power
Corrected Model	11.818[a]	7	1.688	2.821	.007	.064	19.750	.917
Intercept	7843.796	1	7843.796	13108.410	.000	.978	13108.410	1.000
PCQ	9.978	3	3.326	5.558	.001	.055	16.674	.941
INV	.144	1	.144	.240	.624	.001	.240	.078
PCQ * INV	1.576	3	.525	.878	.453	.009	2.633	.241
Error	172.931	289	.598					
Total	8042.580	297						
Corrected Total	184.750	296						

Table 46: Assessment of Effects on Scepticism towards the Ad [R Squared = 0.064 (Adjusted R Squared = 0.041)]

Paired Comparisons

Pairs		*Mean Difference*	*Std. Err.*	*Sig.*	*95% Confidence Interval for Difference*	
					Lower	*Upper*
2 claims	***3 claims***	.156	.182	.392	-.202	.515
	4 claims	-.360*	.181	.048	-.716	-.004
	5 claims	-.531*	.182	.004	-.888	-.174
3 claims	***2 claims***	-.156	.182	.392	-.515	.202
	4 claims	-.516*	.182	.005	-.875	-.158
	5 claims	-.687*	.183	.000	-1.047	-.328
4 claims	***2 claims***	.360*	.181	.048	.004	.716
	3 claims	.516*	.182	.005	.158	.875
	5 claims	-.171	.182	.347	-.528	.186
5 claims	***2 claims***	.531*	.182	.004	.174	.888
	3 claims	.687*	.183	.000	.328	1.047
	4 claims	.171	.182	.347	-.186	.528

Table 47: Paired Comparisons for Level of PCQ on Scepticism towards the Ad

PRODUCT CLAIM QUANTITY → ATTITUDE TOWARDS THE PRODUCT

Tests of Between-Subjects Effects (Dependent Variable: Attitude towards the Product)

	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power
Corrected Model	11.818	7	1.688	2.821	.007	.064	19.750	.917
Intercept	7843.796	1	7843.796	13108.410	.000	.978	13108.410	1.000
INV	.144	1	.144	.240	.624	.001	.240	.078
PCQ	9.978	3	3.326	5.558	.001	.055	16.674	.941
INV * PCQ	1.576	3	.525	.878	.453	.009	2.633	.241
Error	172.931	289	.598					
Total	8042.580	297						
Corrected Total	184.750	296						

Table 48: Assessment of Effects on Attitude towards the Product [R Squared = 0.064 (Adjusted R Squared = 0.041)]

Paired Comparisons

Pairs		*Mean Difference*	*Std. Err.*	*Sig.*	*95% Confidence Interval for Difference*	
					Lower	*Upper*
2 claims	*3 claims*	-.1931	.12693	.129	-.4429	.0567
	4 claims	-.3822*	.12607	.003	-.6303	-.1341
	5 claims	-.4804*	.12650	.000	-.7293	-.2314
3 claims	*2 claims*	.1931	.12693	.129	-.0567	.4429
	4 claims	-.1891	.12693	.137	-.4389	.0607
	5 claims	-.2873*	.12736	.025	-.5379	-.0366
4 claims	*2 claims*	.3822*	.12607	.003	.1341	.6303
	3 claims	.1891	.12693	.137	-.0607	.4389
	5 claims	-.0981	.12650	.438	-.3471	.1508
5 claims	*2 claims*	.4804*	.12650	.000	.2314	.7293
	3 claims	.2873*	.12736	.025	.0366	.5379
	4 claims	.0981	.12650	.438	-.1508	.3471

Table 49: Paired Comparisons for Levels of PCQ on Attitude towards the Product

VI.j. Preacher-Hayes bootstraps test (Model 7)

PCQ = 2 as base level

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 3.00 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3

**************************************************************************
Model : 7
    Y : APr
    X : PCQB2
    M : SAd
    W : INV

Sample
Size:  297

Coding of categorical X variable for analysis:
   PCQB2   X1   X2   X3
      2  ,000 ,000 ,000
      3 1,000 ,000 ,000
      4 ,000 1,000 ,000
      5 ,000 ,000 1,000

**************************************************************************
OUTCOME VARIABLE:
 SAd

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,2659      ,0707     1,2287     3,1411     7,0000   289,0000      ,0033

Model
              coeff         se          t          p       LLCI       ULCI
constant     3,4423      ,4002     8,6017      ,0000     2,6547     4,2300
X1            ,5982      ,5719     1,0460      ,2964     -,5275     1,7239
X2            ,5064      ,5729      ,8840      ,3774     -,6211     1,6339
X3           1,3786      ,5689     2,4234      ,0160      ,2589     2,4983
INV           ,2372      ,2562      ,9258      ,3553     -,2671      ,7414
Int_1        -,5074     -1,3916     ,1651     -1,2252      ,2103
Int_2        -,1026      ,3623     -,2831      ,7773     -,8157      ,6105
Int_3        -,5712      ,3635    -1,5717     ,1171     -1,2866      ,1441

Product terms key:
 Int_1  :  X1      x      INV
 Int_2  :  X2      x      INV
 Int_3  :  X3      x      INV

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      ,0119     1,2361     3,0000   289,0000      ,2968

**************************************************************************
OUTCOME VARIABLE:
 APr

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,3503      ,1227     ,5551    10,2122     4,0000   292,0000      ,0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     5,5889      ,1720    32,4878      ,0000     5,2503     5,9274
X1            ,1639      ,1226     1,3363      ,1825     -,0775      ,4053
X2            ,4495      ,1225     3,6699      ,0003      ,2084      ,6906
X3            ,5796      ,1238     4,6801      ,0000      ,3359      ,8233
SAd          -,1869      ,0393    -4,7582      ,0000     -,2642     -,1096

************** DIRECT AND INDIRECT EFFECTS OF X ON Y **********************

Relative direct effects of X on Y
      Effect         se          t          p       LLCI       ULCI
X1      ,1639      ,1226     1,3363      ,1825     -,0775      ,4053
X2      ,4495      ,1225     3,6699      ,0003      ,2084      ,6906
X3      ,5796      ,1238     4,6801      ,0000      ,3359      ,8233

Omnibus test of direct effect of X on Y:
      R2-chng          F        df1        df2          p
        ,0803     8,9087     3,0000   292,0000      ,0000
-----------

Relative conditional indirect effects of X on Y:

INDIRECT EFFECT:
PCQB2          ->    SAd          ->    APr

          INV      Effect    BootSE   BootLLCI   BootULCI
X1     1,0000      ,0170      ,0487     -,1116      ,0834
X1     2,0000      ,0779      ,0189      ,0670      ,1841

Index of moderated mediation (difference between conditional indirect effects):
          Index      BootSE   BootLLCI   BootULCI
INV       ,0948      ,0689     -,0330      ,2449
---

          INV      Effect    BootSE   BootLLCI   BootULCI
X2     1,0000      ,0755      ,0455     -,1748      ,0026
X2     2,0000      ,0563      ,0485     -,1564      ,0329

Index of moderated mediation (difference between conditional indirect effects):
          Index      BootSE   BootLLCI   BootULCI
INV       ,0192      ,0630     -,1029      ,1507
---

          INV      Effect    BootSE   BootLLCI   BootULCI
X3     1,0000      -,1509      ,0640     -,2918     -,0380
X3     2,0000      -,0441      ,0450     -,1405      ,0415

Index of moderated mediation (difference between conditional indirect effects):
          Index      BootSE   BootLLCI   BootULCI
INV       ,1067      ,0727     -,0268      ,2615
---

************** ANALYSIS NOTES AND ERRORS ************************************

Level of confidence for all confidence intervals in output:
     95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
     5000

------ END MATRIX -----
```

PCQ = 3 as base level

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 3.00 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3

**************************************************************************
Model  : 7
    Y  : APr
    X  : PCQB3
    M  : SAd
    W  : INV

Sample
Size:  297

Coding of categorical X variable for analysis:
   PCQB3    X1    X2
     3   ,000  ,000
     4  1,000  ,000
     5   ,000 1,000
     2   ,000  ,000

**************************************************************************
OUTCOME VARIABLE:
 SAd

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,2659      ,0707     1,2287     3,1411     7,0000   289,0000      ,0033

Model
              coeff         se          t          p       LLCI       ULCI
constant     4,0405      ,4086     9,8885      ,0000     3,2363     4,8448
X1           -,0918      ,5788     -,1586      ,8741    -1,2310     1,0473
X2            ,7804      ,5748     1,3575      ,1757     -,3510     1,9117
X3           -,5982      ,5719    -1,0460      ,2964    -1,7239      ,5275
INV          -,2703      ,2595    -1,0415      ,2985     -,7810      ,2405
Int_1         ,4049      ,3647     1,1103      ,2678     -,3128     1,1226
Int_2        -,0638      ,3658     -,1744      ,8617     -,7837      ,6562
Int_3         ,5074      ,3647     1,3916      ,1651     -,2103     1,2252

Product terms key:
  Int_1    :    X1        x       INV
  Int_2    :    X2        x       INV
  Int_3    :    X3        x       INV

Test(s) of highest order unconditional interaction(s):
       R2-chng       F        df1        df2          p
X*W      ,0119     1,2361     3,0000   289,0000      ,2968

**************************************************************************
OUTCOME VARIABLE:
 APr

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,3503      ,1227     ,5551     10,2122     4,0000   292,0000      ,0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     5,7527      ,1673    34,3761      ,0000     5,4234     6,0821
X1           ,2856       ,1242     2,3003      ,0221      ,0412      ,5300
X2           ,4157       ,1258     3,3037      ,0011      ,1681      ,6633
X3           -,1639      ,1226    -1,3363      ,1825     -,4053      ,0775
SAd          -,1869      ,0393    -4,7582      ,0000     -,2642     -,1096

************************** DIRECT AND INDIRECT EFFECTS OF X ON Y **************************

Relative direct effects of X on Y
      Effect         se          t          p       LLCI       ULCI
X1     ,2856      ,1242     2,3003      ,0221      ,0412      ,5300
X2     ,4157      ,1258     3,3037      ,0011      ,1681      ,6633
X3     -,1639     ,1226    -1,3363      ,1825     -,4053      ,0775

Omnibus test of direct effect of X on Y:
     R2-chng          F        df1        df2          p
      ,0803     8,9087     3,0000   292,0000      ,0000
----------

Relative conditional indirect effects of X on Y:

INDIRECT EFFECT:
 PCQB3          ->    SAd          ->    APr
                INV       Effect    BootSE    BootLLCI   BootULCI
X1    1,0000    -,0585    ,0519     -,1743     ,0319
X1    2,0000    -,1342    ,0577     -,2643    -,0360

Index of moderated mediation (difference between conditional indirect effects):
      Index     BootSE    BootLLCI   BootULCI
INV   -,0757    ,0688     -,2225     ,0549
---

                INV       Effect    BootSE    BootLLCI   BootULCI
X2    1,0000    -,1339    ,0681     -,2660    -,0103
X2    2,0000    -,1220    ,0546     -,2247    -,0311

Index of moderated mediation (difference between conditional indirect effects):
      Index     BootSE    BootLLCI   BootULCI
INV   ,0119     ,0739     -,1415     ,1546
---

                INV       Effect    BootSE    BootLLCI   BootULCI
X3    1,0000    ,0170     ,0489     -,0814     ,1153
X3    2,0000    -,0779    ,0498     -,1878     ,0092

Index of moderated mediation (difference between conditional indirect effects):
      Index     BootSE    BootLLCI   BootULCI
INV   -,0948    ,0689     -,2415     ,0312
---

************************** ANALYSIS NOTES AND ERRORS **************************

Level of confidence for all confidence intervals in output:
     95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
     5000

------ END MATRIX -----
```

PCQ = 4 as base level

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 3.00 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3

**************************************************************************
Model  : 7
    Y  : APr
    X  : PCQB4
    M  : SAd
    W  : INV

Sample
Size:  297

Coding of categorical X variable for analysis:
   PCQB4   X1   X2   X3
   4,000  ,000  ,000
   5,000  1,000  ,000  ,000
   2,000  ,000  1,000  ,000
   3,000  ,000  ,000  1,000

**************************************************************************
OUTCOME VARIABLE:
 SAd

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,2659      ,0707     1,2287     3,1411     7,0000   289,0000      ,0033

Model
              coeff         se          t          p       LLCI       ULCI
constant     3,9487      ,4099     9,6331      ,0000     3,1419     4,7555
X1           ,8722       ,5758     1,5149      ,1309     -,2610     2,0054
X2          -,5064       ,5729     -,8840      ,3774     -1,6339     ,6211
X3           ,0918       ,5788      ,1586      ,8741     -1,0473    1,2310
INV          ,1346       ,2562      ,5254      ,5997      -,3696     ,6389
Int_1       -,4687      -1,2895     ,3635      ,1983     -1,1840     ,2467
Int_2        ,1026       ,2831      ,3623      ,7773      -,6105     ,8157
Int_3       -,4049      -1,1103     ,3647      ,2678     -1,1226     ,3128

Product terms key:
 Int_1  :  X1       x       INV
 Int_2  :  X2       x       INV
 Int_3  :  X3       x       INV

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      ,0119     1,2361     3,0000   289,0000      ,2968

**************************************************************************
OUTCOME VARIABLE:
 APr

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,3503      ,1227     ,5551     10,2122     4,0000   292,0000      ,0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     6,0384      ,1844    32,7445      ,0000     5,6754     6,4013
X1           ,1301       ,1223     1,0641      ,2882     -,1105      ,3707
X2          -,4495       ,1225    -3,6699      ,0003     -,6906     -,2084
X3          -,2856       ,1242    -2,3003      ,0221     -,5300     -,0412
SAd         -,1869       ,0393    -4,7582      ,0000     -,2642     -,1096

************** DIRECT AND INDIRECT EFFECTS OF X ON Y **********************

Relative direct effects of X on Y
      Effect         se          t          p       LLCI       ULCI
X1     ,1301      ,1223     1,0641      ,2882     -,1105      ,3707
X2    -,4495      ,1225    -3,6699      ,0003     -,6906     -,2084
X3    -,2856      ,1242    -2,3003      ,0221     -,5300     -,0412

Omnibus test of direct effect of X on Y:
      R2-chng          F        df1        df2          p
       ,0803     8,9087     3,0000   292,0000      ,0000
----------

Relative conditional indirect effects of X on Y:

INDIRECT EFFECT:
 PCQB4      ->   SAd        ->   APr
          INV      Effect    BootSE   BootLLCI   BootULCI
X1     1,0000     -,0754     ,0568     -,1959      ,0303
X1     2,0000      ,0122     ,0454     -,0780      ,1018

Index of moderated mediation (difference between conditional indirect effects):
          Index    BootSE   BootLLCI   BootULCI
INV       ,0876     ,0739     -,0548      ,2408
---

          INV      Effect    BootSE   BootLLCI   BootULCI
X2     1,0000      ,0755     ,0458     -,0043      ,1755
X2     2,0000      ,0563     ,0483     -,0349      ,1550

Index of moderated mediation (difference between conditional indirect effects):
          Index    BootSE   BootLLCI   BootULCI
INV       -,0192     ,0618     -,1475      ,1031
---

          INV      Effect    BootSE   BootLLCI   BootULCI
X3     1,0000      ,0585     ,0522     -,0346      ,1752
X3     2,0000      ,1342     ,0572      ,0353      ,2560

Index of moderated mediation (difference between conditional indirect effects):
          Index    BootSE   BootLLCI   BootULCI
INV       ,0757     ,0687     -,0534      ,2211
---

************************** ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
    95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
    5000

------ END MATRIX -----
```

PCQ = 5 as base level

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 3.00 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3

**************************************************************************
Model  : 7
    Y  : APr
    X  : PCQB5
    M  : SAd
    W  : INV

Sample
Size:  297

Coding of categorical X variable for analysis:
   PCQB5   X1   X2   X3
   5,000  ,000  ,000
   1,000 1,000  ,000  ,000
   2,000  ,000 1,000  ,000
   3,000  ,000  ,000 1,000
   4,000  ,000  ,000  ,000

**************************************************************************
OUTCOME VARIABLE:
 SAd

Model Summary
          R       R-sq        MSE          F        df1        df2          p
     ,2659      ,0707     1,2287     3,1411     7,0000   289,0000     ,0033

Model
              coeff         se          t          p       LLCI       ULCI
constant     4,8209     ,4043    11,9238     ,0000     4,0251     5,6167
X1          -1,3786     ,5689    -2,4234     ,0160    -2,4983     -,2589
X2            -,7804     ,5748    -1,3576     ,1757    -1,9117     ,3510
X3            -,8722     ,5758    -1,5149     ,1309    -2,0054     ,2610
INV           -,3341     ,2578    -1,2958     ,1961     -,8415     ,1734
Int_1          ,5712     ,3635     1,5717     ,1171     -,1441    1,2866
Int_2          ,0638     ,3658     ,1744      ,8617     -,6562     ,7837
Int_3          ,4687     ,3635     1,2895     ,1983     -,2467    1,1840

Product terms key:
  Int_1    :    X1        x        INV
  Int_2    :    X2        x        INV
  Int_3    :    X3        x        INV

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      ,0119     1,2361     3,0000   289,0000     ,2968

**************************************************************************
OUTCOME VARIABLE:
 APr

Model Summary
          R       R-sq        MSE          F        df1        df2          p
     ,3503      ,1227     ,5551     10,2122     4,0000   292,0000     ,0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     6,1684     ,1906    32,3572     ,0000     5,7932     6,5436
X1           -,5796     ,1238    -4,6801     ,0000     -,8233     -,3359
X2           -,4157     ,1258    -3,3037     ,0011     -,6633     -,1681
X3           -,1301     ,1223    -1,0641     ,2882     -,3707      ,1105
SAd          -,1869     ,0393    -4,7582     ,0000     -,2642     -,1096

************************** DIRECT AND INDIRECT EFFECTS OF X ON Y **************************

Relative direct effects of X on Y
          Effect         se          t          p       LLCI       ULCI
X1          -,5796     ,1238    -4,6801     ,0000     -,8233     -,3359
X2          -,4157     ,1258    -3,3037     ,0011     -,6633     -,1681
X3          -,1301     ,1223    -1,0641     ,2882     -,3707      ,1105

Omnibus test of direct effect of X on Y:
       R2-chng          F        df1        df2          p
         ,0803     8,9087     3,0000   292,0000     ,0000
----------

Relative conditional indirect effects of X on Y:

INDIRECT EFFECT:
 PCQB5          ->    SAd          ->    APr

          INV       Effect    BootSE    BootLLCI  BootULCI
X1     1,0000       ,1509     ,0647      ,0380     ,2929
X1     2,0000       ,0442     ,0444     -,0350     ,1404

Index of moderated mediation (difference between conditional indirect effects):
          Index     BootSE    BootLLCI  BootULCI
INV       -,1067    ,0730     -,2566     ,0318
---

          INV       Effect    BootSE    BootLLCI  BootULCI
X2     1,0000       ,1339     ,0694      ,0128     ,2897
X2     2,0000       ,1220     ,0554      ,0307     ,2458

Index of moderated mediation (difference between conditional indirect effects):
          Index     BootSE    BootLLCI  BootULCI
INV       -,0119    ,0762     -,1638     ,1432
---

          INV       Effect    BootSE    BootLLCI  BootULCI
X3     1,0000       ,0754     ,0566      -,0293    ,1973
X3     2,0000       -,0122    ,0455      -,1026    ,0827

Index of moderated mediation (difference between conditional indirect effects):
          Index     BootSE    BootLLCI  BootULCI
INV       -,0876    ,0731     -,2381     ,0532
---

************************** ANALYSIS NOTES AND ERRORS **************************

Level of confidence for all confidence intervals in output:
     95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
    5000

------ END MATRIX -----
```

VI.I. AMOS Output (SEM) – Base Level: 2 claims

Variable Summary (Group number 1)

Your model contains the following variables (Group number 1)

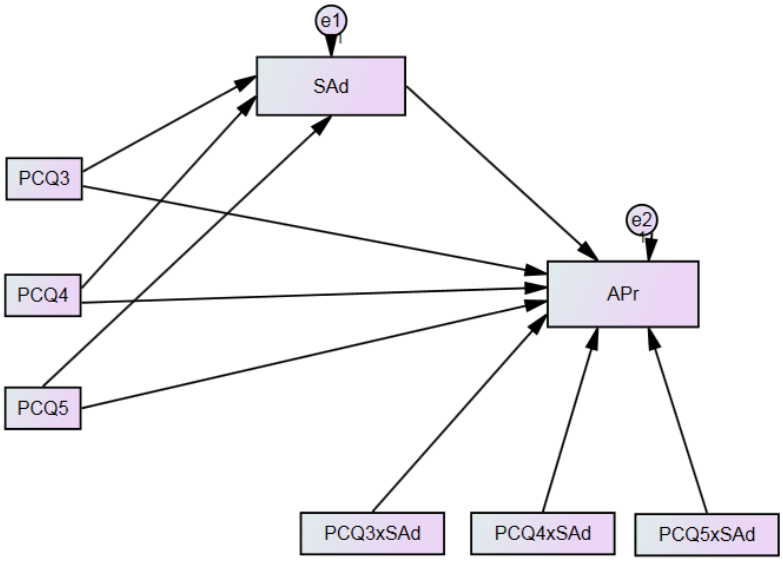
Observed. endogenous variables: SAd; APr

Observed. exogenous variables: PCQ3; PCQ4; PCQ5; PCQ3xSAd; PCQ4xSAd; PCQ5xSAd

Unobserved. exogenous variables: e1; e2

Variable counts (Group number 1)

Number of variables in your model:	10
Number of observed variables:	8
Number of unobserved variables:	2
Number of exogenous variables:	8
Number of endogenous variables:	2



Number of distinct sample moments:	36
Number of distinct parameters to be estimated:	18
Degrees of freedom (36 - 18):	18

Result (Default model)

Minimum was achieved

Chi-square	=	2722.089
Degrees of freedom	=	18
Probability level	=	0.000

Regression Weights: (Group number 1 - Default model) (Maximum Likelihood Estimates)

			Estimate	S.E.	C.R.	P
SAd	←	*PCQ3*	-.156	.149	-1.052	.293
SAd	←	*PCQ4*	.360	.147	2.445	.015
SAd	←	*PCQ5*	.531	.148	3.590	***
APr	←	*PCQ3*	1.956	.096	20.475	***
APr	←	*PCQ4*	2.490	.095	26.097	***
APr	←	*PCQ5*	2.454	.097	25.311	***
APr	←	*SAd*	.207	.037	5.550	***
APr	←	*PCQ3xSAd*	-.476	.025	-19.268	***
APr	←	*PCQ4xSAd*	-.525	.022	-24.010	***
APr	←	*PCQ5xSAd*	-.482	.021	-23.167	***

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
SAd	←	*PCQ3*	-.059
SAd	←	*PCQ4*	.138
SAd	←	*PCQ5*	.202
APr	←	*PCQ3*	.338
APr	←	*PCQ4*	.434
APr	←	*PCQ5*	.426
APr	←	*SAd*	.094
APr	←	*PCQ3xSAd*	-.317
APr	←	*PCQ4xSAd*	-.396
APr	←	*PCQ5xSAd*	-.382

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P
PCQ3	.185	.015	12.166	***
PCQ4	.189	.016	12.166	***
PCQ5	.187	.015	12.166	***
PCQ3xSAd	2.764	.227	12.166	***
PCQ4xSAd	3.517	.289	12.166	***
PCQ5xSAd	3.896	.320	12.166	***
e1	1.212	.100	12.166	***
e2	.499	.041	12.166	***

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	18	2722.089	18	.000	151.227
Saturated model	36	.000	0		
Independence model	8	2805.275	28	.000	100.188

RMR. GFI

Model	RMR	GFI	AGFI	PGFI
Default model	1.146	.501	.002	.250
Saturated model	.000	1.000		
Independence model	.411	.486	.339	.378

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.030	.509	.030	-.515	.026
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.643	.019	.017
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	*2704.089*	*2536.337*	*2879.158*
Saturated model	*.000*	*.000*	*.000*
Independence model	*2777.275*	*2607.072*	*2954.795*

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	9.196	9.135	8.569	9.727
Saturated model	.000	.000	.000	.000
Independence model	9.477	9.383	8.808	9.982

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.712	.690	.735	.000
Independence model	.579	.561	.597	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	2758.089	2759.218	2824.577	2842.577
Saturated model	72.000	74.258	204.974	240.974
Independence model	2821.275	2821.776	2850.824	2858.824

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	9.318	8.751	9.909	9.322
Saturated model	.243	.243	.243	.251
Independence model	9.531	8.956	10.131	9.533

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	4	4
Independence model	5	6

VI.m. Comparison of other Base Levels

Regression Weights (Base Level 3)

			Estimate	S.E.	CR	P	Standardised Regression Weights
SAd	←	*PCQ2*	0.156	0.147	1.062	0.288	0.058
SAd	←	*PCQ4*	0.516	0.147	3.506	***	0.193
SAd	←	*PCQ5*	0.687	0.148	4.647	***	0.255
APr	←	*SAd*	-0.269	0.037	-7.207	***	-0.218
APr	←	*PCQ2*	-1.956	0.095	-20.66	***	-0.591
APr	←	*PCQ4*	0.535	0.096	5.546	***	0.162
APr	←	*PCQ5*	0.498	0.098	5.067	***	0.15
APr	←	*PCQ2xSAd*	0.476	0.024	19.929	***	0.569
APr	←	*PCQ4xSAd*	-0.05	0.022	-2.276	0.023	-0.065
APr	←	*PCQ5xSAd*	-0.006	0.021	-0.29	0.772	-0.008

Variances (Base Level 3)

	Estimate	S.E.	CR	P
PCQ2	*0.156*	*0.147*	*1.062*	*0.288*
PCQ4	*0.516*	*0.147*	*3.506*	***
PCQ5	*0.687*	*0.148*	*4.647*	***
PCQ4xSAd	*-0.269*	*0.037*	*-7.207*	***
PCQ5xSAd	*-1.956*	*0.095*	*-20.66*	***
e1	*0.535*	*0.096*	*5.546*	***
e2	*0.498*	*0.098*	*5.067*	***

Regression Weights (Base Level 4)

			Estimate	S.E.	C.R.	P	Standardised Regression Weights
SAd	←	*PCQ2*	-0.360	0.147	-2.445	0.015	-0.138
SAd	←	*PCQ3*	-0.516	0.149	-3.475	***	-0.196
SAd	←	*PCQ5*	0.171	0.148	1.156	0.248	0.065
APr	←	*SAd*	-0.319	0.037	-8.543	***	-0.227
APr	←	*PCQ2*	-2.490	0.095	-26.097	***	-0.678
APr	←	*PCQ3*	-0.535	0.097	-5.498	***	-0.144
APr	←	*PCQ5*	*-0.037*	*0.095*	*-0.385*	*0.7*	*-0.01*
APr	←	*PCQ2xSAd*	*0.525*	*0.024*	*22.016*	***	*0.566*
APr	←	*PCQ3xSAd*	0.050	0.025	2.017	0.044	0.052
APr	←	*PCQ5xSAd*	0.044	0.021	2.105	0.035	0.054

Variances (Base Level 4)

	Estimate	S.E.	CR	P
PCQ2	*0.189*	*0.016*	*12.166*	***
PCQ3	*0.185*	*0.015*	*12.166*	***
PCQ5	*0.187*	*0.015*	*12.166*	***
PCQ2xSAd	*2.957*	*0.243*	*12.166*	***
PCQ3xSAd	*2.764*	*0.227*	*12.166*	***
PCQ5xSAd	*3.896*	*0.32*	*12.166*	***
e1	*1.212*	*0.1*	*12.166*	***
e2	*0.499*	*0.041*	*12.166*	***

Regression Weights (Base Level 5)

			Estimate	S.E.	C.R.	P	Standardised Regression Weights
SAd	←	*PCQ2*	*-0.531*	*0.147*	*-3.606*	***	*-0.198*
SAd	←	*PCQ3*	*-0.687*	*0.149*	*-4.625*	***	*-0.254*
SAd	←	*PCQ4*	*-0.171*	*0.147*	*-1.161*	*0.246*	*-0.064*
APr	←	*SAd*	*-0.275*	*0.037*	*-7.369*	***	*-0.211*
APr	←	*PCQ2*	*-2.454*	*0.097*	*-25.419*	***	*-0.702*
APr	←	*PCQ3*	*-0.498*	*0.099*	*-5.045*	***	*-0.141*
APr	←	*PCQ4*	*0.037*	*0.095*	*0.387*	*0.699*	*0.01*
APr	←	*PCQ2xSAd*	*0.482*	*0.024*	*20.182*	***	*0.545*
APr	←	*PCQ3xSAd*	*0.006*	*0.025*	*0.244*	*0.807*	*0.007*
APr	←	*PCQ4xSAd*	*-0.044*	*0.022*	*-2.000*	*0.056*	*-0.054*

Variances (Base Level 5)

	Estimate	S.E.	CR	P
PCQ2	*0.156*	*0.147*	*1.062*	*0.288*
PCQ4	*0.516*	*0.147*	*3.506*	***
PCQ5	*0.687*	*0.148*	*4.647*	***
PCQ4xSAd	*-0.269*	*0.037*	*-7.207*	***
PCQ5xSAd	*-1.956*	*0.095*	*-20.66*	***
e1	*0.535*	*0.096*	*5.546*	***
e2	*0.498*	*0.098*	*5.067*	***

Univariate Tests (Dependent Variable: Attitude towards the Product)

PCQ		Sum of Squares	df	Mean Square	F	Sig.
2	*Contrast*	7.385	9	.821	1.859	.059
	Error	113.025	256	.442		
3	*Contrast*	29.332	10	2.933	6.644	.000
	Error	113.025	256	.442		
4	*Contrast*	14.246	9	1.583	3.585	.000
	Error	113.025	256	.442		
5	*Contrast*	10.656	9	1.184	2.682	.005
	Error	113,025	256	,442		