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Techtopia

How Tech Bias Among Consumers Affects Product Evaluations

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ABSTRACT

Several studies have found technology to be viewed as something inherently positive. Investors have shown an irrational bias for investments in tech companies and people using tech products are generally regarded as more innovative and successful. This possible tech bias has however not been thoroughly investigated from a consumer perspective, whereby this paper aspires to expand the understanding of how associations to technology affect consumer perceptions of products and services. The authors suggest, and seek to prove, the existence of a Techtopia effect - a general belief among consumers that a product or service with associations to new technology will be superior to a product or service lacking such associations.

Three questionnaire-based experiments, with a total of 563 respondents, are conducted where respondents were asked to rate their interest in either a product or a service. The first experiment investigates how consumer preferences differ depending on whether a lamp has been produced by mold casting (control group) or 3D-printing (experiment group). The second experiment investigates how consumer preferences differ depending on if a shoe insole has been developed in Pittsburgh (control group) or Silicon Valley (experiment group). Lastly, the third experiment investigates how consumer preferences differ between a delivery service using bicycles (control group) or drones (experiment group).

In the first experiment, respondents express a significantly greater interest in the 3D-printed lamp. In all three experiments, respondents express a significantly greater intent to spread Word of Mouth for the tech-augmented manipulation. Respondents also view users of the tech-augmented manipulation to be significantly more innovative in all three experiments. Lastly, a mediating effect of perceived innovativeness on Word of Mouth was found in all three experiments. The conclusion is thus that the hypothesized Techtopia effect does seem to exist, affecting consumer preferences and perceptions.

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1. Introduction

1.1 Introductory Words

Not many have eluded the recent years' skyrocketing hype around the tech scene. Its epicenter in Silicon Valley, California has attracted more attention, capital and talent than any other sector lately, overthrowing Wall Street as the center stage of modern business. Investments have poured into the tech sector - in 2015 alone, venture capital firms invested over $128 billion into tech deals globally, the highest figure since the dotcom bubble in 2000 (Lewis-Kraus, 2016). The soaring valuations of tech startups have vividly illustrated the tech craze, but as more and more of these firms fail to monetize their business models, investors are beginning to write down their stakes by hundreds of millions of dollars (Winkler, 2016). Some call it market correction, others have boldly employed the dreaded B-word: editorials at tech magazines WIRED and Techcrunch and those of The New York Times and The Washington Post have daringly portended a new *bubble*.

Recent research has observed a *technology bias effect* among investors, where they unwarily associate tech with success (Clark, Rober & Hampton, 2016). This positive bias also appears stronger the more unfamiliar the technology is to the investor. It is purportedly the result of the past decades' constant exposure to rapid advancements in tech, clouding decision makers with deceiving optimism on technology's unfaltering potential to drive successful outcomes.

Even the world's political leaders may be suffering from a deluding tech bias; overconfidence in tech is pointed out as a possible explanation to why more action has not yet been taken to stop climate change (Arvesen, Bright & Hertwich, 2011). If true, it implies that tech bias may entail severe consequences globally as people delay action when viewing future tech as a panacea to problems of any nature. Who truly cares about recycling and reducing emissions when we know that Elon Musk, founder of Tesla Motors, SolarCity and SpaceX, is ardently working on solving the energy and environment crisis for us?

Technological utopianism is the idea that advances in technology will eventually bring about a better, near-perfect world. While most people probably do not view technology as an omnipotent solution to whatever issue conceivable, we believe this ostensible tech optimism exerts its perilous influence beyond the narrow world of investing, venture capital and politics, affecting the everyday consumer in ways that may not have been realized before. If professional investors are affected, the same is likely to be true for ordinary consumers.

Despite being a sparsely researched field of study, the few observations made on how tech optimism affect consumer choices portray intriguing findings. Wood & Hoeffler (2013) show that people who consume and use high-tech products are viewed as more innovative and even as more successful. Consumers seem aware of this as others have noted that people purchase high-tech products primarily for prestige rather than to satisfy particular needs (Hamann, Williams Jr & Omar, 2007). In other words, people tend to view new high-tech products as something inherently positive, not just because of the needs they satisfy, but simply because they are high-tech.

In this paper, we seek to investigate this phenomenon further. Is the positive high-tech bias present even in the case of low-tech products that in one way or the other are associated with new technologies?

Put differently, we seek what we call the Techtopia effect - a general belief among consumers that a product or service with associations to new technology will be superior to a product or service lacking such associations.

A Techtopia effect is present when consumers prefer a product with tech additives over one that lacks these additives even though the actual product, its features and design remain the same. With "tech additives", we imply technology that is not built into the product but that surrounds it, e.g. a new production technology used in the manufacturing, or a city of origin that is closely linked to new and innovative technology. 3D-printing and Silicon Valley constitute illustrative examples of entities engendering high levels of tech associations. The Techtopian phenomenon may also latch onto services, such as autonomous deliveries by drone or similar.

Provided this context, we set out on an explorative endeavor, probing for the Techtopia.

1.2 Definitions

For pedagogical reasons, we here define some of the terms, epithets and wording used in this study. This serves to ensure a textual backbone rigorous in terminology and definitions, whereby imparting our findings and expounding concepts to the reader is facilitated.

Tech additive: This term epitomizes the addition of a hi-tech association to a product or service.

Techtopia: A general belief among consumers that a product or service with associations to new technology will be superior to a product or service lacking such associations.

In order to succinctly encapsulate the utopian fallacy emanating from the aforementioned tech hype, we coin the term Techtopia. It encompasses all conceivable effects such a widespread - and still proliferating - credulity may entail.

Within the frame of this study, any illogical effect that a tech additive may have on consumer perception of products falls within the scope of what Techtopia as an umbrella-term covers. All mentionings of any such effect is of course purely speculative until scientific methods can prove their existence.

Tech association: In this study, the tech additives are chosen since they entail tech associations. It is safe to say that Silicon Valley as a region carry more associations to technology than the city of Pittsburgh. The same goes for how technological a flying drone is perceived to be, versus how people perceive a standard bicycle. When writing "tech associations", we denote the thoughts, mental images and perceptions that people may attribute to a specific item, service or phenomenon.

Augmentation: By *augmenting*, we imply the process of adhering tech additives to a product or service. A tech additive causes a product to be augmented with tech associations.

Word of Mouth (WOM)*:* The concept of Word of Mouth does in this study enclose personal recommendations, interpersonal relationships, interpersonal communication, informal communication and personal and interpersonal influence, as defined by Arndt (1967), Godes & Mayzlin (2004), Silverman (2011) and Brown & Reingen (1987).

Impression Management (IM): Throughout this thesis, Impression Management comprises what is defined by Wood & Hoeffler (2013): "... the human tendency to monitor, consciously or unconsciously, the efficacy of his or her communication of self to others". It is by this definition we refer to the concept as a whole.

Perceived Innovativeness (PI): Perceived innovativeness is the specific type of Impression Management that we focus on in this thesis. It refers to people's ambition to control others' impression of themselves through consumption of tech associated products that will make them appear more innovative, trendy and tech-savvy (Wood & Hoeffler, 2013).

1.3 Purpose and Research Questions

The broad purpose of this study is to provide a new take on techno optimism; to probe the existence of the aforementioned Techtopia effect. While a general optimism regarding new high-tech products is rational in many ways, we want to explore if consumers' optimism remains even in cases where the actual positive impacts of technology are small or nonexistent.

First and foremost, we want to investigate if the Techtopia effect make people more *interested* in products with tech additives.

Secondly, we seek to examine the Techtopia effect on Word of Mouth. In other words, can we by simulation show that the consumer is more enticed to talk about a product or service if we augment it with an overtly unrelated tech additive?

And thirdly, we want to extend the field of research of Impression Management and the links between product consumption, self-expression and technology. Earlier studies have shown that people using high-tech products are perceived as more innovative, we seek to test whether this is true also for low-tech products with tech additives.

With these three main goals in mind, we thus formulate the following research questions:

RQ1: Does consumer interest increase when products and services are augmented with tech additives?

RQ2: Can adding blatantly unrelated tech additives to products and services increase the likeliness of them spurring Word of Mouth?

RQ3: Are people who purchase products and services with tech additives considered more innovative than people using the same product or service without tech additives?

1.4 Expected Contributions

The attempt to uncover and prove Techtopia is a foray into a consumer-psychological realm that, to the best of our knowledge, hitherto is untouched by academics and researchers in the field of Marketing. As authors, we undeniably hold the highest of hopes that this investigation might spur further research on the topic.

Our findings may also provide some managerial implications. We have acknowledged three possible contributions to researchers, brand managers and marketing professionals that possess implicational potency.

Firstly, our results could convey that manufacturers of products that traditionally do not exhibit any tech additives, may actually draw branding value from exhibiting the such. If rudimentary and mundane products like those featured in our empirical tests are perceived more appealing when presented with high-tech elements, the result may appear interesting to relevant brand managers. In its longest stretch, firms engaged in the production of traditional non-techy products may even consider adding some high-tech sequence in its value chain just for branding purposes.

Secondly, we aim to examine the dynamics between tech-associations to products and the spread of WOM. Prior consumer research on behaviors of WOM in a tech-manipulated context is scant, whereby our experiments may produce insightful results complementing to this niched stock of knowledge.

Thirdly, if found that tech actually boosts WOM, we aspire to dive into the ulterior mechanics to examine the nuts and bolts of this connection. Previous academics have observed a link between the propensity to engage in WOM and the innate psychological urge to self-express impressions (impression management, IM). Today, when the tech scene is the new Hollywood, traits such as innovativeness and tech-savviness are more sought-after than ever before. Based on the ubiquitously supported notion of self-expression through consumption, we aim to explore the hypothesized connection between consuming tech-products and the urge to communicate a "techy" impression to others.

1.5 Delimitations

Due to the deplorable but yet so curbing constraints of time and resources, some delimitations were inexorable throughout the design and progression of this study.

The vast number of possible tech additives to experiment on is limited by no other boundaries than those of imagination. Our empirical investigation presents three experiments where each involves adding one tech additive to a low-tech product/service that subsequently is exhibited to an experiment group. The chosen tech additives are merely examples of conceivable variations that may replicate the effect this study seek to simulate.

As for our sample, it is intended to mirror the citizens of Sweden. Any generalizing conclusions made can consequently not comprise any population but that of the Swedes.

1.6 Thesis Outline

Firstly, previous theory related to this study's scope of investigation is presented in section 2. This section outlines the theoretical basis on which this thesis generates its hypotheses. These are summarized in the concluding parts of section 2.

Subsequently, a detailed review of the study methodology follows under section 3. This to facilitate scientific replicability, ensuring reliability. A granular description of the scientific approach is provided, laying out an overview of the experiment design, its composition, data collection and how the analysis was conducted.

The experiment results are exhibited in section 4. Each test with corresponding results is here put under scrutiny, with the data being analyzed and general observations displayed in text and in figures.

The results and analysis chapter is succeeded by a discussion part in section 5, putting the study findings under the microscope. We here hold a tentative discourse of how the study results may contribute to existing theory, as well as how they may shed new light on prior conclusions.

Lastly, all references used are listed under the final chapter, section 6.

2. Theoretical Framework

The first section below, Background theory, introduces the reader to theories that have shaped the focus of the study without being directly relevant to the the investigation of our research questions. It provides a general background to how the hypothesized Techtopia phenomenon can be viewed in relation to adjacent theoretical frameworks.

The second section, Experiment specific theory, introduces the reader to the theory that has directly shaped the configuration of our hypotheses and the experiment design.

2.1 Background Theory

There is naturally a profuse amount of theoretical constructs, tenets and speculations that in one or several ways tangent the Techtopian effect. A multitude of notions from the sciences of psychology and sociology, together with sub-sciences within marketing and business, constitute related theory to which this study may appeal for guidance. Below follows a selection of those that we as authors regard most applicable. Future research may extract further insights from incorporating more theories than those incorporated in this thesis.

2.1.1 Signal Effects

In many ways, new technologies and innovations are what lead the world forward. Thanks to modern production processes many products are now of higher quality than they were earlier. Metal, for example, has gotten stronger, shinier, and more resistant to rust thanks to numerous technical advancements over time. Although there are of course numerous exceptions to this rule, it is probable that people in general believe new production processes and new technology to be better than old ones. If so, companies using a more modern production technology would benefit from communicating this in order to signal superior quality compared to competitors.

The theory of signaling effects refers to how actors use signals to overcome information asymmetry. Quality signals can be transmitted in many forms, including brand name, price, warranty, and advertising expenditures. These variables represent fundamental choices that marketing managers make, including what to call a new product, how much to charge for it, whether to offer a warranty, and how much to spend on advertising (Kirmani & Rao, 2000).

Investments in new technology is costly and if a product is produced by advanced technology this could be seen as a signal of quality by consumers. The same goes for choosing to develop a product in Silicon Valley as opposed to a location less known for

talented (and costly) human capital. According to theory, the amount spent on signaling should be just high enough to dissuade the low-quality firm from signaling, yet low enough to make signaling attractive for the high-quality firm (Kirmani & Rao, 2000). In other words, if all companies could use new technology or choose to be based in Silicon Valley, these actions may not be very successful ways of signaling product quality. Furthermore, the signal of course need to be perceived as positive and relevant by the consumers to be successful. This study investigates this further and looks at whether tech additives are in fact seen as an indicator of quality or not, and in extension, if tech additives could and should be used as signals of product superiority.

2.1.2 Nextopia

Dahlén, Thorbjörnsen & Sjödin (2011) investigates the Nextopia effect; a general belief among consumers that future products are always better. As technological advancements are continuously being developed over time, there is a strong and natural correlation between the passing of time and the development of more advanced technologies. Naturally, our subject of investigation is thus related to the concept of Nextopia through its observation of people having a positive bias to future, to be released products.

Dahlén et al (2011) finds that advertising for a product before its release evokes greater elaboration and stimulates more positive evaluations of both brands and ads. This is true both for low and high-tech products and the authors thus conclude that the future bias does not seem to stem from a belief that the future products will be superior due to the technical advancements that are made over time.

The possible effects of technology on consumers' product evaluations is however not thoroughly addressed in the Nextopia article despite the very close and obvious association between the future and new technology. This study should not be seen as a direct extension of the Nextopia theory. However, as new technology and the future are closely connected we seek to expand the knowledge on how these similar but different concepts may both have an impact on consumers' product evaluations.

2.2 Experiment-specific Theory and Hypothesis Generation

2.2.1 Tech Hype

Tech optimism is still only sparsely covered in academic literature. This is somewhat surprising given the many and rather obvious symptoms of a tech hype that can be seen in media every day. A plethora of news articles have been written lately warning that the tech industry might have been hyped to the point where we are risking a new tech bubble (Mims, 2016; Bercovici, 2015; Dougherty, 2015). When new iPhones are released thousands of people are waiting in line on the release day (Tibken, 2016), and news sites covering the tech industry are followed by millions across the world (Techcrunch, 2016).

Still, there is some academic coverage on the topic tangenting the focus of research in this thesis. Wood & Hoeffler (2013) for example, show that people who consume and use high-tech products are viewed as more innovative and even as more successful. Clark et al (2016) looks at the perceived link between tech and success from from an investment perspective. Participants in the study are asked to make investment choices in tech and non-tech industries with equivalent reputations, past returns and prospects of future returns. Despite the equivalent information they had to base their decisions on, the participants were found to consistently invest more in the high-tech firms as they thought they would do better. In a second step of the study they tested what effect the familiarity of a technology had and they found that the participants were more optimistic about a new technology the less familiar they were with it. The study shows that the abstract concept of technology has become closely associated with success. It can be seen as a form of implicit associations that affects both people's cognition and their behavior (Greenwald, Poehlman, Uhlmann & Banaji, 2009).

It is possible that this tech bias is strengthened through what is commonly referred to as salience and availability (Tversky & Kahneman, 1973). People are more likely to come across and hear about successful examples of new technology as the less successful examples will quickly fade out and thus reach relatively few people. Similarly, one is more likely to take notice of the more successful examples of new technology as they are likely to be more prominent and make a greater impression than a less successful new technology (Levinthal & March, 1993).

Given that a tech bias plays a role in investment decisions that are normally characterized as rational and well thought out, we believe the same form of bias can also be found in less important purchase decisions, where perhaps implicit associations are allowed to play an even larger role. We therefore find reasons to believe that people will express greater interest

for products with tech additives than for identical products or services lacking these additives. Hence our first hypothesis:

H1	Consumers will express greater interest for products and services with high-tech additives than for identical products or services lacking these additives

2.2.2 Word-of-Mouth

For today's practitioners in the field of marketing and advertising, spurring WOM constitute one of the most central goals. WOM campaigns have taken a central part within the marketing plan of numerous firms (Berger & Schwartz, 2011). The WOM effect is significantly powerful: people's everyday talk emanates over 3.3 billion brand impressions daily, influencing consumer's purchasing decisions or what sellers seek to offer for sale (Godes & Mayzlin, 2009; Iyengar, Van den Bulte & Valente, 2008; Leskovec, Adamic & Huberman, 2007; Moe & Trusov, 2011). Academics have for long examined the how's and why's of WOM, trying to decipher what characteristics in products that make them more appealing to talk about. What are the factors that give products that extra social grease?

Marketing professionals have historically argued that properties such as novelty and conspicuousness form the primary drivers of WOM (Dye, 1999; Hughes, 2005; Sernovitz, 2006). In other terms, they need to be *interesting*. Sernovitz (2006) carves out the term interesting by polarizing it against a *boring* extreme - "nobody talks about boring companies, boring products, or boring ads". Hughes (2005) extends the notion of *interesting* by adding product characteristics such as unusualness and remarkability, preferably even outrageousness, as factors that galvanize talkativity. He further lays out that products with high WOM provides a larger quantity of "social currency". Moreover, people like to build conversations on topics that differ and surprises (Rosen, 2009; Knox, 2010; Nulman, 2009). By this postulation, new iPhones are more likely to enjoy more WOM than Cheerios (Berger & Schwartz, 2011).

However, when consumers talk about products it is not just product information that is generated. Consumers also say something about *themselves* (Wojnicki & Godes, 2008).
Berger & Schwartz (2011) state that "people may talk about interesting products (more than less interesting ones) because it makes them seem interesting". Generating talk that is interesting, as opposed to boring, helps people make others think higher of them.

Wojnicki & Godes (2008) have further elaborated on the mechanisms tying WOM and expression of self-identity together. In specific, they noted a pattern of *positive* WOM-spread occurring when the consumer recognizes herself as an "expert". When consumers regard themselves as particularly knowledgeable within a specific product sphere, they are more likely to generate positive WOM. The authors further propose that consumers' proclivity to disseminate WOM is closely tied with each individual's ambition to *self-enhance*, the latter being "one of the most dominant human social motivations" (Fiske, 2001; Sedikides, 1993).

Thus, Berger & Schwartz (2011) and Wojnicki & Godes (2008) have by innovative means examined how WOM is linked with the notion of Impression Management; a bridge between two socio-psychological phenomena that we in this study seek to explore further.

In addition, customers' propensity to spread WOM has been found to increase with the originality of the product. Moldovan, Goldenberg & Chattopadhyay (2011) examined how the usefulness and originality of a product affect WOM and found that consumers spread more WOM about original products when comparing products of equal usefulness but different degree of originality. The valence of the WOM depends on the usefulness of the products, meaning that more positive WOM is spread about original products when the product is useful. On the other hand, more negative WOM is spread about original products when the product is not useful, compared to a less original product with the same degree of usefulness. Originality is therefore positive as it increases buzz, but it might lead to negatively valenced WOM when the usefulness of the product is perceived to be low.

Usefulness could be seen as a measure of congruence and in our study, the usefulness of the product could be translated into the usefulness or appropriateness of the tech additive. Just like original products need to be useful to spur positive Word of Mouth, a likely requirement for a tech additive to be positively received is that consumers perceive it as useful or at least not inappropriate.

In our study we compare products of equal usefulness but of different degree of tech additives. As we believe the high-tech examples will be perceived as more unusual and therefore more original we believe customers' intention to spread WOM will be higher for the high-tech products than for the low-tech equivalents. This
expectation together with prior WOM-theory shape our second hypothesis:

H2	Products and services augmented with tech additives enjoy a higher likelihood of spurring Word of Mouth than products or services lacking such tech additives

2.2.3 Impression Management Theory (Perceived Innovativeness)

Impression management is a well-established phenomenon in social psychology. It refers to the human tendency to monitor, consciously or unconsciously, the efficacy of his or her communication of self to others, as defined by Wood & Hoeffler (2013).

They further state that one way of controlling others' impressions of oneself is through one's consumption. The purchase decisions of individuals are often influenced by the desire to create or avoid particular impressions. For example, people's choice of food is often affected by impression management considerations. Eating healthier food and smaller portions is perceived as more feminine while unhealthier food and larger portions are perceived as more masculine (Vartanian, Lenny, Herman, Polivy, 2007). Furthermore, people's choice of food is affected by whether they are in a public or private sphere. People tend to make other, less indulgent, choices than those they favored privately when anticipating that others form impressions of them based on the decisions made. (Cheng, Huang, Chuang & Ju, 2007)

Actions taken to control impression management can be conscious or unconscious. Ashworth, Matear & Philp (2014) investigate the accuracy of consumers' estimation of how much others' impression of them would change if they purchase and use a specific product. They found that consumers tend to overestimate the effect that different products have on how others perceive them. For example, men were concerned of looking less masculine when buying a pink mp3-player but this concern turned out to be heavily overestimated when compared to observers' actual impressions.

Wood & Hoeffler (2013) explores the role Impression Management plays in consumers' choice to purchase and use high-tech products in order to seem innovative or tech-savvy.

The study finds that besides the obvious functional benefits of adopting new technologies, there are also social benefits as the usage of an innovative product makes the user seem more innovative. The usage of high-tech products work as a surprisingly effective social signal of one's tech-savviness and personal innovativeness. Consumers need not necessarily seek this effect consciously, but it is stronger than one might think; the study shows that the usage of high-tech products also has a significantly positive effect on the evaluation of a person's leadership skills and professional success. A different study also indicates that not only are people aware of the social benefits of purchasing high tech products, but the ambition to seem innovative is one of the main drivers behind purchasing tech products. Put differently, people buy high-tech products for prestige rather than to satisfy particular needs (Hamann, Williams Jr & Omar, 2007). Berger & Heath (2007) have diligently explored the mechanisms that link together product consumption and identity-signaling. They argue that individuals often seek to differ in their consumption behavior from others, in order to have highest possible efficacy in their communication of desired identities.

In this study we extend prior research on IM to see how distant the high-tech associations to a product can be without losing the effect of making the user seem more innovative. Can even mundane products having no or very low levels of a wow-factor become mediators of a tech-savvy, innovative self-image if they are given a high-tech association? To put this question to the test, the following hypothesis is formed:

H3	People purchasing a product or service with tech additives will be perceived as more innovative, tech-savvy and trendy than people purchasing the counterpart lacking tech additives

2.2.4 Perceived Innovativeness Mediating Word-of-Mouth Effect

As touched upon in subsections 2.2.1 and 2.2.2 above, previous researchers have linked the concept of WOM to people seeking self-enhancement, identity-signaling and other behaviors belonging to the socio-psychological phenomenon of Impression Management. Consumption that, if boasted to others, serves as a communicative tool for people seeking to project their self-image is more likely to spur WOM (Berger & Heath, 2007; Wood & Hoeffler, 2013). In this study, we intend to examine this link in a tech context, proposing a corollary built on the body of literature surrounding IM and WOM.

If tech additives do in fact increase the likeliness of WOM - that is, if H2 is true - we seek to investigate what underlying, ulterior effect actually causes this. Is it simply the inherent Techtopian aura provided by a tech additive that causes an increase in likeliness of subsequent WOM, or is there a mediating effect to be found? Is this explanatory, mediating variable the one belonging to self-projection and signaling of identity?

Based on previous theory postulating that social forces within the doctrines of Impression Management act as drivers of WOM, there is reason to expect a similar observation within this study's frame of experiments. Hence the fourth and last hypothesis:

H4	Perceived Innovativeness mediates the effect of tech additives on Word of Mouth

2.2.5 Hypotheses Summary

Thus, summing up the above gives the following four hypotheses:

Table I

Summary of Hypotheses	
H1	Consumers will express greater interest for products and services with tech additives than for identical products or services lacking these additives.
H2	Products and services augmented with tech additives enjoy a higher likelihood of spurring word of mouth than products or services lacking such tech additives.
H3	People purchasing a product or service with tech additives will be perceived as more innovative, tech-savvy and trendy than people purchasing the counterpart lacking tech additives.
H4	Perceived Innovativeness mediates the effect of tech additives on Word of Mouth.

3. Methodology

This section introduces the scientific methods with which our study was conducted. Next, a discussion on the study's validity, reliability and veracity is presented. The section concludes with a summary of the statistical analyses used when scrutinizing the collected data.

3.1 Initial Work

The deluge of tech news, reports and gossip that has flooded Swedish media in recent years has cumulatively formed a tech hype. This media ballyhoo is what galvanized us as authors to examine the hype from a new angle. There had been a number of publications portending an overconfidence in tech, numerically illustrated by unprofitable - yet highly valued - startup firms in tech that despite business model pivots still had not turned loss to profit. With this in mind, we sought out to experiment whether this overconfidence and hype actually translated into an effect on consumer perceptions on products: could blatantly unrelated tech associations to banal, non-tech products actually improve Swedish consumers' perceptions of the items at hand?

A rigorous effort was made to scour libraries, databases and journals for prior academic evidence of any effects relatable to the hypothesized Techtopia phenomenon. Having found scant or little previous research pertinent to our question, the decision to simply go look for the effect ourselves was made.

In order to examine whether any Techtopia effect was prevalent in Sweden, a quantitative study was to be conducted. This decision was made in dialogue with our tutor Micael Dahlén, Professor at the Department of Marketing and Strategy at the Stockholm School of Economics. A descriptive outlining of the complete methodological process follows below.

3.2 Scientific Approach and Data Gathering

Building on thoughts, conclusions and findings of others, this study aspires to add to the cumulated sum of knowledge encompassing the dynamic between consumption, impression management and word-of-mouth - and how they link to technology. Prior theory acts as a guiding light throughout our research, as it underpins each hypothesis stated in section 2. Thus the data gathering has a theoretical abutment. This is in line with the scientific method advocated by Bryman & Bell (2011).

In attempting to prove our point as lucidly as possible and with the highest veracity achievable, we sought to employ tests featuring such small experimental changes that any statistically significant Techtopia effect would constitute a remarkable finding. It is with this mindset, aiming to build a sensitive probing device, we chose to experiment on the most mundane, basic products of the lowest technical level, such as a lamp or a shoe insole. Any inherent tech-association attributable to the item at hand is thus minimized.

It is a deductive research approach as it builds on existing research, simultaneously attempting to generate new inferences based on empirical observations. To test our hypotheses and examine our research questions, three questionnaire-based experiments were administered. Each experiment featured two questionnaires exposed to two groups of respondents; one constituting a control group.

3.3 Research Design

To test our hypotheses, an experimental research design was found most suitable as the objective was to seek causal relationships (Malhotra & Birks, 2007). The chosen experimental design used consists of one experiment group and one control group for each experiment. This way the independent variables of interest could be manipulated and examined in a controlled environment (Bryman & Bell, 2011). Conducting the experiment under controlled conditions allows one to keep external factors controlled, implying the exclusion of external variables influencing the results while not neglecting variables of interest (independent). Thus, the veracity and accuracy of the assessment of the relationship between dependent and independent variables is improved (Webster & Sell, 2007). Moreover, it has been argued that experiments are stronger assessors of causal relationships than methods of more descriptive or exploratory designs (Churchill & Iacobucci, 2010).

Bryman & Bell (2011) recommend that a quantitative analysis should build the bedrock on which any generalizing conclusions are to be drawn. As this study primarily sets out to find general evidence of tech-additives enhancing consumer perceptions of products, a quantitative method of analysis was chosen to test our hypotheses. The experiment being of an artificial nature, that implying the environment in which it is conducted is artificial and not a real-life setting, makes it of a laboratory kind (Söderlund, 2010).

3.4 Experiment Design

Once we had decided on the general topic of our study, we tried to find what new innovations we could use to concretize and study the Techtopia effect. Based on newspapers, tech-websites and conversations with peers at the Stockholm School of Economics, we came up with three well-known concepts that are frequently mentioned in association with new technology and innovation: drones, 3D-printing and Silicon Valley. After conducting a pre-study that confirmed that these three are indeed very closely associated to high-tech, we decided to use them in our study as examples of tech additives. How and why this was done is explained later under section 3.4.1, Questionnaire Design and Theoretical Foundation.

To test our hypotheses thoroughly, we decided to conduct not just one but three separate questionnaire-based experiments with different stimuli but similar research questions. By testing the same hypothesis in three different ways we increased the strength of our study and any conclusions can be drawn with greater confidence. In each experiment, the respondents were exposed to a stimuli in the form of a product or service description. There were two versions of each product description, one with high-tech association and one without such associations, however the actual product or service performed remained unchanged in both examples.

A complementary qualitative assessment of our research question would undoubtedly have presented further insights, adding to the foundation on which any relevant conclusions could be drawn (Bryman & Bell, 2011). However, as this thesis seeks to primarily probe and discover the aforementioned Techtopia effect, and as a second step examine its properties, the choice of pursuing a questionnaire-based experiment design appeared more suitable and practical. Questionnaire-experiments to large sample sizes may intuitively serve as a better scientific probing device than any qualitative data assessment. This reasoning lies along the lines of argumentations made by Churchill & Iacobucci (2010).

3.4.1 Questionnaire Design and Theoretical Foundation

This section outlines the background theory that guided us as we designed our questionnaire, showing the methods with which we generated the intended tech-augmentation products by adding tech additives. We, rather unorthodoxly, decided to exhibit this theoretical piece in the methodology section as our tech additives lack precedents in prior research.

3.4.2 Experiment 1: City of Origin

The first experiments tested city of origin as manipulation component**.** Below follows a brief review of point-of-origin-effects that theoretically approved our choice of variable for manipulation.

One dimension of product association that may affect consumer product perception is the one engendered by the origin of a product's design and development. Consequently, a review of published theory encompassing this effect was conducted. Place-of-origin effects, denoted "POOE" below, constitute an academic ground widely explored by researchers throughout the last decades. The research on the subject spans 50 years and 1,000+ articles, of which over 400 were in peer-reviewed journals in 2006 (Usunier, 2006). Extensive overviews of POOE effects were retrieved by reviewing Peterson and Jolibert (1995), Verlegt & Steenkamp (1999), Dinnie (2004), Zeugner-Roth & Diamantopoulous (2008) and Andehn & Berg (2011).

In summary, the collective theory presents four core points. Firstly, the place-of-manufacturing is not as influential as the place-of-brand in determining a consumer's perception of a product's origin. Lucid examples are Volkswagen cars being manufactured in the Czech Republic, however still perceived as German; Smirnoff vodka is perceived Russian despite it being produced in the U.S. and the company is based in the UK (Andehn and Berg, 2011). As our related test of place-of-origin does not feature any brand, this revelation does not entail any momentous implications. Secondly, the actual physical location of manufacturing is not as influential on the POOE as consumer's dominant perception of the location in question. This statement may initially appear redundant, but underscores the importance of reviewing *perceptions* and not the specific properties of geographical locations in isolation. Thirdly, a geographical location's reputation as place of manufacturing for a given product or category constitute the strongest POOE. Lastly, not only countries engender potent POOEs, but smaller, local locations such as cities and regions generate similar effects. These last two notions remain relatively uncovered academically. Our test of how consumer perceptions vary depending on a Silicon Valley-design versus one developed in Pittsburgh thus treads on relatively unmapped academic avenues, moderately unguided by existing theory.

Location-of-*design* has been touched briefly by prior research. Li et al (2000) and Hamzaoui-Essoussi and Merunka (2007) constitute two examples of articles noting a location-of-design POOE actually surmounting the effect engendered by a product's point-of-manufacturing.

Andehn and Berg (2011) bring up a specific *tech*-origin-effect, manifested by Apple and the prominent and conspicuous Designed in California-print figuring on all their products. California, according to Andehn and Berg, is a region associated with "easy going life, high-tech industry and design". This behavior by Apple may be regarded as supporting evidence of a potential positive tech-POOE extractable by being merely associated with the state of California, just as this study seeks to investigate.

Based on the above outlined theory on point-of-origin effects, this study aspire to examine how these affect consumer perception in a tech-context. We expect - for reasons provided in section 2 - that any tech additive added to low-tech products will improve how consumers perceive the products at hand. Thus, to sum up, the reasoning above leads us to believe that a product *designed in an area associated with high-tech will be perceived differently than a low-tech product designed in a tech-neutral location.*

Experiment 1, Tech additive

The product used in the first experiment was a shoe insole, including a brief product description introducing it. The description was identical between the control group and the experiment group in all aspects but one; the experiment group was informed that the insole had been developed in Silicon Valley while the control group was told that it had been developed in Pittsburgh. The choice of product was made based on a reasoning considering us seeking to test the effect of tech additives in cases where little or no rational reason exist to why the tech additives should have a positive impact on the product. We also sought to use a common product that everyone is familiar with so as to reduce the risk of confusion. A shoe insole is a low-tech everyday product and it therefore fits our purpose well.

3.4.3 Experiment 2: Production Mode

For the second experiment, we chose *production mode* as tech additive component.

At least one previous study has shown that stated production mode has an impact on how people perceive products. Despite the popularity of machine made products, Fuchs, Schreier & van Osselaer (2015) found a positive handmade-effect on product attractiveness. In the case of hand made products, the authors explain a large part of the positive effect with the perceptions that handmade products symbolically "contain more love." than do machine made products. In the study, consumer were willing to pay more for hand-made products especially when buying it as a gift.

While the underlying reasons to why a certain production mode has a positive effect on product attractiveness may vary greatly, this study shows that the production mode indeed does have an effect on product attractiveness. We therefore found reasons to believe that a similar type of production mode effect could be found also when comparing a conventional production mode with a more spectacular high tech one.

Experiment 2, Tech additive

In specific, the second experiment used a product description of a plastic lamp. The experiment group was told the lamp had been 3D-printed while the control group was told it had been produced by the more conventional production mode of mold casting. In all other aspects, the experiments were identical.

Just like in the previous example, we chose to use a lamp (fronting its lamp-shade) as it is a common, relatively dull product without any specific connection to advanced technology.

On a side note, we feared that mentioning the production mode in the control group stimuli would be perceived as strange and unnatural. Why mention that something has been produced in the most conventional way possible? To get around this, we claimed that the product had been mold casted in *recycled plastic*. By adding *recycled* we thus got a natural reason to mention how the product had been produced. Of course we claimed recycled plastic had been used in both manipulations.

3.4.4 Experiment 3: Delivery

For our third experiment, we chose to use a service description as stimuli. As products are very different from services the third experiment also differed from the previous two. In the product experiments, we varied the information regarding how and where the product was produced while keeping the actual products identical to each other. In the service experiment, we instead kept the service identically performed while varying the technology used to perform it.

Experiment 3, Tech additive

To be specific, the stimulus of the third experiment consisted of a description of a delivery service where the price and delivery time remained the same while the vehicle of delivery differed. The control group was told the products would be delivered by bike while the experiment group was told it would be delivered by drone.

The reasoning behind choosing bike delivery rather than car delivery in the control group manipulation was that some may prefer drones over bikes due to environmental concerns. Bikes on the other hand should have an environmental impact similar to that of drones which increases the comparability of the delivery methods.

Table II: Summary of Experiments

Experiment nr	Type	Stimuli variation	Experiment group manipulation (Tech additive)	Control group manipulation (No tech additive)
1	Product	Production mode	3D-printing	Mold casting
2	Product	City of origin	Silicon Valley	Pittsburgh
3	Service	Delivery vehicle	Drone	Bike

3.4.5 Experiment Groups

In an experimental context, the division of respondents into experimental and control groups that receive different stimuli should be made on a random basis (Söderlund, 2010). Our questionnaires were made in the software tool Qualtrics and we used the built-in randomizer tool to randomly distribute the different questionnaires to different respondents. Each respondent received one and only one of the 6 questionnaires and hence they were exposed to either the experimental or control group in one of the three experiments conducted.

The distribution of questionnaires was handled by the market research company Nepa. A detailed description of how the data was garnered and subsequently processed is outlined in subsections 3.6 below.

3.4.6 Questionnaires

Each questionnaire begun with a picture of the product or service and a brief product/service description. We did not use branded products or services in our experiments as these may come with unintended connotations that make consumers perceive the tech additives as incongruent with the brand. When designing the questionnaires, we used structured and dichotomous scale questions as this type of questions simplifies the data analysis (Malhotra and Birks, 2007; Bryman & Bell, 2011) When possible, questions from

previous studies were used to facilitate comparisons. As all of our respondents were Swedish, the questionnaire was made in Swedish and questions from previous studies were translated by us after consulting with our supervisor, Micael Dahlén. We tried to keep the questionnaire as short and clear as possible to avoid confusion and reduce the risk of respondents getting tired of answering the questions (Söderlund, 2005).

In order to gain consistency in the study, most questions were answered on a 1-7 point Likert scale with numerically equal distances bounded at each end by one of two bipolar adjectives (Söderlund, 2005). By choosing the range 1-7 respondents were offered a decent range of options as well as the alternative to stay neutral. The low end of the range was placed to the left and the high end was placed to the right as recommended by Söderlund (2005). The majority of variables were gauged through multi-item scales, thus maximizing internal consistency and improving reliability; all along the lines of Söderlund (2005).

Each questionnaire consisted of a total of 15 questions.
These can be divided into 4 groups, (i) Main research questions (ii) Manipulation Control questions, (iii) Questionnaire control questions, (iv) Demographics questions

The questions relevant to this thesis are explained in closer detail below. All questions used multi item 7-point Likert scale unless it is stated otherwise.

In all cases where several variations of the same question were asked, an index was of the responses was produced and in all such cases the Cronbach's alpha was well above 0,8, i.e. above the lower threshold given by Bryman & Bell (2011)

Main Questions

Product attractiveness

In order to measure general product or service attractiveness respondents were asked: *How interested are you in the product/service?* Answers were measured through 7 point multi-item scales *(interested/not interested, want to try/don't want to try, want to buy/don't want to buy*) (Dahlén et al, 2011).

Impression Management (Perceived Innovativeness)

Impression management, and perceived innovativeness, is a rather complex concept as it can be addressed and measured from two different angles; both from the perspective of the person signaling innovativeness and from the perspective of the observers of a person signaling innovativeness. Furthermore, the signaling part may not have made a conscious decision of trying to signal innovativeness.

In order to make the test as robust as possible, we therefore decided to test Perceived Innovativeness both from the perspective of the user and from the perspective of an observer of the user. More specifically, in the two product experiments we asked how respondents perceive *others* using the product while in the service experiment, we asked how they would feel if they themselves used the product. The questions were: *What personality traits do you associate a user of the product with?* and *Imagine that you have used the service, how do you feel?* The answer alternatives were the same for both questions *(Innovative/not Innovative, tech-savvy/not tech-savvy, trendy/not trendy)* Wood & Hoeffler (2013)

Word of Mouth

In order to measure whether people are more likely to talk about products with tech additives, we asked the question: *Imagine that you have purchased the product/service, how likely is it that you would talk about it with your friends and acquaintances? (Likely/unlikely).* Instead of specifying a certain means of communication (such as social media) or a specific type of WOM (positive) we wanted to state a question that was as open as possible to capture all kinds of Word of Mouth.

Manipulation control questions

Perceived technological level of manipulation

In order to ascertain that the respondents did perceive the stimuli of the experiment and control group to differ in technological level we asked the question: *Please describe what associations you have to the "city of origin/production mode/delivery mode"?* With answer alternatives: *(High-tech/Not high-tech, New technology/Established technology)*

Appropriateness of manipulation

As the perceived congruence of tech additives could play an important role, we also wanted to ascertain that the respondents perceived the manipulation to be appropriate. If the manipulation would be seen as too inappropriate or unrealistic it would be difficult for the respondents to answer the questionnaire in a realistic way.

We therefore asked: *What do you think of the fact that the product/service,*

was developed in Silicon valley/Pittsburgh?

was produced using 3D-printing/mold casting?

used drones/bikes for delivery?

The answers were registered in three ways: *(Appropriate/inappropriate, Likely/unlikely, suitable/not suitable)*

Questionnaire control questions

Questionnaire design

Towards the end of the questionnaire we used an open question asking respondents to give feedback on the design and wording of the questionnaire. No major feedback affecting the clarity of the questionnaire was received.

Questionnaire purpose

We also used an open question asking respondents to guess the purpose of the questionnaire in order to remove respondents whose answers might be biased. However, no one managed to accurately guess the purpose of the study.

Demographics questions

Lastly, respondents were asked to state gender and age in order to ascertain an even and representative demographic spread of respondents. This was also used to segment the respondents when analyzing the results.

3.5 Pre-Studies

Before executing the main study, two pre-studies were conducted in order to validate the material for the main study (Bryman & Bell, 2011).

The first set of pre-studies was made in order to ascertain that consumers perceive the stimuli material for the experiment and control groups to differ in technological level. Two questionnaires were thus conducted where respondents were exposed to either the experiment or control group versions of the stimuli for production mode, city of origin and type of delivery. They were then asked to rate the level of high-tech associations related to each stimuli. 20 people took each questionnaire and the different stimuli were found to differ significantly in the level of high-tech associations and could therefore be used in the main study.

Before the main studies were sent out we had a second round of pre-studies where each questionnaire was tested on 8 people or more. Based on the feedback received, minor textual changes and improvements were made accordingly.

3.6 Data Sampling & Analysis

To ensure maximum quality of data and assuring a sample mirroring the population of Sweden to the best extent conceivable within our frame of possibility, the data sampling was conducted by the market research company Nepa. In total, 593 samples were collected in the experiment, out of which 563 were considered being of approvable standard.

The responses from all 3 experiments were imported to IBM SPSS Statistics Software (version 23), which also served as the main analytical tool with which we scrutinized collected data. The responses were screened manually to check for respondents who did not seem to respond seriously. Respondents that answered with exactly the same number more than 12 times in a row were not considered serious respondents and they were deleted from the sample. In total, 30 responses were deleted after this screening.

The data from our final sample (n=563) was analyzed using IBM SPSS Statistics Software to calculate mean values, Cronbach's alpha, independent sample t-tests and OLS regressions, with the aim of testing our hypotheses and answering our research questions.

Hypotheses 1, 2 and 3 were investigated by comparing the means of control and experiment group by using independent sample t-tests.

Hypothesis 4 required a mediation analysis. After consulting with our supervisor professor Micael Dahlén, we chose to conduct a mediation analysis according to the four step approach advocated by Baron & Kenny (1986). For each experiment three regressions were conducted: first we calculated "c" by conducting a regression with WOM as dependent variable and the Tech additive variable as independent variable. In the second regression, we calculated "b" and "c´" by adding the suggested mediator, Perceived Innovativeness (PI), as a second independent variable. Lastly we calculated "a" by conducting a regression with the PI variable as dependent variable and the Tech additive variable as independent. To calculate the indirect effect of Tech additives on WOM we then multiplied "a" and "b" and used a Sobel test to test the significance of the mediation effect (Sobel, 1982).

All results were reviewed at conventionally used significance levels; $p<0,01$, $p<0,05$ and $p<0,1$.

3.7 Data Quality

Maximizing scientific precision is of utmost importance when designing study methodology, securing quality in all collected data. By convention, the two paradigms of reliability and validity were heeded when designing the study; the former conceptualizing trustworthiness, the latter encapsulating that the experiment validly examines its intended goal (Bryman & Bell, 2011).

3.7.1 Reliability

Bryman and Bell (2011) connects scientific reliability to an experiment's ability to be reproduced and repeated, while still generating unchanged results: "... whether the results of a study are repeatable". In detail, reliability demands robustness over time (stability) and inter-observer consistency.

Test stability implies yielding non-fluctuating results over time. One alternative measure to tackle the issue of stability is by applying the same test measure in different time periods; the test-retest method (Bryman & Bell, 2011). Since this study's research area is - to the best of our knowledge - relatively unexplored, all study results would draw significant robustness from having the test repeated. The thorough methodological explanation throughout section 3 serves to ensure this study's reproducibility.

To assure internal reliability in our constructed variables, the Cronbach's alpha of our measures were calculated, all of them being at acceptable levels (above 0,8, the lower threshold stated by Bryman & Bell, 2011). Thus, all constructed variables served their purpose adequately and was scientifically approvable (Malhotra, 2010).

To minimize subjectiveness when analyzing collected data, the scientific tenet of inter-observer consistency was regarded throughout this study's progress. This notion highlights that consistency in judgment grows poorer as the number of active researchers increase (Bryman & Bell, 2011). Aspiring to keep subjectiveness to a minimum, all interpretation, analysis and conclusions were made jointly by both authors and in consultation with Micael Dahlén.

3.7.2 Validity

The notion of validity has four corners shaping its foundation: the internal, external, ecological dimensions and lastly validity in measurement (Bryman & Bell, 2011).

Internal validity challenges any scientific conclusion that argues causality between two variables (Bryman & Bell, 2011). As we employed manipulation control tests, we could ensure that the intended effect truly was generated. Moreover, eliminating respondent data of poor quality further rinses the sample from soiling input. Hence our confidence in our study maintaining a high level of internal validity.

External validity encapsulates whether a study may draw any conclusions on its presented data that extend beyond the context tested in the experiment; "results [...] generalized beyond the specific research context" (Bryman & Bell, 2011). Essentially, external validity concerns if the observed statistical sample represent the population intended to examine. As our data collection was administered by the external contractor Nepa, we were clear in our communication on how they were to conduct their sampling. Strictly instructed to distribute their sample as evenly as possible (randomized) across Sweden, we sought to ensure a sample reflecting the Swedish population in the best way possible.

Ecological validity questions whether or not "social scientific findings are applicable to people's everyday, natural, social settings" (Bryman & Bell, 2011). All measures and stimuli utilized in this study were conceived under meticulous and diligent circumstances in order to ensure a high level of ecological validity.

To conclude, measurement validity or construct validity is a notion imperative to heed when designing an experiment. It asks whether a measure designed to examine a concept actually "... does reflect the concept that it is supposed to be denoting" (Bryman & Bell, 2011). As all hypotheses are abutted to prior research and the methodology draws validity from previous experimental designs, the study abides with this notion.

4. Results and Analysis

The overall goal of this study was to seek the hypothesized Techtopia effect, by probing different ways in which tech-additives applied to products may alter consumer perceptions. This investigation pries into the nebulous interconnectivity that exists between consumption, self-expression and technology, aiming to light up some previously unexplored areas.

4.1 Manipulation Controls

To ascertain that the stimuli used in the experimental groups - the one intended to generate an additive of high-tech associations to the low-tech products - worked as planned, some manipulation checks were devised. Tests were made to see whether the products augmented with tech-additives actually yielded its intended effect; i.e. if the tech additives worked.

Respondents from both the experimental and control groups were asked to rate if they perceived the featured product as "new technology" and as "high-tech". Comparing the means from these groups provided vivid proof of our simulation working: all hi-tech product examples yielded higher means from these aforementioned tech-rating questions. See Table III below.

Table III: High tech associations

	Mean (Experiment)	Mean (Control)	Mean Difference	Sig. (1-tailed)
Experiment 1: Lamp	5.371	3.830	1.541***	0.000
Experiment 2: Insole	5.474	3.878	1.596***	0.000
Experiment 3: Delivery	5.231	1.761	3.470***	0.000

Experiment Group: N(Lamp) = 93; N(Insole) = 95; N(Delivery)= 95
Control Group: N(Lamp) = 91; N(Insole) = 98; N(Delivery) = 91
*** p<0.01. ** p<0.05. *p<0.1

As discussed in the theory section, we believed perceived appropriateness, or congruence, might have an impact on how consumers react to different tech additives. We therefore wanted to ascertain that our respondents viewed the tech additives to be appropriate. Respondents were thus asked to rate how appropriate they found the stated production mode, city of origin or delivery mode to be.

In the two product experiments, the means for the tech additive version was slightly higher than the version lacking tech additives. This difference was significant but rather small.

In the case of the delivery service experiment however, the mean difference was more than three times greater and *negative*. In other words, the respondents considered a bike delivery service to be far more appropriate than a drone delivery service.

Table IV: Appropriateness of tech manipulation

	Mean (Experiment)	Mean (Control)	Mean Difference	Sig. (1-tailed)
Experiment 1: Lamp	4.949	4.582	0.367**	0.032
Experiment 2: Insole	4.816	4.327	0.489***	0.009
Experiment 3: Delivery	3.375	4.888	-1.513	N.S.

Experiment Group: N(Lamp) = 93; N(Insole) = 95; N(Delivery)= 95
Control Group: N(Lamp) = 91; N(Insole) = 98; N(Delivery) = 91
*** p<0.01. ** p<0.05. *p<0.1

Since the lack of trust in drones as an appropriate delivery vehicle could affect the rest of the results, we also conducted a test where we only included respondents who stated that they viewed the delivery method as above median. This changed the results dramatically and is presented later under subsection Other Findings.

4.2 Experiment Results

The section below presents our findings. The structure is as follows: each hypothesis with its corresponding results is presented under its own subsection, whereafter an analysis of the findings pertinent to the hypothesis concludes it. Summarized tables of accumulated data are embedded in the text.

4.2.1 Interest in Product or Service

Based on the theory presented in section 2, we postulated in hypothesis H1 that people in general will be more interested in products and services with tech additives.

As shown below in Table V, the means differ in favor of the high-tech manipulation in both of the product experiments but not in the service experiment. Furthermore, the difference is only significant in the first product experiment. Our hypothesis thus holds in just one out of three experiments.

The negative difference in the service experiment can be explained by a general lack of trust in drones as appropriate vehicles for delivery services. When running the same test including only those who believe drones are in fact appropriate for delivery services, the difference is

positive, large and strongly significant. This is further presented later under Other findings. Nevertheless, we failed to find support for our hypothesis in two out of three cases and the hypothesis is therefore only partially supported.

Table V. Interest in product/service

	Mean (Experiment)	Mean (Control)	Mean Difference	Sig. (1-tailed)
Experiment 1: Lamp	3.778	3.355	0.422*	0.056
Experiment 2: Insole	3.975	3.956	0.020	0.469
Experiment 3: Delivery	3.846	4.066	-0.220	0.226

Experiment Group: N(Lamp) = 93; N(Insole) = 95; N(Delivery)= 95
Control Group: N(Lamp) = 91; N(Insole) = 98; N(Delivery) = 91
*** p<0.01. ** p<0.05. *p<0.1

Based on these results, these experiments are not in unanimous support of the postulation made in hypothesis H1:

H1	Consumers will express greater interest for products and services with high-tech additives than for identical products or services lacking these additives	**PARTIALLY SUPPORTED**

4.2.2 Word of Mouth

Following the reasoning presented in the theoretical framework, our hypothesis H2 suggests that products augmented with tech additives are more likely to spur WOM.

As shown in Table VI below, the results show a significant difference in favor of the products/service augmented with tech additives in all three experiments. Consumers do on average state a higher probability of talking about the product/service with tech additives. Do note that the mean difference is minor, however still statistically significant, implying a slight but distinct dissimilarity. The results are consistent in all three experiments and we can therefore conclude that high-tech associations added to a product increases the likelihood of people talking about their purchase.

Table VI: Word of Mouth

	Mean (Experiment)	Mean (Control)	Mean Difference	Sig. (1-tailed)
Experiment 1: Lamp	4.470	4.010	0.460*	0.060
Experiment 2: Insole	5.000	4.580	0.420**	0.046
Experiment 3: Delivery	5.250	4.620	0.630**	0.011

Experiment Group: N(Lamp) = 93; N(Insole) = 95; N(Delivery)= 95
Control Group: N(Lamp) = 91; N(Insole) = 98; N(Delivery) = 91
*** p<0.01. ** p<0.05. *p<0.1

Hypothesis H2 can consequently *not* be rejected:

H2	Products and services augmented with tech additives enjoy a higher likelihood of spurring Word of Mouth than products or services lacking such tech additives	**SUPPORTED**

4.2.3 Impression Management

Based on the theory of Impression Management, we further proposed that people buying products augmented with tech additives will be perceived as more innovative, tech-savvy and trendy than people purchasing the unaugmented counterpart. This was tested in two different ways: in the two product questionnaires, we asked respondents to rate how they perceived *others* buying the products, while in the service questionnaire, we asked respondents to rate how they would feel if they *themselves* had made the purchase.

Deriving from the data presented in Table VII below, the results are in accordance with our hypothesis. People buying products or services with tech additives are perceived as more innovative, trendy and tech-savvy than people buying the exact same product without tech additives. The difference in means is statistically significant in all three experiments, however Experiment 3 exhibits the distinctly largest mean gap. This could be because the tech additive of the third experiment is seen as more sensational and thereby linked to a higher degree of innovativeness. However, it could also be that a larger gap is achieved when measuring Perceived Innovativeness from the perspective of the user. This is further elaborated on under Discussion.

Table VII: Perceived Innovativeness

	Mean (Experiment)	Mean (Control)	Mean Difference	Sig. (1-tailed)
Experiment 1: Lamp	5.080	4.733	0.347**	0.027
Experiment 2: Insole	4.961	4.663	0.298**	0.041
Experiment 3: Delivery	3.487	1.163	2.325***	0.000

Experiment Group: N(Lamp) = 93; N(Insole) = 95; N(Delivery)= 95
Control Group: N(Lamp) = 91; N(Insole) = 98; N(Delivery) = 91
*** p<0.01. ** p<0.05. *p<0.1

Our third hypothesis H3 can consequently *not* be rejected:

H3	People purchasing a product or service with tech additives will be perceived as more innovative, tech-savvy and trendy than people purchasing the counterpart lacking tech additives	**SUPPORTED**

4.2.4 Mediating Effect of Perceived Innovativeness on Word of Mouth

Lastly, we wanted to dig beyond our research questions and understand not only *if* the Techtopia effect existed, but also how it worked. For this reason, our fourth hypothesis proposed that the effect of Tech additives on Word of Mouth is mediated by Perceived Innovativeness. In other words: the reason why products or services with tech additives receive more WOM, is not only because of the added high-tech associations per se, but due to the mediating effect stemming from how people perceive users of those products or services.

A Mediation analysis was thus conducted according to the four-step approach advocated by Baron & Kenny (1986) and the results are presented below together with Figure I explaining the logic of mediation.

Figure I: Mediation Model

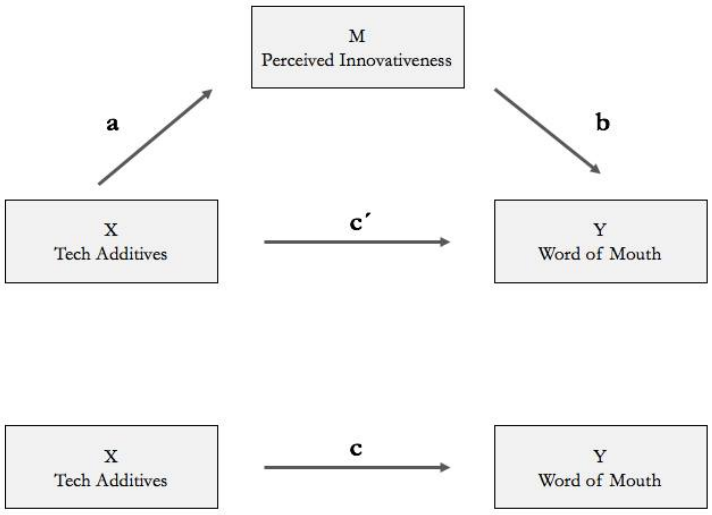

Table VIII: Mediation Analysis

Experiment	Beta	SE
1: Production mode		
a	1.041*	0.536
b	0.258***	0.037
c´	0.198	0.266
ab	0.269*	0.140
c	0.462	0.295
2: City of Origin		
a	0.894*	0.511
b	0.258***	0.03
c´	0.188	0.212
ab	0.231*	0.135
c	0.418*	0.247
3: Delivery		
a	1.802***	0.627
b	0.326***	0.022
c´	0.051	0.190
ab	0.587***	0.208
c	0.637**	0.276

N(Lamp) = 184; N(Insole) = 193; N(Delivery)= 186
Unstandardized Coefficients;
*** p<0.01. ** p<0.05. *p<0.1

Table VIII shows the results for H4 on all three experiments. First off we will look at the results for Experiment 1: Lamp. Table VIII shows an insignificant positive total effect of Tech Additives on WOM (c_{lamp}= 0.462). However, a mediation analysis does not require a significant total effect to find a significant mediated indirect effect (Hayes, 2013). The table further shows a significant direct effect of Tech Additives on PI (a_{lamp}=1.041*) as well as a significant direct effect of PI on WOM (b_{lamp}=0.258***). The direct effect of Tech Additives on WOM is insignificant (c_{lamp}= 0.198) and rather small compared to the total effect. The indirect effect mediated through PI (ab_{lamp}=0.269*) thus accounts for a large share of the total effect of Tech Additives on WOM. This supports our hypothesis H4.

Looking at the second experiment (Insole) the results are similar with the exception that the total effect is significant (c_{insole}=0.418*). Both the direct effect of Tech Additives on PI (a_{insole}=0.894*) and the effect of PI on WOM (b_{insole}=0.258***) are also significant while the direct effect of Tech Additives on WOM ($c´_{insole}$=0.188) is not. This means that similarly to the previous example, the mediating indirect effect of PI (ab_{insole}=0.231*) accounts for more than half of the total effect of tech additives on WOM.

Lastly, the results for the third experiment (Delivery) are also in line with the previous two. There is a strong and positive significant total effect of Tech additives on WOM ($c_{delivery}$ =0,637**) Both the effect of Tech Additives on PI ($a_{delivery}$=1,802***) and PI on WOM ($b_{delivery}$=0,326***) are also significant and multiplied they result in a large mediated indirect effect ($ab_{delivery}$=0,587***). This leaves a small direct effect ($c'_{delivery}$=0,051) and the total effect is thus almost completely mediated through PI.

The results from all three experiments are thus in support of hypothesis H4. People are more willing to tell their peers about products with tech additives and more than half of this effect comes from the fact that they perceive owners of such products to be more innovative and trendy.

Drawing on these findings, the fourth hypothesis H4 can *not* be rejected:

H4 Perceived Innovativeness mediates the effect of tech additives on Word of Mouth

SUPPORTED

4.2.5 Other Findings

4.2.5.1 Effect of Perceived Appropriateness of Tech Additive

As shown in section 4.2.1, experiment number 3 differed from the other two when it comes to the perceived appropriateness of the tech additive. While the results in experiment 1 and 2 showed a slight but significant difference in favor of the tech-augmented version with respect to appropriateness, the third experiment showed a large difference in means in favour of the non tech-augmented service. As we suspected this would affect the results, we also conducted a t-test where we only compared those who stated appropriateness over median for the manipulation they were exposed to. The results, shown below in Table IX and Table X, show a dramatic difference in all three parameters but mostly so in "Interest".

The interest for the service with tech additives compared to the non-tech version goes from negative to strongly positive and significant. The mean difference for WOM and PI follows the same trend as the difference gets bigger and more significant when only those who judge the manipulation to be appropriate are included in the t-test.

Table IX: Delivery results, If appropriateness over median

	Mean (Experiment)	Mean (Control)	Mean Difference	Sig. (1-tailed)
Interest	5.444	4.609	0.835**	0.007
WOM	6.370	5.130	1.240***	0.000
Perceived Innovativeness	3.649	1.200	2.449***	0.000

Experiment Group: N=27
Control Group: N = 52
*** p<0.01. ** p<0.05. *p<0.1

Table X: Delivery results, All

	Mean (Experiment)	Mean (Control)	Mean Difference	Sig. (1-tailed)
Interest	3.846	4.066	-0.220	0.226
WOM	5.250	4.620	0.630**	0.011
Perceived Innovativeness	3.487	1.163	2.325***	0.000

Experiment Group: N=95
Control Group: N = 91
*** p<0.01. ** p<0.05. *p<0.1

4.2.5.2 Generational Differences in Perceived Appropriateness of Tech Additive

To investigate the causes of the differences in perceived appropriateness of drone deliveries, we ran a test where we compared how the perception depended on age and gender. As shown below in Table XI and Table XII, a great difference was found in how men below and above the age of 35 perceived the appropriateness of drone deliveries. The older group expressed a skepticism for the appropriateness of drone deliveries, which was reflected throughout the results. While the younger segment expressed a significantly greater interest in drone deliveries, the older segment expressed an equally strong preference for bike deliveries. Furthermore, the younger segment was significantly more likely to spread Word of Mouth regarding drone deliveries while no such effect was present in the older segment.

Table XI: Men below age 35, Experiment 3

	Mean (Experiment)	**Mean (Control)**	**Mean Difference**	**Sig. (2-tailed)**
Interest	5,286	4,000	1,286**	0,022
WOM	6,290	4,580	1,710***	0,002
Perceived Innovativeness	3,833	1,103	2,731***	0,000
Appropriateness of delivery mode	4,456	4,483	-0,027	0,959

Experiment Group: N=21
Control Group: N = 17
*** p<0.01. ** p<0.05. *p<0

Table XII: Men above age 35, Experiment 3

	Mean (Experiment)	**Mean (Control)**	**Mean Difference**	**Sig. (2-tailed)**
Interest	3.184	4.413	-1.229**	0.034
WOM	4.550	4.560	-0.010	0.988
Perceived Innovativeness	3.154	1.100	2.054***	0.000
Appropriateness of delivery mode	2.921	4.833	-1.912***	0.001

Experiment Group: N=27
Control Group: N = 35
*** p<0.01. ** p<0.05. *p<0.

4.3 Summary of Results

Table XIII

Summary of Results	
H1	Consumers will express greater interest for products and services with tech additives than for identical products or services lacking these additives. **PARTIALLY SUPPORTED**
H2	Products and services augmented with tech additives enjoy a higher likelihood of spurring word of mouth than products or services lacking such tech additives. **SUPPORTED**
H3	People purchasing a product or service with tech additives will be perceived as more innovative, tech-savvy and trendy than people purchasing the counterpart lacking tech additives. **SUPPORTED**
H4	Perceived Innovativeness mediates the effect of tech additives on Word of Mouth. **SUPPORTED**

5. Discussion

5.1 Conclusion

The main purpose of this study was to investigate the Techtopia effect, investigating whether consumers perceive products and services differently if they are in some way associated to new technology. In order to get as strong results as possible, we chose mundane every-day products and added seemingly unrelated tech additives that objectively did little or nothing to improve the actual product or service. In this section we will answer our research questions and present the main conclusions that can be drawn from our study.

RQ1: Does consumer interest increase when products and services are augmented with tech additives?

We failed to find unanimous support for our first research question and we can thus not claim to have proven that tech associations make consumers more interested in buying a product. This is somewhat surprising since we did find support for our other hypotheses. It therefore seems as if people are not necessarily more interested in buying products with tech additives, but they do regard users of such products as more innovative and they would be more likely to talk about them if they were in their possession.

The second experiment was the only one where we failed to find significant support for H1 even after excluding those who did not view the tech additive as appropriate. Based on our three experiments, we can only say that the Techtopia effect seem to exist, but not always and not under all circumstances. This is further discussed in section 5.2 below.

RQ2: Can adding blatantly unrelated tech additives to products and services increase the likeliness of them spurring Word of Mouth?

All three experiments supported our second hypothesis. We can thus conclude that people are more likely to spread Word of Mouth regarding products and services with tech additives, at least in the cases tested in this study.

RQ3: Are people who purchase products and services with tech additives considered more innovative than people using the same product or service without tech additives?

The study also provides empirical evidence that people using products with tech additives are considered more innovative. This is a remarkable finding given how distant the technology is

from the user. The user is not using a high-tech product but a product with mere associations to high technology and this still reflects back on the user.

5.2 General Discussion

5.2.1 The Techtopia Effect

Although we did not manage to find unanimous support for all our hypotheses, the general conclusion from this study is that some form of Techtopia effect does seem to exist.

The effects of tech additives in our experiments were generally positive but small, some may argue too small to be of any practical importance. However, one must remember that the small difference in means was achieved through equally small differences in stimuli variations. The stimuli were identical aside from one or two words. Had we instead built a stronger case around the tech additive to highlight it as a strong signal of innovativeness, the effect is likely to have been even stronger.

Furthermore, one should remember that we chose to test low-engagement products for which technical specifications are likely to be of relatively small interest for the average consumer. The effect of tech additives is likely to be amplified the more a consumer cares about the product or service. Furthermore, we chose products that people are unlikely to buy in order to show off or seem innovative. This is especially true for the shoe insole, few products are more hidden away and less relevant from others than the user. Still, we found significant evidence saying that people buying the tech-augmented version are viewed as more innovative. If this is true for such an insignificant product, the effect is likely to exist in many other products as well.

One could argue that it is surprising that we found unanimous significant support for our second and third hypotheses while the first hypothesis was only partially supported. It could be interpreted as if people are more likely to talk about the tech-augmented versions although they are not necessarily more interested buying them. Perhaps this is significative for the hype phenomenon - people talk more, but they don't necessarily buy more.

This study tested the Techtopia effect in three different ways with three different types of tech additives. Even in the cases where we found unanimous support for our hypotheses one should bear in mind that this does not mean that the Techtopia effect will always be present regardless of product, tech additive component and target group.

5.2.2 Techtopia Effect on Interest

When testing the tech additives' effect on consumer interest, we only got significantly positive results regarding the first experiment (lamp). We have already showed how the lack of congruence seem to have played a role in explaining the lack of significant results for the third experiment and this reasoning is developed further down in this section.

However, it is more difficult to explain the lack of significance in the second experiment (Insole) as this cannot be derived from lack of congruence. One possible explanation could be that the insignificance of the product itself did not allow for much variance in consumer interest. A shoe insole is not likely to evoke great consumer engagement regardless of how it is presented. A similar but different theory would be that the *tech additive* was not perceived as sensational enough to have an effect on consumer interest. Looking back, it would have been interesting to test several different tech additives with different products to get an understanding of how the Techtopia effect works and shed light on the suggested theories. As this was not done, we instead encourage further research on the topic.

As indicated in the results from the third experiment, congruence plays a large part for the Techtopia effect to break through. When splitting the respondents into by gender and age we found some interesting results. Among the women, no significant difference was found between the younger and the older segment, however we found a great difference among men above and below the age of 35. The older men did not believe in drone deliveries and hence did not want to try the service or talk about it to friends and acquaintances. The younger segment on the other hand seemed enthusiastic about drone deliveries - they were eager to try the service and they intended to spread the word.

This sharp difference indicates some interesting insights. The manipulations of the third experiment made up the largest technological gap among the experiments in our study. We expected this to lead to a strong interest preference for the drone delivery experiment. As we now know, this did not happen until we started segmenting the respondents on age and gender. However, when looking at the group of young men, their interest preference for drone deliveries are significantly larger than in any of the other experiments. It thus seems like a greater difference in technological level of the tech additive does lead to a greater Techtopia effect, but only among those who perceive the tech additive as appropriate. Among those who don't see it as appropriate, the effect is equally large but negative.

This is closely related to the phenomenon presented by Moldovan et al (2011) who state that an original product generates more Word of Mouth, however, the valence of the Word of Mouth completely depends on the perceived usefulness of the product. In just the same way,

a more sensational tech additive leads to larger differences in interest, however the direction of the interest preference completely depends on whether the tech additive is perceived as appropriate or not. This highlights the importance for companies to know their target group in order to benefit from the Techtopia effect. Based on our results, the introduction of a drone delivery service is likely to be hugely successful among younger men while no such demand exists among older men.

5.2.3 Techtopia Effect on WOM and Impression Management

The tech additives had a significant positive effect on consumer intention to spread WOM in all three experiments. The increase was even and rather small throughout all experiments. Similarly, tech additives also led to a positive effect on perceived innovativeness in all experiments, but the size of the effect differed greatly between the experiments. The effect on perceived innovativeness was almost seven times higher in the third experiment compared to the first and second. This could be because people view the tech additive in Experiment 3 as more sensational, however, if that is the case we have yet to explain why a similar difference is not present when it comes to the effect on WOM. Another theory would be that the effect stems from the fact that we investigated the perceived innovativeness from the perspective of the *user* in Experiment 3 and from the perspective of the *observer* in Experiment 1 and 2. The greater effect in Experiment 3 thus indicates that people tend to overestimate how innovative they seem when purchasing an innovative product which is perfectly in line with the findings of Ashworth et al (2014)

5.2.4 Mediating Effect

In all three experiments, we found a mediating effect of perceived innovativeness on WOM. This is in line with the theory presented earlier stating that consumers are more likely to spread WOM about products that can make them seem more interesting and signal their identity (Berger & Heath, 2007; Wood & Hoeffler, 2013*).* Our test and finding is unique in examining this mediating effect in a technological context, observing how tech appears to serve as an instigator of WOM through its effect of increasing PI.

5.3 Critical Reflections

In this section we want to address the difficulties associated with the study design as well as other limitations and potential methodological shortcomings.

First of all, it is important to remember that our study was not based on actual observations in real life but builds on a questionnaire-based experiment with manipulated product descriptions. The chosen research design makes it easy to draw statistically significant conclusions but it is possible that people would act differently in real life, and this might therefore have affected the results. Furthermore, the results might also have been biased due to the sample of the study. As in most studies, respondents are free to choose if they want to take part or not and the sample is therefore not completely random. The fact that our study addresses technology through technology further increase the risk of biased results. The questionnaires were all filled out online and certain level of computer literacy was thus required to be part of the sample. It is therefore possible that our sample was slightly more tech-savvy than the average Swede and this could in turn have led to biased results as tech-savvy people are likely to appreciate tech additives more.

Another limitation is the limited number of experiments and the difficulty in choosing products that are relevant to many people. Most of our respondents are probably not seriously interested in buying any of the products in the experiments. The already hypothetical situation presented in the experiment thus gets even more hypothetical and the quality of the answers might suffer.

Our ambition in all three experiments was that the products or services would receive identical manipulations. The tech additive would be more of an interesting piece of curiosa than as a tech feature that changed the actual product or service performed. Despite this ambition one could argue that the two services in the third experiment are not identical. Although the price and delivery time are identical, the actual vehicle of delivery could be seen as an important part of the service too. Tech nerds might be willing to pay extra just to see a flying drone and others might be willing to pay extra to have a real person come and deliver their products. To control for this possible weakness, we also asked respondents how interested they would be in the service if they were not at home when the product was delivered. The results only differed marginally and we therefore believe the two versions of the service offering can be seen as identical.

Lastly, it became evident from the results that appropriateness was an important part in how people evaluate the tech additives. We solved this by segmenting our data on age and gender. However, a better method could have been to choose a different tech additive with a higher

level of congruence throughout all segments. A more ambitious pre-study where the congruence aspect was also addressed would have allowed us to find tech additives that better isolate the tech-aspect.

5.4 Contributions and Implications

5.4.1 Contributions

This is not the first study touching upon the concept of tech bias and tech optimism but it is, to our knowledge, the first one to do so from a consumer perspective. Clark et al (2016) describe how tech bias make investors more prone to invest in tech companies than in an, objectively speaking, equally promising non-tech company. Investment decisions are of course meant to be based on facts and figures rather than on emotions and hunches, yet investors fail to distinguish between the two. It is therefore not surprising that the same type of bias can be found in private consumption decisions where choices are largely based on emotions and subjective preferences. From this perspective, our findings are not sensational but they nevertheless make up an important contribution to the knowledge around how tech associations affect everyday consumption choices.

Although no academic study has previously proven what we call the Techtopia effect, there are reasons to believe that the private sector have assumed that such an effect exists and acted accordingly in order to signal innovativeness. One such example is Apple's choice to clearly mark their iPhones as "Designed in California". Another, more far fetched, example would be Amazon's choice to announce that they will start using drone deliveries many years before the launch. The announcement is likely to signal innovativeness for many years regardless of whether the service is eventually launched or not. These could both be examples of companies benefiting from signaling effects as described by Kirmani & Rao (2000).

5.4.2 Implications

This study is the result of an ambition to seek the Techtopian effect and, if found, examine the underlying forces working beneath it. Upon its completion, our findings entail implications for current researchers as it certainly tangents and complements previous theory, while still opening up new avenues of research to follow. The conclusions also form a vessel of insights for practitioners to draw from - marketing professionals may act on the indication of tech (no matter it being unrelated to the product itself) spurring WOM.

In its conventional scientific form, the thesis also puts the chosen methodology on display for others to build upon when, hopefully, venturing on a like-minded but improved

exploration. Hence two categories of implications follow, one under which our findings have an effect on theory, the other what implications they may entail for practitioners and marketing managers.

5.4.2.1 Theoretical Implications

It is important to note that our study aspire to explore the base of the hypothesized tech hype, while each stepping stone taking us there is based on prior research from WOM, IM and other sub-disciplines within the field of marketing science. The experiment results carry the effect of both chiming in with former academic findings, while also uncovering new questions for researchers to seek answers to.

The hypothesized expectation of adding originality through tech would boost WOM was supported. This finding lies alongside those of others (Moldovan et al, 2011), while also adding a dimension of insight through its tech-context. In addition, the relationship between IM and WOM gained a new hue when our experiment indicated the link to be significantly strong. This answers the insinuated call from Berger & Heath (2007) and Wood & Hoeffler (2013) for more research on the connecting link between the two.

The conducted regression analysis unveiled the mediative effect that IM exerts on WOM. Considering the contentious finding of Hamann, Williams Jr & Omar (2007), stating that people purchase high-tech products primarily for prestige rather than to satisfy particular needs, we thus partially support their observation. Moreover, we share their view of this research field being left relatively unexplored, given the potential implications further insights may entail. We consequently reiterate their call for more research within this niched topic. The study from Hamann et al (2007) does however feature less than 100 respondents, whereby their conclusions rest on relatively feeble ground. This further intensifies the need for further academic investigations on the subject.

To reconnect to the theories presented in our background theory, our findings suggests that tech associations could be successfully used to signal innovativeness, and companies may already consciously be using tech additives to achieve signaling effects (Kirmani & Rao, 2000).

Furthermore, our findings open up for an expansion of the Nextopia theory. Dahlén et al, (2011) did not find technology to be an explaining factor to why people prefer future, to be released, products. This was largely based on the fact that the Nextopia effect was present even when testing low tech products, for which technological advancements are of little or no importance. However, as our study show that even low tech products are affected by far fetched tech associations, this indicates that an indirect assumption of future technological

advancements could play a role in explaining why people prefer to be released products even if they are low tech. Whether that is true or not, both tech additives and future oriented advertising seem to have positive effects on product attractiveness. It would therefore be interesting to look at exactly how these two concepts are interrelated.

5.4.2.2 Managerial Implications

The findings in this study provide valuable information for marketers and managers. Our results show that investments in new technology might have positive effects beyond what is usually considered when summing up the pros and cons. Investing in a more modern type of production technology for example may not just lower the costs or increase productivity, it could also be used in marketing to signal innovativeness and spur Word of Mouth. Similarly, a company deciding to move to Silicon Valley will not only benefit from the general buzz of the world's number one tech hub, it could also use its new headquarters to signal their innovativeness to consumers and thereby make their products more attractive.

While companies have long strived to convince consumers of the technological superiority of their latest products, they may not have realized that even the technological level of their machinery reflects back on the product and may affect consumer perceptions in a positive way. Our city of origin experiment showed how very distant tech associations may have positive effects on very mundane and low-tech products. Simply developing a product in a city where many other innovative products are developed proved to be enough to positively reflect back, not only on the product, but on the *user* of the product as well. If such a far fetched tech associations give significant effects, numerous examples of more direct tech associations are likely to have a larger impact on consumer perceptions.

To sum up, we have two pieces of advice to managers. Firstly, investigate what current undisclosed tech associations that are linked to your products and consider whether those could be used to market the products as more innovative than they are currently being perceived. Secondly, before discarding any type of investment in a tech innovation as being too costly, consider what effect said innovation would have from a marketing perspective and evaluate if it makes the investment worthwhile.

5.5 Future Research

It is with ardent expectations that we may suggest further studies. All aforementioned shortcomings of our study design may with shrewd effort and resolute ambition be overcome, with possible great findings as a result. Below follow suggestions for future examinations stand out as rational extensions of what we have initiated.

Having discerned hints and cues of the Techtopia, there is a prolific opportunity to magnify this discovery by systematizing our methodology. Imagine building an experimental design featuring numerous products from several industries and sectors, with additives from different steps in the value chain. Provided results, one could potentially convey certain effects and efficacies from different additives from within the value chain, to certain products from various industries. As an example, more mundane products could benefit more from exhibiting tech-associations from stages further back in the value chain, while more advanced products may profit from displaying tech-associations from stages closer to the customer. We strongly encourage such an endeavor and would gladly support it.

Moreover, our study exhibited merely two products and one service, these products also being mundane, dull and of low-involvement character. One suggestion is to use products of an inherently more technical nature. This would allow researchers to observe how sizeable the Techtopia effect is on products that actually are likely to be associated with tech, as opposed to the fundamentally unadvanced items featured in this study. Furthermore, designing additives that actually relate to the product and enhance the item's properties would add richness to the array of possible affecting variables. Moreover, as mentioned above, applying a wide array of tech additives of varying nature would sharpen the test significantly as more combinations would allow for deeper insights. Further research could thus draw significant value from simply inflating our study, both horizontally and vertically. As we in Experiment 1 only generated 2 out of 3 hits, a more elaborate deep-dive into why this was is sure to engender fruitful insights.

Our evaluation of WOM-effects in a tech context allowed only for a limited frame of conclusions. At the crux of all studies attempting to examine the WOM-phenomenon stands the fact that *actual* WOM - that is, the real physical passing of words about a particular product or service - is close to impossible to measure. We here, as in numerous previous studies, limit ourselves to examine the *intent* to spread WOM. Subsequent research would do well in extending this measure of intention to include follow-up methodologies estimating how much WOM that in fact was generated.

The findings pertinent to IM entail numerous opportunities for socio-psychological researchers to appreciate. A stratification of a larger sample, with strata cut across personality, social status, career level and more, would allow for observations linking intentions behind tech-product consumption to personality types, leadership roles and more. Such inferences could shed further light on the postulated tech-mania from fresh angles.

Lastly, in this study we have focused on testing whether a Techtopia effect exists and how it works. We have however not explained *why* the Techtopia effect exists, why people have this unwary good belief in technology. This may quickly transform into a philosophical question addressable from a number of angles, and we encourage any attempt to explain the underlying causes of mankind's credulous conviction of viewing new technology as something inherently good.

5.6 Concluding Remarks

The main ambition of this thesis was to seek, and hopefully unravel, Techtopia from a consumer-and-consumption perspective, providing a new angle of research on the tech hype. Previous and current research mainly assails the ostensible tech craze from a business-and-firms perspective, analyzing venture capital valuations of unprofitable tech startups, the inability of monetization in growing tech business models and other pecuniary approaches of investigation. We here sought out to employ a different method of exploration, separated from past and current investigative *modus operandi*.

On top of this endeavor of discovery, analyzing how tech could drive such hype became the second goal. One way of capturing a "hype" phenomenon from a consumer marketing perspective would be to examine Word of Mouth effects. Does technology by itself drive Word of Mouth?

Thirdly, we wanted to investigate the affinity between consumption and self-expression in a tech context. Could adding extraordinarily unrelated tech associations to banal, low-tech products, increase the perceived innovativeness of people purchasing them?

These three inquiries conceived a fourth - a corollary connecting the concepts of Word of Mouth and impression management: could people talking about tech products - as theory suggested - be linked to consumers merely seeking to exhibit favorable traits of innovativeness?

Our quantitative approach to examine these conundrums provided indicative signs of a Techtopia. The study hypotheses were either partially or fully supported.

Our tests hint that technology today may influence us more than we consciously would like to admit, giving a surmise of a credulous belief. The findings do discern a - if not hot, lukewarm - trail that indubitably opens up a new area of exploration for researchers within the marketing and socio-psychological sciences to explore.

To conclude, we again address the continuous flow of capital elevating the global tech scene up onto its pedestal. If mere consumers unwittingly yield to a Techtopian credence, it should come as no surprise that investors may do so too.

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