Relevance of brand awareness, brand trust, perceived risk, and perceived quality in developing branding strategies in the pharmaceutical market

Maria Vittoria Visentin

Dissertation written under the supervision of Prof. Paulo Romeiro

Dissertation submitted in partial fulfilment of requirements for the MSc in International MSc in Management at Universidade Católica Portuguesa and for the MSc in Marketing Management at Bocconi University, September 2022.

ABSTRACT

Title: “Relevance of brand awareness, brand trust, perceived risk and perceived quality in developing branding strategies in the pharmaceutical market”

Author: Maria Vittoria Visentin

Increasingly these years, the pharmaceutical industry – one of the world’s major consumer goods markets – has utilized branding tactics to differentiate and help achieve competitive advantage.

Due to the introduction of the Covid-19 pandemic and the invention of a vaccine against it, the significance of this phenomenon has been growing. Since then, people’s familiarity with medical terms has increased, as has their interest in the medications they take.

This study aims to examine the relationship between the brand awareness of four selected pharmaceutical brands and brand trust, as well as the perceived financial and performance risk and the perceived quality of a potential new product from these companies. In addition, the study attempts to evaluate if personal experience with the Covid-19 vaccination affects people's responses and to uncover potential discrepancies in results across different pharmaceutical brands.

An online survey was performed online. The primary finding of the study is that all the factors evaluated have a significant relationship – some strong, others weak – with one another and that they all influence the perceived quality of a new product – some favorably, some adversely. In order to remain competitive in a changing industry, pharma businesses will be able to apply successful and effective branding strategies with the aid of this study.

Keywords: Pharmaceutical sector, Brand Awareness, Brand Trust, Perceived Risk, Perceived Quality, Satisfaction, Covid-19 Vaccine

SUMÁRIO

Título: "Relevância do conhecimento da marca, confiança na marca, risco percebido e qualidade percebida no desenvolvimento de estratégias de branding no mercado farmacêutico"

Autora: Maria Vittoria Visentin

Nos últimos anos, na indústria farmacêutica – um dos maiores mercados mundiais de bens de consumo – tem sido cada vez mais comum o uso de táticas de branding para proporcionar diferenciação e obtenção de vantagem competitiva para as organizações.

Devido à pandemia de Covid-19 e consequente invenção de uma vacina contra a mesma, a importância deste fenómeno tem aumentado cada vez mais. Desde então, a familiaridade das pessoas com os termos médicos tem aumentado, bem como o seu interesse nos medicamentos que tomam.

Este estudo visa examinar a relação entre o conhecimento da marca e a confiança na marca comparando quatro marcas farmacêuticas selecionadas, bem como a perceção do risco financeiro e de desempenho além da perceção da qualidade de um novo produto potencial destas empresas. Além disso, o estudo tenta avaliar se a experiência pessoal com a vacinação Covid-19 afeta as respostas das pessoas e descobrir potenciais discrepâncias nos resultados entre as diferentes marcas farmacêuticas.

Foi realizado um inquérito em linha. A principal conclusão do estudo é que todos os fatores avaliados têm uma relação significativa – alguns fortes, outros fracos – uns com os outros e que todos eles influenciam a qualidade percebida de um novo produto – alguns favoravelmente, outros adversamente.

A fim de permanecerem competitivas numa indústria em mudança, as empresas farmacêuticas serão capazes de aplicar estratégias de marca bem-sucedidas e eficazes com a ajuda deste estudo.

Palavras-chave: Sector farmacêutico, Consciência da Marca, Confiança da Marca, Risco Percebido, Qualidade Percebida, Satisfação, Vacina Covid-19

ACKNOWLEDGMENTS

This work is dedicated to the three cities that I am lucky enough to call home.

To Mogliano, that raised me as a curious and passionate young woman, and that taught me there is no need to be afraid of leaving your roots as long as they are solid and kind enough to welcome you back.

To Milano, the first home I chose. Thank you for being tough and loving at the same time and for teaching me that sometimes life can be challenging and difficult, but you will never be 20 years old again enjoying life in a new city with your best friends.

To Lisbon, that showed me that staying in your comfort zone is boring and uninteresting, that it is important to take things at your own pace, and that bright colors do improve your mood. Obrigada for your kindness and lightheartedness.

To all the people that crossed paths with me during these years – whom I am lucky enough to call my friends – thank each one of you for showing me that it is true that whatever you do in life is not legendary if your friends are not there to share it with you. I hope I was able to give you half of what you gave me.

To mum and dad, my biggest thank you goes to you. Any experience I had in life can easily be traced back to you and your unconditional support. I will always be grateful, even if I do not show it much. I am still a work in process.

Finally, to my grandparents, Mario, Luigi, Teresa and Maria Rosa, thank you for being such a big part of my life. I still feel you holding my hand everywhere I go. I hope you are proud of me.

TABLE OF CONTENTS

TABLE OF FIGURES

TABLE OF TABLES

TABLE OF APPENDICES

GLOSSARY

AW	Brand Awareness
TR	Brand Trust
QU	Perceived Quality
PR	Perceived Performance Risk
FR	Perceived Financial Risk
SAT	Satisfaction
FMGC	Fast Moving Consumer Goods
CRM	Customer Relationship Management

CHAPTER 1 – INTRODUCTION

1.1 Background

The pharmaceutical sector has never been effective at capitalizing on the influence of its brands. This is due mostly to the fact that pharmaceuticals have traditionally competed on the basis of functional and product-related characteristics (Panchal et al., 2012).
In contrast to the FMCG market, where the function of brands has rapidly evolved into a source of competitive advantage (Aaker, 2009), pharmaceutical branding's approach to these techniques has been at a nascent stage for a very long period (Panchal et al., 2012).
At least, this was the case before the pandemic, but Covid-19 majorly altered the rate of this development.

The pandemic and the necessity for social distance have influenced the marketing strategies of several businesses in a variety of industries, including the pharmaceutical one.
In response, pharmaceutical businesses are seeking options to maintain successful engagement with their present and prospective clients (Sawad & Turkistani, 2021).

For instance, these businesses have always depended heavily on pharmaceutical sales agents to contact physicians and patients. Anyway, according to a recent survey performed by Kadar in 2020[1], 63% of physicians have never interacted with pharmaceutical business personnel after the quarantine period. This suggests a reduction in pharmaceutical corporations' in-person marketing efforts.

The previous is only one of the many reasons why it is crucial for the pharmaceutical industry to recognize the issues posed by Covid-19, and to resort to new frontiers in the world of marketing.
There has been an initial shift in the development of new marketing strategies in an effort to remain competitive, showing evidence of the so-called telemedicine revolution (Khan et al., 2021): companies have moved to combat the adverse effects of the health crisis through technology, including digital marketing, e-detailing CRM, e-sampling, in order to promote product value and accelerate prescriptions to the target consumer.
In this new scenario, a new branding approach may also be necessary.

[1] Kadar, R. (2020, Apr 27). COVID-19 Pharma Marketing Strategy and Spend Survey Results. *PM360*. https://www.pm360online.com/co vid-19-pharma-marketing-strategy-and- spend-survey-results/.

Whether or not the pharmaceutical business is prepared for this new marketing journey, social distancing is not the only wake-up call.
The pharmaceutical industry has been at the center of attention for the past two years due to the fact that several pharmaceutical firms have successfully developed vaccinations against Covid-19. Beginning with Pfizer and Moderna, it is safe to conclude that some pharmaceutical names have been propelled into the public consciousness.

People have been asking their peers, "What vaccine shot did you receive?", "Pfizer, J&J, Moderna". They were even going to vaccination hubs and requesting their preferred vaccine: "Is it okay if I take the Pfizer instead of the AstraZeneca?"
These names have been the subject of discussion for a very long time, but it is something that the general public has never been accustomed to before.

Beginning of 2022, Christina Falzano, managing director of the Conran Design Group, was interviewed by Pharma Executive[2], a pharmaceutical news editor: she believes that the increased significance of pharmaceutical brands is likely to persist even after the pandemic subsides, and that pharma brands will begin to serve as assurances of quality and dependability, providing interested parties with faith and trust in new medications or prescriptions.

As a result of Covid-19 vaccinations, pharmaceutical company names are now more visible in the eyes of the general public. In this framework, Gen Z is arguably the age group most impacted by pharmaceutical branding, with 49% reporting that they are now more inclined to tell their doctors which pharmaceutical brand they prefer[3].

As a result of a pandemic that has brought unprecedented change to their lives, people are devoting more time and energy to the study of science and medicine. They now have greater knowledge and authority (Laukka et al., 2019). This address all of their medical needs and extends beyond Covid.

[2] Pharmaceutical executive volume 42, number 1, January 2022
[3] O'Kane, C., (2021, Apr 30). Most Americans say they prefer a specific brand of vaccine – and what they've seen on social media influences their decision. *CBS News*. https://www.cbsnews.com/news/covid-19-vaccine-brand-preference/

1.2 Problem Statement

The scope of this thesis is understand if different levels of awareness and trust of certain pharma brands have an impact on the perceived quality and risk of a new pharma product that they might develop in the future and understand if this impact is moderated by people's satisfaction regarding their experience with the Covid-19 vaccine.

These objectives guided the development of the following research questions:
RQ1: What are the brand trust and awareness of these pharma companies in 2022 and is there a relationship between them?
RQ2: Does the level of personal satisfaction with the vaccine affect brand awareness and trust?
RQ3: How do awareness and trust affect the perceived quality and risk of a new pharma product?

1.3 Relevance

For our generation, the novel COVID-19 pandemic has established an entirely new and unusual scenario. It has altered our behavior and interactions. Together with that, it has changed the way we get informed, consume, we purchase things. This applies to food, travel and transportation, but it may also be fascinating to see how it altered people's perspectives on science and health.

This study aims to determine whether or not individuals are aware of pharmaceutical businesses, whether or not they trust them, and whether or not they feel uncertain about new pharmaceutical items on the market.

If it is true that people are getting influenced by pharma branding and are actively asking for certain brands of drugs because they feel reassured by their logo, pharmaceutical organizations should seize the opportunity and find solutions to intensify their branding strategy and D2C communication.

In light of the fact that communication trends in the pharmaceutical industry are already shifting, it is essential for every company operating in the industry to take this step, which has the potential to lead to a better reputation, higher revenues, and ultimately more resources to invest in more sophisticated drugs and medicine, in order to eradicate diseases and create a better, healthier world.

1.4 Research Method

Secondary and primary data were collected in order to gain the information necessary to answer the study questions posed.

The first step was a review of the existing literature, in particular relevant academic publications, pertaining to the most important components of this study (brand awareness and trust, satisfaction, perceived risk, and perceived quality). This comprehensive evaluation assisted in clarifying the problem's definition and establishing the primary data collecting method.

Quantitative research was used to employed to acquire primary data, utilizing a questionnaire that examined the aforementioned variables. Four stimuli, namely four pharmaceutical brands with their hypothetical new product, were shown to four unique response groups. The questionnaire also gathered information on each respondent's degree of satisfaction with their Covid-19 vaccine experience.

1.5 Dissertation Outline

The outline of the thesis appears below.
In the introductory chapter, the problem statement and research questions were addressed first. The literature on awareness, trust, satisfaction, perceived risk, and perceived quality is covered in the second chapter. The third section describes the methodology and data set of the investigation. In the fourth chapter, findings are provided alongside an assessment of the validity of each hypothesis. The last chapter concludes the study with a summary of the key findings, as well as information on the limitations of the study and suggestions for further research.

CHAPTER 2 – LITERATURE REVIEW

This chapter provides a summary of prior research and literature on brand awareness, brand trust, satisfaction, perceived risk, and perceived quality for a better understanding of the thesis' purpose. On the basis of this literature, research hypotheses were formulated.
The conceptual framework shown in the end gives a summary of the interactions between each variable and provides an overview of the research.

2.1 Brand Awareness

Brand awareness refers to "the ability of a potential buyer to recognize or remember that a brand belongs to a certain product category" (Aaker, 2009).
High brand awareness can improve consumers' ability to purchase a product or service, providing the brand with a sustainable competitive advantage (Foroudi, 2019).
This metric relates to the strength of the brand image in consumers' memories, as indicated by their ability to recognize the brand (Rossiter & Percy, 1987). Brand awareness influences perception and attitudes and drives brand selection and loyalty (Motameni & Shahrokhi, 1998). High brand awareness can increase consumers' propensity to purchase a product or service, creating a lasting competitive advantage for the brand (Foroudi, 2019).

Brand awareness comprises brand recognition and recall (Keller, 1993). Brand recognition is the capacity of consumers to recognize a brand when provided with a cue. Brand recall refers to the ability of consumers to retrieve the brand name and some attributes when given the product category and other cues (Keller, 1993). Brand recall is likely to require the consumer to expend greater effort to retrieve a brand from memory than brand recognition, which only requires consumers to determine when the brand has been seen or heard previously. There are different levels of involvement between the two components: when compared to brand recognition, which just requires consumers to discern when they have previously seen or heard the brand, brand recall demands more effort from the consumer (Lu et al., 2014).

Brand awareness with strong associations can form a specific image of the brand (Yoo et al., 2000). Aaker (2009) defines brand associations as "anything linked in memory to a brand". These associations are stronger when based on numerous exposures to communications (Alba & Hutchinson, 1987). Brand associations, which result in high brand awareness, are positively

related to brand equity because they can be a signal of quality and commitment and because they enable a buyer to evaluate the brand at the moment of purchase (Yoo et al., 2000).

For healthcare marketers who work in the pharmaceutical sector, brand awareness is essential, but it is a bit more sophisticated than simple exposure. The reason for this is that the relevance of pharmaceutical items is defined by consumer necessity rather than desire (Shah, 2021). Taking these aspects into account and from a business viewpoint, brand awareness is of utmost significance, so long as it develops customer confidence and trust in the brand (Ettenson, 1993).

According to research by Panchal, Khan, and Ramesh (2012), consumers are more likely to purchase a medicine from a known brand, either because they feel more comfortable with the familiar, or because a well-known brand is more likely to be dependable and of adequate quality. Thus, a well-known brand will often be chosen over an unfamiliar one: this is because, while a well-known brand is more likely to reach the consideration set, an unknown brand usually has little chance.

2.2. Brand Trust

In establishing a positive relationship between consumers and suppliers, experts consider trust as a crucial element (Elliott & Yannopoulou, 2007). To use Hiscock's words (2003), "the ultimate goal of marketing is to generate an intense bond between the consumer and the brand, and the main ingredient of this bond is trust".
Brand trust is defined as the willingness to rely on an exchange partner in whom a person has confidence and faith (Moorman et al., 1993).
It has been demonstrated that trust influences the perceived quality of a product or service and the amount of customer engagement during the relationship (Moorman et al., 1992).

Delgado-Ballester (2004) defines brand trust as "the confident expectations of the brand's reliability and intentions in situations involving risk to the consumer", recognizing two distinct components: brand reliability, which is based on the extent to which the consumer believes the brand will deliver on its promise of value, and brand intentions, which are based on the extent to which the consumer believes the brand will put the consumer's interests before its own. Whereas trust based on reliability represents a set of technical characteristics, brand intentions reflect emotional security on the part of individuals (Delgado-Ballester, 2004). This second

dimension includes elements such as altruism (Frost et al., 1978), kindness, and honesty (Larzelere and Huston, 1980).

The creation of brand trust results in an encouraging attitude towards a brand and is thus essential for establishing a lasting relationship with the consumer. Brand-consumer relationships are based primarily on brand trust, which results in long-term brand loyalty (Delgado-Ballester & Munuera-Aleman, 2005; Louis & Lombart, 2010).

For pharmaceutical brands, trust is crucial since it affects not only consumers' brand loyalty but also that of medical professionals (Plooy, 2012). According to Sanyal and Datta (2011), trust in the pharmaceutical brand is one of the most significant influencers on physicians' prescribing behavior.

Studies show that if consumers are more familiar with a brand, indicating that brand awareness is strong, their confidence in the brand will increase (Laroche et al., 1996), and they will be more likely to trust that brand (Smith & Wheeler, 2002). According to Leong (1993) and Macdonald and Sharp (2000), consumers have a strong inclination to use brand awareness as an indicator of quality when selecting a product because they perceive a well-known brand to be more trustworthy than an unknown one. If consumers are familiar with the brand, they will not have to think too hard or for too long to obtain information about a product's characteristics (Ha, 2004). This suggests the following conclusion:

H1a: Brand awareness has a positive effect on brand trust.

2.3 Satisfaction

Oliver (2014) defines satisfaction as "pleasurable fulfillment": the consumer has the impression that the experience satisfies a need, desire, or another aim, and that the satisfaction is pleasurable. Consequently, satisfaction is the consumer's belief that the event satisfies a pleasure or displeasure criterion (Oliver, 1999).
Despite the fact that many studies strive to objectively quantify discrepancies, a current of early reviewers (Watts 1968; Weaver & Brickman, 1974) focuses on the idea that individuals generate summary comparison judgments mainly as a contributor to their feelings of pleasure.

Literature studies (LaTour & Peat, 1979; Oliver, 1977) reveal that performance-specific anticipation and expectations disconfirmation play substantial roles in the satisfaction decision-making process.

Literature on healthcare system satisfaction suggests that a substantial share of satisfaction reflects the individual experience of care (Blendon et al., 2001).

Today, while examining the link between brand awareness and brand trust in the pharmaceutical sector, it is important to take into account a third variable, satisfaction with the Covid-19 vaccination, as a potential moderator.
If research suggests that a higher degree of brand awareness leads to a higher level of trust in that brand, and that trust also depends on a personal experience that people have had in the same field, then this link might be moderated by the level of satisfaction that individuals have with their Covid-19 vaccine experience. This resulted in the subsequent hypothesis:

> *H1b: Vaccine satisfaction moderates the relationship between brand awareness and brand trust.*

2.4 Perceived Risk

Bauer (1960) first introduced the notion of perceived risk in consumer behavior research, stating that "customer behavior involves risk in the sense that any action of the consumer might result in undesirable outcomes."
Risk is a two-component phenomenon (Kogan & Wallach, 1964; Peter & Ryan, 1976; Dowling & Staelin, 1994): it consists of a probability element, which focuses on the possibility of loss, and a danger aspect, which focuses on the severity of a loss.
Peter and Ryan (1976) are also the ones that defined a new notion of perceived risk as the expectation of losses connected with buying, and as such acts as an inhibitor of purchasing behavior. The higher the perceived risk, the less probable it is that a consumer would behave in a given manner.

Most studies have involved subsets and/or combinations of six types of risk believed connected with the purchasing process (Roselius, 1971; Jacoby & Kaplan, 1972): financial, social, performance, psychological, physical, and convenience or time. Behavioral contexts, brands,

and product categories of interest all affect how relevant and various influential sorts of perceived risks are on customer behavior (Mieres et al., 2006).
While all of these dimensions have been proposed, only two are considered in this study: financial and performance. According to Sweeney, Soutar, and Johnson (1999), these are the two most essential elements of risk perception.
Performance risk is the uncertainty over the product's capacity to fulfill its intended purpose (Horton, 1976), i.e., the risk that the product will not perform as promised. Bettman (1973) argues that consumers typically rely on their own knowledge and experience to evaluate the performance of a product. Especially when they purchase a product for the first time, a lack of information or expert suggestions significantly heightens their risk perception (Arslan et al., 2013).

Financial risk is the potential for a customer to incur a net financial loss, including the likelihood that a product would need to be repaired or replaced (Horton, 1976). It is also described as the fear that the item is not worth the amount the buyer paid for it (Tsiros & Heilman, 2005). According to Pappas (2016), this last description might be expanded to include the possibility that the product's quality does not match its price.

Although Sweeney et al. (1999) identified and assessed the two risk indicators — performance and financial risk — they did not hypothesize a distinct mediating role. Agarwal and Teas were the ones that, in 2001, studied the possibly distinct mediating effects of the two factors. It has been demonstrated in their study that performance and financial risk are likely to be correlated: a larger chance that the product will not fulfill its intended function is likely to result in a higher projected cost of changes, maintenance, and/or repair (Agarwal & Teas, 2001). Thus:

H2: Performance perceived risk has a positive effect on financial perceived risk.

The literature demonstrates that customers frequently rely on a well-known brand as a means of coping with perceived risk (Roselius, 1971; Rao & Monroe, 1989).
High awareness of a brand's name, logo and attributes has the power to minimize the perceived risk associated with the usage of a product or service (Mutahar et al., 2018), as well as the risk of purchasing and consuming an alternative brand (Bharadwaj et al., 1993). Consequently, empirical evidence should support the following hypotheses:

H3a: Brand awareness has a negative effect on the performance risk of a new product.

H3b: Brand awareness has a negative effect on the financial risk of a new product.

Different scholarly perspectives exist about the relationship between perceived risk and trust (Blau, 2017; Luhmann, 2001; Williamson, 1993). Particularly, Luhmann, (2001) argues that trust is a crucial driver of action in situations involving perceived risk of a negative consequence. If consumers' trust in a certain brand is high or low, the perceived risk associated with purchasing a product from the same brand will be proportionally low or high. As trust grows, consumers are likely to perceive less danger than if the trust were low or inexistent (Kim et al., 2008). Consequently, the following assumptions were developed:

H4a: A consumer's trust in a brand negatively affects the consumer's performance risk of a new product.

H4b: A consumer's trust in a brand negatively affects the consumer's financial risk of a new product.

2.5 Perceived Quality

Quality can be defined as excellence or superiority. By extension, perceived quality is defined as "the consumer's evaluation of a brand's overall excellence or superiority" (Zeithaml, 1988). Personal product experience, unique and particular needs, and consumption circumstances are some of the factors that influence the consumer's subjective assessment of quality.

The construct is closely related to the perceptions of consumers, which depend on their subjective evaluation of the product or service (Garvin, 1983), and not on its actual technical superiority of it, called "objective quality" (Hjorth-Anderson 1984; Monroe & Krishnan, 1985). Nonetheless, it has been shown what consumers perceive as good or bad quality has a very strong impact on their preferences and behaviors. A high degree of perceived quality indicates that customers sense brand differentiation and superiority (Yoo et al., 2000). According to Zeithaml (1988), perceived quality is a component of brand value; high perceived quality would encourage customers to prefer a product with a brand name over a product without a brand name, and increase their purchase intentions (Zeithaml et al., 1996).

Evaluations of quality occur in a comparative setting. A product's quality is rated as high or low based on its relative superiority relative to items that are considered alternatives and that are part of the so-called evoked set (Zeithaml, 1988).

Perceived quality is influenced by many variables.
Brand awareness is likely to have a beneficial effect on quality perceptions (Oh, 2000), as it encourages customers to consider the brand they are familiar with at the time of purchase, resulting in a favorable attitude toward the product offered under the same brand (Yoo et al., 2000).
Among various brand elements, people can recognize or recall the brand's name. Researchers have primarily focused on the relationship between brand name and perceived quality, viewing the brand name as an "overview" construct (Han 1989; Johansson 1989) for quality because consumers can infer product quality from the brand name.
Using this explanation as a foundation, the following hypothesis is proposed:

H5: Brand awareness has a positive effect on the perceived quality of a new product.

Trust has been discovered to affect the perceived quality of a product or service as well (Moorman et al., 1992): it is essential for consumers to be able to rely on companies to assure the quality of their products in order to make informed purchasing decisions (Moorman et al., 1993). This resulted in the subsequent hypothesis:

H6: A consumer's trust in a brand positively affects the consumer's perceived quality of a new product.

Finally, Bettman (1973) identified a negative correlation between perceived risk and perceived quality. According to Sheau-Fen et al. (2012), performance risk has an unfavorable impact on purchasers' perceived quality and, as a result, reduces the chance of a purchase decision. Therefore, the following hypothesis guides this study:

H7a: A low level of performance risk in the new product positively affects the consumer's perceived quality of that same product.

H7b: A low level of financial risk in the new product positively affects the consumer's perceived quality of that same product.

2.6 Conceptual Framework

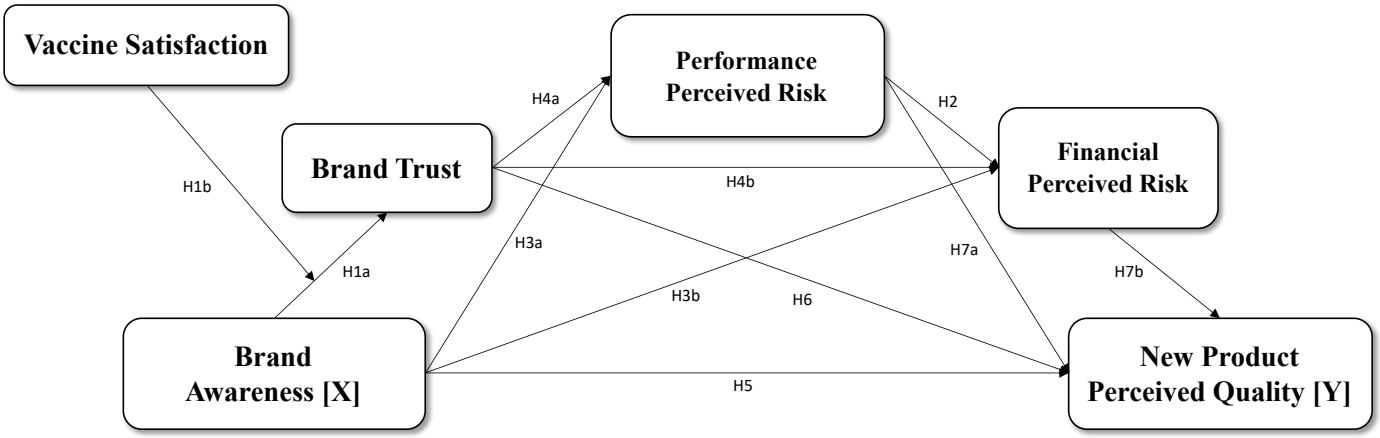


Figure 1: Conceptual Framework

CHAPTER 3 – METHODOLOGY

This chapter describes the methodology used to gather and evaluate primary and secondary data in order to test hypotheses, develop conclusions, and respond to the research questions posed in Chapter 2.

The chapter is organized as follows: initially, the research approach is presented, followed by a description of the primary and secondary research employed throughout the thesis, and lastly, a detailed explanation of primary research.

3.1 Research Approach

The primary objective of this research is to elucidate the relationship between brand awareness and perceived quality, with brand trust, performance risk, and financial risk serving as mediators and vaccination satisfaction serving as a moderator.

This was accomplished by completing literature research on the aforementioned issues, which enabled the conceptual framework to be developed.

To address the research questions and validate the proposed hypotheses, various research approaches were employed. The exploratory and explanatory approaches have been given priority. In the initial phase, the exploratory technique was utilized to examine the existing literature for information that may assist in identifying the relevant variables and hypothesizing their relationships. Subsequently, the explanatory technique was employed to evaluate the presented hypotheses, as well as to confirm and explain the potential interactions between the variables.

Finally, this study focuses only on quantitative data, employing a survey research technique to collect information about the variables, validate hypotheses, and obtain the desired results.

3.2 Secondary Data

To gather information for the literature review, secondary data was primarily collected from internet sources that provided academic papers from prestigious journals. The acquired data was used to create a better understanding of the problem statement and variables, as well as to determine which constructs will be utilized in this study.

3.3 Primary Data

To ensure the effectiveness and understanding of the survey, a pilot test was conducted. 12 responses were evaluated, which led to adjustments based on the feedback.

Primary data was obtained through an online survey that was submitted on social media platforms.

The use of this research methodology can result in great benefits but also in some drawbacks for the research as a whole. Advantages of internet-mediated surveys include faster response times, reduced costs, and the ability to contact a wider number of respondents (Saunders et al., 2009). On the risks side, the likely response rate is quite low, around 11% (Saunders et al., 2009), and there is inherent inflexibility and the likelihood of unclear or omitted responses (Kothari, 2004), which are nearly impossible to interpret.

The questionnaire was initially tested on 6 people to assess the clarity of the questions and the duration of the survey. In general, they needed 4 minutes to complete the questionnaire.

3.3.1 Online Survey

3.3.1.1 Data Collection

This study aims to examine the relationship between brand awareness of certain pharmaceutical brands and brand trust, as well as the perceived financial and performance risk and perceived quality of a new product that these companies may introduce. In addition, the study aims to determine if personal experience with the Covid-19 vaccination affected people's responses, as well as to identify potential discrepancies in outcomes across various pharmaceutical brands.

AstraZeneca, Dompé, Pfizer, and Roche were the brands chosen to test these factors on the responders. This decision was designed to guarantee that two of these (AstraZeneca and Pfizer) are pharmaceutical companies that have recently developed and patented a vaccine against Covid-19, while the other two (Dompé and Roche) have not.

Cough syrup was used as the stimulation item. This product was chosen because it is an over-the-counter (OTC) medication, one you can buy without a doctor’s prescription. It was judged more suited for this study because people purchase drugs prescribed by their doctors, they typically do not have a choice, therefore the variables researched here may not influence the purchase. Additionally, it was deemed significant since it treats one of the most common symptoms of Covid-19, cough.

During the data collection phase, an online survey was distributed through a Qualtrics link via social platforms, Facebook and LinkedIn, from 1 June 2022 to 21 June 2022, resulting in the gathering of 305 valid answers and 221 invalid ones.
The randomly assigned stimuli were partially evenly distributed, resulting in 100 being exposed to stimulus 1 (Pfizer), 86 to stimulus 2 (AstraZeneca), 103 to stimulus 3 (Dompé), and 96 to stimulus 4 (Roche).
In terms of the target population, there was no demographic or behavioral exclusion. Anyone could respond to the questionnaire.

A non-probabilistic sampling technique was used to acquire the survey data, which indicates that the sample was not selected at random from the population. Due to time and budgetary restrictions, as well as the difficulties in choosing a suitable sample, this method is the most convenient one. In addition, utilizing the convenience strategy led to little variation in the population (Saunders et al., 2009).

3.3.1.2 Research Design ad Stimuli Development

The study was separated into three major sections.
Following the default check questions, respondents were asked whether they had had the Covid-19 vaccination and, if so, how satisfied they were with the experience.
In the second phase, respondents were randomly assigned to one of four scenarios using Qualtrics' randomizer flow option.
Then, the main block was divided into two parts: first, participants were shown the logo of a pharmaceutical brand (AstraZeneca, Dompé, Pfizer, or Roche) (Figure 2) and asked to respond to a series of questions regarding brand awareness and brand trust. The participants were then shown a picture of a cough syrup containing the brand they had previously seen (Figure 2) and asked to reply to questions regarding the perceived quality and perceived risk of the same cough syrup. In the same block, respondents were asked to identify the brand they saw at the beginning of the research, As a measure of their attention.
The third and final section consisted of demographic questions regarding gender, age, education, occupation, and nationality.

In order to examine these scenarios, it was important to provide participants with stimuli that seemed as realistic as possible.

Each brand represented a scenario in which the brand's logo was displayed first, followed by an image of cough syrup with the company's logo on the bottle and packaging. The image was created with Photoshop.

Scenario	Brand Logo	New Product
Scenario 1	Pfizer	
Scenario 2	AstraZeneca	
Scenario 3	Dompé	
Scenario 4	Roche	

Figure 2: Stimuli Shown to Different Groups of Respondents

3.3.1.3 Measurements

A literature review was undertaken to determine the optimal method for measuring each variable.

Except for the questions on perceived quality, all survey items were provided on a 7-point Likert scale ranging from "Do not agree at all" to "Completely agree."

The first section of the questionnaire addressed the Covid-19 vaccination. If respondents answered “Yes” to the question “Have you had a Covid shot?”, they were sent to a series of questions meant to assess their level of personal satisfaction. The chosen construct to measure satisfaction was by Klaus and Maklan (2013), which was earlier developed by the two in 2012 as part of the Customer Experience Quality (EXQ) scale. The construct is an adaptation of the one implemented by Dagger, Sweeney, and Johnson (2007).

The brand awareness constructs developed by Buil, Chernatony, and Martinez (2008), which were taken from Yoo and Dontu (2000) and Netemeyer et al. (2004), were chosen because they

integrate brand recognition, brand recall, and brand familiarity, the three components of brand awareness.

The construct developed by Delgado-Ballester (2004) was utilized to evaluate brand trust, with a focus on intentions – and, by extension, the emotional aspect of the variable. The decision to prioritize the brand intentions component can be explained by the fact that, unlike brand reliability items, which are based on the amount of past experience and the extent to which this experience suggests consistency, brand intentions items are relevant in specific problematic situations involving product consumption. This notion is based on an article by Rempel, Holmes, and Zanna (1985), who suggest that brand intention-related features and behaviors bear the greatest weight because the future is filled with unique conditions for which prior experience is not necessarily a valid barometer. In this case, the scale had to be converted from a 5-point Likert to a 7-point Likert.

To measure the value of perceived risk, five questions based on the framework proposed by Agarwal and Teas (2001) were formulated. Risk is a multifaceted notion that includes six main types: performance, psychological, social, financial, physical, and convenience (Kaplan et al., 1974). However, the most studied risk are performance and financial (Grewal et al., 1994; Shimp & Bearden, 1982; Sweeney et al. 1999). Consequently, performance risk (a two-item scale) and financial risk (a three-item scale) were assessed. Performance risk is a variable with reverse coding, which requires the responses to be recoded in SPSS before proceeding with the analysis, such that a high score correlates to a low score on the scale.

Finally, perceived quality was measured with 6 items using 7-point Likert scales, a construct used by Oh (2000). Three items pertained to the expected product performance, whereas the remaining three things pertained to the expected product quality as a whole. Both measures were computed using the following ranges: poor-excellent, inferior-superior, extremely unfavorable-extremely favorable.

Framework	Measure	Items	Scale	Reference	Cronbach α
IV	Brand Awareness	5	7-point Likert Scale	Buil et al. (2008)	0.89
Moderator	Satisfaction	5	7-point Likert Scale	Klaus & Maklan (2013)	0.89
Mediator	Brand Trust	4	7-point Likert Scale*	Delgado-Ballester (2004)	0.83
Mediator	Financial Perceived Risk	3	7-point Likert Scale	Agarwal & Teas (2001)	0.93
Mediator	Performance Perceived Risk	2	7-point Likert Scale	Agarwal & Teas (2001)	0.90
DV	Perceived Quality	6	7-point Likert Scale	Oh (2000)	0.95
** The scale was adapted from the original 5-point Likert Scale.*					

Table 1: Operational Model

The table above (Table 1) displays the structures, number of scale elements, and literature sources used to develop these scales for the dissertation.

3.3.2 Data Analysis

SPSS, a program developed by IBM, was used to analyze the quantitative data obtained. The primary purpose of the study is to verify the provided hypotheses and assess the statistical significance of the interactions between the variables.

Firstly, Cronbach's Alpha was used to determine the degree of dependability of each construct. Then, descriptive statistics and frequency distributions were employed to gain a general understanding of the sample. Correlation analysis was conducted to establish the direction and strength of the associations between the independent factors and the dependent variable.

In order to explain the indirect effects between brand awareness and perceived quality, a multiple mediation analysis was conducted using Hayes' macro PROCESS in SPSS (Hayes, 2017).
Based on the findings from the literature review, a merged version of Hayes' PROCESS models 6 and 7 was used to explain the behavior of the statistical model (Hayes, 2017) (Figure 3).
The indirect impact of the independent variable (X) on the dependent variable (Y) is represented by three mediators (M_1, M_2, M_3), which aids in the explanation of the relationship between the independent and dependent variables. A moderator (W) is also expected to explain how X impacts Y in relation to various requirements for W (Taylor et al., 2008).

Finally, in order to examine the effect of different brands on the variables, Independent-sample T tests and one-way ANOVA tests were run to compare the means of each variable and establish whether there was a statistically significant difference between them.

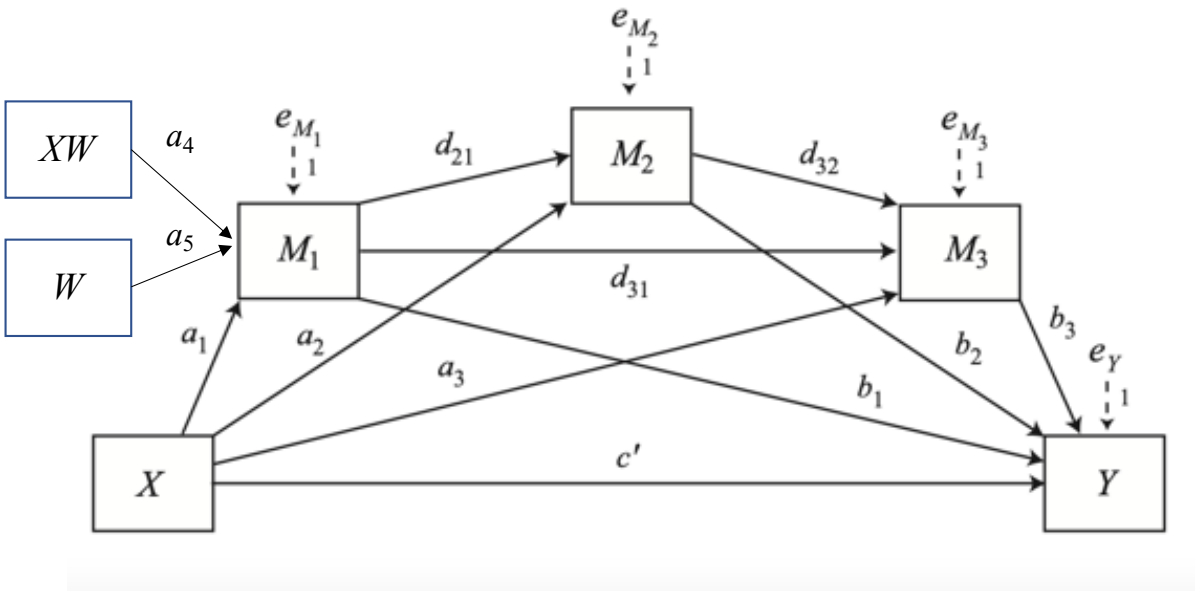


Figure 3: Hayes' Process Macro merged models 6 and 7 (Conditional Process)

CHAPTER 4 – RESULTS and DISCUSSION

This chapter analyzes the quantitative data taken from the online survey in order to evaluate the hypotheses described in the literature review chapter and provide appropriate answers to the research questions.

4.1 Data Preparation Process

Of the 305 valid responses, some had to be removed since they failed the manipulation check (Q25).

- Of the 89 respondents exposed to stimulus 1 (Pfizer) that successfully finished the survey, 70 recognized the brand in the manipulation.
- Of the 86 respondents exposed to stimulus 2 (Astrazeneca) that successfully finished the survey, 53 recognized the brand in the manipulation.
- Of the 77 respondents exposed to stimulus 3 (Dompé) that successfully finished the survey, 65 recognized the brand in the manipulation.
- Of the 76 respondents exposed to stimulus 4 (Roche) that successfully finished the survey, 73 recognized the brand in the manipulation.

In total, 41 respondents were treated as if they had not been presented with any stimulus.

Before continuing with the data analysis, a multivariate outlier analysis was performed to indentify extreme values to delete (Seltman, 2015). The Mahalanobis distance was calculated, generating a new variable for each participant, and those with a p-value lower than 0.001 were deemed outliers. The study detected three respondents whose data was considered outliers and was consequently omitted. All three responders were presented with stimulus 1.

The sample size varies based on the ongoing analysis (Malhotra et al., 2012). This procedure is suitable because: (1) the sample size is considerably large and (2) the variables will not be associated (Malhotra et al., 2012).

Table 2 shows the number of valid responses per block and the distribution of participants in the groups.

4.2 Sample Characterization

The final 258 responses are presented in the table below according to their exposed stimulus. The total number of respondents was randomly divided between groups with Qualtrics' randomization tool.

Sample Characterization						
		Astrazeneca	**Dompé**	**Pfizer**	**Roche**	**Total**
Gender	Total	53	65	67	73	258
	Male	32,1%	44,6%	29,9%	39,7%	36,8%
	Female	67,9%	53,8%	70,1%	57,5%	62,0%
	Non binary	0,0%	1,5%	0,0%	0,0%	0,4%
	Prefer not to say	0,0%	0,0%	0,0%	2,7%	0,8%
Age	Total	53	65	67	73	258
	<= 28	54,7%	46,2%	43,3%	37,0%	44,6%
	29-50	17,0%	18,5%	29,9%	27,4%	23,6%
	50+	28,3%	35,4%	26,9%	35,6%	31,8%
Nationality	Total	53	65	67	73	258
	Italian	83,0%	84,7%	80,6%	84,9%	83,3%
	Other	17,0%	15,3%	19,4%	15,1%	16,7%
Education	Total	53	65	67	73	258
	High school diploma	34,0%	23,0%	27,0%	38,4%	30,6%
	Bachelor degree	32,0%	26,2%	25,0%	23,2%	26,4%
	Master degree or higher	34,0%	50,8%	48,0%	38,4%	43,0%
Occupation	Total	53	65	67	73	258
	Student	32,1%	21,6%	20,9%	19,2%	22,9%
	Student worker	15,1%	13,8%	11,9%	6,8%	11,6%
	Employed	45,2%	61,5%	58,2%	63,0%	57,8%
	Unemployed	3,8%	0,0%	1,5%	1,4%	1,6%
	Pensioner	3,8%	3,1%	7,5%	9,6%	6,2%

Table 2: Sample Characterization

The overall number of respondents was approximately evenly distributed over groups.

Due to non-probability sampling, the majority of respondents were Italian. The nationalities included in the *other* are mainly Portuguese, British and Hungarian.

Given that 62% of respondents were female and 37% were male, female respondents hold a slight majority. Nonetheless, the sample might be considered representative due to the presence of additional demographic factors that are evenly distributed across groups.

Lastly, the demographics of the respondents exposed to each of the four stimuli are similar. This indicates that the groups are homogeneous.

4.3 Measure Reliability

The variables employed in this study were subjected to a Cronbach alpha test to determine their consistency and reliability. Even if all constructions were collected from the previously studied literature, it is necessary to confirm the data's feasibility.

All constructs had a Cronbach's alpha greater than 0.8 (Table 3), indicating that they are reliable enough to predict variables and proceed with data analysis.

CRONBACH'S ALFA		
Construct	**# of Items**	**Total**
Vaccine Satisfaction	5	0.943
Brand Awareness	5	0.926
Brand Trust	4	0.911
Performance Risk	2	0.896
Financial Risk	3	0.846
Perceived Quality	6	0.971

Table 3: Cronbach's Alphas

The only value of concern was found in the "alfa if item deleted" column of item 1 of the Financial Risk variable – purchasing this product would be extremely risky. The Cronbach Alpha would rise from.846 to.906 if the item were eliminated.

After consideration, the decision was made to keep it. According to Cortina (1993), if Cronbach's alpha value exceeds 0.8, both the items and the variable have adequate reliability. Furthermore, the number of items in the scale must be considered: not having a large number of items in the financial risk variable (3), and deleting even one could be detrimental to the subsequent interaction with the interviewees.

4.4 Results from Hypothesis Testing

In order to gain a deeper knowledge of the relationships between the predictive variables and the outcome variable, several statistical tests were performed to determine the validity of the hypotheses. Due to the nature of the conceptual framework, simple and multiple linear regression tests were undertaken. Since the hypotheses intend to investigate the impact of moderation and mediation, the Process Macro is utilized in this research.

For each hypothesis, a preliminary analysis was undertaken to confirm that none of the regression assumptions were violated, which could affect the data's validity.

Concerning the independence hypothesis, all Durbin-Watson values were smaller than 2, indicating that the observations were independent.

All variance inflation factor (VIF) values were under 2, indicating that multicollinearity is not an issue.

Regarding the remaining assumptions, the residuals may be seen to be normally distributed and linear. In addition, the error terms are independent of each other.

Finally, the level of significance utilized is 5%.

4.4.1 Hypothesis 1

H1a: Brand awareness has a positive effect on brand trust.

In order to analyze the direct effect of AW on TR, the following linear regression was conducted:

$$TRi = \beta_0 + \beta_1 AW_i + \varepsilon_i,$$
$$i = 1, \ldots \overline{N}$$

Where N is equal to 258 individuals.

The model has a moderate quality in predicting TR from AW (R=.606), where 36.4% of the total variation in TR can be explained by AW (Adj R^2=.364). In addition, the model is appropriate and statistically significant (F=148.188 and p<.001), so the null hypothesis (B1=0) is rejected, and H1a is verified.

At a significant level of 5%, AW has a statistically significant positive effect on TR (β=.446), meaning that an increase of 1 unit of AW will lead to an increase of 0,446 of TR. This test validates H1a.

TR = 1.502 + 0.446AW

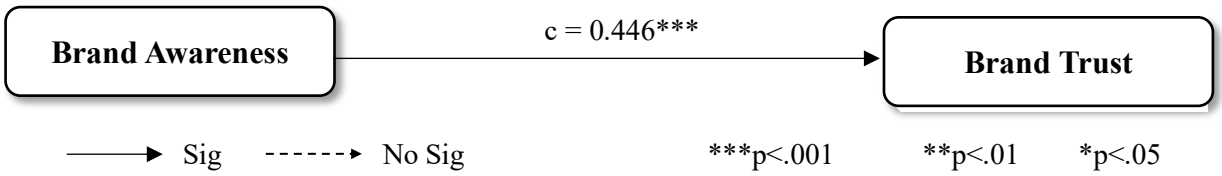


Figure 4: H1a results

H1b: Vaccine satisfaction moderates the relationship between brand awareness and brand trust.

PROCESS model 1 was used to study the moderating impact of vaccine satisfaction on brand awareness and trust. The goal of this analysis is to understand how satisfaction explains how brand awareness affects brand trust on different specifications of the moderator.

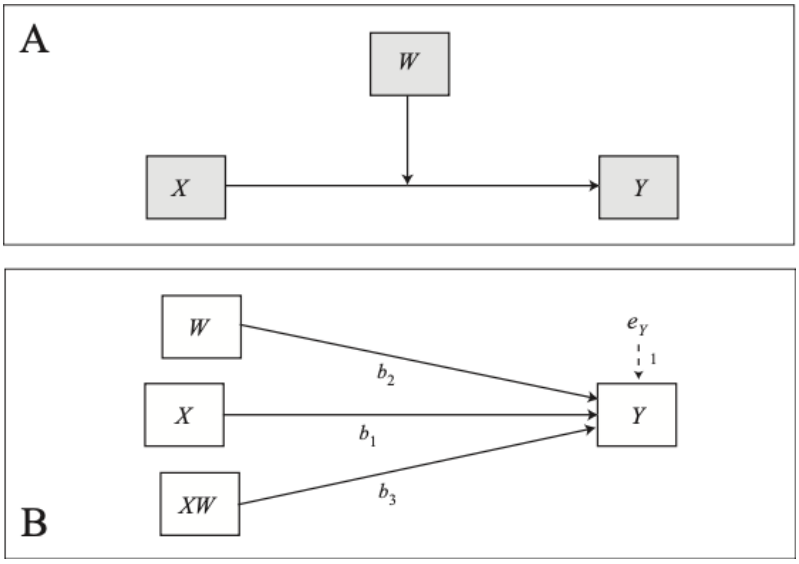


Figure 5: Hayes' Process Macro Model 1 (Moderation Process)

Overall, the model is significant (all p-values for AW, SAT, and INTERCEPT (Int_1), where INTERCEPT = AW * SAT, are significant, i.e., p<.001), and 45.44% of the variance are explained by this model.

Regarding the effects on trust, AW has a positive effect of 0.4039 with a significant p-value (p<.001). Also, SAT has a significant effect on TR (p<.001), and it has a positive effect of 0.2783.

Finally, the interaction between AW and SAT is also significant (p<.001). According to this, when SAT interacts with a high AW of the brand, it has a positive effect of 0.0885 on TR.

In addition, when examining conditional effects, it is possible to go further in the analysis and state the level of vaccine satisfaction and its impact on trust.

The conditional effects of AW at values of the moderator SAT are significant (p<.001) at levels -1.4264, .3416, and 1.3416 (16th, 50th, 84th percentile), and they all can be considered since none of them includes zero in the bootstrapping interval.

It can be seen that a lower value of vaccine satisfaction will result in a positive effect on brand trust of .2777, the average value will result in a higher positive impact of .4341, and the highest vaccine satisfaction value suggests an even higher positive impact of .5226.

Finally, the Johnson-Neyman test was conducted to provide further details on the level at which satisfaction becomes significant. The cut-off point occurs when the p-value=0.05, which corresponds to a level of -2.7586 of satisfaction. Above, the relationship between brand awareness and vaccine satisfaction is significant, and its significance increase the higher the value of satisfaction. Looking at the percentage of the data that is above and below this cut-off, it is shown that 95.2% of the data is significant and 4.8% is not significant.

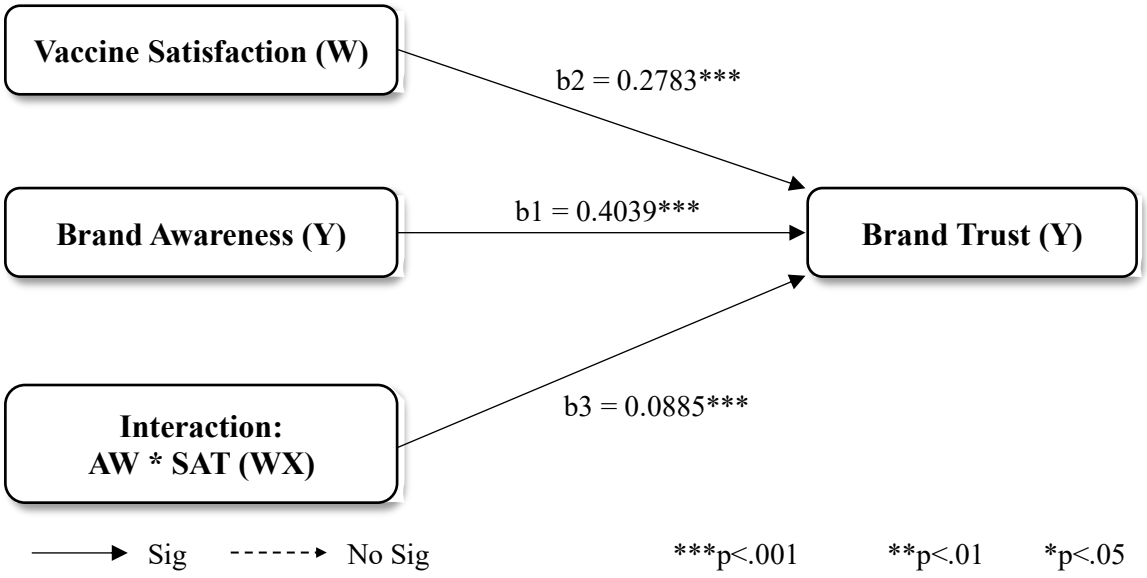


Figure 6: H1b results

4.4.2 Hypothesis 2

H2: Performance perceived risk has a positive effect on financial perceived risk.

To study the impact of performance risk, independent variable, on financial risk, dependent variable, correlation analysis, and linear regression analysis were performed.

$$FRi = \beta_0 + \beta_1 PR_i + \varepsilon_i,$$
$$i = 1, \ldots \overline{N}$$

The model has quite low quality in predicting FR from PR (R=.322) where only 10% of the total variation in FR can be explained by PR (Adj R^2=.100).

The regression model is a good fit for the data, since it is statistically significant, and it predicts the outcome variable (F test =29.538 and p<.001). The null hypothesis (B1=0) is rejected, and the H2 is verified.

At a significant level of 5%, performance risk has a statistically significant positive effect on financial risk (β=0.306), meaning that an increase of 1 unit of PR will lead to an increase of 0.306 of FR. This test validated H2.

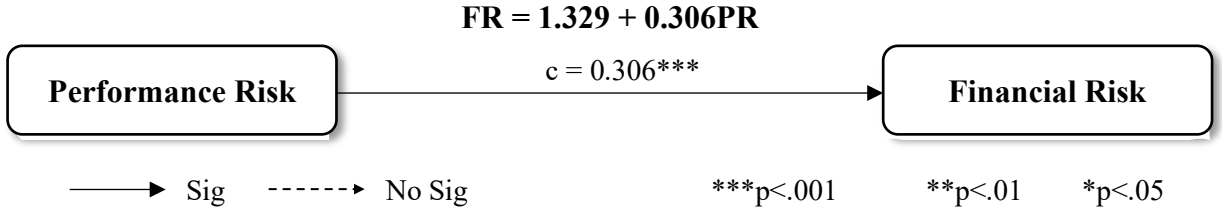


Figure 7: H2 results

4.4.3 Hypothesis 3

H3a: Brand awareness has a negative effect on the performance risk of a new product. Similar to H1a, AW is used as the independent variable, and PR is the dependent variable. The following is the linear regression formula:

$$PRi = \beta_0 + \beta_1 AW_i + \varepsilon_i,$$
$$i = 1, \ldots \overline{N}$$

The model has rather low quality in predicting PR from AW (R=.353) where 12.1% of the total variation in PR can be explained by AW (Adj R^2=.121). In addition, the model is appropriate and statistically significant (F=36.370 and p<.001), so the null hypothesis (B1=0) is rejected, and H3a is verified.

At a confident level of 95%, AW has a statistically negative effect on PR (β=-.241), meaning that an increase of 1 unit of AW will lead to a decrease of 0.241 of PR. Thus, H3a is validated.

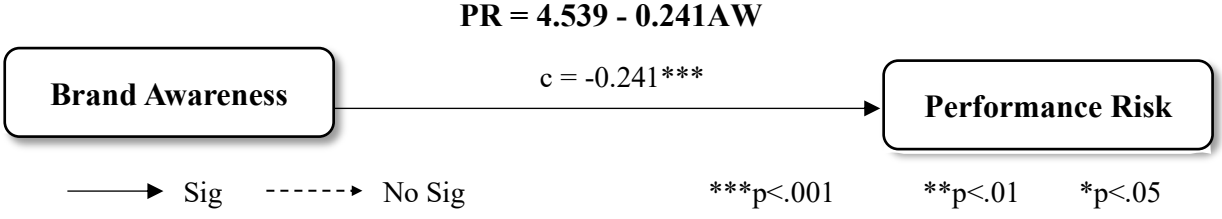


Figure 8: H3a results

H3b: Brand awareness has a negative effect on the financial risk of a new product.

To analyze this effect, a linear regression should be performed:

$$FRi = \beta_0 + \beta_1 AW_i + \varepsilon_i,$$
$$i = 1, \ldots \overline{N}$$

The model is extremely weak in explaining the variance of FR, explaining only 1.27%, which means that financial risk has other more important drivers contributing to its explanation. Nevertheless, this model is significant in predicting purchase intention (p-value=0.041).

Rejecting H0 (β1=0), we conclude that AW has a statistically significant effect on FR at a 95% confidence level. With a 1-unit increase in AW, FR would decrease by 0.083 units. H3b is validated: brand awareness has an inverse impact on financial risk, even though it is very weak.

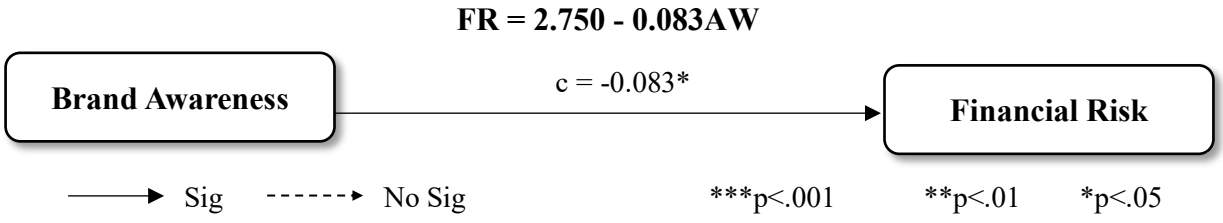


Figure 9: H3b results

4.4.4 Hypothesis 4

H4a: A consumer's trust in a brand negatively affects the consumer's performance risk of a new product.

To test hypothesis 4a, a regression analysis was performed to see whether the independent variable, brand trust, positively affects performance risk (dependent variable).

$$PRi = \beta_0 + \beta_1 TR_i + \varepsilon_i,$$
$$i = 1, \ldots \overline{N}$$

Through the Adjusted R^2 analysis, it is possible to describe that 22.2% of the variations in performance risk around its mean value are explained by the estimated model, meaning that brand trust is a driver of performance risk. The model is significant (p-value<.001) and thus predicts performance risk well. At a significant level of 5%, TR has a statistically significant negative effect on PR (β=-.440), meaning that an increase of 1 unit of TR will lead to a decrease of 0.44 of PR. This test validated the H4a.

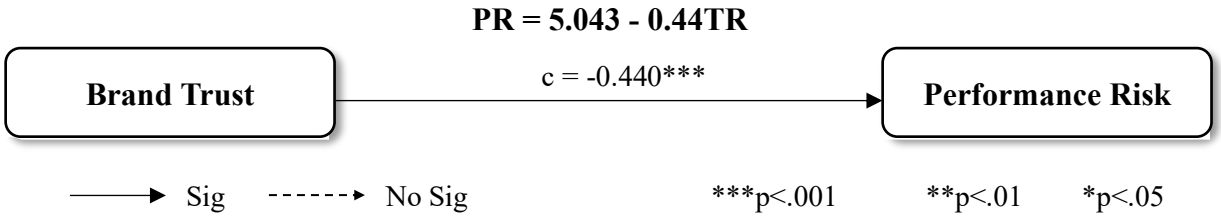


Figure 10: H4a results

H4b: A consumer's trust in a brand negatively affects the consumer's perceived financial risk of a new product.

To analyze this effect, a linear regression analysis should be performed:

$$FRi = \beta_0 + \beta_1 TR_i + \varepsilon_i,$$
$$i = 1, \ldots \overline{N}$$

The model has very low quality in predicting FR from TR (R=.154), where only 2% of the total variation in FR can be explained by TR (Adj R^2=.02). Moreover, the model is appropriate and statistically significant (F=6.214 and p=.013), so the null hypothesis (B1=0) is rejected, and H4b is verified.

At a significant level of 5%, TR has a statistically significant negative effect on FR (β=-.136), meaning that a 1-unit increase in TR will lead to a decrease of -0.136 in FR. Although the relation is very weak, this test validates H4b.

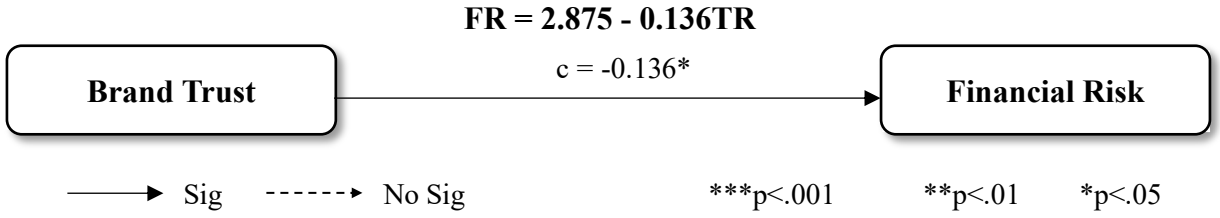


Figure 11: H4b results

4.4.5 Hypothesis 5

H5: Brand awareness has a positive effect on the perceived quality of a new product.

In order to analyze the direct effect of AW on QU, a linear regression analysis should be performed, where AW functions as a predictor and QU as the outcome variable:

$$QUi = \beta_0 + \beta_1 AW_i + \varepsilon_i,$$
$$i = 1, \ldots \overline{N}$$

The model has a moderate quality in predicting QU from AW (R=.400), where 15.7% of the total variation in QU can be explained by AW (Adj R^2=.157). In addition, the model is appropriate and statistically significant (F=48.693 and p<.001), so the null hypothesis (B1=0) is rejected, and H5 is verified.

At a significant level of 5%, AW has a statistically significant positive effect on QU (β=0.211), meaning that an increase of 1 unit of AW will lead to an increase of 0.211 of QU. This test validates H5.

QU = 3.589 + 0.211AW

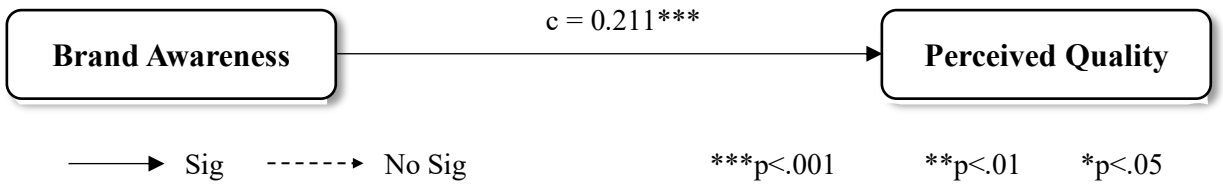


Figure 12: H5 results

4.4.6 Hypothesis 6

H6: A consumer's trust in a brand positively affects the consumer's perceived quality of a new product.

To analyze this effect, a linear regression analysis should be performed:

$$QUi = \beta_0 + \beta_1 TR_i + \varepsilon_i,$$
$$i = 1, \ldots \overline{N}$$

The model has quite high quality in predicting QU from TR (R=.537), where 28.6% of the total variation in QU can be explained by TR (Adj R^2=.286). Moreover, the model is appropriate and statistically significant (F=103.903 and p<.001), so the null hypothesis (B1=0) is rejected, and H6 is verified.

At a significant level of 5%, TR has a statistically significant positive effect on QU (β=.385), meaning that a 1-unit increase in TR will lead to an increase of 0.385 in QU. H6 is validated.

QU = 3.149 + 0.385TR

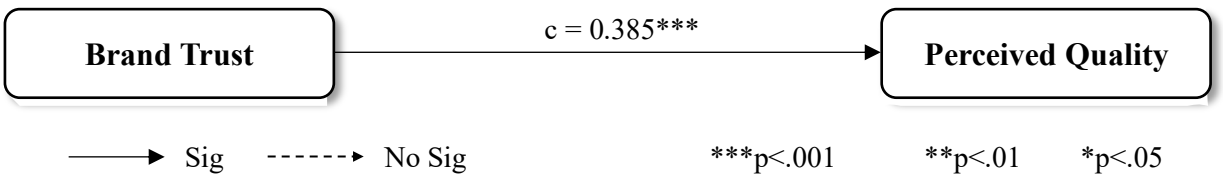


Figure 13. H6 results

4.4.7 Hypothesis 7

H7a: A low level of performance risk towards the new product positively affects the consumer's perceived quality of that same product.

In order to analyze the direct effect of PR on Qu, the following linear regression was conducted:

$$QUi = \beta_0 + \beta_1 TR_i + \varepsilon_i,$$
$$i = 1, \ldots \overline{N}$$

With an adjusted R^2 of 0.414, 41.4% of the total variation in QU can be explained by PR. Moreover, with a F-test =182.445 and p value<.001, the regression model statistically significantly predicts the outcome variable, so it is a good fit for the data. The model is significant, the null hypothesis (B1=0) is rejected, and the hypothesis 7a is verified.

At a significant level of 5%, PR has a statistically significant negative effect on QU (β=-.498), meaning that an increase of 1 unit of PR will lead to a decrease of 0.498 of QU. This test validated H7a.

QU = 6.171 - 0.498PR

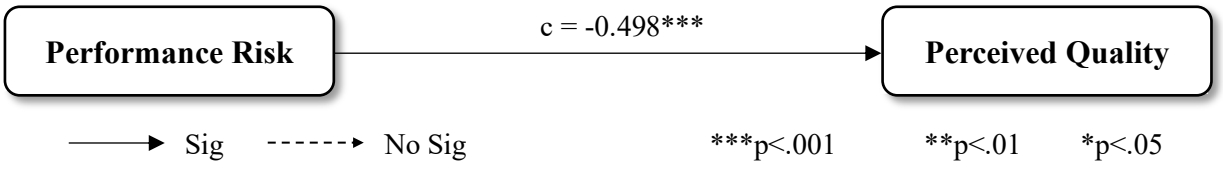


Figure 14: H7a results

H7b: A low level of financial risk towards the new product positively affects the consumer's perceived quality of that same product.

To analyze this effect, a linear regression analysis should be performed:

$$QUi = \beta_0 + \beta_1 TR_i + \varepsilon_i,$$
$$i = 1, \ldots \overline{N}$$

This model explains 9% of the variance in QU, and it is able to predict this variable statistically well (F test=26.558 and p<.001). The null hypothesis (B1=0) is rejected and H7b is verified.

At a significant level of 5%, FR has a statistically significant negative effect on QU (β=-.249), meaning that a 1-unit increase in FR will lead to a decrease of 0.249 in QU. H7b is validated.

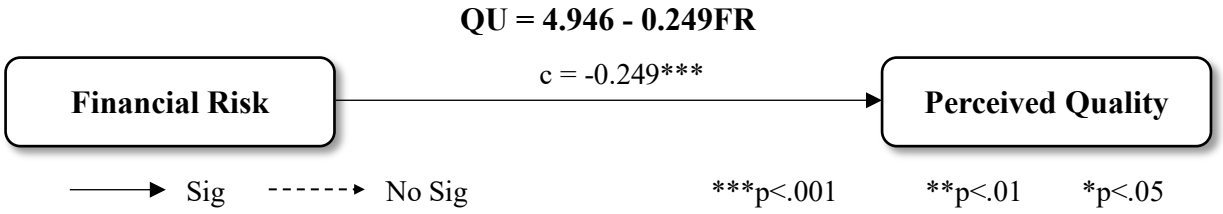


Figure 15: H7b results

4.4.8 Conditional Process Modeling – Moderated Mediation

In order to evaluate the model comprehensively, a final Process Macro was conducted. The selected model was model 83 since it incorporated all the models previously utilized in this investigation.

The first variable outcome is brand trust. Anyway, the result is similar to that tested previously for moderation (H1b). Since this variable is influenced only by AW, SAT and their interaction, the added variables do not represent a change in its significance or coefficient. This is also true for the conditional effects of moderator and cutoff point.

Coming to performance and financial risk, not all of the model's components are significant.
As for performance risk, the overall model is statistically significant (p<.001), and it explains 23.95% of the variance. The financial risk model as a whole is also significant, but it explains just 9.57% of the variance.
Analyzing the coefficients individually within performance risk:

- AW is not significant (p=0.0774).
- TR influences significantly (p<.001) PR by -.3709. Its effect is negative.

Coming to the financial risk model:

- AW is not significant (p=.4431).
- TR is not significant (p=.7655).
- PR influences significantly (p<.001) FR by .2740. Its effect is positive.

In both instances, it appears that the influence of each variable has diminished since it was evaluated in the hypotheses: for example, the association between trust and performance risk is still there and is significant, but its effect has decreased from 0.44 to 0.37. The link between trust and financial risk has shifted from significant to insignificant (p=.7655).

The reasoning behind this might be that as more complex the model becomes, the less important each variable of the model becomes.

Finally, the last outcome variable is the dependent variable, perceived quality. The overall model is significant (p<.001), and it explains well 50.34% of the variance, which is high. Coming to the individual coefficients:

- AW is not significant (p=.4632).
- TR influences significantly (p<.001) QU by .1994. Its effect is positive.
- PR influences significantly (p<.001) QU by -.3601. Its effect is negative.
- FR influences significantly (p=.0172) QU by -.0951. Its effect is negative.

As stated previously, all factors have lost a substantial amount of the influence that their effects had on the model.

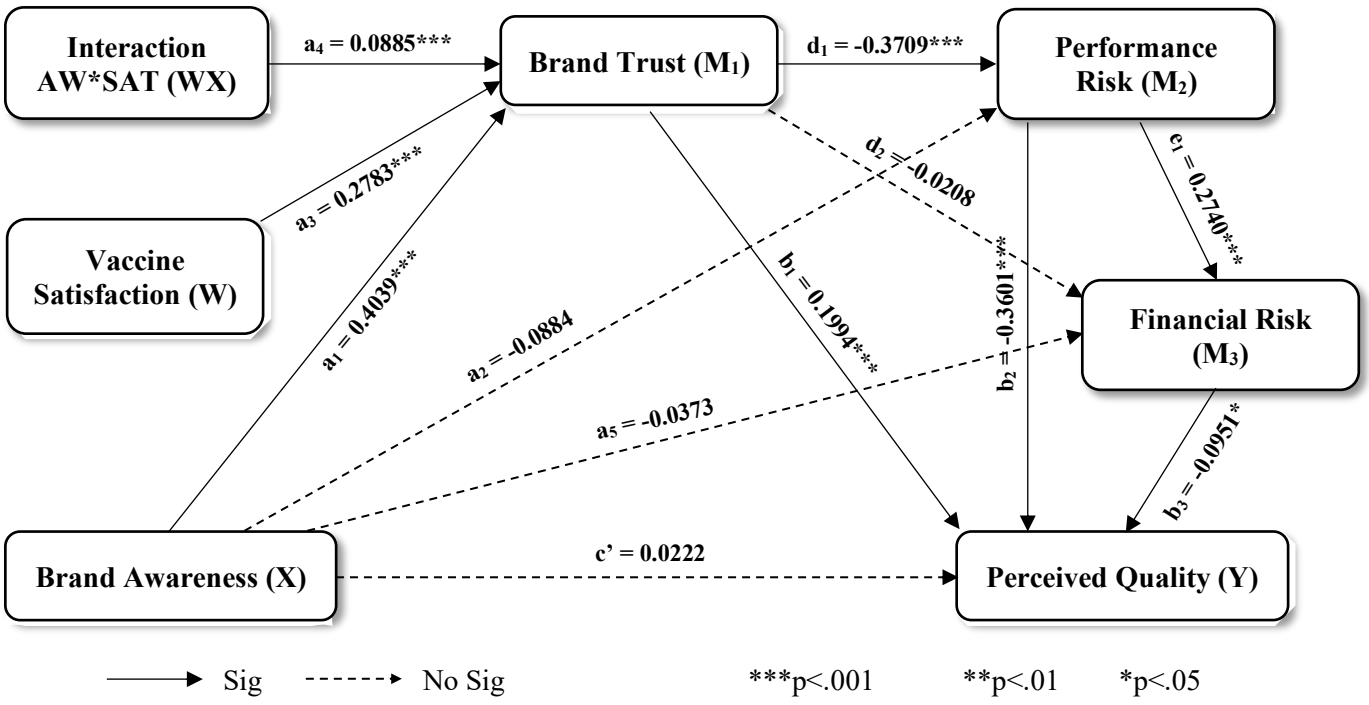


Figure 16: Statistical model with coefficients

Figure 16 demonstrates that the model is still highly significant and adequately explains fifty percent of the variation of the variables (R^2 for perceived quality, which is the dependent variable of the whole model, is 0.5034).

4.5 Further Results

Before moving on to the concluding chapter, an analysis was conducted to determine how the results of the survey changed in response to the different stimuli respondents were exposed to and whether the results showed statistically significant differences, proving that different brands influence the results and the values of each measure. Al the results are expressed in Appendix 4.13.

To do this, a One-way ANOVA test was performed to compare the means of each variable and determine if these means differ statistically. For each variable (AW, TR, PR, FR, QU), a different hypothesis was proposed, in which the null hypothesis to reject was the same:

$$H0: \mu_{Pfizer} = \mu_{Astrazeneca} = \mu_{Dompé} = \mu_{Roche}$$

The results of the Robust Test of Equality of Means and their significance are summarized in the table below:

	Welch test	p-value
Brand Awareness	<.001	<.001
Brand Trust	<.001	<.001
Performance Risk	.134	.091
Financial Risk	.160	.206
Perceived Quality	.055	.048

Table 4: One-Way ANOVA results

Looking at the results, it is possible to reject the null hypothesis that the means are equal only for brand awareness and brand trust.

Starting with brand awareness, looking at the Post Hoc Test and at Games-Howell, all the brands differ significantly from one another except for AstraZeneca and Roche (p=.521).

Taking a look at the mean differences, Pfizer is the brand with the highest awareness throughout the population (μ=4.80), while Dompé is the least known (μ=2.1292). AstraZeneca (μ=3.8302) and Roche (μ=3.3836) are less known than Pfizer and more known than Dompé.

A similar outcome is the one for brand trust: the means are statistically different (p<.001), but only a few means differ significantly from each other: Pfizer and Dompé (post hoc test p<.001) and Pfizer and Roche (post hoc test p=.049). Again, Pfizer (μ=3.60) is more trusted than Dompé (μ=2.5038) and Roche (μ=2.9966).

For what concerns perceived quality, even though the homogeneity assumption is violated (Welch test p=.055), the means are statistically different (p=.048). A relationship between brand and value of QU exists, but only between Pfizer and Dompé (post hoc test p=.038): the new Pfizer product has a higher perceived quality (μ=4.5896) than Dompé's (μ=4.0821).

Finally, the four brands were separated into two groups: Pfizer and AstraZeneca made up the first group, while Roche and Dompé formed the second. The difference between the two is that the first category consists of brands that have a patent on the Covid-19 vaccine, whilst the second group does not.
This time, the Independent-Sample T-Test was used since there were only two groups.
For each variable (AW, TR, PR, FR, QU), a different hypothesis was proposed, in which the null hypothesis to reject was the same:

$$H0: \mu_{brandswithvaccine} = \mu_{brandswithoutvaccine}$$

The results are expressed in the following table:

	Levene's test	**p-value**	**Mean Difference**
Brand Awareness	<.001	<.001	1.58058
Brand Trust	.007	<.001	0.64158
Performance Risk	.953	.103	-0.28134
Financial Risk	.118	.140	-0.24227
Perceived Quality	.734	.126	.20393

Table 5: Independent-Sample T Test results

Similar to what happened in the previous test, it is possible to reject the null hypothesis that the means are equal only for brand awareness and brand trust.
At a significant level of 5%, brand awareness is statistically affected differently by the brands with the vaccine and brands without. The brands that produced the vaccine have a higher mean of awareness (μ=4.3733) than those that did not produce it (μ=2.7928).
Similar is the discussion around brand trust: a consumer's trust towards a brand is affected by the fact that the brand has or has not produced the Covid-19 vaccine. In particular, those brands that produced the vaccine are more trusted (μ=3.4188) than those that did not produce it (μ=2.7772).

CHAPTER 5 – CONCLUSIONS and LIMITATIONS

This last chapter will highlight the study's key results and insights, the management and academic significance of the study's findings, as well as limits and ideas for further research.

5.1 Main Findings and Conclusions

This study aimed to investigate the relationship between brand awareness, trust, perceived risk, and perceived quality in the pharmaceutical industry. Based on the research problem, three research questions were developed and attempted to be answered. This section describes the primary results of each RQ.

RQ1:What are the brand trust and awareness of these pharma companies in 2022, and is there a relationship between them?

The findings of the survey indicate that the four brands that were presented to respondents had different values of awareness and trust.

Using a one-way ANOVA, it was possible to validate that these means are significantly different, and the results are as follows.

Pfizer, with an awareness mean score of 4.80, is the brand that people are most familiar with. AstraZeneca (μ=3.83) and Roche (μ=3.38) follow, with ratings that swing around the scale's mean (3.5), indicating that they are not as well known. Dompé, on the other hand, has a relatively low value (μ=2.13), making it the least known and recognized brand among the four.

Regarding brand trust, the outcome was comparable. Pfizer is once again the brand with the highest score (μ=3.60). Even so, the mean value is not very high, indicating that customers do not think they can rely on Pfizer to completely please them and solve their concerns. AstraZeneca (μ=3.18), Roche (μ=2.99), and Dompé (μ=2.50) appear to be brands that consumers f have difficulty trusting and do not regard to be as trustworthy as they might be in addressing their problems.

Concerning brand awareness, it is demonstrated that vaccine-producing brands have a greater mean value for brand awareness (μ=4.37) than the other group of brands (μ=2.80), which are largely unfamiliar to consumers.

Similar considerations pertain to brand trust: a consumer's faith and trust in a pharma brand is affected by whether or not the brand produced the vaccine, and the brands that did are more trusted on average (μ=3.42) than those that did not (μ=2.78). Even if the mean value for neither group is particularly high, consumer trust in brands such as Roche and Dompé is quite poor.

Finally, concerning the relationship between these two factors, a linear regression study revealed that a connection exists and that its effect is positive and impactful (β=.446).
From the consumer perspective, this means that a brand will look more trustworthy and reliable the greater its popularity and recognition.

RQ2: Does the level of personal satisfaction with the vaccine affect the brand awareness and trust?

The presence of a mediator – the satisfaction of the vaccine experience – has been found to modify the relationship between awareness and trust.
In the moderation model, the primary focus is on the interaction term between awareness and satisfaction, which is significant (p.001) and has a positive effect on trust of 0.0885.
The relationship is significant, and the moderator has an impact on said relationship: a person's level of trust in a pharmaceutical brand will be affected if they are satisfied or dissatisfied with their experience with the Covid-19 shot.
In other words, awareness still has a positive influence on trust, but this effect is diminished if the personal experience with the vaccination has not been satisfying. On the other hand, if he or she is satisfied, they will have greater faith and trust in the pharma brand they are considering.

RQ3: How do awareness and trust affect the perceived quality and risk of a new pharma product?

Brand awareness negatively impacts performance and perceived financial risk, and it positively affects perceived quality.
When a pharmaceutical brand is well-known, its name, logo, and characteristics become a coping strategy for the risk associated with a new product, and the amount of uncertainty related to its purchase and performance decreases, helping consumers feel more confident in their decision. Note that although the correlation between awareness and financial risk is significant, it is quite weak (Adj R2 =.0127).

Moreover, perceived quality is affected by awareness: a high degree of brand awareness leads to a more favorable attitude toward its products, reassuring consumers of the expected quality of the pharmaceutical product they are contemplating purchasing.

Brand trust has a negative effect on perceived performance and financial risk but a positive effect on perceived quality.
The effect of trust on performance risk is quite strong (c = -0.440): if a customer has faith and trust in a brand, the likelihood that a product from the same firm would fail to achieve the desired outcomes is very low, and consumers will perceive less danger.
The same holds true for financial risk, although the association between the two variables is not as strong (Adj R^2=.02): a trustworthy brand is expected to provide items that represent a good value for money and will not misuse financial resources.
Lastly, the association between trust and perceived quality is positive and robust (Adj R2=.286): brand trust functions as an assurance of a product's quality, and the more a pharma brand is trusted, the greater the perceived quality of the product.

Finally, it is fair to discuss the relationship between perceived risk and perceived quality. They are both significant, and their effect is negative.
Performance risk explains a substantial proportion of the variance in perceived quality (Adj R^2 =.414). As the perceived performance risk of a product decreases, its perceived quality rises dramatically.
Financial risk has a similar effect, although the association is not as strong (Adj R^2=.09) and the effect is not as significant (c=-0.249). A lower financial risk value results in a stronger perception of a product's quality, although not as much as for performance.

5.2 Managerial and Academic Implications

Branding has become a major focus for both academics and managers, together with the acknowledgement of brands as one of a company's most valuable assets.
In pharmaceuticals, in particular, there is much discussion around the empowered consumer/patient. Armed with the internet and a serious interest, he or she wants to know where their prescriptions come from and what the corporate brand behind them stands for.

In terms of academic relevance, this study gives more information regarding the role of brand awareness and brand trust in the pharmaceutical industry, as well as their ability to influence consumers' perceptions of the risk and quality of their products.
Since a focus on this discipline is relatively new and its importance has only developed in the past years, these factors and their relationships have been researched scarcely or not at all, indicating how this study enlarges the body of knowledge on this topic.
Lastly, the role of the Covid-19 vaccine as a personal experience with which individuals may be satisfied or dissatisfied could enrich the research as well and become a variable that attracts attention and is employed in subsequent research.

From a managerial perspective, this study uncovers relevant findings for pharmaceutical marketeers seeking to establish strong brands and exploit brand equity as a competitive advantage. A high level of brand awareness enhances brand trust and perceived product quality while decreasing perceived product risk. Brand managers should be aware of this to make practical long-term investments that support marketing and branding initiatives in order to manage the sources of brand awareness and trust and to guarantee high-performing, cost-effective medications.
Right now, Pfizer is pushing its corporate brand like never before, sponsoring media channels' programs, sports and weather, and starring in late-night skits, social media, and television commercials. It is also the leader in the industry.

5.3 Limitations and Further Research

Due to its academic purpose, this study is subject to a number of restrictions and limits.

First, time constraints were an obstacle. While this search yielded results for works published in 2019 and 2020, other papers were published after that time frame. The literature review can therefore be continued for future investigations. In addition, future research is required to investigate the trends of modifications and alterations in pharmaceutical marketing techniques as a result of COVID-19.

Then, the data collection was done using a non-random sampling method and convenience methodology, which produces a biased sample. In addition, the online poll was distributed primarily on Facebook and LinkedIn, reducing the number of responders.
Each stimulus was delivered an average of 65 times, which is not a significant quantity.

To address this issue, the study might be repeated with a representative sample and, preferably, a larger number of responders.

Another limitation is the absence of comparable publications in the literature, possibly from pre-pandemic times, making it impossible to compare the numbers and values obtained and to attribute the reason behind eventual changes to Covid-19 and the production of the vaccine against it. Also, face-to-face interviews might help in this sense, considering the higher level of interactivity and extended responses (Mann & Stewart, 2000).

This analysis focused on modifications and shifts in marketing techniques caused by Covid-19 in a particular industry (i.e., pharmaceuticals). Consequently, the findings cannot be generalized and applied to other industries.
In addition, the research was limited to a particular product – cough syrup – which raises issues about the generalizability of the conclusions for the pharmaceutical business. Therefore, additional study is required to test these results on different drugs and medicines.

Finally, pharmaceutical marketing, far more than the classic consumer marketing framework, is deeply influenced by regulations and laws. Given there appears to be a lack of evidence in the literature review on pharmaceutical marketing about this influence on a pharmaceutical company's strategy, it was impossible to investigate this problem in the present review.

REFERENCE LIST

Aaker, D. A. (2009). *Managing brand equity* simon and schuster.

Aaker, D. A. (2012). *Building strong brands* Simon and Schuster.

Agarwal, S., & Teas, R. K. (2001). Perceived value: Mediating role of perceived risk. *Journal of Marketing Theory and Practice, 9*(4), 1-14. doi:10.1080/10696679.2001.11501899

Alba, J. W., & Hutchinson, J. W. (1987). Dimensions of consumer expertise. *Journal of Consumer Research, 13*(4), 411-454.

Arslan, Y., Geçti, F., & Zengin, H. (2013). Examining perceived risk and its influence on attitudes: A study on private label consumers in turkey. *Asian Social Science, 9*(4), 158.

Ayati, N., Saiyarsarai, P., & Nikfar, S. (2020). Short and long term impacts of COVID-19 on the pharmaceutical sector. *Daru, 28*(2), 799-805. doi:10.1007/s40199-020-00358-5

Bauer, R. A. (1960). Consumer behavior as risk taking. Paper presented at the *Proceedings of the 43rd National Conference of the American Marketing Assocation, June 15, 16, 17, Chicago, Illinois, 1960,*

Bettman, J. R. (1973). Perceived risk and its components: A model and empirical test. *Journal of Marketing Research, 10*(2), 184-190.

Bharadwaj, S. G., Varadarajan, P. R., & Fahy, J. (1993). Sustainable competitive advantage in service industries: A conceptual model and research propositions. *Journal of Marketing, 57*(4), 83-99.

Blau, P. M. (2017). *Exchange and power in social life* Routledge.

Blendon, R. J., Kim, M., & Benson, J. M. (2001). The public versus the world health organization on health system performance. *Health Affairs, 20*(3), 10-20.

Buil, I., de Chernatony, L., & Martínez, E. (2008). A cross-national validation of the consumer-based brand equity scale. *The Journal of Product & Brand Management, 17*(6), 384-392. doi:10.1108/10610420810904121

Cortina, J. M. (1993). What is coefficient alpha? an examination of theory and applications. *Journal of Applied Psychology, 78*(1), 98.

Kothari, C. R. (2004). Research methodology: Methods and techniques. New Age International.

Dagger, T. S., Sweeney, J. C., & Johnson, L. W. (2007). A hierarchical model of health service quality: Scale development and investigation of an integrated model. *Journal of Service Research, 10*(2), 123-142.

Delgado-Ballester, E. (2004). Applicability of a brand trust scale across product categories: A multigroup invariance analysis. *European Journal of Marketing, 38*(5/6), 573-592.

Delgado-Ballester, E., Munuera-Aleman, J. L., & Yague-Guillen, M. J. (2003). Development and validation of a brand trust scale. *International Journal of Market Research, 45*(1), 35-54.

Dowling, G. R., & Staelin, R. (1994). A model of perceived risk and intended risk-handling activity. *Journal of Consumer Research, 21*(1), 119-134.

Du Plooy, H. (2012). Measuring brand loyalty in the pharmaceutical industry of South Africa (Doctoral dissertation, North-West University).

Elliott, R., & Yannopoulou, N. (2007). The nature of trust in brands: A psychosocial model. *European Journal of Marketing,*

Ettenson, R. (1993). Brand name and country of origin effects in the emerging market economies of russia, poland and hungary. *International Marketing Review, 10*(5)

Foroudi, P. (2019). Influence of brand signature, brand awareness, brand attitude, brand reputation on hotel industry's brand performance. *International Journal of Hospitality Management, 76*, 271-285. doi:10.1016/j.ijhm.2018.05.016

Frost, T., Stimpson, D. V., & Maughan, M. R. (1978). Some correlates of trust. *Journal of Psychology, 99*(1), 103.

Garvin, D. (1983). Quality on the line. Harv. Bus. Rev., 65-75.

Grewal, D., Gotlieb, J., & Marmorstein, H. (1994). The moderating effects of message framing and source credibility on the price-perceived risk relationship. *Journal of Consumer Research, 21*(1), 145-153.

Ha, H. (2004). Factors influencing consumer perceptions of brand trust online. *Journal of Product & Brand Management, 13*(5), 329-342.

Han, C. M. (1989). Country image: Halo or summary construct? *Journal of Marketing Research, 26*(2), 222-229.

Hartmann, N. N., & Lussier, B. (2020). Managing the sales force through the unexpected exogenous COVID-19 crisis. *Industrial Marketing Management, 88*, 101-111. doi:10.1016/j.indmarman.2020.05.005

Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* Guilford publications.

Hiscock, J. (2003). Most trusted brands 2002. *Marketing*, 1.

Horton, R. L. (1976). The structure of perceived risk: Some further progress. *Journal of the Academy of Marketing Science, 4*(4), 694-706.

Jacoby, J., & Kaplan, L. B. (1972). The components of perceived risk. *ACR Special Volumes,*

Johansson, J. K. (1989). Determinants and effects of the use of "Made in "Labels. *International Marketing Review, 6*(1)

Kaplan, L. B., Szybillo, G. J., & Jacoby, J. (1974). Components of perceived risk in product purchase: A cross-validation. *Journal of Applied Psychology, 59*(3), 287.

Keller, K. L. (1993). Conceptualizing, measuring, and managing customer-based brand equity. *Journal of Marketing, 57*(1), 1-22.

Keller, K. L., Parameswaran, M. G., & Jacob, I. (2011). *Strategic brand management: Building, measuring, and managing brand equity* Pearson Education India.

Khan, F., Hussain, S., Basak, S., Moustafa, M., & Corcoran, P. (2021). A Review of Benchmark Datasets and Training Loss Functions in Neural Depth Estimation. *IEEE Access*, 9, 148479-148503.

Kim, D. J., Ferrin, D. L., & Rao, H. R. (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decision Support Systems, 44*(2), 544-564.

Klaus, P. P., & Maklan, S. (2013). Towards a better measure of customer experience. International journal of market research, 55(2), 227-246.

Kogan, N., & Wallach, M. A. (1964). Risk taking: A study in cognition and personality.

Landsman, V., Verniers, I., & Stremersch, S. (2013). *The successful launch and diffusion of new therapies* Springer New York. doi:10.1007/978-1-4614-7801-0_7

Laroche, M., Kim, C., & Zhou, L. (1996). Brand familiarity and confidence as determinants of purchase intention: An empirical test in a multiple brand context. *Journal of business Research*, 37(2), 115-120.

Larzelere, R. E., & Huston, T. L. (1980). The dyadic trust scale: Toward understanding interpersonal trust in close relationships. *Journal of Marriage and the Family*, 595-604.

LaTour, S. A., & Peat, N. C. (1979). Conceptual and methodological issues in consumer satisfaction research. *ACR North American Advances,*

Laukka, E., Rantakokko, P., & Suhonen, M. (2019). Consumer-led health-related online sources and their impact on consumers: An integrative review of the literature. *Health Informatics Journal, 25*(2), 247-266.

Leong, S. M. (1993). Consumer decision making for common, repeat-purchase products: A dual replication. *Journal of Consumer Psychology*, 2(2), 193-208.

Louis, D., & Lombart, C. (2010). Impact of brand personality on three major relational consequences (trust, attachment, and commitment to the brand). *Journal of product & brand management*.

Lu, L. C., Chang, W. P., & Chang, H. H. (2014). Consumer attitudes toward blogger's sponsored recommendations and purchase intention: The effect of sponsorship type, product type, and brand awareness. *Computers in Human Behavior*, 34, 258-266.

Luhmann, N. (2001). Familiarity, confidence, trust: Problems and alternatives. *Reseaux, 108*(4), 15-35.

Macdonald, E. K., & Sharp, B. M. (2000). Brand awareness effects on consumer decision making for a common, repeat purchase product: A replication. *Journal of business research*, 48(1), 5-15.

Maklan, S. (2012). EXQ: A multiple-item scale for assessing service experience. *Journal of Service Management,*

Malhotra, N. K., & Malhotra, N. K. (2012). Basic marketing research: Integration of social media.

Malhotra, N., Nunan, D., & Birks, D. (2017). *Marketing research: An applied approach* Pearson.

Mann, C., & Stewart, F. (2000). *Internet communication and qualitative research: A handbook for researching online* Sage.

Mieres, C. G., Martin, A. M. D., & Gutiérrez, J. A. T. (2006). Antecedents of the difference in perceived risk between store brands and national brands. *European Journal of Marketing*.

Moorman, C., Deshpande, R., & Zaltman, G. (1993). Factors affecting trust in market research relationships. *Journal of Marketing, 57*(1), 81-101.

Moorman, C., Zaltman, G., & Deshpande, R. (1992). Relationships between providers and users of market research: The dynamics of trust within and between organizations. *Journal of Marketing Research, 29*(3), 314-328.

Motameni, R., & Shahrokhi, M. (1998). Brand equity valuation: a global perspective. *Journal of product & brand management*.

Mutahar, A. M., Daud, N. M., Ramayah, T., Isaac, O., & Aldholay, A. H. (2018). The effect of awareness and perceived risk on the technology acceptance model (TAM): Mobile banking in yemen. *International Journal of Services and Standards, 12*(2), 180-204.

Netemeyer, R. G., Krishnan, B., Pullig, C., Wang, G., Yagci, M., Dean, D., ... & Wirth, F. (2004). Developing and validating measures of facets of customer-based brand equity. *Journal of business research*, 57(2), 209-224.

Newton, D. A., & Cox, D. (1967). A marketing communications model for sales management. *Risk Taking and Information Handling in Consumer Behavior*, 579-602.

Oh, H. (2000). The effect of brand class, brand awareness, and price on customer value and behavioral intentions. *Journal of Hospitality & Tourism Research (Washington, D.C.), 24*(2), 136-162. doi:10.1177/109634800002400202

Oliver, R. L. (1977). Effect of expectation and disconfirmation on postexposure product evaluations: An alternative interpretation. *Journal of Applied Psychology, 62*(4), 480.

Oliver, R. L. (2014). *Satisfaction: A behavioral perspective on the consumer* Routledge.

Oliver, R. L. (1999). Whence consumer loyalty? *Journal of Marketing, 63*(4_suppl1), 33-44. doi:10.1177/00222429990634s105

Panchal, S. K., Khan, B. M., & Ramesh, S. (2012). Importance of 'brand loyalty, brand awareness and perceived quality parameters' in building brand equity in the indian pharmaceutical industry. *Journal of Medical Marketing, 12*(2), 81-92.

Pappas, N. (2016). Marketing strategies, perceived risks, and consumer trust in online buying behaviour. *Journal of Retailing and Consumer Services, 29*, 92-103.

Peter, J. P., & Ryan, M. J. (1976). An investigation of perceived risk at the brand level. *Journal of Marketing Research, 13*(2), 184-188.

Rao, A. R., & Monroe, K. B. (1989). The effect of price, brand name, and store name on buyers' perceptions of product quality: An integrative review. *Journal of Marketing Research, 26*(3), 351-357.

Rempel, J. K., Holmes, J. G., & Zanna, M. P. (1985). Trust in close relationships. *Journal of Personality and Social Psychology, 49*(1), 95.

Roselius, T. (1971). Consumer rankings of risk reduction methods. Journal of marketing, 35(1), 56-61.

Rossiter, J. R., & Percy, L. (1987). *Advertising and promotion management* McGraw-Hill Book Company.

Sanyal, S. N., & Datta, S. K. (2011). The effect of perceived quality on brand equity: An empirical study on generic drugs. *Asia Pacific Journal of Marketing and Logistics,*

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students* Pearson education.

Sawad, A. B., & Turkistani, F. (2021). Pharmaceutical marketing transformation due to COVID-19 pandemic. *Journal of Pharmaceutical Research International,* , 91-99. doi:10.9734/jpri/2021/v33i33A31776

Seltman, H. J. (2015). Experimental Design and Analysis. Pittsburgh, PA: Carnegie Mellon University.

Shah, S. N. (2021). The Importance of Brand Awareness in the Pharmaceutical Industry. *The Healthcare Guys.*

Sheau-Fen, Y., Sun-May, L., & Yu-Ghee, W. (2012). Store brand proneness: Effects of perceived risks, quality and familiarity. Australasian Marketing Journal (AMJ), 20(1), 48-58.

Shimp, T. A., & Bearden, W. O. (1982). Warranty and other extrinsic cue effects on consumers' risk perceptions. *Journal of Consumer Research, 9*(1), 38-46.

Smith, S., & Wheeler, J. (2002). *Managing the customer experience: Turning customers into advocates*. Pearson Education.

Sweeney, J. C., Soutar, G. N., & Johnson, L. W. (1999). The role of perceived risk in the quality-value relationship: A study in a retail environment. *Journal of Retailing, 75*(1), 77-105.

Taylor, A. B., MacKinnon, D. P., & Tein, J. (2008). Tests of the three-path mediated effect. *Organizational Research Methods, 11*(2), 241-269.

Tsiros, M., & Heilman, C. M. (2005). The effect of expiration dates and perceived risk on purchasing behavior in grocery store perishable categories. *Journal of Marketing, 69*(2), 114-129.

Watts, W. A. (1968). Predictability and pleasure: Reactions to the disconfirmation of expectancies. *Theories of Cognitive Consistency: A Sourcebook,* , 469-478.

Weaver, D., & Brickman, P. (1974). Expectancy, feedback, and disconfirmation as independent factors in outcome satisfaction. *Journal of Personality and Social Psychology, 30*(3), 420.

Williamson, O. E. (1993). Calculativeness, trust, and economic organization. *The Journal of Law and Economics, 36*(1, Part 2), 453-486.

Yoo, B., & Donthu, N. (2002). Testing cross-cultural invariance of the brand equity creation process. *Journal of Product & Brand Management,*

Yoo, B., Donthu, N., & Lee, S. (2000). An examination of selected marketing mix elements and brand equity. *Journal of the Academy of Marketing Science, 28*(2), 195-211.

Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. *Journal of Marketing, 52*(3), 2-22.

Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of Marketing, 60*(2), 31-46.

APPENDICES

Appendix 1: Survey

Block 1: Default Question

Q1: The following questionnaire is part of a Final Thesis at Universidade Católica. All information is collected anonymously and will not be disclosed outside the project. Thank you for your help!

(1) Yes (2) No

Block 2: Vaccine

Q2 Did you get a Covid vaccine shot?

(1) Yes (2) No

Skip to: End of Block if Did you get a Covid vaccine shot? = No

Q3 What vaccine did you take?

Select more than one option if you more than one in different doses.

(1) Comirnaty (Pfizer/BioNTech)

(2) Spikevax (Moderna)

(3) Vaxzevria (Oxford/Astrazeneca)

(4) Ad26.COV2.S (Janssen Johnson & Johnson)

(5) Other

Q4 How much do you agree with these sentences regarding your personal experience with the Covid vaccine shot? [1 = do not agree at all – 7 = completely agree]

- My feelings towards the experience are positive.
- I feel good about the experience.
- Overall, I am satisfied with the experience.
- I feel satisfied that it was the best result that can be achieved.
- The extent to which the experience has produced the best possible outcome satisfies me.

Block 3: Brand Awareness (from Block 3 to Block 6, each respondent will see and answer to the questions related to only 1 of the 4 brands).

Q5 When answering the following questions, think of XXX. How much do you agree with these sentences regarding XXX? [1 = do not agree at all – 7 = completely agree]

- I am aware of [brand].
- I can recognize Pfizer amongst competing brands.
- When I think of pharmaceutical, Pfizer is one of the brands that comes to mind.
- Pfizer is a pharma brand I am familiar with.
- I know what Pfizer looks like.

Block 4: Brand Trust

Q6 How much do you agree with these sentences regarding ? [1 = do not agree at all – 7 = completely agree]

- Pfizer would be honest and sincere in addressing my concerns.
- I could rely on Pfizer to solve my problem.
- Pfizer would make any effort to satisfy me.
- Pfizer would compensate me in some way for a problem with a product.

Block 5: Perceived Risk

Q7 Imagine that Pfizer is launching a new product: it is a cough syrup. You can buy it at the pharmacy without the need of a prescription. How much do you agree with these sentences regarding Pfizer's new product? [1 = do not agree at all – 7 = completely agree]

- Considering the investment involved, purchase this product would be very risky.
- I think that the purchase of the product would lead to a financial risk for me.
- I believe the overall financial risk associated with the purchase is very high.
- I am very confident that the product will performed as described.
- I am very certain that the product will work satisfactorily.

Block 6: Perceived Quality

Q8 Imagine the same cough syrup. How much do you agree with these sentences regarding Pfizer's new product? The expected product performance is:

- 1 = poor – 7 = excellent

- 1 = inferior – 7 = superior
- 1 = extremely unfavorable – 7 = extremely favorable

Q9 The overall expected product quality is:

- 1 = poor – 7 = excellent
- 1 = inferior – 7 = superior
- 1 = extremely unfavorable – 7 = extremely favorable

Block 7: Manipulation Check

Q10 Which brand logo did you just see?

(1) Astrazeneca
(2) Dompé
(3) Pfizer
(4) Roche

Block 8: Demographics

Q11 Gender

(1) Male
(2) Female
(3) Nonbinary / third gender
(4) Prefer not to say

Q12 Age:_____

Q13 Education level

(1) High school degree

(2) Bachelor’s degree

(3) Master’s degree or higher

Q14 Occupation

(1) Student

(2) Student worker

(3) Employed

(4) Unemployed

(5) Pensioner

Q15 Where do you come from?

(1) Italy

(2) Portugal

(3) Germany

(4) Spain

(5) France

(6) Other:_____

Appendix 2: Descriptive Statistics and Frequencies

Age

		Stimulus of respondent											
		Astrazeneca			Dompé			Pfizer			Roche		
		Count	Row N %	Column N %	Count	Row N %	Column N %	Count	Row N %	Column N %	Count	Row N %	Column N %
Age_Class	<= 28	29	25.2%	54.7%	30	26.1%	46.2%	29	25.2%	43.3%	27	23.5%	37.0%
	29 - 50	9	14.8%	17.0%	12	19.7%	18.5%	20	32.8%	29.9%	20	32.8%	27.4%
	50+	15	18.3%	28.3%	23	28.0%	35.4%	18	22.0%	26.9%	26	31.7%	35.6%

Nationality

		Stimulus of respondent											
		Astrazeneca			Dompé			Pfizer			Roche		
		Count	Row N %	Column N %	Count	Row N %	Column N %	Count	Row N %	Column N %	Count	Row N %	Column N %
Origin	Italy	44	20.5%	83.0%	55	25.6%	84.6%	54	25.1%	80.6%	62	28.8%	84.9%
	Portugal	2	33.3%	3.8%	0	0.0%	0.0%	2	33.3%	3.0%	2	33.3%	2.7%
	Germany	2	50.0%	3.8%	1	25.0%	1.5%	0	0.0%	0.0%	1	25.0%	1.4%
	Spain	0	0.0%	0.0%	1	100.0%	1.5%	0	0.0%	0.0%	0	0.0%	0.0%
	France	0	0.0%	0.0%	1	50.0%	1.5%	1	50.0%	1.5%	0	0.0%	0.0%
	Other	5	16.7%	9.4%	7	23.3%	10.8%	10	33.3%	14.9%	8	26.7%	11.0%

Education

		Stimulus of respondent											
		Astrazeneca			Dompé			Pfizer			Roche		
		Count	Row N %	Column N %	Count	Row N %	Column N %	Count	Row N %	Column N %	Count	Row N %	Column N %
Education	High school diploma	18	22.8%	34.0%	15	19.0%	23.1%	18	22.8%	26.9%	28	35.4%	38.4%
	Bachelor degree	17	25.0%	32.1%	17	25.0%	26.2%	17	25.0%	25.4%	17	25.0%	23.3%
	Master degree or higher	18	16.2%	34.0%	33	29.7%	50.8%	32	28.8%	47.8%	28	25.2%	38.4%

Occupation

		Stimulus of respondent											
		Astrazeneca			Dompé			Pfizer			Roche		
		Count	Row N %	Column N %	Count	Row N %	Column N %	Count	Row N %	Column N %	Count	Row N %	Column N %
Occupation	Student	17	28.8%	32.1%	14	23.7%	21.5%	14	23.7%	20.9%	14	23.7%	19.2%
	Student worker	8	26.7%	15.1%	9	30.0%	13.8%	8	26.7%	11.9%	5	16.7%	6.8%
	Employed	24	16.1%	45.3%	40	26.8%	61.5%	39	26.2%	58.2%	46	30.9%	63.0%
	Unemployed	2	50.0%	3.8%	0	0.0%	0.0%	1	25.0%	1.5%	1	25.0%	1.4%
	Pensioner	2	12.5%	3.8%	2	12.5%	3.1%	5	31.3%	7.5%	7	43.8%	9.6%

Gender

		Stimulus of respondent			
		Astrazeneca Count	Dompé Count	Pfizer Count	Roche Count
Gender	Male	17	29	20	29
	Female	36	35	47	42
	Non binary	0	1	0	0
	Prefer not to say	0	0	0	2

Vaccine

Did you get a Covid-19 vaccine shot?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	250	96.9	96.9	96.9
	No	8	3.1	3.1	100.0
	Total	258	100.0	100.0	

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Pfizer	202	78.3%	56	21.7%	258	100.0%
Moderna	105	40.7%	153	59.3%	258	100.0%
Astrazeneca	29	11.2%	229	88.8%	258	100.0%
J&J	4	1.6%	254	98.4%	258	100.0%

Appendix 3: Cronbach Alfas

Awareness

AWARENESS_Reliability Statistics

Cronbach's Alpha	N of Items
.926	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
AW1	13.6322	65.203	.796	.911
AW2	14.0613	64.665	.853	.899
AW3	14.4330	68.608	.775	.914
AW2	14.1418	64.514	.877	.894
AW5	14.8889	71.607	.730	.923

Trust

TRUST_Reliability Statistics

Cronbach's Alpha	N of Items
.911	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
TR1	9.0345	20.626	.793	.886
TR2	9.1073	19.965	.858	.862
TR3	9.3448	20.688	.842	.869
TR4	9.3410	21.810	.701	.918

Financial Risk

FINANCIAL RISK_Reliability Statistics

Cronbach's Alpha	N of Items
.846	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
FR1	4.6169	8.460	.584	.906
FR2	5.1724	7.359	.797	.706
FR3	5.1303	7.291	.772	.728

Performance Risk

PERFORMANCE RISK_Reliability Statistics

Cronbach's Alpha	N of Items
.896	2

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PR1	4.2644	2.095	.812	.
PR2	4.3908	2.131	.812	.

Perceived Quality

PERCEIVED QUALITY_Reliability Statistics

Cronbach's Alpha	N of Items
.971	6

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
QU1	21.6207	30.159	.878	.969
QU2	21.7854	30.969	.899	.967
QU3	21.7280	30.553	.919	.965
QU4	21.6628	29.794	.925	.964
QU5	21.7701	30.478	.920	.964
QU6	21.7395	30.416	.898	.967

Satisfaction

SATISFACTION_Reliability Statistics

Cronbach's Alpha	N of Items
.943	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
My feelings towards the experience are positive.	22.51	33.624	.844	.931
I feel good about the experience.	22.60	32.851	.862	.927
Overall, I am satisfied with the experience.	22.52	32.877	.906	.920
I feel satisfied that it was the best result that can be achieved.	22.73	33.048	.825	.934
The extent to which the experience has produced the best possible outcome satisfies me.	22.80	34.054	.797	.939

Appendix 4: SPSS results from hypothesis testing

4.1 Hypothesis 1a

Correlations

		AWARENESS	TRUST
AWARENESS	Pearson Correlation	1	.606**
	Sig. (2-tailed)		<.001
	N	258	258
TRUST	Pearson Correlation	.606**	1
	Sig. (2-tailed)	<.001	
	N	258	258

**. Correlation is significant at the 0.01 level (2-tailed).

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	208.348	1	208.348	148.188	<.001[b]
	Residual	359.928	256	1.406		
	Total	568.276	257			

a. Dependent Variable: TRUST

b. Predictors: (Constant), AWARENESS

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.606[a]	.367	.364	1.18574	.367	148.188	1	256	<.001	1.838

a. Predictors: (Constant), AWARENESS

b. Dependent Variable: TRUST

Coefficients[a]

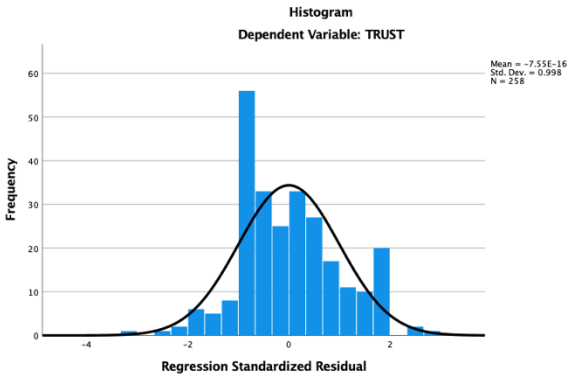
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	1.502	.149		10.086	<.001					
	AWARENESS	.446	.037	.606	12.173	<.001	.606	.606	.606	1.000	1.000

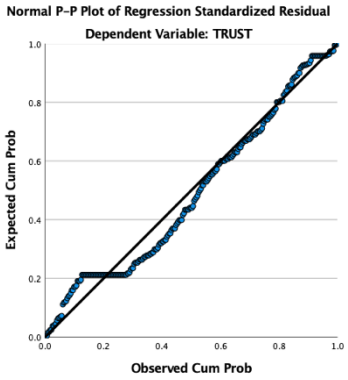
a. Dependent Variable: TRUST

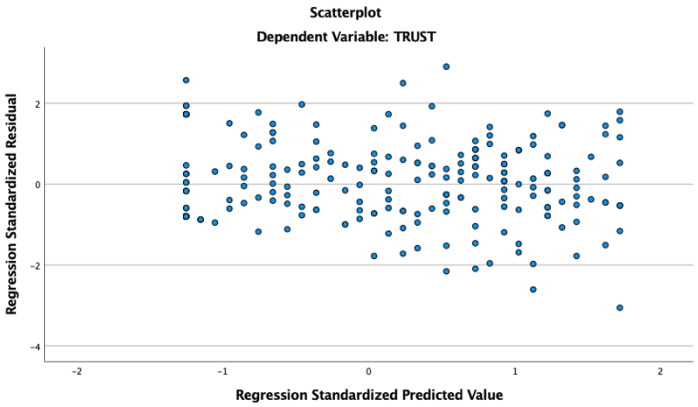
Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	AWARENESS
1	1	1.868	1.000	.07	.07
	2	.132	3.768	.93	.93

a. Dependent Variable: TRUST







4.2 Hypothesis 1b

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : TR
    X  : AW
    W  : SAT

Sample
Size:  250

**************************************************************************
OUTCOME VARIABLE:
 TR

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .6741      .4544     1.2300    68.3011     3.0000   246.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.0429      .0714    42.6016      .0000     2.9022     3.1836
AW            .4039      .0356    11.3522      .0000      .3338      .4740
SAT           .2783      .0514     5.4146      .0000      .1770      .3795
Int_1         .0885      .0248     3.5675      .0004      .0396      .1373

Product terms key:
 Int_1    :        AW       x        SAT

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0282    12.7271     1.0000   246.0000      .0004
----------
    Focal predict: AW       (X)
          Mod var: SAT      (W)

Conditional effects of the focal predictor at values of the moderator(s):

        SAT     Effect         se          t          p       LLCI       ULCI
    -1.4264      .2777      .0534     5.2044      .0000      .1726      .3828
      .3416      .4341      .0355    12.2364      .0000      .3642      .5040
     1.3416      .5226      .0454    11.5064      .0000      .4331      .6120

Moderator value(s) defining Johnson-Neyman significance region(s):
      Value    % below    % above
    -2.7586     4.8000    95.2000

Conditional effect of focal predictor at values of the moderator:
        SAT     Effect         se          t          p       LLCI       ULCI
    -4.6584     -.0083      .1253     -.0659      .9475     -.2550      .2385
```

```
    -4.3584       .0183       .1181       .1547       .8771      -.2144       .2510
    -4.0584       .0448       .1111       .4036       .6869      -.1739       .2636
    -3.7584       .0714       .1040       .6860       .4934      -.1335       .2763
    -3.4584       .0979       .0971      1.0087       .3141      -.0933       .2891
    -3.1584       .1244       .0902      1.3801       .1688      -.0532       .3021
    -2.8584       .1510       .0834      1.8110       .0714      -.0132       .3152
    -2.7586       .1598       .0811      1.9697       .0500       .0000       .3196
    -2.5584       .1775       .0767      2.3147       .0215       .0265       .3286
    -2.2584       .2041       .0702      2.9081       .0040       .0659       .3423
    -1.9584       .2306       .0639      3.6117       .0004       .1048       .3564
    -1.6584       .2572       .0578      4.4493       .0000       .1433       .3710
    -1.3584       .2837       .0521      5.4451       .0000       .1811       .3863
    -1.0584       .3102       .0469      6.6154       .0000       .2179       .4026
     -.7584       .3368       .0424      7.9496       .0000       .2533       .4202
     -.4584       .3633       .0387      9.3781       .0000       .2870       .4396
     -.1584       .3899       .0363     10.7397       .0000       .3184       .4614
      .1416       .4164       .0353     11.7997       .0000       .3469       .4859
      .4416       .4430       .0358     12.3634       .0000       .3724       .5135
      .7416       .4695       .0378     12.4042       .0000       .3949       .5440
     1.0416       .4960       .0411     12.0581       .0000       .4150       .5771
     1.3416       .5226       .0454     11.5064       .0000       .4331       .6120

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

Level of confidence for all confidence intervals in output:
  95.0000

W values in conditional tables are the 16th, 50th, and 84th percentiles.

NOTE: The following variables were mean centered prior to analysis:
          SAT      AW

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

4.3 Hypothesis 2

Correlations

		FINANCIAL RISK	PERFORMANCE RISK
Pearson Correlation	FINANCIAL RISK	1.000	.322
	PERFORMANCE RISK	.322	1.000
Sig. (1-tailed)	FINANCIAL RISK	.	<.001
	PERFORMANCE RISK	.000	.
N	FINANCIAL RISK	258	258
	PERFORMANCE RISK	258	258

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	45.841	1	45.841	29.538	<.001[b]
	Residual	397.301	256	1.552		
	Total	443.142	257			

a. Dependent Variable: FINANCIAL RISK

b. Predictors: (Constant), PERFORMANCE RISK

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.322[a]	.103	.100	1.24578	.103	29.538	1	256	<.001	1.869

a. Predictors: (Constant), PERFORMANCE RISK

b. Dependent Variable: FINANCIAL RISK

Coefficients[a]

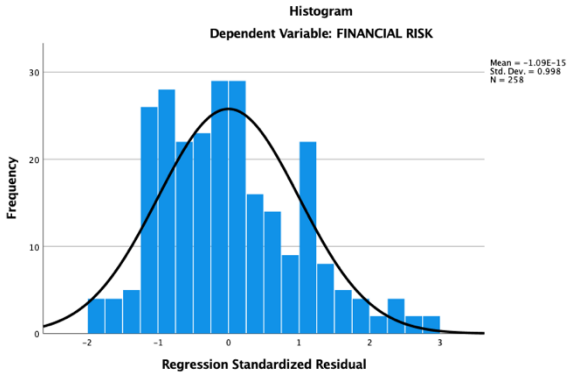
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	1.329	.222		5.996	<.001					
	PERFORMANCE RISK	.306	.056	.322	5.435	<.001	.322	.322	.322	1.000	1.000

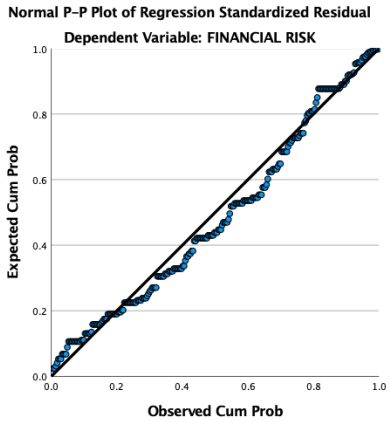
a. Dependent Variable: FINANCIAL RISK

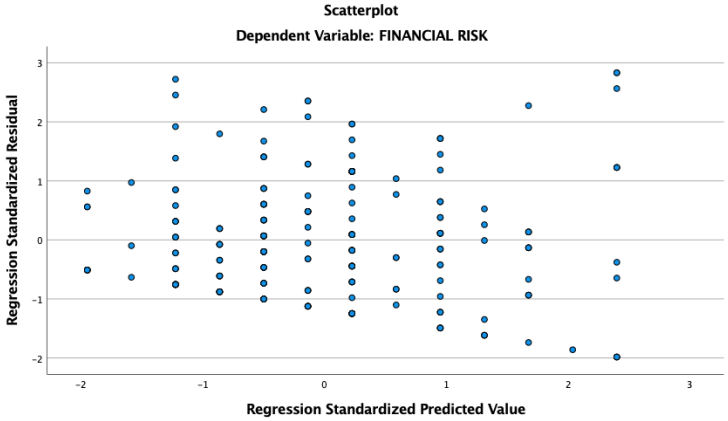
Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	Variance Proportions PERFORMANCE RISK
1	1	1.953	1.000	.02	.02
	2	.047	6.416	.98	.98

a. Dependent Variable: FINANCIAL RISK







4.4 Hypothesis 3a

Correlations

		PERFORMANCE RISK	AWARENESS
Pearson Correlation	PERFORMANCE RISK	1.000	-.353
	AWARENESS	-.353	1.000
Sig. (1-tailed)	PERFORMANCE RISK	.	<.001
	AWARENESS	.000	.
N	PERFORMANCE RISK	258	258
	AWARENESS	258	258

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	60.909	1	60.909	36.370	<.001[b]
	Residual	428.724	256	1.675		
	Total	489.633	257			

a. Dependent Variable: PERFORMANCE RISK

b. Predictors: (Constant), AWARENESS

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.353[a]	.124	.121	1.29410	.124	36.370	1	256	<.001	1.702

a. Predictors: (Constant), AWARENESS

b. Dependent Variable: PERFORMANCE RISK

Coefficients[a]

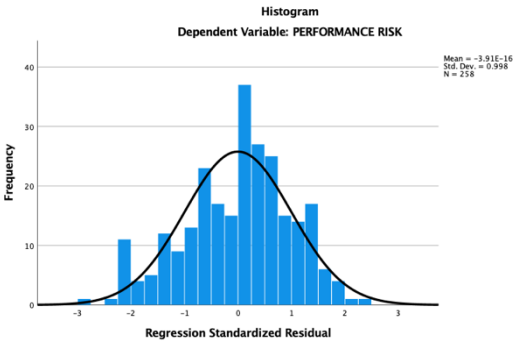
Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Correlations Zero-order	Correlations Partial	Correlations Part	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	4.539	.162		27.934	<.001					
	AWARENESS	-.241	.040	-.353	-6.031	<.001	-.353	-.353	-.353	1.000	1.000

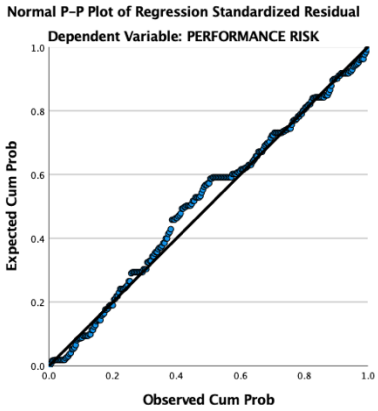
a. Dependent Variable: PERFORMANCE RISK

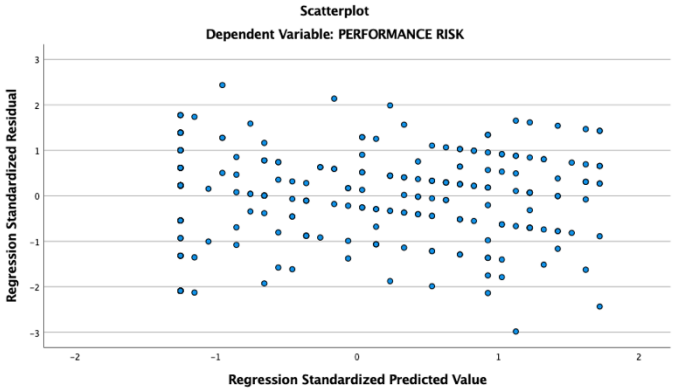
Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	Variance Proportions AWARENESS
1	1	1.868	1.000	.07	.07
	2	.132	3.768	.93	.93

a. Dependent Variable: PERFORMANCE RISK







4.5 Hypothesis 3b

Correlations

		FINANCIAL RISK	AWARENESS
Pearson Correlation	FINANCIAL RISK	1.000	-.127
	AWARENESS	-.127	1.000
Sig. (1-tailed)	FINANCIAL RISK	.	.021
	AWARENESS	.021	.
N	FINANCIAL RISK	258	258
	AWARENESS	258	258

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.180	1	7.180	4.216	.041[b]
	Residual	435.962	256	1.703		
	Total	443.142	257			

a. Dependent Variable: FINANCIAL RISK

b. Predictors: (Constant), AWARENESS

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.127[a]	.016	.012	1.30498	.016	4.216	1	256	.041	1.811

a. Predictors: (Constant), AWARENESS

b. Dependent Variable: FINANCIAL RISK

Coefficients[a]

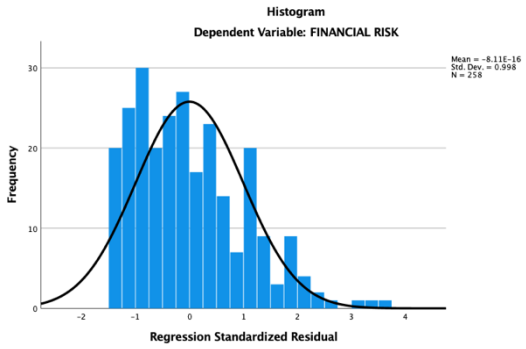
Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Correlations Zero-order	Correlations Partial	Correlations Part	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	2.750	.164		16.780	<.001					
	AWARENESS	-.083	.040	-.127	-2.053	.041	-.127	-.127	-.127	1.000	1.000

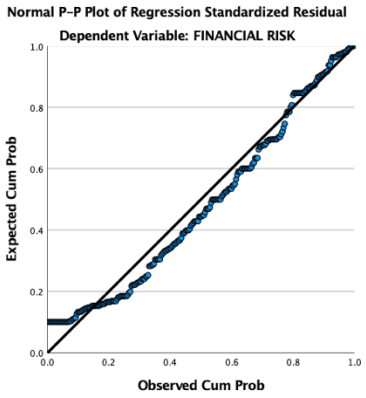
a. Dependent Variable: FINANCIAL RISK

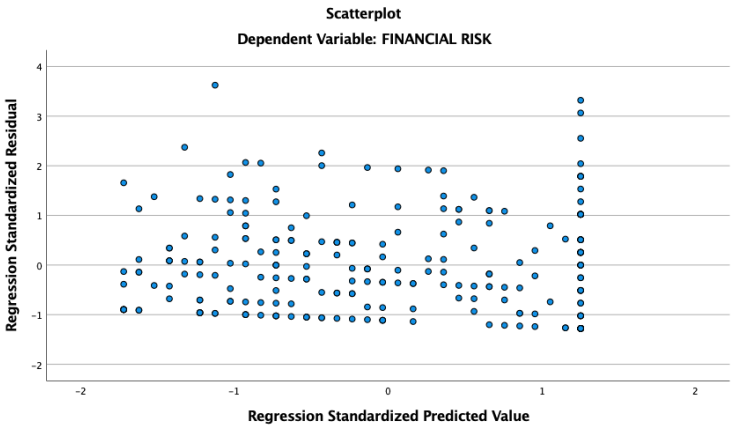
Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	Variance Proportions AWARENESS
1	1	1.868	1.000	.07	.07
	2	.132	3.768	.93	.93

a. Dependent Variable: FINANCIAL RISK







4.6 Hypothesis 4a

Correlations

		PERFORMANCE RISK	TRUST
Pearson Correlation	PERFORMANCE RISK	1.000	-.474
	TRUST	-.474	1.000
Sig. (1-tailed)	PERFORMANCE RISK	.	<.001
	TRUST	.000	.
N	PERFORMANCE RISK	258	258
	TRUST	258	258

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	110.238	1	110.238	74.384	<.001[b]
	Residual	379.395	256	1.482		
	Total	489.633	257			

a. Dependent Variable: PERFORMANCE RISK

b. Predictors: (Constant), TRUST

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics: R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.474[a]	.225	.222	1.21738	.225	74.384	1	256	<.001	1.736

a. Predictors: (Constant), TRUST

b. Dependent Variable: PERFORMANCE RISK

Coefficients[a]

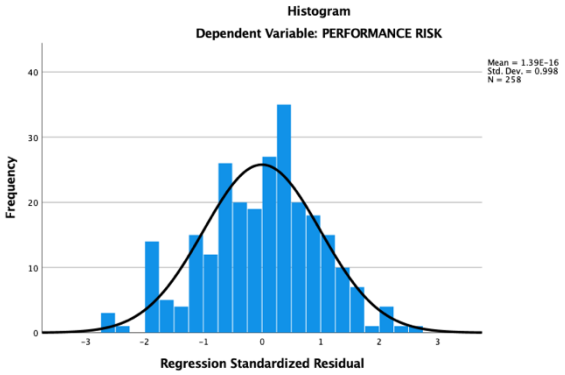
Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Correlations Zero-order	Correlations Partial	Correlations Part	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	5.043	.174		28.915	<.001					
	TRUST	-.440	.051	-.474	-8.625	<.001	-.474	-.474	-.474	1.000	1.000

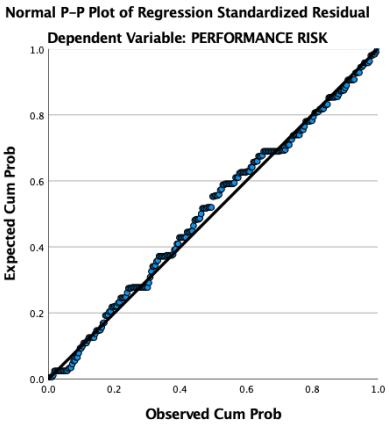
a. Dependent Variable: PERFORMANCE RISK

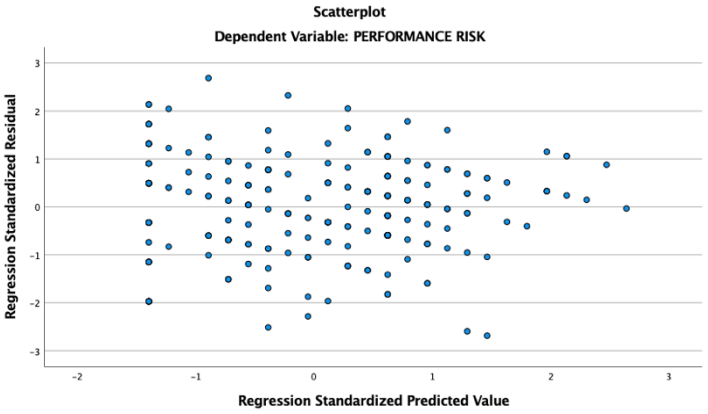
Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	Variance Proportions TRUST
1	1	1.901	1.000	.05	.05
	2	.099	4.373	.95	.95

a. Dependent Variable: PERFORMANCE RISK







4.7 Hypothesis 4b

Correlations

		FINANCIAL RISK	TRUST
Pearson Correlation	FINANCIAL RISK	1.000	-.154
	TRUST	-.154	1.000
Sig. (1-tailed)	FINANCIAL RISK	.	.007
	TRUST	.007	.
N	FINANCIAL RISK	258	258
	TRUST	258	258

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.502	1	10.502	6.214	.013[b]
	Residual	432.640	256	1.690		
	Total	443.142	257			

a. Dependent Variable: FINANCIAL RISK

b. Predictors: (Constant), TRUST

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Correlations Zero-order	Correlations Partial	Correlations Part	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	2.875	.186		15.440	<.001					
	TRUST	-.136	.055	-.154	-2.493	.013	-.154	-.154	-.154	1.000	1.000

a. Dependent Variable: FINANCIAL RISK

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	Change Statistics F Change	Change Statistics df1	Change Statistics df2	Change Statistics Sig. F Change	Durbin-Watson
1	.154[a]	.024	.020	1.30000	.024	6.214	1	256	.013	1.811

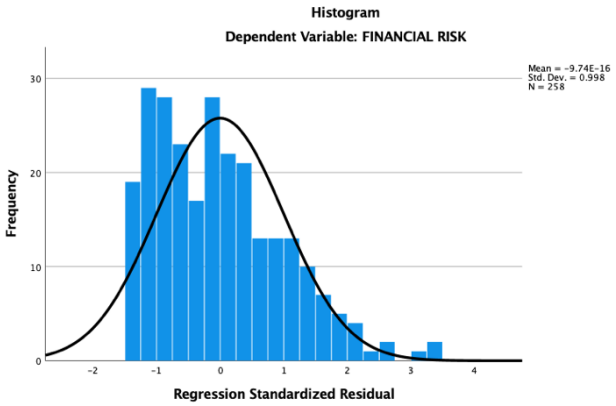
a. Predictors: (Constant), TRUST

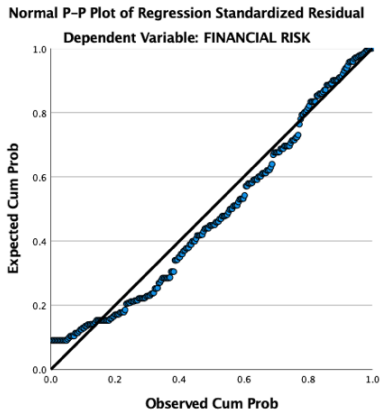
b. Dependent Variable: FINANCIAL RISK

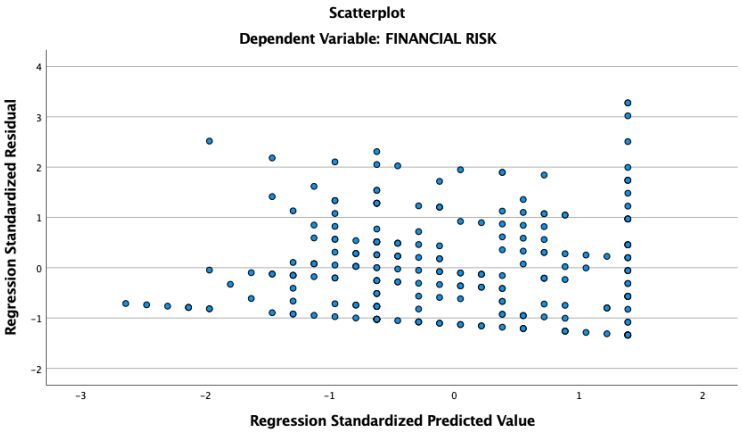
Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	Variance Proportions TRUST
1	1	1.901	1.000	.05	.05
	2	.099	4.373	.95	.95

a. Dependent Variable: FINANCIAL RISK







4.8 Hypothesis 5

Correlations

		PERCEIVED QUALITY	AWARENESS
Pearson Correlation	PERCEIVED QUALITY	1.000	.400
	AWARENESS	.400	1.000
Sig. (1-tailed)	PERCEIVED QUALITY	.	<.001
	AWARENESS	.000	.
N	PERCEIVED QUALITY	258	258
	AWARENESS	258	258

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	46.678	1	46.678	48.693	<.001[b]
	Residual	245.406	256	.959		
	Total	292.083	257			

a. Dependent Variable: PERCEIVED QUALITY

b. Predictors: (Constant), AWARENESS

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics: R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.400[a]	.160	.157	.97909	.160	48.693	1	256	<.001	1.579

a. Predictors: (Constant), AWARENESS

b. Dependent Variable: PERCEIVED QUALITY

Coefficients[a]

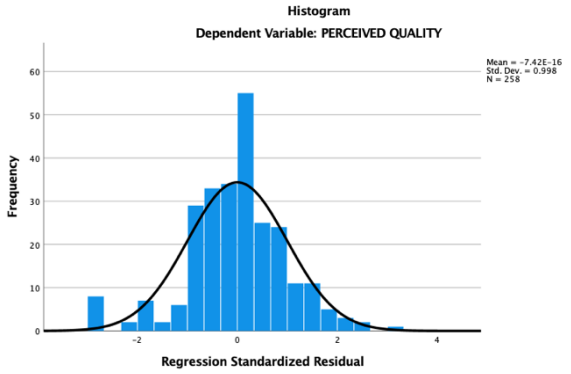
Model		Unstandardized Coefficients: B	Unstandardized Coefficients: Std. Error	Standardized Coefficients: Beta	t	Sig.	Correlations: Zero-order	Correlations: Partial	Correlations: Part	Collinearity Statistics: Tolerance	Collinearity Statistics: VIF
1	(Constant)	3.589	.123		29.194	<.001					
	AWARENESS	.211	.030	.400	6.978	<.001	.400	.400	.400	1.000	1.000

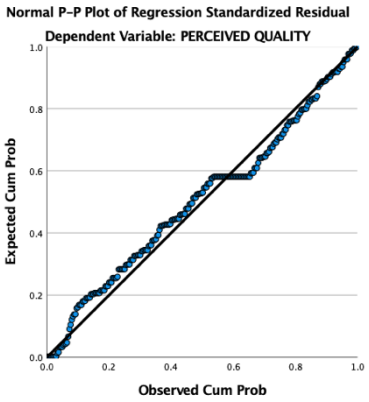
a. Dependent Variable: PERCEIVED QUALITY

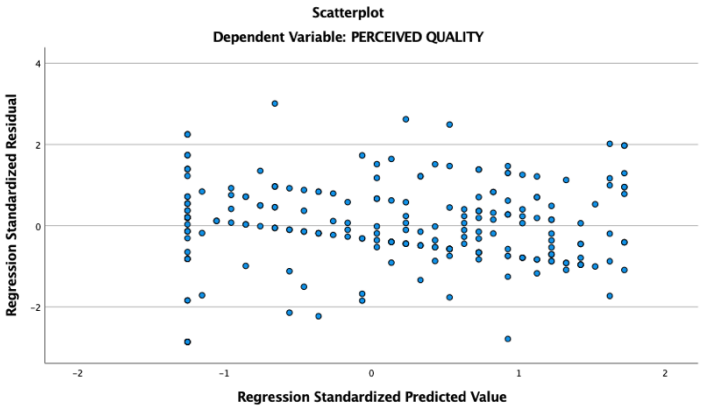
Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	Variance Proportions AWARENESS
1	1	1.868	1.000	.07	.07
	2	.132	3.768	.93	.93

a. Dependent Variable: PERCEIVED QUALITY







4.9 Hypothesis 6

Correlations

		PERCEIVED QUALITY	TRUST
Pearson Correlation	PERCEIVED QUALITY	1.000	.537
	TRUST	.537	1.000
Sig. (1-tailed)	PERCEIVED QUALITY	.	<.001
	TRUST	.000	.
N	PERCEIVED QUALITY	258	258
	TRUST	258	258

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	84.323	1	84.323	103.903	<.001[b]
	Residual	207.760	256	.812		
	Total	292.083	257			

a. Dependent Variable: PERCEIVED QUALITY

b. Predictors: (Constant), TRUST

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics: R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.537[a]	.289	.286	.90087	.289	103.903	1	256	<.001	1.469

a. Predictors: (Constant), TRUST

b. Dependent Variable: PERCEIVED QUALITY

Coefficients[a]

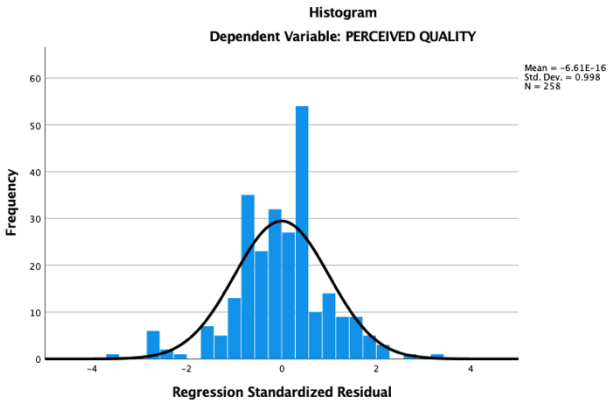
Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Correlations Zero-order	Correlations Partial	Correlations Part	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	3.149	.129		24.403	<.001					
	TRUST	.385	.038	.537	10.193	<.001	.537	.537	.537	1.000	1.000

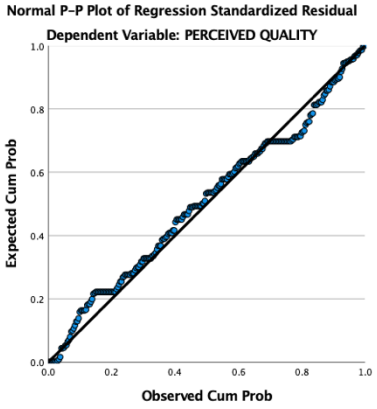
a. Dependent Variable: PERCEIVED QUALITY

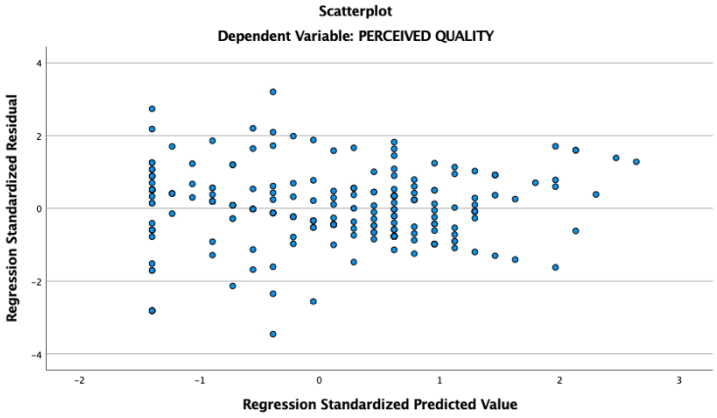
Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	Variance Proportions TRUST
1	1	1.901	1.000	.05	.05
	2	.099	4.373	.95	.95

a. Dependent Variable: PERCEIVED QUALITY







4.10 Hypothesis 7a

Correlations

		PERCEIVED QUALITY	PERFORMANCE RISK
Pearson Correlation	PERCEIVED QUALITY	1.000	-.645
	PERFORMANCE RISK	-.645	1.000
Sig. (1-tailed)	PERCEIVED QUALITY	.	<.001
	PERFORMANCE RISK	.000	.
N	PERCEIVED QUALITY	258	258
	PERFORMANCE RISK	258	258

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	121.541	1	121.541	182.445	<.001[b]
	Residual	170.542	256	.666		
	Total	292.083	257			

a. Dependent Variable: PERCEIVED QUALITY

b. Predictors: (Constant), PERFORMANCE RISK

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.645[a]	.416	.414	.81620	.416	182.445	1	256	<.001	1.993

a. Predictors: (Constant), PERFORMANCE RISK

b. Dependent Variable: PERCEIVED QUALITY

Coefficients[a]

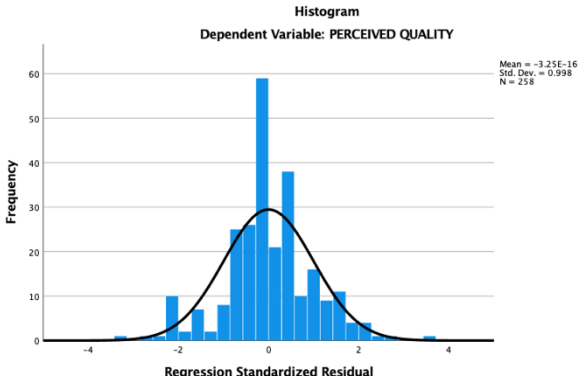
Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Correlations Zero-order	Correlations Partial	Correlations Part	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	6.171	.145		42.498	<.001					
	PERFORMANCE RISK	-.498	.037	-.645	-13.507	<.001	-.645	-.645	-.645	1.000	1.000

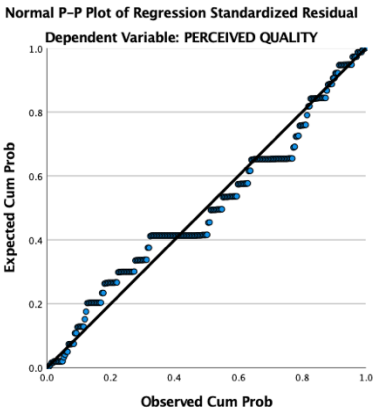
a. Dependent Variable: PERCEIVED QUALITY

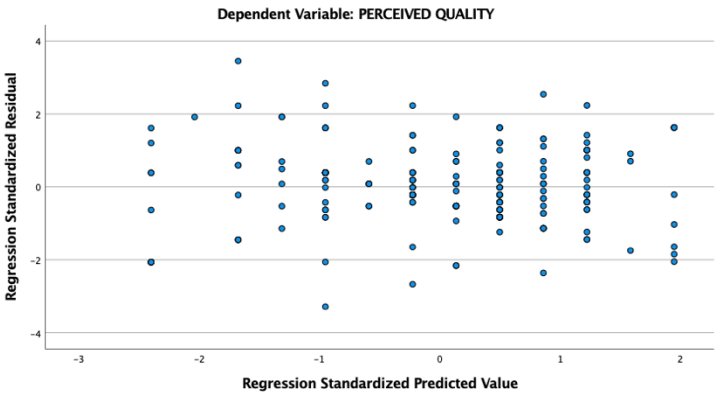
Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	Variance Proportions PERFORMANCE RISK
1	1	1.937	1.000	.03	.03
	2	.063	5.535	.97	.97

a. Dependent Variable: PERCEIVED QUALITY







4.11 Hypothesis 7b

Correlations

		PERCEIVED QUALITY	FINANCIAL RISK
Pearson Correlation	PERCEIVED QUALITY	1.000	-.307
	FINANCIAL RISK	-.307	1.000
Sig. (1-tailed)	PERCEIVED QUALITY	.	<.001
	FINANCIAL RISK	.000	.
N	PERCEIVED QUALITY	258	258
	FINANCIAL RISK	258	258

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.453	1	27.453	26.558	<.001[b]
	Residual	264.630	256	1.034		
	Total	292.083	257			

a. Dependent Variable: PERCEIVED QUALITY

b. Predictors: (Constant), FINANCIAL RISK

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.307[a]	.094	.090	1.01672	.094	26.558	1	256	<.001	1.612

a. Predictors: (Constant), FINANCIAL RISK

b. Dependent Variable: PERCEIVED QUALITY

Coefficients[a]

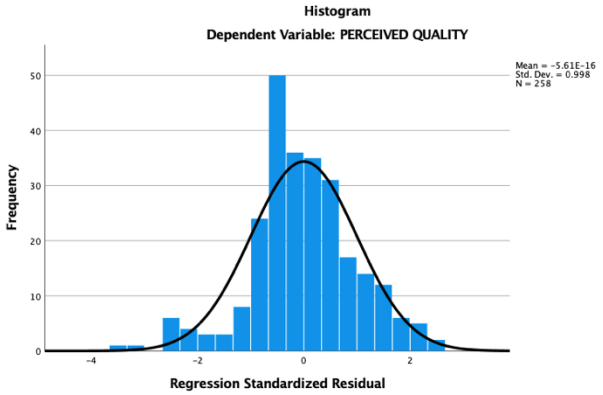
Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Correlations Zero-order	Correlations Partial	Correlations Part	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	4.946	.135		36.768	<.001					
	FINANCIAL RISK	-.249	.048	-.307	-5.153	<.001	-.307	-.307	-.307	1.000	1.000

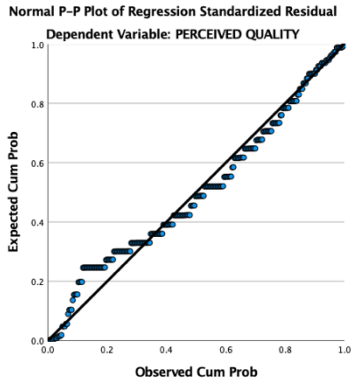
a. Dependent Variable: PERCEIVED QUALITY

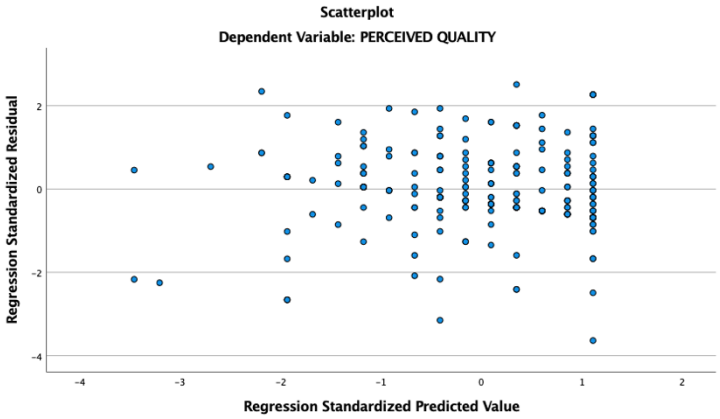
Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	Variance Proportions FINANCIAL RISK
1	1	1.882	1.000	.06	.06
	2	.118	4.000	.94	.94

a. Dependent Variable: PERCEIVED QUALITY







4.12 Conditional process model

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 83
    Y  : QU
    X  : AW
   M1  : TR
   M2  : PFMRISK
   M3  : FINRK
    W  : SAT

Sample
Size:  250

**************************************************************************
OUTCOME VARIABLE:
 TR

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .6741      .4544     1.2300    68.3011     3.0000   246.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.0429      .0714    42.6016      .0000     2.9022     3.1836
AW            .4039      .0356    11.3522      .0000      .3338      .4740
SAT           .2783      .0514     5.4146      .0000      .1770      .3795
```

```
Int_1         .0885      .0248     3.5675      .0004      .0396      .1373

Product terms key:
 Int_1    :        AW       x        SAT

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0282    12.7271     1.0000   246.0000      .0004
----------
    Focal predict: AW       (X)
          Mod var: SAT      (W)

Conditional effects of the focal predictor at values of the moderator(s):

        SAT     Effect         se          t          p       LLCI       ULCI
    -1.4324      .2772      .0535     5.1837      .0000      .1718      .3825
      .0000      .4039      .0356    11.3522      .0000      .3338      .4740
     1.3416      .5226      .0454    11.5064      .0000      .4331      .6120

Moderator value(s) defining Johnson-Neyman significance region(s):
      Value    % below    % above
    -2.7586     4.8000    95.2000

Conditional effect of focal predictor at values of the moderator:
        SAT     Effect         se          t          p       LLCI       ULCI
    -4.6584     -.0083      .1253     -.0659      .9475     -.2550      .2385
    -4.3584      .0183      .1181      .1547      .8771     -.2144      .2510
    -4.0584      .0448      .1111      .4036      .6869     -.1739      .2636
    -3.7584      .0714      .1040      .6860      .4934     -.1335      .2763
    -3.4584      .0979      .0971     1.0087      .3141     -.0933      .2891
    -3.1584      .1244      .0902     1.3801      .1688     -.0532      .3021
    -2.8584      .1510      .0834     1.8110      .0714     -.0132      .3152
    -2.7586      .1598      .0811     1.9697      .0500      .0000      .3196
    -2.5584      .1775      .0767     2.3147      .0215      .0265      .3286
    -2.2584      .2041      .0702     2.9081      .0040      .0659      .3423
    -1.9584      .2306      .0639     3.6117      .0004      .1048      .3564
    -1.6584      .2572      .0578     4.4493      .0000      .1433      .3710
    -1.3584      .2837      .0521     5.4451      .0000      .1811      .3863
    -1.0584      .3102      .0469     6.6154      .0000      .2179      .4026
     -.7584      .3368      .0424     7.9496      .0000      .2533      .4202
     -.4584      .3633      .0387     9.3781      .0000      .2870      .4396
     -.1584      .3899      .0363    10.7397      .0000      .3184      .4614
      .1416      .4164      .0353    11.7997      .0000      .3469      .4859
      .4416      .4430      .0358    12.3634      .0000      .3724      .5135
      .7416      .4695      .0378    12.4042      .0000      .3949      .5440
     1.0416      .4960      .0411    12.0581      .0000      .4150      .5771
     1.3416      .5226      .0454    11.5064      .0000      .4331      .6120

**************************************************************************
OUTCOME VARIABLE:
 PFMRISK

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .4894      .2395     1.4474    38.8941     2.0000   247.0000      .0000

Model
             coeff         se          t          p       LLCI       ULCI
constant     4.8184      .2140    22.5114      .0000     4.3968     5.2400
AW           -.0844      .0476    -1.7733      .0774     -.1782      .0093
TR           -.3709      .0647    -5.7303      .0000     -.4984     -.2434

**************************************************************************
OUTCOME VARIABLE:
 FINRK

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .3094      .0957     1.4870     8.6828     3.0000   246.0000      .0000

Model
             coeff         se          t          p       LLCI       ULCI
constant     1.3706      .3790     3.6166      .0004      .6242     2.1171
AW           -.0373      .0486     -.7682      .4431     -.1330      .0583
TR            .0208      .0698      .2985      .7655     -.1167      .1584
PFMRISK       .2740      .0645     4.2491      .0000      .1470      .4011
```

```
**************************************************************************
OUTCOME VARIABLE:
 QU

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .7095      .5034      .5753    62.0905     4.0000   245.0000      .0000

Model
             coeff         se          t          p       LLCI       ULCI
constant    5.2857      .2419    21.8496      .0000     4.8092     5.7622
AW           .0222      .0302      .7348      .4632     -.0373      .0818
TR           .1994      .0434     4.5893      .0000      .1138      .2849
PFMRISK     -.3601      .0416    -8.6655      .0000     -.4420     -.2783
FINRK       -.0951      .0397    -2.3978      .0172     -.1732     -.0170

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

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI
      .0222      .0302      .7348      .4632     -.0373      .0818

Conditional and unconditional indirect effects of X on Y:

INDIRECT EFFECT:
 AW          ->    TR          ->    QU

        SAT     Effect     BootSE   BootLLCI   BootULCI
    -1.4324      .0553      .0170      .0263      .0929
      .0000      .0805      .0199      .0446      .1215
     1.3416      .1042      .0253      .0570      .1562

      Index of moderated mediation:
         Index     BootSE   BootLLCI   BootULCI
SAT      .0176      .0063      .0068      .0310
---

INDIRECT EFFECT:
 AW          ->    PFMRISK     ->    QU

     Effect     BootSE   BootLLCI   BootULCI
      .0304      .0170      .0002      .0673

INDIRECT EFFECT:
 AW          ->    FINRK       ->    QU

     Effect     BootSE   BootLLCI   BootULCI
      .0035      .0049     -.0050      .0148

INDIRECT EFFECT:
 AW          ->    TR          ->    PFMRISK     ->    QU

        SAT     Effect     BootSE   BootLLCI   BootULCI
    -1.4324      .0370      .0120      .0176      .0639
      .0000      .0539      .0142      .0295      .0848
     1.3416      .0698      .0179      .0390      .1079

      Index of moderated mediation:
         Index     BootSE   BootLLCI   BootULCI
SAT      .0118      .0042      .0046      .0212
---

INDIRECT EFFECT:
 AW          ->    TR          ->    FINRK       ->    QU

        SAT     Effect     BootSE   BootLLCI   BootULCI
    -1.4324     -.0005      .0019     -.0049      .0031
      .0000     -.0008      .0027     -.0071      .0044
     1.3416     -.0010      .0035     -.0091      .0056

      Index of moderated mediation:
         Index     BootSE   BootLLCI   BootULCI
SAT     -.0002      .0006     -.0016      .0009
---

INDIRECT EFFECT:
 AW          ->    PFMRISK     ->    FINRK       ->    QU
```

```
     Effect      BootSE    BootLLCI    BootULCI
      .0022       .0020      -.0001       .0074

INDIRECT EFFECT:
 AW          ->    TR          ->    PFMRISK     ->    FINRK       ->    QU

        SAT      Effect      BootSE    BootLLCI    BootULCI
    -1.4324       .0027       .0018       .0002       .0070
      .0000       .0039       .0025       .0002       .0099
     1.3416       .0051       .0032       .0003       .0128

      Index of moderated mediation:
         Index      BootSE    BootLLCI    BootULCI
SAT       .0009       .0006       .0000       .0024
---

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

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

W values in conditional tables are 1 SD below the mean, the mean, and the maximum.

NOTE: One SD above the mean is above the maximum observed in the data for W,
      so the maximum measurement for W is used for conditioning instead.

NOTE: The following variables were mean centered prior to analysis:
          SAT      AW

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

4.13 Further Results

Descriptive Statistics – Total Sample

Descriptive Statistics

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
AWARENESS	258	3.5279	2.01818	.071	.152	-1.390	.302
TRUST	258	3.0756	1.48701	.128	.152	-.821	.302
PERFORMANCE RISK	258	3.6880	1.38028	.431	.152	-.057	.302
FINANCIAL RISK	258	2.4574	1.31312	.865	.152	.390	.302
PERCEIVED QUALITY	258	4.3340	1.06607	-.429	.152	1.917	.302
VACCINE SATISFACTION	250	5.6584	1.43237	-1.200	.154	1.021	.307
Valid N (listwise)	250						

Descriptive Statistics – Brands

Report

AWARENESS

Stimulus of respondent	Mean	N	Std. Deviation
Astrazeneca	3.8302	53	1.55088
Dompé	2.1292	65	1.74837
Pfizer	4.8030	67	1.56882
Roche	3.3836	73	2.11207
Total	3.5279	258	2.01818

Report

TRUST

Stimulus of respondent	Mean	N	Std. Deviation
Astrazeneca	3.1792	53	1.42975
Dompé	2.5308	65	1.55153
Pfizer	3.6082	67	1.26148
Roche	2.9966	73	1.50721
Total	3.0756	258	1.48701

Report

PERFORMANCE RISK

Stimulus of respondent	Mean	N	Std. Deviation
Astrazeneca	3.6981	53	1.29844
Dompé	4.0154	65	1.50252
Pfizer	3.4104	67	1.41669
Roche	3.6438	73	1.25133
Total	3.6880	258	1.38028

Report

FINANCIAL RISK

Stimulus of respondent	Mean	N	Std. Deviation
Astrazeneca	2.1321	53	1.14231
Dompé	2.5077	65	1.32039
Pfizer	2.4826	67	1.27562
Roche	2.6256	73	1.43581
Total	2.4574	258	1.31312

Report

PERCEIVED QUALITY

Stimulus of respondent	Mean	N	Std. Deviation
Astrazeneca	4.2579	53	1.05032
Dompé	4.0821	65	1.15174
Pfizer	4.5896	67	.99296
Roche	4.3790	73	1.02600
Total	4.3340	258	1.06607

One-Way ANOVA

Awareness

ANOVA

AWARENESS

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	242.453	3	80.818	25.522	<.001
Within Groups	804.326	254	3.167		
Total	1046.779	257			

Robust Tests of Equality of Means

AWARENESS

	Statistic[a]	df1	df2	Sig.
Welch	28.799	3	139.196	<.001

a. Asymptotically F distributed.

Multiple Comparisons

Dependent Variable: AWARENESS

Games-Howell

(I) Pharmaceutical Brand	(J) Pharmaceutical Brand	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Astrazeneca	Dompé	1.70096*	.30399	<.001	.9085	2.4934
	Pfizer	-.97280*	.28656	.005	-1.7201	-.2255
	Roche	.44663	.32633	.521	-.4032	1.2965
Dompé	Astrazeneca	-1.70096*	.30399	<.001	-2.4934	-.9085
	Pfizer	-2.67375*	.28942	<.001	-3.4272	-1.9203
	Roche	-1.25433*	.32884	.001	-2.1097	-.3989
Pfizer	Astrazeneca	.97280*	.28656	.005	.2255	1.7201
	Dompé	2.67375*	.28942	<.001	1.9203	3.4272
	Roche	1.41942*	.31280	<.001	.6055	2.2333
Roche	Astrazeneca	-.44663	.32633	.521	-1.2965	.4032
	Dompé	1.25433*	.32884	.001	.3989	2.1097
	Pfizer	-1.41942*	.31280	<.001	-2.2333	-.6055

*. The mean difference is significant at the 0.05 level.

Trust

ANOVA

TRUST

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	39.326	3	13.109	6.295	<.001
Within Groups	528.950	254	2.082		
Total	568.276	257			

Robust Tests of Equality of Means

TRUST

	Statistic[a]	df1	df2	Sig.
Welch	6.587	3	137.293	<.001

a. Asymptotically F distributed.

Multiple Comparisons

Dependent Variable: TRUST

Games-Howell

(I) Pharmaceutical Brand	(J) Pharmaceutical Brand	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Astrazeneca	Dompé	.64848	.27496	.091	-.0684	1.3654
	Pfizer	-.42896	.24964	.319	-1.0807	.2228
	Roche	.18267	.26399	.900	-.5055	.8708
Dompé	Astrazeneca	-.64848	.27496	.091	-1.3654	.0684
	Pfizer	-1.07744*	.24655	<.001	-1.7196	-.4353
	Roche	-.46581	.26106	.285	-1.1450	.2134
Pfizer	Astrazeneca	.42896	.24964	.319	-.2228	1.0807
	Dompé	1.07744*	.24655	<.001	.4353	1.7196
	Roche	.61163*	.23424	.049	.0024	1.2209
Roche	Astrazeneca	-.18267	.26399	.900	-.8708	.5055
	Dompé	.46581	.26106	.285	-.2134	1.1450
	Pfizer	-.61163*	.23424	.049	-1.2209	-.0024

*. The mean difference is significant at the 0.05 level.

Performance Risk

ANOVA

PERFORMANCE RISK

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	12.276	3	4.092	2.177	.091
Within Groups	477.357	254	1.879		
Total	489.633	257			

Robust Tests of Equality of Means

PERFORMANCE RISK

	Statistic[a]	df1	df2	Sig.
Welch	1.893	3	137.257	.134

a. Asymptotically F distributed.

Multiple Comparisons

Dependent Variable: PERFORMANCE RISK

Games-Howell

(I) Pharmaceutical Brand	(J) Pharmaceutical Brand	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Astrazeneca	Dompé	-.31727	.25796	.609	-.9897	.3552
	Pfizer	.28767	.24853	.655	-.3602	.9355
	Roche	.05428	.23078	.995	-.5478	.6563
Dompé	Astrazeneca	.31727	.25796	.609	-.3552	.9897
	Pfizer	.60494	.25434	.086	-.0571	1.2669
	Roche	.37155	.23703	.401	-.2456	.9887
Pfizer	Astrazeneca	-.28767	.24853	.655	-.9355	.3602
	Dompé	-.60494	.25434	.086	-1.2669	.0571
	Roche	-.23339	.22673	.733	-.8233	.3566
Roche	Astrazeneca	-.05428	.23078	.995	-.6563	.5478
	Dompé	-.37155	.23703	.401	-.9887	.2456
	Pfizer	.23339	.22673	.733	-.3566	.8233

Financial Risk

ANOVA

FINANCIAL RISK

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.881	3	2.627	1.533	.206
Within Groups	435.261	254	1.714		
Total	443.142	257			

Robust Tests of Equality of Means

FINANCIAL RISK

	Statistic[a]	df1	df2	Sig.
Welch	1.749	3	139.494	.160

a. Asymptotically F distributed.

Multiple Comparisons

Dependent Variable: FINANCIAL RISK

Games-Howell

(I) Pharmaceutical Brand	(J) Pharmaceutical Brand	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Astrazeneca	Dompé	-.37562	.22681	.352	-.9669	.2156
	Pfizer	-.35051	.22115	.391	-.9270	.2259
	Roche	-.49350	.22991	.144	-1.0923	.1053
Dompé	Astrazeneca	.37562	.22681	.352	-.2156	.9669
	Pfizer	.02511	.22607	1.000	-.5633	.6135
	Roche	-.11788	.23465	.958	-.7282	.4925
Pfizer	Astrazeneca	.35051	.22115	.391	-.2259	.9270
	Dompé	-.02511	.22607	1.000	-.6135	.5633
	Roche	-.14298	.22919	.924	-.7390	.4531
Roche	Astrazeneca	.49350	.22991	.144	-.1053	1.0923
	Dompé	.11788	.23465	.958	-.4925	.7282
	Pfizer	.14298	.22919	.924	-.4531	.7390

Perceived Quality

ANOVA

PERCEIVED QUALITY

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.957	3	2.986	2.678	.048
Within Groups	283.127	254	1.115		
Total	292.083	257			

Robust Tests of Equality of Means

PERCEIVED QUALITY

	Statistic[a]	df1	df2	Sig.
Welch	2.602	3	137.169	.055

a. Asymptotically F distributed.

Multiple Comparisons

Dependent Variable: PERCEIVED QUALITY

Games-Howell

(I) Pharmaceutical Brand	(J) Pharmaceutical Brand	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Astrazeneca	Dompé	.17581	.20303	.822	-.3535	.7051
	Pfizer	-.33169	.18850	.298	-.8235	.1601
	Roche	-.12113	.18771	.917	-.6108	.3685
Dompé	Astrazeneca	-.17581	.20303	.822	-.7051	.3535
	Pfizer	-.50750*	.18741	.038	-.9955	-.0195
	Roche	-.29694	.18662	.387	-.7827	.1888
Pfizer	Astrazeneca	.33169	.18850	.298	-.1601	.8235
	Dompé	.50750*	.18741	.038	.0195	.9955
	Roche	.21056	.17069	.607	-.2334	.6545
Roche	Astrazeneca	.12113	.18771	.917	-.3685	.6108
	Dompé	.29694	.18662	.387	-.1888	.7827
	Pfizer	-.21056	.17069	.607	-.6545	.2334

*. The mean difference is significant at the 0.05 level.

Independent-Sample T Test

Awareness

Group Statistics

	vaccine	N	Mean	Std. Deviation	Std. Error Mean
AWARENESS	vaccine	120	4.3733	1.62831	.14864
	no vaccine	138	2.7928	2.04138	.17377

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
AWARENESS	Equal variances assumed	15.846	<.001	6.805	256	<.001	<.001	1.58058	.23226	1.12319	2.03797
	Equal variances not assumed			6.912	254.170	<.001	<.001	1.58058	.22868	1.13024	2.03092

Trust

Group Statistics

	vaccine	N	Mean	Std. Deviation	Std. Error Mean
TRUST	vaccine	120	3.4188	1.34967	.12321
	no vaccine	138	2.7772	1.54042	.13113

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
TRUST	Equal variances assumed	7.512	.007	3.533	256	<.001	<.001	.64158	.18159	.28397	.99918
	Equal variances not assumed			3.566	255.983	<.001	<.001	.64158	.17993	.28724	.99591

Performance Risk

Group Statistics

	vaccine	N	Mean	Std. Deviation	Std. Error Mean
PERFORMANCE RISK	vaccine	120	3.5375	1.36764	.12485
	no vaccine	138	3.8188	1.38282	.11771

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
PERFORMANCE RISK	Equal variances assumed	.004	.953	-1.638	256	.051	.103	-.28134	.17172	-.61951	.05683
	Equal variances not assumed			-1.640	251.784	.051	.102	-.28134	.17159	-.61928	.05660

Financial Risk

Group Statistics

	vaccine	N	Mean	Std. Deviation	Std. Error Mean
FINANCIAL RISK	vaccine	120	2.3278	1.22607	.11192
	no vaccine	138	2.5700	1.37891	.11738

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
FINANCIAL RISK	Equal variances assumed	2.455	.118	-1.482	256	.070	.140	-.24227	.16352	-.56429	.07975
	Equal variances not assumed			-1.494	255.867	.068	.136	-.24227	.16219	-.56166	.07712

Perceived Quality

Group Statistics

	vaccine	N	Mean	Std. Deviation	Std. Error Mean
PERCEIVED QUALITY	vaccine	120	4.4431	1.02774	.09382
	no vaccine	138	4.2391	1.09318	.09306

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
PERCEIVED QUALITY	Equal variances assumed	.116	.734	1.537	256	.063	.126	.20393	.13271	-.05743	.46528
	Equal variances not assumed			1.543	254.426	.062	.124	.20393	.13214	-.05631	.46416