

An exploration into the implementations of using Machine Learning Algorithms in marketing low-involvement health/ fitness products

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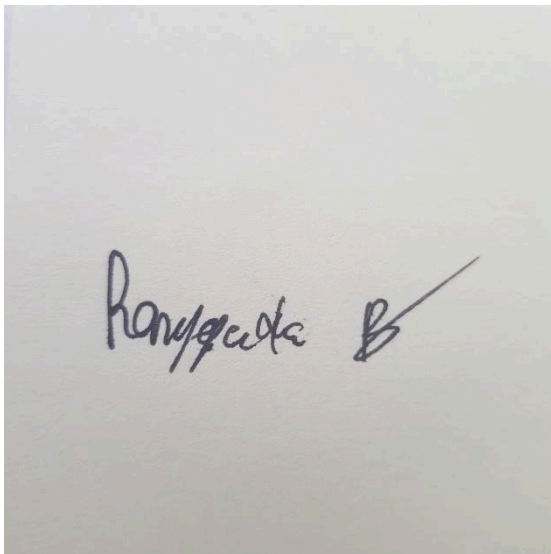


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DECLARATION

This dissertation is a product of my own work and does not infringe the ethical principles set out in the University's Handbook for Research Ethics. I agree that it may be made available for reference via any media and developed in the future at the discretion of the University.

A photograph of a handwritten signature in dark ink on a light-colored surface. The signature appears to read 'Ranggada Prabu Sadewa' followed by a stylized flourish or checkmark.

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Ranggada Prabu Sadewa

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Abstract

Artificial Intelligence is the future. Many scientists have said that and many more will. But to those who know, we are still far behind in developing a real Artificial Intelligence. What we have are algorithms and they are what makes our lives easier, from shopping on Amazon and film recommendations on Netflix.

But have we heard of them being used in the health/ fitness industry? Little to none. That's what this research paper will aim to answer. Using interviews, we will see what it is that motivates people to stay fit or why don't they want to stay fit. This paper will explore how viable algorithms are to be used within the health/ fitness industry and if they are, see how they can change it or maybe even shape it.

Table of Contents

1. Introduction	1
1.1 Rationale	2
1.2 Value	3
1.3 Research Aims and Objectives	3
2. Background and Context	5
2.1 Generation Active	5
2.2 Vitamins, Supplements and Snack Bars	6
2.3 Marketing in times of COVID-19	7
3. Literature Review	9
3.1 Consumer Motivation and Behaviour	9
3.1.1 Consumption: Emotional Vs. Economic	11
3.1.2 Brand & Loyalty	13
3.2 Algorithms in Marketing	15
3.2.1 Machine Learning Algorithms	16
3.2.2 Risks and Ethics in using Algorithms	17
4. Methodology	20
4.1 Research Design	20
4.2 Data Collection	21
4.2.1 Face-to-face Interviews	21
4.2.2 Semi-structured Interviews	22
4.3 Data Sampling	23
4.4 Data Analysis	24
4.5 Ethics and Limitations	25
5. Findings	27
5.1 Motivations	29
5.2 Pricing	30
5.3 Factors which influence health purchases	31
5.3.1 Brand & Loyalty	31
5.3.2 Emotion	32
5.4 Algorithms, A.I & e-Marketing	33
6. Discussion	34
6.1 Promoting Health and Fitness	34
6.2 Pricing in a low-involvement perspective	35
6.3 Factors influencing health purchases	37

7. Conclusion	39
7.1 Summary of Key Findings	39
7.2 Significance of study	40
7.3 Limitations of the current study	40
7.4 Recommendations for further research	41
Appendices	42
Bibliography	60

1. Introduction

Due to the rapid innovations in algorithms, Artificial Intelligence has been slowly shaping the world and business as we know it. According to Hall (2019), AI will be the new frontier of Marketing as the set of algorithms analyses and compiles the data that it has been given to give better insight about a business's target audience and determine the best content or campaign to develop in order to improve conversion rates. Despite the uncertainty of the political and economic climate, businesses have started to grow weary with their marketing budget and where it should be directed to resulting in a dip with internet marketing (Hammett, 2019). The implementation of machine learning algorithms can cut budgets even further for marketers in times of economic and political unrest.

In 2010, the European Branch of the World Health Organization found that two thirds of adults in the EU did not meet the recommended level of physical activity, with factors such as road safety and academic demand being the major factors.

Subsequently, they suggested the health sectors to make a collaboration with other infrastructures to accommodate and promote a healthy life style, cheap and easy to access sports facilities were among the recommended plans. Thus, more and more people find themselves exercising ever since. In 2019, Melissa Rodriguez of the International Health, Racquet and Sportsclub Association (IHRSA) reported a rise of 37% in gym memberships since 2008, with more than 1.8 billion consumers visiting health clubs regularly within the 10-year span.

Marketers nowadays are differentiating their companies by ensuring brand integrity, much of which is assisted by dissatisfied consumers voicing their irritation through modern marketing technologies such as Twitter, Facebook or YouTube (Dr. Jain & Yadav, 2017). However, there is a plethora of complaints made every day and businesses are moving to implement algorithms, commonly mistaken as AI's, within their businesses (See Appendix 2).

1.1 Rationale

There has been research that has delved into the difficulties of marketing low-involvement products indicating that consumers, specifically those with low-income, purchase out of habit and thus maintain no loyalty to the brands they are purchasing (Gbadamosi, 2009). Assael (1987) further explains that differences between brands can be the impetus between habitual purchases and variety-seeking purchases (See Appendix 1).

Algorithms rely heavily on collected consumer data, making them specialize within the field of personalized marketing. Tailoring recommendations by predicting what consumers might like from previous data. Bhambhri (2020) has given an example of this in practice during this year's Adobe Summit, stating that they collect data in real time and use machine learning to tailor future released apps to the specific customer.

Using personalized marketing, businesses can save on time and costs while simultaneously boosting notoriety and sales.

1.2 Value

This research delves into the finding the data required to feed algorithms in regards to low-involvement health and fitness products. We can learn what it is that drives the active generation to purchase fitness accessories and supplements, what they prioritize in determining what a good and trusted brand means (habitual purchasing) and what this data means when applied to certain algorithms.

Companies such as Corning has already explored, albeit briefly, the potential of using algorithms within personalized marketing in their 2011 video 'A Day Made of Glass'. Using augmented reality to project real time data to consumers makes it simpler for marketers and companies to deliver a more personalized experience and in the long run, capture as well as retain their loyalty.

1.3 Research Aims and Objectives

This research aims to explore the purchasing behaviour of millennials and Gen Z's and which data would prove beneficial to feed algorithms. From this, we can discern the best possible approach to personalized marketing in regards to personal fitness and overall health. With that said, the objectives of this research will give a clear idea of what this paper aims to answer:

1. To evaluate how algorithms be can used to promote health and fitness

This will explore the ethics and psychology of using algorithms in within marketing in a way where consumer's behaviours may be manipulated subconsciously.

2. To identify how algorithms can play a part in displaying different prices to different audiences

This will look into how much price plays a part in keeping the balance between loyalty and a classification of low-involvement. While some Millennial's and Gen Z's are more privileged than others, this objective will answer how algorithms may discern the gap and evaluate what price may be suitable to that demographic.

3. To identify the factors which influence health purchases and how algorithms can affect it.

This will supply the reasoning behind what Generation Active prioritize when deciding what to purchase and subsequently the data needed for the algorithms to make future predictions. We look into topics such as Maslow's Hierarchy of Needs to fulfil this objective.

2. Background and Context

2.1 Generation Active

LesMills (2019) conducted a research where they asked 22,000 people from over 22 countries about their workout habits and found that 80% of gymgoers are millennials and Gen Z's – people who were born after 1997 (Dimock, 2019). 87% of Gen Z's make up the most active demographic by exercising 3 or more times per week. However, Mintel (2019a) reveals that the majority of people refrain from joining a gym or fitness clubs due to high costs with only 23% doing so due to lack of interest in exercising. On top of going to the gym, there are consumers who take extra steps in ensuring they have a healthy lifestyle. These extra steps come in the form of Vitamins, Supplements, Energy Boosters and Protein Powders. Mintel (2019b) conducted a survey on the internet regarding people's opinions on Vitamins and Supplements, with 57% of respondents saying vitamins and minerals are essential to one's health. However, 68% say that getting those vitamins and minerals through diets is much better than supplements. In the United States, more than 1500 Americans were surveyed and stated that they had spent, on average, \$155 per month on health fitness, with \$56 of that going into supplements (Settembre, 2018).

Additionally, Nielsen (2015) reports that Gen Z's are open to paying a hefty premium price for extra benefits added into their foods (i.e natural, Non-GMO or vitamin fortified foods). Supporting this statement, Jed (2018) has cited a report by Aramark, an American food service provider, who had found that 65% of Gen Z's would find plant-based food more appealing and that 79%, would go meatless one or two times

a week. Furthermore, Gen Z's have been found to prefer healthy snacks that can be bought on the go which benefits their busy lifestyle and also satiates their need to be healthy (Packaged Facts, 2018).

2.2 Vitamins, Supplements and Snack Bars

With so many Millennials and Gen Z's actively pursuing a healthier lifestyle, there are those who consume grab and go energy bars to give them the extra energy needed to continue their day after the gym. Mintel (2020) reports that the driving factor for the majority of consumers is taste in snacks with health benefits being the 4th thought of factor, below price and convenience. Furthermore, they suggest that in order to differentiate products, companies should focus on the health factor for millennials and convenience for Gen Z. Supporting that statement, Mordor Intelligence (2019) found that there would be an expected CAGR of 5% for healthy snack bars (energy bars) with North America being the largest market.

Apart from snack bars, consumers have their eyes on protein powder as a viable addition to their workout diet. In contrast to energy snack bars, Deshmukh & Thomas (2019) estimates that the protein supplement market will have an CAGR of 7.4% with a value of \$9bn in 2025. Additionally, they add that millennials have been and will continue to be the dominant demographic purchasing protein supplement. Innova Market Insights (2019) supplies an insight on this topic by stating that due to travel being easily accessible to Gen Z's, since they actively seek new experiences, protein supplements should focus more on globally inspired flavours while retaining a

plant-based diet. However, the NHS (2011) reported that only “5% of boys and 2% of girls, aged 12 to 18, used protein powder to improve their appearance or strength”.

2.3 Marketing in times of COVID-19

With the recent outbreak of Covid-19, gym and other fitness clubs have been order to shut their doors to the public and because of this, they offer their members alternatives workout solutions by sending them online content. Due to this, the use of pocket personal trainers is expected to rise with apps such as Centr seeing double the user traffic in this pandemic (Ryan, 2020). Rogers (2020) reported that marketers are changing their strategy due to major budget cuts brought upon by the lack of demand and sales. There are three steps in ensuring marketers and businesses survive the pandemic crisis according to Kleine (2020), these are Survive, Revive and Thrive. All require businesses and marketers to conduct a fresh market research to gain knowledge on the new needs and wants driven by consumers. Shimuzu (2020, cited in WARC, 2020) emphasizes that collecting consumer data through survey is the most optimal and quickest way to get insights to consumer wants and need in a time of crisis. He also adds that businesses should utilize current technology to efficiently and seamlessly sample the gathered data – by market and region.

One company that utilizes such technology is Adobe. In their recent Adobe Summit Event, they had announced the uses of Adobe Audience Manager for marketers in need of Data Management Platforms (DMPs) and Customer Data Platforms (CDPs).

DMPs function as a collective data gatherer, collecting information on a large group of people which does not focus on identifying personal data, which is useful for sampling demographic and geographic data. CDPs collect personal data which marketers can use on CRM platforms to understand and connect with valuable customers, useful for personalized marketing. Using AI and machine learning, Adobe Sensei, they are building a platform which is capable of organizing and consolidating real time data for marketers to use. Furthermore, they are developing a way for marketers to access unified real time data offline meaning they would get up-to-date data from new audiences, receiving information on what research they had done to get to the company's website and their product of interest without having the consumer making an account (Skinner & Kuu, 2020).

The use of this technology can help marketers avoid the pitfall of heavy network traffic which is the only platform businesses can gather data from consumers. Subsequently Lion (2020) has stated that marketers should focus on helping people rather than trying to boost sales. He simplifies the suggestion into three different steps: to identify the new consumer needs, communicate how to accommodate those needs and finally act on those communications. He consistently urges partnerships and active cooperation between businesses to create a stronger brand, using animation and CGI to create marketing campaigns from home. He recommends businesses to repurpose their brand to aid the workforce dealing with the crisis or to create new traditions and communities in relation to their brand.

Right now, machine learning algorithms are at the forefront in our fight to discover the cure for COVID-19. Stanford have developed an algorithm that aims to protect the surgeon operating in emergency room by estimating the “urgency of the procedure, potential for aerosolization and release of virus droplets at the surgical site, and evidence that a patient has been infected” (American College of Surgeons, 2020). Apart from protecting the doctors and nurses, companies such as Folding@Home (2020) who asks people who are stuck at home to donate their computing power to speed up research and simulations to find a cure for COVID-19. They state that “our specialty is in using computer simulations to understand proteins’ moving parts. Watching how the atoms in a protein move relative to one another is important because it captures valuable information that is inaccessible by any other means.”

3. Literature Review

3.1 Consumer Motivation and Behaviour

Investigating the current motivations consumers have can give some insights into the future motivations of zero-touch consumption and global automation. A basic foundation to determine how consumers decide what to purchase would be using Maslow's Hierarchy of Needs which can be summarized as a widely accepted and cited pyramid of human-centered psychological motivations (see Fig. 1).

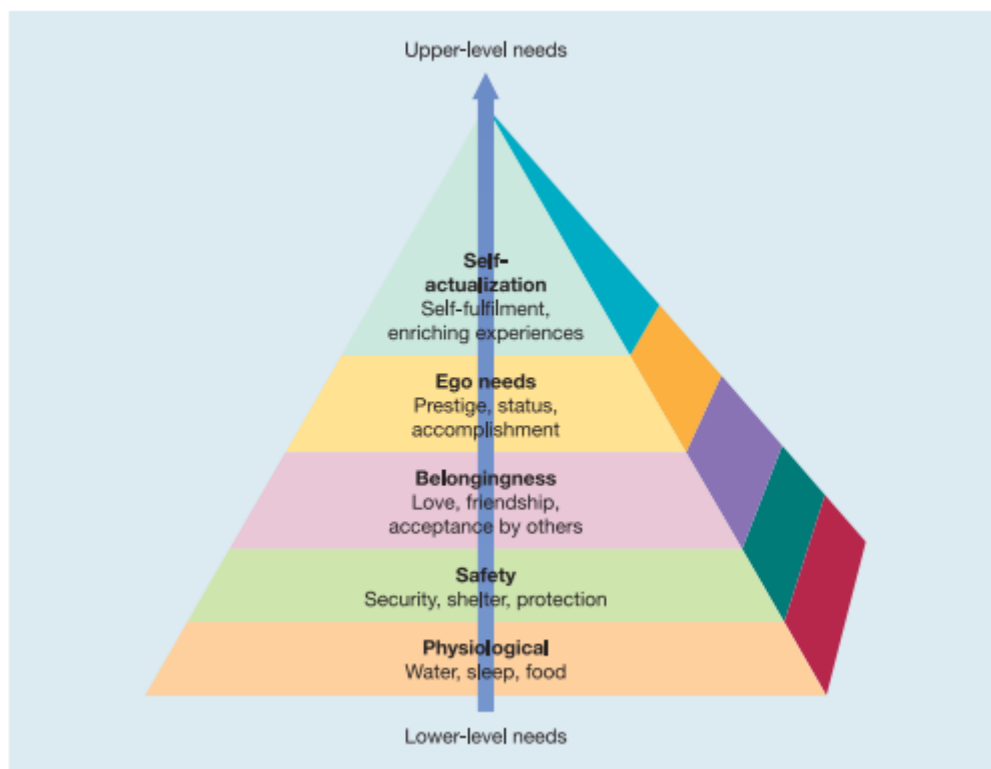


Figure 1. Maslow's Hierarchy of Needs

Source: Solomon *et al.* (2006)

Scholars, despite recognizing the hierarchy as an accepted psychological theory, have disputed its credibility and argued it to be a controversial piece of work. For example, Yang (2003) claims the theory to be culture centered while Cullen & Gotell

(2002) claims it is gender biased. While other theorists have opposed those claims, Maslow himself (1943) has stated that motivation theory is separate from behavior theory, explaining that behavior is driven by biology, culture and situation whereas motivation is one of many determinants for a certain behavior.

Before consumer decides what to purchase, Riley (2012) explains that they go through a specific process of evaluation to determine if the product they are purchasing is and/or was worth their money (see Fig. 2). However, Kotler & Armstrong (2010) states that during a routine purchase, the consumer can bypass a few processes, going on to state that the full process is only utilized when

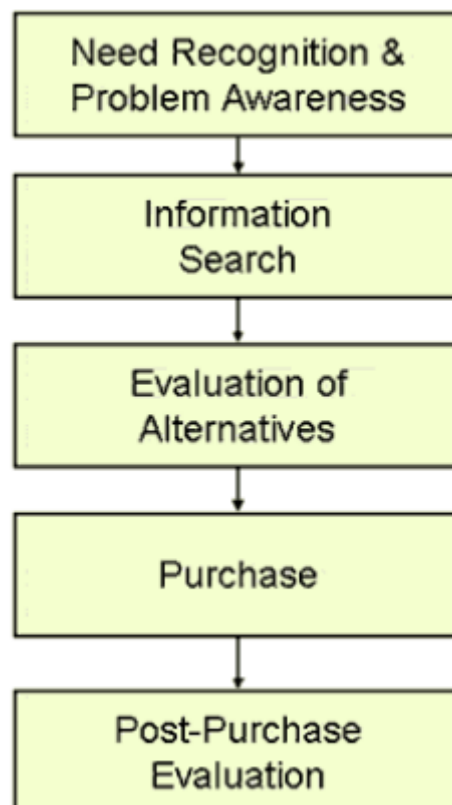


Figure 2. Consumer Decision-Making Process

Source: Riley (2012)

consumers are faced with a new and complex purchase. In other words, consumers go through a different set of behavior when purchasing low-involvement products rather than high-involvement ones. Dr. Jain (2019) states that low-involvement products contain two important elements: inexpensiveness and a low risk in purchase. She goes on to state that if a consumer were to change their purchase habit from one brand to a competitor, the risk involved would be negligible for the consumer. Thus, companies who sell low-involvement products maintain their sales through extensive advertising and offering deals in sales promotions. Additionally, they sell their product through various channels of sales, encompassing a wide array of customers. In regards to advertising, they promote their products through TV ads or indoor/outdoor advertising. However, digital marketing methods have been reaching more consumers than traditional marketing methods with consumers leaning towards preferring to see ads on social media than any other marketing channel (Sha S & Mannu, 2018).

3.1.1 Consumption: Emotional Vs. Economic

A journal conducting research into motivation behind online consumption states that most consumers look towards hedonism stimuli which can make them vulnerable to more marketing campaigns and lead to a higher purchase count (Schienbaum and Kukar-Kinney, 2009). Chaker and Linden (2011, cited in Alba & Williams, 2012) draws the difference in marketing a utilitarian product that possesses hedonic characteristics and a purely hedonic product by stating that the utilitarian product is

marketed based on emotion and psychological pleasure rather than its function as a product whereas the purely hedonic product such as chocolate could be consumed for its cardiovascular benefits; and a product initially consumed to achieve euphoria may subsequently be consumed to reduce the unpleasant cravings caused by addiction. Ultimately, whether the product being sold is purely hedonic or utilitarian, consumers react strongly to emotional triggers given by the product being sought after.

Barksy & Nash (2002) say that emotions are one of many essential aspects that make up the customer satisfaction construct. Fournier (1998) adds that consumers are more involved with brands that adds meaning to their lives, whether the product is utilitarian, hedonistic or emotional. Calvo-Porrall, Ruiz-Vega & Levy-Mangin (2018) proposed a relationship framework for product satisfaction (see Fig. 3) where emotions combined with how involved a consumer is during the purchase process, will ultimately affect how satisfied they are with their purchase.

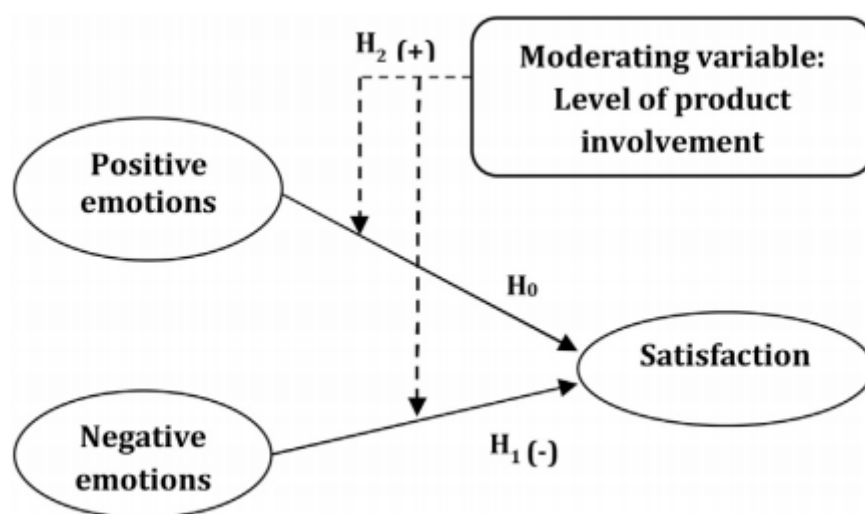


Figure 3. Proposed Relationship Framework for Product Involvement

Source: Calvo-Porrall, Ruiz-Vega & Levy-Mangin (2018)

Where a positive emotion synergizing well with low-involvement products will ultimately give a psychological outcome of a happy consumer. Richins (1997) suggests that positive and negative emotions play an important role in influencing consumer satisfaction. Consequently, he adds that context must be present at all times when consumptions take place as emotion is context specific and it influences the emotional experience of consumption. To sum it up, emotions triumphs over quality perceptions in any and all aspect (Compeau, Grewal, & Monroe, 1998; Jiang & Wang, 2006; White, 2010)

Apart from emotional factors, Bell, Corsten & Knox (2011) states that economic factors come into play in deciding consumer behaviour, price and time being the two major aspects. Income level plays a major part in how consumer behave when deciding what to purchase; as income level rises, their need for consumption of luxurious products rises along with it (Ahmed, Khan & Samad, 2016). Yang *et al* (2019) adds that price is a major influence in perceiving quality albeit the utilitarian function of the product remains identical to other brands, thus giving the illusion that higher priced products have more to offer although only slightly. People with low-income however, do not have as much freedom to spend their finances on goods and service that they desire, hence being described as “‘unwanted’, ‘abnormal’, ‘blemished, defective, faulty and deficient’, ‘flawed consumers’ and ‘non-consumers’” (Bauman, 2005, pp. 38, 112, 113). On that note, consumers with low income have no

choice but to submit to routine purchases and inexpensive goods which are often low quality (Hamilton, 2009).

3.1.2 Brand & Loyalty

Before deciding how to market a low-involvement product, a brand must be established to implant a specific image of what that product stands for. Quick decision making on which brand to buy relies on how well the consumer knows that brands, whether through familiarity, good word of mouth or quality (Ahmed *et al*, 2009 & Vranesevic & Stancec, 2003). McWilliams (1997) claims that branding low-involvement products is unacceptable as the effort put into creating a positive view of the product through differentiation is almost negligible as consumers purchase through habit and therefore making it a 'fast-moving' purchase journey. However, Keller (2003) opposes this statement by stating that creating brand awareness is just as important due to product familiarity should the consumer remember the ostentatious amounts of times the brand has been publicly made known through advertising. Therefore, making it easier for the consumer to make a brand recall if they are needed to recommend a particular brand to a friend or family member. It connotes that the brand has taken root in the minds of the consumer as they are not necessarily required to hear the name of the brand to make an immediate connection to the specific brand (Mariotti, 1999; Laurent, Kapferer & Roussel, 1995). Kotler, Armstrong & Opresnik (2018) supports this statement by expressing that even though consumers purchase out of habit, they subconsciously

follow brand beliefs formed by passive learning motivating them to purchase specific brands.

Lotfizadeh & Lotfizadeh (2015) conducted a study that found advertising, paired with models featuring the products, played a big part in creating brand awareness. They have also found that brand names which are easy to remember played a bigger part than advertising, pronunciation on the other hand played the biggest part. When consumers remember brands easily, they are more prone to being loyal towards that specific brand. Chaudhuri & Holbrook (2002) discusses brand loyalty around trust and commitment, further stating that having brand commitment reduces the uncertainty and risk the consumers have towards that specific brand. However, low-involvement products already possess the low risk value towards consumers thus making it a tedious, and if not purposeless, process to invest into. They support this by stating that brand loyalty is at its strongest when partnered with a high involvement product due to its greater risk thus reinforcing brand loyalty. But that is not say that low-involvement products cannot acquire a certain of brand loyalty. Datta (2003) acknowledges that brand loyalty in low-involvement products can be classified as habitual purchases which can strengthen through factors such as product performance, customer satisfaction, price, habit, consumer's history with the brand and the brand's name.

3.2 Algorithms in Marketing

Algorithms are not to be mistaken as Artificial Intelligence. Panch, Mattie & Atun (2019, pg.1) describes the difference as “Artificial intelligence (AI) is a family of techniques where algorithms uncover or learn associations of predictive power from data.”

With that said, AI is not a new innovation by any stretch, however, with more people gaining access to the internet everyday it would seem that it would ultimately be the epicentre of every marketing activity in a digital space. Davenport *et al* (2020) discusses the implementation of Artificial Intelligence in consumer behaviour and how it affects the sales process of a business, additionally stating that AI adoption within robotics may replace even executive positions within companies. However, the term Artificial Intelligence is more commonly adopted and interchanged by the general public with algorithms, which is at the heart of every Artificial Intelligent system (Shankar, 2018). Multiple algorithms such as machine learning, natural language processing, rule-based expert systems, neural networks, deep learning make up different the AI's used today (Davenport, 2018). While Artificial Intelligence is a topic of interest, and will occasionally recur within this paper, algorithms narrow down the technological discussion in line with marketing low-involvement health/fitness products.

3.2.1 Machine Learning Algorithms

Van Otterlo, (2013) defines Machine Learning as “any methodology and set of techniques that can employ data to come up with novel patterns and knowledge, and generate models that can be used for effective predictions about the data”. Using Machine Learning in Marketing has been commonplace for quite some time as companies use them for three main activities: gathering data, making market insights by data analysis and more commonly, customer engagement. Mari (2019) informs that the benefits of Machine Learning Algorithms lie in handling the data and using that specific data in prediction and hyper-personalization towards a specific consumer. Using L’Oreal as an example, he revealed that the company used machine learning to determine what consumers of different target markets look out for and created twelve different campaign video on YouTube, it was such a huge success that analytics showed a “109% increase in brand interest and 30% in purchase intent”. Additionally, he claims that a successful AI marketing model (see Fig. 4) can only be sustainably efficient if its technical and organizational foundations are equally as solid. He clarifies that managers need to understand the foundations

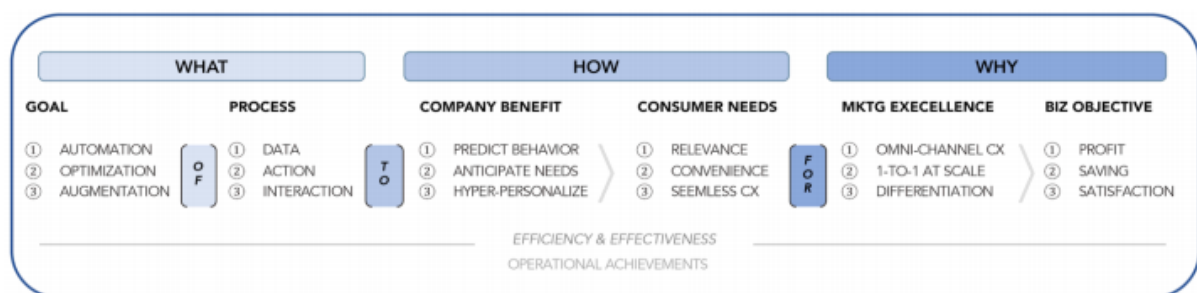


Figure 4. AI-Driven Marketing Model

Source: Mari, A. (2019)

of an AI-driven marketing model as such: the employees make up the technical foundation responsible of using and handling the AI, being digitally literate would enable the handling of data privacy and infrastructure that much smoother and the finally, the corporate culture would see the process all working in symbiosis.

3.2.2 Risks and Ethics in using Algorithms

Search Engine Optimization (SEO) is another instance of using algorithms. It works by focusing on creating a more “semantic web” which emphasizes on consumer ‘intent’, partially brought on by the rise of more and more consumers willing to try voice-based searches (Lin & Yazdanifard, 2014). However, with more people willing to try voice-based searches via IVAs (Intelligent Voice Assistants), there comes along with it the cyber security risks, ethically and psychologically. A major security flaw most consumers have now come to recognize, partly due to Facebook’s biggest security flaw scandal, is the data being gathered through unintentional voice recording whilst IVAs are not in use (Chung *et al*, 2017).

The ethical reasoning behind the use of Algorithms, whether it is used for marketing or any other technological advancement, have been debated by various scholars. Algorithms have always posed a problem within the field of decision-making as the scale of analysis grows while also having to tackle the ambiguity of the work being done, all of which needs a human touch to define the parameters of which data is correct data, but there are increasing evidence of algorithms relying on learning

capacities to tackle such problems without the help of the biased human touch (Tutt, 2016). Mittelstadt *et al.* (2016) designed a prescriptive framework (see Fig. 5)

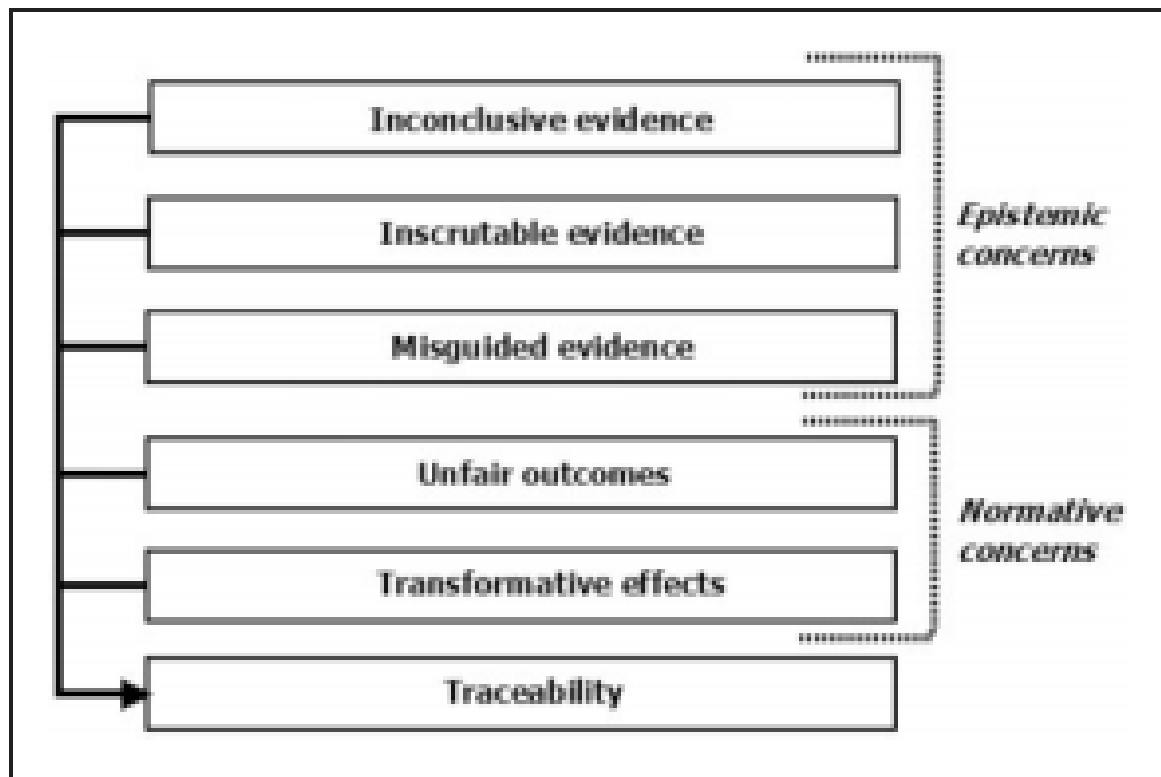


Figure 5. Six Types of Ethical Concerns Raised by Algorithms

Source: Mittelstadt *et al.* (2016)

which addresses the issue brought on by algorithms, concurrently relating to three aspects to how algorithms behaves: turning data input into evidence for a given outcome, trigger actions and motivations affecting human decision making in ways which may not be ethically neutral and complicates the responsibility for the effects of decisions made by algorithms.

Grote & Berens (2019) adds that whenever an algorithm makes a mistake, it becomes a problematic situation wherein the users have to quickly determine

accountability and future uncertainty to retain the trust and perceptibility of its customers. This aligns with Tuttt's work in voicing the ambiguity of who is responsible, the end user who trusted the algorithm's final decision or the engineer who designed the algorithm.

To counter the ethical problems, the European Union established the General Data Protection Act which Felzmann *et al.* (2019, pg.4) states that "within data protection law, notice and consent refers to providing information about the envisaged data processing to an individual before the actual data processing takes place (cf. Art. 13 of the GDPR). The individual then has the option to consent to data processing on the basis of this information but must do so freely and state their choice unambiguously (cf. Art. 4(11) of the GDPR). In practice, notice and consent is generally realized through the provision, by the service provider, of statements containing relevant information, such as privacy policies, and the ticking of a box for consent by the service user."

4. Methodology

4.1 Research Design

This research design followed an interpretivist (sometimes known as constructivist) approach, which focuses on multiple realities perceived by different people thus requiring research to be objectively observed from the direct experience of the people (Mack, 2010) subsequently relating to consumer behaviour theories.

Additionally, a deductive or inductive approach was considered but the researcher ultimately chose an inductive approach as Konrad (2008, pg. 13) states that “research questions derived solely through deduction from even a thorough knowledge of the extant literature are likely to generate only incremental contributions to the field”. Thus, an inductive approach was implemented as this research aims to advance knowledge and develop new theories within the realm of Marketing Technology (Harriman, 2010, p.6; Eisenhardt, Graebner & Sonenshein, 2016; Locke, 2007). The interpretivist and inductive approach requires the researcher to obtain qualitative data as it aids to better understand the ambiguity of reality perceived by different individuals as well as the development of new theories and knowledge (Woiceshyn & Daellenbach, 2018).

Obtaining qualitative data in this research is imperative as it aims to explore the changes in consumer behaviour in relation to the advancements in algorithmic marketing of low-involvement health/ fitness products, thus requiring exploratory research. Sarma (2012) describes exploratory research as research that delves into

new ideas and topics that will be able to spearhead or develop future research. Furthermore, Bryman & Bell (2015) suggested that qualitative research allows researchers to understand participants' feelings and opinions more so than quantitative or mixed methods. Essentially, qualitative research focuses on gathering the individual worldviews of a small group of participants thus encompassing a humanistic focus (Azungah, 2018). Birkinshaw, Brannen & Tung (2011, p. 573) observed that “qualitative methods can once again play a critical role to interpret and understand the complex plurality of contexts” which is crucial in grasping the intricate details of the research question on algorithms and low-involvement products.

4.2 Data Collection

4.2.1 Face-to-face Interviews

Face to face interviews allows the researcher to gather richer data due to the accessibility of interpreting the interviewee's mannerisms, feelings and tone of voice (reactions) to the questions asked (Oltmann, 2016). Additionally, Bolderston (2012) points out that face to face interviews may be more comfortable to individuals who have difficulty voicing their personal opinion on sensitive matters due to the subconsciousness of peer pressure or influence. Furthermore, face-to-face interviews allow for real time answers thus providing the researcher with the interviewees honest opinions without any further reflection (raw data) but this puts more responsibility on the interviewer to concentrate as they have to actively be aware of the questions being asked and the answers that are given (Opdenakker,

2006). The downside to conducting face-to-face interviews is the inconvenience of appearing at the selected venue for both parties.

4.2.2 Semi-structured Interviews

Bell (2009) reports that semi-structured interviews allows the researcher to follow the respondent's train of thought and open up new discussion from the answers given while at the same time pertaining to the topic/ agenda at hand. Gray (2011) has described it as a "controlled conversation" with the researcher on the wheel. This way the researcher can delve deeper into the themes already set from reviewing the literature beforehand. Semi-structured interviews also help both parties maintain focus towards the topic at hand without distractions from surrounding nuances. Furthermore, this style of interviewing allows information to come up naturally and sincerely due to the informality and casual flow of conversation (Lindlof & Taylor, 2011).

The interview was conducted at the researcher's bedroom as during the time of writing, there has been a government issued order to stay home at all times due to the COVID-19 pandemic. However, the researcher has ensured that the space used for conducting the interview is comfortable and quiet, exempt from any interruptions caused by nearby individuals or phone calls (Bryman & Bell, 2015).

Cottrell (2014) emphasizes the importance of using open-ended questions since it allows the participants to answer in an in-depth manner thus allowing for richer data. For the interview, 10-15 open ended question have been drawn up by the researcher from literature read beforehand as well as his own knowledge and experience. Alvesson & Sandberg (2013) points out that open ended question can also benefit the researcher by challenging their own knowledge on the topic, allowing for a new perspective to form while maintaining a coherent flow of discussion between respondent and interviewer.

Cottrell (2014) further recommends the interviews to have at least one type of recording device such as an audio recorder since it not only allows for obtaining and retaining information better than handwritten notes but also to allow a sense of focus for the both the interviewer and interviewee, which he claims can reduce stress due to the increased eye contact. During the interview, two recording devices were used to ensure data backup and reassurance: a Samsung smartphone voice recorder and a laptop voice recorder with a condenser microphone connected to ensure the highest quality of audio is captured. Opdenakker (2006) also recommends the researcher to take notes in case the technology fails at the last minute or the data gets corrupted for unknown reasons.

4.3 Data Sampling

Due to the recent outbreak of COVID-19, the UK government has issued a nationwide lockdown where everyone must stay indoors at all times when possible.

Thus, in virtue of the limitations imposed, this research has employed a convenience sampling method which Dörnyei (2007) explains as a non-probability sampling method in which participants are chosen based on convenience on the researcher's part and if they meet a certain criterion. While the use of online video calling such as Skype, Zoom and Microsoft Teams has made it easier to conduct qualitative research in these times, limitations such as a loss of connection and lack of trust with the researcher over an online call can cause a halt in the flow of the interview as well as a poor dataset (La lacono, Symonds & Brown, 2016) Furthermore, convenience sampling has been said to be most useful when carrying out an exploratory research method (Blackstone, 2012). However, Mackey & Gass (2005, cited in Farrokhi & Mahmoudi-Hamidbad, 2012) have suggested that a certain disadvantage of using convenience sampling is its high probability of being biased.

The sample comprised of 6 individuals, within the Gen Z demographic aged 20-30. The main reason why these 6 individuals were chosen was due to their occupational status as students, who are more likely to engage in purchasing low-involvement products as well as a high probability in a shift of spending behaviour.

4.4 Data Analysis

Recordings of the six interviews were transcribed (Appendix 4.) and using a coded manual, quotations were extracted to fit into those codes, concurrently eliminating any unnecessary information (Bryman, 2008). As per the requirement of the

University of Gloucestershire, the most representative interview was transcribed verbatim and can be seen in Appendix 5.

Weber (1990, cited in Hsieh & Shannon, 2005) emphasizes the importance of coding data through content analysis thus applying two separate coding methods: Priori and Inductive. Cottrell (2014) explains the process of analyzing the recorded data and categorizing them within codes developed beforehand for easier identification of similarities, this is known as Priori Coding. However, while conducting the interviews, new codes began develop amidst the discussion held from the open-ended questions asked. Thomas (2006) states the goal of inductive coding is to create a few summary categories inspired by critical themes relating to the objective drawn from the raw data.

Bryman & Bell (2015) justifies the use of thematic analysis in an undergraduate researcher as it is a widespread analysis method which is theoretically-flexible and easy to use for individuals new to research. The basic process of Thematic Analysis is defined by Braun & Clarke (2006, p.79) as “a method of identifying, analysing and reporting patterns within data.” Javadi & Zarea (2016) states that a limitation for conducting a thematic analysis is its high probability of inconsistency or lack of coherency duly caused by incomplete analysis of the entire data or an inadequacy interpretation thus leading to a poor representation of data. However, they further emphasise that these limitations are caused by inept data analysis and poor data interpretation, not the method of analysis itself.

4.5 Ethics and Limitations

The researcher followed the strict ethical guidelines of the University's research handbook for conducting this qualitative research. The participants were explicitly informed of what they would be asked, what the research is about and what they can expect. Additionally, they have been told what to expect and that their data is secured. Participants were notified of every point stated and have been asked to give verbal consent during the start of the interview.

Psychological and physical limitations stemmed from the COVID-19 pandemic with limited access to additional/ diverse participants to contribute towards this research. Additionally, a transition from everyday routine to quarantine may have affected participants mentally and emotionally subsequently altering their views on certain products and purchase habits.

5. Findings

This chapter aims to analyse the data received from the interviews conducted. Prior to conducting the interviews, 5 main themes were drawn and statements that correlates with these themes were identified and framed. The five themes that were drawn aimed to answer the three objectives of this dissertation research:

1. To evaluate how algorithms can be used to promote health and fitness.
2. To identify how algorithms can a play a part in displaying different prices to different audiences.
3. The identify the factors which influence health purchases and how algorithms can affect it.

However, new themes emerged during the process of the interview and subsequently built upon one another during consecutive interviews.

Figure 6. Post Analysis Table

Motivations – Health/ Fitness	<p>“It’s not really important to me, I’m not an exercise freak.” (P1)</p> <p>“I think it’s important but not THAT important, because food affects 80% of your health and 20% is exercise, so I feel that food is more important.” (P2)</p> <p>“My health needs to be in tiptop shape. I have a medical problem that can be aided by exercising.” (P3)</p> <p>“I exercise to get my ideal body, for health purposes but partly for showing off too.” (P4)</p> <p>“help you maintain good health; it can make you feel good about yourself and your body. Self-confidence from a good body image essentially.” (P5)</p> <p>“It’s a matter of personal preference [...] I like to swim and dance as a form of exercise but that’s only because I have a reason to do it.” (P6)</p>
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Brand & Loyalty	<p>"My friend recommended that brand to me and I've been using it ever since." (P1)</p> <p>"Any brand that is associated with a celebrity I like would always have my loyalty." (P2)</p> <p>"Multiple reviews. If a certain brand has many good review and good word of mouth, I'd consider it good quality. Reassurance basically." (P3)</p> <p>"I tend to trust brands that have been given good reviews by experts." (P4)</p> <p>"it's my Dad's favourite car brand so I suppose that affected my decision a lot." (P5)</p> <p>"I can be loyal to something I have an emotional history with." (P6)</p>
Consumption - Economic	<p>"But if I can see the product itself, I judge it through the actual product itself." (P1)</p> <p>"I rarely look at the prices. Except for when I'm broke, then I start paying attention to them, even the cheapest products." (P2)</p> <p>"If I saw right then there whether or not I could afford it, I would Google it to see more details about it." (P3) [On prices in ads]</p> <p>"Usually, I don't mind spending more if the nutritional values align with my diet." (P4)</p> <p>"Packaging. That definitely plays a large role. [...] It has stand out from everything else on the shelf." (P5)</p> <p>"The packaging and origin of country, some countries are known for specializing in some products so I don't mind paying an extra pound or two for it." (P6)</p>
Consumption - Emotion	<p>"I really like it because I feel like it's right for me." (P1)</p> <p>"I feel better when I drink it compared to other brands." (P2)</p> <p>"I felt good, even though that was the first time I bought anything over 500 pounds in my life [...] I felt even better when I realized I purchased it with the money I made working part-time." (P3)</p> <p>"I didn't do more research, I thought that it would fit me but, in the end, it just felt uncomfortable although it had fit me." (P4)</p> <p>"Nope, not one bit. Since I use it every day and I love the smell so what's there to regret." (P5)</p> <p>"It would depend [...] on how close it hits home." (P6)</p>
Algorithms/ e-Marketing	<p>"I think it's scary. To think that a computer will be able to convince me to buy a product I may have never heard of." (P1)</p> <p>"It's scary because it's new so our data isn't secure." (P2)</p> <p>"Just thinking about ads popping out when I've barely spoken about my interests is creepy." (P3)</p>

	<p>"I think people would like to retain some form of freedom and not entirely leave it up to algorithms to decide what we need or want." (P4)</p> <p>"I don't like the idea of a computer knowing sensitive information about me." (P6)</p>
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5.1 Motivations

The first of the five themes, Motivations, aimed to understand the reasoning behind why the participants exercise. Out of the six interviewed, half deemed it important to exercise. Their reasonings included the consciousness of their personal health and to make themselves feel better after a workout. Participant 4 explicitly stated that their self-image was very important to their confidence, which stemmed from the inspiration of viewing transformation videos online. However, Participant's 3 and 5 stated they merely exercised to stay health with the former indicating their health problem can be subdued or lessened through exercise.

The other half claimed that although the health is important to them, they do not necessarily see it as a necessity to exercise as much. Going on to say that keeping track of what and how much they consume is far more important than exercising. When questioned why, they stated that they simply don't feel as energized as most people after exercising. Participant 2 went on to quote various studies done online regarding a rule that losing weight is 80% about the intake of calories while 20% is dependent on the exercise performed. When asked why they trusted a study done online with no credible source, they simply replied "It works for me so I don't need any further validation."

However, when asked what would motivate them to exercise, all three participants say that it would be acquiesce to the request of their friends and family. They also heavily emphasize the influence of people's perception of them as a motivator with statements such as "when my mom says I should start thinking of exercising, it makes me self-conscious." (Participant 6) and "I'm definitely influenced by the people I'm surrounded by, if they don't like to exercise, I won't have any motivation to do so. But if they keep talking about, I get self-conscious and start questioning if i should start exercising or not" (Participant 2).

A recurring sub theme regarding the motivations to exercising is the inclusion of friends. All six participants voiced their preference of having their friends work out with them saying that it's "influencing how hard they exercise", "a bonding experience to exercise together", "it's just way more fun to do something together.

5.2 Pricing

This theme aimed to discover how the participants felt about purchasing low-involvement products in supermarket venues. Most participants ignored, if not completely disregarded, the prices of purchases that were habitual. When questioned as to what they look at when purchasing items in the grocery store, most said that "the packaging would most like be the deciding factor", with aspects such as its "its ability to catch my eye, to make me curious to try" (Participant 1). Apart

from packaging, Participant 2 says that if they “see enough of it in advertising and decide to try it and it works, I’ll stick with that brand.” They also go on to mention that ads which showcase the products price will usually garner more attention from them and seldom move to purchase if they had the financial freedom to do so. When asked if other participants felt the same, most preferred seeing the price on display.

5.3 Factors which influence health purchases

5.3.1 Brand & Loyalty

This theme revolves around the factors that influence consumers to try new brands and if loyalty is something that can be instilled for low-involvement products. Most participants have acknowledged the fact that they receive news of new brands by word-of-mouth mainly by a trusted source such as their parents. When it comes to health purchases such as vitamins and supplements, participants who take it usually research on their own at first and seek validation from a trusted source. However, other participants also seek mass validation (Participant 6) by scouring through a plethora of reviews purchasing a new brand.

Participant 5 have stated that they do not take post exercise vitamins or supplements due to a gender stereotype that revolves around its uses only being consumed by men. An emerging theme that sparked new research interest.

Additionally, celebrity endorsements seem to be a recurring sub theme that majorly affects the decision of most participant's purchases, with one stating that they are more loyal to the celebrity rather than the brand they are endorsing for. During an open-ended discussion with Participant 4 post interview, they indicated that concerning health and fitness, they do not trust celebrity endorsements but rather experts on the topic which were licensed fitness trainers.

5.3.2 Emotion

This theme determines how much emotion play a part in deciding how much people are willing to spend when they are emotionally connected to a specific product.

Participant 3 explains that even though they had never spent more than 500 pounds on any product, a camera is a purchase they did not regret due to their wish to express themselves creatively. However, participant 6 have expressed that even with a strong emotion towards a product it has to be within a reasonable price range considering they are talking about a low-involvement product which reminded them of home. When asked if they would do the same with a product on a higher price, they mention that it would solely depend on how emotionally connected they are with that product.

Participant 4 expressed a negative emotion with a recent purchase they had made and when questioned if had regretted their purchase, they had remarked "I would refund it if I could". However, they ultimately blamed themselves for not researching

thoroughly before making the purchase meaning they are not necessarily dissatisfied with the brand itself.

5.4 Algorithms, A.I & e-Marketing

This final theme encompasses the main focus of this research paper. It aimed to discern how the participants reacted to the thought of a computer micro-managing their daily live subconsciously. All participants were asked to identify the most common channel they saw marketing adverts and all responded with social media being the most common marketing channel. Subsequently, they were asked how they felt about a computer presenting ads to them. Almost all participants reacted in a negative light, with claims such as: “I don’t like the idea of a computer knowing sensitive information about me.” (Participant 1), “I think people would like to retain some form of freedom and not entirely leave it up to algorithms to decide what we need or want” (Participant 4), “It’s scary because it’s new so our data isn’t secure.” (Participant 2) and “Just thinking about ads popping out when I’ve barely spoken about my interests is creepy.” (Participant 3).

6. Discussion

6.1 Promoting Health and Fitness

Aligning with Mari (2019), algorithms should focus on hyper personalization and each participant interviewed has their own preferences. However, in order to answer the first objective, we can simply categorize the participants into two groups and create personas: those who value exercise and those who value diets.

Maslow's Hierarchy of Needs shows the importance value of consumer as they go up the hierarchy meaning if algorithms can target the pinnacle aspect of the hierarchy, the campaigns, products or services being marketed would leave a deeper impression on the consumer. From the pyramid, we can discern that the findings prioritize the top three factors: Self-Actualization, Ego Needs and Belongingness. The first half of the participants who stated that exercise is very important to them exhibit values that correlate more towards the top two values of the pyramid indicating that they prioritize enriching experiences that come from the accomplishments of exercising: "I exercise to get my ideal body, for health purposes but partly for showing off too" (Participant 4). Solomon (2006) states that recognizing your actual self is the first step in closing the gap between your ideal and your actual self. This persona needs no more motivation due to the fact that they already possess the intrinsic motivation to take the first step in information search which is the second base in the consumer journey (Riley, 2012). Deci & Ryan (2008) states that intrinsic motivation can be associated with creativity and vitality which can be proven by the fact that despite the COVID-19 lockdown currently occurring, the three

participants (3,4 & 5) are continuing/ are willing to do some form of exercise to keep in shape.

The second half of participants who stated that food takes priority over exercise is the apparent target audience persona for answering the first objective as their tendency to be aware of exercising adverts but remain docile indicates that they have not taken a step into the first base in the consumer journey. Using algorithms to subtly convince them to take the first step can prove to be a remarkable yet dangerous feat. Firstly, they exhibit an adjacency towards exercising with friends and loved one, mainly: "I'm definitely influenced by the people I'm surrounded by, if they don't like to exercise, I won't have any motivation to do so. But if they keep talking about, I get self-conscious and start questioning if I should start exercising or not." (Participant 2). Using algorithms to subtly promote group bundle membership prices in gyms can assist in spreading the intrinsic motivation to exercise under the guise of an extrinsic motivation for this persona. Alternatively, in close association with Participant 3, who preferred group sports such badminton, Participant 1 has said that "I think I need someone who's aligned with how I exercise, they're not too intense but also fun to work out with." Data privacy and ethics play a major aspect should marketers try to use algorithms to collect data on what type of sport this persona enjoys on an individual level.

6.2 Pricing in a low-involvement perspective

Keeping in alignment as to what Assael (1987) states, most participants engage in habitual purchasing when shopping only ever seeking new variety if a certain product

stands out due to its curious packaging. When questioned about being sent vouchers in relation to the income level of an individual, Participant 4 was very vocal and expressive in stating how the drawbacks of a computer obtaining such data would be an infringement of free human will, yet again indicating the importance of data privacy and ethics. Furthermore, Participant 4 has also expressed their decision to willingly spend more on a higher quality product, with only looking at the nutritional facts on the packaging to determine the worth. This coincides with Yang *et al* (2019) who stated that pricing may often give the illusion of a higher quality product but in utilitarian terms, the functions remains the same.

Apart from in store shopping, participants expressed their interest in seeing prices displayed on adverts, saying that it is more efficient. Likewise, Bell, Corsten & Knox (2011) have said that price as well as time play the next important factor when understanding human behavior which is proven when Participant 3 had dismissed a possible product purchase because they had felt that it was interesting enough to conduct further information search.

While although the participants have voiced discomfort in the knowledge that a computer might hold all their sensitive and private data, algorithms can already collect their data. As a few participants have signed up for Unidays, the possibility of algorithms having access to such public knowledge on the internet is not out of the question.

6.3 Factors influencing health purchases

Out of the six participants, only Participant 4 uses post gym supplements. The others strictly consume vitamins to instantly receive the deficit they lack for that day. A new theme that had emerged from discussing supplements came from Participant 5, who had said that they believed there was a gender stereotype that only men consumes such supplements. They had stated that they “had not seen many women who exercise talk about or recommend any supplements.” In light of this new theme, further research was conducted to see its viability as a possible future research or merely a lack of aptitude on the researcher’s part. Pasiakos, McLellen & Lieberman (2014) has produced a paper studying the effects of protein supplements but there was a lack of representation of the female persona. Additionally, Davies, Carson and Jakeman (2018) conducted a similar research but similarly lack the female representation.

Participant 4, has described his reasoning behind the purchase of protein supplements as a need in order to “get their ideal body”. In other words, their statement reinforces Schienbaum and Kukar-Kinney’s (2009) study on hedonistic purchases, whereby the consumer would be more susceptible to marketing campaigns and could lead to a higher purchase count. To reinforce it even further, Participant 4 has mentioned that they would usually see expert reviews first and foremost. Using an algorithm to identify which expert review the specific individual trusts can be beneficial by immediately placing their review on the campaign itself.

Another factor that may be influencing purchases might be the inclusion on celebrity brand endorsements, backing up the statement by Lotfizadeh & Lotfizadeh (2015) who had identified an increase of brand awareness if something eye catching such as models were used in the campaigns. Implementing a machine learning algorithm to identify the celebrity's specific individuals idolize and push out content which correlates with the item being marketed may give a boost in brand awareness should the targeted persona be oblivious to the campaign.

The last and final factor that can influence health purchases may be the most dangerous use of Machine Learning Algorithms which can trigger an emotional response but in an explosive and invasive manner. As Richins (1997) states, emotion is very context specific but if the context is a very private and personal memory, Participant 6 says that they "don't like the idea of a computer knowing sensitive information about me." However, Participant 4 claims that "we're already giving out data to companies like Facebook, willingly."

7. Conclusion

7.1 Summary of Key Findings

Algorithms are still far ahead of its time. Everybody is still terrified of how much we trust corporations with our data let alone machine learning computer. This dissertation sought out to find how algorithms promote, affect and influence people regarding health/ fitness.

Using Maslow's Hierarchy of Needs, we discerned that the persona who does not regularly exercise do so in a social manner, with common motivations such as their image in the wider society and influences from family members and friends. The next step is to elevate this persona onto the higher level of hierarchy of the pyramid, to make them realize their need and problem recognition (Riley, 2012). Furthermore, the findings have proven that once these personas reach the top of the hierarchy, they would continuously self-regulate in information search through intrinsic motivation. Further proven to be the most effective place to be due to the fact that although we are in the midst of a pandemic, those with intrinsic motivations continue to do some form of exercise.

Factors which influenced health purchases were also discovered with celebrity endorsements being the favorite choice, followed by w-o-m. These factors can be inputted into algorithms and have it executed on a global scale to conduct mass hyper-personalization.

However, the findings have presented the concerns and pressing matters if we were to use algorithms to conduct hyper-personalization marketing on a deeper level. With problems regarding data privacy and the ethics behind it, the people are not yet ready for that type of technology to be implemented. Ideally, we would have to convince the general populace to let them trust corporations with their sensitive data and media scandals such as Facebook's data leak has people already cautious about what data they share online.

7.2 Significance of study

The findings from this study made several contributions to the current and possibly future research. Firstly, the findings have discovered what Millennials and Gen Z's prioritize when decide to exercise as well as discovering why some people don't exercise and how to make them change their minds through the use of algorithms. Secondly, this research has gathered the current opinions of using algorithms to collect and analyze data in order to quite possibly predict future behavioral trends. Whilst conducting research, a gap in the literature has suggested that there is not enough literature going on about promoting supplements for women, with gender inequality an ever-rising topic, this topic might be of interest.

7.3 Limitations of the current study

The main limitation affecting this study was the unprecedented appearance of the COVID-19 pandemic which have caused distress to many individuals and

complications in gathering the desired sample group. Additionally, the psychological impact of the sudden transition to quarantine may have altered the quality of data that was given by the participants.

Additionally, the inexperience in conducting research also posed a limitation risk as there could have been a high probability of human error in conducting the interviews and analyzing the data given. Bias tendencies can occur in the result findings due to the knowledge, passion, and prejudices of the researcher (Finlay and Gough, 2008).

7.4 Recommendations for further research

Further qualitative research may be conducted to see how people would feel about improving the structural integrity of data privacy and the ethics behind using algorithms to influence purchases online and offline. This would be the first step in enabling a more efficient world for marketers and companies alike. To be able to simultaneously parse through vast amount of data would save massive time and resources. Additionally, a study may be conducted to explore the viability of women using supplements as compared to men would be a topic of great interest as it is currently lacking in the industry

Appendices

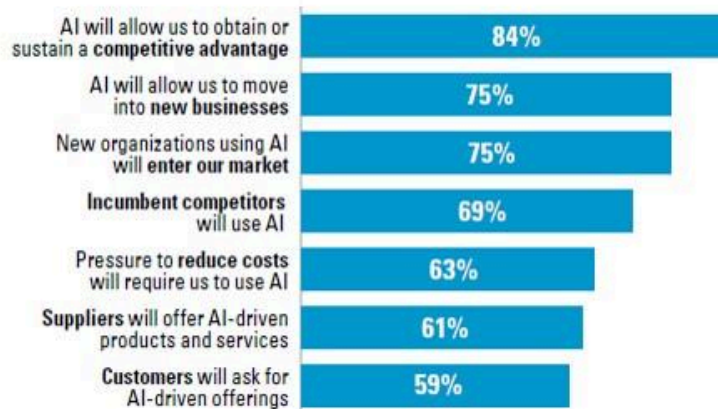
Appendix 1. Four Types of Buying Behavior

	High involvement	Low involvement
Significant differences between brands	Complex buying behavior	Variety-seeking buying behavior
Few differences between brands	Dissonance-reducing buying behavior	Habitual buying behavior

Appendix 2. AI Adoption

Reasons for adopting AI

Why is your organization interested in AI?



Percentage of respondents who somewhat or strongly agree with each statement

Appendix 3. Usage of AI in today's world

AI in driverless cars (e.g., Tesla)	In the future, AI-enabled cars may allow for car journeys without any driver input, with the potential to significantly impact various industries (e.g., insurance, taxi services) and customer behaviors (e.g., whether they still buy cars).
Online retailing AI (e.g., Birchbox)	AI will enable better predictions for what customers want, which may cause firms to move away from a shopping-then-shipping business model and toward a shipping-then-shopping business model.
Fashion-related AI (e.g., Stitch Fix)	AI applications support stylists, who curate a set of clothing items for customers. Stitch Fix's AI analyzes both numeric and image/other non-numeric data.
Sales AI (e.g., Conversica)	AI bots can automate parts of the sales process, augmenting the capabilities of existing sales teams. There may be backlash if customers know (upfront) that they are chatting with an AI bot (even if the AI bot is otherwise capable)
Customer service robots (e.g., Rock'em and Sock'em; Pepper)	Robots with task-automating AI respond to relatively simple customer service requests (e.g., making cocktails).
Emotional support AI (e.g., Replika)	AI aims to provide emotional support to customers by asking meaningful questions, offering social support, and adjusting to users' linguistic syntax.
In-car AI (e.g., Affectiva)	In-car AI that analyzes driver data (e.g., facial expression) to evaluate drivers' emotional and cognitive states.
Customer screening AI (e.g., Kanetix)	AI used to identify customers who should be provided incentives to buy insurance (and avoid those who (1) are already likely to buy and (2) those unlikely to buy).
Business process AI (e.g., IBM Interact)	AI used for multiple (simple) applications, such as customized offers (e.g., Bank of Montreal).
Retail store AI (e.g., Café X, LoweBot, 84.51, Bossa Nova)	Robots that can serve as coffee baristas, respond to simple customer service requests in Lowe's stores, and identifying misshelved items in grocery stores.
Security AI (e.g., Knightscope's K5)	Security robots patrol in offices or malls, equipped with superior sensing capabilities (e.g., thermal cameras).
Spiritual support AI (e.g., BlessU-2; Xian'er)	Customizable robot priest/monk offering blessings in different languages to the user.
Companion robot AI (e.g., Harmony from Realbotix)	Customizable robot companion, which promises reduced loneliness to the user.

Appendix 4. Table of Interview Analysis (Complete)

Themes	Participant 1 Comments
Motivations – Health/ Fitness	<p>“It’s not really important to me, I’m not an exercise freak.”</p> <p>“For my mom, sometimes she asks me if I could accompany her”</p> <p>“I gained weight during the pandemic, so I think once this over I’ll start exercising.”</p> <p>“I think I need someone who’s aligned with how I exercise, they’re not too intense but also fun to work out with.”</p> <p>“Togetherness is a motivational factor I would say.”</p> <p>“I would say that vitamins and pills are unnecessary because my mom says that you can get them naturally though the foods you eat.”</p> <p>“For women, our skin is really important. So, I do exercise but I mainly pay more attention to my diet.”</p>
Brand & Loyalty	<p>“I found that their skincare product works, I can see the improvement compared to other brands.”</p> <p>“My friend recommended that brand to me and I’ve been using it ever since.”</p> <p>“A combination of those two made me presume that all the products from that brand is good.”</p> <p>“I believe it’s personal preference, if you decide who to be loyal to.”</p>
Consumption - Economic	<p>“I don’t pay much attention to price when I’m grocery shopping.”</p> <p>“Actually, quality is much more important to me.”</p> <p>“I guess the packaging is what matters, how it looks on the outside. [...] its ability to catch my eye, to make me curious to try”</p> <p>“But if I can see the product itself, I judge it through the actual product itself.”</p> <p>“Yeah, I think it’s nice to see the prices [...] then, I wouldn’t have to go through the trouble of intensive research.”</p>
Consumption - Emotion	<p>“There is this T-shirt I always wanted because I feel like it fits my style.”</p> <p>“I really like it because I feel like it’s right for me.”</p> <p>“I already have the image in my head of what I’ll look like with it on.”</p> <p>“I haven’t bought it, no. Because it looks like I won’t fit the shirt, so I’m looking for the same product but in my available size. But I definitely am buying it.”</p>
Algorithms/ e-Marketing	<p>“Social media definitely.”</p> <p>“I think it’s scary. To think that a computer will be able to convince me to buy a product I may have never heard of.”</p> <p>“Data privacy is definitely something I’ve heard of and am concerned about. With companies like Facebook selling my info to other companies I’ve never heard of? It’s frightening.”</p> <p>“I feel annoyed when I get those personalized marketing emails.”</p> <p>“I never asked for them, yet there they are.”</p>
Additional Comments	

Themes	Participant 2 Comments
Motivations – Health/ Fitness	<p>“I think it’s important but not THAT important, because food affects 80% of your health and 20% is exercise, so I feel that food is more important.”</p> <p>“I think it’s better to exercise with friends [...] It’s way more fun to do something together.”</p> <p>“I’m definitely influenced by the people I’m surrounded by, if they don’t like to exercise, I won’t have any motivation to do so. But if they keep talking about, I get self-conscious and start questioning if i should start exercising or not.”</p>
Brand & Loyalty	<p>“Any brand that is associated with a celebrity I like would always have my loyalty.”</p> <p>“I guess you could say that I’m loyal to the celebrity.”</p> <p>“Usually if I see enough of it in advertising and decide to try it and it works, I’ll stick with that brand.” (on low-involvement products)</p> <p>“If the celebrity switches brand then I’ll give the new brand a try, that doesn’t necessarily mean I’ll be loyal towards them.”</p> <p>“I’ll get bored if I keep buying the same brand over and over, so every now and then I’ll try new brands.”</p> <p>“Global recognition is a major factor too; I automatically trust a brand that globally recognized.”</p>
Consumption - Economic	<p>“I rarely look at the prices. Except for when I’m broke, then I start paying attention to them, even the cheapest products.”</p> <p>“I’m more inclined to head over to the product’s website when I see the prices displayed on the adverts [...] because I can make an immediate assessment of whether or not I could afford it.”</p> <p>“[...] I would just head over to the website to see extra information about it and sometimes order it online.”</p>
Consumption - Emotion	<p>“I feel better when I drink it compared to other brands.”</p> <p>“It was a need. Even though it was expensive I needed it.”</p>
Algorithms/ e-Marketing	<p>“I always see the ads on Social Media, like Instagram.”</p> <p>“It depends on what we recently searched.”</p> <p>“It’s scary because it’s new so our data isn’t secure.”</p> <p>“I’m protective of my data.”</p> <p>“I don’t like it; they shouldn’t know too much about our preferences.”</p>
Additional Comments	

Themes	Participant 3 Comments
Motivations – Health/ Fitness	<p>“On a scale of 1-10, it’s a 9.”</p> <p>“I exercise almost every day, except on weekends.”</p> <p>“I felt really good, really fresh. More confident after moving around.”</p> <p>“I feel that comfort is a priority when exercising.”</p> <p>“My health needs to be in tiptop shape. I have a medical problem that can be aided by exercising.”</p> <p>“I prefer exercising [...] with friends, because we’re bonding.”</p> <p>“My mother told me it helps [...] improve [...] overall health.”</p>
Brand & Loyalty	<p>“I prefer the minimalist design from Adidas. And it’s also more comfortable to wear compared to Nike.”</p> <p>“I look at quality mainly, when I’m trying to decide a good brand.”</p> <p>“Multiple reviews. If a certain brand has many good review and good word of mouth, I’d consider it good quality. Reassurance basically.”</p> <p>“Brands try to find someone who is trending right now and sign them for a deal to get more loyalty from them. [...] So, I believe celebrity endorsements are a big thing for loyalty.”</p> <p>“I’d be buying more shoes from Adidas. [...] I’m a fan, I want to see if the shoes he endorses are good or not.”</p> <p>“No, even though Ronaldo is tied to Nike, I won’t buy Nike, it’s too uncomfortable for me.”</p>
Consumption - Economic	<p>“Pricing is quite important, but when I go grocery shopping, I don’t pay much attention to it since I would get what I need then when it comes time to pay, I realize I’ve bought too much.”</p> <p>“Yeah, I’d like to see the prices. [...] more efficient.”</p> <p>“If I saw right then there whether or not I could afford it, I would Google it to see more details about it.”</p>
Consumption - Emotion	<p>“Hobbies are good examples, I think. [...] I certainly didn’t regret buying my camera.”</p> <p>“I get to express my creativity through photography. [...] So, I didn’t hesitate buying one [a camera].”</p> <p>“I felt good, even though that was the first time I bought anything over 500 pounds in my life [...] I felt even better when I realized I purchased it with the money I made working part-time.”</p>
Algorithms/ e-Marketing	<p>“Social media, apps like Instagram or YouTube.”</p> <p>“I feel having an AI make ads in the future won’t be any different to today since AI’s are developed BY humans.”</p> <p>“I suppose if they {the AI} were to be able to receive data about me, it’s a scary thought.”</p> <p>“Just thinking about ads popping out when I’ve barely spoken about my interests is creepy.”</p> <p>“I think the media also paints Facebook in a bad light, which is the main reason why I’m cautious to begin with. I haven’t given much thought into by data privacy until the news brought up the fact that Facebook has been selling data.”</p> <p>“Maybe” [To the possibility of AI being a norm in the future]</p> <p>“[...] how poorly our data is being managed and protected out there.”</p>

Additional Comments	<p>"If I can see the product itself, I judge the quality of the product rather than the packaging."</p> <p>"I would tell my friends about it even if I can't afford it."</p>
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Themes	Participant 4 Comments
Motivations – Health/ Fitness	<p>“Very important.”</p> <p>“If I don’t exercise, I don’t feel healthy.”</p> <p>“I exercise to get my ideal body, for health purposes but partly for showing off too.”</p> <p>“I see people online, you know body transformation videos, and I feel inspired.”</p> <p>“I don’t work out as much right now because of the pandemic but I would like it if I had an all in one product.”</p> <p>“Yeah I heard about that [Tonal]. It’d be nice if someone can make a cheaper variant of that, right now it’s only available for the rich.”</p> <p>“I can exercise alone or with friends, but if I had to choose, I would go with my friends</p>
Brand & Loyalty	<p>“I tend to trust brands that have been given good reviews by experts.” [fitness products]</p> <p>“Pricing gets me too, if the product works for a cheap price then I don’t think twice about buying that again.”</p> <p>“I’m not really loyal to any brand, I like to try different brands now and then.”</p> <p>“I don’t think anyone is tied to any one brand [...] they just want the best thing [their] money can buy.”</p>
Consumption - Economic	<p>“I tend to only look at prices where I deem necessary, such as honey or meats [grocery shopping], because I believe that a higher price usually indicates a higher quality.”</p> <p>“I seldom look at the nutritional values on the back of the products and then the price.”</p> <p>“Usually, I don’t mind spending more if the nutritional values align with my diet.”</p> <p>“I don’t mind either way.” (on seeing prices on ads)</p> <p>“If I like the product enough, I’ll research more about it on my own.”</p>
Consumption - Emotion	<p>“Yeah, that was a negative experience.”</p> <p>“I didn’t do more research, I thought that it would fit me but, in the end, it just felt uncomfortable although it had fit me.”</p> <p>“Yeah, I still buy from that brand [...] just not that specific line of shoes.”</p> <p>“If I could’ve refunded it, I would.”</p>
Algorithms/ e-Marketing	<p>“Instagram and YouTube.”</p> <p>“We’re already giving out data to companies like Facebook, willingly, so I won’t really be surprised if I start getting ads specially tailored to me.”</p> <p>“We’re already receiving ads by AI; we just don’t consciously recognize it.”</p> <p>“I think people would like to retain some form of freedom and not entirely leave it up to algorithms to decide what we need or want.”</p> <p>“Unidays already offer discounts for students, it’s just a matter of us clicking it. If an AI decides that I need something, then I’ve lost my freedom to choose as a human, haven’t I?”</p>

Additional Comments	"By doing research, you can tell if that product is actually beneficial for you."
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Themes	Participant 5 Comments
Motivations – Health/ Fitness	<p>“it’s very important.”</p> <p>“help you maintain good health; it can make you feel good about yourself and your body. Self-confidence from a good body image essentially.”</p> <p>“I had more energy and I felt fresh. I felt good about myself.”</p> <p>“I believe it’s important for everybody to keep on doing one form of exercise to stimulate their brain.”</p> <p>“I used to work out with my friends. Now, I have to work out alone.”</p> <p>“Yeah” (When asked if they preferred working out with friends.)</p>
Brand & Loyalty	<p>“it’s my Dad’s favorite car brand so I suppose that affected my decision a lot.”</p> <p>“I’m not really loyal to any brands, I’m not that type of person.”</p> <p>“I usually look for the cheaper brands.”</p>
Consumption - Economic	<p>“A good midway point between price and quality.”</p> <p>“Packaging. That definitely plays a large role. [...] It has stand out from everything else on the shelf.”</p> <p>“Color schemes, design, attractiveness.” (on what makes good packaging)</p> <p>“Yeah, I think it’s good [...] to see the prices on ads]. A lot of people would just appreciate it, to see how much it costs right then and there.”</p>
Consumption - Emotion	<p>“The price was just an afterthought.”</p> <p>“Nope, not one bit. Since I use it every day and I love the smell so what’s there to regret.”</p>
Algorithms/ e-Marketing	<p>“Instagram.”</p> <p>“it’s way too complicated for someone who’s tech illiterate like me.”</p>
Additional Comments	<p>“I always thought those products were just for men. I believe that exercise is all we need and a healthy diet of course.” (On vitamins and supplements.)</p> <p>“I had not seen many women who exercise talk about supplements, or recommend it.”</p>

Themes	Participant 6 Comments
Motivations – Health/ Fitness	<p>“Not very important [...] I used to but not anymore.”</p> <p>“It’s not something I’m passionate about.”</p> <p>“It’s a matter of personal preference [...] I like to swim and dance as a form of exercise but that’s only because I have a reason to do it.”</p> <p>“Currently, I have no reason to exercise. Even though I know I’m not healthy, I’m okay with that.”</p> <p>“I felt tired but healthy at the same time, so a sense of fulfillment.”</p> <p>“If a friend persuades me to exercise, I would go with them [...] working out alone is not something I like to do, it’s more fun with friends.”</p> <p>“I started thinking about exercising because recently I started gaining weight.”</p> <p>“And my parents too I guess, when my mom says I should start thinking of exercising, it makes me self-conscious.”</p> <p>“Of course, my image is important to me, it gives me my confidence.”</p>
Brand & Loyalty	<p>“I guess loyalty means coming to purchase products from that brand again and again over time.”</p> <p>“I’m not loyal to a specific brand, I’m constantly trying new brands.”</p> <p>“I’m going to try any brands that have a lot of good reviews. Mass validation if you will.”</p> <p>“I can be loyal to something I have an emotional history with.”</p> <p>“[...] because I interviewed her once, I have that history with her. She knows the products she’s selling. I can be loyal to a service.”</p>
Consumption - Economic	<p>“I pay lot of attention to pricing when I go shopping.”</p> <p>“I go for products that are worth the price.”</p> <p>“The packaging and origin of country, some countries are known for specializing in some products so I don’t mind paying an extra pound or two for it.”</p>
Consumption - Emotion	<p>“Something that reminds me of home.”</p> <p>“Even then, I still look at the price to see if it’s reasonable or not.”</p> <p>“It would depend [...] on how close it hits home.”</p>
Algorithms/ e-Marketing	<p>“Social media.”</p> <p>“I don’t like the idea of a computer knowing sensitive information about me.”</p>
Additional Comments	<p>“I’m currently taking some vitamins pills because recently I’ve been sleeping really late and it makes up for any deficit I might be lacking.”</p>

Appendix 5. Transcript of Representative Interview - Participant 3

Researcher Thank you for participating in this interview. The purpose of this interview is to attain new insights for my dissertation project and will not be used for anything else. This interview is completely voluntary and you may step out at any time you feel uncomfortable. Similarly, you are not required to answer my question if you feel uneasy about answering it. I assure you that your identity will be kept hidden and secured on the university's hard drive. With that said, do you have any questions?

Participant 3 No.

Researcher Do you give your consent for me to conduct this interview?

Participant 3 Yes.

Researcher Alright! First question, how important is exercise for you?

Participant 3 Uh, really important.

Researcher Really important? Can you elaborate?

Participant 3 On a scale of 1-10? 9.

Researcher A 9? So, how often do you exercise?

Participant 3 Back in Laos, I exercise almost every day. Except for the weekend.

Researcher Ok, how did you feel after exercising?

Participant 3 Really good. Very fresh. You know, you get all the sweat out. More confident after moving around a bit.

Researcher So, as you know, we're in the midst of a pandemic right now. In this time of crisis, how has your fitness routine changed compared to before?

Participant 3 Yeah, it changed a lot because I didn't do it as frequently anymore. I don't have space to do fitness. So, I decided to reduce how much I exercise.

Researcher Ok. Do you realize that there are people on YouTube that are uploading at home workout sessions for people quarantined at home?

Participant 3 Yeah, I do.

Researcher So, can you explain to me why you have reduced your exercising routine?

Participant 3 It's uncomfortable in my room to intensive exercises. I feel that comfort is a priority when exercising. Right now, I try to do simple workouts like pushups and jumping jacks in the backyard. But, if I had my way, I would prefer to play badminton with a friend in the backyard.

Researcher What motivated you to keep on exercising?

Participant 3 My health. That's what motivated me to exercise again. My health needs to be in tiptop shape. I have a medical problem that can be aided by exercising.

Researcher Okay, okay. So, do you prefer to exercise alone or with friends?

Participant 3 It depends. If I'm at the gym, I don't mind exercising alone. Although it will be boring and dull. Which is why I prefer to exercise, playing team sports like badminton, with friends because we're bonding. I can play badminton alone but that would be... you know?

Researcher Dull and boring?

Participant 3 Exactly

Researcher Ok, so have you seen any ads recently online that promoted exercising?

Participant 3 Yes, of course.

Researcher Okay! Do you often search for products that you think add benefit to your health?

Participant 3 Uh, no. rarely, I rarely do.

Researcher Why not?

Participant 3 I don't know. I just never have. Didn't feel like it.

Researcher Okay, so do you consume any health products such as Vitamins or Protein/ Diet Supplements?

Participant 3 I do for the Vitamins, but that's for improving my concentration. My mother told me that it helps with concentration and it improves eyesight and overall health. But, not post exercise vitamins.

Researcher Okay, so you take recommendations from your parents? Word of Mouth?

Participant 3 Yes.

Researcher Okay, moving on from exercising. Are you loyal to a specific brand?

Participant 3 Can it be any brand?

Researcher Yeah, sure. Anything in general.

Participant 3 Adidas.

Researcher Why?

Participant 5 I prefer the minimalist design from Adidas. It looks plain, it doesn't have much special feature. Also, because Nike it too tight whenever I wear them. Adidas is looser so it's more comfortable to wear compared to Nike.

Researcher What makes a good brand, in your own words.

Participant 3 Quality. I look at quality mainly, when I'm trying to decide a good brand.

Researcher Any other factors?

Participant 3 Uh, multiple reviews. If a lot of people talk about the brand and it has many good review and good word of mouth, I'd consider it good quality. Reassurance basically.

Researcher What about celebrity endorsements? What does it mean to you for a brand to use celebrity endorsements?

Participant 3 Generally, I suppose that's what brands do to gain loyalty from their customers. They try to find someone who is trending right now and sign them for a deal to get more loyalty from people. The exposure from the rising celebrity also exposes the brand to a wider audience. So, I believe celebrity endorsements are a big thing for loyalty.

Researcher Do you have a celebrity that you idolize?

Participant 3 Cristiano Ronaldo.

Researcher Have you bought any products that were endorsed by Ronaldo?

Participant 3 No. But I know that brands try to upsell their products using Ronaldo to convince his fans that if they buy the shoes he wears, they'll run just as fast as him. Besides, Ronaldo signed a contract with Nike.

Researcher If Ronaldo switched over to Adidas, how would you react?

Participant 3 I'd buy more shoes from Adidas that's for sure.

Researcher Why?

Participant 3 It's Ronaldo! I'm a fan, I want to see if the shoes he endorses are good or not.

Researcher So why aren't you buying Nike products even though your idol is endorsing their shoes?

Participant 3 No. Even if he is tied to Nike, I won't buy them. It's too uncomfortable for me. Nike would have to change how they're shoes are fitted for me to buy Nike.

Researcher Okay! Moving on to the next question. How much do you pay attention to pricing when you go grocery shopping?

Participant 3 Uh, price? On a scale of 1-10? Uh, 7? I think price quite important, but sometimes I forget about it. I just buy what I need and when I comes time to pay, suddenly everything costs 20 pounds, I realized I bought too much. I look at the quality of the stuff as well.

Researcher Hmm, how do you determine what is 'good quality'?

Participant 3 Packaging. That definitely plays a large role. Another one would be the actual product. For example, when I'm buying chicken or beef, I take a good look at the quality of the meat first. If I can see the product itself, I judge the quality of the product rather than the packaging. But, if it's snacks or condiments, the packaging. It has stand out from everything else on the shelf.

Researcher I see. What about prices displayed on adverts? How do you feel about that?

Participant 3 Yeah, I like to see the prices. Like for example, I saw an ad for a gaming chair once and it didn't have the price on it. Although I thought the design looked cool, I didn't research further. That's as far as I got. Awareness as you would call it, right? So, I think if they had displayed the price on the ad, it would've been more efficient. If I saw right then there whether or not I could afford it, I would Google it to see more details about it. Even if I couldn't afford it, I could share it with my friends.

Researcher Okay, what about pricing on grocery ads?

Participant 3 I see them occasionally, but it doesn't really phase me. I see ads about product bundles but it's not usually what I buy together so it's matter of personal preference I suppose. Besides, I think it's targeted towards people whose income are incredibly low because most groceries are affordable to the average citizen, in my opinion at least.

Researcher Okay, next question. Could you recall a time when purchased something because you had a strong emotional attachment to it?

Participant 3 Hmm, a strong emotional attachment. I can't remember when was last time I bought something I really wanted. Give me a moment.

Researcher Of course, take as much time as you need.

Participant 3 Hobbies are good examples, I think. Yeah, a camera. I certainly didn't regret buying my camera. It was the first I bought anything that was over 500 pounds. Although if I had more money, I would've gone for the more expensive one.

Researcher What sort of emotional attachment did you have to it?

Participant 3 I get to express my creativity through photography. I always travel with my friends and family and I always wanted to take picture of the landmarks of the places I travelled to. I would always take pictures with my phone but I felt it was enough. So, I didn't hesitate buying one.

Researcher How did you feel after the purchase?

Participant 3 I felt good, even though that was the first time I bought anything over 500 pounds in my life. It wasn't a purchase influenced by my friends, I just wanted to. I think I felt even better when I realized I purchased it with the money I made working part-time.

Researcher I see. Okay, moving onto the next question. What is the most common place you see advertisements?

Participant 3 Social media, apps like Instagram or YouTube.

Researcher With that said, how would you feel if adverts were made by Artificial Intelligence?

Participant 3 I feel having an AI make ads in the future won't be any different to today since AI's are developed BY humans, right? I mean I don't know much about AI or anything like that but nowadays aren't most ads made by computers like our data is being collected and used to market our interest back to us?

Researcher Okay, then how do you feel the current state of Data Privacy?

Participant 3 I suppose if they were to be able to receive data about me, it's a scary thought.

Researcher Can you elaborate?

Participant 3 Just thinking about ads popping out of nowhere when I've barely spoken about my interest is creepy. I feel it's already creepy how when I've looked up places to stay whenever I want to travel, any website I go to starts showing ads like 'Here's a few places you might like in Madrid or Here's a few more hotel suggestions for Oslo.'

Researcher Do you know about GDPR?

Participant 3 I've heard about it, but that's all. I don't really know much in depth about what it says. What I do know is the Facebook scandal which happened a few years ago right? I think the media painted Facebook in a bad light, I mean we're already giving our data to them whenever we post something right? I think that scandal is the main reason why I'm cautious about data privacy. I haven't given it much thought into by data privacy until the news brought up the fact that Facebook has been selling data.

Researcher What sort of data do you fear would be exposed?

Participant 3 Uh, my address for one. My income. My occupation. If hackers found those things out about me that would be the worst.

Researcher Do you think people will be ready for Artificial Intelligence to start marketing products to us in the future?

Participant 3 Maybe. For now, I can say that I'm not ready. Not with all the bad news about how companies are selling our data for their financial benefit and how poorly our data is being managed and protected out there.

Researcher I see! Well, that's all the questions I have for you. Would you like to add anything else?

Participant 5 Nope, none at all.

Researcher Okay! Well, thank you for your time.

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