

ANTECEDENTS AND MOTIVATIONS FOR
CHOOSING DAIRY-FREE: INVESTIGATING THE
VIABILITY OF A DAIRY-FREE INSTANT COFFEE
PRODUCT

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ABSTRACT

This dissertation was produced to explore the core antecedents driving dairy-free food choices, to inform the viability of a free-from coffee opportunity.

Volume I: Existing literature was reviewed, with the intention of understanding the factors present in the behavioural decision-making process of food choice. Individual level-factors, such as identity were found to be influential, in addition to intrinsic motivations and medical facets. A gap in research was identified with relation to dairy-free food choices and in response, a conceptual model, based on extant literature was produced to validate data analysis outputs. Primary research was undertaken in the form of a qualitative interview with an immunologist and an online survey. Variables from the quantitative research were operationalised and fed into a binomial regression model, revealing medical facets (lactose intolerance and cow's milk allergies) were the most significant predictor of an individual making a dairy-free food choice, followed by income, qualification, perceptions of health and perceived nutritional benefits.

Volume II: A business plan for ALTERNATEV – a venture offering free-from coffee products was produced, leveraging data from Volume I to corroborate viability. The business plan revealed a gap in the market for the product in question. The saliency of the problem and opportunities for a burgeoning free-from, sustainable start-up, confirmed ALTERNATEV should be taken forward.

DECLARATION

No portion of the work referred to in the dissertation has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning

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1 INTRODUCTION

1.1 RATIONALE

UK diets have historically centred around meat and dairy, epitomised by the old British adage 'meat and two veg'. In contemporary society, however, animal products are experiencing pronounced economic crises, due to over-production and a decrease in consumer demand (Clay, Sexton, Garnett and Lorimer, 2020). While meat alternatives have been available since the early 2000s, dairy and lactose-free products, once a limited offering, have exploded at an unprecedented rate, now rivalling their dairy counterparts on supermarket shelves. With growing recognition of the co-benefits for human health and sustainability, the last decade has seen an unparalleled societal shift in dietary attitudes and behaviours, spearheaded by the promotion of 'sustainable diets', that emphasise the inclusion of plant-based foods (Nair, Augustine and Konapur, 2016). Garnering interest from public health, academic and business domains, there remains an ongoing challenge to understand consumer food-choices, to develop effective dietary recommendations and nutritional programs and products, from food systems that support nutritional and planetary health (Burlingame and Dernini, 2019).

Pioneering work by Lewin (1943, 1951) proposed that several specific frames of reference are involved in food choice: taste, health, social status, and cost. Later investigations examined these and other values, focusing on cognitive and motivational factors involved in food choice (Bell et al., 1981). The rationale for this dissertation was to explore the behavioural motivations, and socio-economic factors driving an individual's decision to reduce or ultimately cease their consumption of dairy, in addition to understanding the extent of the popularity and adoption of free-from and dairy-free food choices in the UK. This dissertation considers existing literature on the subject of dietary behaviours and introduces an analytical model that absorbs both primary and secondary research, with the intention of situating the business opportunity of creating a free-from coffee product, in a theoretical context.

1.2 AIMS

This dissertation was undertaken with the aim of understanding the drivers of behavioural change associated with contemporary food and dietary choices, to substantiate the viability of AlternatEV – a business offering instant, dairy-free coffee alternative products. The dissertation is guided by the following primary research question:

“What are the most influential antecedents and motivations for making dairy-free food choices?”

The overarching research question is subsequently broken down into the following lower-level questions:

- What are the key factors driving people’s food choices and adoption of new food behaviours?
- For those individuals following dairy-free lifestyles, what are the most significant reasons for doing so?
- Based on statistically significant identifiers, to what extent can we predict the likelihood of an individual stopping or reducing their dairy consumption?

1.3 OBJECTIVES

- To undertake a review of research into the psychology of dietary behavioural change, medical explanations and micro and macro-level factors affecting food choice.
- To understand behavioural and perceptual elements of food choice, with reference to dairy-free food choices, to inform the development of an analytical model illustrating the relationship between antecedents and food choice.
- To respond to gaps in the dairy-free literature space by undertaking primary research.

- To utilise results of the primary research to validate the analytical model and gain a comprehensive understanding of the relationship between motivations and dairy-free food choices.
- To exploit findings for use in the development of a free-from instant coffee opportunity.

1.4 SCOPE

This dissertation was produced to provide the relevant theoretical underpinnings for a business plan seeking to validate the opportunity of a free-from coffee product. The focus of the research question was on dairy-free food choices, and as such, research into the full spectrum food trends (Figure 2.3) and respective dietary choices, is out of scope. While elements of overlap do exist, delving into these peripheral topics, given their breadth and depth, is beyond the remit of this project.

To enable findings to be transferred to a business proposal with a tangible outcome, every endeavour was made to situate research in a UK context. However, recognising the somewhat limited literature on dairy-free food choices, the literature review draws on several non-UK centred studies, with the caveat that findings may not be directly extrapolated to a UK audience, yet will provide some insight into dominant trends. To account for the observed gap in the subject area of interest, primary research sought to recruit UK-based participants, to support construction of a more representative view of the UK consumer.

1.5 CHAPTER OVERVIEW

Chapter 1: Introduction: This dissertation opens with an introduction to the subject area under investigation, rationale, background, aims, objectives, scope, and finally, identified limitations.

Chapter 2: Literature Review: Key topics and themes associated with food behaviour, choices and attitudes are dissected and discussed. Gaps in the literature are identified.

Chapter 3: Conceptual Framework: Based on the identified research gap, Chapter 3 sets out a contextual framework; to inform the structure of the primary research. Prevailing motivations of food choice are operationalised and added to a conceptual model, to be validated later.

Chapter 4: Research Methodology: This chapter provides an outline of the research methodology, employing a tiered approach in accordance with the Research Onion framework. Philosophy, research choice and qualitative and quantitative methods of analysis are discussed, supported by approach justification.

Chapter 5: Data Analysis and Results: The data analysis and results section describes the results of the mixed-methods primary research, providing detailed explanations of the quantitative results and thematic extracts of the interview, followed by a discussion to assess concurrence with existing literature.

Chapter 6: Conclusion: The dissertation concludes with limitations, future research opportunities and implications for the business plan in Volume II.

2 LITERATURE REVIEW

2.1 INTRODUCTION

For decades, the concept of ‘consumption behaviour’ has enjoyed increased popularity in academic, public health and business domains, as the vehicle for explaining, describing, and understanding how people interact with food. Food choices, by virtue of being human behaviours, are complex and multi-layered, involving intricate interactions between physiological, societal, cultural, biological, and economic factors (Braveman and Gottlieb, 2014). Analysis of these factors, as the precursors to food choices, span several disparate academic disciplines; from nutritional epidemiology to psychology, and anthropology to social economics (Murcott, 1998) (Hardcastle, Thøgersen-Ntoumani and Chatzisarantis, 2015). This literature review intends to consolidate evidence across these domains, to form a logical overview of the prevailing research arena; investigating the explanations underpinning the observed societal shift in dietary behaviours; and exploring the antecedents of dietary evolution, with a focus on the key drivers of dairy-free diet adoption and dairy-free dietary decisions.

The review will begin by outlining relevant definitions and terminology, followed by an appraisal of research into the psychology of dietary behaviours and the motives and predecessors of broad-spectrum dietary behaviours. Dairy-free is a somewhat under-explored area, however research into diets incorporating free-from choices, animal product consumption reduction, and other plant-based diets abstaining from dairy are utilised for reference (Tuso, 2013).

2.2 TERMINOLOGY

2.2.1 PLANT-BASED

Plant-based diets consist of minimally processed fruits, vegetables, whole grains, legumes, nuts and seeds, herbs, and spices and excludes all animal products, including red meat, poultry, and fish (Allen, Gumber and Ostfeld, 2019). Denoting a diet eschewed of animal products, the term 'plant-based', is often mistakenly used synonymously with 'vegan', and recognising the existence of an overlap, for the purposes of this study, it is important to distinguish between the two. 'Plant-based' does not carry the same ethical and environmental connotations as 'vegan', nor does it pertain to a 'way of life', in the same way veganism does (Bryant, 2019). Those following a plant-based diet, often employ the term to signify their consumption of a diet comprising entirely, or mostly, of plant foods, without restrictions on the consumption of animal-derived products (Turner-McGrievy and Harris, 2014). Others use the term 'whole-foods' or 'plant-based' to describe a diet consisting of raw or minimally processed foods, referring to the avoidance of oils and processed grains; foods that are permitted as part of a vegan or otherwise plant-based diet (Jetter and Cassady, 2006). Notably, one can make the clear switch from 'plant-based' to 'vegan', or vice versa, in addition to following both diets simultaneously.

2.2.2 VEGANISM

Over the last decade, academic interest in the concept of veganism has surged, mirroring the rise in its societal relevance. This profusion of new literature, however, is not without its limitations. Scholars belonging to critical schools of thought, note the presence of a prevailing naïve positivist approach to the defining of veganism, with studies often leaving veganism undefined, despite it being a major construct under investigation (North, Kothe, Klas and Ling, 2021). From a dietary standpoint, the common denominator across definitions is that of the exclusion of all animal or animal-derived products from the diet, however, beyond this, attempts to define veganism, often fall back on its inherent subjectivity, denoting veganism as a way of living, rather than a strictly diet-orientated concept (Christopher, Bartkowski and

Haverda, 2018). Rowley for example refers to the extending of ‘veganism’ to encompass a certain ‘code of ethics’ that transcends that which would ordinarily be conferred by human beings upon other human beings, with vegan values employed as components of broader positive philosophies (Rowley, 2020). Greenbaum similarly interprets veganism in a philosophical sense, stating that identifying as a vegan is a ‘publicly declaring one's identity, morals and lifestyle’ (Greenbaum, 2012).

A more comprehensive review of research in this space is out of scope for this study, however, acknowledging the need for demarcation in terminology, and given the differentiation between veganism as a lifestyle, and a plant-based diet, the definition deemed most appropriate, and the one adhered to throughout this dissertation, is that provided by the UK Vegan Society.

“Veganism is a way of living which seeks to exclude, as far as is possible and practicable, all forms of exploitation of, and cruelty to, animals for food, clothing or any other purpose” (The Vegan Society, 2021).

2.2.3 FREE-FROM

Despite the mainstreaming of free-from products, there is still no official academic definition of the term ‘free-from’. Once used colloquially as a synonym for gluten-free, the concept of free-from has progressed to characterise the full spectrum of foods that exclude one or more of the FSA’s 14 recognised allergenic foods (Table 2.1). Turning to definitions offered elsewhere, free-from foods can be interpreted as those “made without one or more specific ingredients, making them suitable for people who have a certain allergy, intolerance or health requirement who may need to avoid certain food components” (Boots.com, 2022). Fundamentally, however, the framing of free-from foods has undergone change, with foods coming to serve more than the intolerant and allergic population. Free-from is now widely associated with more general health benefits, with consumers focusing on the positives of the ‘alternative’ ingredients, rather than the absence of ingredients (Román, Sánchez-Siles and Siegrist, 2017).

| Allergen | Example |
|--|---|
| Cereals containing gluten | Barley, oats |
| Crustaceans | Prawns, crabs |
| Molluscs | Muscles, oysters |
| Fish | Gelatine, dressing |
| Eggs | Mayonnaise, battered foods, custard |
| Peanuts | Nougat, grain breads, granola |
| Nuts (Tree Nuts) | Almonds, hazelnuts, walnuts, Brazil nuts, |
| Soya | Soy milk, tofu |
| Milk | Chocolate, creamers, cheese, butter |
| Celery | Soup, stock cubes, crisps, marmite |
| Mustard | Condiments, curries, chutney |
| Sesame | Sesame seeds, seeded bread, tahini |
| Lupin | Pasta, chocolate spread |
| Sulphur Dioxide (Concentration of more than ten parts per million) | Meat, raisins, beer |

Table 2.1 Recognised FSA allergens (Food Standards Agency, 2021)

2.2.4 DAIRY-FREE

At the forefront of this free-from movement, are dairy-free diets; centred on the elimination of all dairy products; a food group that includes milk originating from animals, in addition to milk derivatives such as butter, cream and cheese (Food Standards Agency, 2021). Dairy-free remains a contested concept; with ambiguity surrounding the interplay with the terms 'lactose-free' and 'milk-free' (Facioni et al., 2020). For clarity, Figure 2.1 illustrates the relationship between these concepts, delineating the hierarchical structure of the 'dairy' food category (Food Standards Agency, 2021). In accordance with this interpretation, in the context of this dissertation, people following a dairy-free diet will be defined as those who may still consume non-dairy animal products such as poultry, red meat, fish or eggs, but will avoid all foods comprising the 'dairy group' - those containing milk, milk proteins (casein and

whey), and/or milk sugar (lactose) (Groce, 2021). A reduction in dairy consumption therefore denotes a decrease in the intake of any groups that sit within the ‘Dairy’ category (Figure 2.1).

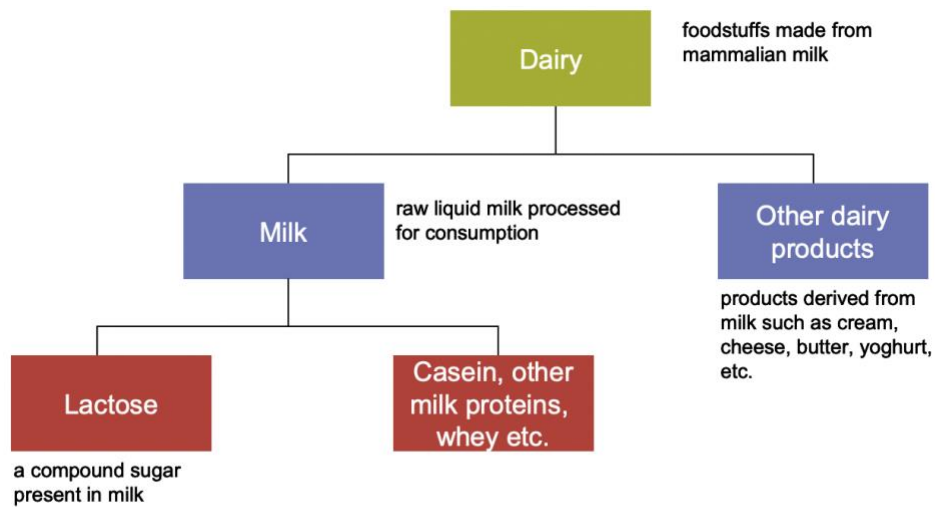


Figure 2.1 The relationship between ‘dairy’, ‘milk’ and ‘lactose’ (Food Standards Agency, 2021)

2.3 FOOD TRENDS

Food choices at the individual level, rooted in patterns of food consumption, have evolved in accordance with changes to the physical and biological needs of humans, natural environment, lifestyles, and technological developments (Seymour, 2016). Depicted in Figure 2.2 depicts a Venn diagram of contemporary prevailing food trends, developed to signify the overlap and converging of dietary preferences in contemporary society (Janssen et al., 2021). Environmentally orientated trends have gained notable traction, with a snowballing public cognisance of the connection between meat and dairy production, environmental degradation, and climate change, consequently thrusting the sustainability of animal products into question (Clark et al., 2020). This shift towards more sustainable diets and a decreased reliance on foods of animal origin, has paved the way for the agri-food industry to explore alternative sources of non-animal proteins, encouraging auxiliary trends such as ‘Beyond Food’ (Aiking and de Boer, 2020). Enjoyment, quality, and health have also appeared as interconnected, prominent trends; amplified by situational factors associated with the pandemic (Janssen et al., 2021).

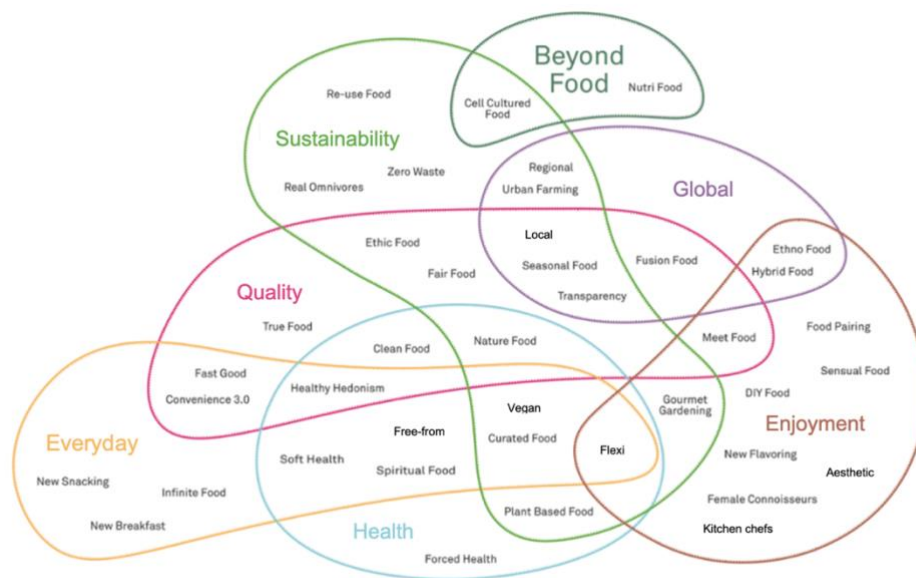


Figure 2.2 Overlap in contemporary food trends (Janssen et al., 2021)

2.4 BACKGROUND

Historically, animal products have served as staple elements in the human diet, with foods derived from the muscle of farm animals, poultry, fish, and dairy contributing significantly to the intake of sources of energy and essential nutrients (Kearney, 2010). In recent years however, diets emphasising the consumption of plant-based foods, have garnered growing recognition from health authorities and the wider general population, as providing important health and environmental benefits (Lynch, Johnston and Wharton, 2018). In the UK, average annual animal product consumption has decreased by almost 39% since 2010, evidencing a remarkable shift away from traditional dietary practices (d'Angelo, Gloinson, Draper and Guthrie, 2020). For some, this reflects the adoption of strict dietary practices, such as plant-based diets, for others, it represents the incorporation of less restrictive dietary changes or 'swaps', that do not prohibit the consumption of animal products, but rather, comfortably sit within existing dietary regimes (Sabaté and Soret, 2014), (Lynch and Pierrehumbert, 2019). The common denominator throughout, however, is the fact the people are making changes to their food choices.

2.5 FOOD CHOICE

Diet and behaviour are both autonomous research domains, however, converge to form an independent sub-domain of 'dietary behaviour'. As a concept, the term 'dietary behaviour' is broad, and therefore, attempts to understand the precursors to behaviour, require a working definition. The following section of this literature review is shaped by interpretation of the taxonomical analysis conducted by Marjin Stok; proposing dietary behaviour should be read as an umbrella concept, representing a range of outcomes relating to the initiation of the eating process, through to the intake of the constituents of the food itself (Figure 2.3, (Marijn Stok et al., 2018)).

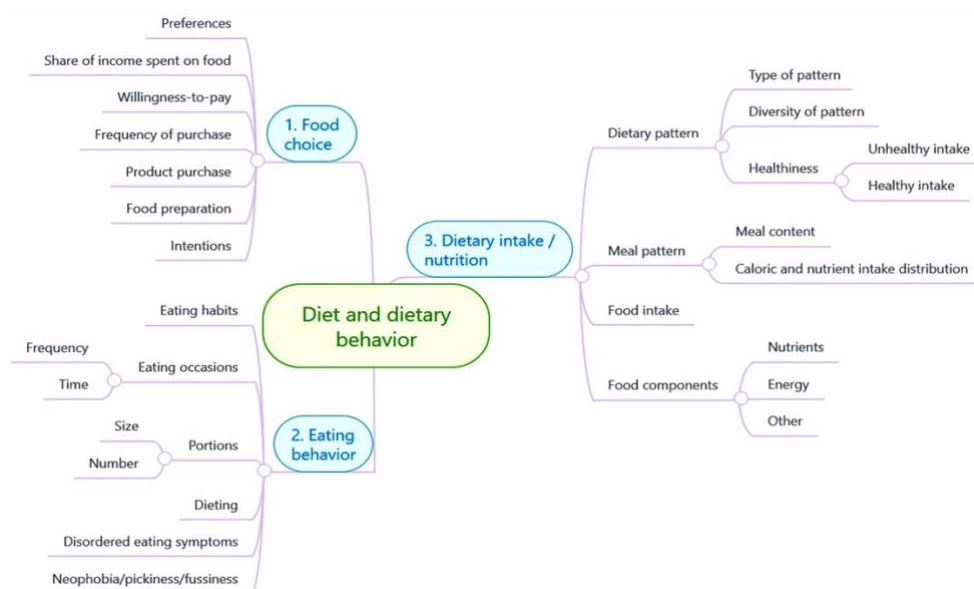


Figure 2.3 Dietary Behaviour Model (Marjin Stok et al., 2018)

At the start of this process is the food choice; the way in which a person considers and selects food and beverages (Furst, Connors, Carole and Falk, 1996). Employing Marjin Stok's model, 'food choice', encompasses preferences, intentions, share of income spent on food, willingness-to-pay, frequency of purchase, product purchase and food preparation (Marijn Stok et al., 2018). Further support for this model comes from Skallerud, who proposes individuals evaluate food products for qualities, attributes, and practicality, ahead of making

a choice or purchase, at the very moment the purchase or choice occurs, throughout preparation, right up to the point of consumption (Skallerud and Wien, 2019). While the dietary behaviour model provides a helpful overview of the components of diet, critics have noted that it tends to oversimplify the complex decision-making process, occurring at the initial ‘food choice’ stage, that consequently shapes an individual’s eating behaviour, and dietary intake/nutrition (Torjusen, Lieblein, Wandel and Francis, 2001). Therefore, to understand the behaviour of food choice in greater depth and understand why and how changes to diets at this stage might occur, one can look to behavioural change models for explanation.

2.5.1 BEHAVIOURAL CHANGE MODELS

One of the most widely employed models across all areas of human psychology is the ‘stages of change’ model, which states behavioural change in humans occurs across five distinct stages; 1) precontemplation; 2) contemplation; 3) preparation; 4) action; and 5) maintenance (Prochaska, DiClemente and Norcross, 1993). For an individual to progress through these defined states in the behavioural change process; the benefits of progression, must offset the drawbacks (Mastellos et al., 2014). Acknowledging that conflicting literature suggests this behavioural model may not be suitable for application to food behaviours, due to the artificiality of the time frames of each stage; at the very least, it provides an insight into the cognition stages that occur when people make either ad-hoc or sustained dietary changes (Thomas, 1991), (Brick, MacIntyre and Campbell, 2016). Notably, we can draw parallels between the stages of change model and the perceived benefits and barriers of food choice.

2.6 BEHAVIOURAL CHANGES AND DIET

In 2021, 63% of the UK’s adult population were clinically overweight, and 27% were obese, statistics that have prompted the quality of the nation’s diet to become a key public health issue (NHS Digital, 2022). Public Health programs are striving to respond to this challenge, at the same time, integrating a sustainability dimension into nutrition policies and nutrition reference standards (Cena and Calder, 2020). It is widely acknowledged that if “dietary

change was simple, then dissemination of information would automatically lead to behaviour change". While the assumption that knowledge shapes behaviour appears to be self-evident, data suggests that distribution of information about the risks and benefits of diet, has little effect on food behaviour, unless it can overcome counteracting psychosocial, behavioural, and environmental barriers (Nestle et al., 2009).

Gardner argues changes made to the diet, at the food choice stage (Figure 2.3), are instigated by, and subsequently dependent on the fundamental behavioural changes (Gardner, Lally and Wardle, 2012). As such, changes that might appear trivial on the surface, such as making the decision to switch to a lactose-free milk, demand the individual to make several calculated decisions along these 5 stages, to accommodate the change (Luca, Perry and Di Rienzo, 2010). Taking the milk scenario as an example and drawing on the other facets of 'food choice', the individual intending to make the change, might need to confirm the availability, accessibility, and affordability of the lactose-free milk, or determine whether her switching, impacts other members of the household. On this basis, the perceived positive outcomes, i.e losing weight, relief from digestive issues, or the satisfaction of ethical concerns, must outweigh the incurred costs of making the change (Mastellos et al., 2014).

Research on sustained dietary change has largely focussed on the former outcome, and prolonged 'weight-loss' diets, involving significant changes to most, if not all, aspects in the dietary behaviour model (Hall and Kahan, 2018), (Hartmann-Boyce et al., 2021). Sustained weight-loss, according to Burke et al., requires continuous, successful self-regulation; dependent in part on the truthfulness, consistency, and timeliness of self-monitoring in relation to the performance of the target behaviour (food choice and consumption) (Burke, Wang and Sevick, 2011). Investigating the motives and barriers for intentions of weight-loss, and their impact on behaviour, it has been proven that food motives best predict behavioural intention in terms of multiple food choice contexts, highlighting evidence that factors such as time and cost may be unimportant when it comes to adopting a healthy diet (McDermott et al., 2015), (Missagia, Oliveira and Rezende, 2013). It would be imprudent to directly extrapolate from weight-loss diets to those encompassing dairy-free facets, however, we are able to draw parallels between the two (Luca, Perry and Di Rienzo, 2010). Coupling the behavioural change model with the diet and dietary behavioural model, it then stands to

reason, that sustained behavioural changes, to any extent, relating to food choice, require the adoption of cemented, affirmative attitudes toward the intended dietary alterations, driven by internally grounded incentives (Sanchez-Sabate and Sabaté, 2019).

These intrinsically motivated behaviours must be engaged in for their own sake; for the pleasure, interest and satisfaction derived from participation itself, and must be performed voluntarily in the absence of material rewards or external constraints (Jovanovic and Matejevic, 2014). Studies on motivations and diet have found positive associations between nutrition knowledge, self-efficacy, belief in a relationship between diet and health, and stage of dietary change, with fruit and vegetable consumption.

2.6.2 REJECTION OF FOODS

Behavioural models provide helpful context when interpreting human behavioural processes, however, often fall short when attempting to explain certain elements of dietary behaviour (Davis et al., 2014). The adoption of new diets, or changes to existing diets, entail both the addition and removal of foods, with the addition of new food into one's diet equally as important as the rejection, or removal of others (de Ridder et al., 2017). This section investigates the latter, exploring research into food rejection and removal; given the pertinence of the topic with relation to newly adopted dairy-free food patterns.

Food rejection can be divided into three distinct classifications: the anticipation of bodily harm (danger), ideational factors (inappropriate and disgust) and sensory-affective reasons (distaste) (Adise, Gavdanovich and Zellner, 2015). If an individual anticipates unpleasant repercussions succeeding the consumption of a food, the refutation is classified as dangerous, in that consumption will result in either immediate bodily harm i.e., gastrointestinal discomfort or longer-term bodily damage such as diabetes (de Ridder et al., 2017) (Chapman, Kim, Susskind and Anderson, 2009) (Fallon, Rozin and Pliner, 1984). Notably, the refutation of dairy, or mindful act of not choosing dairy, by milk allergy and lactose intolerance sufferers can often be explained by the perception of danger associated with dairy ingest, provoking physically unpleasant, and in some cases, severe reactions (Yu, Freeland and Nadeau, 2016). The danger-driven rejection of both meat dairy products has become increasingly common in

recent years; with cumulative societal knowledge of the associations found between the inclusion of animal products in diets, and long-term conditions such as heart disease and weight gain (Salter, 2013).

Ideation factors can similarly cause the rejection of certain foods, due to the foods in question being considered 'revolting' by the subject. In this instance, it is the origins of the food or food product components that lead to rejection (Meyer-Rochow, 2009). Notably, disgust for animal-based foods is influenced by their degree of 'animal-ness' and the degree to which they elicit reminders that their source was once a living animal (Fallon, Rozin and Pliner, 1984). Evidencing this idea, are the findings of a study undertaken by Kubberød, in which uncooked red meat was found to provoke greater levels of distaste than poultry, due to the association with the meat in its previous living state (Kubberød, 2006).

While behavioural model advocates tend to emphasise the conscious, rational element of food choice, Furst et al. propose decision-making during the food choice process can also be automatic, habitual, and subconscious (Furst, Connors, Bisogni, Sobal & Falk, 1996:247). The refutation of a food constructed on sensory-affective grounds, supports this notion; and is often both reactive and transient, arising when an individual expects the food to hold adverse sensory qualities such as a bad texture, taste, or odour (Cermak, Curtin and Bandini, 2010). Of particular interest to this literature review, are previous findings, demonstrating that the rejection of novel non-animal foods, occurring at the food choice stage, is provoked by the negative poles of the sensory-affective dimension, such as distaste – as opposed to anticipated consequences (danger), or ideation factors (revoltingness) (Traynor et al., 2020).

Conversely, the readiness of an individual to try foods of nonanimal origin increases when the food presents as something familiar, nullifying any anticipated adverse, sensory-affective properties (Sproesser et al., 2019). To explain this response, academics turn to the defined laws of similarity, according to which, things that look alike have the same properties or essence (Adise, Gavdanovich and Zellner, 2015). In a practical context, consumers presented with a food choice of non-animal derived products that intend to resemble animal products, will expect products to be analogous; consequently, eliciting equivalent responses when presented with a food choice (Thomas, 1991).

2.7 MACRO AND MIRC0-LEVEL FACTORS

2.7.1 MACRO-LEVEL FACTORS

For most models and theories attempting to explain the antecedents driving food choice, individual-level factors often take centre stage. However, there exists a peripheral strand of research, highlighting the importance of the role of the broader macro environment and systems, in which consumption decisions pertaining to food and eating are made (d'Angelo, Gloinson, Draper and Guthrie, 2020).

Throughout industrialised countries, concepts of nutrition have expanded from hunger satisfaction to utilising food to promote overall state of well-being (Jeske, Zannini and Arendt, 2018). Coupled with the global increase in population; finding ways to make diets more sustainable has become both a matter of food security and a public health issue (Clark et al., 2020). According to Joyce et al., a reduction in the production of meat and dairy and replacement of animal proteins in the diet would at least partially alleviate anthropogenic impact, by moderating the strain that animal husbandry poses to the environment (Joyce, Dixon, Comfort and Hallett, 2012) (Bailey, Froggatt and Wellesley, 2021).

Consumer behaviours are ultimately determined by the buying decisions they are faced with, with government initiatives, such as the 2018 EU Protein2Food project, aimed at improving human health, environmental sustainability, and biodiversity, through the promotion of high value plant proteins, can be hugely influential (Jeske, Zannini and Arendt, 2018). Advertisements and media similarly influence consumer purchases, evidenced by Kellogg's advertising of the cancer-preventing benefits of high-fibre diets, which led to a 47% increase in sales within 24 weeks of campaign launch (Freimuth, Hammond and Stein, 1988).

2.7.2 MICRO-LEVEL FACTORS

Nestle argues that culture is the pervasive foundation that underlies all food choices. People use the defined categories and rules of their culture, subculture, and ethnic group to frame what they consider to be suitable and desirable foods, the amount and combination of chosen foods, and foods they believe to be ideal or, conversely, improper (Cardello and Schutz, 1996). Anthropologists consider food to be both an integral tool in communication of culture; with an individual's food choice utilised as a channel to project their beliefs, values, identity, and social affiliations (Martin, 2005). To evidence this point, UK survey data, such as the 2018-19 Family Food Survey shows that white British diets, traditionally centred on meat, contain around 10% more animal protein than other ethnic groups (DEFRA, 2020). In contrast, African-Caribbean and Chinese groups consume greater volumes of fruit and vegetables than the white population, while South Asian groups consume less; reflecting the characteristics of traditional dietary practices of these groups (Craig, Doyle and Jotangia, 2006)

Acceptance within situational social contexts has also been shown to impact food choice. Cardello and Shutz demonstrated that in social settings where meat alternatives are consumed, individuals are more likely to accept these products than in situations where most of the group are eating meat (Cardello and Schutz, 1996). Moreover, outside of group scenarios, eating alone produces the highest acceptance ratings of meat alternatives, emphasising the significance of eating acceptance.

2.8 INDIVIDUAL LEVEL FACTORS

At the individual level, research has explored potential variations in attitudes, motivation, and behaviour as a function of age and gender. Research indicates that women have a higher awareness and better knowledge of nutrition than men, with nutrition playing a central role in the female conception of health (Missagia, Oliveira and Rezende, 2013). In contrast, men have been found to place greater weight on the rational aspects of food choice, such as price (French, 2003) and convenience (Botonaki & Mattas, 2010). Further studies of the relationship between identity and food choice have considered personality traits, ethnicity,

vegetarianism, organic food use, meat eating, and dietary change for health promotion or illness management (Bisogni, Connors, Devine and Sobal, 2002).

The quality of diet, in terms of the consumption of vitamins and 'healthy' food components, is positively associated with income, education level, age, energy intake and food diversity (Thiele, Mensink and Beitz, 2004). Studies on the health consciousness of individuals who report a constellation of healthy behaviours, such as non-smoking, low alcohol intake and frequent exercise, demonstrate lower consumptions of dietary fat in individuals living above the poverty line, and those with higher education levels (Missagia, Oliveira and Rezende, 2013). Complementary to this, are incentives and motivations for making certain food choices. Holgado's European study found that commercial and scientific information, were important sources of food-related information for those in higher income brackets and those with degree-level education (Holgado, 2020). Moreover, individual use of science-based sources for nutritional information is correlated with healthy food choices, whereas exposure to commercials is negatively associated with fruit and vegetable consumption (García-Holgado, Marcos-Pablos, Therón-Sánchez and García-Peñalvo, 2019).

2.9 MEDICAL EXPLANATIONS

In 2019, allergies and intolerances toward any of the FSA's 14 food allergens were thought to affect 28% of adults in the UK (Soon, 2019). For this literature review, of prime interest is research into lactose intolerance and milk allergies. At a high-level, the presence of an immune response serves as a clear demarcation between the two conditions; with nomenclature dictating cow's milk allergy as an immune mediated condition, and lactose intolerance, non-immune mediated (Walsh et al., 2016). While a full medical review of the low-level components of these conditions is beyond the scope of this thesis, an overview is provided for context.

2.9.1 LACTOSE INTOLERANCE AND COW'S MILK ALLERGY

Lactose intolerance (LI) is characterised by an inability to digest and absorb dietary lactose. In the UK, as of 2020, 21% of the population were believed to suffer from some degree of lactose intolerance (categorised as either primary or secondary); with symptoms falling on a spectrum, ranging from slight sensitivities to more severe, debilitating reactions (Facioni et al., 2020). The digestion of lactose, as a process, involves hydrolysis to the monosaccharides that make up lactose (galactose and glucose), by the lactase enzyme, making the components available for absorption (Forsgård, 2019). Those suffering from primary LI undergo a genetically defined decrease in lactase expression following weaning, resulting in digestive failures in the breakdown of lactose, on consumption (Heine et al., 2017) (Deng, Misselwitz, Dai and Fox, 2015). Secondary LI occurs in individuals with lactase proficiency who experience damage to the gut lining because of gastrointestinal infections, IBD, abdominal surgery or other health issues causing a decrease in lactase activity (Szilagyi, Galiatsatos and Xue, 2015).

Conversely, cow's milk allergy (CMA) is an immunologically mediated response to the proteinic compounds found in cow's milk, that adversely affect the gastro-intestinal tract, skin, or respiratory tract (Bahna, 2002). Immunological responses to CMA emerge in two forms; Immunoglobulin E (IgE) mediated or non-Immunoglobulin E (non-IgE) mediated. IgE-mediated CMA is triggered by the overreaction of the immune system to the allergen itself (Burks et al., 2012). Unlike the delayed indicators of LI post-lactose consumption, symptoms such as hives and swelling with respiratory obstruction are highly indicative of IgE-mediated CMA and commonly arise immediately after ingestion or exposure to cow's milk (Flom and Sicherer, 2019).

In contrast, non-IgE-mediated is caused by a reaction involving immune system components other than IgE antibodies, with symptoms generally occurring within 2 hours of exposure or digestion. Allergic responses to cow's milk range from moderate to severe, however life-threatening anaphylaxis can occur into 1-2% of cases (Lifschitz and Szajewska, 2014). Despite the emphatic increase in prevalence of both forms of CMA, the mechanisms of allergenic sensitisation and the exact interaction of genes and environmental factors contributing to the

development of CMA fall short of explication (Walsh et al., 2016). For clarity, Table 2.2 outlines the differences between LI, Non IgE-mediated CMA and IgE-mediated CMA.

| | Non-IgE-mediated CMA | IgE-mediated CMA | Lactose Intolerance |
|------------------------------------|---|---|---|
| Mechanism | Immunological reaction | Immunological reaction | Non-immunological. Inability to digest lactose. |
| Symptoms | Gastrointestinal, skin, respiratory | Gastrointestinal, skin, respiratory, anaphylaxis | Bowel only i.e diarrhoea, stomach pain, nausea, flatulence, bloating |
| Exposure/ Reaction Time | Several hours to days | Immediately to 2 days | 30 mins to 2 hours |
| Severity | Mild to moderate | Mild to severe | Mild to moderate |
| Tests | Exclusion diet w/ reintroduction, physical exam, history | Skin prick, IgE measurements, diagnostic exclusion diet | Exclusion diet w/ reintroduction |
| Dietary Implications | Exclude all cow's milk and products. | Exclude all cow's milk and products. | Lactose free diet — exclude all cow's milk and foods containing cow's milk. |

Table 2.2 Differentiations between Non-IgE-mediated CMA, IgE-mediated CMA and LI (Lifschitz and Szajewska, 2014), (Burks et al., 2012), (Walsh et al., 2016), (Bahna, 2002)

Among both patients and physicians, confusion exists between lactose intolerance and CMA, with terms such as suspected 'lactose-intolerance', 'milk-allergy', 'milk-intolerance' frequently used interchangeably, without an appreciation of the diverse underlying mechanisms or resulting repercussions of diagnoses on diet and food choice (Di Costanzo and Berni Canani, 2018). The complex nature of both LI and CMA has cascaded down to members of the public and resulted in widespread societal misconceptions and an explosion in self-diagnoses, particularly in the case of LI (Lomer, Parkes and Sanderson, 2007).

Consensus on global rates of LI, when standardising for country size, falls between 68-70% and encompasses both primary and secondary LI. However, at the country-level, disparities

are significant, ranging from an incidence rate of 4% in Denmark to 100% in China (Storhaug, Fosse and Fadnes, 2017), (Catanzaro, Sciuto and Marotta, 2021) (Figure 2.4).

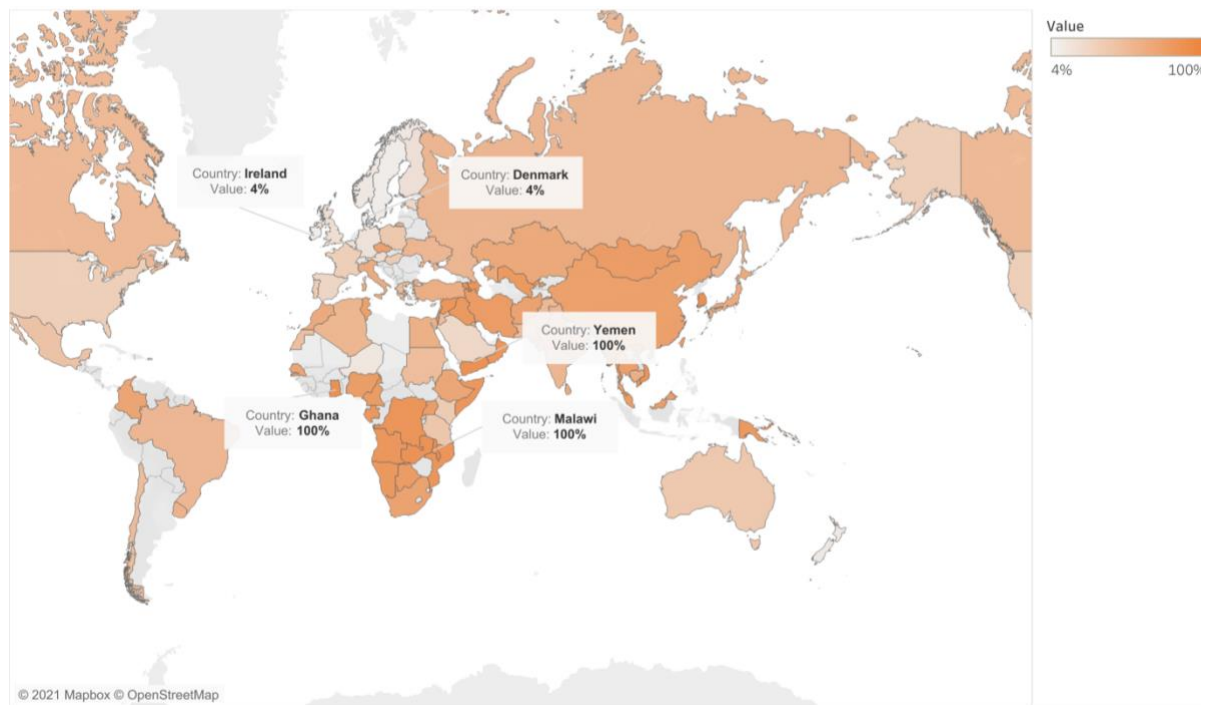


Figure 2.4 Map showing global prevalence of lactose intolerance (produced from global LI ranking statistics) (Storhaug, Fosse and Fadnes, 2017), (Catanzaro, Sciuto and Marotta, 2021).

Epidemiological evidence finds allergies and intolerances, in general are more prevalent in industrialised countries than developing nations and are more frequent in urban than rural areas (Crittenden and Bennett, 2005). Prevalence rates of LI, however, contradict this theory, with some of the highest rates in the world found in the least developed countries (Storhaug, Fosse and Fadnes, 2017).

Tables 2.3 and Table 2.4 provide a list of the 10 countries with highest and lowest rates of LI, alongside the country's Human Development Index rank; a standardised metric utilised to measure industrialisation. Alternative theories put forward by scholars such as Alharbi and El-Sohehy, argue this divergence is due to ethnic variances in the gene providing instructions for the breaking down of lactase (Alharbi and El-Sohehy, 2017).

| Rank | Country | Prevalence | HDI Rank / 196 |
|------|-----------------|------------|----------------|
| 1. | Ghana | 100% | 138 |
| 2. | Malawi | 100% | 174 |
| 3. | South Korea | 100% | 23 |
| 4. | Yemen | 100% | 179 |
| 5. | Solomon Islands | 99% | 151 |
| 6. | Armenia | 98% | 81 |
| 7. | Vietnam | 98% | 117 |
| 8. | Zambia | 98% | 146 |
| 9. | Azerbaijan | 96% | 88 |
| 10. | Oman | 96% | 60 |

Table 2.3 Top 10 countries with greatest prevalence of lactose intolerance

| Rank | Country | Prevalence | HDI Rank / 196 |
|------|-------------|------------|----------------|
| 1. | Denmark | 4% | 10 |
| 2. | Ireland | 4% | 2 |
| 3. | Sweden | 7% | 7 |
| 4. | New Zealand | 10% | 14 |
| 5. | Netherlands | 12% | 8 |
| 6. | Norway | 12% | 1 |
| 7. | Niger | 13% | 189 |
| 8. | Belgium | 15% | 14 |
| 9. | Cyprus | 16% | 33 |
| 10. | Finland | 16% | 11 |

Table 2.4 Top 10 countries with lowest prevalence of lactose intolerance

2.10 TRANSITIONS TO VEGANISM

Section 1.1 made note of the differences between two seemingly analogous dietary trends; plant-based and vegan, however also highlighted the discernible and fundamental difference between diet and lifestyle. In the absence of research into transitions to dairy-free food choices, one can look at transitions to veganism, in attempts to understand the motivations underpinning significant dietary changes, that, while not strictly limited to – involve the eschewing of dairy.

In the UK, in 2020, 22% of the UK were thought to identify as vegan, albeit the true number is likely to be far higher (ONS, 2021). Any sort of dietary transition, as outlined in the dietary behavioural change section, occurs across varying trajectories. According to Jabs et al., at a high-level, those transitioning directly to veganism from a standard non-restrictive diet are more likely to do so for intrinsically motivated reasons; such as those of an ethical nature, as opposed to those transitioning from vegetarianism, who tend to do so for health reasons (Jabs, Devine and Sobal, 1998). As Tusso notes, much of the research conducted on dietary changeovers was carried out prior to the 'vegan revolution'. More contemporary transitions may thus have been motivated by the publishing of research into health benefits, the influence of social media and the propagation of vegan product substitutes (Tusso, 2013).

2.11 CONCLUSION

This literature review sought to understand why people make food choice outcomes of a dairy-free nature. It is undisputed that in any food choice situation, a unique combination of environment information is integrated with personal needs, motives, perceptions, and attitudes, however the significance of these factors has not received a great deal of attention. What's more, despite the pervasive adoption of dairy-free food choices, little research has been conducted by way of understanding why this food trend has gained such notoriety. As such, this literature successfully identified the key factors driving food choices and adopting new food behaviours, however, found a gap in the literature with relation to the significant reasons for following dairy-free lifestyles, or making dairy-free food choices.

3 CONCEPTUAL FRAMEWORK

3.1 INTRODUCTION

Food choices are layered, situational, dynamic, and complex, and thus, a multidisciplinary approach and holistic picture are required to understand not only how the manifold factors are involved, but also how those factors are constructed and interact throughout the decision-making process (Chen and Antonelli, 2020). The conceptual model (Figure 3.1), was developed as a tool to help understand the influence of factors, drawn out of the literature review - on dairy-free food choices, to a) address the posited research questions and b) aid the in the development of primary research and interpretation of results, after the fact. Consequently, from a business perspective, an understanding of the critical influences on food choice, and which of those factors are subject to modification, will inform targeted marketing, value creation and product development, via the ability to target drivers of change in consumers.

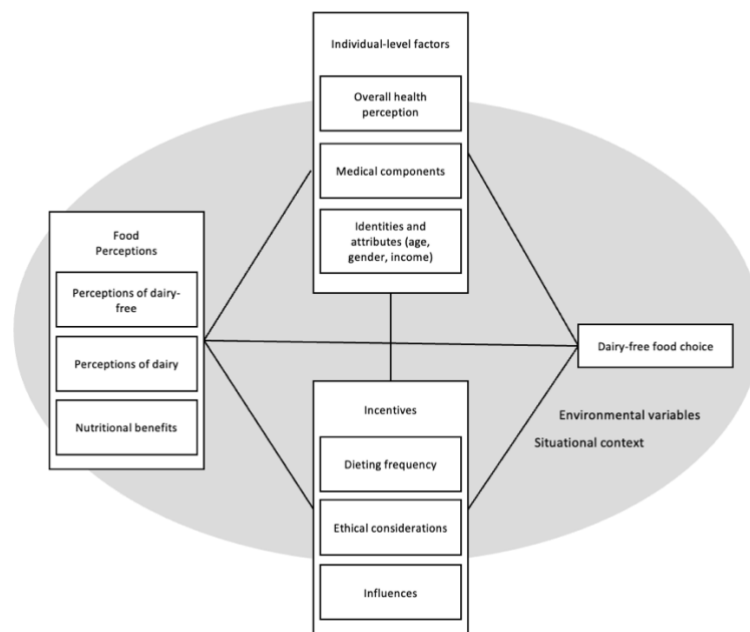


Figure 3.1 Analytical model based on key concepts highlighted in literature review

Post-revision of prevailing literature, it was reasoned that individual factors and notions play a prominent role in determining changes to dairy consumption. The queries guiding the analysis were intended to be primarily experimental, in response to the current lack of empirical or explanatory research.

To ascertain the core drivers of dairy-free food choices; the model presents 'dairy-free food choice' as the outcome of the following interacting factors; individual-level factors, inclusive of health perception, medical components, and identity (Thiele, Mensink and Beitz, 2004), (Bisogni, Connors, Devine and Sobal, 2002), (Missaglia, Oliveira and Rezende, 2013), incentives, or intrinsic motivations; encompassing dietary frequency, ethical considerations and influences (Burke, Wang and Sevick, 2011), and food perceptions, specifically dairy, non-dairy and the perceived nutritional benefits of foods. Finally, environmental variables and situational context are included to account for the extraneous influence of the pandemic and lockdown on dairy-free food choices.

4 RESEARCH METHODOLOGY

4.1 INTRODUCTION

The preceding chapter provided an overview of existing literature on the topic of dietary behaviours and factors influencing dietary decisions. Research illustrated a temporal decline in the consumption of dairy, however, as acknowledged in the introduction, the antecedents giving rise to this specific shift in dietary preference is a significantly under-researched avenue. As such, to address the research questions posed in Section 1, primary research aims to address the identified knowledge gap, by exploring the precursors and explanatory factors of food choices resulting in individuals stopping or reducing their consumption of dairy products. Appendix A illustrates the research methodology, in the form of a flow chart, starting with formulation of the research questions, through to write-up and discussion. The following section outlines the core components of the research process, starting with identification of philosophical approach, specification of methods and congruence between these, and transparency and clarity in sampling, data collection, and data analytic procedures.

4.2 RESEARCH PHILOSOPHY

Research philosophy can be described as the system of beliefs and assumptions about the development of knowledge (Muhaise, Habinka, Wycliffe and Muwanga Zake, 2020). Providing a consistent and logical set of assumptions to accompany research, in turn constitutes a more credible research philosophy and fortifies each additional layer of the research paradigm (Kivunja and Kuyini, 2017). The Research Onion (Figure 4.1) presents a tiered framework for application to the construction of research methodology, commencing with the demarcation of suitable philosophies, followed by delineation of approach, method, strategy, and concluding with finer-grained aspects such as statistical techniques (Saunders, Lewis and Thornhill, 2019).

Emphasising a positivist focus allows the researcher to focus on a strictly scientific empiricist method, designed to yield pure data and facts, uninfluenced by human interpretation or bias (Saunders, Lewis and Thornhill, 2019). While scholars emphasise the benefits of objectivity in research, much of the research being carried out to fill the gap in the literature was likely to be interpretive. Therefore, a pragmatist approach was deemed to be the most appropriate. Pragmatism seeks to identify a problem, view it in a broader question, and consequently undertake a research inquiry to better understand the problem (Maxcy, 2003). Placing the research question at the heart of assumption, as is the case with this research and its attempts to understand drivers of dairy-free food choices – pragmatism is defined as the philosophy of common sense, whereby one can make assumptions without commitment to an abstract set of beliefs (Kelly and Cordeiro, 2020).

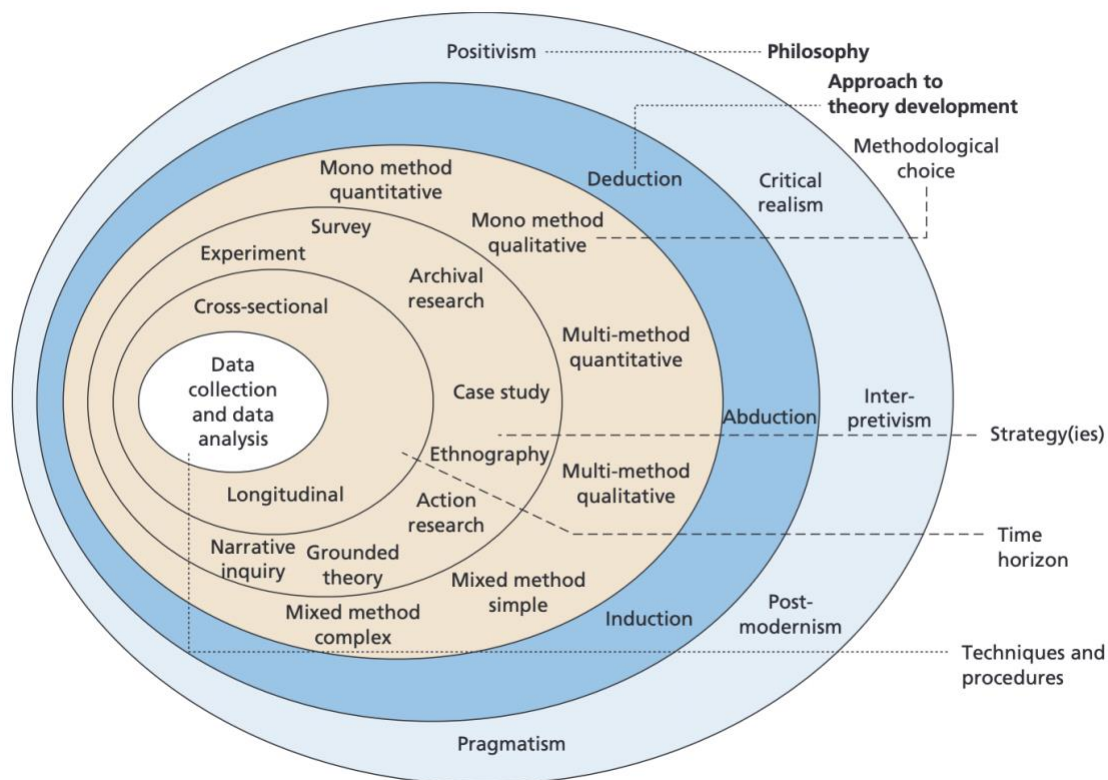


Figure 4.1 The Research Onion (Saunders, Lewis and Thornhill, 2019)

4.3 RESEARCH APPROACH

A deductive framework guided the research in empirical data collection and induction from the data (Babbie, 2010). Pragmatism as an approach supports explanatory analysis; and mixed methods approaches to data analysis. By triangulating mixed methods data, the extant literature's significant themes could be identified, to aid in the generation of the methodological process and objectives, consequently providing explanations regarding the emerging phenomenon of dairy-free food choices (Singh, 2015).

4.4 RESEARCH DESIGN

4.4.1 RESEARCH CHOICE

Methodological distinctions generally focus on the differences between quantitative research - associated with the philosophical traditions of positivism, and qualitative research, allied with post-positivist philosophy (Polit et al 2001). A mixed-methods approach was adopted in pursuit of answers to the proposed research questions. Combining processes of data collection presents the opportunity to implement data triangulation, involving the use of multiple sources of data within a single investigation. The probability of investigators drawing erroneous conclusions increases when relying on a single source of data, where expectations may colour interpretation; triangulating data mitigates this risk and is thus highly encouraged approach in the field of Social Sciences (Ryen, 2008). Furthermore, Tracy comments on the benefits of employing numerous data sources as a means of validating findings, holding the view that if multiple data sources converge on the same information, the researcher can be more certain in both the data's validity and reliability (Tracy, 2010).

4.4.2 RESEARCH STRATEGIES

The mixed-method approach took the form of a semi-structured interview with an immunologist and an online questionnaire distributed via convenience sampling.

Amalgamating both quantitative and qualitative data on the same topic provides context and alleviates at least some of the drawbacks.

4.4.2.1 DATA COLLECTION METHODS

It is necessary to establish empirical evidence for decisions, through the collection of data. Data collection methods were decided on in-line with a pragmatist philosophical approach (Babbie, 2010). The decision to use a survey was made based on the types of information that can be collected by means of a questionnaire - levels of knowledge, opinions, expectations and aspirations and attitudes and perceptions. Other means of data collection were considered, such as focus groups, however these have several disadvantages. Participants may not divulge nor express their personal opinions about the issues under discussion. In a group, research subjects may be hesitant to say what they believe, especially when their opinions do not align with others in the group. A self-completion survey thus has the advantage of anonymity and gives subjects time to consider how to answer a questions (Lavrakas, 2008). For the qualitative element, the individual interview sought to acquire the opinions and knowledge of a reputable expert, to provide scientific backing to the findings of the questionnaire.

4.4.3 SAMPLING

Across all bands of research, it would of course, be advantageous to use as large a sample of the population as possible (Etikan, 2016). Larger samples more accurately denote the characteristics of the populations from which they derive (Wilson Van Voorhis and Morgan, 2007), however, garnering a large sample is often unfeasible; thus is the justification for using practices such as convenience sampling. Convenience sampling was deemed the most pragmatic approach; a form of non-random or non-probability sampling where those in the targeted population adhere to a particular practical criterion (Jager, Putnick and Bornstein, 2017). Due to the prohibitive restrictions imposed as a result of the pandemic, recruitment criteria were simply, accessibility and a willingness to participate.

4.4.4 IDENTIFICATION OF INTERVIEW SUBJECT

The ambition of the qualitative element of research was to delve further into the medical field of immunology, lactose intolerance and cow's milk allergy. Limited by a deficiency in literature on the true prevalence of lactose intolerance and cow's milk allergy, and the issue of diagnosis of these conditions, it was considered an important exploit to gain insight from an actively researching expert in the field. The chosen subject for interview was Professor Nelson Fernandez from the department of immunology at The University of Essex.

Professor Fernandez specialises in the immunological aspects of reproductive immunology and the biochemistry and physiological role of protein-protein interactions of immunological receptors.

4.5 ETHICAL CONSIDERATIONS

Research was conducted with the aim of advancing knowledge and understanding in the subject underpinning this dissertation. Inclusion of both socio-economic and medical questions increased the level of sensitivity, however, to both avoid false responses and ensure participants were given the choice of responding, questions of a sensitive nature were non-mandatory, and 'prefer not to say' options were included. The researcher ensured that all data collection methods adhered to the University of Manchester's Policy on the Ethical Involvement of Human Participants in Research, stating researchers have a responsibility to consider the ethical implications of their research and to be aware of their responsibilities to society, the environment, their profession, the University, and research participants (University of Manchester, 2021). Guidelines stipulate the following ethical principles must underpin any research project:

Respect for autonomy: participation was entirely optional. The sampling method was non-coercive and, as per the introductory questionnaire text (Appendix C), participants were free to withdraw at any time before, during or after the survey. For the interview, the subject

confirmed he understood his information would be used for academic purposes to inform a Masters' dissertation and gave verbal consent to disclose his identity.

Beneficence: Risks in the context of this research were low, yet the intended worthwhile outcomes of the research – to fill a gap in the literature, outweighed any possible negative implications.

Non-maleficence: Participants self-completed the questionnaire online, without oversight from the researcher.

Justice: Recruitment methods were as fair as was deemed reasonably possible, given the pandemic related circumstances,

Confidentiality: The rights of the participant were protected; with assurance their personal data were kept safe and stored securely.

Integrity: There were no known personal, financial, institutional, or other gains pursued by the research, nor where third parties involved in the research,

Participants were asked to confirm they were over the age of 18. If respondents answered no to the age confirmation question, the survey was immediately terminated. All data was fully anonymised and securely managed on the University's system, in accordance with GDPR and Data Protection Act regulations.

4.6 QUESTIONNAIRE DESIGN

Questions were designed to obtain prevailing theories on the drivers of food choice, tailored to address the research gap identified in the literature review. Whether a questionnaire is intended to provide descriptive data or to test hypotheses, designers should ensure questions are both valid and reliable, have been piloted on sufficient samples of the target population, and amass data that is suitable for codification and analysis (Fallowfield, 1995). Guided by

standards set forth by Rattray and Jones', question-wording was succinct, relevant, and unambiguous, avoiding negatively phrased items, to ultimately improve validity and avoid misleading answers (Rattray and Jones, 2007). Regarding length of time taken to take the questionnaire, as expressed by Kost, it is axiomatic that quality of data is compromised as the length of time required to complete tests increases (Kost and Correa da Rosa, 2018). To further maximise the validity of responses, the 30 questions included were devised to ensure estimated time of completion fell within the optimal survey length period of 8-14 minutes (Žmuk, 2017).

Where possible, the questionnaire included validated, standardised measures, to increase the credibility of results, in addition to response formats permitting continuous judgments (Table 4.1), (Fallowfield, 1995).

| Question | Theme | Justification for inclusion (based on literature review) |
|--|----------------------------|---|
| How old are you? | Demographic information | Individual-level factors. Influence of age on dietary behaviours (Thiele, Mensink and Beitz, 2004). |
| Which of the following best describes the region you live in? | Demographic information | Included to understand distribution of respondents. Acknowledgment of limitations and caveats associated with geographically targeted research. |
| Which gender do you most identify as? | Demographic information | Gender differences in concepts of nutrition and food choice (Missagia, Oliveira and Rezende, 2013). |
| What is your ethnic group? | Demographic information | Identity and food choice (Bisogni, Connors, Devine and Sobal, 2002). |
| What is the highest level of qualification you have completed? | Socio-economic information | Identity and food choice (Bisogni, Connors, Devine and Sobal, 2002). |
| How many people (including children) reside in your household? | Demographic information | Micro-level factors and social influences on food choice. |
| What is your monthly disposable household income? | Socio-economic information | Individual level factors and the impact of income on diet quality (Thiele, Mensink and Beitz, 2004). |

| | | |
|--|---|--|
| What is your average household monthly expenditure on food groceries? (not including restaurant visits or takeaways) | Socio-economic information | Individual level factors – and rational aspects of food choice (French, 2003). |
| Regarding your household, which best describes you? | Socio-economic information | Micro-level factors and social influences on food choice. |
| Thinking about your own health, please indicate how strongly you agree / disagree with the following statements: | Health perception metrics | Individual level factors and influence of perception of health on dietary choices (Bisogni, Connors, Devine and Sobal, 2002). Developed utilising established 5-point Likert scale (Hoek, Luning, Stafleu and de Graaf, 2004). |
| Thinking about your diet, which of the following health benefits are you most interested in getting from foods or nutrients? | Health benefits – understanding underlying dietary motivations | Benefits of dietary change in the context of behavioural change model (Thomas, 1991), (Brick, MacIntyre and Campbell, 2016). |
| Do you suffer / consider yourself to be suffering from an intolerance to lactose? | Prevalence of perceived / medically diagnosed Lactose Intolerance | Prevalence of LI and refutation of foods based on danger associated with ingest (Yu, Freeland and Nadeau, 2016). |
| If you answered 'Yes', has this been diagnosed by a medical professional? | Prevalence of medically diagnosed Lactose Intolerance. | Accommodation of non-professionally diagnosed LI (as above). |
| Do you suffer from an allergy to cow's milk? | Prevalence of perceived / medically diagnosed Cow's Milk Allergy | Prevalence of CMA and refutation of foods based on danger associated with ingest (Yu, Freeland and Nadeau, 2016). |
| If you answered 'Yes', has this been diagnosed by a medical professional? | Prevalence of medically diagnosed Cow's Milk Allergy | Accommodation of non-professionally diagnosed CMA (as above). |
| Have you followed any specific eating pattern or diet at any time in the past year? | Dietary stability and dietary behavioural change | Frequency of dieting practices, and sustained maintenance of diets (changes (Gardner, Lally and Wardle, 2012). |
| How often, if at all, do you personally eat any form of meat (inc. poultry), fish or shellfish? | Animal product consumption frequency. | Frequency of inclusion of animal products (meat) in the diet. |
| How often, if at all, do you personally consume animal products other than meat, fish or shellfish? | Animal product (non-meat) consumption frequency. | Frequency of inclusion of animal products (dairy) in the diet. |
| Thinking about the volume and frequency of dairy products you currently consume. Is this | Changes in consumption of dairy | Motivations for making modifications to frequency of dairy product consumption. |

| | | |
|---|---|--|
| the result of any significant changes you made to your diet? | | |
| If you made any sort of changes, how long ago did you make them? | Sustained or acute dietary changes | Sustained / maintained dietary change (Hall and Kahan, 2018), (Hartmann-Boyce et al., 2021). |
| If you stopped consuming / reduced your consumption of dairy PRIOR to lockdown, what were your main reasons for doing so? | Understand motivations for stopping / reducing consumption of dairy, prior to lockdown. | Reasons and motivations for sustained dietary change (Burke, Wang and Sevick, 2011). |
| If you stopped consuming / reduced your consumption of dairy DURING lockdown, what were your main reasons for doing so? | Understand motivations for stopping / reducing consumption of dairy, during lockdown. | Reasons and motivations for dietary change in the pandemic era (no relevant literature). |
| If you have stopped consuming / reduced your consumption of dairy, was there anyone / anything in particular that motivated you to do so? | Understand micro-level motivations for stopping / reducing consumption of dairy | Influence of micro-level factors on food choice |
| How often, if at all, do you personally consume milk alternative products? | Consumption of dairy alternatives | Frequency of food choice. |
| If you use milk alternative products, do you use these as a replacement for dairy products or in addition to? | Understand purpose served by dairy alternatives | Preference or required substitute. |
| For each statement about dairy milk (milk from cows), please indicate how strongly you agree or disagree: | Understand perceptions of milk | Perception / evaluation of dairy milk Likert Scale (Fallon, Rozin and Pliner, 1984). |
| For each statement about dairy alternatives (soya, rice, oat, almond etc) please indicate how strongly you agree or disagree: | Understand perceptions of dairy alternatives | Perception / evaluation of dairy milk - Likert Scale (Fallon, Rozin and Pliner, 1984). |

Table 4.1 Survey question justification

It should be noted, that given the sampling method, monitoring distribution was virtually impossible and therefore questions were included in the survey to vet respondents ahead of involvement. Two additional criteria were added - to be met after the fact – for respondents to proceed with participation. The respondent had to confirm they were over the age of 18

and a resident / part-time resident in the UK. For those under 18, or living outside of the UK, the survey was immediately terminated.

4.6.1 PILOT STUDY

It is recommended that questionnaire developers should always conduct a small pilot study on the target population, using different formats (Moore, Carter, Nietert and Stewart, 2011). However, due to time constraints, undertaking a full pilot study was not feasible, therefore questions were reviewed by a selection of colleagues and academic peers of the researcher to gauge clarity, coherence, and overall flow. Positive responses to the questionnaire's contents confirmed the research could proceed without modification.

4.6.2 DISTRIBUTION

The online survey, created on Survey Net, recruited participants via email, social media, and word-of-mouth. Scholars in the field of Social Science Research tend to argue that the online recruitment of survey participants does not offer sufficient fielding opportunity, particularly for purposive sampling, given the immediate elimination of certain societal groups from involvement (Gelinas et al., 2017), (Palinkas et al., 2013). As noted above, convenience sampling does not seek to recruit from a defined group and therefore, surveys disseminated via the web, may in fact be just as valid as more traditional sampling methods.

Nevertheless, drawing inferences from sampled individuals to the population must be done so with caution, and it becomes obligatory when employing convenience sampling as an approach, to describe i) how the sample would differ from one that *was* randomly selected and ii) to define subjects who might be excluded during the selection process, or those who may be overrepresented in the sample (Fricker and Schonlau, 2002). Unlike random sampling, convenience sampling does not benefit from each population item having an equal chance of being selected; consequently, raising the quality of audit evidence in favour of the researcher making unbiased attempts at participant selection (Gershuny, 2004). The sample population for the survey were mobilised in an opportunistic way, and while every attempt was made to

eliminate bias, the radius of contacts was limited to that of the researcher's immediate and semi-immediate contacts. Those outside of the researcher's contact potential, would have been automatically emitted from survey involvement. Moreover, it was acknowledged that contacts of the researcher, would inevitably fall into various societal groups, based on their connection with the researcher, such as university acquaintances.

An additional point to note is that this survey was conducted in June 2020, during the COVID-19 pandemic. Given the impact of the pandemic on personal circumstances; data collected for socio-economic and socio-cultural metrics such as monthly income, monthly expenditure and behavioural or dietary changes may not hold temporal validity. Every effort was made when designing questions to distinguish between behaviours and perceptions towards dairy consumption prior to lockdown and during lockdown; with the aim of ascertaining the impact of Covid-19, however, additionally accounting for all variables of a socio-cultural nature was deemed too complicated.

4.6.3 ASSESSMENT OF DESIGN QUALITY

A significant caveat with online surveys is the overall quality of obtained data, in terms of known data quality dimension; accuracy, completeness, timeliness (Wand and Wang, 1996). The honesty and completeness of responses – including non-response -, principally for questions of a delicate nature must be considered as part of a data quality assessment. With all other things held constant, the likelihood of unit and item non-response are lessened using interviewer-assisted modes, compared to self-administered survey modes (Bowling, 2005).

4.7 INTERVIEW DESIGN

Semi-structured interviews are coordinated around a set of predetermined, open-ended questions, with sub-questions or probes emerging from the dialogue between researcher and subject (DiCicco-Bloom and Crabtree, 2006). To obtain data that is as rich as possible, it is critical that questions posed are fluid and formulated in a fashion that elicits unstructured responses and generates discussion. This form of interview approach is most appropriately

used when the researcher knows enough about the topic to isolate the domain and main components of the topic, yet unable to anticipate all conceivable answers (DeJonckheere and Vaughn, 2019). Due to the Covid-19 regulations preventing individuals from different households from mixing, opportunities to gather qualitative data were limited.

Other forms of interview technique were considered, such as Zoom and Facetime, however, the interview subject was not equipped with technology to accommodate these techniques. Telephone interviews were thus deemed to be the most effective alternative.

4.8 DATA ANALYSIS TECHNIQUE

4.8.1 QUALITATIVE

A thematic analysis approach was used to analyse the single interview (Kiger and Varpio, 2020). Adopting this approach both aligns with a pragmatist approach to research and enables the analyst to draw out insights in the areas of interest to the investigation.

4.8.2 QUANTITATIVE

Previous research endeavours have employed binomial logistic regression to predict the outcome of food choice (Vorage, Wiseman, Graca and Harris, 2020). The same statistical analysis technique was therefore deemed suitable to test the efficacy of the conceptual model proposed in Chapter 3. As a model, binomial, logistic regression has the capacity to predict the probability that an observation will fall into one of two categories of a dichotomous dependent variable, based on one or more independent predictor variables (Midi, Sarkar and Rana, 2010). The outcome, as a series of validated outputs are then expressed as the log-odds of an event's occurrence, in this case; an individual making a dairy-free food choice, and the most significant factors contributing to the occurrence of said event.

In the context of this quantitative research, the question guiding the analysis was posed to discover explanatory factors predicting dairy-free food choices. The predicted dependent

variable would thus serve as a function of the probability that an individual respondent would fall into one of the two binary categories: making a dairy-free food choice, or not making a dairy-free food choice. The variables intended for inclusion were operationalised in-line with the analytical model designed in Section 3 and existing literature. Mapping of operationalised dependent and explanatory variables to concepts in the analytical model are detailed in Table 4.2.

| Model concept theme | Component | Relevant question(s) | Operationalised variable(s) |
|----------------------------|---------------------------|-----------------------------|------------------------------------|
| Individual-level-factors | Overall health perception | 13 | Health perception |
| | Medical components | 15,16,17,18 | Medical Avoidance |
| | Identities and attributes | 4, 6, 8, 10 | Age, Qualification, Income |
| Incentives | Dieting frequency | 19 | Dieting frequency |
| | Ethical considerations | 25 | Ethical |
| | Influences | 27 | Motivations |
| Food Perceptions | Perceptions of dairy-free | 31 | Milk alternatives perception |
| | Perceptions of dairy | 30 | Milk perception |
| | Nutritional benefits | 14 | Nutritional benefits |
| Environmental variables | Environmental variables | 25, 26, 27 | External influences |
| Situational context | Situational context | 24 | Latency of change |
| Dairy-free food choice | Dairy-free food choice | 23 | Dairy consumption changes |

Table 4.2 Operationalised variables mapped to concepts in analytical model

5 DATA ANALYSIS AND RESULTS

5.1 INTRODUCTION

This section provides an in-depth look at the results of the interview and questionnaire. The section begins with a series of thematic extracts from the interview, followed by an analysis of the quantitative data, obtained via the survey.

5.2 QUALITATIVE SECTION

The subject chosen for interview, is a renowned scholar in the field of immunology, at the University of Essex. The purpose was to understand, whether, medically, immunological responses to dairy or lactose had in-fact increased. It should be noted, that to maintain independence of results, and not bias the response, the interviewee was not informed of the results of the quantitative analysis. Key extracts of the interview, and associated details are included in Appendix B.

The interview took the form of a semi-structured conversation, which began by asking the subject his take on the prevalence of the two dairy-related medical conditions: Lactose Intolerance and Cow's Milk Allergy:

"In the West, we are certainly seeing an increase in immunological allergies and lactose intolerance"

When asked about the reasons for this increase, the interviewee provided three core reasons: the over-use of antibiotics, an aging population and over-consumption of sugar:

"First of all, people are using more anti-biotics...Anti-biotics are over-prescribed and when people take them for a prolonged period of time, this has a significant effect on the people's microbiome.... The ability to produce lactase to break down lactose

decreases as people get older....Sugar overconsumption has an impact on the way the diet and dairy are digested”

The interviewee was asked to expand on his comment about lactose intolerance in an aging population, noting that literary research did not indicate an age-dependent rise in LI. Professor Fernandez noted that deficiency in lactase increases with age, however, in younger people, they are actively pursuing resolutions to digestive problems:

“...changes in our diets in the West and perhaps more importantly, people actively seeking answers to digestive problems. But for these conditions, the medicine is easy. One just stops eating whatever is causing the problem.... for lactose intolerance, they stop eating lactose and for milk allergy, milk.”

The interview then turned to the topic of self-diagnoses of lactose intolerance. The interviewee notes that people were self-diagnosing due to increases in perceived sensitivity:

“...in the immunological world, we are putting this down to an increase in new psychological sensitivity to foods. when people go to the supermarket, they are met with all sorts of alternative milks..... psychologically associate the presence of these products on the shelf with a sensitivity to dairy that may or may not be present.”

Finally, drawing on some of the earlier – now arguably defunct research into the benefits of dairy, the interviewee was asked to comment on whether the inclusion of dairy in the diet, in any volume might be conducive to good health; with the intention of garnering a subjective response, from a reputable source. The interviewee noted that he was conscious of the environmental impacts of dairy consumption and believed the benefits of dairy could be obtained via alternative sources:

“...I am a firm believer that the nutritional benefits of dairy can be acquired elsewhere..., I have tried to cut down on my dairy consumption... I don't doubt that in 10 years dairy and the industry, will be almost non-existent.”

5.3 QUANTITATIVE SECTION

To validate the conceptual model and provide answers to the research questions, an in-depth and comprehensive analysis was carried out in SPSS on the obtained survey data. To ensure research adheres to the increasingly stringent data replication procedures, the associated syntax from each step is available on request, in addition to the raw data. A caveat of older research is that the analyses themselves are difficult to replicate solely from the published reports (Tincani and Travers, 2019). Moreover, evidence of unverifiable results and the faking of data has led to research being declared as either fabricated or inadmissible (Khadilkar, 2018). Research was ultimately undertaken to inform commercial opportunity, and thus the ability to prove full transparency and provide a traceable provenance record are vital. An investigator conducting future research conducted, drawing on results of the primary research, will therefore arrive at the same findings and conclusions; solidifying those originally obtained.

The survey was completed and submitted by 138 respondents (N=138). To begin, variables to be used were re-coded and frequencies were run to assess distribution. Missing cases were also recorded, in accordance with the Data Quality dimension, Completeness. All questions in the survey were included with the intention of filling the research gap highlighted in the literature review. While the survey was not specifically directed at non-dairy consumers, it was disseminated with the objective of gaging the difference in attitudes, beliefs and characteristics of both dairy consumers and non-dairy consumers.

5.3.1 RESULTS

5.3.1.1 SURVEY POPULATION

The survey population comprised 138 individuals: 54 men and 84 women. By age, the greatest proportion of the population fell in the 55-64 and 18-24 age bands (29 in each band), followed by those aged 45-54 (27). Regional distribution was heavily skewed towards the South of England, posing issues with extrapolation that will be addressed later.

5.3.1.2 INCIDENCES OF LACTOSE INTOLERANCE AND COW'S MILK ALLERGY

Analysis began by looking at the number of respondents suffering from Lactose Intolerance and / or Cow's Milk Allergy.

| Response | Lactose Intolerance | Cow's Milk Allergy |
|--------------|---------------------|--------------------|
| No | 112 | 133 |
| Yes | 26 | 5 |
| Total | 138 | 138 |

Table 5.1 Responses to question asking participants whether they suffer from Lactose Intolerance or Cow's Milk Allergy

Of the 138 survey respondents, 26 answered 'Yes' to suffering from Lactose Intolerance. Of those 26, only 12 answered 'Yes' to the follow up question asking whether their condition had been diagnosed by a medical professional (See Table 5.1). 5 respondents claimed they suffered from a Cow's Milk Allergy, with 4 declaring professional diagnosis of the condition. 2 respondents indicated they suffered from Lactose Intolerance and Cow's Milk Allergy, of which both had only received a professional diagnosis of CMA.

5.3.1.3 HEALTH PERCEPTION

Based on existing scales to map self-reported health levels (Hoek, Luning, Stafleu and de Graaf, 2004), the newly operationalised variable for health perception was computed by calculating the average of the total score for each of the components of health. Where 5 = complete agreement with all aspects of health-related measures, and 0 = strong disagreement. The average score for respondents, fell between 2 and 3, indicating neutral to positive perceptions of good health for most respondents (Figure 5.1).

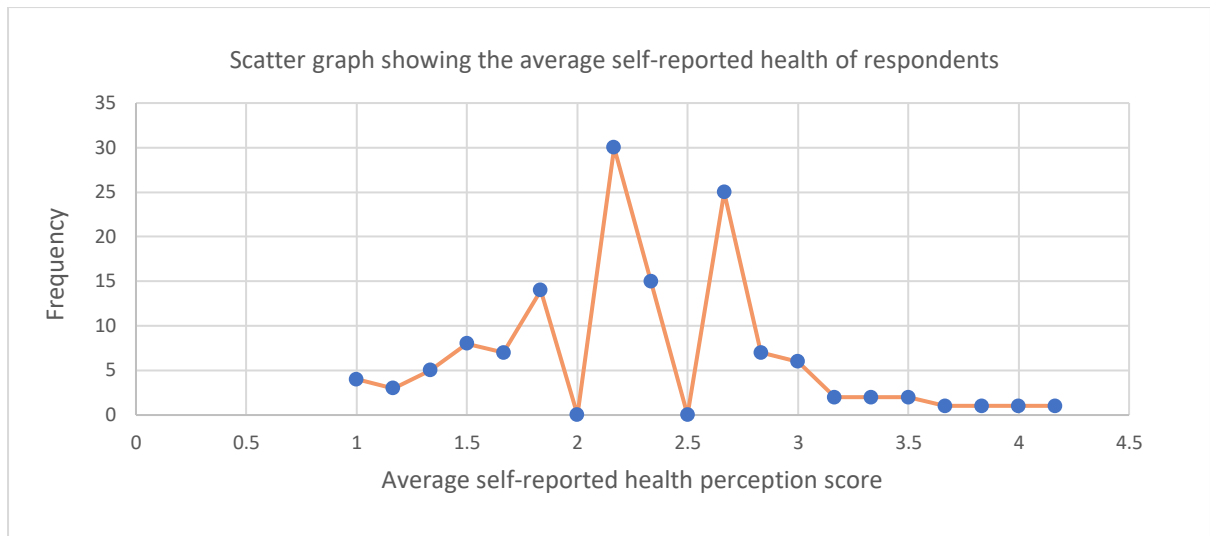


Figure 5.1 Scatter graph showing average health perception of respondents

5.3.1.4 DIETING FREQUENCY

Respondents were provided with a list of 11 frequently adopted diets and asked to choose how many they had followed in the previous 12 months. To ascertain dieting frequency, in the context of sustained behavioural dietary change, the resulting variable was calculated by totalling the number of diets followed per respondent. Figure 5.2 displays a bar chart of the results. 69% of all respondents had followed at least 1 diet in the preceding 12 month, 20% had followed 2 or more diets, and 4% had followed 5 or more diets.



Figure 5.2 Bar chart showing dieting frequency by % of respondents

5.3.2 DEPENDENT VARIABLE ANALYSIS

The dependent variable for analysis was the operationalised concept of dairy consumption, to inform the outcome of the conceptual model - dairy-free food choice. With reference to the overarching research question, the analysis intended to uncover the most influential antecedents and motivations for making dairy-free food choices and thus understand who was making changes to their dairy consumption.

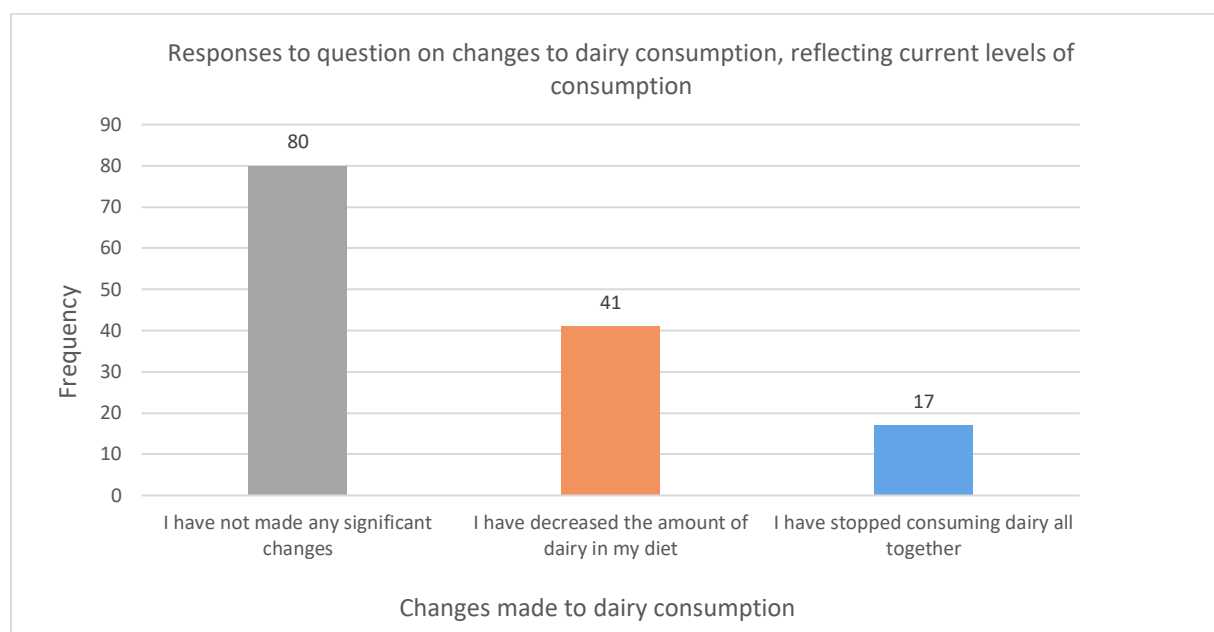


Figure 5.3 Bar chart showing responses to survey question on current dairy consumption (N=138)

Of the 138 respondents, a total of 58 either decreased or stopped consuming dairy altogether, translating to a food choice outcome avoiding dairy (Figure 5.3). 80 individuals made no significant changes. Excluded from the bar chart, due to a response rate of 0, was the choice of 'I have increased the amount of dairy in my diet'.

5.3.3 EXPLANATORY VARIABLE ANALYSIS

The following explanatory variables were analysed in accordance with the conceptual model (Chapter 3). To support the analysis of variables, dairy consumption was recoded as a binary

variable, where 1 = decreased or stopped consuming dairy, and 0 = made no significant changes to dairy consumption.

5.3.3.1.1 WHO IS MAKING CHANGES TO THEIR DAIRY CONSUMPTION?

To begin, crosstabs were run on the explanatory variables - illustrated in the conceptual model as factors influencing food choice outcome – to investigate the demographic distribution of respondents in relation to changes to dairy consumption.

5.3.3.1.2 DAIRY CONSUMPTION CHANGES BY AGE OF RESPONDENTS

Age was the first variable to undergo analysis. Figure 5.4 displays a bar chart, with dairy consumption changes broken down by age group. The greatest change to dairy consumption was made in the 55-64 age group, with 17 of the 29 respondents responding yes to either stopping or reducing their consumption of dairy. Recognising the disproportionate distribution of age, changes to dairy were consistent across other age groups, bar those aged 65+.

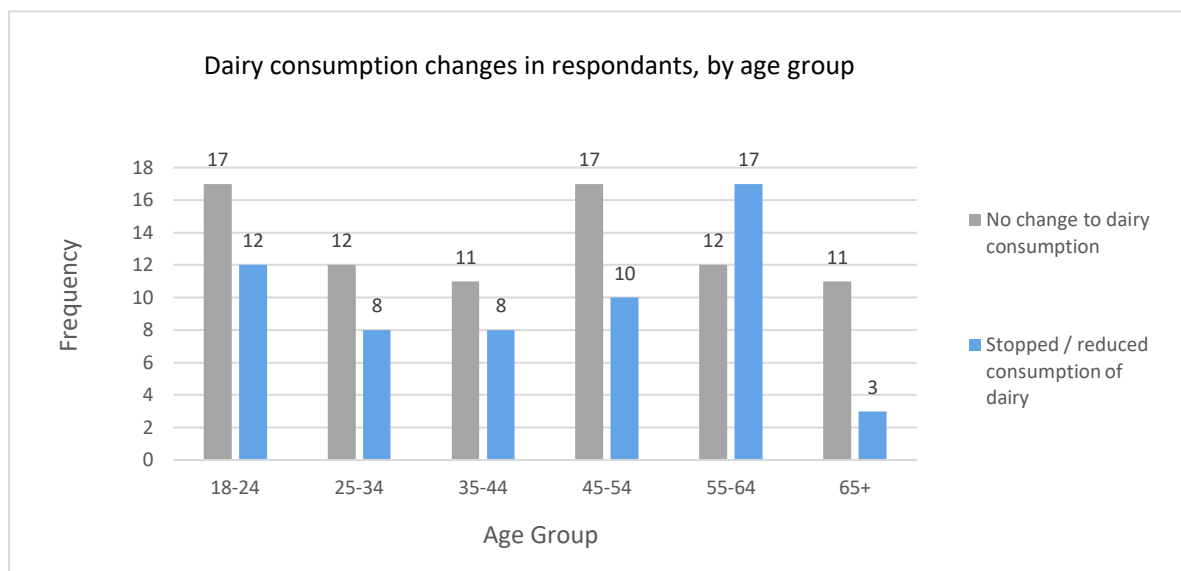


Figure 5.4 Bar chart showing respondents' changes in dairy consumption, by age group (N=138)

5.3.3.1.3 DAIRY CONSUMPTION CHANGES BY GENDER OF RESPONDENTS

Dairy consumption was then analysed against gender. Figure 5.6 presents the results of dairy changes in males in the sample, of which 35% had stopped or reduced their consumption of dairy. In females, this figure rose to 46% (Figure 5.5).

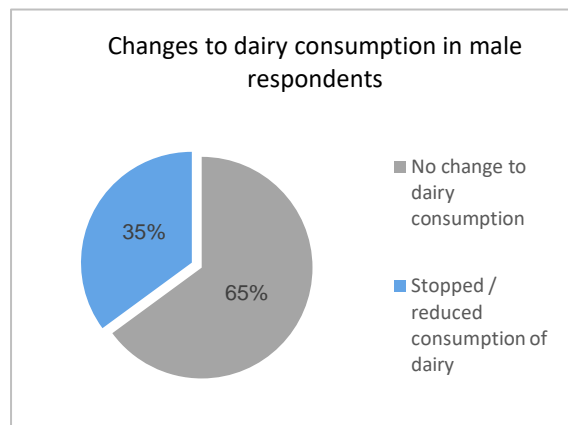


Figure 5.6 Pie chart showing changes to dairy consumption in male respondents (N=54)

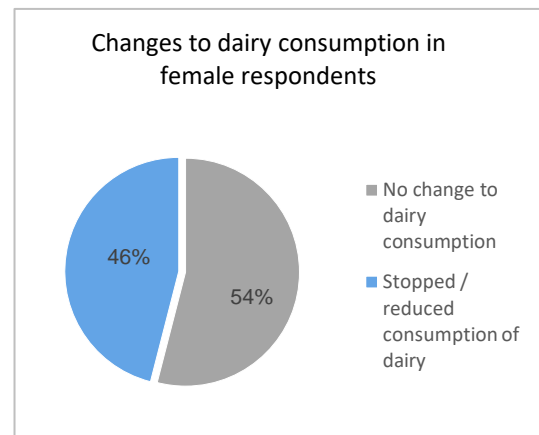


Figure 5.5 Chart showing changes to dairy consumption in female respondents (N=84)

5.3.3.1.4 DAIRY CONSUMPTION CHANGES BY REGIONAL DISTRIBUTION OF RESPONDENTS

Regional analyses were then undertaken. Figure 5.7 presents a map of the UK, illustrating the regional distribution of dairy consumption changes. Areas shaded darker orange indicate a higher % of respondents who stopped or reduced their consumption of dairy in the region. The East Midlands and South East regions had the highest percentages of respondents who had stopped or decreased their consumption of dairy, with 47% and 59% respectively.

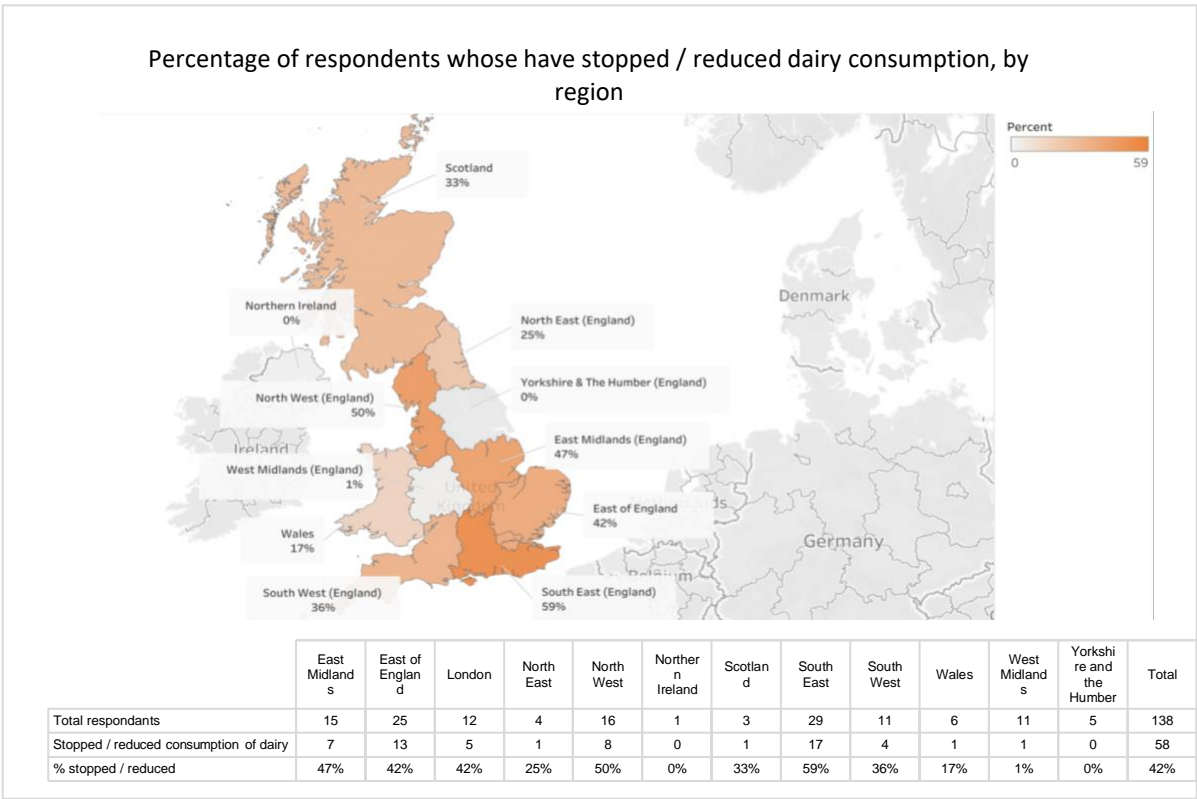


Figure 5.7 Map showing changes to dairy consumption in respondents, by Region (N=138)

5.3.3.1.5 DAIRY CONSUMPTION CHANGES BY RESPONDENTS' QUALIFICATION LEVELS

The survey population was highly skewed in terms of qualification level, with 83 of the 138 respondents qualified at degree level or equivalent. Figure 5.8 details a breakdown of dairy consumption by qualification level.

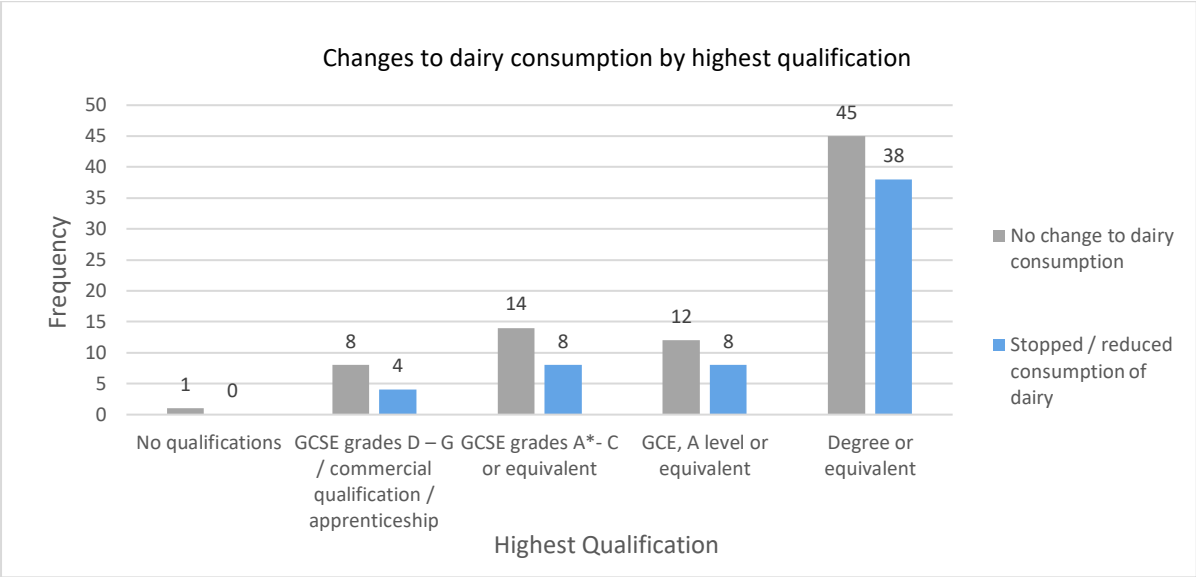


Figure 5.8 Bar chart showing changes to dairy consumption in respondents, by highest level of qualification (N=138)

5.3.3.1.6 DAIRY CONSUMPTION CHANGES BY MONTHLY INCOME BAND

Income was evenly distributed variable in the analysis. Running crosstabs against dairy consumption produced results illustrated in Figure 5.9 The £500-£1,499 and <£500 income band saw more individuals stopping or reducing their dairy consumption, when compared with those making no changes at all. In the £1,500 - £2,499, only 25% of individuals (7 out of 21), reduced their consumption of dairy.

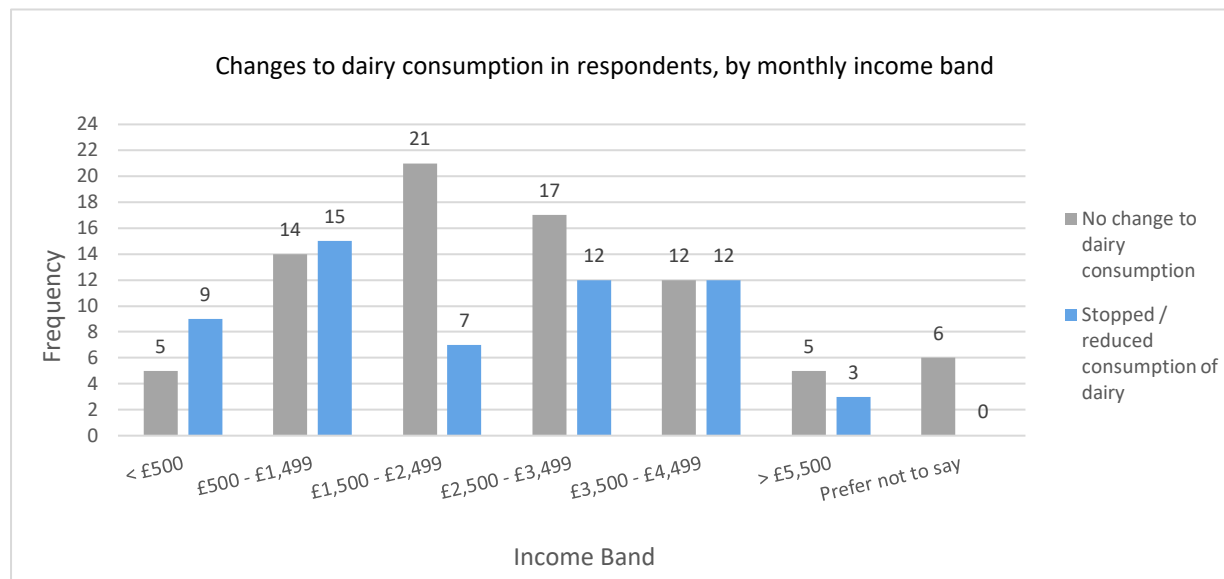


Figure 5.9 Bar chart showing changes to dairy consumption in respondents, grouped, by monthly income band (N=138)

5.3.3.2 HOW LONG AGO WERE CHANGES MADE TO DAIRY CONSUMPTION?

Respondents who made changes to their consumption of dairy (stopped or reduced), were asked how long-ago changes were made, with respect to the nation-wide lockdown imposed to curb the spread of COVID-19. Figure 5.10 shows that 18 of the 58 respondents made changes to their consumption over 3 years ago, indicating sustained changes to food choice.

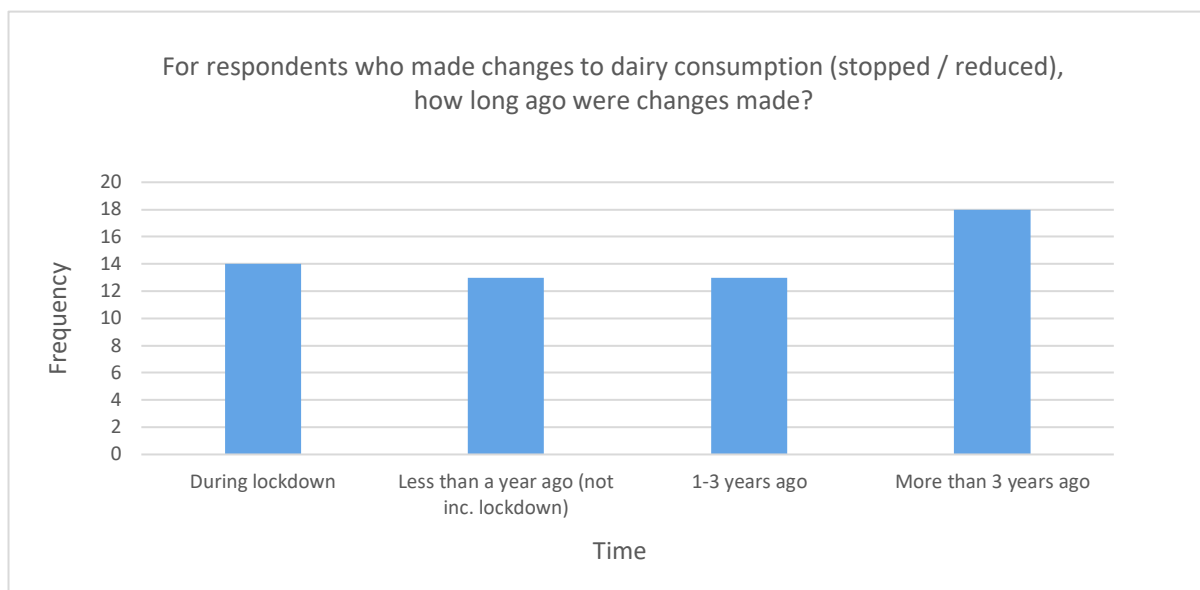


Figure 5.10 Bar chart showing how long-ago respondents made changes to dairy consumption (N=58)

The variable covering time since consumption changes occurred, was then converted to binary, where 0 = prior to lockdown and 1 = during lockdown, revealing 25% of respondents made changes during lockdown; the period covering March 2020 to the date of research commencement (Table 5.11).

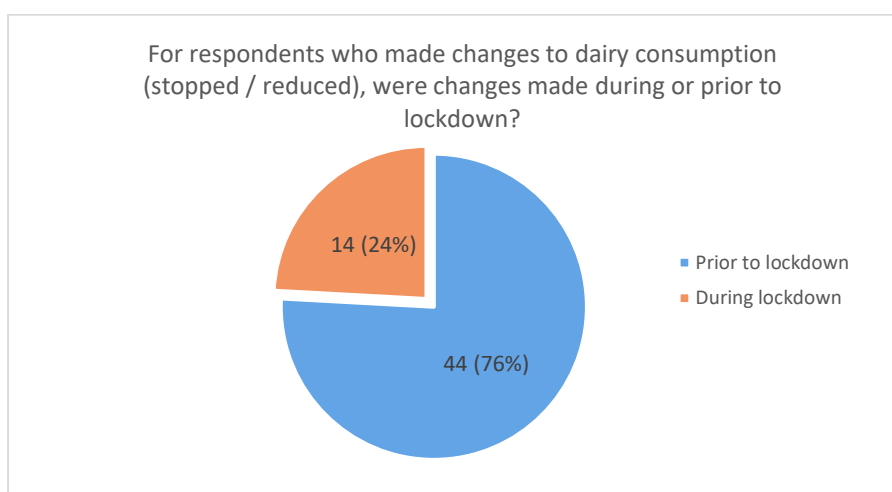


Figure 5.11 Pie chart showing number and percentage of respondents, who stopped / reduced dairy consumption during and prior to lockdown (N=58)

5.3.3.3 WHY ARE PEOPLE MAKING CHANGES TO THEIR DAIRY CONSUMPTION?

Incentives and intrinsic motivations for change were then analysed. The most common reason for change prior to lockdown was lactose intolerance (both perceived - i.e. without diagnosis - and medically diagnosed (Table 5.12). Animal welfare and bettering current health followed with 35% of respondents citing these as reasons for stopping or reducing their consumption of dairy. During lockdown, bettering current health and access to dairy were principal reasons for reducing or ceasing dairy consumption.

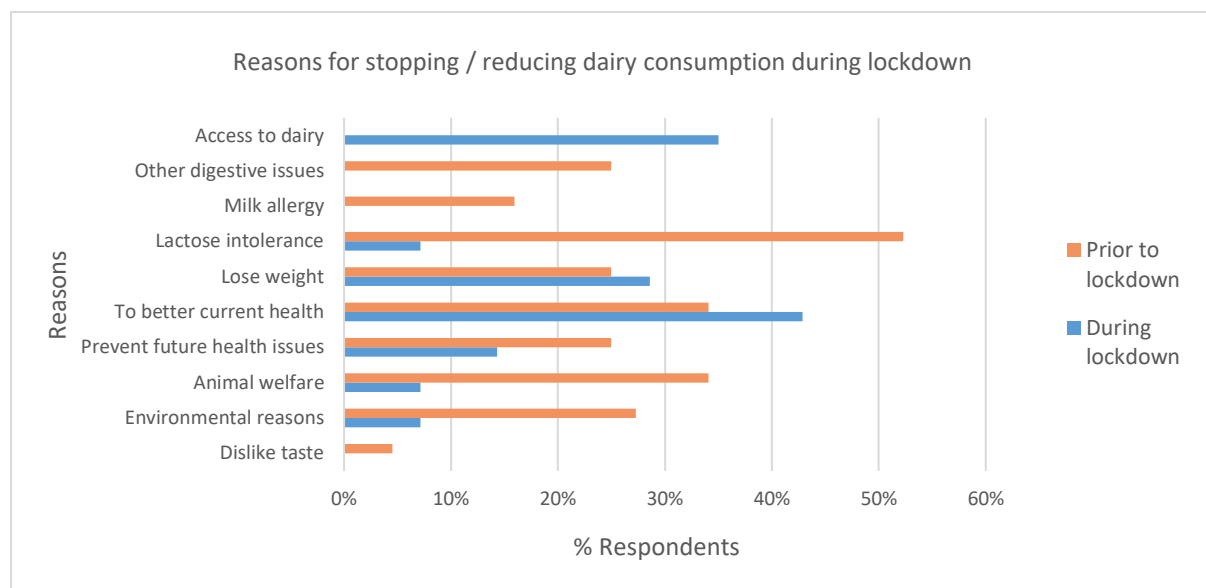


Figure 5.12 Chart showing key reasons, by percentage of respondents, who stopped / reduced dairy consumption (N=58)

When asked about the micro-level factors and influences on dairy consumption, 'other' was cited as the greatest reason. Text responses to this question are provided in Appendix D. Individuals cited 'personal trainers', 'baristas' and 'ethical readings' as other motivations for changes to dairy consumption.

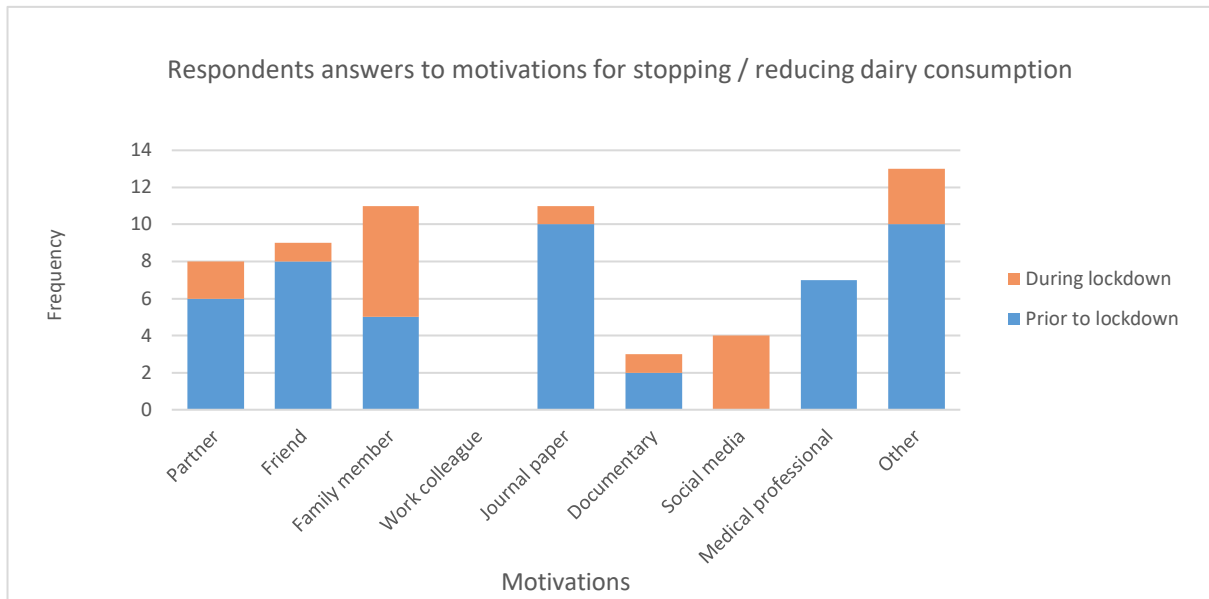


Figure 5.13 Chart showing motivations by frequency of respondents, who stopped / reduced dairy consumption during / prior to lockdown (N=58)

5.3.3.4 PERCEPTIONS OF DAIRY AND DAIRY ALTERNATIVES

Figure 5.14 displays a mapping of the perceptions of components of dairy products and dairy alternatives. Dairy alternatives were perceived as fresher, healthier, more digestible, and allergy-free. In contrast, dairy products were deemed to be better for bones, more natural and richer in minerals.

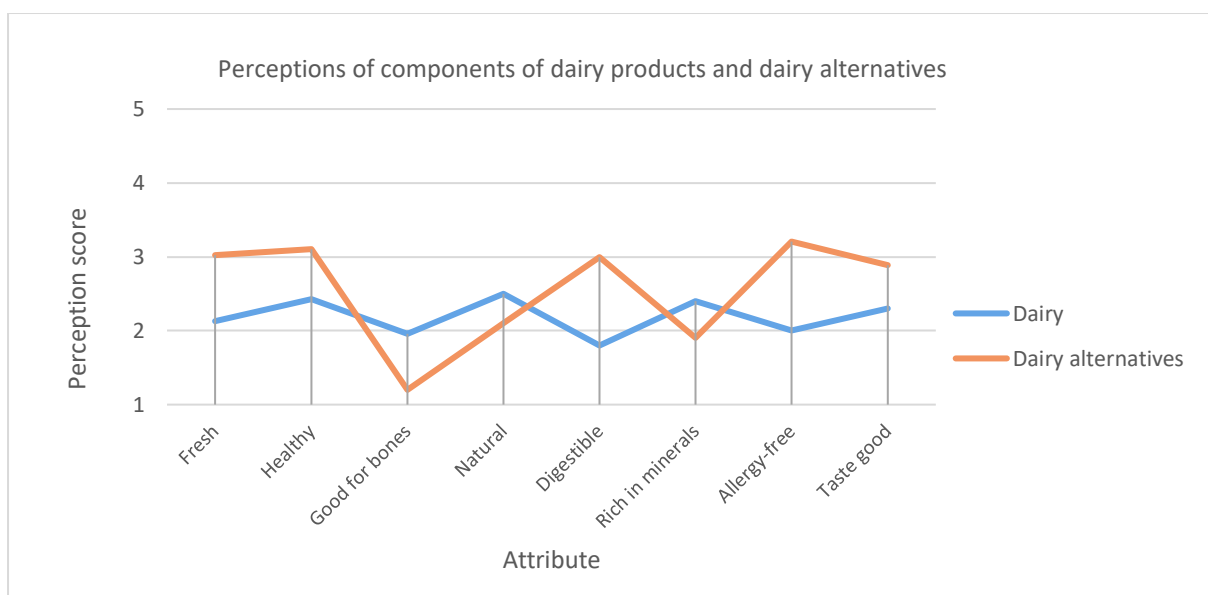


Figure 5.14 Chart showing perceptions of components of dairy products and dairy alternatives (N=138)

5.3.4 REGRESSION ANALYSIS

The means of analysis deemed most appropriate for modelling was binomial logistic regression. Appealing to known frameworks, used to determine regression sample sizes, for regression analysis, it is suggested $N > 50 + 8m$ (where m is the number of explanatory or independent variables. The sample size was 138; and the number of independent variables therefore was capped at 10. (Chapter 4.8.2). To ensure the model ran efficiently, several variables were therefore excluded; with the caveat that future research should include these factors, to ensure a comprehensive analysis. As categorical variables that could be independently assessed against the dependent variable to determine the existence of a correlation; the following concepts were excluded from the model: ethical considerations, situational context, and motivations.

Prior to running binary logistic regression analyses on the data, the following assumptions had to be met:

Assumption 1: The dependent variable was measured on a dichotomous scale

The dependent variable was created by modifying the existing variable for the question 'changes to dairy consumption'. By creating a new binary variable, responses were divided into two new categories:

- 1 = reduced consumption of dairy / stopped consuming dairy altogether
- 0 = no significant changes made to dairy consumption

Assumption 2: Analysis involves one or more independent variables

To undertake exploratory analyses into the factors influencing dairy-free food choices, via assessment of reductions in, or ceasing of the consumption of dairy, several variables were included in the regression analysis. A detailed overview of the variables entered is provided later in this chapter.

Assumption 3: There should be independence of observations and the DV should have mutually exclusive / exhaustive categories

The new binary variable created from the raw dependent variable satisfied this assumption.

The results of logistic regression can be used to classify subjects with respect to what decision it is thought they will make. As such, with the newly transformed binary dependent variable, the question becomes:

‘What are the odds that an individual will make a dairy-free food choice based on their stopping of / reduction in dairy consumption?’

The regression model predicts the natural log of the odds of having made one or the other decision (Edgar and Manz, 2017). \hat{Y} is the predicted probability of the event, coded as 1 (stop or reduce dairy consumption) rather than 0 (make no changes to dairy consumption). $1-\hat{Y}$ is the predicted probability of the other decision, and X , the predictor variable:

$$\ln(ODDS) = \ln\left(\frac{\hat{Y}}{1-\hat{Y}}\right) = a + bX$$

To begin, the variable for gender was added in as a predictor. While significant results were not expected from this initial model, running binary logistic regression on a single variable allows for a more meaningful interpretation of the output of a multi-variable model.

5.3.4.1.1 MODEL WITH NO PREDICTOR VARIABLES

Midi et al., assert that regression analyses should take a two-pronged approach. The model should first run with only the dependent variable, followed by a second run, including a single predictor variable – for referential purposes (Midi, Sarkar and Rana, 2010).

| Classification Table ^{a,b} | | | | | |
|-------------------------------------|--------------------------|--|--------------------------------|--|--------------------|
| | Observed | | Predicted | | |
| | | | dairy_consume_change_new | | Percentage Correct |
| | | | No change to dairy consumption | Stopped / reduced consumption of dairy | |
| Step 0 | dairy_consume_change_new | No change to dairy consumption | 80 | 0 | 100.0 |
| | | Stopped / reduced consumption of dairy | 58 | 0 | .0 |
| | Overall Percentage | | | | 58.0 |

a. Constant is included in the model.
b. The cut value is .500

Table 5.2 Regression Model Block 0 - Intercept Only

| Variables in the Equation | | | | | | | |
|---------------------------|----------|-------|------|-------|----|------|--------|
| | | B | S.E. | Wald | df | Sig. | Exp(B) |
| Step 0 | Constant | -.322 | .172 | 3.477 | 1 | .062 | .725 |

Table 5.3 Variables included in Regression Model Block 0

Table 5.2 displays the model output with only the intercept. Given only the base rates of the two categories, without any other information, the best method of prediction is to assume the null hypothesis; that no individuals made changes to their dairy consumption. On this prediction, 58% of the time, the model would be correct. The constant (B) (Table 5.3), with only the intercept included gave a value of -.322, translating to a log odds equation of:

$$\ln(ODDS) = -.322$$

Taking the exponential of both sides, the predicted odds equation then becomes:

$$Exp(B) = e^{-.322} = 0.725$$

58 respondents stopped or reduced their dairy consumption and 80 made no changes at all. $58/80 = 0.725$, the predicted odds of stopping or reducing with all other factors held constant.

5.3.4.1.2 MODEL WITH GENDER AS A PREDICTOR VARIABLE

| Omnibus Tests of Model Coefficients | | | | |
|-------------------------------------|-------|------------|----|------|
| | | Chi-square | df | Sig. |
| Step 1 | Step | 1.719 | 1 | .190 |
| | Block | 1.719 | 1 | .190 |
| | Model | 1.719 | 1 | .190 |

Table 5.4 Omnibus Test of Coefficients

The Block 1 output (Table 5.4) includes a single predictor variable in the model. The Omnibus Tests gave a Chi-Square of 1.719 at 0.190 significance when gender was added as a dependent variable, denoting an acceptance of the null hypothesis that the inclusion of gender has no significant influence on the model's capacity to predict whether an individual will stop or reduce their dairy consumption.

| Model Summary | | | |
|---------------|-------------------|----------------------|---------------------|
| Step | -2 Log likelihood | Cox & Snell R Square | Nagelkerke R Square |
| 1 | 186.067 | .012 | .017 |

Table 5.5 R Square Model Summary

The model summary (Table 5.5) for Step 1 gave a -2 Log Likelihood (LI) of 186.067. The closer to 0 the -2LI, the more successful the model is at predicting the outcome. On its own, this figure is inconsequential, however it serves as a comparative baseline for models nested in one another (Midi, Sarkar and Rana, 2010). By the same token, the R Squared values in the table above do not offer much by way of model success, however, are highlighted as reference for the succeeding analysis.

| Variables in the Equation | | | | | | | |
|---------------------------|-----------|-------|------|-------|----|------|--------|
| | | B | S.E. | Wald | df | Sig. | Exp(B) |
| Step 1 ^a | GENDER(1) | -.468 | .359 | 1.696 | 1 | .193 | .626 |
| | Constant | -.143 | .219 | .428 | 1 | .513 | .867 |

Table 5.6 Variables added into equation

Including the variable outputs (B) gives a regression equation of:

$$\ln(ODDS) = -0.143 + (-0.468SEX)$$

As such, we can predict the odds of a female or male reducing / stopping consuming dairy or making no changes to their dairy consumption, where:

$$ODDS = e^{a+bX}$$

For males (Male = 0), $e^{-.143+(-.468(0))} = 0.866$. Thus, a male is 0.866 times as likely to reduce his dairy consumption or stop consuming dairy altogether, than he is to make no changes at all. For females (Female = 1), $e^{-.143+(-.468(1))} = 0.543$. Converting this to probabilities:

$$\hat{Y} = \frac{ODDS}{1 + ODDS}$$

For males, $\hat{Y} = \frac{0.866}{1.866} = 0.464 = 46\%$ and for females, $\hat{Y} = \frac{0.543}{1.543} = 0.352 = 35\%$

The model thus predicts 46% of males and 35% of females will reduce or stop consuming dairy, with all else held constant.

5.3.4.2 REGRESSION MODEL (MAIN)

Adding more variables into the model delivers more intricate and meaningful results. The variables included were intended to represent the various elements of the conceptual model.

5.3.4.2.1 EXPLANATORY VARIABLES

Questions in the survey did not provide a direct translation to variables in the conceptual model, therefore, for appropriate entry in the model, new variables were calculated, based on the mapping of variables to concepts in Chapter 4.8.2, Table 5.2.

| Variable Name | Description |
|------------------------------|--|
| Dairy_perception | Derived from questions in the survey asking respondents to rate the extent to which they agreed or disagreed with statements about dairy on a Likert scale. Responses were re-coded, and the new variable computed as a cumulative, continuous variable, based on the 8 statements in the questionnaire. |
| Dairy_alternative_perception | Derived from questions in the survey asking respondents to rate the extent to which they agreed or disagreed with statements about dairy alternatives on a Likert scale. Responses were re-coded, and the new variable computed as a cumulative, continuous variable, based on the 8 statements in the questionnaire. |
| Health_perception | The variable measuring health perception drew on previously conducted research pointing to a correlation between overall personal health perception and the consumption of dairy; a variable was created, following the same logic as that of the variable for dairy milk perception - to form a continuous variable reflecting the mean value of the responses to the six health perception questions included in the survey. |
| Nutritional_benefits | Responses to the question asking respondents the benefits they deemed most important were totalled and computed to create a new variable. In line with existing literature, variables for each of the nutritional benefits were transformed into a single continuous, cumulative variable. |
| Responsibility | To account for extenuating micro-level influences on food choice, responsibility was recoded as a binary variable – where 0 = no responsibility for shopping and 1 = some level of responsibility. |
| Medical_components | A binary variable was computed to cover medical components, where 0 = does not suffer from Lactose Intolerance of Cow's Milk Allergy and 1 = |
| Dieting_frequency | Responses to the question asking how many diets had been followed, were totalled to create a new cumulative, continuous variable. |
| Qualification | The variable testing highest qualification, analogously to monthly income and age group was recoded to produce a new binary variable for degree educated and not degree educated. |
| Age | Age was added into the regression model as a categorical variable. and the parameters recoded to create K>1 variables. |
| Income | Income was added into the regression model as a categorical variable and the parameters recoded to create K>1 variables. |

Table 5.7 Explanatory variables included in model

5.3.4.2.2 REGRESSION MODEL RESULTS

110 cases were included in the final regression model, with 28 coded as missing.

| Case Processing Summary | | | |
|--------------------------------|----------------------|-----|---------|
| Unweighted Cases ^a | | N | Percent |
| Selected Cases | Included in Analysis | 110 | 79.7 |
| | Missing Cases | 28 | 20.3 |
| | Total | 138 | 100.0 |
| Unselected Cases | | 0 | .0 |
| Total | | 138 | 100.0 |

Table 5.8 Case Processing Summary

| Omnibus Tests of Model Coefficients | | | | |
|--|-------|------------|----|------|
| | | Chi-square | df | Sig. |
| Step 1 | Step | 60.133 | 18 | .000 |
| | Block | 60.133 | 18 | .000 |
| | Model | 60.133 | 18 | .000 |

Table 5.9 Omnibus Tests of Model Coefficients

The table showing the Omnibus Tests of Model Coefficients displays a Chi-square statistic of 60.133. This statistic is immaterial, however the 0.000 significance level qualifies a rejection of the null hypothesis, indicating the model with variables built-in is more successful at predicting, on a dichotomous level, whether someone will stop or reduce their dairy consumption, or make no changes at all. Acknowledging that gender had no influence on the outcome of the independent variable, based on the acceptance of the null hypothesis in the initial regression analysis (Regression Model 1), focus of the subsequent outputs was directed on the other explanatory variables included in the analysis.

| Classification Table ^a | | | | | |
|-----------------------------------|--------------------------------|--|----------------------|----|--------------------|
| | Observed | | Predicted | | |
| | | | dairy_consume_change | | Percentage Correct |
| | No change to dairy consumption | Stopped / reduced consumption of dairy | | | |
| Step 1 | dairy_consume_changes | No change to dairy consumption | 57 | 7 | 89.1 |
| | | Stopped / reduced consumption of dairy | 12 | 34 | 73.9 |
| Overall Percentage | | | | | 81.5 |

Table 5.10 Final Regression Model Classification Table

| Model Summary | | | |
|--|---------------------|----------------------|---------------------|
| Step | -2 Log likelihood | Cox & Snell R Square | Nagelkerke R Square |
| 1 | 89.401 ^a | .421 | .567 |
| <i>a. Estimation terminated at iteration number 8 because parameter estimates changed by less than .001.</i> | | | |

Table 5.11 R Square Model Summary

The significance of the difference between two models, can be evaluated, on the condition that one model is nested within another (Bentler and Satorra, 2010). The one-predictor model, which included gender as a predictor variable, gave a -2 Log likelihood statistic of 186.067. The second model had a -2 Log likelihood statistic of 89.401. Adding the explanatory variables operationalised from concepts in the analytical model produced a decrease of 96.666. To determine whether this decrease was statistically significant, a Chi-square cumulative distribution function was calculated, returning the probability that the observation from the chi-square distribution, with 8 degrees of freedom and the non-centrality parameter, was less than or equal to the x , where $x=186.666$. This computation produced a new column of p values of 0.0002, allowing acceptance of this decrease of Log likelihood as statistically significant at the $p < 0.001$ level.

A foremost and universally accepted criterion for evaluating the success of a model, is the goodness of fit, quantified as an R Squared value. Goodness-of-fit indices ultimately exist to

assess the predictive capacity of a logistic regression model. For Ordinary Least Squares (OLS) regression, this value converts to a percentage success rate of the model in predicting the dependent variable (Fomby, Johnson and Hill, 1984). The Nagelkerke and Cox & Snell R Square values serve as pseudo values for the R Squared obtained in an Ordinary Least Squares regression analysis, the former an adjusted version of the latter that regulates the scale for a result between 1 and 0. As a contested concept in statistical analyses, opinions on use of these two calculations are heavily polarised. An interpretation of the Nagelkerke R Squared as delineated by, accepts a perfect model fit of 1, and a model whereby the variables explain 0% of the variation as 0 (Leng, Zhang, Kleinman and Zhu, 2007). Furthermore, in a study conducted by Rezaye Abbasi Charkhi, comparing the results of Psuedo R Square results and OLS R Squared values, Nagelkerke's index was somewhat lower, but almost as close to the corresponding OLS R Squared values (Rezaye Abbasi Charkhi, Aminnayeri and Amiri, 2015)

A Nagelkerke R Squared value of 0.567, based on this logic, may be understood as the model designed predicting the outcome correctly between 55 and 60% of the time, taking into consideration the 5 percent variation found in Rezaye Abbasi Charkhi, research. In contrast, the model with only gender as a covariate, gave an R Squared of 0.017 and while there is no consensus on an interpretation of this statistic in silo, evaluated next to a nested model, an increase in R Squared irrefutably signifies an increase in 'goodness-of-fit'. Therefore, conclusions can be drawn that, including the operationalised variables into the model, significantly increased the likelihood of the model being able to predict the likelihood of an individual stopping or reducing their dairy consumption.

| | | Variables in the Equation | | | | | |
|------------------------|------------------------------|---------------------------|-------|--------|----|------|--------|
| | | B | S.E. | Wald | df | Sig. | Exp(B) |
| Step 1 ^a | Dairy_perception | -.844 | .081 | 17.833 | 1 | .000 | 1.410 |
| | Dairy_alternative_perception | .803 | .779 | 1.063 | 1 | .003 | 2.232 |
| | Health_perception | .670 | .093 | 1.143 | 1 | .029 | .905 |
| | Nutritional_benefits | .800 | .399 | .062 | 1 | .013 | 1.105 |
| | Age | 1.604 | 1.156 | 1.925 | 1 | .165 | 4.971 |
| | Qualification | .809 | .779 | 1.063 | 1 | .002 | 2.232 |
| | Income | .302 | 1.356 | .598 | 1 | .004 | .854 |
| | Responsibility | .242 | .580 | .175 | 1 | .676 | 1.274 |
| | Medical_components | 1.049 | 1.356 | .598 | 1 | .001 | .854 |
| | Constant | -6.871 | 2.692 | 6.516 | 1 | .011 | .001 |

Table 5.12 Final regression model output

Interpreting the model output (Table 5.12) requires looking at the coefficients (B), which indicate whether an event is more likely to happen when that variable is factored in. The event in this case refers to whether an individual will make a dairy-free food choice; underpinned by a ceasing or reduction of dairy consumption. Shaded cells denote variables of significance. In the case of this model, all variables bar from age and responsibility were significantly significant, with p values < 0.05. Medical components i.e whether an individual suffered from lactose intolerance or cow's milk allergy was the most significant predictor in the model. Qualification, nutritional benefits and dairy alternative perceptions were all positive predictors, indicating that as qualification level increased, pursuit of nutritional benefits of food, and positive perceptions of dairy alternatives increased, the likelihood an individual would cease or reduce their consumption of dairy also increased.

Variables with negative coefficients correspond to an inverse relationship with the dependent variable. Dairy perception was the only variable that signified a negative correlation with the probability of an individual decreasing or ceasing their consumption of dairy, indicating that the event is less likely at that level of the predictor than at the reference level.

5.4 DESCRIPTIVE STATISTICS

Noting that ethical considerations were not included in the model, yet are undoubtedly an important facet to consider, ethical considerations were independently analysed against the dependent variable. Table 5.13 presents the results of this correlation analysis, indicating a positive association between ethical considerations and likelihood of making a dairy-free food choice.

| Correlations | | | |
|--|---------------------|------------------------|----------------------|
| | | Ethical_considerations | Dairy_consume_change |
| Ethical_considerations | Pearson Correlation | 1 | .328** |
| | Sig. (1-tailed) | | .000 |
| Dairy_consume_change | Pearson Correlation | .328** | 1 |
| | Sig. (1-tailed) | .000 | |
| **. Correlation is significant at the 0.01 level (1-tailed). | | | |

Table 5.13 Correlation between ethical considerations and changes to dairy consumption

5.5 DISCUSSION

This research sought to validate the conceptual model produced in response to the identified gap in the literature (Figure 3.1). The model was developed with the intention of answering the overarching research question guiding this dissertation, to uncover the most influential antecedents and motivations for making dairy-free food choices. In concordance with existing literature, the regression model found that the most significant factor affecting dairy-free food choice was whether an individual suffered from Lactose Intolerance or Cow's Milk Allergy. This can arguably be explained by the refutation of food based on anticipation of bodily harm. It stands to reason that an individual with LI or CMA would class dairy as dangerous, with consumption leading to either immediate bodily harm or discomfort (Chapman, Kim, Susskind and Anderson, 2009). Interestingly however, results indicated that not all of those who considered themselves to suffer from lactose intolerance had been

diagnosed by a medical professional, denoting perceived LI. Findings from the interview support this claim of perceived intolerance, from an immunological standpoint.

Individual-level factors were equally significant; with health perception and nutritional factors serving as significant contributors to the model. Identity was deemed significant in predicting dairy-free food choice outcome. Qualification level and income were strong predictors of an individual ceasing or reducing their consumption of dairy. Noting that existing research found associations between the consumption of 'healthy' food and income and education level, it seems plausible, that given that dairy-free has come to connote health, that these influences would similarly serve as predictors of dairy consumption (Thiele, Mensink and Beitz, 2004).

6 CONCLUSION

6.1 LIMITATIONS

This section serves to elaborate further on the drawbacks of the conducted research. Research forming a substantial part of this dissertation was carried out during the COVID-19 pandemic, between July 2020 - August 2020. The unforeseen circumstances and government-regulated restrictions limited research opportunities to methods which could be carried out remotely.

Acknowledging the impact of the pandemic on every aspect of life, views and opinions expressed by respondents should be considered a snapshot of attitudes at a specific moment in time and may not hold true outside of the extreme and unprecedented pandemic conditions. Research quality is heavily dependent on the individual skills of the researcher and more easily influenced by the researcher's personal biases and idiosyncrasies. Regarding data analysis, given the small sample size, to ensure the model ran efficiently, several variables were excluded, which when added in may have been strong predictors of dairy-free food choice.

6.2 FUTURE RESEARCH

The research conducted, while valuable for the purpose of this dissertation, is limited in scope and generalisability. It does, however, afford the opportunity to undertake more in-depth and valuable analyses for forecasting future behaviour. With a greater sample size and a tracking of individuals' dairy consumption over a period, data collected utilising the survey will provide the fundamentals for predictive analytics, such as Vector Autoregression or DeepAR using recurrent neural networks. Based on an input dataset, the DeepAR algorithm can train a model to learn an approximation of a process, in this case, an individual's consumption of dairy and use it to predict how the target time series will evolve. According to Salinas, this probabilistic forecasting method is a key enabler for both optimizing business processes and

predicting consumer behaviours (Marcjasz, Uniejewski and Weron, 2020). It is proposed that data is collected on the consumption of dairy at monthly intervals, alongside ancillary information on income, perceptions of health, age and other variables that are susceptible to changes over time.

It is expected that seasonal changes, events such as subsequent lockdowns and further economic strain on the population as a consequence of the ongoing Coronavirus pandemic will influence the consumption of dairy amongst individuals. Since data examining these expectations does not currently exist, acquiring a consistent stream of data to address hypotheses in relation to the impact of COVID-19 would serve as invaluable to further understanding antecedents and interaction of factors influencing dairy consumption in the current climate. Gerlach et al., advocate a data-driven approach to understanding human behaviour and health (Gerlach, Farb, Revelle and Nunes Amaral, 2018). Behavioural health systems leveraging machine learning to learn an individual's behaviour and surroundings, present a promising underpinning for the predictive modelling of an individual's behavioural health trajectory. By and large, scientific research on digital health data provides convincing evidence on proof of concept and gives rise to a basis for exploiting these approaches to inform behaviour change intermediations that are receptive to the dynamicity of human health behaviour.

6.3 JUSTIFICATION FOR BUSINESS CONCEPT

The purpose of this research was two-pronged; from an academic perspective, it filled a known gap in the literature; from a business opportunity standpoint, it confirmed the assumption that people are choosing to eschew dairy from their diets and sought to inform the target market analysis and motivations of the potential consumer of ALTERNATEV's products.

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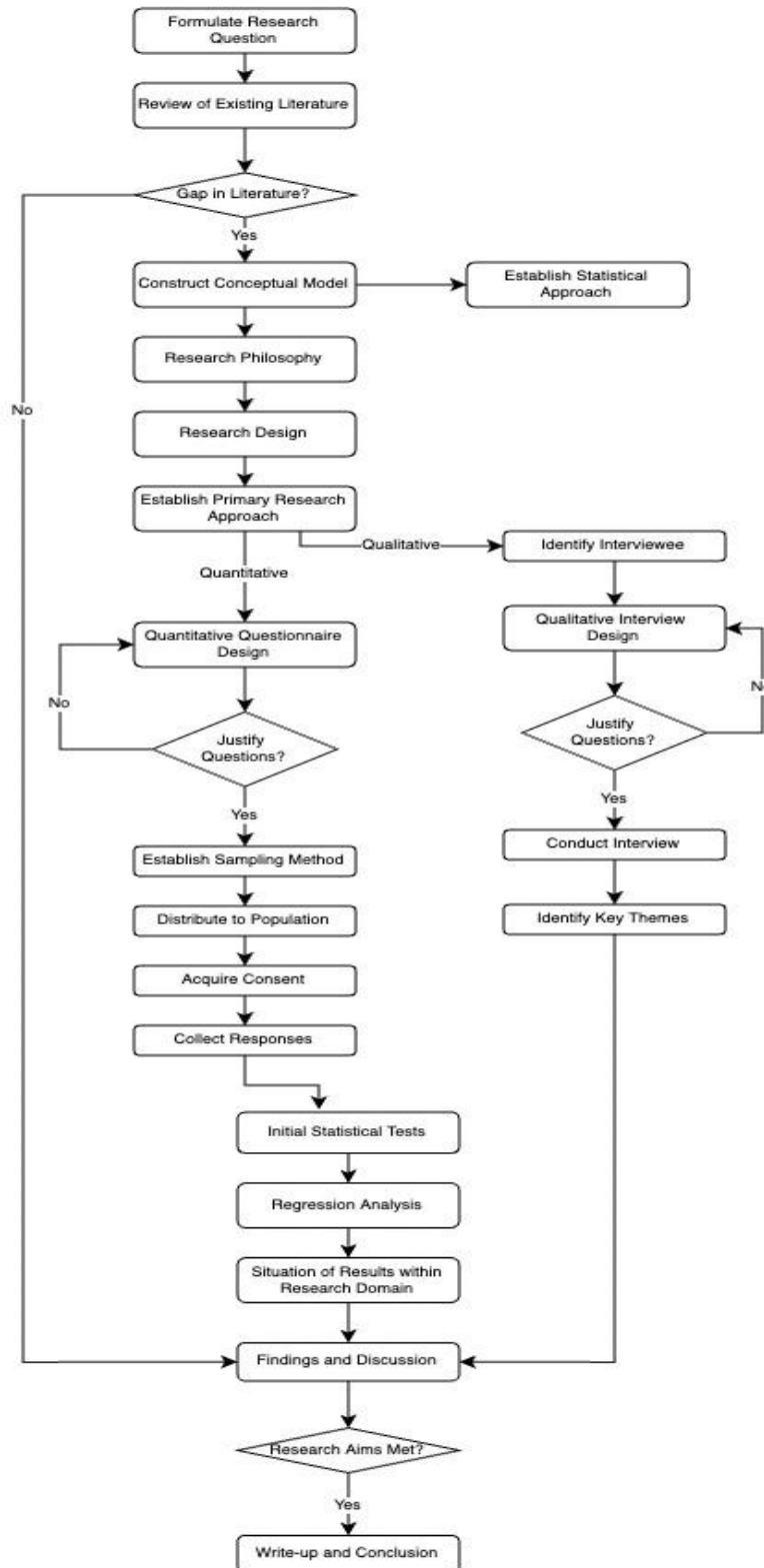
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APPENDIX

APPENDIX A: RESEARCH METHODOLOGY FLOWCHART



APPENDIX B: INTERVIEW RECORD AND TRANSCRIPT

| Interview Information - General | |
|--|----------------------------|
| Interviewer | Camille Corti-Georgiou |
| Interviewee | Professor Nelson Fernandez |
| Date of interview | 10/07/2020 |
| Start time of interview | 15:00 |
| End time of interview | 15:35 |
| Length of interview | 35 minutes |
| Mode of interview | Telephone |
| Interview recorded (Y/N) | No |
| Consent obtained to share participate | Yes |
| Consent obtained to share identity | Yes |
| Interview Transcript | |
| <p>INTERVIEWER: From your perspective, as a prevailing immunologist in the field, what do you think about the current incidence of lactose intolerance and cow's milk allergy?</p> <p><i>INTERVIEWEE: "In the West, we are certainly seeing an increase in immunological allergies and lactose intolerance. Of course, the two you mention are very different, but yes, lactose intolerance is on the rise"</i></p> <p>INTERVIEWER: I'd like to come back to cow's milk allergies in a moment, but could you elaborate on why you think we are seeing greater numbers of lactose intolerance?</p> <p><i>INTERVIEWEE: "I think there are three reasons we are seeing an increase. First of all, people are using more anti-biotics. Anti-biotics are over-prescribed and when people take them for a prolonged period of time, this has a significant effect on the people's microbiome. The second reason is an ageing population. The ability to produce lactase to break down lactose decreases as people get older. The epistemological parameters decline, the immune system declines and antibody production declines. Finally, the over-consumption of sugar in the Western world plays a huge role and this is quite heavily linked with GDP and obesity. Sugar overconsumption has an impact on the way the diet and dairy are digested. This is the generalised view amongst immunologists today.</i></p> <p>INTERVIEWER: In terms of cow's milk allergies, are we also seeing an increase here?</p> <p><i>INTERVIEWEE: "We are seeing an increase in cow's milk allergy, yes, and this is a genetic issue, . There is a clear distinction between lactose intolerance and cow's milk allergy. Lactose intolerance is not immunological, it is a sensitivity. Cow's milk allergies involve a different mechanism that involves the immune system, where</i></p> | |

ingesting milk will lead to rashes, swelling and in severe cases, anaphylaxis. There is a whole spectrum of disorders that cause gastro-intestinal symptoms; diverticulosis, coeliac, lactose intolerance, all with similar characteristics that make it difficult to get a differential diagnosis from doctors. Cow's milk allergies prompt an allergenic response and are easy to diagnose with a drop of blood.

INTERVIEWER: I want to return quickly to your point about the impact of an aging population on the prevalence of lactose intolerance. I recognise the biology behind it, however, my literary research revealed that in younger people, there also seems to be an increase in lactose intolerance. I was wondering if you had any thoughts on this.

INTERVIEWEE: "The dominant view is that in the case of lactose intolerance, it is a deficiency of the enzyme lactase that causes the condition, and this is correlated with age. The patient cannot / can no longer break down lactose. There is also an incline in children and young people with lactose intolerance, and I place this down to the changes in our diets in the West and perhaps more importantly, people actively seeking answers to digestive problems. But for these conditions, the medicine is easy. One just stops eating whatever is causing the problem. For coeliac disease, patients stop eating gluten, for lactose intolerance, they stop eating lactose and for milk allergy, milk."

INTERVIEWER: I've noted that you've mentioned the West quite a few times. From my understanding, lactose intolerance is pretty much ubiquitously encountered by individuals in the East – China, Japan, Korea etc. where diets do not include milk, or any dairy-based products for that matter -

INTERVIEWEE: "Yes, well what we see here is a genetic disposition. The gene that commands the digestion of lactase differs when we look at different ethnic groups. In the West, dairy has always been part of the diet, which is why it becomes more evident when people start to physiologically reject lactose, but in the countries you have noted, things have always been that way"

INTERVIEWER: That's really helpful. Thank you. We've talked a little about a legitimate increase in prevalence from an immunological standpoint, but what about people self-diagnosing without going to a doctor?

INTERVIEWEE: "Ah, I had a feeling this topic might rear its head. People are indeed diagnosing themselves with lactose intolerance, and in the immunological world, we are putting this down to an increase in new psychological sensitivity to foods. When people go to the supermarket, they are met with all sorts of alternative milks and cheeses, that were not around five or ten years ago. what people then do, is psychologically associate the presence of these products on the shelf with a sensitivity to dairy that may or may not be present."

INTERVIEWER: Interesting. So, people are almost willing or imagining a sort of reaction to dairy. I wanted to ask about your own opinions of dairy. From a health perspective, do you think dairy – in any - volume is conducive to a healthy diet?

INTERVIEWEE: "In my opinion, no. I am a firm believer that the nutritional benefits of dairy can be acquired elsewhere. I am conscious of the environmental impacts of dairy because of over-farming and the negative implications on CO2 emissions et cetera et cetera. Personally, I have tried to cut down on my dairy consumption, as is my wife, as have many of my students. I don't doubt that in 10 years dairy and the industry, will be almost non-existent.

APPENDIX C: FULL QUESTIONNAIRE

| Survey Information - General | | | |
|--|--|---------------------|------------------|
| Title | Characteristics, Perceptions and Preferences of Dairy Milk / Non-Dairy Milk Drinkers. | | |
| Survey ID | 96K08n721 | | |
| Survey Link | https://apps.mhs.manchester.ac.uk/surveys/ /TakeSurvey.aspx?SurveyID=96K08n721 | | |
| Status | Open | | |
| Language | English (Standard) | | |
| Owners | Camille Corti-Georgiou | | |
| Start Date Time | 16/07/2020 13:25:48 | | |
| End Date Time | 15/08/2020 13:25:48 | | |
| Date Launched Responses | 328 | | |
| Valid Responses | 138 | | |
| Survey Information - Access | | | |
| Authentication | Anonymous | | |
| Max # Responses | Unlimited | | |
| # responses per User | 1 | | |
| Timed Survey | Not Timed | | |
| Question no. | Question | Mandator y (Y/N) | Response measure |
| Section 1 – Participant information and consent | | | |
| <p>Dear Participant,</p> <p>I invite you to take part in the following research project as part of my Masters dissertation. Before deciding whether to participate, it is important you understand why the research is being undertaken and what it will involve. Please take time to read the following information carefully.</p> <p>This study aims to investigate the characteristics, perceptions and preferences of dairy milk drinkers and non-dairy milk drinkers. The project builds on prior research of a similar nature, designed to allow comparisons with earlier findings. You will be asked to complete a web-based questionnaire which will take you approximately 10 minutes. Participation is entirely voluntary, and you may withdraw from the survey at any time, without giving a reason and without detriment to yourself.</p> <p>The Ethics Committees at the University of Manchester and Alliance Manchester Business School have jointly approved this research. The research is of sufficient standard and complies with the relevant legislation and all statutory and other guidance set out by the Committees. Data gathered will be securely stored at</p> | | | |

the University of Manchester. Please see the Privacy Notice for details of how the University stores data from research: <http://documents.manchester.ac.uk/display.aspx?DocID=37095>

All data obtained will be fully anonymised and may be shared or published to allow re-use in future research. These anonymised data will not allow you to be identified or become identifiable. Please note, it is not possible to remove your data from the project once it has been anonymised and prepared for analysis. The survey comprises 30 questions. The first section will ask about your demographic information, perception of health and dietary preferences. You will then be asked about your attitudes towards dairy and dairy alternatives. While you are under no obligation to answer every question, if you opt not to respond, please choose the 'prefer not to say' option where possible.

If you have any questions, concerns or comments about the research or questionnaire itself, please feel free to contact me.

Thank you in advance for your participation.

Yours

sincerely,

Camille Corti-Georgiou

Camille.corti-georgiou@postgrad.manchester.ac.uk

| | | | |
|----|---|-----|---|
| 1. | I have read and understood the above information and consent to participating in this study. | Yes | YES/NO i. Yes ii. No → Survey terminated. |
| 2. | You must be at least 18 to participate in this survey. Please confirm you are 18 or over. | Yes | YES/NO i. Yes ii. No → Survey terminated. |
| 3. | This study is looking at behaviours and attitudes amongst the UK populace. Please confirm you currently reside in the UK. | Yes | YES/NO i. Yes No → Survey terminated. |

Demographics

The following section will ask you basic demographic and dietary questions. Please answer as accurately as possible.

| | | | |
|----|------------------|-----|---|
| 4. | How old are you? | Yes | CHOICE - SINGLE SELECT OPTION BUTTONS i. 18-24 ii. 25-34 iii. 35-44 |
|----|------------------|-----|---|

| | | | |
|----|---|-----|--|
| | | | iv. 45-54 v. 55-64 vi. 65+ |
| 5. | Which of the following best describes the region you currently live in? | Yes | CHOICE - SINGLE SELECT OPTION BUTTONS i. North East ii. North West iii. Yorkshire and the Humber iv. East Midlands v. West Midlands vi. London vii. East of England viii. South East ix. South West x. Scotland xi. Wales xii. Northern Ireland |
| 6. | Which gender do you most identify as? | Yes | CHOICE - SINGLE SELECT OPTION BUTTONS i. Male ii. Female iii. Prefer not to say iv. Other, please specify |
| 7. | What is your ethnic group? | Yes | CHOICE - SINGLE SELECT OPTION BUTTONS i. White / White British ii. Mixed / Multiple ethnic groups iii. Asian / Asian British iv. Black / African / Caribbean / Black British v. Other ethnic group vi. Prefer not to say |

| | | | |
|-----|--|-----|---|
| 8. | What is the highest level of qualification you have completed? | Yes | CHOICE - SINGLE SELECT OPTION BUTTONS i. Degree or equivalent ii. Higher education, below degree level iii. GCE, A level or equivalent iv. GCSE grades A*- C or equivalent v. GCSE grades D - G / commercial qualification / apprenticeship vi. No qualifications vii. Prefer not to say viii. Other, please specify |
| 9. | How many people (including children) reside in your household? | Yes | CHOICE - SINGLE SELECT OPTION BUTTONS i. Single ii. 2 iii. 3 iv. 4 v. 5 vi. 6 vii. 7+ viii. Prefer not to say |
| 10. | What is your monthly disposable household income? | Yes | CHOICE - SINGLE SELECT OPTION BUTTONS i. < £500 ii. £500-£1,499 iii. £1,500-£2,499 iv. £2,500 -£3,499 v. £3,500 - £4,499 vi. > £5,500 vii. Prefer not to say |
| 11. | What is your average household monthly | Yes | CHOICE - SINGLE SELECT OPTION BUTTONS |

| | | | |
|-----|--|-----|--|
| | expenditure on food groceries? (not including restaurant visits or takeaways) | | <ul style="list-style-type: none"> i. < £100 ii. £100 - £249.99 iii. £250 - £399.99 iv. £400 - £549.99 v. £600 - £749.999 vi. > £750 vii. Prefer not to say |
| 12. | Regarding your household, which best describes you? | Yes | <p>CHOICE - SINGLE SELECT OPTION BUTTONS</p> <ul style="list-style-type: none"> i. I am solely responsible for the grocery shopping for my household ii. I am jointly responsible for the grocery shopping for my household iii. I am not responsible for the grocery shopping for my household |
| 13. | <p>Thinking about your own health, please indicate how strongly you agree / disagree with the following statements:</p> <ul style="list-style-type: none"> a. I pay attention to a healthy diet. b. I avoid alcohol. c. I avoid cigarettes. d. Regular consultations with doctors are important to me. e. Regular physical training is important to me. | Yes | <p>MATRIX RATING SCALE</p> <ul style="list-style-type: none"> i. Strongly Agree ii. Agree iii. Neither Agree nor Disagree iv. Disagree v. Strongly Disagree |

| | | | |
|---|--|-----|---|
| | f. I am a health-conscious person. | | |
| 14. | Thinking about your diet, which of the following health benefits are you most interested in getting from foods or nutrients? | Yes | CHOICE - MULTI CHOICE CHECKBOXES i. Athletic Performance ii. Cardiovascular health iii. Weight loss/weight management iv. Energy v. Brain function (memory, focus, cognition) vi. Digestive health vii. Muscle health/strength viii. Immune function ix. Diabetes management/blood sugar x. Emotional/mental health xi. Bone health xii. None of the above xiii. Other, please specify |
| Allergy / Intolerances | | | |
| Before moving onto more specific questions, please answer the following regarding lactose intolerance and milk allergies. Please note - cow's milk allergies are associated with the immune system and trigger the same reaction as other food allergies i.e rash, trouble breathing etc. | | | |
| 15. | Do you suffer / consider yourself to be suffering from an intolerance to lactose? | Yes | CHOICE - SINGLE SELECT OPTION BUTTONS i. Yes ii. No → Skip to 17 iii. Prefer not to say → Skip to 17 |
| 16. | If you answered 'Yes', has this been diagnosed by a medical professional? | Yes | CHOICE - SINGLE SELECT OPTION BUTTONS i. Yes |

| | | | |
|--|---|-----|---|
| | | | <ul style="list-style-type: none"> ii. No iii. Prefer not to say |
| 17. | Do you suffer from / consider yourself to be suffering from an allergy to cow's milk? | Yes | CHOICE - SINGLE SELECT OPTION BUTTONS <ul style="list-style-type: none"> i. Yes ii. No → Skip to 19 iii. Prefer not to say → Skip to 19 |
| 18. | If you answered 'Yes', has this been diagnosed by a medical professional? | Yes | CHOICE - SINGLE SELECT OPTION BUTTONS <ul style="list-style-type: none"> i. Yes ii. No iii. Prefer not to say |
| <p>Dietary Preferences and Perceptions of Dairy Milk / Non-Dairy Milk</p> <p>The questions in the final section of this survey are intended to investigate your diet / dietary preferences and your consumption of animal products. Where the question cites 'Lockdown', this refers to the period from 16th March onwards.</p> | | | |
| 19. | Have you followed any specific eating pattern or diet at any time in the past year? <i>Please select all that apply.</i> | Yes | CHOICE - MULTI CHOICE CHECKBOXES <ul style="list-style-type: none"> i. Intermittent fasting ii. Paleo diet iii. Gluten-free diet iv. Low-carb diet v. Mediterranean diet vi. High-protein diet vii. Vegan diet viii. Vegetarian diet ix. Dairy-free diet x. Weight-loss plan xi. Ketogenic or high-fat diet xii. N/A xiii. Other, please specify |
| 20. | How often, if at all, do you personally eat any form of meat (inc. poultry), fish or shellfish? | Yes | CHOICE - SINGLE SELECT OPTION BUTTONS <ul style="list-style-type: none"> i. Every day ii. Every 2-3 days |

| | | | |
|-----|--|-----|---|
| | <i>This includes all forms and types of meat, fish or shellfish and dishes that contain these, even in small amounts.</i> | | iii. Every 4-5 days iv. About once a week v. Every 2-3 weeks vi. About once a month vii. Less often than once a month viii. Never ix. Prefer not to say |
| 21. | How often, if at all, do you personally consume animal products other than meat, fish or shellfish? <i>This includes any products produced from animals, such as milk, cheese, yoghurt, cream.</i> | Yes | CHOICE - SINGLE SELECT OPTION BUTTONS i. Every day ii. Every 2-3 days iii. Every 4-5 days iv. About once a week v. Every 2-3 weeks vi. About once a month vii. Less often than once a month viii. Never ix. Prefer not to say |
| 22. | If your diet includes animal products other than meat, fish or shellfish, please indicate which of the following products you consume and how frequently: <i>If you responded 'Never' to the previous question, please choose the 'N/A' option for each product listed.</i> <ol style="list-style-type: none"> a. Milk b. Cheese c. Yoghurt d. Cream e. Ice cream f. Butter | Yes | CHOICE - SINGLE SELECT OPTION BUTTONS i. Every day ii. Every 2-3 days iii. Every 4-5 days iv. About once a week v. Every 2-3 weeks vi. About once a month vii. Less often than once a month viii. Never ix. N/A |

| | | | |
|-----|--|-----|---|
| 23. | Thinking about the volume and frequency of dairy products you currently consume. Is this the result of any significant changes you made to your diet? | Yes | <p>CHOICE - SINGLE SELECT OPTION BUTTONS</p> <ul style="list-style-type: none"> i. I increased the amount of dairy in my diet ii. I have not made any significant changes iii. I decreased the amount of dairy in my diet iv. I stopped consuming dairy all together v. Prefer not to say |
| 24. | If you made any sort of changes, how long ago did you make them? | Yes | <p>CHOICE - SINGLE SELECT OPTION BUTTONS</p> <ul style="list-style-type: none"> i. During lockdown ii. Less than a year ago (not inc. lockdown) iii. 1-3 years ago iv. More than 3 years ago v. N/A |
| 25. | <p>If you stopped consuming / reduced your consumption of dairy PRIOR to lockdown, what were your main reasons for doing so?</p> <p><i>Please tick all that apply.</i></p> | Yes | <p>CHOICE - MULTI CHOICE CHECKBOXES</p> <ul style="list-style-type: none"> i. I dislike the taste ii. Environmental impacts iii. Animal welfare iv. I wanted to prevent future health problems v. I wanted to better my current health vi. To lose weight vii. Lactose intolerance viii. Milk allergy ix. Other health or digestive problems |

| | | | |
|-----|---|-----|--|
| | | | <ul style="list-style-type: none"> x. Access / availability of dairy products i.e fresh milk xi. Financial reasons xii. N/A xiii. Other, please specify |
| 26. | If you stopped consuming / reduced your consumption of dairy DURING lockdown, what were your main reasons for doing so? | Yes | <p>CHOICE - MULTI CHOICE CHECKBOXES</p> <ul style="list-style-type: none"> i. I dislike the taste ii. Environmental impacts iii. Animal welfare iv. I wanted to prevent future health problems v. I wanted to better my current health vi. To lose weight vii. Lactose intolerance viii. Milk allergy ix. Other health or digestive problems x. Access / availability of dairy products i.e fresh milk xi. Financial reasons xii. N/A xiii. Other, please specify |
| 27. | If you have stopped consuming / reduced your consumption of dairy, was there anyone / anything in particular that motivated you to do so? | Yes | <p>CHOICE - MULTI CHOICE CHECKBOXES</p> <ul style="list-style-type: none"> i. A partner / spouse ii. Friend iii. Family member iv. A work colleague v. Journal articles / science papers / books vi. A documentary |

| | | | |
|-----|--|-----|--|
| | | | <ul style="list-style-type: none"> vii. Social media viii. A medical professional / doctor ix. N/A x. Other, please specify |
| 28. | How often, if at all, do you personally consume milk alternative products? | Yes | <p>CHOICE - SINGLE SELECT OPTION BUTTONS</p> <ul style="list-style-type: none"> i. Every day ii. Every 2-3 days iii. About once a week iv. Every 2-3 weeks v. About once a month vi. Less than once a month vii. Never viii. Prefer not to say |
| 29. | If you use milk alternative products, do you use these as a replacement for dairy products or in addition to? | Yes | <p>CHOICE - SINGLE SELECT OPTION BUTTONS</p> <ul style="list-style-type: none"> i. I use them as a sole replacement ii. I use them as partial replacements iii. I use them in addition to iv. N/A |
| 30. | <p>For each statement about dairy (from cows), please indicate how strongly you agree or disagree:</p> <ul style="list-style-type: none"> a. Dairy is fresh b. Dairy is healthy c. Dairy is good for bones d. Dairy is natural e. Dairy is digestible f. Dairy is rich in minerals | Yes | <p>MATRIX RATING SCALE</p> <ul style="list-style-type: none"> i. Strongly Agree ii. Agree iii. Neither Agree nor Disagree iv. Disagree v. Strongly Disagree |

| | | | |
|---|--|-----|---|
| | <p>g. Dairy is allergy-free</p> <p>h. Dairy tastes good</p> | | |
| 31. | <p>For each statement about milk alternatives (soya, rice, oat, almond etc) please indicate how strongly you agree or disagree:</p> <p>a. Milk alternative products are fresh</p> <p>b. Milk alternative products are healthy</p> <p>c. Milk alternative products are good for bones</p> <p>d. Milk alternative products are natural</p> <p>e. Milk alternative products are digestible</p> <p>f. Milk alternative products are rich in minerals</p> <p>g. Milk alternative products are allergy-free</p> <p>h. Milk alternative products taste good</p> | Yes | <p>MATRIX RATING SCALE</p> <p>i. Strongly Agree</p> <p>ii. Agree</p> <p>iii. Neither Agree nor Disagree</p> <p>iv. Disagree</p> <p>v. Strongly Disagree</p> |
| End of survey. Thank you for participating. | | | |

APPENDIX D: TEXT RESPONSES

| Question | Text responses | Category recode (if applicable) | Justification |
|---|--|------------------------------------|-------------------------------|
| What is the highest level of qualification you have completed? (Other, please specify) | "Masters degree in Science" | Degree or equivalent | ONS Qualification groupings |
| | "Masters Degree" | Degree or equivalent | ONS Qualification groupings |
| | "PhD" | Degree or equivalent | ONS Qualification groupings |
| | "Master's degree" | Degree or equivalent | ONS Qualification groupings |
| | "Post-graduate professional qualification" | Degree or equivalent | ONS Qualification groupings |
| | "Gce" | GCE, A level or equivalent | ONS Qualification groupings |
| | "Postgraduate qualifications " | Degree or equivalent | ONS Qualification groupings |
| | "PhD" | Degree or equivalent | ONS Qualification groupings |
| | "MSc" | Degree or equivalent | ONS Qualification groupings |
| Have you followed any specific eating pattern or diet at any time in the past year? (Other, please specify) | "Pescatarian diet" | N/A | N/A |
| | "FODMAP (under dietitian and gp recommendation and support)" | N/A | N/A |
| | "Pescatarian" | N/A | N/A |
| | "Yeast free" | N/A | N/A |
| | "Pescatarian" | N/A | N/A |
| | "Pescatarian" | N/A | N/A |
| | "Wahl's protocol" | N/A | N/A |
| If you stopped consuming / reduced your consumption of dairy PRIOR to lockdown, | "Health reasons, like adenomyosis and endometriosis" | Other health or digestive problems | "Adenomyosis / endometriosis" |

| | | | |
|---|---|--------------------------------------|-----------------|
| what were your main reasons for doing so? (Other, please specify) | “My son and husband are dairy intolerant and it seemed easier” | N/A | N/A |
| | “Experimenting by adopting oat milk” | N/A | N/A |
| | “Part of my health regime didn't include so much dairy” | I wanted to better my current health | “Health regime” |
| | “To try and help rhinitis” | Other health or digestive problems | “Rhinitis” |
| | “It triggered serious health issues” | Other health or digestive problems | “Health issues” |
| | “Trial of low dairy in pine with eating to balance my dosha (ayurvedic medicine).” | N/A | N/A |
| | “Wanted to try Oat milk for coffee and liked it” | N/A | N/A |
| If you stopped consuming / reduced your consumption of dairy DURING lockdown, what were your main reasons for doing so? (Other, please specify) | “New relationship with someone who is Vegan” | N/A | N/A |
| | “No change in lockdown” | N/A | N/A |
| If you have stopped consuming / reduced your consumption of dairy, was there anyone / anything in particular that motivated you to do so? (Other, please specify) | “Seeing animals deaths first hand. Also seeing grass in my milk as a child put me off. So associations made me stop.” | N/A | N/A |
| | “Just me living rurally with small dairy farm in fields next to house - farmer very small scale | N/A | N/A |

| | | | |
|--|---|---|-------------|
| | and good on animal welfare but seeing the reality of even that way of production opened my eyes” | | |
| | “Tendency to over indulge when butter/cheese available.” | N/A | N/A |
| | “Got very gassy and tried cutting different things. Dairy was the trigger. Now just gave milk in tea and occasionally cream.” | N/A | N/A |
| | “Digestive issues” | N/A | N/A |
| | “Personal trainer” | N/A | N/A |
| | “Book - Wahl's protocol and observations of consequences of eating dairy” | Journal articles / science papers / books | “Book” |
| | “Readings on Ayurveda” | Journal articles / science papers / books | “Readings” |
| | “Barista” | | |
| | “Friend who is a personal trainer” | Friend | “Friend” |
| | “Frequent diarrhoea, consultations with dietician” | A medical professional / doctor | “Dietician” |

VOLUME II: ENTERPRISE SIDE

VOLUME II OF II

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1 INTRODUCTION

This business plan seeks to validate the viability of a new dairy-free instant coffee product. The investigation undertaken in Volume I will be drawn on to provide a more holistic and theoretically grounded understanding of the industry in which ALTERNATEV will operate and the pre-conditions necessary to drive product consumption in the target market.

1.1 BACKGROUND

The idea to develop a business providing instant, dairy-free coffee beverages initially stemmed from personal experience. Eliminating dairy entirely from my own diet in 2015, I found it difficult to source replacements for some of the dairy-containing products I purchased prior to transitioning. Fresh products such as milk and cheese were substitutable to a degree, with the caveat that options were limited, and prices markedly higher, however the market at the time, was immature and yet to gain any sort of traction.

In 2018, having observed the extraordinary snowballing of the free-from market in the UK; I began development of a product with the motivation of combatting two problems that remained prevalent, despite this evolution; the perennial premium applied to all dairy alternative products and the significant lack of ambient products to meet the needs of the dairy-free consumer. I formulated the idea for a dairy-free coffee alternative product following a review of the products on the market for individuals not adhering to dietary requirements, which could be modified with increased value for those who do, that would a) challenge the hiked pricing method of existing brands and b) provide a dairy-free alternative to a product that until now, has only served a dairy-consuming audience.

Two and a half years later, and I have registered 'ALTERNATEV' as a business, received a first tranche of funding and, as part of my Master of Enterprise, intend to produce a two-part dissertation comprising an in-depth academic investigation and lucrative business plan. It is important to note that research supporting this dissertation was undertaken during the COVID-19 pandemic, and while the intention when starting this Masters, was to take the

business forward in parallel, further development has been stunted by the unforeseen circumstances.

1.2 BUSINESS OPPORTUNITY

Contemporary food trends are continuously evolving phenomena, shaped by environmental context, societal influences and the ever-changing needs and desires of the consumer (Seymour, 2016) (p16). Over the last decade, nutritional requirements and behaviours have shifted, with more people choosing free-from lifestyles and consumers becoming more demanding of products that satisfy their expectations, dietary choices, and lifestyles (Román, Sánchez-Siles and Siegrist, 2017). In 2020, the world was thrust into unprecedented circumstances, brought about by the COVID-19 Pandemic. The ramifications of restrictions, and amplified focus on health, propagated a new era of consumerism, with heightened concern with health and wellbeing and rising awareness of the effects of certain foods on both the environment and the body (Janssen et al., 2021).

Volume I of this dissertation probed into the factors influencing individuals' decisions to go dairy-free, delving into the antecedents of behavioural dietary changes, with dairy-free consumption as the outcome. Primary research revealed a significant proportion (48%) of the survey population had stopped or reduced their consumption of dairy (p51). The most significant factors driving these changes were found to be perceptions of health, perception of dairy, nutritional benefits, and ethical considerations. Moreover, positive associations were found between income, qualification, and the consumption of dairy (p66). The purpose of this research was two-pronged – from an academic perspective, it filled a known gap in the literature; from a business opportunity standpoint, it confirmed the assumption that people are choosing to eschew dairy from their diets and sought to inform the target market analysis and motivations of the potential consumer of ALTERNATEV's products.

1.3 PROBLEM

According to Getzels, problems may be discovered or created. Problem resolution is then dependent on several factors; whether the problem already exists, who is impacted, and the presence of a known solution (Getzels, 1979). At a high-level, the problem underpinning the opportunity for ALTERNATEV, is that of having dietary requirements, or systematically and consciously eschewing certain foods in the diet. Govella notes that when a problem is identified, it is important to ask why the problem persists, and one should continue to ask why until arriving at the root cause (Govella, 2019).

Volume 1 pursued this approach to problem investigation via a literature review and primary research, delving into the core drivers of contemporary food trends and dietary behaviours. A problem space once almost entirely occupied by those with allergies/intolerances, free-from diet habits now sit firmly at the mainstream table and while the industry catering to the array of dietary requirements has matured, the scope of products catering to the dairy-free market remains narrow. Coupling this information with contemporary coffee trends, revealing an increase in the quantity of coffee drunk and consumer desires for more elaborate and coffees; exposes a problem vacuum for ALTERNATEV to satisfy. At present, there are no instant coffee alternatives on the market, suitable for the free-from consumer, and if an individual following dietary requirements desires a coffee, the options are both limited and inconvenient.

Over the last decade, the free-from market has surged in popularity, with a proliferation in the number of individuals abstaining from animal-based products (Knott, 2018). Drawing on prevailing market research, the problem statement may be delineated as follows:

“As of February 2021, 52% of adults reported the avoidance of at least one food or ingredient in their household. With avoidance cited for intolerance / allergenic reasons in only a fifth of cases, this statistic is indicative of the rise in free-from consumerism (Mintel, 2021) (Figure 1.1). 44% of adults had also actively reduced their intake of dairy or had stopped consuming dairy altogether, rising to 65% in the 18-24 demographic group (Mintel, 2021). In response to

this movement and accompanying consumer demands, suppliers have expanded their ranges of free-from alternatives, however, individuals with dietary requirements or preferences, remain short of a solution to an alternative instant, accessible and affordable coffee.”

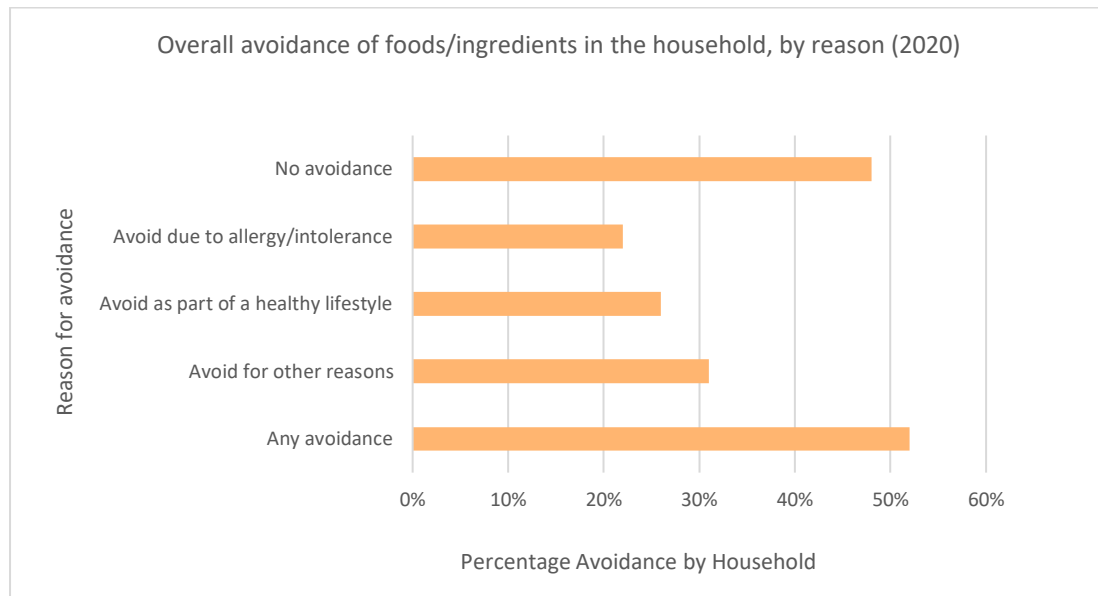


Figure 1.1 Overall avoidance of foods/ingredients in the household, by reason, October 2020 (Mintel, 2021)

1.4 SOLUTION

Applying Govella’s problem-mapping model, the business opportunity for ALTERNATEV stems from a defined problem with an undefined solution (Govella, 2019) (Figure 1.2). Aligned with concepts of market-pull opportunity detection; the dissatisfaction of customer needs of the current product or service offerings create a problem-solving opening for ALTERNATEV, based on the principle of ‘invent-to-order’, whereby a product or service is created specifically to meet a demand (Ameka, 2013).



Figure 1.2 Govella's Problem Mapping Model

Bona fide business opportunities must be situated within social, cultural, environmental, or technological precincts (Dyer, Gregersen and Christensen, 2008). Predicated on this idea, the solution posed to address the identified problem is free-from instant coffee sachets and instant coffee sets. Substituting dairy-containing constituents with powdered or condensed dairy alternatives; cappuccinos, lattes and flavour-enhanced coffees could be made available to the free-from consumer. The scope of the opportunity is vast, and the idea lends itself to the prospect of expansion; to include hot and cold beverages and incorporate both free-from public vending coffee machines, home-coffee machines and B2B market permeation. As both a brand and an idea, the solution would serve to offer expedience, with key differentiations deriving from the free-from contents, ethical sourcing, quality, affordability and sustainable ingredients and packaging.

1.4.1 VALUE PROPOSITION

Solutions solve a business problem not simply by enhancing the quality of component products but ultimately through integration of components, that extend beyond the product itself, to the contextual implications of product use (Nordin and Kowalkowski 2010; Storbacka 2011). ALTERNATEV will therefore deliver an instant, affordable, sustainable, and instant dairy-free coffee experience; a unique offering and the first of its kind, providing an alternative to existing, non-dietary-requirement adherent instant coffee mixes.

What you've got: Instant fix for coffee

Who for: Those with specific dietary requirements

At What Value: Affordable, Expedient, Not currently offered/accessible

1.4.2 MISSION, VALUES AND VISION

Mission: To provide an alternative to dairy-containing instant coffee mixes, providing consumers with an on-demand, premium coffee experience.

Values: ALTERNATEV promotes values of affordable, accessible, speciality, instantaneous and sustainable coffee drinking.

Vision: To facilitate the convergence of two prevalent, 21st century dietary trends; coffee and free-from.

1.5 CHAPTER OVERVIEW

This business plan intends to focus on an opportunity identified – the creation of a dairy-free instant coffee product, with the aim of producing a proposal to take the idea from concept to fruition.

Chapter 1: Introduction: Chapter 1 provides background context to the conception of ALTERNATEV, followed by an overview of the business opportunity, set in the context of the business problem space. The proposed solution is then outlined, followed by an overview of the value proposition, mission values and vision.

Chapter 2: Review of the Proposed Market: The markets in which ALTERNATEV intends to operate are analysed and reviewed, drawing out key drivers. Key impacts on the industry are appraised, competitors reviewed, and stakeholders mapped employing known models. A target market analysis is undertaken, with reference to the analysis conducted in Volume I. Concluding this chapter is a problem / solution fit.

Chapter 3: Products and services: This chapter introduces the products to be delivered by ALTERNATEV. The concept is validated, and value focus delineated, prior to delving into the various components and development processes required to bring the product to life. Branding and other associated activities are also outlined.

Chapter 4: Commercialisation: Stages of development are summarised, and a business model canvas produced, centred on the development of a value proposition. ALTERNATEV's competitive advantage is presented, with an emphasis on differentiation and a marketing strategy outlined.

Chapter 5: Financial Analysis: Financial forecasts and analysis for the company's first 5 years of operation are presented and discussed.

Chapter 6: Conclusion: The business plan concludes with an assessment of the viability of ALTERNATEV as a business, with reference to the venture's key risks and critical success factors.

2 REVIEW OF THE PROPOSED MARKET

2.1 INTRODUCTION

Defining a business's industry is imperative for reasoned industry analysis and strategy development (Porter, 1987). Moreover, it allows the business to delineate the boundaries in which it intends to function, to obtain a comprehensive picture of the domain of operation (Erasmus, Vanderfeesten, Traganos and Grefen, 2020). The amalgamation of free-from components with speciality coffee to form ALTERNATEV's products, grants ALTERNATEV multi-industry penetration opportunities. The following section provides an analysis of both the free-from and coffee markets, the former acting as the primary industry of operation, to validate the potential of each in relation to ALTERNATEV's operations. Relevant environmental influences are considered, in addition to stakeholder groups, limitations and assumptions associated with the product opportunity, to a) inform the development of primary consumer research and b) attain a holistic view of the market landscape.

2.2 MARKET OVERVIEW

2.2.1 FREE-FROM

The UK's free-from market has enjoyed year-on-year growth over the last decade. Following a slight deceleration in 2019, expansion of the UK's free-from foods market picked up significant pace in 2020, with sales rising by 16.9%, and the market size surpassing the £1 billion mark for the first time (Mintel, 2021). 2021 prognoses further reveal a firm upsurge in market size between 2020-2025, projected to reach 1.6 billion in 2025, albeit, annual percentage increase is expected to decline and level, as the market develops (Mintel, 2021) (Figure 2.1).

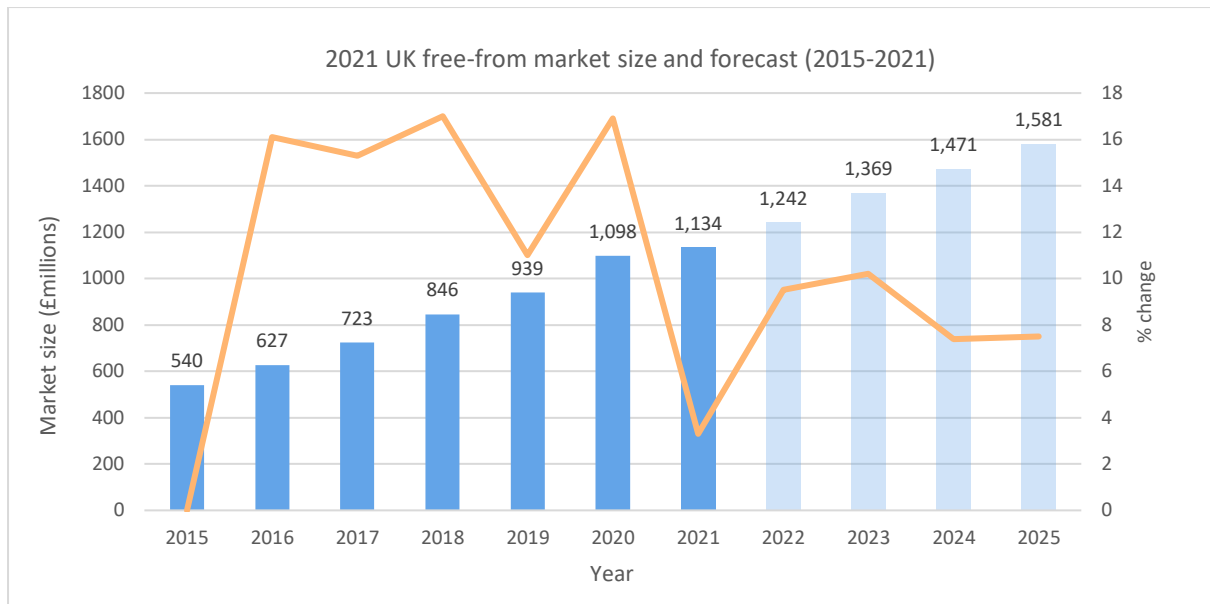


Figure 2.1 Chart showing size of UK free-from market in £ millions, with 5-year forecasts and percentage change (2015-2021). Dark blue bars indicate actual values, light blue bars depict forecasted values (Mintel, 2021)

Credited to the popularity of free-from products and solidified market positioning, verified annual market values, calculated after the fact, continue to exceed previously forecasted values (Statista, 2021). Notwithstanding the influence of the pandemic, a host of factors have contributed to the market’s robust growth, including celebrity endorsement of exclusion diets and heightened media buzz on one side of the coin, and increased distribution and visibility of retailers on the other (Mintel, 2021). Increased penetration has been a key growth-driver, with 4,000 free-from products entering the market each year and continuous new product development activity, and innovation, by both established and own-label brands (Food and Drink Federation, 2021).

Free-from foods, as per the definition provided in Volume I; are defined as foods manufactured and targeted specifically toward consumers following avoidance diets and those suffering from food intolerances and/or allergies (p14). The free-from food and drink market comprises gluten/wheat-free and dairy-free; inclusive of all products manufactured as an alternative to dairy-milk products and all gluten / wheat containing product alternatives (Sethi, Tyagi and Anurag, 2016).

Evidenced by the market segmentation graph (Figure 2.2), performance of the gluten-free segment has started to abate (Mintel, 2020). Notably, since 2017, trajectories of the two categories have diverged, with the dairy-free sector continuing to outperform its industry counterpart. In 2020, the dairy-free market was valued at £652 million, accounting for 59% of the free-from market share, an increase of 294% from 2014 figures (Figure 2.2) (Figure 2.3) (Mintel, 2021). Comparably, valued at £455 million, the gluten/wheat-free market rose by 219% during the same period.

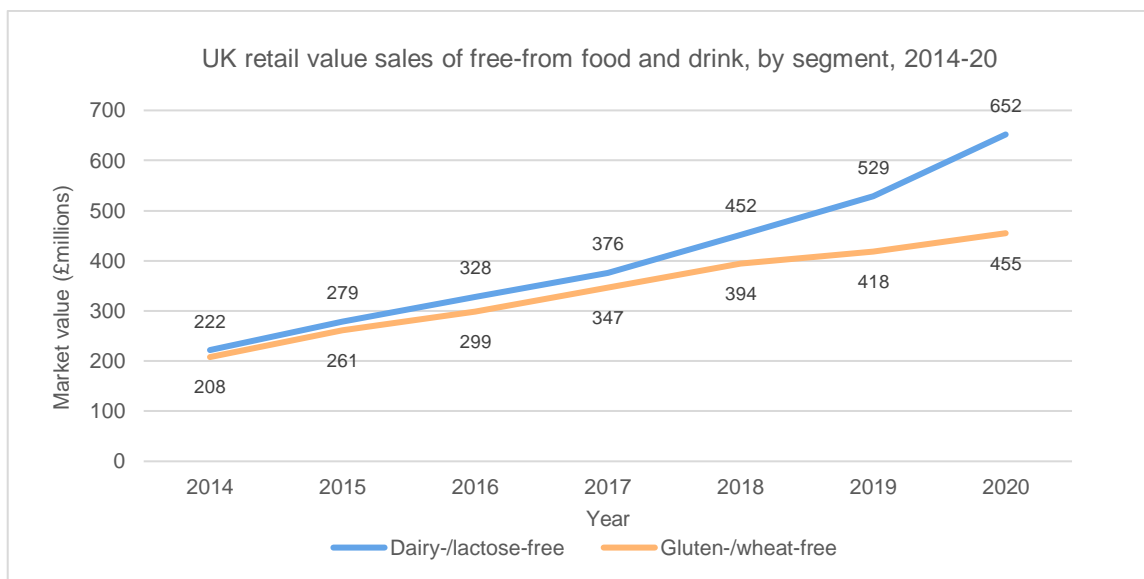


Figure 2.2 UK retail value sales of free-from food and drink, by segment (2014-2020) (Mintel, 2021)(Mintel, 2017) (Mintel, 2020)

It is well acknowledged, that both gluten-free and dairy-free foods have come to serve more than just those with intolerances and allergies, however Figure 2.2 illustrates a plateauing of the market performance of gluten-/wheat-free and an ascent in the success of dairy-free. Much of the early buzz around gluten-free was driven by the promoted nutritional benefits associated with the avoidance of gluten, however, attention from all angles has been relocated to dairy-free (Jones, 2017). Complementary to the increasing popularity of the plant-based trend; and contrastingly to gluten-free, dairy substitutes are afforded the opportunity to draw on selling points that extend beyond intolerance suitability and nutritional benefits, such as environmental considerations, sustainability, and flavour (Sethi, Tyagi and Anurag, 2016). In contrast, despite efforts to diversify product ranges, the gluten-free market does not benefit from the same range of attributes, constraining the potential

for audience expansion (Gorgitano and Sodano, 2019). It is thus predicted that the future of the free-from market will be driven by the ongoing success of dairy-free, and the continued investments in new product ranges for the dairy-free consumer (Mintel, 2020)

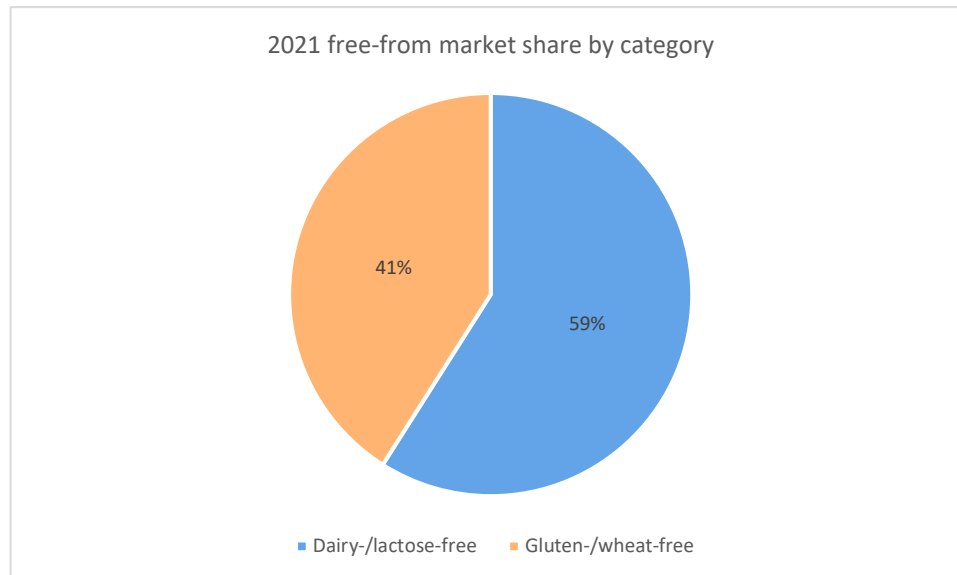


Figure 2.3 Pie chart showing free-from market share by category (Mintel, 2021)

Despite a positive market outlook, the association of free-from, with poor value for money, is likely to deter consumers during periods of economic uncertainty (The Guardian, 2022). According to consumer research, 42% of individuals who purchase free-from products state they reduce purchases when disposable income is tight (Lobaugh, Stephens and Simpson, 2022). Furthermore, in addition to price, the availability and accessibility and availability of free-from products is key to consumers, with 62% of users or purchasers of free-from preferring to shop at stores offering a wide range of free-from products to shopping at stores that don't (Mintel, 2021). Positively, this presents strong opportunities for individual free-from products to stand out on price and location. Costing the same as standard products, and being positioned alongside existing products, would entice a generous 61% of women and 50% of men, to buy a free-from food/drink product and would win over 25% of consumers who have not bought or used free-from food/drink in the six months to October 2020 (Mintel, 2020)

2.3 MARKET DRIVERS

2.3.1 HEALTH AND WELLBEING

Changing perceptions of health and well-being have been crucial to the success of free-from. With consumers becoming more sensitive to the ways in which their bodies respond to food, rates of both medically diagnosed, and self-diagnosed lactose intolerance and coeliac disease have dramatically increased (Dillon, 2021). However, research also reveals that consumers are buying dairy alternatives as healthier options to existing dairy products. Indicative of the 'lifestylers' - consumers buying into the category out of choice, rather than due to allergies are undoubtedly becoming more critical than ever to the sale of free-from good. In 2021, over 40% who bought into the market did so for their 'general health', and 37% did as a 'lifestyle choice' (McKinsey and Company, 2021).

2.3.2 INNOVATION

Increased penetration by new market entrants will continue to act as a strong growth driver in the free-from sector. Innovation in this space is principally led by small-entrepreneurial food manufacturers, however larger brands are starting to recognise the demand from consumers (Perrett, 2021). A case study of Ben & Jerry's – the premium ice-cream makers, offers valuable insight into the extent of this trend among established brands. As of 2021, 40% of the entire ice-cream product line was dairy-free, with the company's strategy for expansion centred on reinventing long-standing flavours to meet the requirements of their dairy-free consumer base (Vegconomist.com, 2022). The launch of the first Free-From Food Festival in London, in 2021, and success of associations such as the Free-From Awards have further impelled companies to revolutionise their offerings, by supporting, promoting and actively encouraging both existing and new product development (Free From Food Awards, 2022).

2.3.3 SUSTAINABILITY AND ETHICALITY

Ethical production and consumerism are flourishing trends, with growing emphasis on concepts of sustainability and eco-friendly, at the consumer level (Geels, McMeekin, Mylan and Southerton, 2015). In 2020, ethical spending in the food and drink category reached £14.3 billion in 2020, however markets, outside of food are similarly being infiltrated by 'eco-friendly' products, highlighting the pervasive nature of this driver (Co-op, 2021). The industry for ethically produced cosmetics, demarcated by the exclusion of genetically modified organisms, chemical constituents, or animal-originating components, achieved sales of £900 million in 2021, an increase of 5% from 2020 (Statista.com, 2018).

In the case of dairy-free consumption, heightened consumer awareness of the negative environmental implications of dairy production has pushed sales of dairy-free foodstuffs to an all-time-high (Statista, 2021). 41% of adults agree that substituting dairy for dairy alternatives is a good way to reduce environmental footprint (Intel, 2021). Indicating scope for greater educational awareness around sustainability impacts of animal products, 27% of non-free-from purchasing consumers conveyed an interest in purchasing free-from alternatives that lessened their personal ecological footprint (Sanchez-Sabate and Sabaté, 2019). Boycotts on non-ethical market players performed an equally important role, with an 18% rise in boycotts on ethical grounds between 2019 and 2020. To this end, it is key for brands to continue and ramp-up their work alongside the public to breed confidence in the claims attached to products (Parr, 2022).

2.3.4 COFFEE MARKET

The UK's coffee industry is one of the leading economy sectors, valued at £1.47 billion in 2021 (Statista, 2021). An increase of 14.3% from the previous year, volume sales of coffee climbed due to the nationwide lockdown and closure of the hospitality sector, inflating the frequency of at-home drinking occasions (Intel, 2021). The ongoing growth of coffee has been strengthened by the novel premiumisation trend and popularisation of specialty coffee - used to refer to coffee that is graded 80 points or above by certified coffee associations; cultivating

a connoisseur spirit in consumers, and boosting all-round engagement (The Specialty Coffee Company, 2022) (Intel, 2021). As an industry, the UK coffee market is monopolised by big players, led by Kenco and Nescafe, with a combined market share of 80% and an estimate of 20 million users in 2020 (Statista, 2022).

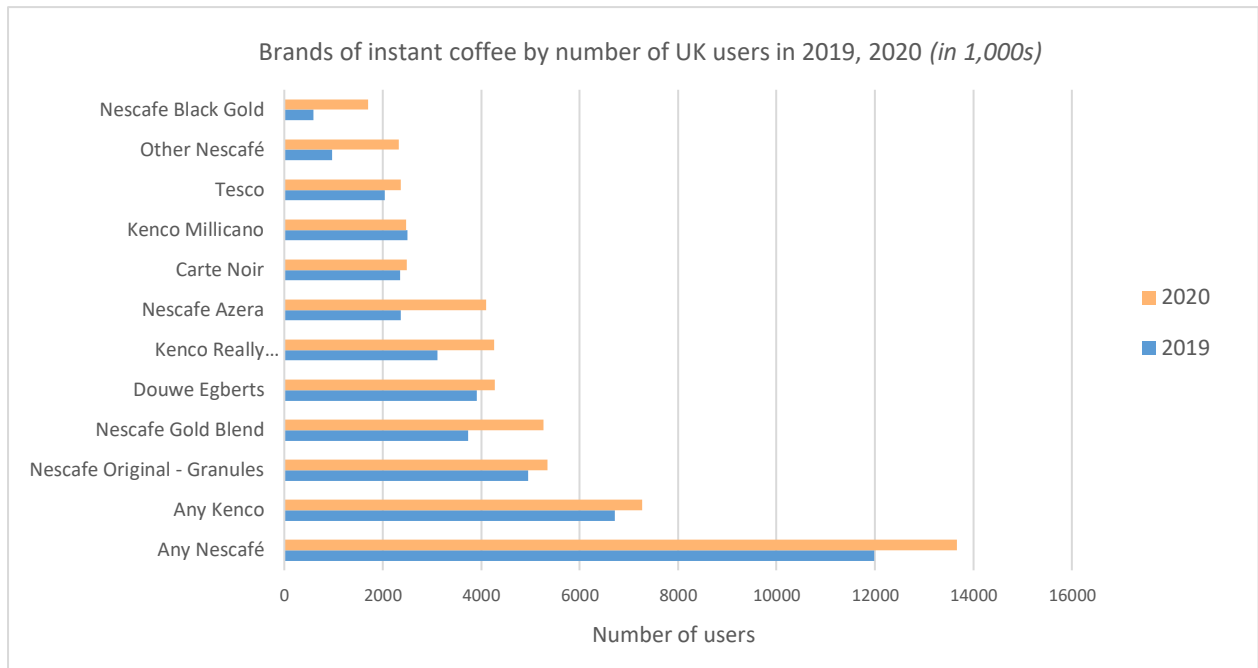


Figure 2.4 Brands of instant coffee by number of UK users 2019, 2020 (Statista, 2022)

Regarding types of coffee brought, 80% of UK households purchase instant coffee for in-home consumption, with 20% purchases concentrated in the 65+ age group (Statista, 2021).. For millennials (those aged 16-34), accounting for 36% of consumers, ground coffee and single-serving coffee products have become increasingly popular (Statista, 2021). COVID-19 brought about a substantial 8% rise in total packaged coffee launches during 2020, compared to 2019. Novel varieties, including pods and sachets (24%), fresh ground (23%), and beans (15%) now account for almost two thirds of global coffee innovation collectively (ICO, 2022). From an ethical standpoint, sustainability, traceability, and ethical human claims continue to dominate the coffee market; claims that are now so pervasive, they have become a ‘hygiene factor’; a must-have for brands, rather than brand differentiators (World Coffee Portal, 2022).

2.3.5 COVID-19 PANDEMIC IMPACT

The period of panic-buying and supply shortages in the spring of 2020 saw free-from sales skyrocket, with consumers pressed to source alternatives to customary options of foods and drink (Aday and Aday, 2020). Further boosting the industry was the elevation in sales of almost all retail food and drink categories in 2020, with the pandemic fuelling a seismic shift away from foodservice (Mintel, 2021). In the long-term, as pre-COVID-19 normality resumes and people return to offices and workplaces, expediency is expected to become a stronger selling point for the free-from industry (ONS, 2021). However, the work-from-home shift is expected to endure post-pandemic recovery, providing a durable rise in retail sales of food, drink, and home cooking.

There is wide speculation on the projected success of coffee in the UK (ICO, 2022). Unlike the free-from industry, the at-home coffee market is expected to lose a degree of momentum, with sales forecasted to decrease by 4% in 2022, as coffee houses re-open (Mintel, 2021). Extended COVID disruption or reintroduction of restrictions could, however, continue to place upward pressure on the retail coffee industry (Mintel, 2021).

2.4 PESTLE ANALYSIS

As businesses interact with their external environments, extraneous factors, beyond the control of the organisation, can influence operations. Appraisal of the environment via situational analyses minimises the risk of failure in operations, while supporting decision making (Perera, 2017). Table 2.1 provides a PESTLE analysis of ALTERNATEV's business environment.

| | |
|------------------|--|
| Political | Both existing and newly implemented regulations governing products falling into the free-from category may impede operations. Amendment 171, which would have led to the censorship of packaging designs, such as cartons, imagery, and labelling, traditionally descriptive or evocative of dairy products, was rejected by the EU (Cuff, 2021). However, a ruling by the European Court of Justice in 2018, banned vegan / free-from traders in the EU from using terminology that could be construed as misleading, such as 'soya milk' |
|------------------|--|

| | |
|----------------------|---|
| | <p>and 'soya yoghurt' on their packaging (Newton, 2019). Despite the UK's departure from the EU, certain EU laws have been retained. The General Food Law, still in force, seeks to assure the safety of food on the market food. Under this law, businesses must ensure the traceability and appropriate presentation of food, in addition to providing suitable food information and enacting prompt withdrawal or recall of unsafe food placed on the market (Food Standards Agency, 2022).</p> <p>Political decisions regarding COVID, and food production have also impacted the industry, with more stringent rules and guidelines governing the processing, manufacturing, and distribution of foods (Food Standards Agency, 2020).</p> |
| Economic | <p>Primary economic parameters for the food industry include the purchasing power of consumers, fluctuations in interest rates and economic growth. The magnitude of the recession caused by the pandemic is unprecedented, evidenced by a 9.8% decline in GDP in 2020 (The House of Commons Library, 2021). The cumulative loss of economic output is expected to be worth £727bn over the 2020-2025, five-year period (The Guardian, 2021). However, as the economy gradually reopens, economic indicators suggest a strong recovery, leading to upgraded forecasts for GDP growth in 2022 (The House of Commons Library, 2021). Inflation rates are forecasted to reach 6% in April 2022, alongside stalling wage growth and planned tax rises from the government, resulting in an income squeeze (The Guardian, 2022).</p> |
| Social | <p>Due to the government-regulated stay-at-home restrictions, imposed intermittently over the course of the pandemic, in-home consumption increased throughout the 2020-2021 period. In contrast, out-of-home consumption, historically generating the highest margin, came to almost standstill (Mckinsey and Company, 2021). Research shared by GSK revealed the significant impact of the COVID-19 pandemic on people's behaviour and attitudes to self-care and health consciousness (Morina, 2020). The pandemic incited 68% of UK citizens to adopt new everyday health habits, rising to 70% in those aged 16-24. Cultural and regional variations in diets within the UK have also been observed, with greater levels of free-from purchases in urban areas than in rural (Intel, 2017). As the pandemic draws to an end, Deloitte postulates that the impacts may have instigated long-term changes in customer behaviour and demand (Deloitte, 2021). The media buzz around health and wellbeing continues to influence eating habits, evidenced by studies revealing the average Gen Xer sees 134 food-related posts each week on Instagram (REF).</p> |
| Technological | <p>Tech advancements are critical to food engineering. Developments in production processes such as freeze-drying coffee beans to enhance flavour and novel conceptions for environmentally conscious packaging, accentuate the importance of technology in the food industry (Fissore, 2015). Investments in R&D are also focused on the</p> |

| | |
|----------------------|--|
| | development of alternative free-from products, the prolonging of shelf-life and Sustainable production and supply (ForrestBrown, 2022). |
| Legal | All employers and managers must conduct a COVID-19 workplace risk assessment and prepare and keep updated a business continuity plan (Department for Environment Food & Rural Affairs, 2021). Legal matter if any regulations on transporting, storage or preparation of foods are ever breached (Food Standards Agency, 2021). The Vegan Society's Vegan Trademark can also be applied to foods carrying a 'may contain' statement providing that there is robust evidence to show the risk of cross contamination has been effectively managed (The Vegan Society, 2021). The commencement of Natasha's Law, has led to stringent rules on the labelling of products, demanding food producers provide full ingredient lists with clear allergen labelling on every sold product (BSACI, 2022) |
| Environmental | Sustainability has become one of the most influential issues in contemporary society, impacting every business in operation. In 2021, food lifecycles accounted for over a quarter of global greenhouse gas emissions. Beef, lamb, cheese, and milk accounted for over 20% of these emissions, posing the biggest risk to environmental degradation. Organically sourced food products and carbon-reducing processing designs are therefore taking precedence and are likely to continue gaining traction, in the wake of COP21 and widely publicised climate crisis (Olayanju, 2022). |

Table 2.1 PESTLE Analysis

At present, the biggest external influences on the industry are likely to be those of a sustainable nature, with fresh emphasis on planetary health from Public Health, business, and academic domains. Legal requirements on labelling and marketing will also impact operations, notably, restrictions on the marketing of dairy-alternatives and new laws requiring all food businesses to inform customers if any of the FSA's ingredients are used in food and drink products they supply (FSA, 2021). Optimistically, the economic setbacks of COVID-19 are likely to be short-term, with acute income squeezes and high rates of inflation expected to abate and return to pre-pandemic rates in the next 2 years (The Guardian, 2022).

2.5 PORTER'S 5 FORCES

The state of competition in an industry depends on five basic forces; the collective strength of which, determine the ultimate profit potential of an industry (Porter, 1987). As a framework, Porter's 5 Forces has come under criticism for its inability to accommodate organisations straddling several industries (Beattie, 2022). Thus, for completeness, the analysis considers both the coffee and free-from industries, in the context of a free-from coffee sub-domain.

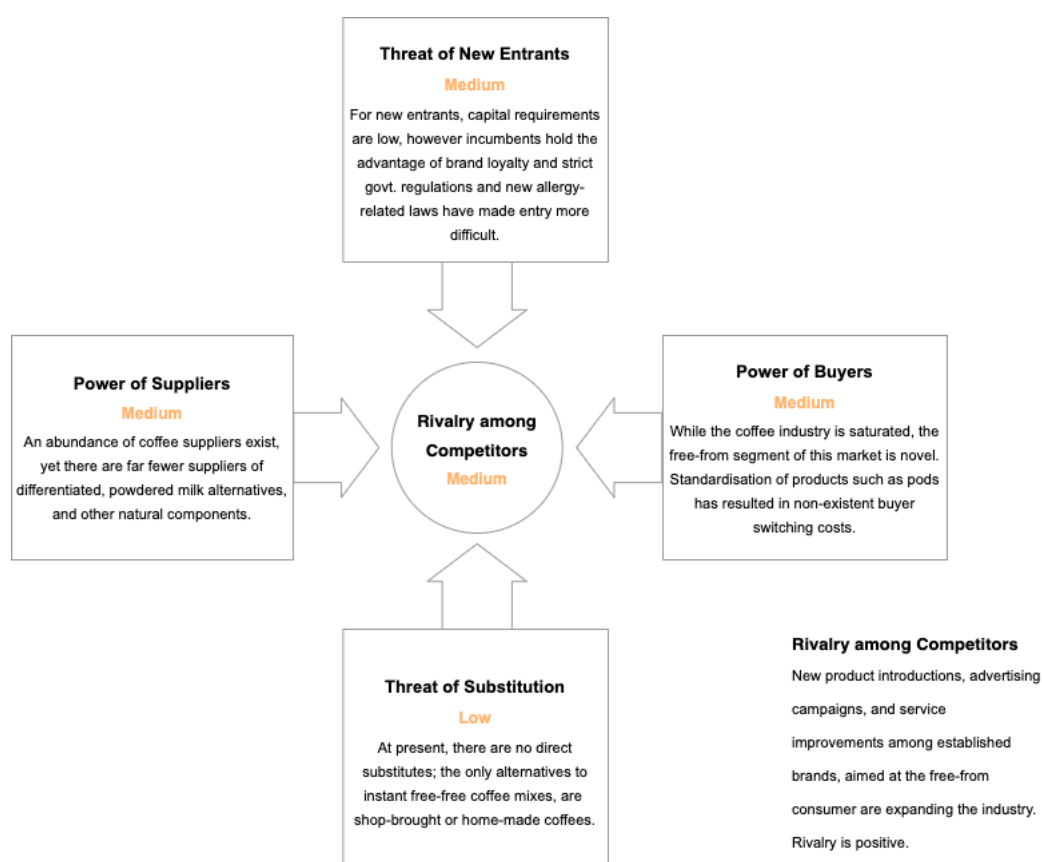


Figure 2.5 Porters Five Forces analysis

High rivalry among businesses places limits on the profitability of an industry. The coffee industry is both mature and saturated, and existing, long-standing brands with established reputations have monopolised the industry (Intel, 2021) (See Figure 2.4). Positively, however, the number of competitors in this space is increasing, driven by demands for innovation. Existing brands however are diverging from traditional product offerings and

revolutionising to improve taste and capitalise on demands of modern consumers (Brown, 2022). The costs associated with establishing a new coffee venture are relatively low, however access to existing distribution channels is highly unequal. According to Porter, for a new entrant to pose a threat to existing brands, it must displace existing products from the shelf, however, offline segments of coffee hold the highest market share; including supermarkets, convenience stores and local shops, and are recognised as being harder to infiltrate than alternative channels (Porter, 1987), (Azoth Analytics, 2022). Newly implemented government policies enforcing stricter rules on packaging and labelling of free-from products will also heighten the barrier to entry for prospective companies (Gov.uk, 2021). Finally, given the abundance and low-cost nature of products; the bargaining power of consumers in the coffee industry is relatively high, yet this can arguably be offset by the innovation of new products and value-added differentiation (Porter, 1987).

2.6 COMPETITOR ANALYSIS

Identifying competitors is an essential component of competitive analysis and consequently, of strategy formulation and implementation (Zahra and Chaples, 1993). The conceptualisation of competitor identification varies, yet for the purpose of this analysis, identification is based on Fraser and Bradford's definition; with competitive boundaries based on product range and attributes (Fraser and Bradford, 1983). In the absence of direct competitors offering the same product as ALTERNATEV, companies offering regular variations of the product have been selected for examination, with assessments of the coffee attributes deemed most important by consumers; accessibility, price, ethicality, product range, and grade (Mintel, 2021). For reference, a column with free-from options has been added, to illustrate the inaccessibility for those with dietary requirements – and the targeted audience of ALTERNATEV's products.

| Competitor | Type | Ethicality / 5 | Product Range | Coffee Grade | Accessibility | Free-from option | Price |
|-----------------|---------------|----------------|-------------------|--------------|--|------------------|----------|
| Tassimo | Pods | 2 | Extensive | Varied | Online and offline | No | \$\$\$ |
| Nespresso | Pods | 3 | Black coffee only | Specialty | Online and offline; including dedicated stores | N/A | \$\$\$\$ |
| Costa | Pods | 4 | Limited | Premium | Online and offline; including dedicated stores | No | \$\$\$ |
| Starbucks | Sachets, Pods | 2 | Extensive | Premium | Online and offline; including dedicated stores | No | \$\$ |
| Maxwell House | Sachets | 1 | Moderate | Commodity | Online and limited offline | No | \$ |
| Nescafe | Sachets | 2 | Extensive | Premium | Online and offline; highly accessible | No | \$\$ |
| Kenco | Pods, Sachets | 2 | Extensive | Premium | Online and offline; highly accessible | No | \$\$ |
| Mokate | Sachets | 2 | Extensive | Commodity | Instant | No | \$\$ |
| Alcafe (ALDI) | Pods, Sachets | 1 | Moderate | Commodity | Compatible machine required, Instant | No | \$\$ |
| Bellarom (LIDL) | Pods, Sachets | 1 | Moderate | Commodity | Compatible machine required, Instant | No | \$\$ |
| Moccona | Sachets | 1 | Moderate | Commodity | Instant | No | \$\$ |

Table 2.2 ALTERNATEV Competitor Analysis

Nescafe and Kenco are highlighted as the two chief competitors for ALTERNATEV's coffee sachets, based on their extensive range of products, accessibility, and price. Drilling down into two core attributes – price and quality, perceptual mapping was then undertaken to ascertain where competitors place on a matrix (Figure 2.6)



Figure 2.6 ALTERNATEV Competitor Matrix

In the top right, Nespresso sits comfortably in the high quality / high price quadrant, with scale, experience and buying power that other premium coffee suppliers have been unable to match, however (Cumming, 2022). At the lower end of the scale are the every-day commodity coffee products, including super-market owned brands – Alcafe and Bellarom, that despite leading on price, underperform on quality (Statista, 2021).

2.7 STAKEHOLDER ANALYSIS

Collecting and analysing data on stakeholders, permits one to develop an understanding of – and possibly identify opportunities for influencing – how decisions are taken forward in new business ventures (Brugha, 2000). As the most important associates of a value-delivery framework, stakeholders and their contributions are a substantial source of capital that can increase entrepreneurs’ success propensity (Riad Shams et al., 2020). ALTERNATEV’s stakeholder map, based on a synthesised interpretation of Nguyen’s stakeholder framework, depicts the core groups comprising ALTERNATEV’s stakeholder groups (Figure 2.7). Detailed descriptions of the influence of each group are provided in APPENDIX A.

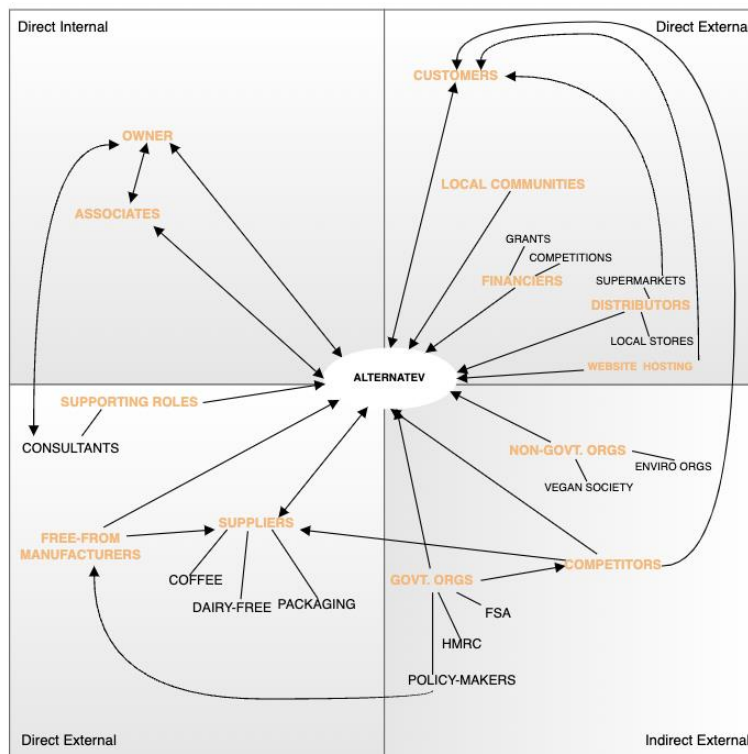


Figure 2.7 ALTERNATEV Stakeholder Map, based on Nguyen's stakeholder architecture (Nguyen, Chileshe, Rameezdeen and Wood, 2019)

To inform the stakeholder communication strategy, groups identified were then positioned within a stakeholder matrix (Figure 2.8). Required level of engagement was determined by the power and interest of each group. Customers, as direct, primary external stakeholders, and Associates / The Owner - direct, primary, internal stakeholders - hold both the greatest power over and possess greatest interest in, the business, demanding continuous engagement and consultation as the business evolves. Manufacturers, Suppliers and Financiers will likely express less interest in the business than those in the upper right quadrant yet given their influence with relation to financial contributions and the overall supply chain; should be kept satisfied. Opposing interests of stakeholders may also impede the activities of ALTERNATEV. Regarding the free-from coffee solution, externally situated stakeholders such as non-governmental organisations and vegan / ethical associations lay emphasis on values such as ethicality and sustainable processes across the venture's operations, potentially constraining the ability to meet the demands of consumers, and their administration of value to the affordability and accessibility of goods.

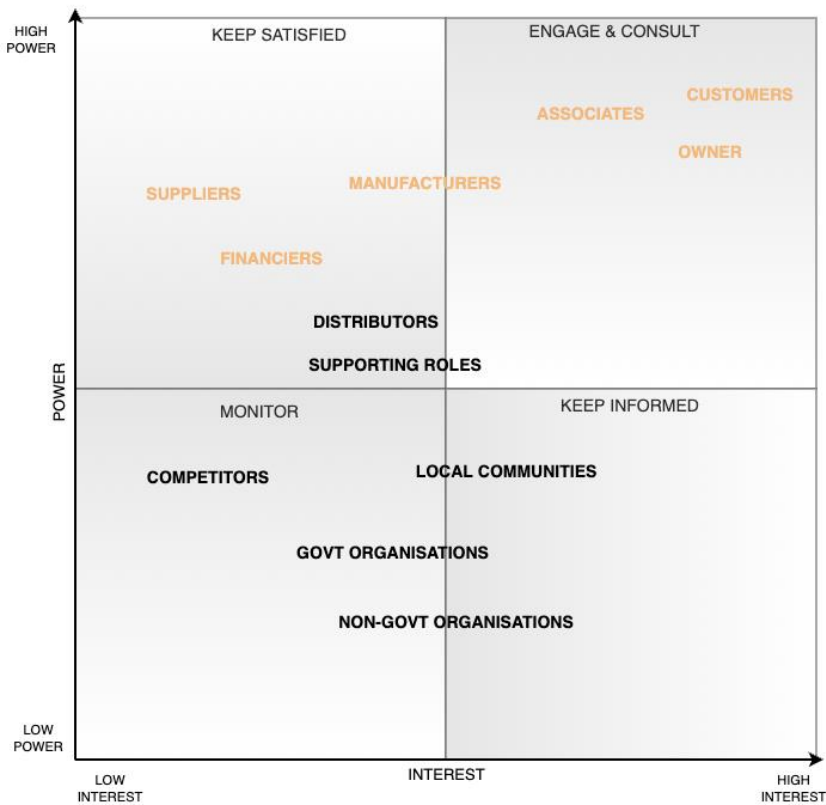


Figure 2.8 ALTERNATEV stakeholder matrix

2.8 ECOSYSTEM

Entrepreneurial ecosystems exist as organised attempts to establish environments that are conducive to increasing the success of newly established ventures. A well-mapped and comprehensively described ecosystem generates a perfect haven to launch innovations in products and services, creating value for associated stakeholders (Riad Shams et al., 2020). Ventures do not operate in silo – thus, the eco-system view must enrich the close competitive environment, rethink existing causal relationships, and embrace physical and intangible assets, such as infrastructures, institutions, sources of knowledge and human capital, and network forces (Audretsch et al., 2018). To this effect, ALTERNATEV’s eco-system - with the free-from coffee solution at the centre - was mapped; applying Isenberg’s six pillar framework and drawing on interpretations provided by other academics in the domain, to encompass opportunities for value generation (Isenberg, 2016) (Figure 2.9).



Figure 2.9 ALTERNATEV's ecosystem

To examine the business problem in greater depth, a consumer trend-canvas was produced, mapping the trend-driven ideation process, and culminating opportunity of free-from coffee for ALTERNATEV (APPENDIX B).

2.9 SWOT

As a strategic management technique, SWOT frameworks are utilised to assess a company's competitive position. A SWOT was carried out on the industry in question, to uncover the strengths, weaknesses, opportunities, and threats (Table 2.3). For ALTERNATEV, core strengths are the targeting of two prosperous and established markets, with forecasted growth, proliferation in people adopting free-from habits, and the novelty of the product in question (Mintel, 2021). The popularity and appeal of free-from foods creates numerous opportunities for ALTERNATEV to both expand its offerings gain product endorsement.

Regarding weaknesses, further consumer research, R&D and implementation time will result in delays to product launch. This in turn, poses a threat to business operations – extended development time could see established, long-standing competitors develop a solution to respond to the problem, by developing their own free-from coffee products.

| | |
|---|---|
| <p>STRENGTHS</p> <ul style="list-style-type: none"> • Opportunity involves targeting two big UK markets: Instant coffee market and free-from market, valued at £1.4 billion and £1.134 billion in 2021 (Mintel, 2021), (Mintel, 2021) • Marked and evidenced proliferation in adoption of free-from lifestyles in the UK. 54% of households avoid at least one food (Statista, 2019) • Instant free-from coffee not currently offered. Offering a product to respond to a gap in the market. • Consumers want convenience: In 2021, in the UK, 4.8 million people used instant cappuccino (Mintel, 2021) • At-home consumption trend, residual pandemic habits. • Current economy = less disposable income to spend OOH or on expensive healthy products. Consumers looking for cheap alternatives (Cox, 2021) | <p>WEAKNESSES</p> <ul style="list-style-type: none"> • Given the novelty of the market and its products, the long-term effects of non-medical free-from diets and free-from product consumption, are unknown. • Not an urgent, life-impacting problem and alternatives, albeit, not direct solutions exist i.e coffeehouses such as Starbucks and Costa offering dairy-free beverages. • Consumer research, R&D and implementation time, could allow for more advanced, established companies to develop innovative substitutes for products. • Limited experience in manufacturing / food industry. • Power of consumers demanding cheap products, and economic turmoil. |
| <p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • Opportunity to expand brand to cater for other under-served instant market i.e at home/retailed coffee machines/vending machines / beverages • Product endorsement by celebrities. Social media’s influential role in the health and nutrition domain. • Global/economic challenges of animal farming/ sustainability concerns with animal products work in favour of opportunity success. • Societal and cultural norms swaying toward convenience & free-from. • 98% of GenX utilising social media for social networking, and 52% using to improve health and nutrition (ONS, 2021) | <p>THREATS</p> <ul style="list-style-type: none"> • Volatility of trends and market. consumers making decisions about free-from lifestyles based on information received. • Competition from large firms with capabilities and resources. Nestle and Jacobs Douwe Egberts dominate UK market with 25% and 14% shares in new product launches (Statista, 2017) • Regulations guiding food and drink sector, such as legislations placing restrictions on packaging and labelling (Gov.uk, 2018) • High costs associated with manufacturing and research and development for foodstuffs. |

Table 2.3 SWOT Analysis

2.10 TARGET MARKET ANALYSIS

Volume I of this dissertation sought to identify the motivations and incentives for making dairy-free food choices to inform the viability of a dairy-free coffee product. The statistical analysis served to uncover the identities, perceptions and beliefs of individuals most likely to adopt dairy-free habits. From a targeted marketing perspective, the ability to select the most appropriate targets of dairy consumption change in an individual, rests on an understanding of the critical influences on dairy-free food choice and ascertaining of which of these are subject to modification, underpinning a venture's pursuit of the most profitable current and future target market groups. The outcome of the analysis indicated ALTERNATEV should focus on two types of market segmentation: demographic segmentation and psychographic segmentation (Yesbeck, 2022).

2.10.1 DEMOGRAPHIC SEGMENTATION

Demographic segmentation is centred on targeting the statistical characteristics of human populations (Meiselman, Kuesten and Bi, 2021). While age was not a significant predictor of dairy-free food choices, this was deemed to be due to the uneven distribution of the sample. A distinct analysis of age vs dairy consumption indicated that those in the 18-24 and 55-64 age groups had the highest proportion of respondents who had stopped or reduced their consumption of dairy (p52). Qualification level was also found to be indicative of dairy-free food choice, with higher education correlated with likelihood of making dairy-free food choices (p54). Marketing should therefore appeal to those in the stated age-groups, with degree-level or higher education.

2.10.2 PSYCHOGRAPHIC SEGMENTATION

Psychographic segmentation looks to appeal to the personality, values, attitudes, interests, and lifestyles of consumers (Meiselman, Kuesten and Bi, 2021). Medical components, nutritional benefits, self-assessed perception of health and perceptions of dairy and dairy alternatives were all significant in predicting whether an individual would make a dairy-free

food choice. Negative perceptions of self-assessed health were inverse predictors of the likelihood of an individual making a dairy-free food choice (p64). Market research supports this statement, with conceptions of health driving the sale of free-from goods (Mintel, 2021). Nutritional benefits were positive determinants; the greater the weight placed on the use of food in general, as a conduit to achieving better health, the more likely an individual is to make a dairy-free food choice. Inevitably, medical components (i.e suffering from lactose intolerance or cow's milk allergy) was also a predictor. As such, the psychographic target market for ALTERNATEV may be defined as follows:

“Individuals who have ceased or reduced dairy consumption for reasons pertaining to attitudes, lifestyle choices or incentives; those adhering to dairy-free, plant-based, vegan and free-from diets etc. either out of choice or due to medical reasons”

Volume I saw the development of a model predicting the likelihood that someone will make a dairy-free food choice. Therefore, while the primary target market is those already making dairy-free food choices, the secondary target market may be defined as those whom, although not necessarily decreasing their dairy consumption at present are likely to do so due to individual-level factors or perceptions.

2.11 PROBLEM / SOLUTION FIT

A new venture must understand well the problems to be resolved to be used as a basis for solutions (Kirkley, 2016). Adopting a lean approach, prior to commencing any sort of development, a start-up must determine whether the problem in question is one worth solving (Maurya and Schmitz, 2013). ALTERNATEV's problem statement states that individuals with dietary requirements remain short of a solution to an alternative instant, accessible and affordable coffee. Since customers do not care about the solution, but rather the problem faced, the role of ALTERNATEV, is thus to formulate a solution to eradicate the problem (Dixon, 2010). To assess problem solution fit, a comparative analysis of current solutions vs ALTERNATEV's solution was undertaken (Table 2.4)

| Solution | Pros | Cons |
|---|---|---|
| Visit designated coffee house i.e Costa | <ul style="list-style-type: none"> <input type="checkbox"/> Assurance of coffee, 'luxury' <input type="checkbox"/> Customisable <input type="checkbox"/> Familiarity of brands <input type="checkbox"/> Highly concentrated Urban locations | <ul style="list-style-type: none"> <input type="checkbox"/> Expensive. Avg cost of cappuccino = £3.45 (Mintel, 2021) <input type="checkbox"/> Access; may not be within proximity <input type="checkbox"/> Waiting/queuing; decreased functional value <input type="checkbox"/> Opening times <input type="checkbox"/> Lockdown / restrictions |
| Make coffee at home from scratch | <ul style="list-style-type: none"> <input type="checkbox"/> Can produce cheap alternative <input type="checkbox"/> Configurable: Can tailor how strong, ingredients sweet etc. | <ul style="list-style-type: none"> <input type="checkbox"/> Time-consuming <input type="checkbox"/> May not have ingredients <input type="checkbox"/> Restricted to standard coffee |
| Instant free-from coffee sachets | <ul style="list-style-type: none"> <input type="checkbox"/> Fixed individual serving <input type="checkbox"/> Can buy in bulk from supermarket <input type="checkbox"/> Low switching costs | <ul style="list-style-type: none"> <input type="checkbox"/> Taste/quality may not be to customer's liking <input type="checkbox"/> Accessibility; may not be stocked in local retailer |
| Free-from home coffee machine | <ul style="list-style-type: none"> <input type="checkbox"/> Range of options <input type="checkbox"/> Instant element | <ul style="list-style-type: none"> <input type="checkbox"/> High switching cost for consumers |
| Free-from pods to fit existing machines | <ul style="list-style-type: none"> <input type="checkbox"/> Compatible with existing machines <input type="checkbox"/> Range of coffees <input type="checkbox"/> Accessible and able to buy in bulk | <ul style="list-style-type: none"> <input type="checkbox"/> Taste/quality may not be to consumer's liking <input type="checkbox"/> If customer does not own machine, high switching costs <input type="checkbox"/> Cross-contamination if non-free-from coffee used |
| Free-from public coffee machine | <ul style="list-style-type: none"> <input type="checkbox"/> Can be placed in convenient locations i.e service stations <input type="checkbox"/> Instant element | <ul style="list-style-type: none"> <input type="checkbox"/> Chance of malfunction <input type="checkbox"/> May not be accessible <input type="checkbox"/> Reliant on opening times of location in which situated |

Table 2.4 Problem Solution Fit

The core business concept stemmed from an assessment of contemporary societal trends and the perceived move toward dairy-free food choices; coupled with a review of products available to those without dietary restrictions, that presented opportunities for modification. In short, the number of people eschewing dairy from their diet is increasing; amplified by the pandemic (p56) and the demands of coffee consumers for more lavish, sustainable, and accessible coffee continue to grow (The Specialty Coffee Company, 2022). At present, all instant coffee mixes on the market contain dairy, excluding 43% of the population from purchase/consumption. Problem / solution fit was thus confirmed with the solution to address the disconnect between the supply-and-demand of accessible coffee products.

3 PRODUCT / SERVICE DEVELOPMENT

3.1 INTRODUCTION

The intention of ALTERNATEV is to bring the concept of instant, premium coffee mixes to the underserved free-from market, via sustainable, ethical, and affordable means. Following the collection of primary data in Volume I, further, targeted research activities were undertaken, in a similar vein, to refine and validate existing product-specific assumptions:

- 1) Assumption that free-from coffee products will be of interest to consumers
- 2) Assumption that people are willing to substitute regular products for ALTERNATEV products

Acknowledging that the objectivity of respondents' answers to questions about a proposed product may have been skewed by questions posed in Volume I's set of primary research, a different sample of participants was used, ensuring detachment and impartiality. Questions sought to understand responsiveness to ALTERNATEV's core offering, from potential consumers, with a focus on understanding the value and expected qualities and attributes of a product.

The following section presents the proposal for the development of ALTERNATEV's products, drawing on the results of the survey to substantiate development decisions. ALTERNATEV's superior value proposition rests on its ability to offer sustainably produced, instant, speciality grade coffee mixes. The instant nature of the mixes will stem from the 'just-add-water' element, with mixes comprising the core constituents of popular coffee drinks - ethically sourced coffee, milk alternative powders and natural flavourings, entirely free from allergens.

3.2 CONCEPT VALIDATION

To validate the concept of free-from instant coffee, a set of assumptions, first required substantiation. Volume I of this dissertation presented primary research into dietary behaviours and attitudes predicting dairy-free food choices, confirming the hypothesis that individuals are increasingly reducing or stopping their consumption of dairy. 42% of respondents had either decreased their consumption of dairy or stopped consuming dairy all together; consistent with more general societal dietary behaviour trends, and 22% of respondents considered themselves to suffer from either Lactose Intolerance or Cow's Milk Allergy. Statements from the interview with Professor Nelson Fernandez corroborated these findings from an immunological standpoint, detailing a rise in the presence of immunological allergies, and an increase in both perceived and actual Lactose Intolerance (p47). Results from the binary regression model indicated health perception, perceptions of milk and nutritional benefits were significant when predicting whether an individual would make changes to their consumption of dairy. Socio-economic factors such as qualification and income were also correlated with reductions in dairy consumption, supporting targeted marketing efforts and the production of a product to meet the needs of these groups (p64).

The second phase of consumer research was carried out to understand where potential consumers would assign value in a new coffee product and to validate the concept of free-from instant coffee. A semi-structured market research questionnaire was designed and administered online (APPENDIX C). In line with the University of Manchester's ethics policy; asking members of the public questions about a given subject area of commercial interest, does not require independent ethical review (University of Manchester, 2021). Acknowledging the presence of commercial sensitivity, participants were asked to confirm they would respect the confidentiality of the information pertaining to the novel concept, contained in the survey. Recruitment methods were limited due to the restrictions imposed to curb the spread of COVID-19, therefore, to ensure a degree of relevancy to the research, various criteria had to be met by individuals intending to take the survey. Participants were asked to confirm they met at least 2 of the following criteria:

- 1) Coffee drinker
- 2) Consumed or purchased instant coffee product (i.e latte pods / sachets) in last 30 days
- 3) Milk/lactose avoidance
- 4) Consumer of free-from products

To begin, respondents were asked whether they were actively limiting or avoiding dairy, as part of a diet or lifestyle. Of the 112 respondents, 38% (43 pts) replied yes, consistent with findings of 42% for the same question in Volume I. Respondents were then asked if, regardless of whether they actively avoided or were reducing their intake of dairy or not, they had purchased free-from products in the last 30 days. 87 had brought products branded as free-from dairy or lactose, such as almond milk, indicating the demand for free-from products extends well beyond those consumers consciously limiting dairy consumption.

Following a series of questions asking participants about their coffee preferences and free-from product purchasing patterns, respondents were asked which of the proposed ALTERNATEV coffee products they would be interested in buying or using as a consumer. Respondents were briefed on the commercial opportunity being pursued by ALTERNATEV, and were presented with the following description of activities:

“ALTERNATEV provides high quality dairy/allergen/sugar-free instant coffee alternatives, created using ethically sourced and sustainable ingredients and packaging, developed for commercial and individual use. Initially, ALTERNATEV will focus on coffee sachets and pods to be consumed at home, with the intention to expand into over beverages and other modes of distribution, such as public coffee vending machines.”

57% of respondents stated they would be somewhat interested in free-from coffee products. 21% indicated they would be extremely interested, affirming the assumption that free-from coffee products will be of interest to consumers (Figure 3.1).

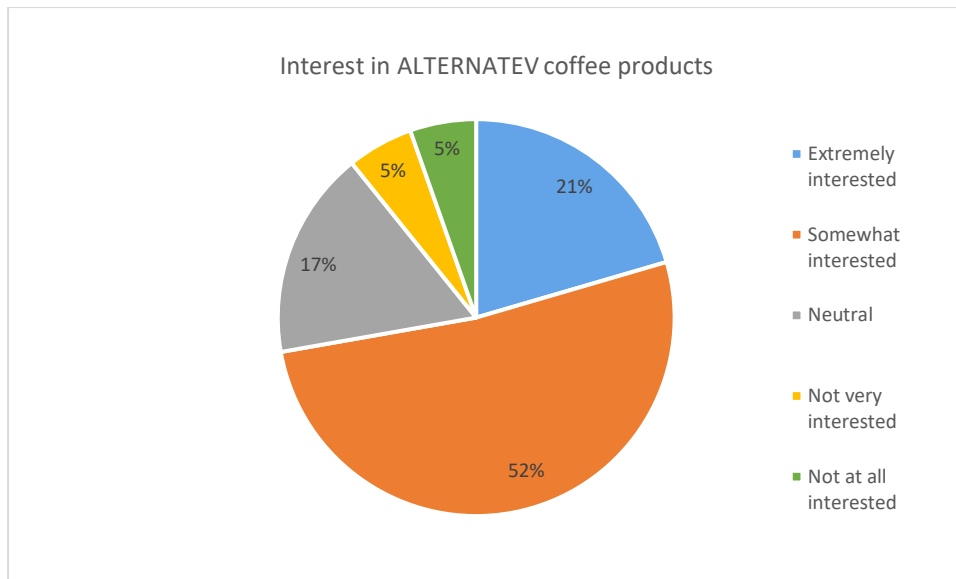


Figure 3.1 Interest in ALTERNATEV coffee products

It stands to reason that an individual would seek to purchase ALTERNATEV products as replacements, or in addition to, current coffee purchases. When asked about home consumption of coffee in the last 30 days, fresh ground coffee was the most popular choice, with 67 coffee-drinking respondents selecting this answer. 62 respondents said they had used a home coffee machine; the category comprising coffee pod machines such as Nespresso, and 45 said they had used instant mixes in the previous month. Of the listed ALTERNATEV products, those garnering interest from the greatest number of participants, were free-from coffee pods - compatible with existing machines - and instant mixes / sachets. 35 respondents said they would purchase canned / cartoned coffee products and 25 indicated they would not be interested in purchasing any of the proposed ALTERNATEV products. Products listed in the regular coffee drinking question and subsequent ALTERNATEV-product based question were kept consistent to support comparison (Figure 3.2)

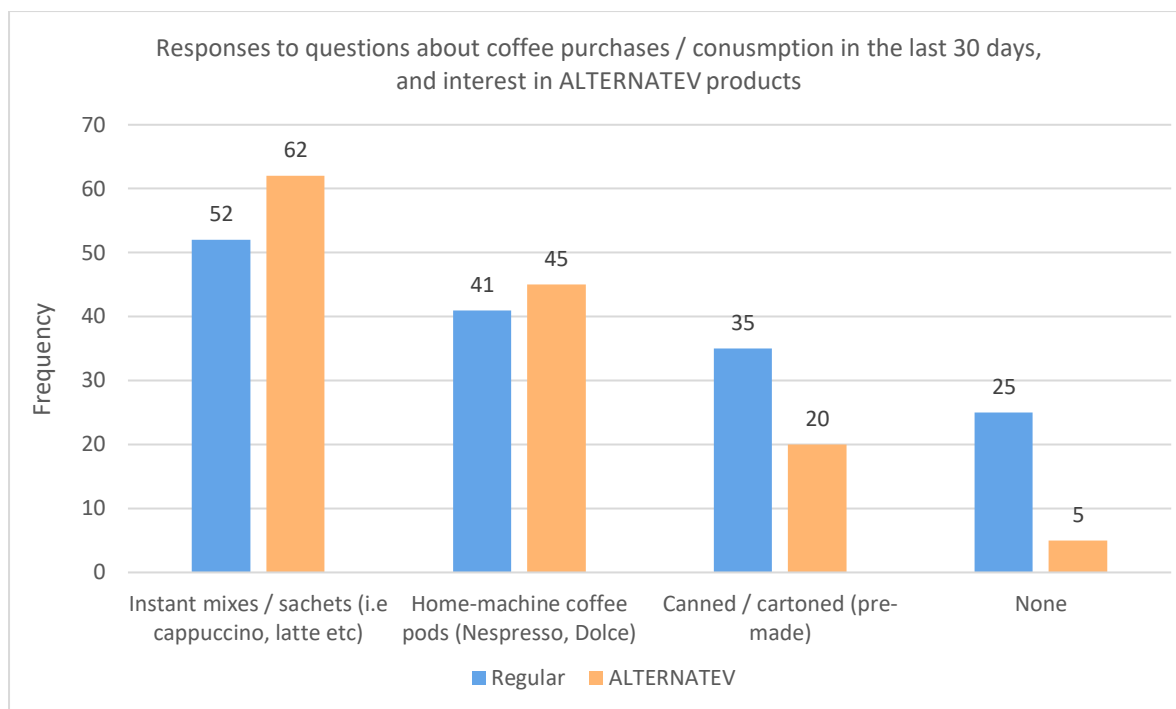


Figure 3.2 Responses to question on coffee purchasing habits

Interestingly, responses to the prospect of purchasing ALTERNATEV’s free-from variations were more positive than those toward existing products, validating the assumption that people are not only willing, but are actively interested in switching regular products to free-from. Respondents were then asked about the types of coffee brought or consumed, both in and out of the home, in the preceding 30 days, the results of which, are contained in Table 3.1. Cappuccinos, lattes and cortados received the greatest number of responses, indicating focus in the preliminary development phase should be placed on producing dairy-free substitutes for these products.

| Coffee Type | % Coffee Drinking Respondents |
|-------------------------|-------------------------------|
| Macchiato | 27% |
| Latte | 57% |
| Cortado | 62% |
| Americano (black/white) | 31% |
| Cappuccino | 61% |
| Espresso | 50% |
| Flat White | 48% |
| Mocha | 39% |

Table 3.1 Types of coffee drunk in the preceding 30 days

In deciding where to focus attentions, literature from Volume I was drawn on for reference. According to Sproesser, the readiness of an individual to try foods of nonanimal origin radically increases when the food presents as something familiar (Sproesser et al., 2019). Therefore, to increase the likelihood of a consumer purchasing free-from instant coffee, products should present themselves as recognisable entities to the target. As such, ALTERNATEV will focus on development of the highlighted products in Table 3.1.

3.2.1 VALUE FOCUS

A rigorous model of customer value provides a business with the apparatuses to develop products with the right value combinations. In turn, the business reaps the rewards associated with customer loyalty, a willingness to try new products and sustained revenue (Almquist, Senior and Bloch, 2016). In the context of ALTERNATEV's product offering, these value combinations should reflect the positive factors influencing consumers' food choices. It was established in the literature review in Volume I that food choices, by their very nature are multifaceted, situational, and dynamic, and food purchasing decisions made by consumers are the culmination of a set of generated influences, which include personal ideals, resources, context, and resources (Chen and Antonelli, 2020).

To home in on the value of the product, coffee product attributes of importance and more general inclinations, perceptions and behaviours of consumers are reviewed in this section. The coffee attributes deemed most important by consumers, as part of existing research were identified in the market review. These attributes were put to the respondents of the survey, in the context of a new free-from instant coffee product to determine the value combination of ALTERNATEV's product offerings. Findings correspond with research claiming that consumers tend to form perceptions based on functional characteristics, packaging, branding, and sensory characteristics of coffee; the latter accounting for the major portion (Figure 3.3).

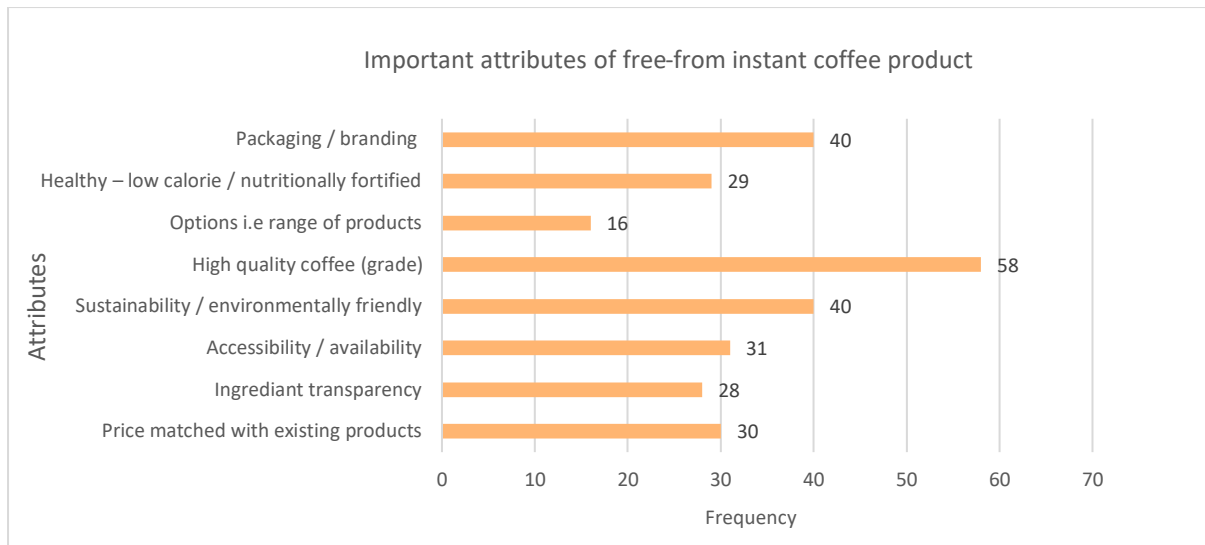


Figure 3.3 Attributes of a free-from coffee product deemed important to respondents

It should be noted, that due to the small research sample size, findings of the consumer survey were not meant to be generalised but were intended to provide affirmation of the wider market research, regarding the potential audience of the product. The nonexistence of a minimal viable product at this point, does mean that consumer perceptions of any tangible product were unobtainable, and warrants further consumer research.

3.3 PRODUCT

ALTERNATEV's products are instant, free-from coffee solutions, taking the form of sachets, in the first instance, with the intention of extending the range to include coffee pods, in later phases of development. Analysis of ALTERNATEV's competitors revealed 8 of the most prominent coffee brands currently offer instant coffee mixes in the form of sachets, and 7 are vendors of coffee pods, albeit none of the identified competitors provide free-from variations of their core products. It should be noted that product development was stunted due to COVID-19, and therefore the following section is intended to provide an overview of what the product may look like but is very much subject to change.

Consumer research identified the types of coffee most frequently consumed by respondents. Cappuccinos, lattes and cortados received the highest number of responses, suggesting the initial range of products should cater to existing coffee-drinking preferences. To this end, the

initial line of sachets will comprise lattes, cappuccinos, and flat whites. The attributes deemed to be most important to consumers in the survey sample were grade of coffee, product / packaging and branding and sustainable practices. The products will therefore seek to incorporate speciality grade coffee, emphasise the branding of ALTERNATEV and ensure all practices are sustainable and ethical.

3.3.1 COMPONENTS

ALTERNATEV’s products will provide a suitable substitute for existing instant coffee products on the market. Research conducted in Volume I found individual health perceptions have a significant impact on food choice (p64), supported by literature indicating consumers tend to prefer foods perceived as natural. Ingredients deemed to be unnatural by consumers, are consequently seen as unhealthy, may deter purchase (Lähteenmäki et al., 2010). Moreover, research from Mintel indicated that among current non-consumers of free-from foods, 33% were interested in buying a free-from products that were either higher in healthy ingredients or lower in bad-for-you ingredients than standard products (Mintel, 2021).

The selection of the right components for the coffee sachets, will thus, be fundamental to the creation of a product that delivers value to the consumer. As part of the experimentation process, existing products will undergo laboratory-style analysis, to ascertain composition, solubility, and response to varied methods of preparation. Leading cappuccino and latte sachet contents from Kenco and Nescafe are listed in Table 3.2, with nutritional information provided alongside constituents.

| Brand | Product Name | Ingredient list | Nutritional Info (per serving) | | | | | | | |
|-------|---------------------------------|--|--------------------------------|-----|-----------|---------------|--------|-------|---------|-------|
| | | | Energy | Fat | Saturates | Carbohydrates | Sugars | Fibre | Protein | Salt |
| Kenco | Kenco Cappuccino Instant Coffee | Sugar (32%), Glucose syrup, Instant coffee (11%), Skimmed MILK powder (9.5%), Fully hydrogenated coconut oil, Maltodextrin, Whey protein concentrate (from permeate (from MILK). | 57kcal | 2g | 1.9g | 8.5g | 3.3g | 0g | 1.4g | 0.15g |

| | | | | | | | | | | |
|-------------|--|---|--------|----------|------|-------|------|------|------|-------|
| | | Stabilizer (E340). Modified starch, Salt, Antcaking agent (E340). Modified Starch, Salt, Anticaking agent (E5511). | | | | | | | | |
| Kenco | Kenco Latte Instant Coffee | Glucose Syrup, Lactose (from Milk), Skimmed Milk Powder (14.5 %), Fully Hydrogenated Coconut Oil, Sugar (8,1%), Instant Coffee (7.5 %), Maltodextrin, Whey Protein (from Milk), Whey Permeate (from Milk), Stabiliser (E340), Modified Starch, Flavouring, Anti- Caking Agent (E551), Salt | 79kcal | 2.2 g | 2.2g | 13g | 8.1g | 0g | 1.4g | 0.19g |
| Nescaf e | Nescafe Gold Cappuccino Instant Coffee | Sugar, Skimmed Milk Powder (21%), Coffee (12%) [Instant Coffee (11%), Premium roast and Ground Coffee], Glucose Syrup, Coconut Oil, Lactose, Acidity Regulators (Sodium Bicarbonate, Citric Acid), Salt, Natural Flavouring | 60kcal | 1.3 g | 1.1g | 10.3g | 8.0g | 0.7g | 1.4g | 0.18g |
| Nescaf e | Nescafe Gold Latte Instant Coffee | Skimmed Milk Powder (47%), Glucose Syrup, Coffee (12%) [Instant Coffee (11%), Premium roast and Ground Coffee], Coconut Oil, Lactose, Acidity Regulators (Sodium Bicarbonate, Citric Acid), Salt, Natural Flavouring | 60kcal | 1.7 g | 1.4g | 7.9g | 5.2g | 0.7g | 2.8g | 0.26g |

Table 3.2 Components and nutritional information of existing products

3.3.1.1 COFFEE

The coffee to be used in the products will conform to the requirements of speciality grade coffee. For coffee to be classed as speciality it must have zero 'Primary' defects and less than five 'Secondary' defects and achieve a score of 80 or above on a scale of a certified tester (Speciality Coffee Company, 2021). Moreover, coffee must possess ripeness, moisture

percentage ranges, and have at least one unique attribute in either its taste, aroma, body and/or acidity (American Force Coffee Co., 2022).

| SCORE | GRADE | SPECIALTY YES/NO |
|----------|-------------------------|----------------------|
| 90-100 | Outstanding | Specialty Coffee |
| 85-89.99 | Excellent | Specialty Coffee |
| 80-84.99 | Very Good | Specialty Coffee |
| >80.0 | Below Specialty Quality | Not Specialty Coffee |

Table 3.3 Speciality Coffee Grades (Speciality Coffee Company, 2021)

Speciality coffee is generally brewed fresh; yet has been shown to retain its quality when adapted to instant (Coffee Blog, 2022). Moreover, when distributed into sachets, the quantity of coffee required in a single serving sachet will not push the price of ALTERNATEV’s products too far above the incumbent speciality coffee product providers (Nespresso etc.). Existing products, as per the components table (Table 3.2), do not utilise speciality coffee in their sachets. Nescafe’s instant sachets are produced with premium coffee, and Kenco’s products use standard commodity coffee. As a point of differentiation, ALTERNATEV will therefore attempt to upgrade and adapt current products on the market with speciality, sourced coffee.

3.3.1.2 ADDITIONAL INGREDIENTS

Additional ingredients will be natural, organic, free-from allergens and fortified with nutritional benefits. Milk alternative powders will serve as substitutes to the skimmed milk powder in existing products. The following alternatives to milk will be trialled in the experimentation process, to gage their compatibility, taste attributes and response to hot water when combined with stabilisers:

- Coconut milk powder
- Soya milk powder
- Almond milk powder
- Rice milk powder

In formulating natural food products, gums and starches isolated from plant sources are widely used as stabilizers (INSIDER, 2007). Natural gums and starches do not undergo chemical modification and are simply isolated from the plant to obtain a concentrated ingredient (INSIDER, 2007). Natural stabilisers to be experimented will include:

- Guar gum
- Inulin
- Gum acacia

3.3.2 ASSURANCE

Ingredient transparency was deemed to be an important facet for 28 respondents in the survey, however ethical and sustainable practices were important for over a third of consumers (Figure 3.3) The values of ALTERNATEV should traverse the entire product lifecycle. Assurance labels substantiate claims associated with the provenance and fair sourcing of ingredients, and thus form an important part of product development. Over 42% of consumers make shopping decisions that largely depend on certifications and labels, therefore ALTERNATEV will seek to gain accreditation of the following labels (Mintel, 2021):

Name: Fairtrade

Description: “Covers environmental, economic, and social standards, sets minimum market prices for what producers and farmers are selling and gives them an additional premium to invest in community projects. Certified farms have fair working conditions, ban forced labour, and meet environmental criteria such as responsible water use and minimal pesticide use.”

Relevant component: Coffee

Justification: 36% of survey respondents noted ethical considerations as important properties in coffee. Increased consumer sensitivity to inequalities in coffee production (Figure 3.3).

Name: Vegan Label

Description: Globally trusted mark for vegan and vegetarian quality. To bear the mark, food products must comply with V-Label scheme requirements. All stages of production,

processing and distribution must be designed so that the final product contains less than 0.1% of non-vegan or non-vegetarian substances.

Justification: 91% of consumers prefer products with an independent stamp guaranteeing the product is in fact vegan (V-Label, 2022).

3.3.3 MANUFACTURING

The approach to manufacturing will be two-pronged. In the first two years, as per the development plan, the founder will seek to exploit resources at their disposal, by undertaking much of the experimentation process by hand, in the nutritional, food science laboratories at Manchester Metropolitan University. Year 3 onwards will see the outsourcing of manufacturing to a reputable company, to bring the concept to fruition.

3.3.3.1 EXPERIMENTATION

Experimentation will be carried out in Years 1 and 2 and aim to understand the interaction of components of existing products, prior to testing and developing ALTERNATEV's products. Instant beverages, by design, are based on agglomerated powders, that are supposed to be completely dissolved or dispersed in the specific amount of water, after a brief stirring:

“A good instantised beverage is free from floating, surfaced particles and sediment at the bottom of the container after minimum stirring (Shanmugam, 2017)”

Experimentation will thus investigate the best method of converting speciality coffee into an instant, compatible form, via freeze-drying, utilising the expertise of nutritional scientists, immunologists. Freeze-drying, albeit marginally more expensive than other methods such as spray-drying, is the method employed by speciality instant coffee producers (Tomaniova, 2022). Preparing coffee in this way, a) preserves the nuances and aromatic qualities of the coffee, and b) responds well to the addition of other ingredients (Tomaniova, 2022).

Experimentation will additionally address the following features:

Product shelf-life: A core part of the cycle of product development is to determine shelf life/ For ambient products, such as instant coffee – with long shelf lives – full evaluation is unfeasible, therefore, accelerated shelf-life analyses will be undertaken.

Solubility: Defined as the capability of a substance (solute) to dissolve into another substance (solvent) to produce a solution, relative to the degree of consistency maintained (Assembly Coffee London, 2022).

3.3.3.2 OUTSOURCING

Armed with data from the experimentation phase, manufacturing will be outsourced in Year 3. ALTERNATEV's founder does not have manufacturing experience, and therefore, outsourcing the manufacturing element of the business will give it the space it needs to grow. While outsourcing takes away the costs associated with labour, bills, facilities etc. it can result in detachment of the business from its processes. As indicated in the stakeholder analysis (APPENDIX A), the importance of both manufacturer and supplier engagement is fundamental to ALTERNATEV, and therefore, relationships will be prioritised to

The founder has already reached out to potential free-from manufacturers, such as TASTEHEAD to understand how one transitions from experimentation to product manufacturing. It was established that data from the experimentation process would be shared with the manufacturing organisation to implement. TASTEHEAD were also happy to adjust, customise and adapt existing processes to accommodate the creation of a free-from coffee product (TASTEHEAD, 2021).

3.3.4 PACKAGING

Sustainable packaging is the development and use of packaging which results in improved sustainability (GWP Group, 2022). Noting the importance of package type and organic status in the role of consumer sustainability perception, ALTERNATEV's product packaging will adhere to the following points:

- Packaging will be beneficial, safe & healthy for individuals and communities throughout its life cycle
- The packaging will meet the market criteria for both performance and cost
- Packaging will incorporate and optimise the use of renewable or recycled source materials wherever possible
- The packaging will be manufactured using clean production technologies and best practices
- Packaging will materials that are healthy in all possible end of life scenarios

Packaging will be undertaken by the manufacturer, however, all processes involved will be checked and assured by the founder.

3.3.4.1 LABELLING

The Food Standards Agency recognises 14 types of allergens and under UK food law, all food businesses must inform customers if any of these ingredients are used in food and drink products they supply (FSA, 2021). For pre-packed food and drinks, the allergens should be emphasised in the ingredients list, for example in bold or coloured-type face for easier recognition (FSA, 2021).

Where there may only be small amounts of allergen in a product, for example arising through cross-contamination in the preparation process, businesses can add wording to labelling, such as 'may contain' as a precautionary measure. This is not a legal requirement but advised to help customers with allergies make suitable choices. ALTERNATEV will endeavour to avoid the need to include 'may contain'.

Labelling will also include mandatory nutrition information and declare the following one each product:

- energy value
- amounts of fat
- saturates
- carbohydrate

- sugars
- protein
- salt

The European Parliament define shelf life as the “time from production to expiration, the end of the life of a food is when it exceeds the levels of microbiological contamination, loses its physical-chemical qualities and changes its organoleptic quality”. All products must include an expiration date – administered during production; based on data obtained from the experimental development phase (Section 3.3.3.1).

3.4 VARIATIONS

In the future, ALTERNATEV will look to expand its product range to include pods, hot chocolate, and variations on the existing coffee products. Research indicates that coffee pods are increasing in popularity, and coffee pods were the second most popular choice for consumers in the survey (3.2). Further consumer research as part of the future research and development will also be undertaken to gauge consumer responses to product variations.

3.5 BRANDING

The enduring success of a brand is contingent upon the suitable selection and operationalisation of brand-meaning prior to the organisation entering the market. A brand should exhibit itself as a set of tangible and intangible attributes, symbolised by name, logo, colours etc. which, when operated properly, create value and influence (Moorthi, 2002).

3.5.1 NAME

Scholars in the marketing field have identified specific, desirable properties of effective new brand names such as distinctiveness, easy recall, and simple pronunciation, with semantic imbeds (Klink, 2003). Conceptualising brand knowledge as a group of nodes, brand recognition and brand information are predicated on the existence of a brand name node,

that occupies a central position in consumers' brand memory structures. Consequently, the brand name frequently serves as a powerful and reliable retrieval cue for associated brand information (Keller et al, 1998).

The name first chosen for the free-from coffee product was 'coffree', a union of the words: 'coffee' and 'free-from', intended to be self-explanatory to the audience. According to Aveline, the contribution of brand name in the context of brand expansion is a core function of accessibility (Aveline, 2006). After due consideration, it was decided that the name 'coffree' heavily connoted coffee, but did not signify other qualities, nor permit expansion beyond coffee.

On reflection of the theoretical principles underpinning a successful and appealing brand name, ALTERNATEV was chosen, to take the business forward. Comprising the words 'alternate' i.e substitute and 'v' - the letter symbolising veganism, the name 'ALTERNATEV' semantically resonates, due to its shared spoken likeness with the word 'alternative', and functions as a parent-brand name under which sub-brands or sub-products could comfortably sit.

3.5.2 BRAND IDENTITY

Consistent brand meaning is fundamental to sustained brand loyalty. In the current market, businesses operating in the free-from space, have begun defining themselves, not by the absence of dairy products, but by the exclusive use of plant-based ingredients, to extend appeal beyond simply being dairy-free (Mckinsey and Company, 2021). General messaging of plant-based alternatives involves; sustainability, commitment to the environment, elimination of "unnatural foods," or humane treatment of animals, which ultimately gives them an advantage against traditional dairy products (Hocquette, 2015). Brand identity is about crafting the language used, in pursuit of portrayal of the right image to the consumer. As per the target market analysis, effective psychographic segmentation involves baking in the core values and beliefs of the consumer into the brand; therefore, brand identity will

convey messages of nutritional benefits and sustainability, aligned with consumers' positive health perceptions (Black and Veloutsou, 2017).

3.5.3 BRAND DESIGN

Research indicates that descriptive logos can positively influence brand evaluations, purchase intentions, and brand performance, and elicit stronger impressions of authenticity (Luffarelli, Mukesh and Mahmood, 2019). Logos were designed by the founder, with varying degrees of descriptiveness, there are presented in APPENDIX D. Further consumer research will seek to acquire feedback on logo design, however, to support the design of prototype products; the logo taken forward is depicted in Figure 3.4.



Figure 3.4 Initial Logo

Colours can bias the way consumers make ethical judgements about a brand. While 'green' is commonly thought of as the colour most associated with sustainability, research indicates blue is 'greener' than green in terms of conveying an impression of eco-friendliness (Edie Newsroom, 2022). Shades of browns and orange are highly correlated with perceptions of quality coffee and yellow of health benefits; as such, the chosen colour scheme for ALTERNATEV included core colours that complemented the identity and would convey messaging that appealed to the consumer (Figure 3.5)



Figure 3.5 ALTERNATEV colour scheme



Figure 3.6 Cappuccino sachet box mock-up



Figure 3.7 Latte sachet box mock-up

Based on the chosen logo, mock-ups (Figure 3.6 and Figure 3.7) and mood boards (APPENDIX E) were developed to depict potential design patterns for ALTERNATEV

3.5.4 INTELLECTUAL PROPERTY

Exhaustive searches through both domestic and international patent databases did not return free-from instant coffee products comparable to that of ALTERNATEV's, justifying the pursuit of a form of intellectual property protection. In the UK, protection of IP can take different forms. Both patents and trademarks were considered for ALTERNATEV, the analysis of which are outlined below:

3.5.4.1 PATENTING AND TRADEMARKING

Acquiring a patent for an idea serves as a competitive advantage and evidence of a unique, novel invention (European Office, 2022). Patent criterion outlined by the EPO are set against the idea of ALTERNATEV to evaluate the potential for patenting:

| Criteria for patentability | Yes/No | Details |
|------------------------------|--------|---|
| Novelty | Yes | Idea is novel. No existing products on the market that match that of Alternatev's. |
| Inventive step | Yes | Idea constitutes an inventive step. Incumbents in both the coffee and free-from industries have not yet developed a product with the same features as that of Alternatev's. |
| Capable of industrial action | Yes | The idea is capable of industrial action, supporting manufacturing and distribution. |
| Not an excluded category | Yes | The idea does not fall into an excluded category and is thus not an exception to patentability. |

Table 3.4 Criteria for patenting ALTERNATEV's free-from coffee idea

In contrast, trademarking and provides a business with a monopoly right to use their trademark in their chosen class of goods or services. Trademarks utilise words and images, projected to the public to distinguish the offered goods and services provided (from those of its competitors) and to generate goodwill and brand recognition (AMD Solicitors, 2022).

On review, given that patents can take up to 5 years and £20,000 to materialise, it was decided that trademarks over patents, would be pursued to protect the name and branding of ALTERNATEV. Trademarking classes relevant to ALTERNATEV are detailed below:

Trade mark: ALTERNATEV

Classes:

30: "foodstuffs of plant origin prepared for consumption or conservation as well as auxiliaries intended for the improvement of the flavour of food."

32: "includes mainly non-alcoholic beverages, as well as beer".

3.6 COMPANY REGISTRATION

ALTERNATEV LTD was incorporated as a Private Limited Company with Companies House on 6th August 2019, with nature of business (SIC) code: 10832, covering the production of coffee and coffee substitutes (Companies House, 2022).

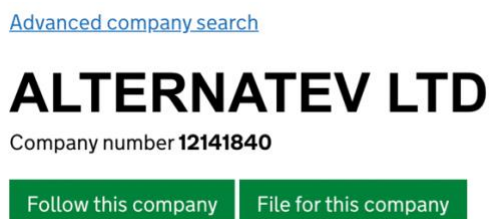


Figure 3.8 ALTERNATEV LTD Companies House

3.7 DISTRIBUTION

The consumer survey asked respondents about the channels they tend to purchase dairy or lactose-free products from. Results of this question are depicted in table 3.5. In-store supermarket purchases were chosen as the most common channel of purchase, emphasising the need for accessibility, however, online and health and well-being stores were still present viable means of distribution for ALTERNATEV.

| | Response | Frequency |
|-------|----------------------------|-----------|
| | Online | 24 |
| | Independent / local stores | 10 |
| | Health & Wellbeing Stores | 23 |
| | In-store supermarkets | 30 |
| Total | | 87 |

Table 3.5 Responses to channels of purchase

While there are wide variations in the costs and profitability of channels and intermediaries, companies with established partnerships, who maintain engagement are more successful at generating profit (Lowe, 1975). Manufacturing of the product will be outsourced, and

therefore distribution will be indirect, however the founder will work closely with manufacturers to ensure distribution channels are properly served. To begin, ALTERNATEV will offer products online; a two-fold distribution channel which will seek to a) generate demand and b) fulfil said demand. The website in question is intended to be both an information hub and a way for consumers to purchase products. Concurrently, the founder will pursue health and well-being stores, and supermarkets to stock the products.

3.8 WEBSITE DEVELOPMENT

Website development will be undertaken in-house by the founder who has both design and development experience. Initial website designs are depicted in Figure 3.9.

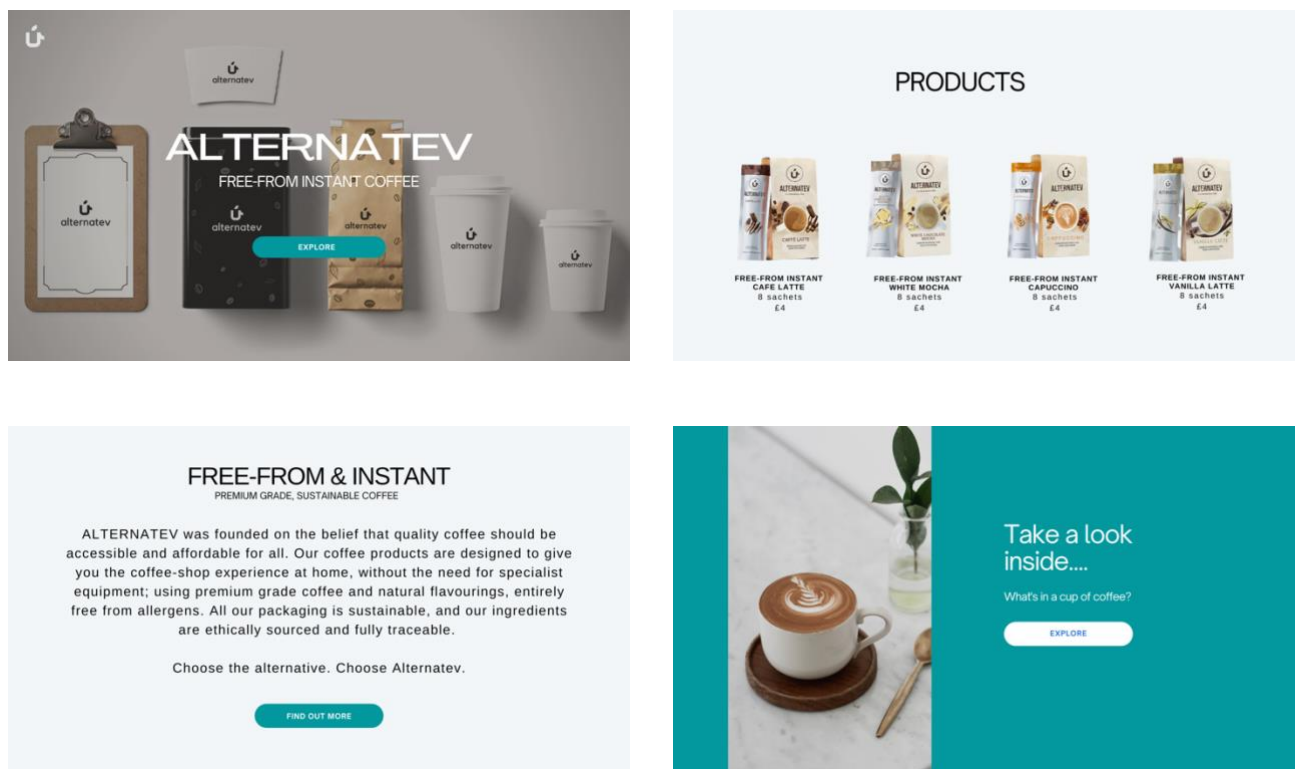


Figure 3.9 Initial website mock-ups

4 COMMERCIALISATION

4.1 INTRODUCTION

Enthusiasm surrounding the “lean start-up methodology” and its offshoots has generated a mentality that entrepreneurs should just launch, failing early and often — iterating to use start-up parlance (Fjeld, 2017). While launching swiftly with a minimum viable product generates practical feedback, and enables the venture to pivot, iterate and refine the product in response, given the nature of ALTERNATEV’s product, the commercialisation approach will be more methodical. Development of ALTERNATEV’s products will take an iterative path, however, much of this will be in a controlled setting. Initial development stages, as outlined in the experimentation phase will focus on research and development, to create a product that generates value for the consumer. Manufacturing will then be outsourced and led by experts in the field

4.2 STAGES OF DEVELOPMENT

4.2.1 DEVELOPMENT

As it stands, ALTERNATEV is still primarily in the conception stage. The business development phase; Years 1 and 2, will seek to both experiment and test products with potential consumers. Development will occur in-house, with use of Manchester Metropolitan’s nutritional science facilities for experimentation. Acknowledging the website will solve as both a distribution channel and a source of information, the founder will develop and launch the website, and relationships with distribution channels will be pursued.

ALTERNATEV will look to establish suppliers of milk alternative powders, nutritional flavourings and stabilisers, and speciality coffee companies to provide the coffee component. As an example, the Speciality Coffee Company offer a wholesale program, focused on freshly roasted specialty grade coffee, in addition to providing support the development of new

coffee businesses (Speciality Coffee Company, 2021). The company offers new vendors the option of working with an existing blend or working with a specialist to design a custom blend. Development will work on the assumption that an existing blend will be used.

4.2.2 LAUNCH

Post development, ALTERNATEV will look to launch in month 2 of Year 3. Manufacturing will be outsourced, and the product taken to market, utilising data obtained from experimentation. Experts in the marketing field will be brought on board to support efforts. Products associated with the launch will follow the analysis conducted as part of this business plan and further consumer research undertaken as part of the development process. In Year 3, it is anticipated that products will be sold online and via one or two smaller stores.

4.2.3 SCALE

Year 4 will see the business scale. ALTERNATEV's ambitions to penetrate supermarkets, and increase marketing resource will hopefully come to fruition. Profit will be invested back in the business to support the venture in the future.

4.3 BUSINESS MODEL CANVAS

Business models are defined as a conceptualization of the money earning logic of a firm, functioning as a federator between strategy and business organisation (Jin, Ji, Liu and Wang, 2021). Business model canvases comprises nine related elements of knowledge, which represent the content of doing business (Parry, 2014). The business model canvas (APPENDIX F) intends to serve as a translation of ALTERNATEV's business plan into an executable business process, via the portrayal of a value proposition, consumer relationships and systems of value. Validation of the concept via consumer research indicated a preference for coffee sachets and coffee pods. The decision was made to focus on sachets in ALTERNATEV's first few years of operation; due to the high production costs associated with coffee pods – with the

intention to expand into the pod market later. The following section of this chapter provides an overview of each segment of the business model canvas.

4.3.1 RESOURCES

Key resources fall into four distinct categories: physical, human, intellectual and financial. Access to manufacturers, distributors and suppliers will be vital to the development of ALTERNATEV's products. Exploitation of existing patents that cover the preparation of instant coffee will be harnessed to support the exploratory phase of development, in addition to new technological innovations in processing. Intellectual resources will include the obtaining of support from health specialists, immunologists, business consultants and the University of Manchester's innovation factory. With regard to financial resources, in the near term, ALTERNATEV will leverage resources of potential affiliates to support the launching of the business. Government-funded backing for free-from products, and innovation grants will be pursued in parallel.

4.3.2 ACTIVITIES

Key initial activities will include R&D and experimentation to generate the initial products to take to market. Coffee vendors and alternative milk powder providers will be explored and assessed for suitability, and cohesion with ALTERNATEV's mission. Following experimentation, ALTERNATEV will look to outsource production to suitable manufacturers. In later phases of development, indirect supply chain management will also be crucial to ensuring the business maintains its values of transparency and ethicality, albeit the intention is to source from coffee suppliers in the UK, so will likely entail certifying supplier credentials and processes. Distribution activities will involve retailers and businesses, in addition to further development of the business, to enable direct distribution.

4.3.3 VALUE PROPOSITION

For ALTERNATEV, value is ultimately generated through the offering of a free-from alternative to instant coffee mixes. A value proposition canvas (VPC) was developed (APPENDIX G) to drill down into the most critical aspects of the business model and display how and in what form value will be created for the consumer. The fundamental question asked when developing the value proposition was:

“As a consumer with dietary requirements, what value do I gain when I purchase free-from coffee alternatives”?

The culminating value proposition, incorporated in the business model canvas was thus: ‘instant, affordable, sustainable, and instant dairy-free coffee experience’. As highlighted in the VPC, the solution is product-based, comprising free-from instant coffee sachets. Alongside development of the canvas, a VP table was produced, specifying where functional consumer value is positioned, and the advantages over products already on the market:

| | | Nescafe | Kenco | ALTERNATEV |
|----------------------|--|---------|-------|------------|
| Must-haves | Instantaneous (addition of water only) | ✓ | ✓ | ✓ |
| | Ambient, prolonged, shelf-life | ✓ | ✓ | ✓ |
| | Comprehensive, regulated labelling | ✓ | ✓ | ✓ |
| Performance Benefits | Extensive range of products | ✓ | ✓ | ✓ |
| | Pleasantly flavored | ✓ | ✓ | ✓ |
| | Accessible channels of purchase | ✓ | ✓ | ✓ |
| | Single serving | ✓ | ✓ | ✓ |
| Delighters | Free-from major allergens; suitable for all | X | X | ✓ |
| | Sustainable packaging and ethical production | X | X | ✓ |
| | Specialty grade, ethically sourced coffee | ✓ | ✓ | ✓ |

Table 4.1 Value Proposition Table

4.3.4 CUSTOMER SEGMENTS

Segments to be target by ALTERNATEV are aligned with the target market analysis (Section 2.10). Research conducted in Volume I indicated attributes and factors most likely to drive dairy-free food choices. Individuals who have ceased or reduced all dairy consumption for any reason; those adhering to dairy-free, plant-based, vegan, and free-from diets etc. either by choice or due to medical reasons will form the primary target market. Viable consumer bases may also be found in health-conscious individuals and consumers with ethical concerns (p67). Existing market research revealed pandemic habits will persist and thus, individuals working from home and those who see convenience as synonymous with value will also serve as a viable customer base (ONS, 2021).

4.3.5 CHANNELS

Channels are the way in which a business tangibly delivers the value proposition to each customer segment. Channels fall into two categories; acquisition and delivery, the former denoting how a customer will be enticed and the latter pertaining to the physical delivery of value. These consumer touchpoints play an integral part in consumer experience. To appeal to the accessibility demands of consumers; ALTERNATEV's channels of distribution will be multifaceted. Consumers will be able to purchase directly from the business website, in addition to physical, brick-and-mortar stores - with initial focus on organic stores and coffee specialists, followed by supermarkets.

4.3.6 RELATIONSHIPS

Creating and maintaining customer relationships is fundamental to a business. ALTERNATEV will support the digital experience for consumers, providing detailed information about the range of products on offer, ingredients, sourcing, and manufacturing processes – with provenance and lineage of products. Any orders placed online will be accompanied by online support. Social-media promotion and community outreach will also be fundamental.

4.3.7 RESOURCES

Resources may be broken down into four distinct categories; physical, human, intellectual and financial. Access to manufacturers, distributors and suppliers will be vital to the development of ALTERNATEV's products. Exploitation of existing patents that cover the preparation of instant coffee will be harnessed to support the exploratory phase of development, in addition to new technological innovations in processing. Intellectual resources will include the obtaining of support from health specialists, immunologists, business consultants and the University of Manchester's innovation factory. Regarding financial resources, in the near term, ALTERNATEV will leverage resources of potential affiliates to support the launching of the business. Government-funded backing for new ventures, and innovation grants will be pursued in parallel.

4.3.8 PARTNERS

Key partners will include free-from manufacturers to produce products, and suppliers of product constituents. Partnering with conservations, coffee producers and bodies actively engaged in environmental advocacy, will ensure adherence to assurance standards such as FAIRTRADE, V-LABEL and Rainforest Alliance Certification. Retail partnerships will be necessary to facilitate distribution, and will include specialist retailers, market operators and smaller shops in the near term, extending to supermarkets, hotel chains and other larger partners in the future.

4.3.9 REVENUE STREAMS

Revenue streams for ALTERNATEV are reliant on the buying and re-buying of products. Given the functional value and advantage over existing products, in conjunction with 'delighters' delineated in the value proposition table, ALTERNATEV can adopt a value-based pricing stagey. Pricing of components are dependent on the real-time markets. Coffee for example is susceptible to economic and environmental influences, however, every attempt will be made to keep prices consistent.

4.3.10 COST STRUCTURE

In accordance with a lean start-up approach, costs will be kept to a minimum in the business's first years. Much of the initial research and development work will be carried out in-house, however, ingredient sourcing, trademarking, and subsequently manufacturing will all incur costs to the business.

4.4 COMPETITIVE STRATEGY AND ADVANTAGE

Competitive advantage can be achieved via two routes: low cost or differentiation. Currently, for ALTAERNA TEV, the best chance of competing in the market is via differentiation. Current competitors are yet to offer products that are suitable for the free-from consumer, and therefore ALTERNATEV will fill a gap in the current market. The novel subdomain of free-from coffee is unpenetrated, so ALTERNATEV will lead the way in the progression of this industry. Emphasis on sustainability, ethical practices and high-quality coffee, will also place ALTERNATEV in an advantageous position against its competitors, by focusing on aspects currently overlooked by market vendors. Key to this approach will be the marketing strategy; a path of action which intends to concentrate on the differentiated approach of ALTERNATEV.

4.5 MARKETING STRATEGY

The marketing strategy for ALTERNATEV will follow the 4Ps approach; controlled variables that the venture can utilise to influence the buyer's response.

4.5.1 PRODUCT

Production in the first instance will focus on cappuccinos, lattes and cortados, as per the consumer survey results. Branding and packaging will be devised in-line with core branding attributes outlined in Chapter 3.

4.5.2 PRICE

Given its niche position in the market, pricing will take a value-based approach. Research shows consumers are willing to pay more for both higher-grade coffee and free-from products, justifying a value-based method. To set value-based pricing, how much ALTERNATEV's products are worth to the consumer must first be determined. Cost can then be set accordingly, based on price floor – how much each item costs to produce – and the addition of a margin that is not significantly higher than direct competitors. The price of a box of 8 sachets of free-from instant coffee mix is estimated at £4.

4.5.3 PROMOTION

Promotion will take the form of social media campaigns, rolled out via well-known mediums such as Instagram and Tik Tok. ALTERNATEV will also look to partner with Free-From Associations, vegan organisations, and influencers, to further promote the brand.

4.5.4 PLACE

Products will be made available online and in traditional brick-and-mortar stores, ensuring consumer accessibility, and subsequent value creation.

4.6 TEAM

In Years 1 and 2, the founder will exploit their own network of direct and indirect contacts for business support, seeking assistance across all features of the business. ALTERNATEV will adopt an 'Associate-based' approach to organisational structure, calling on contractors to provide expertise, in line with the business's plans to expand and introduce more advanced marketing activities.

5 FINANCIAL ANALYSIS

5.1 INTRODUCTION

According to the ONS, 1 in 5 new businesses fail in the first year, with 50% closing within 5 years of launching. The COVID pandemic paved the foundations for the launching of thousands of new businesses across the UK, however, in the same breath, many businesses, both new and established, were swiftly forced to close, unable to survive the tumultuous economic situation, government regulated premises closures and reduced trading activity, capacity and demand (Gov.uk, 2022). Moreover, due to delays in business closure filings, and unknown volumes of debt taken on by businesses to survive non-operational months; statistics fail to reveal the true extent of the health state of businesses still in operation, post-pandemic (House of Commons Library, 2021). As such, perhaps now more than ever, an intimate knowledge, comprehensive understanding and objective interpretation of the financial operations and performance of enterprises is fundamental to the survival of new ventures (Pride, 2018).

The following section presents the financial forecasts for ALTERNATEV's first five years of activity. To strengthen the veracity of the outputs produced, an existing financial model, developed by the University of Manchester's Innovation Factory was repurposed and employed to produce statements for a year of funding acquisition and product development, and four subsequent years of trading. Inflation costs reflect the Bank of England's predicted Consumer Price Inflation rates, averaged over 5 years at 2.4%. Figures are broken down, by year in Table X (Bank of England, 2021).

| Year | CPI Projections |
|------|-----------------|
| 2022 | 3.5 |
| 2023 | 2.5 |
| 2024 | 2 |
| 2025 | 2 |
| 2026 | 2 |

Table 5.1 Projected CPI (2022-2026) (Bank of England, 2021)

It should be noted that future lockdowns or restrictions are not factored into the financial forecasts, and numbers represent a post-COVID business era.

5.1.2 FINANCIAL MODEL

5.2 FUNDING ACQUISITION

As a business in its infancy, ALTERNATEV is striving to gain a foothold in two competitive marketplaces, intending to lucratively straddle both the free-from and coffee markets.

Funding avenues will be pursued to support the development phase, however, as noted by Atherton, risking one’s own capital makes a business proposal more attractive to potential investors (Atherton, 2007). To this end, in the first year of activity, in addition to already acquired funding, the founder will invest £2,000 of their own savings in ALTERNATEV, to fund activities associated with product development and product launch, in accordance with the business development plan, outlined in section 4.2

In the first year, ALTERNATEV will seek to acquire funding from the following sources:

| Name | Provider | Application Deadline | Funding available (£) | Status |
|------------------------------------|----------------------------|----------------------|-----------------------|--------------------|
| Kickstarter Fund | Manchester Business School | 31 July 2019 | £500 | Funding Granted |
| Women in Innovation Awards 2022/23 | Innovate UK | 13 October 2022 | Up to £50,000 | Pending submission |
| Venture Further | Manchester Business School | 28 February 2022 | £12,000 | Pending submission |

Table 5.2 Sources of Finance

5.3 COSTS

5.3.1 START-UP COSTS

Start-up costs are defined as one-time expenses, incurred prior to the business generating income, and are not directly linked to the rewards from an innovative venture (Darnihamedani, Block, Hessels and Simonyan, 2018). ALTERNATEV LTD was incorporated as a Private Limited Company with Companies House on 6th August 2019, costing the founder £12. The domain 'ALTERNATEV.com' was acquired on 5th August 2019 at a cost of £20.51, inclusive of VAT, via Godaddy. Figure X provides details of the domain in question, valued at approximately £1,072, as of December 2021. These costs are not included in the financial model, given the length of time that has passed since purchase.

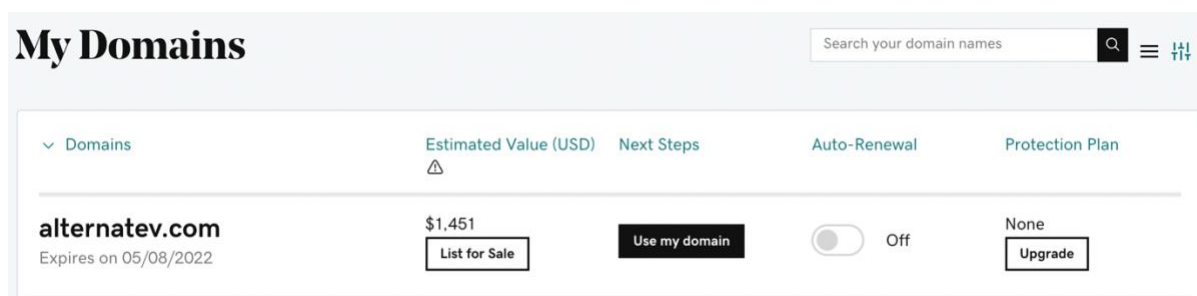


Figure 5.1 ALTERNATEV.com domain registry (Godaddy)

A trade mark application will be submitted to protect the name 'ALTERNATEV' at a cost of £220. To account for future expansion and potential penetration of markets outside those defined in this business plan, the application will include 2 distinct trademark classes, as delineated in Section 3.3.5.1.

5.3.2 FIXED COSTS

Fixed costs are recurrent costs that a business incurs, regardless of revenue, production quantity or business success. Fixed costs for ALTERNATEV will primarily pertain to ongoing renewals of domains, licenses, hosting, outsourced marketing, and property rental. Until such

a time that ALTERNATEV begins actively trading in Year 2, accounts will continue to be made up for a dormant company, and confirmation statements filed ONLINE at an annual, static fee of £13. Accounting will be undertaken by the founder in years 1 and 2. As the business grows in Years 3, 4 and 5, financial management activities will be appropriately delegated to a hired accountant, at £74.50 (£78.17) per month for a tailored package from The Accountancy Partnership (The Accountancy Partnership, 2022) (Table 5.3).

| | |
|--------------------|---------------------|
| Accountant Package | £49.50 |
| VAT Returns | £25.00 |
| Total | £74.50 / mth |

Table 5.3 Accountancy breakdown, based on 2022 prices

Insurance with Royal & Sun Alliance Insurance PLC, is quoted at £29.95, including tax for essential Public Liability cover, for the first five years, based on the business employing <5 individuals and turning over <£250,000.

| | |
|--|---------------|
| Monthly Premium | £26.74 |
| Insurance Premium Tax | £3.21 |
| Public and Product Liability - £2,000,000 limit - £250 excess | £13.68 |
| Portable and electronic equipment - £5,000 sum insured - £250 excess | £16.27 |

Table 5.4 Insurance breakdown (Royal & Sun Alliance Insurance plc, 2022)

Renewal of the domain 'ALTERNATEV.com' will cost £14.03 in 2022 for the first year, including VAT, via Godaddy. Domain privacy will be purchased alongside this renewal at £8.40 per year. A 'Choice Plus' 36-month, WordPress hosting subscription - including package extras (Table X) - through Bluehost will incur a fee of £271.65, for the first 36 months, renewing at an annual fee of £121.92 in year. Utilising existing website development skills, the founder will create and subsequently maintain ALTERNATEV's website using WordPress, with no incurred costs to the business.

| Package Information | 36 Month Price | 12 Month Price |
|---|----------------|----------------|
| Choice Plus Account Plan – Hosting Price | £198.01 | £48.28 |

Table 5.5 Choice Plus Hosting Package

| Package Extras | Price |
|-------------------------------|------------------|
| Bluehost SEO Tools Start | £17.63/yr |
| Single Domain SSL | £29.52/yr |
| SiteLock Security - Essential | £26.49/yr |
| Total | £73.64/yr |

Table 5.6 Hosting extras

Day rates for contractors are estimated at £400 per day, with fixed-term contracts covering the anticipated duration of activities. From Year 4 onwards, when the business begins generating profit, ALTERNATEV's founder will pay themselves a salary of £736.66 per month, taking the salary up to the secondary threshold of Secondary Threshold of £8,840 per annum, outside of National Insurance Contributions (1st Formations, 2022).

5.3.3. VARIABLE COSTS

Variable costs are conditional and driven by product demand; costs that change in direct proportion to a change in the level of activity. For ALTERNATEV, these include costs to manufacture, cost of packaging, tax, and distribution. As of 2021, ALTERNATEV has not begun production. Costs to manufacture for products have been difficult were source, given the scale of production of existing brands. Costs should therefore be interpreted with an element of caution and are subject to change. Table X provides a list of variable costs to the business:

| Variable Cost | Summary | Y1 | Y2 | Y3 | Y4 | Y5 |
|---------------|---|--|--|--|--|--|
| Manufacturing | Manufacturing costs are those incurred to produce the goods. This will include outsourcing and cost of components, comprise of coffee, milk alternative powders and natural flavourings. | In Year 1, manufacturing costs will not apply. Costs of goods for experimentation purposes will equate to £167, based on £50 worth of existing shelved products, £66.6 worth of coffee and £50 worth of alternative milk powders and flavourings | In Y2, manufacturing costs will not apply, however a cost of £60 per month will be incurred to utilise the premises at Manchester Met. | Manufacturing is outsourced prior to launch. | Manufacturing is scaled, subject to demand. | Manufacturing is scaled, subject to demand. |
| Packaging | Packaging is purchased in bulk, from sustainable retailers of boxes and sachets. To enable goods to be sent via mail, outer packaging will remain within dimensions of a large letter. Given a typical box will contain 8 sachets, packaging is calculated per box at £0.10 per item. | In Year 1, packaging will not be required. | In Year 2, trial packaging will be purchased for experimentation with products. | Packaging is outsourced to Manufacturer. | Packaging is outsourced to Manufacturer | Packaging is outsourced to Manufacturer |
| Distribution | Direct sales from the website, social media or otherwise will incur delivery costs of £ 1.29 per delivery (Royal Mail, 2021). | Distribution will not begin until Year 3. | Distribution will not begin until Year 3. | Distribution will be outsourced to manufacturer. | Distribution will be outsourced to manufacturer. | Distribution will be outsourced to manufacturer. |

| | | | | | | |
|-----------------|---|---|---|----------------------------|-----------------------------|-----------------------------|
| Taxes | From the financial year, 2021, corporation tax of 19% must be paid on all profits (GOV.UK, 2022). | ALTERNATEV will not incur taxes until Y3. | ALTERNATEV will not incur taxes until Y3. | 19% on all profits from Y3 | 19% on all profits from Y4. | 19% on all profits from Y5. |
| Value Added Tax | The standard VAT rate for goods and services is 20% (GOV.UK, 2022a) | VAT will not apply until Y3. | VAT will not apply until Y3. | 20% VAT on goods sold. | 20% VAT on goods sold. | 20% VAT on goods sold. |

Table 5.7 Variable costs table

5.1.1.1 COST OF GOODS SOLD

Production of ALTERNATEV’s products will be outsourced to manufacturers with appropriate equipment and expertise. Experimentation, packaging design and product development will be conducted internally. Components and ingredients will be sourced and outsourced to a manufacturer.

While it is difficult to estimate a breakdown of the cost of goods, given existing products are mass-produced, discussions with TASTEHEAD, a manufacturer, provided the following figures, based on the production of 500 boxes of lattes, with 8 sachets per box (4000 sachets), each weighing 7.5g (30kg of product), with 3g of coffee (12kg) and 4.5g of milk alternative powders, stabilisers, and flavourings (18kg) (Tastehead, 2022). Boxes are assigned a retail value of £4. Production in the first three years will focus on cappuccinos, lattes and cortados, as per

| Manufacturing | Cost |
|--|--------------------------|
| Production | £75.00 |
| Packaging and barcodes | £45.00 |
| Speciality coffee | £80.00 (£6.666 per kilo) |
| Additional components (milk powder etc.) | £60 (£3.333 per kilo) |
| Total | £260 |
| Margin | £1740 |

Table 5.8 Cost to product 500 boxes of 8 sachets

Breaking these figures down to calculate the cost to produce a single box gives the following:

| Manufacturing | Cost |
|--|-------------|
| Production | £0.15 |
| Packaging and barcodes | £0.09 |
| Speciality coffee | £0.16 |
| Additional components (soya powder etc.) | £0.12 |
| Total | £0.52 |
| Margin | £3.48 |

Table 5.9 Costs to product 1 box of 8 sachets

5.1.2 PROJECTED SALES

Table 5.10 displays the forecasted sales for ALTERNATEV's first three years of operation, starting in Y3. Sales in Y3 are expected to equal 300 boxes per month, from month 2, with distribution limited to online and selling and smaller brick and mortar stores. Y4's sales are projected to increase to 2000 boxes per month with greater emphasis on marketing and an assumed stocking of products in larger stores and supermarkets. On the assumption that supermarket penetration is successful, Year 5 is expected to see 4000 boxes per month. Projected sales indicate that in the Year 3, ALTERNATEV products will generate revenue of £13,200, increasing to £96,000 with upscaling of production. Year 5 is then expected to see ALTERNATEV achieve £192,000 in revenue.

| Product | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |
|--------------------|--------|---------|--------|---------|--------|------------|--------|-------------|--------|-------------|
| | Units | Revenue | Units | Revenue | Units | Revenue | Units | Revenue | Units | Revenue |
| Cappuccino sachets | 0 | £0.00 | 0 | £0.00 | 1100 | £4,400.00 | 16000 | £64,000.00 | 40000 | £160,000.00 |
| Latte sachets | 0 | £0.00 | 0 | £0.00 | 1100 | £4,400.00 | 16000 | £64,000.00 | 40000 | £160,000.00 |
| Cortado sachets | 0 | £0.00 | 0 | £0.00 | 1100 | £4,400.00 | 16000 | £64,000.00 | 40000 | £160,000.00 |
| Total | 0 | £0.00 | 0 | £0.00 | 3300 | £13,200.00 | 48000 | £192,000.00 | 48000 | £480,000.00 |

Table 5.10 Projected sales (Y1-5)

5.2 CASH FLOWS

Monthly cash flows are described as the inputs and outputs of money to the organisation. Inputs detailed are broken down by sales, founder investments and grants. The following tables (Table 5.11 – Table 5.15) show a breakdown of cashflow, for each year.

| CASH FLOW | Q1 | | | Q2 | | | Q3 | | | Q4 | | | |
|------------------------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Apr-22 | May-22 | Jun-22 | Jul-22 | Aug-22 | Sep-22 | Oct-22 | Nov-22 | Dec-22 | Jan-23 | Feb-23 | Mar-23 | Total |
| Fixed costs | £1,245.1 | £30.0 | £30.0 | £30.0 | £65.4 | £30.0 | £30.0 | £30.0 | £30.0 | £30.0 | £30.0 | £30.0 | £1,610.0 |
| Variable costs | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 |
| TOTAL OUTPUT | £1,245.1 | £30.0 | £30.0 | £30.0 | £65.4 | £30.0 | £30.0 | £30.0 | £30.0 | £30.0 | £30.0 | £30.0 | £1,610.0 |
| FUNDING | £2,500.0 | £12,000.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £5,000.0 | £0.0 | £0.0 | £0.0 | £0.0 | £19,500.0 |
| TOTAL INPUT | £2,500.0 | £12,000.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £5,000.0 | £0.0 | £0.0 | £0.0 | £0.0 | £19,500.0 |
| Profit | £1,254.9 | £11,970.1 | -£30.0 | -£30.0 | -£65.4 | -£30.0 | -£30.0 | £4,970.1 | -£30.0 | -£30.0 | -£30.0 | -£30.0 | £17,890.0 |
| Opening Balance | £500.0 | £1,754.9 | £13,724.9 | £13,695.0 | £13,665.0 | £13,599.7 | £13,569.7 | £13,539.8 | £18,509.8 | £18,479.9 | £18,449.9 | £18,420.0 | |
| Closing Balance | £1,754.9 | £13,724.9 | £13,695.0 | £13,665.0 | £13,599.7 | £13,569.7 | £13,539.8 | £18,509.8 | £18,479.9 | £18,449.9 | £18,420.0 | £18,390.0 | |

Table 5.11 Y1 Cashflow statement

| CASH FLOW | Q1 | | | Q2 | | | Q3 | | | Q4 | | | |
|------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Apr-23 | May-23 | Jun-23 | Jul-23 | Aug-23 | Sep-23 | Oct-23 | Nov-23 | Dec-23 | Jan-24 | Feb-24 | Mar-24 | Total |
| Fixed costs | £137.8 | £90.7 | £90.7 | £90.7 | £126.6 | £90.7 | £90.7 | £90.7 | £90.7 | £90.7 | £90.7 | £90.7 | £1,171.1 |
| Variable costs | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 |
| TOTAL OUTPUT | £137.8 | £90.7 | £90.7 | £90.7 | £126.6 | £90.7 | £90.7 | £90.7 | £90.7 | £90.7 | £90.7 | £90.7 | £1,171.1 |
| FUNDING | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 |
| TOTAL INPUT | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 |
| Profit | -£137.8 | -£90.7 | -£90.7 | -£90.7 | -£126.6 | -£90.7 | -£90.7 | -£90.7 | -£90.7 | -£90.7 | -£90.7 | -£90.7 | -£1,171.1 |
| Opening Balance | £18,390.0 | £18,252.2 | £18,161.5 | £18,070.9 | £17,980.2 | £17,853.5 | £17,762.9 | £17,672.2 | £17,581.5 | £17,490.9 | £17,400.2 | £17,309.5 | |
| Closing Balance | £18,252.2 | £18,161.5 | £18,070.9 | £17,980.2 | £17,853.5 | £17,762.9 | £17,672.2 | £17,581.5 | £17,490.9 | £17,400.2 | £17,309.5 | £17,218.9 | |

Table 5.12 Y2 Cashflow statement

| CASH FLOW | Q1 | | | Q2 | | | Q3 | | | Q4 | | | |
|------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Apr-24 | May-24 | Jun-24 | Jul-24 | Aug-24 | Sep-24 | Oct-24 | Nov-24 | Dec-24 | Jan-25 | Feb-25 | Mar-25 | Total |
| Fixed costs | £156.7 | £109.6 | £109.6 | £109.6 | £146.1 | £109.6 | £109.6 | £109.6 | £109.6 | £109.6 | £109.6 | £109.6 | £1,398.5 |
| Variable costs | £156.0 | £156.0 | £581.4 | £1,781.4 | £575.2 | £581.4 | £581.4 | £1,781.4 | £581.4 | £581.4 | £581.4 | £581.4 | £8,519.5 |
| TOTAL OUTPUT | £312.7 | £265.6 | £690.9 | £1,890.9 | £721.3 | £690.9 | £690.9 | £1,890.9 | £690.9 | £690.9 | £690.9 | £690.9 | £9,918.0 |
| FUNDING | £0.0 | £1,200.0 | £1,200.0 | £1,200.0 | £1,200.0 | £1,200.0 | £1,200.0 | £1,200.0 | £1,200.0 | £1,200.0 | £1,200.0 | £1,200.0 | £13,200.0 |
| TOTAL INPUT | £0.0 | £1,200.0 | £1,200.0 | £1,200.0 | £1,200.0 | £1,200.0 | £1,200.0 | £1,200.0 | £1,200.0 | £1,200.0 | £1,200.0 | £1,200.0 | £13,200.0 |
| Profit | -£156.7 | £1,090.4 | £1,090.4 | £1,090.4 | £1,053.9 | £1,090.4 | £1,090.4 | £1,090.4 | £1,090.4 | £1,090.4 | £1,090.4 | £1,090.4 | £7,529.5 |
| Opening Balance | £17,218.9 | £17,062.1 | £18,152.6 | £19,243.0 | £20,333.4 | £21,387.3 | £22,477.8 | £23,568.2 | £24,658.6 | £25,749.1 | £26,839.5 | £27,929.9 | |
| Closing Balance | £17,062.1 | £18,152.6 | £19,243.0 | £20,333.4 | £21,387.3 | £22,477.8 | £23,568.2 | £24,658.6 | £25,749.1 | £26,839.5 | £27,929.9 | £29,020.3 | |

Table 5.13 Y3 Cashflow statement

| CASH FLOW | Q1 | | | Q2 | | | Q3 | | | Q4 | | | |
|------------------------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|
| | Apr-25 | May-25 | Jun-25 | Jul-25 | Aug-25 | Sep-25 | Oct-25 | Nov-25 | Dec-25 | Jan-26 | Feb-26 | Mar-26 | Total |
| Fixed costs | £944.3 | £848.9 | £848.9 | £848.9 | £885.9 | £848.9 | £848.9 | £848.9 | £848.9 | £848.9 | £848.9 | £848.9 | £10,318.8 |
| Variable costs | £7,512.7 | £5,038.9 | £5,038.9 | £5,038.9 | £5,032.6 | £5,038.9 | £5,038.9 | £7,528.9 | £5,038.9 | £5,038.9 | £5,038.9 | £5,038.9 | £65,424.2 |
| TOTAL OUTPUT | £8,457.0 | £5,887.8 | £5,887.8 | £5,887.8 | £5,918.5 | £5,887.8 | £5,887.8 | £8,377.8 | £5,887.8 | £5,887.8 | £5,887.8 | £5,887.8 | £75,743.0 |
| FUNDING | £16,000.0 | £16,000.0 | £16,000.0 | £16,000.0 | £16,000.0 | £16,000.0 | £16,000.0 | £16,000.0 | £16,000.0 | £16,000.0 | £16,000.0 | £16,000.0 | £192,000.0 |
| TOTAL INPUT | £16,000.0 | £16,000.0 | £16,000.0 | £16,000.0 | £16,000.0 | £16,000.0 | £16,000.0 | £16,000.0 | £16,000.0 | £16,000.0 | £16,000.0 | £16,000.0 | £192,000.0 |
| Profit | £11,015.7 | £14,111.1 | £14,111.1 | £14,111.1 | £14,074.1 | £14,111.1 | £14,111.1 | £11,111.1 | £14,111.1 | £14,111.1 | £14,111.1 | £14,111.1 | £163,201.2 |
| Opening Balance | £29,020.3 | £40,036.0 | £54,147.2 | £68,258.3 | £82,369.5 | £96,443.5 | £110,554.7 | £124,665.8 | £135,776.9 | £149,888.1 | £163,999.2 | £178,110.4 | |
| Closing Balance | £40,036.0 | £54,147.2 | £68,258.3 | £82,369.5 | £96,443.5 | £110,554.7 | £124,665.8 | £135,776.9 | £149,888.1 | £163,999.2 | £178,110.4 | £192,221.5 | |

Table 5.14 Y4 Cashflow statement

| CASH FLOW | Q1 | | | Q2 | | | Q3 | | | Q4 | | | |
|------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | Apr-26 | May-26 | Jun-26 | Jul-26 | Aug-26 | Sep-26 | Oct-26 | Nov-26 | Dec-26 | Jan-27 | Feb-27 | Mar-27 | Total |
| Fixed costs | £947.0 | £851.6 | £851.6 | £851.6 | £889.2 | £851.6 | £851.6 | £851.6 | £851.6 | £851.6 | £851.6 | £851.6 | £10,351.7 |
| Variable costs | £15,044.2 | £12,060.5 | £12,060.5 | £12,060.5 | £18,054.1 | £12,060.5 | £12,060.5 | £12,060.5 | £12,060.5 | £12,060.5 | £12,060.5 | £12,060.5 | £153,703.0 |
| TOTAL OUTPUT | £15,991.2 | £12,912.0 | £12,912.0 | £12,912.0 | £18,943.3 | £12,912.0 | £12,912.0 | £12,912.0 | £12,912.0 | £12,912.0 | £12,912.0 | £12,912.0 | £164,054.7 |
| FUNDING | £40,000.0 | £40,000.0 | £40,000.0 | £40,000.0 | £40,000.0 | £40,000.0 | £40,000.0 | £40,000.0 | £40,000.0 | £40,000.0 | £40,000.0 | £40,000.0 | £480,000.0 |
| TOTAL INPUT | £40,000.0 | £40,000.0 | £40,000.0 | £40,000.0 | £40,000.0 | £40,000.0 | £40,000.0 | £40,000.0 | £40,000.0 | £40,000.0 | £40,000.0 | £40,000.0 | £480,000.0 |
| Profit | £39,789.7 | £39,885.1 | £39,885.1 | £39,885.1 | £39,847.4 | £39,885.1 | £39,885.1 | £39,885.1 | £39,885.1 | £39,885.1 | £39,885.1 | £39,885.1 | £435,688.3 |
| Opening Balance | £192,221.5 | £232,011.2 | £271,896.3 | £311,781.4 | £351,666.5 | £391,513.9 | £431,399.0 | £471,284.1 | £511,169.2 | £551,054.3 | £590,939.5 | £630,824.6 | |
| Closing Balance | £232,011.2 | £271,896.3 | £311,781.4 | £351,666.5 | £391,513.9 | £431,399.0 | £471,284.1 | £511,169.2 | £551,054.3 | £590,939.5 | £630,824.6 | £670,709.7 | |

Table 5.15 Y5 Cashflow statement

5.2.1 END OF YEAR BALANCE SHEET

Table 5.16 presents the end of year balance sheet for ALTERNATEV, per year.

| | Year ending | | | | |
|------------------------------|-------------|------------|------------|-------------|-------------|
| | Mar-23 | Mar-24 | Mar-25 | Mar-26 | Mar-27 |
| Assets | £18,390.01 | £17,218.9 | £29,020.30 | £192,221.49 | £480,000.00 |
| Liabilities | £0.00 | £0.00 | £4,247.52 | £46,944.20 | £119,742.99 |
| Net Assets | £18,390.01 | £17,218.9 | £24,772.78 | £145,277.29 | £360,257.01 |
| Preceding year profit | £0.00 | £18,390.01 | -£1,171.1 | £13,200.00 | £163,201.20 |
| Current year profit | £18,390.01 | -£1,171.1 | £13,200.00 | £163,201.20 | £435,688.25 |
| Net worth | £18,390.01 | £17,218.90 | £36,801.63 | £321,678.49 | £959,146.46 |

Table 5.16 End of year balance sheet

5.2.2 NET INCOME

Based on an analysis of the profit and loss statement, net income for the end of each year is outlined in Table 5.17:

| | Year ending | | | | |
|----------------------------|-------------|-----------|------------|-------------|-------------|
| | Mar-23 | Mar-24 | Mar-25 | Mar-26 | Mar-27 |
| Current year profit | £18,390.01 | -£1,171.1 | £13,200.00 | £163,201.20 | £435,688.25 |

Table 5.17 Net income based on profit / loss statement

5.3 BREAKEVEN ANALYSIS

A breakeven analysis was conducted to ascertain at what point the company will break even, based on the company beginning trading in month 2 of Year 3. The breakeven point is calculated at 1208 units (Month 2, Year 3).

$$\frac{4719.7}{(4-0.52)} = 1208$$

6 CONCLUSION

6.1 VIABILITY

The business plan developed for ALTERNATEV depicts a viable business opportunity to be pursued. The free-from and coffee markets in which ALTERNATEV intends to operate look to be prosperous and fruitful, with innovation driving consumption. Research conducted in Volume I sought to understand why people are making changes to their dairy consumption, enabling ALTERNATEV to adopt a targeted, segmented marketing approach. Financial forecasts also look positive. Despite being speculative, production costs are low, and margin high. While experimentation in the first two years will be crucial to the development of a fit-for-market product with qualities and attributes that exceed that of existing products, ALTERNATEV is set to generate profit early on; with profit in Year 5 expected to reach over £400,000.

6.2 RISKS

Due to the nature of ALTERNATEV's start-up status, and threat of innovation from existing market incumbents, there are several risks associated with the business. Acquisition of funding may fail, in which case, ALTERNATEV's financial projections would paint a different picture. Moreover, the ongoing pandemic-stimulated disruption could limit manufacturing capabilities or delay the development process. Management of these risks, as part of the company's wider strategy will be fundamental to success.

6.3 CRITICAL SUCCESS FACTORS

Critical Success Factors for ALTERNATEV are its manufacturing operations, branding, and maintenance of quality, in line with the values of the consumer. Given ALTERNATEV will be operating in the free-from space, which includes those with legitimate dietary conditions, extra care must be taken to ensure products adhere to the regulations. Continuous value

must also be generated, to promote repeat purchases and retain consumers, in markets where consumers have the upper hand.

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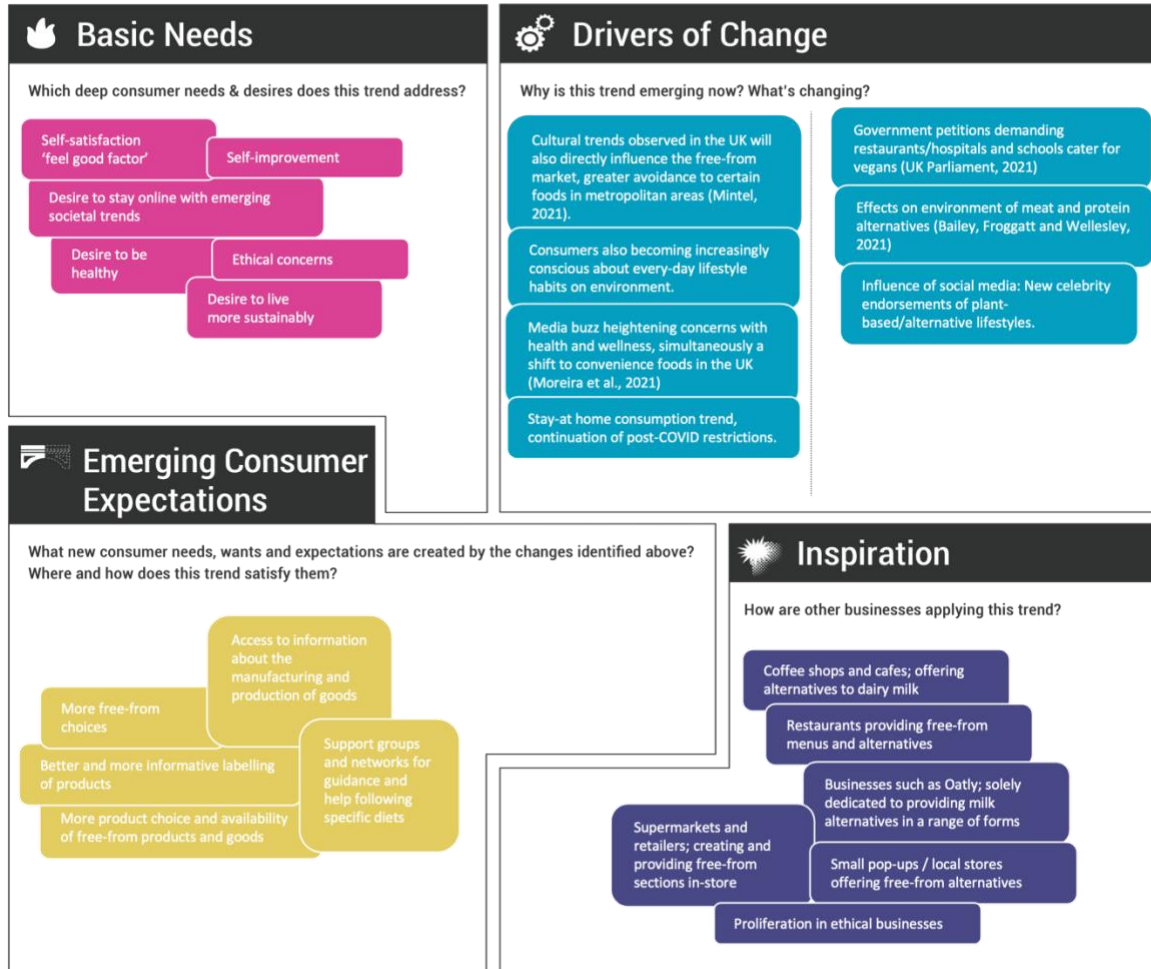
APPENDIX

APPENDIX A: ALTERNATEV STAKEHOLDER GROUPS

| Key Stakeholder | Example | Power | Interest | Group | Values/Perspectives |
|-----------------|---|--------|------------|------------------------------------|--|
| Customers | B2C: Individuals with dietary requirements, individuals making dairy-free choices | High | High | Primary, Direct External | Value high quality, affordable products that are free from prohibited/allergenic ingredients. Concerned with convenience, accessibility, and simplicity. |
| | B2B: Hotel businesses, train companies, other businesses serving instant coffee | High | High | Primary, Direct External | Value quality product with longevity, convenience, and instant aspect. Want to appeal to all consumers. |
| Competitors | Other producers of free-from products; coffee and otherwise | Low | Low | Secondary, Indirect External | Value serving quality coffee. Shared customer base. Collaborative competition. |
| Owners | Founder | High | High | Primary, Direct Internal | Benefits directly from success of company. Personal incentives. |
| Associates | Future associated, brought in on fixed contract terms | High | High | Primary, Direct Internal | Appropriate day rates - financial continuity. Require some benefits. |
| Financiers | Potential investors, grants | High | Medium | Primary, Direct External | Establish and maintain long-term growth and profit creation. May demand some form of return. |
| Suppliers | Coffee suppliers, powdered milk alternative providers | High | Low-Medium | Primary, Indirect External | Want to establish long term growth and consistent relationship with company. Value sustainability of community and quality of coffee. Require financial continuity. |
| Manufacturers | Free-from manufacturers | High | Medium | Primary, Indirect External | Want to establish long term growth and consistent relationship with company. Require financial continuity. |
| Non-Govt. Orgs | Vegan activist groups | Medium | Medium | Secondary, Indirect External | Value ethical business operations |
| Local community | Free-from community groups, vegan organisations, environmental organisations | Low | Medium | Secondary, Indirect External | Social values in line with that of opportunity. Value sustainability and environmentally friendly business practices. |
| Govt. Orgs | Food Standards Agencies, Policy makers | High | Low | Secondary, Indirect External | Ensuring regulations are met and legislations adhered to. Taxations and policy regulations |

APPENDIX B: CONSUMER TREND CANVAS

1. ANALYZE



2. APPLY



APPENDIX C: FULL SURVEY

| Survey Information - General | | | |
|---|---|-----------------|------------------|
| Title | Alternatev Business Opportunity Survey | | |
| Survey ID | SV_3D8rL09hwwK3fPU | | |
| Survey Link | https://www.qualtrics.manchester.ac.uk/jfe/form/SV_3D8rL09hwwK3fPU | | |
| Status | Open | | |
| Language | English (Standard) | | |
| Owners | Camille Corti-Georgiou | | |
| Start Date Time | 15/07/2021 15:26:43 | | |
| End Date Time | 14/08/2021 15:26:43 | | |
| Date Launched | 200 | | |
| Responses | | | |
| Valid Responses | 112 | | |
| Survey Information - Access | | | |
| Authentication | Anonymous | | |
| Max # Responses | Unlimited | | |
| # responses per User | 1 | | |
| Timed Survey | Not Timed | | |
| Question no. | Question | Mandatory (Y/N) | Response measure |
| Section 1 – Participant information and consent | | | |
| <p>Dear Participant,</p> <p>I invite you to take part in the following research project as part of my Masters dissertation. Before deciding whether to participate, it is important you understand why the research is being undertaken and what it will involve. Please take time to read the following information carefully.</p> <p>This project is about a potential free-from instant coffee opportunity. If you continue with participation, you are consequently agreeing to the non-disclosure of information and ideas contained within, that are not currently in the public domain. The purpose of the research is to validate free-from product consumption and coffee drinking assumptions associated with this study. To participate, you will be asked to confirm you adhere to two or more of the listed criteria:</p> <ul style="list-style-type: none"> - Coffee drinker - Consumed or purchased instant coffee product (i.e latte pods / sachets) in last 30 days | | | |

- Milk/lactose avoidance
- Consumer of free-from products

The data collected will be used solely for the purpose of a student assignment. It is up to you to decide whether to take part. If you decide to take part, you are still free to withdraw at any time without giving a reason and without detriment to yourself. Information you choose to share for the purpose of the interview will be anonymous. Please ask if there is anything that is not clear or if you would like more information.

The Ethics Committees at the University of Manchester and Alliance Manchester Business School have jointly approved this research. The research is of sufficient standard and complies with the relevant legislation and all statutory and other guidance set out by the Committees. Data gathered will be securely stored at the University of Manchester. Please see the Privacy Notice for details of how the University stores data from research: <http://documents.manchester.ac.uk/display.aspx?DocID=37095>

All data obtained will be fully anonymised and may be shared or published to allow re-use in future research. These anonymised data will not allow you to be identified or become identifiable. Please note, it is not possible to remove your data from the project once it has been anonymised and prepared for analysis.

The survey comprises 30 questions. The first section will ask basic demographic questions, followed by your current coffee drinking behaviours. You will then be asked about any food avoidances, free-from purchasing and finally your opinions on a free-from coffee opportunity. Please answer as truthfully as you can.

If you have any questions, concerns or comments about the research or questionnaire itself, please feel free to contact me.

Thank you in advance for your participation.

Yours,

Camille Corti-Georgiou

Camille.corti-georgiou@postgrad.manchester.ac.uk

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| 32. | I confirm that I have read and understood the information for the above study and have had the opportunity to consider the information and ask questions and had these answered satisfactorily. | Yes | MULTIPLE CHOICE – Allow once answer iii. Yes iv. No → Survey terminated. |
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| 33. | I understand that my participation in the study is voluntary and that I am free to withdraw at any time without giving a reason and without detriment to myself. I understand that it will not be possible to remove my data from the project once it has been anonymised and forms part of the data set. I agree to take part on this basis. | Yes | MULTIPLE CHOICE – Allow once answer iii. Yes iv. No → Survey terminated. |
| 34. | I understand that some of the information in this survey is not currently in the public domain and is commercially sensitive, and I agree not to share this information. | Yes | MULTIPLE CHOICE – Allow once answer ii. Yes iii. No → Survey terminated. |
| 35. | You must be over the age of 18 to participate in this study, please confirm you are over 18. | Yes | MULTIPLE CHOICE – Allow once answer i. Yes ii. No → Survey terminated. |
| 36. | This study is looking at behaviours and attitudes amongst the UK populace. Please confirm you currently reside in the UK. | Yes | MULTIPLE CHOICE – Allow once answer i. Yes ii. No → Survey terminated. |
| 37. | To continue with this survey, please confirm you meet at least 2 of the following criteria: 1. Coffee drinker 2. Consumed or purchased instant coffee product (i.e latte pods / sachets) in last 30 days | Yes | MULTIPLE CHOICE – Allow once answer i. Yes ii. No → Survey terminated. |

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| | 3. Milk/lactose avoidance 4. Consumer of free-from products | | |
| Coffee Drinking | | | |
| Before moving onto more specific questions, please answer the following regarding coffee drinking, including decaffeinated. Please choose the option/s that best reflect your behaviour at this moment in time (July/August 2021). | | | |
| 38. | Do you consider yourself a coffee drinker? <i>This includes decaffeinated.</i> | Yes | MULTIPLE CHOICE – Allow once answer iv. Yes v. No → Skip to....22 |
| 39. | On an average day, how many standard cups of coffee do you consume? | Yes | MULTIPLE CHOICE – Allow once answer iv. <1 v. 1-2 vi. 3-4 vii. >5 |
| 40. | In the last 30 days, which of the following type/s of coffee have you drunk/bought, both for consumption in and out of the home? <i>Please select all that apply.</i> | Yes | MULTIPLE CHOICE – Allow multiple answers iv. Latte v. Macchiato vi. Cortado vii. Americano (black/white) viii. Cappuccino ix. Espresso x. Flat White xi. Mocha xii. Iced (any) xiii. Other, please specify |
| 41. | Thinking about home consumption of coffee only, in the last 30 days, which of the following have you drunk/brought? | Yes | MULTIPLE CHOICE – Allow multiple answers iv. Fresh ground coffee (any grade) v. Instant / freeze-dried e.g., Milicano vi. Instant mixes / sachets (i.e cappuccino, latte etc) |

| | | | |
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| | | | <ul style="list-style-type: none"> vii. Home-machine coffee pods (Nespresso, Dolce) viii. Canned / cartoned (pre-made) ix. Other, please specify x. None |
| 42. | <p>When buying coffee for consumption at home, which of the following factors do you deem most important?</p> <p><i>Please select 3 attributes from the list provided.</i></p> | Yes | <p>MULTIPLE CHOICE – Allow multiple answers</p> <ul style="list-style-type: none"> i. Price ii. Transparency iii. Brand iv. Traceability v. Type vi. Quality (grade) vii. Availability / ease of access viii. Ethical considerations ix. Health considerations i.e low calorie / low sugar |
| 43. | <p>Are there any other factors not listed above you consider important when buying coffee?</p> | No | TEXT ENTRY |
| 44. | <p>Thinking about the last 18 months and the imposed national lockdowns, would you say your home coffee drinking habits have changed at all (i.e frequency, type, quantity)?</p> | Yes | <p>MULTIPLE CHOICE – Allow once answer</p> <ul style="list-style-type: none"> i. Yes → Please provide details ii. No |
| 45. | <p>Acknowledging that we are still coming out of lockdown, and restrictions still apply, how often would you say you currently purchase coffee from designated coffee shops i.e Costa?</p> | Yes | <p>MULTIPLE CHOICE – Allow once answer</p> <ul style="list-style-type: none"> x. Every day xi. Every 2-3 days xii. Every 4-5 days xiii. About once a week xiv. Every 2-3 weeks xv. About once a month |

| | | | |
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| | | | xvi. Less often than once a month xvii. Never |
| 46. | Acknowledging that we are still coming out of lockdown, and restrictions still apply, how frequently, if ever do you use coffee vending machines i.e Costa Express? | Yes | MULTIPLE CHOICE – Allow once answer i. Every day ii. Every 2-3 days iii. Every 4-5 days iv. About once a week v. Every 2-3 weeks vi. About once a month vii. Less often than once a month viii. Never |
| Dietary Avoidances | | | |
| The questions in this section of this survey are intended to investigate ingredient avoidance. | | | |
| 47. | Thinking about your diet, do you – for any reason - actively avoid or limit your consumption of dairy or lactose as part of a diet or lifestyle? | Yes | MULTIPLE CHOICE – Allow once answer i. Yes ii. No → Skip to 22 |
| 48. | If you answered yes, what are your reasons for avoidance? <i>Please select all that apply.</i> | No | MULTIPLE CHOICE – Allow multiple answers i. Dislike taste ii. Environmental impacts iii. Animal welfare iv. I want to prevent future health problems v. I want to better my current health vi. To lose weight vii. Lactose intolerance viii. Milk allergy ix. Other health or digestive problems |

| | | | |
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| | | | <ul style="list-style-type: none"> x. Access / availability of dairy products i.e fresh milk xi. Financial reasons xii. Other, please specify |
| Free-from Purchasing Behaviour | | | |
| This section intends to explore your attitudes and behaviours regarding free-from dairy products. Please choose the option/s that best reflect your behaviour at this moment in time (July/August 2021). | | | |
| 49. | Regardless of whether you avoid ingredients or not, have you ever brought products branded as free-from dairy or lactose ? i.e almond milk | Yes | <p>MULTIPLE CHOICE – Allow once answer</p> <ul style="list-style-type: none"> i. Yes ii. No → Skip to 26 |
| 50. | How frequently, if ever, do you purchase or opt for dairy / lactose free products? | Yes | <p>MULTIPLE CHOICE – Allow once answer</p> <ul style="list-style-type: none"> i. Every day ii. Every 2-3 days iii. Every 4-5 days iv. About once a week v. Every 2-3 weeks vi. About once a month vii. Less often than once a month |
| 51. | Which of the following channels do you tend to buy dairy / lactose products from? <i>Please select all that apply.</i> | Yes | <p>MULTIPLE CHOICE – Allow multiple answers</p> <ul style="list-style-type: none"> i. Online (inc. large supermarkets and Amazon Fresh) ii. Independent / local stores iii. Health & Wellbeing Stores (i.e Holland & Barrett) iv. In-store supermarkets v. Other, please specify |
| 52. | Do you feel the range of free-from dairy products both available and accessible to you is sufficient to meet your needs? | Yes | <p>MULTIPLE CHOICE – Allow once answer</p> <ul style="list-style-type: none"> i. Yes ii. No → Please provide details |
| Free-from Instant Coffee | | | |

The final section asks about a commercial opportunity for free-from instant coffee. Please take a moment to read the following information providing an overview of the business:

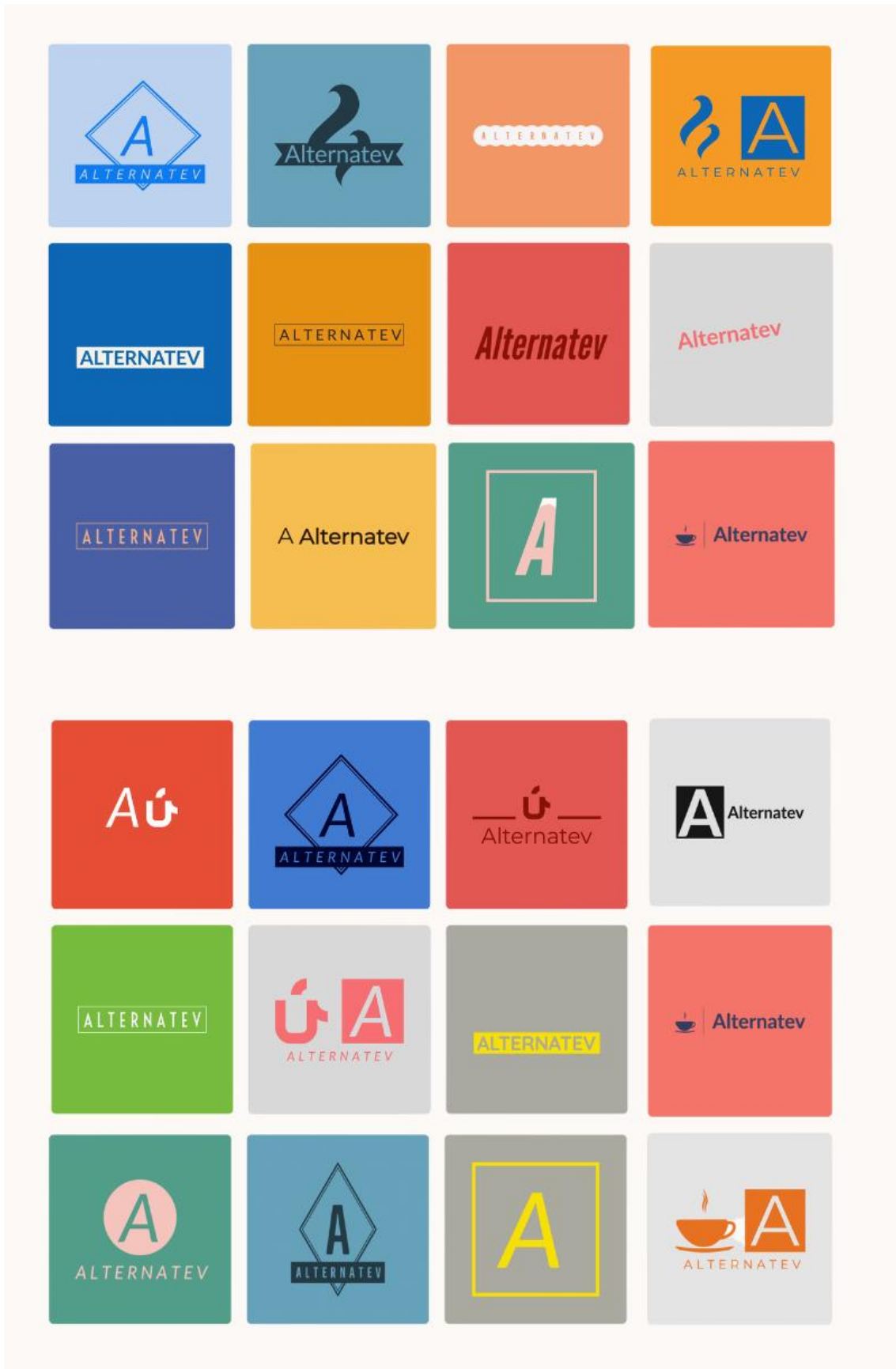
Alternatev provides high quality dairy/allergen/sugar-free instant coffee alternatives, created using ethically sourced and sustainable ingredients and packaging, developed for commercial and individual use. Initially, Alternatev will focus on coffee sachets and pods to be consumed at home, with the intention to expand into over beverages and other modes of distribution, such as public coffee vending machines.

Please note, this section provides commercially sensitive information.

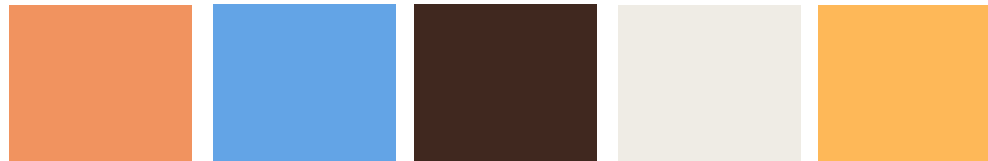
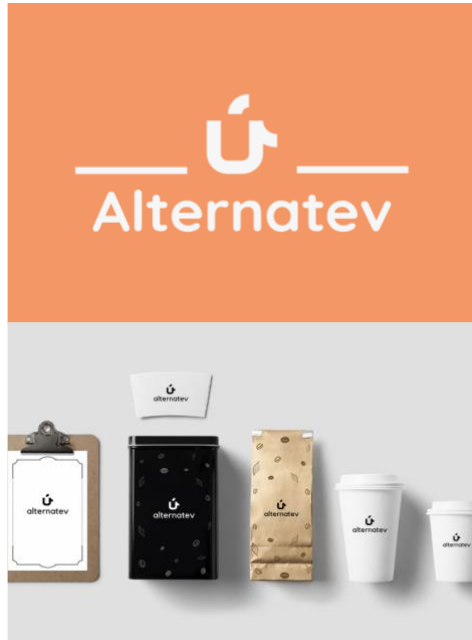
| | | | |
|-----|---|-----|--|
| 53. | <p>If you answered no to having ever purchased free-from products, have you ever purchased free-from, or would you ever consider purchasing free-from products?</p> <p><i>If you purchase free-from products already, please select N/A.</i></p> | Yes | <p>MULTIPLE CHOICE – Allow once answer</p> <p>xi. Yes</p> <p>xii. No → Please provide details</p> <p>xiii. N/A</p> |
| 54. | <p>This business plan is exploring a potential market opportunity to develop a range of free-from instant coffee products. As a consumer, how interested would you be interested in such a product?</p> <p><i>Please rate your interest on a scale of 1-5, where 1 = Extremely interested and 5 = Not at all interested</i></p> | Yes | <p>RANK ORDER</p> <p>i. 1 = Extremely interested</p> <p>ii. 2 = Somewhat interested</p> <p>iii. 3 = Neutral</p> <p>iv. 4 = Not very interested</p> <p>v. 5 = Not at all interested → Skip to end of survey</p> |
| 55. | Alternatev is considering a range of free-from coffee | Yes | MULTIPLE CHOICE – Allow multiple answers |

| | | | |
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| | <p>products, including sachet mixes, coffee pods and coffee vending machines. Please indicate which of the following you would be interested in buying / using as a consumer.</p> <p><i>Please select all that apply.</i></p> | | <ul style="list-style-type: none"> v. Instant mixes / sachets (i.e cappuccino, latte etc) vi. Home-machine coffee pods (Nespresso, Dolce) vii. Canned / cartoned (pre-made) viii. Independent at-home coffee machine ix. Public coffee vending machine x. None |
| 56. | <p>If you currently consume / opt for regular versions of any of these products, would you consider switching to a free-from version?</p> <p><i>If you don't currently purchase or consume these products, please select N/A.</i></p> | Yes | <p>MULTIPLE CHOICE – Allow once answer</p> <ul style="list-style-type: none"> vi. Yes vii. No → Please give details viii. N/A |
| 57. | <p>Which of the following attributes would you deem most important in a range of new free-from coffee products?</p> <p><i>Please select 3 attributes.</i></p> | Yes | <p>MULTIPLE CHOICE – Allow multiple answers</p> <ul style="list-style-type: none"> i. Price matched with existing products ii. Ingredient transparency iii. Accessibility / availability iv. Sustainability / environmentally friendly v. High quality coffee (grade) vi. Options i.e range of products vii. Healthy – low calorie / nutritionally fortified viii. Other, please specify |
| End of survey. Thank you for participating. | | | |

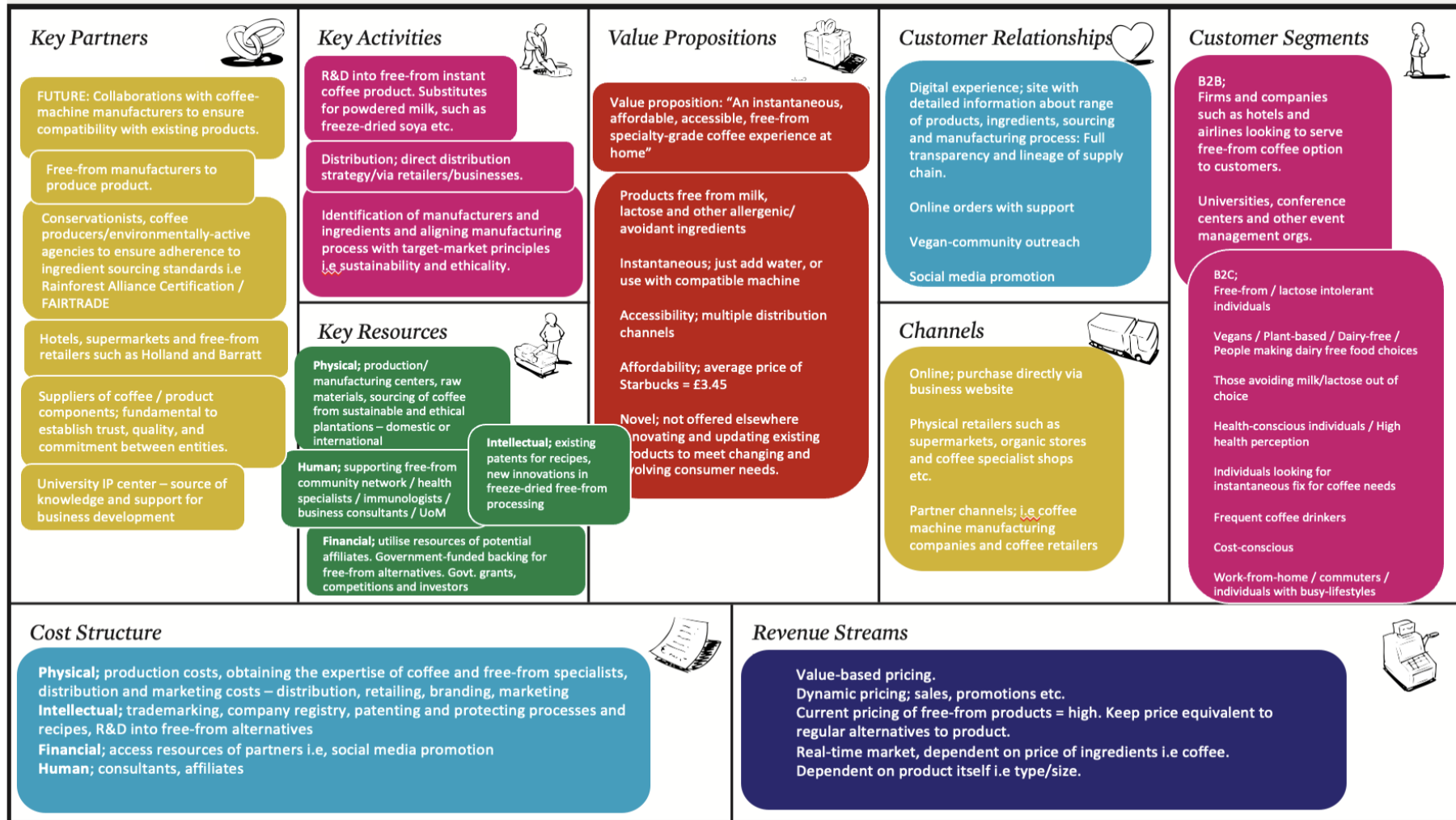
APPENDIX D: LOGO DESIGNS



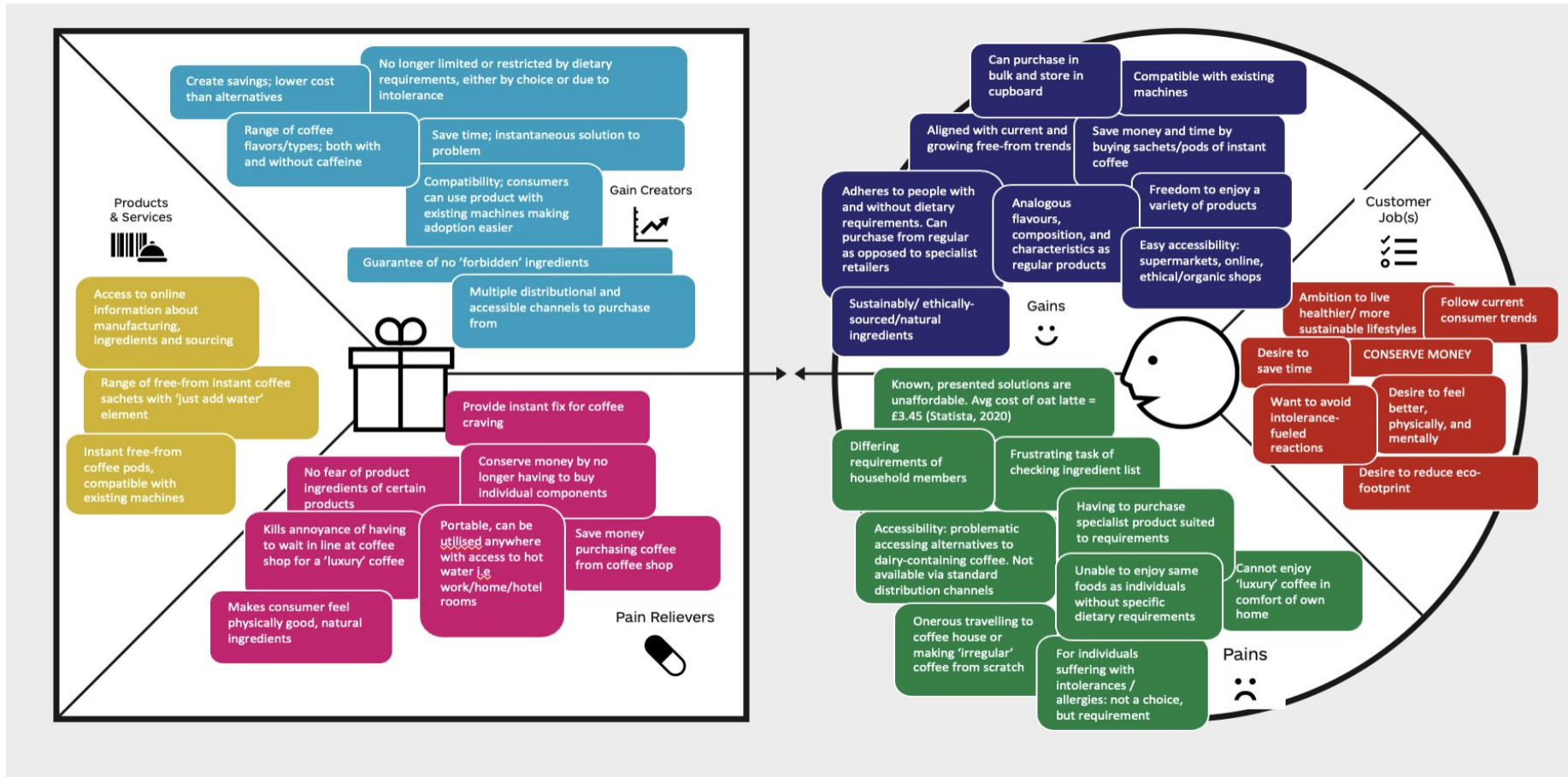
APPENDIX E: BRAND MOODBOARD



APPENDIX F: BUSINESS MODEL CANVAS



APPENDIX G: VALUE PROPOSITION CANVAS



APPENDIX H: CASHFLOW STATEMENTS

| | Y1 CASHFLOW STATEMENT | | | | | | | | | | | | |
|----------------------------|-----------------------|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|-----------------|-----------------|-------------------|
| CASH FLOW | Q1 | | | Q2 | | | Q3 | | | Q4 | | | |
| Fixed costs | Apr-22 | May-22 | Jun-22 | Jul-22 | Aug-22 | Sept-22 | Oct-22 | Nov-22 | Dec-22 | Jan-23 | Feb-23 | Mar-23 | Total |
| Companies House | £0.00 | £0.00 | £0.00 | £0.00 | £13.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £13.00 |
| Accountant (From Y3) | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Public Liability Insurance | £30.00 | £30.00 | £30.00 | £30.00 | £30.00 | £30.00 | £30.00 | £30.00 | £30.00 | £30.00 | £30.00 | £30.00 | £359.40 |
| Domain Renewal | £0.00 | £0.00 | £0.00 | £0.00 | £14.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £14.00 |
| Trademarking | £220.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £220.00 |
| Domain Protection | £0.00 | £0.00 | £0.00 | £0.00 | £8.40 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £8.40 |
| Bluehost Website Hosting | £198.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £198.00 |
| Bluehost SEO Tools | £17.60 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £17.60 |
| Single Domain SSL | £29.50 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £29.50 |
| Man Met facilities | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| R&D materials | £750.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £750.00 |
| Salary | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Variable costs | | | | | | | | | | | | | |
| Cost of Goods Sold | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Associates (Marketing) | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Taxes (17%) | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| VAT (20%) | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| TOTAL OUTPUT | £1,245.10 | £30.00 | £30.00 | £30.00 | £65.40 | £30.00 | £30.00 | £30.00 | £30.00 | £30.00 | £30.00 | £30.00 | £1,610.00 |
| Funding | | | | | | | | | | | | | |
| Grants / Competitions | £500.00 | £12,000.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £5,000.00 | £0.00 | £0.00 | £0.00 | £0.00 | £17,500.00 |
| Founder Investment | £2,000.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £2,000.00 |
| Sales | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| TOTAL INPUT | £2,500.00 | £12,000.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £5,000.00 | £0.00 | £0.00 | £0.00 | £0.00 | £19,500.00 |
| Profit | £1,254.90 | £11,970.10 | (£30.00) | (£30.00) | (£65.40) | (£30.00) | (£30.00) | £4,970.10 | (£30.00) | (£30.00) | (£30.00) | (£30.00) | £17,890.00 |

| | | | | | | | | | | | | | |
|------------------------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--|
| Opening Balance | £500.00 | £1,754.90 | £13,724.90 | £13,695.00 | £13,665.00 | £13,599.70 | £13,569.70 | £13,539.80 | £18,509.80 | £18,479.90 | £18,449.90 | £18,420.00 | |
| Closing Balance | £1,754.90 | £13,724.90 | £13,695.00 | £13,665.00 | £13,599.70 | £13,569.70 | £13,539.80 | £18,509.80 | £18,479.90 | £18,449.90 | £18,420.00 | £18,390.00 | |

| Y2 CASHFLOW STATEMENT | | | | | | | | | | | | | |
|----------------------------|---------|--------|--------|--------|---------|---------|--------|--------|--------|--------|--------|--------|-----------|
| CASH FLOW | Q1 | | | Q2 | | | Q3 | | | Q4 | | | Total |
| Fixed costs | Apr-23 | May-23 | Jun-23 | Jul-23 | Aug-23 | Sept-23 | Oct-23 | Nov-23 | Dec-23 | Jan-24 | Feb-24 | Mar-24 | Total |
| Companies House | £0.00 | £0.00 | £0.00 | £0.00 | £13.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £13.00 |
| Accountant (From Y3) | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Public Liability Insurance | £30.70 | £30.70 | £30.70 | £30.70 | £30.70 | £30.70 | £30.70 | £30.70 | £30.70 | £30.70 | £30.70 | £30.70 | £368.00 |
| Domain Renewal | £0.00 | £0.00 | £0.00 | £0.00 | £14.40 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £14.40 |
| Trademarking | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Domain Protection | £0.00 | £0.00 | £0.00 | £0.00 | £8.60 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £8.60 |
| Bluehost Website Hosting | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Bluehost SEO Tools | £17.60 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £17.60 |
| Single Domain SSL | £29.50 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £29.50 |
| Man Met facilities | £60.00 | £60.00 | £60.00 | £60.00 | £60.00 | £60.00 | £60.00 | £60.00 | £60.00 | £60.00 | £60.00 | £60.00 | £720.00 |
| R&D materials | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Salary | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Variable costs | | | | | | | | | | | | | |
| Cost of Goods Sold | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Associates (Marketing) | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Taxes (17%) | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| VAT (20%) | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| TOTAL OUTPUT | £137.80 | £90.70 | £90.70 | £90.70 | £126.60 | £90.70 | £90.70 | £90.70 | £90.70 | £90.70 | £90.70 | £90.70 | £1,171.10 |
| Funding | | | | | | | | | | | | | |
| Grants / Competitions | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Founder Investment | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |

| | | | | | | | | | | | | | |
|------------------------|------------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------------------|
| Sales | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| TOTAL INPUT | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Profit | (£137.80) | (£90.70) | (£90.70) | (£90.70) | (£126.60) | (£90.70) | (£90.70) | (£90.70) | (£90.70) | (£90.70) | (£90.70) | (£90.70) | (£1,171.10) |
| Opening Balance | £18,390.00 | £18,252.20 | £18,161.50 | £18,070.90 | £17,980.20 | £17,853.50 | £17,762.90 | £17,672.20 | £17,581.50 | £17,490.90 | £17,400.20 | £17,309.50 | |
| Closing Balance | £1,754.90 | £13,724.90 | £13,695.00 | £13,665.00 | £13,599.70 | £13,569.70 | £13,539.80 | £18,509.80 | £18,479.90 | £18,449.90 | £18,420.00 | £18,390.00 | |

| Y3 CASHFLOW STATEMENT | | | | | | | | | | | | | |
|----------------------------|---------|---------|---------|-----------|---------|---------|---------|-----------|---------|---------|---------|---------|-----------|
| CASH FLOW | Q1 | | | Q2 | | | Q3 | | | Q4 | | | Total |
| Fixed costs | Apr-24 | May-24 | Jun-24 | Jul-24 | Aug-24 | Sept-24 | Oct-24 | Nov-24 | Dec-24 | Jan-25 | Feb-25 | Mar-25 | Total |
| Companies House | £0.00 | £0.00 | £0.00 | £0.00 | £13.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £13.00 |
| Accountant (From Y3) | £78.20 | £78.20 | £78.20 | £78.20 | £78.20 | £78.20 | £78.20 | £78.20 | £78.20 | £78.20 | £78.20 | £78.20 | £938.00 |
| Public Liability Insurance | £31.40 | £31.40 | £31.40 | £31.40 | £31.40 | £31.40 | £31.40 | £31.40 | £31.40 | £31.40 | £31.40 | £31.40 | £376.90 |
| Domain Renewal | £0.00 | £0.00 | £0.00 | £0.00 | £14.70 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £14.70 |
| Trademarking | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Domain Protection | £0.00 | £0.00 | £0.00 | £0.00 | £8.80 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £8.80 |
| Bluehost Website Hosting | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Bluehost SEO Tools | £17.60 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £17.60 |
| Single Domain SSL | £29.50 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £29.50 |
| Man Met facilities | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| R&D materials | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Salary | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Variable costs | | | | | | | | | | | | | |
| Cost of Goods Sold | £156.00 | £156.00 | £156.00 | £156.00 | £156.00 | £156.00 | £156.00 | £156.00 | £156.00 | £156.00 | £156.00 | £156.00 | £1,872.00 |
| Associates (Marketing) | £0.00 | £0.00 | £0.00 | £1,200.00 | £0.00 | £0.00 | £0.00 | £1,200.00 | £0.00 | £0.00 | £0.00 | £0.00 | £2,400.00 |
| Taxes (17%) | £0.00 | £0.00 | £185.40 | £185.40 | £179.20 | £185.40 | £185.40 | £185.40 | £185.40 | £185.40 | £185.40 | £185.40 | £1,847.50 |

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|------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| VAT (20%) | £0.00 | £0.00 | £240.00 | £240.00 | £240.00 | £240.00 | £240.00 | £240.00 | £240.00 | £240.00 | £240.00 | £240.00 | £2,400.00 |
| TOTAL OUTPUT | £312.70 | £265.60 | £690.90 | £1,890.90 | £721.30 | £690.90 | £690.90 | £1,890.90 | £690.90 | £690.90 | £690.90 | £690.90 | £9,918.00 |
| Funding | | | | | | | | | | | | | |
| Grants / Competitions | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Founder Investment | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Sales | £0.00 | £1,200.00 | £1,200.00 | £1,200.00 | £1,200.00 | £1,200.00 | £1,200.00 | £1,200.00 | £1,200.00 | £1,200.00 | £1,200.00 | £1,200.00 | £13,200.00 |
| TOTAL INPUT | £0.00 | £1,200.00 | £1,200.00 | £1,200.00 | £1,200.00 | £1,200.00 | £1,200.00 | £1,200.00 | £1,200.00 | £1,200.00 | £1,200.00 | £1,200.00 | £13,200.00 |
| Profit | (£156.70) | £1,090.40 | £1,090.40 | £1,090.40 | £1,053.90 | £1,090.40 | £1,090.40 | £1,090.40 | £1,090.40 | £1,090.40 | £1,090.40 | £1,090.40 | £7,529.50 |
| Opening Balance | £17,218.90 | £17,062.10 | £18,152.60 | £19,243.00 | £20,333.40 | £21,387.30 | £22,477.80 | £23,568.20 | £24,658.60 | £25,749.10 | £26,839.50 | £27,929.90 | |
| Closing Balance | £17,062.10 | £18,152.60 | £19,243.00 | £20,333.40 | £21,387.30 | £22,477.80 | £23,568.20 | £24,658.60 | £25,749.10 | £26,839.50 | £27,929.90 | £29,020.30 | |

| Y4 CASHFLOW STATEMENT | | | | | | | | | | | | | |
|----------------------------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|--------|---------|
| CASH FLOW | Q1 | | | Q2 | | | Q3 | | | Q4 | | | |
| Fixed costs | Apr-25 | May-25 | Jun-25 | Jul-25 | Aug-25 | Sept-25 | Oct-25 | Nov-25 | Dec-25 | Jan-26 | Feb-26 | Mar-26 | Total |
| Companies House | £0.00 | £0.00 | £0.00 | £0.00 | £13.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £13.00 |
| Accountant (From Y3) | £80.00 | £80.00 | £80.00 | £80.00 | £80.00 | £80.00 | £80.00 | £80.00 | £80.00 | £80.00 | £80.00 | £80.00 | £960.50 |
| Public Liability Insurance | £32.20 | £32.20 | £32.20 | £32.20 | £32.20 | £32.20 | £32.20 | £32.20 | £32.20 | £32.20 | £32.20 | £32.20 | £385.90 |
| Domain Renewal | £0.00 | £0.00 | £0.00 | £0.00 | £15.10 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £15.10 |
| Trademarking | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Domain Protection | £0.00 | £0.00 | £0.00 | £0.00 | £9.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £9.00 |
| Bluehost Website Hosting | £48.30 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £48.30 |
| Bluehost SEO Tools | £17.60 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £17.60 |
| Single Domain SSL | £29.50 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £29.50 |

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|------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Man Met facilities | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| R&D materials | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Salary | £736.70 | £736.70 | £736.70 | £736.70 | £736.70 | £736.70 | £736.70 | £736.70 | £736.70 | £736.70 | £736.70 | £736.70 | £8,839.90 |
| Variable costs | | | | | | | | | | | | | |
| Cost of Goods Sold | £1,040.00 | £1,040.00 | £1,040.00 | £1,040.00 | £1,040.00 | £1,040.00 | £1,040.00 | £1,040.00 | £1,040.00 | £1,040.00 | £1,040.00 | £1,040.00 | £12,480.00 |
| Associates (Marketing) | £3,000.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £3,000.00 | £0.00 | £0.00 | £0.00 | £0.00 | £6,000.00 |
| Taxes (17%) | £1,872.70 | £2,398.90 | £2,398.90 | £2,398.90 | £2,392.60 | £2,398.90 | £2,398.90 | £1,888.90 | £2,398.90 | £2,398.90 | £2,398.90 | £2,398.90 | £27,744.20 |
| VAT (20%) | £1,600.00 | £1,600.00 | £1,600.00 | £1,600.00 | £1,600.00 | £1,600.00 | £1,600.00 | £1,600.00 | £1,600.00 | £1,600.00 | £1,600.00 | £1,600.00 | £19,200.00 |
| TOTAL OUTPUT | £8,457.00 | £5,887.80 | £5,887.80 | £5,887.80 | £5,918.50 | £5,887.80 | £5,887.80 | £8,377.80 | £5,887.80 | £5,887.80 | £5,887.80 | £5,887.80 | £75,743.00 |
| Funding | | | | | | | | | | | | | |
| Grants / Competitions | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Founder Investment | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Sales | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £192,000.00 |
| TOTAL INPUT | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £192,000.00 |
| Profit | £11,015.70 | £14,111.10 | £14,111.10 | £14,111.10 | £14,074.10 | £14,111.10 | £14,111.10 | £11,111.10 | £14,111.10 | £14,111.10 | £14,111.10 | £14,111.10 | £163,201.20 |
| Opening Balance | £29,020.30 | £40,036.00 | £54,147.20 | £68,258.30 | £82,369.50 | £96,443.50 | £110,554.70 | £124,665.80 | £135,776.90 | £149,888.10 | £163,999.20 | £178,110.40 | |
| Closing Balance | £40,036.00 | £54,147.20 | £68,258.30 | £82,369.50 | £96,443.50 | £110,554.70 | £124,665.80 | £135,776.90 | £149,888.10 | £163,999.20 | £178,110.40 | £192,221.50 | |

| Y5 CASHFLOW STATEMENT | | | | | | | | | | | | | |
|-----------------------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|--------|--------|
| CASH FLOW | Q1 | | | Q2 | | | Q3 | | | Q4 | | | |
| Fixed costs | Apr-25 | May-25 | Jun-25 | Jul-25 | Aug-25 | Sept-25 | Oct-25 | Nov-25 | Dec-25 | Jan-26 | Feb-26 | Mar-26 | Total |
| Companies House | £0.00 | £0.00 | £0.00 | £0.00 | £13.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £13.00 |

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|----------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Accountant (From Y3) | £80.00 | £80.00 | £80.00 | £80.00 | £80.00 | £80.00 | £80.00 | £80.00 | £80.00 | £80.00 | £80.00 | £80.00 | £960.50 |
| Public Liability Insurance | £32.20 | £32.20 | £32.20 | £32.20 | £32.20 | £32.20 | £32.20 | £32.20 | £32.20 | £32.20 | £32.20 | £32.20 | £385.90 |
| Domain Renewal | £0.00 | £0.00 | £0.00 | £0.00 | £15.10 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £15.10 |
| Trademarking | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Domain Protection | £0.00 | £0.00 | £0.00 | £0.00 | £9.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £9.00 |
| Bluehost Website Hosting | £48.30 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £48.30 |
| Bluehost SEO Tools | £17.60 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £17.60 |
| Single Domain SSL | £29.50 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £29.50 |
| Man Met facilities | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| R&D materials | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Salary | £736.70 | £736.70 | £736.70 | £736.70 | £736.70 | £736.70 | £736.70 | £736.70 | £736.70 | £736.70 | £736.70 | £736.70 | £8,839.90 |
| Variable costs | | | | | | | | | | | | | |
| Cost of Goods Sold | £1,040.00 | £1,040.00 | £1,040.00 | £1,040.00 | £1,040.00 | £1,040.00 | £1,040.00 | £1,040.00 | £1,040.00 | £1,040.00 | £1,040.00 | £1,040.00 | £12,480.00 |
| Associates (Marketing) | £3,000.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £3,000.00 | £0.00 | £0.00 | £0.00 | £0.00 | £6,000.00 |
| Taxes (17%) | £1,872.70 | £2,398.90 | £2,398.90 | £2,398.90 | £2,392.60 | £2,398.90 | £2,398.90 | £1,888.90 | £2,398.90 | £2,398.90 | £2,398.90 | £2,398.90 | £27,744.20 |
| VAT (20%) | £1,600.00 | £1,600.00 | £1,600.00 | £1,600.00 | £1,600.00 | £1,600.00 | £1,600.00 | £1,600.00 | £1,600.00 | £1,600.00 | £1,600.00 | £1,600.00 | £19,200.00 |
| TOTAL OUTPUT | £8,457.00 | £5,887.80 | £5,887.80 | £5,887.80 | £5,918.50 | £5,887.80 | £5,887.80 | £8,377.80 | £5,887.80 | £5,887.80 | £5,887.80 | £5,887.80 | £75,743.00 |
| Funding | | | | | | | | | | | | | |
| Grants / Competitions | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Founder Investment | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Sales | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £192,000.00 |
| TOTAL INPUT | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £16,000.00 | £192,000.00 |
| Profit | £11,015.70 | £14,111.10 | £14,111.10 | £14,111.10 | £14,074.10 | £14,111.10 | £14,111.10 | £11,111.10 | £14,111.10 | £14,111.10 | £14,111.10 | £14,111.10 | £163,201.20 |
| Opening Balance | £29,020.30 | £40,036.00 | £54,147.20 | £68,258.30 | £82,369.50 | £96,443.50 | £110,554.70 | £124,665.80 | £135,776.90 | £149,888.10 | £163,999.20 | £178,110.40 | |
| Closing Balance | £40,036.00 | £54,147.20 | £68,258.30 | £82,369.50 | £96,443.50 | £110,554.70 | £124,665.80 | £135,776.90 | £149,888.10 | £163,999.20 | £178,110.40 | £192,221.50 | |