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The Motivational Power of Inconsistency

A Study of Cognitive Dissonance as a Driver of Intentions to Adopt Healthier Eating Behaviours

Deposed by

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Abstract

Despite widespread awareness of the benefits of a healthy diet, many individuals still struggle to translate their intentions into consistent behaviours. This study explores the role of cognitive dissonance as a motivational driver in increasing the intention to adopt a healthier diet. The objective is to investigate whether inconsistencies between individuals' beliefs and their actual behaviours concerning healthy eating can generate psychological discomfort that both mediates and moderates the relationship between belief–behaviour discrepancies and the intention to adopt a healthier diet. To this end, a questionnaire was developed to highlight discrepancies between participants' beliefs and actions, and to measure both their perceived psychological discomfort and subsequent intentions to change. Results from regression analyses show that higher levels of cognitive dissonance are consistently associated with greater psychological discomfort, which in turn increases the intention to adopt healthier dietary behaviours in the future. These findings contribute to the literature by clarifying the role of cognitive dissonance in motivating healthy food-related behaviour and offer valuable insights for designing social marketing interventions that promote more conscious and health-oriented food choices.

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I. INTRODUCTION

According to the World Health Organisation (WHO), a healthy diet provides essential nutrients, helps prevent malnutrition, and lowers the risk of non-communicable conditions like diabetes, heart disease, and cancer. This type of diet is typically rich in fruits, vegetables, whole grains, legumes, and healthy fats, while being low in salt, added sugars, and harmful fats, particularly those found in ultra-processed foods (World Health Organisation, 2020). Although the principles and importance of a healthy diet are widely recognised, a significant gap often exists between individuals' intentions and their actual behaviours regarding food consumption (Faries, 2016). Among the various factors contributing to the gap between intentions and behaviours regarding healthy eating are the actions of companies operating within the food industry. Today, many companies pay little attention to public health and instead focus primarily on maximising profit by promoting the consumption of unhealthy food in excessive quantities (Folkvord, 2020). Their actions often involve aggressive marketing strategies, particularly targeting vulnerable populations such as children, to encourage the excessive intake of nutritionally poor foods (Harris & Graff, 2012). For example, Scully et al. (2012) demonstrated that adolescents' exposure to commercial television, digital advertising, and school-based food marketing significantly influences their dietary choices, leading to increased consumption of fast food, sugary beverages, and energy-dense snacks (Scully et al., 2012). Such practices highlight how corporate strategies aimed at maximising profit often conflict with public health goals, reinforcing unhealthy eating patterns and intensifying the burden of chronic disease (Deshpande et al., 2023). In this context, social marketing seeks to apply established principles and techniques to steer consumption towards healthier and more sustainable practices, ultimately aiming to promote the well-being of society as a whole (Folkvord, 2020). One technique that could prove useful in this regard is the theory of cognitive dissonance. As first introduced by Festinger (1957), cognitive dissonance arises when a person simultaneously holds two or more cognitions, such as beliefs, attitudes, or knowledge, that are inconsistent with one another. This inconsistency creates a sense of psychological discomfort, and because human beings are naturally inclined to maintain a sense of internal coherence, they become motivated to reduce the inconsistency to restore balance. To resolve the inconsistency, individuals typically adopt

one of three strategies, which consist of modifying one of the conflicting cognitions, seeking new information that supports one side and reduces the contradiction, or minimising the importance of the inconsistency itself (Festinger, 1957). Applied to the context of food consumption, this reasoning suggests that an individual who places a high value on health and well-being, yet frequently consumes unhealthy food, might experience cognitive dissonance. This inconsistency between belief and behaviour can create a state of psychological discomfort, which is central to initiating change. Indeed, this psychological discomfort might serve as a motivational force, encouraging the individual to take steps to resolve the inconsistency. In the context of this example, this conflict may be resolved in several ways. The person might change their behaviour by choosing healthier meals and reducing their consumption of unhealthy food. Alternatively, they could adjust their thinking by convincing themselves that eating unhealthy food occasionally is not significantly harmful. Another possibility is that they might introduce new thoughts to justify their eating habits, such as believing that unhealthy food helps manage stress or that sharing indulgent meals with friends is important for their happiness. By using one or more of these psychological strategies, the individual could reduce the dissonance and restore a sense of internal consistency, thereby easing the psychological discomfort associated with it (Festinger, 1957). Therefore, social marketing could harness the principles of cognitive dissonance to design interventions that make individuals more aware of the conflict between their health-related values and their actual eating behaviours, thereby motivating healthier choices and contributing to the well-being of society. For instance, Wilson et al. (2002) used value-affirmation exercises to highlight inconsistencies between adolescents' health-related values and their eating habits, leading to increased fruit and vegetable consumption (Wilson et al., 2002). Following this example, the idea of this study is to explore whether making individuals explicitly aware of the gap between their stated dietary values and their actual eating behaviours may increase their intention to adopt healthier eating habits. Building on this aim, the study addresses the following research question: *How does cognitive dissonance influence consumers' intention to adopt healthier eating behaviours?* To address this research question, a survey was developed and distributed to participants. The questionnaire was structured according to the induced hypocrisy paradigm, aiming to elicit cognitive dissonance by highlighting the gap between the importance individuals attribute to certain eating-related behaviours and the frequency with which they engage in those behaviours. Participants were initially presented with twelve statements exploring how important they believe certain food-related behaviours are. Subsequently, they were asked how often they usually engage in those

same behaviours. Participants' responses on these two dimensions were then compared to reveal the degree of cognitive dissonance associated with each behaviour. Each participant was then shown a table summarising their responses to make them aware of the dissonant cognitions they held, to induce psychological discomfort. Following this exposure, participants were asked to report the level of discomfort they experienced, specifically how uncomfortable, uneasy, and bothered they felt about the identified inconsistencies. Finally, participants were asked once again to rate the same behaviours, but this time indicating their intention to adopt healthier practices related to each behaviour in the future. This procedure made it possible to assess whether Festinger's (1957) theory of cognitive dissonance as a driver of behavioural change was applicable in the context of this study. If so, the awareness of cognitive dissonance should have triggered psychological discomfort in participants, which in turn would increase their intention to adopt healthier behaviours as a way of reducing the internal conflict. From an academic perspective, this study offers a clearer picture of how cognitive dissonance works in the context of eating behaviour. It explores whether cognitive dissonance can be triggered when people reflect on the gap between their values and actions, and also investigates how the discomfort that follows might push them to change. On a practical level, the findings provide useful insights for those designing public health campaigns or social marketing strategies aimed at improving eating habits. By showing that simply making people aware of their inconsistencies can motivate change, this study highlights the potential of communication approaches that appeal to people's internal motivation, rather than depending only on rules, rewards, or information. In this way, it contributes to the development of more effective, psychologically informed interventions that support healthier and more sustainable food choices. This study begins with a comprehensive review of the current literature, organised into three main chapters. The first chapter provides an overview of the determinants and the barriers to healthy eating. The second chapter focuses on the theory of cognitive dissonance. The third chapter presents empirical studies that have employed cognitive dissonance to influence behaviours in the context of food-related choices. Following the literature review, the conceptual framework is introduced, outlining the hypotheses that sustain this study. This is followed by the methodology section, which describes the questionnaire design and details the data collection process. The subsequent chapter presents the results of the analyses. Finally, the discussion chapter reflects on the main findings, highlights their practical and managerial implications, and addresses the limitations of the study.

II. LITERATURE REVIEW

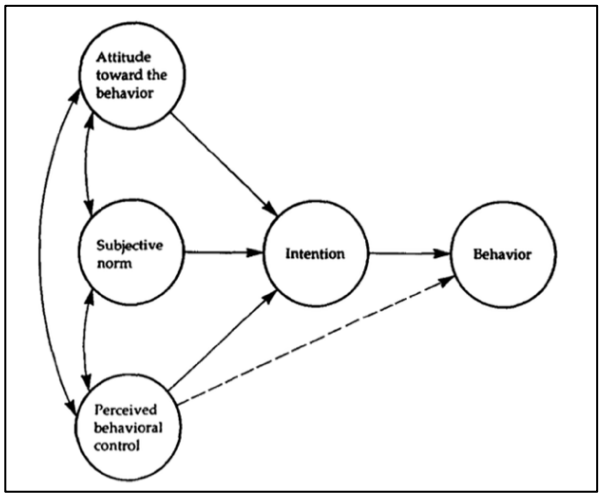
The literature review aims to elucidate the key concepts relevant to this study. The first chapter examines the key determinants and the main barriers to healthy eating. The second explores how conflicting cognitions can create discomfort, prompting behavioural change. The third connects these ideas by reviewing empirical evidence on how inducing such internal conflict has been used to promote certain eating behaviours.

The key determinants and main barriers to healthy eating

The key determinants of healthy eating

The theory of planned behaviour, proposed by Ajzen (1991), has been widely applied in the study of human behaviours. This theoretical framework posits that an individual's intention to engage in a given behaviour is the most immediate predictor of whether the behaviour will actually be performed. In turn, the intention to perform a behaviour is influenced by three core components, which are attitude toward the behaviour, subjective norms, and perceived behavioural control (Ajzen, 1985).

Figure 1: The framework of the theory of planned behaviour



Source: Ajzen (1991)

Applying the theory of planned behaviour to healthy eating, it can be assumed that individuals are more inclined to make healthy choices when they view such behaviour positively (attitude), feel supported or influenced by those around them (subjective norms), and perceive themselves as capable of maintaining those choices within their daily lives (perceived behavioural control). The application of the theory of planned behaviour in the context of healthy food consumption has contributed to a deeper understanding of the mechanisms shaping food-related decisions and has informed the development of targeted interventions aimed at promoting healthier eating behaviours. A foundational contribution in this area comes from Dennison and Shepherd (1995), who applied the theory of planned behaviour to investigate the factors influencing the food choices of adolescents. Their study found that attitudes toward healthy eating were the strongest predictor of intentions, while subjective norms and perceived behavioural control played secondary roles. These findings suggest that adolescents' personal beliefs, such as associating healthy food with better appearance or long-term health, have greater weight in shaping their intentions than external pressures or perceived ease of action. Therefore, fostering positive attitudes toward healthy eating in young people is crucial for encouraging long-term behavioural change. Intervention strategies should focus on reshaping personal beliefs rather than relying solely on normative influence (Dennison & Shepherd, 1995). Expanding upon this foundation, Øygard and Rise (1996) examined young adults and found a similar dominance of attitudes in predicting intention. However, they also identified a stronger role for perceived behavioural control in this older group, likely reflecting increased autonomy in food-related decisions. As individuals age, their sense of control over their eating behaviour becomes more relevant, suggesting a developmental shift in the psychological drivers of healthy eating. Once again, subjective norms had a limited impact, indicating that social pressure may play a relatively minor role in shaping intentions during these early life stages (Øygard & Rise, 1996). Consistently, Povey et al. (2000) confirmed that attitudes, subjective norms, and perceived behavioural control were all significant predictors of intention, with attitudes emerging as the strongest. The study extended the model by testing additional social influence variables, namely descriptive norms and perceived social support. While these constructs did not independently enhance the model's predictive power, perceived social support played a significant moderating role. Specifically, individuals with higher levels of support showed a stronger relationship between positive attitudes and healthy eating intentions, whereas those with lower support relied more on their perceived control. These findings highlight the relevance of social context in shaping how cognitive factors translate into dietary intentions. Although descriptive norms

contributed little, the study underscores the importance of considering supportive environments when using the theory of planned behaviour to design effective interventions aimed at promoting healthy eating behaviours (Povey et al., 2000). To further extend the theory of planned behaviour, Åstrøm and Rise (2001) incorporated the constructs of role identity and group norms. Their findings confirmed the predictive strength of the original theory of planned behaviour components, with perceived behavioural control remaining the most influential predictor of intention. Role identity, specifically identifying as a "healthy eater", explained additional variance in intention beyond the original model. In contrast, group norms influenced intention only when individuals strongly identified with the group. These results suggest that incorporating identity-related factors can enhance the theory of planned behaviour, particularly when health behaviours are perceived as integral to one's self-concept or sense of social affiliation (Åstrøm & Rise, 2001). Later, Conner et al. (2002) proved the durability of intentions in predicting behaviours through a six-year longitudinal study. They demonstrated that consistent intentions were strong predictors of future healthy eating behaviour, emphasising the importance of forming and sustaining health goals over time. Unlike many studies focusing on short-term effects, this research confirmed that intentions rooted in the theory of planned behaviour can yield long-term behavioural outcomes, making the model highly relevant for interventions aimed at lasting dietary change (Conner et al., 2002). In contrast, Fila and Smith (2006) found that the theory of planned behaviour did not operate in its typical way when applied to youth from specific cultural backgrounds. In opposition to earlier studies that emphasised the central role of intention in linking beliefs to behaviour, this study found that intention was not a significant mediator. Instead, attitudes, subjective norms, and perceived behavioural control each had a direct impact on healthy eating behaviour. Notably, subjective norms played a more prominent role than in most previous research, likely reflecting the influence of close family ties and community-oriented values within the studied groups. These findings highlight the need to adapt the theory of planned behaviour when working with diverse populations, as cultural and social factors may shape behaviour more directly, bypassing the mediating role of intention (Fila & Smith, 2006). Cultural and contextual factors also shaped the findings of Grønhøj et al. (2012), who applied the theory of planned behaviour to Danish adolescents. Here, perceived behavioural control emerged as the strongest predictor of intention, followed by attitudes, while subjective norms again showed limited influence. The results may reflect Denmark's individualistic culture, where youth are encouraged to rely on personal values and independence rather than conforming to group expectations. The study

emphasises the importance of enhancing adolescents' sense of efficacy, for instance, by improving access to healthy food or developing food preparation skills, as a way to empower healthy eating choices (Grønhøj et al., 2012). Brouwer and Mosack (2015) built on the role identity importance and found that this identity not only helped explain people's intentions to eat healthily but also their actual eating behaviour, especially when it came to eating more fruits and low-fat dairy. Overall, the study proved that including identity in the theory of planned behaviour helps us better understand eating behaviour and highlights the need for clearer messages about what healthy eating really means (Brouwer & Mosack, 2015). Later, Mamun (2019) proposed integrating health consciousness and nutrition knowledge into the TPB, as both were found to significantly predict intentions to eat healthily. This suggests that personal concern for health and a solid understanding of nutritional principles provide additional explanatory power beyond the traditional theory of planned behaviour variables. The study advocates for a more cognitively enriched version of the theory of planned behaviour, one that incorporates individual traits and knowledge-based competencies alongside attitudes, subjective norms, and perceived behavioural control (Mamun, 2019). Lambert et al. (2020) continued to validate the theory of planned behaviour in the context of snack choices among college students, showing that attitudes and perceived behavioural control remained the most influential predictors of intention. Subjective norms had little effect, echoing earlier findings in young adult populations. Importantly, the study also revealed differences in intention levels across demographic groups, particularly among African American students, who reported lower intentions to choose healthy snacks. These differences were partly explained by less favourable attitudes and lower perceived control, highlighting the importance of culturally tailored interventions that address both access to healthy food and how it is perceived in different communities (Lambert et al., 2020). The influence of social settings was further highlighted by Rahamat et al. (2022), who examined menu labelling in university restaurants. Here, subjective norms emerged as the strongest predictor of intention, a notable departure from prior research. The fast-paced, social nature of the dining environment may have amplified the influence of peer perceptions. Health consciousness also played a key role, while perceived control had minimal impact, possibly due to environmental constraints. These findings demonstrate how context can shift the relative importance of the theory of planned behaviour variables (Rahamat et al., 2022). In a cross-cultural study, Sogari et al. (2023) showed that attitudes toward traditional food can shape intentions to eat healthily. In countries like Italy, Spain, and Japan, where traditional foods are viewed as healthy, this attitude strengthened healthy eating

intentions. Conversely, in Brazil and China, where traditional foods may be seen as less healthy, the effect was diminished. The study illustrates how cultural perceptions of tradition can either support or hinder health intentions, underscoring the importance of aligning public health campaigns with local values and beliefs (Sogari et al., 2023). Lastly, Escobar-Farfán et al. (2025) proposed a further extension of the theory of planned behaviour by incorporating moral norms and self-identity. They found that health consciousness shaped attitudes, control beliefs, and moral considerations, while self-identity emerged as a direct and powerful predictor of intention. This study reinforces the idea that internalised values and personal meaning are essential for understanding why individuals choose to eat healthily. It also signals a theoretical shift: from focusing solely on cognitive predictors to acknowledging deeper psychological and ethical dimensions of food choices (Escobar-Farfán et al., 2025).

The theory of planned behaviour has proven to be valuable for understanding what drives individuals to make healthy eating choices. Over time, researchers have also included additional factors like role identity, health consciousness, nutrition knowledge, and moral values, enriching the understanding of what drives these behaviours. Therefore, it is important to consider the multitude of factors that have a role in shaping healthy eating to conceive effective interventions.

The main barriers to healthy eating

Although individuals may have the intention to adopt healthy eating behaviours, various barriers can prevent these intentions from being translated into action. In recent years, several studies have sought to identify the key barriers that prevent individuals from acting on their intentions to consume healthy food, often leading them to engage in behaviours that are inconsistent with their health-related goals. In this regard, Lappalainen et al. (1997) identified a range of perceived barriers to healthy eating analysis different countries. Based on their findings, these barriers can be grouped into four main categories: psychological, practical, social, and informational/structural barriers. Psychological obstacles were particularly prevalent and included low self-control, emotional resistance to change, and strong preferences for unhealthy but pleasurable foods. This highlights the emotional tension between knowing what is healthy and desiring what is familiar and gratifying. Practical barriers such as lack of time, cooking skills, or access to proper kitchen facilities further limited participants' ability to

act on their intentions, especially among those with demanding jobs or irregular schedules. Social influences also emerged as significant, with many respondents describing the pressure to conform to family or peer norms around eating. Finally, informational and structural barriers included a lack of knowledge about healthy eating, inconsistent advice from experts, and limited availability or visibility of healthy food options in everyday environments. For example, respondents often cited that they did not know enough about nutrition or felt confused by changing guidelines from professionals. In some countries, the challenge was also physical access, as healthy foods were perceived as more expensive, less available, or inconvenient to obtain and prepare (Lappalainen et al., 1997). Later, a study by Hughes et al. (2004) explored how older men who lived alone struggled with being consistent concerning healthy eating. Many of them had limited prior experience preparing meals, often due to traditional gender roles, and found themselves unprepared to manage nutrition by themselves later in life. This was compounded by emotional factors such as loneliness, which reduced the perceived value of cooking for themselves. Additionally, physical limitations, such as declining health, mobility issues, or chronic conditions, further limited their ability to shop for groceries or prepare meals (Hughes et al., 2004). A few years later, Stevenson et al. (2007) investigated the key obstacles to healthy eating among adolescents. They found that peer dynamics and strong preferences for the taste, texture, and visual appeal of unhealthy foods were particularly influential. Fruits and vegetables were often perceived as bland or uninviting, while social norms and marketing reinforced the idea that healthy eating was not cool or desirable. This perception was further shaped by advertising that glamorised fast food and by widespread misconceptions, such as the belief that eating healthily requires giving up enjoyable foods or constantly restricting oneself. Combined with a strong need for peer approval and growing autonomy, these factors contributed to adolescents' reluctance to adopt healthier habits (Stevenson et al., 2007). Later, Reyes et al. (2013) examined the challenges faced by low-income pregnant women in the U.S., focusing on African American communities. The study revealed that many participants held inaccurate beliefs about nutrition, such as considering fruit juice to be inherently healthy regardless of sugar content and had difficulty understanding food labels or applying dietary guidelines in everyday situations. These misconceptions were often shaped by familiar food practices and common advice passed down through family members. At the same time, financial constraints significantly limited their ability to act on their healthy eating intentions. Even when participants expressed a desire to improve their diets during pregnancy, they often lacked the means to purchase fresh produce or other nutrient-dense foods. In many cases,

cheaper, more accessible options like sugary drinks, fried foods, and processed snacks became the default (Reyes et al., 2013). The study conducted by de Mestral et al. (2016) investigated the factors that hinder healthy eating among individuals in Switzerland, focusing particularly on obese people. Their findings showed that participants frequently associated food with comfort, pleasure, and reward, while viewing healthy options as less satisfying. This preference made dietary change difficult, especially in the absence of appealing healthy alternatives. The study also identified significant practical barriers, such as time constraints related to work and family responsibilities often led participants to rely on fast, convenient foods that were high in calories but low in nutritional value. Among lower-income individuals, limited financial resources further restricted access to fresh, wholesome ingredients, reinforcing patterns of unhealthy eating (de Mestral et al., 2016). Hilger et al. (2017) investigated the eating habits of university students in Germany and identified several key barriers that interfered with healthy food choices. Time pressure, lack of cooking experience, and limited availability of nutritious options on campus frequently led students to rely on inexpensive, convenient, and nutritionally poor meals. Even those with a solid understanding of healthy eating often struggled to apply their knowledge in practice due to structural constraints, including irregular schedules, academic stress, and poor food provision within university facilities (Hilger et al., 2017). Pinho et al. (2018) expanded this perspective through a large cross-national study. Their findings confirmed that unhealthy eating patterns were influenced by the combined effects of taste preferences, economic limitations, and uncertainty about nutrition. Participants who perceived healthy food as bland or expensive were significantly less likely to consume fruits, vegetables, or fish, and more likely to opt for fast food. These perceptions were not only personal but were often shaped by cultural norms and habitual exposure to highly processed foods. Additionally, gaps in nutritional knowledge were especially common among younger adults and those with lower levels of education, revealing persistent inequalities in access to reliable dietary information and highlighting the need for more inclusive nutrition education strategies (Pinho et al., 2018). The study conducted by de Mestral et al. (2020) analysed how individuals in Switzerland from different socioeconomic backgrounds perceive barriers to healthy eating. The study found that participants with lower levels of education and income were more likely to cite external factors, such as the high cost of healthy food or limited access to quality grocery stores, as key obstacles. In contrast, those with higher educational attainment were more inclined to report internal difficulties, such as a lack of willpower or confusion caused by conflicting dietary advice (de Mestral et al., 2020). Finally, Lima et al. (2021) focused on the

workplace as a critical setting for understanding dietary challenges. Despite generally high levels of education and health awareness, many participants reported that rigid schedules, short lunch breaks, and the physical distance of healthy food outlets made it difficult to eat well during the workday. As a result, staff often skipped meals or relied on easy access and fast food due to a lack of time and proximity (Lima et al., 2021).

In conclusion, the barriers to healthy eating are complex and multifaceted. These interact in complex ways to prevent people from translating good intentions into sustained behaviours related to food consumption. Understanding these barriers in their full context is essential for designing effective interventions that go beyond individual responsibility and instead support meaningful, sustainable changes in how people eat.

The role of mental conflict in motivating behavioural change

The theory of cognitive dissonance

Festinger (1957) introduced the theory of cognitive dissonance to explain human motivation and behavioural change. The theory posits that individuals possess a natural motivation to maintain internal consistency among their cognitions, defined as beliefs, attitudes, values, knowledge, or perceptions regarding the self and the external environment. When inconsistencies arise between two or more cognitions, a psychological state known as cognitive dissonance is elicited, characterised by psychological discomfort and mental tension. Because this discomfort is aversive, individuals are motivated to reduce it, typically by modifying one or more of the conflicting cognitions to achieve greater coherence and eliminate the dissonance. An example involves a person who smokes cigarettes while believing that good health is important. This inconsistency between beliefs and behaviour generates psychological discomfort, leading the individual to be motivated to resolve the conflict by either changing their behaviour, altering the conflicting cognition, or adding new consonant cognitions that justify the behaviour (Festinger, 1957). Festinger (1957) identified several pathways through which cognitive dissonance may arise. First, new information can generate dissonance when it contradicts preexisting beliefs or expectations. For example, someone who strongly favours a particular car brand may experience discomfort upon encountering evidence that supports a competing model. To reduce the dissonance, the individual might reject the new information,

reinterpret it, or seek confirming evidence that aligns with their original preference. Second, dissonance frequently occurs when individuals act in ways that conflict with their internal values. The classic case of a smoker who continues the behaviour despite knowing its health risks illustrates how behavioural inconsistency with personal values induces dissonance. Third, unexpected events can disrupt cognitive harmony. For instance, planning an outdoor event based on the assumption of good weather, only to be surprised by sudden rain, creates a mismatch between expectations and reality, leading to psychological discomfort (Festinger, 1957). Festinger (1957) also pointed out that once dissonance is experienced, individuals typically undergo a state of discomfort that serves as a motivational force. The intensity of this discomfort is proportional to both the importance of the conflicting cognitions and the ratio of dissonant to consonant elements. Minor inconsistencies involving peripheral beliefs may cause minimal discomfort, whereas conflicts touching on core values or identity-relevant issues tend to elicit significant strain. Additionally, individual differences, such as personality traits, cognitive flexibility, and contextual constraints, affect both the experience of dissonance and one's ability to manage it (Festinger, 1957). Festinger (1957) also advanced the idea that to reduce cognitive dissonance, individuals typically engage in one of three strategies. The first strategy is behavioural change and is often the most direct and effective method. For example, a smoker who accepts the health risks may choose to quit, thereby eliminating the inconsistency. When behavioural change is difficult or undesirable, individuals may instead modify their cognitions. In the case of smoking, this might involve downplaying the severity of the health risks, questioning the credibility of medical data, or believing that the personal benefits outweigh the dangers. Alternatively, new consonant cognitions may be added to justify the behaviour. A smoker, for instance, might adopt the belief that smoking reduces anxiety or prevents weight gain, thereby creating additional rationales to maintain the behaviour (Festinger, 1957). According to Festinger (1957), individuals show some level of resistance to change. Indeed, not all dissonances are easily resolved, and some cognitions exhibit strong resistance to modification. People often find it hard to change certain beliefs or behaviours because they're emotionally attached to them, concerned about social consequences, or see them as closely tied to their identity. For example, it can be difficult to reverse a public decision or give up a long-standing habit. In such cases, rather than changing their beliefs or behaviour, people often engage in rationalisation to reduce the discomfort. This may involve justifying their actions in more complex ways, such as seeking support from others, dismissing conflicting viewpoints, or reframing the situation so it appears less contradictory (Festinger, 1957). Finally,

according to Festinger (1957), an important mechanism in managing cognitive dissonance is selective exposure. People often avoid information that they anticipate will conflict with their existing beliefs or decisions. This avoidance may be deliberate, meaning that individuals might steer clear of conversations, media, or environments that challenge their worldview, and is frequently coupled with a preference for confirmatory sources that reinforce current attitudes. Over time, such tendencies can result in a highly filtered information environment, where individuals are predominantly exposed to perspectives that align with their own. This limited exposure further reinforces existing belief systems and can contribute to increased social and ideological polarisation. In addition, people may engage in anticipatory avoidance of dissonance by hesitating to make decisions that might later prove conflicting, denying inconvenient facts, or disengaging emotionally from situations that pose a threat to internal consistency. These strategies illustrate the extent to which individuals strive to maintain psychological equilibrium, often at the expense of objectivity and critical reflection (Festinger, 1957).

In conclusion, the theory of cognitive dissonance is fundamental to the study of human behaviour. It suggests that individuals strive for internal consistency, and that making them aware of a gap between their attitudes, beliefs, or knowledge and their actual behaviours can trigger psychological discomfort. This discomfort, in turn, may motivate them to resolve the inconsistency.

Further developments of the theory of cognitive dissonance

Since Festinger (1957) introduced the theory of CD, some authors have contributed to the development of the initial conceptualisation. Aronson (1969) added that dissonance is particularly strong when an individual's behaviour threatens their self-image as a competent, moral, or consistent person. This personalisation of dissonance highlighted the role of self-esteem and identity, shifting the theory's focus from mere logical inconsistency to threats to the integrity of the self (Aronson, 1969). Cooper and Fazio (1984) contributed by highlighting the fact that cognitive dissonance arises only when individuals feel personally responsible for producing an aversive consequence. Two key conditions must be met. The first one is that the person must believe they had free choice in performing the behaviour, and the second one is that the behaviour must lead to a negative outcome. This model helped clarify why dissonance

is not triggered by all inconsistencies, rather only those tied to a sense of personal agency and consequence (Cooper & Fazio, 1984). Later, Steele (1988) stated that individuals are motivated to preserve a global sense of moral adequacy. When faced with dissonant behaviour, rather than directly altering their attitudes or behaviours, people may reaffirm their self-worth in unrelated domains. For example, if someone does something bad but still wants to feel like a good person, they might remind themselves of their strength in other situations. This way, they protect their self-image without having to directly face or change the dissonant behaviour (Steele, 1988). More recently, Harmon-Jones and Harmon-Jones (2007) developed the action-based model of cognitive dissonance, offering a new perspective on why dissonance feels uncomfortable. While Festinger saw dissonance as a mental inconsistency that creates psychological discomfort, this newer model suggests that the real problem is that conflicting thoughts or beliefs can get in the way of effective action. When we can't act decisively because our thoughts are pulling us in different directions, it creates a state of internal tension that we're motivated to resolve. Additionally, their research connected this process to brain activity, showing that dissonance is linked to the activation of specific brain areas involved in conflict detection and emotional processing (Harmon-Jones & Harmon-Jones, 2007).

The development of cognitive dissonance theory adds depth to our understanding of how individuals respond to internal conflict, experience psychological discomfort, and consequently modify their behaviour.

The paradigms of the theory of cognitive dissonance

Cognitive dissonance paradigms are structured interventions specifically designed to evoke and resolve dissonance. These paradigms differ in structure and purpose, but they all aim to create an internal conflict that motivates individuals to align their beliefs with their behaviours. The most known paradigms include the free choice paradigm, the belief disconfirmation paradigm, the effort justification paradigm, the induced compliance paradigm, and the induced hypocrisy paradigm (Ong et al., 2017). The free choice paradigm was first introduced by Brehm (1956) to examine how making decisions between similarly attractive alternatives can generate cognitive dissonance. The idea is that, after choosing one option, individuals are left with an internal conflict due to the rejected alternative's appealing features and the less favourable aspects of the selected one. This dissonance that arises after the decision motivates a process of

re-evaluation, where individuals increase their liking for the chosen option and simultaneously devalue the rejected one to restore internal consistency. In the original experiment, participants ranked various consumer goods, selected one from two similarly rated items, and then re-ranked all items. The results consistently showed an enhancement in the perceived value of the chosen item and a diminished evaluation of the rejected one, and this is consistent with clear signs of dissonance reduction (Brehm, 1956). A second paradigm was introduced by Festinger et al. (1956) as the belief disconfirmation paradigm, which refers to the psychological process that occurs when individuals are confronted with evidence that directly contradicts a strongly held belief. The stark conflict between deeply held convictions and undeniable contradictory evidence produces intense psychological discomfort, known as cognitive dissonance. The original study investigated this paradigm in the context of a religious group whose prophecy, that the world would end on a specific date, failed to materialise. Rather than abandoning their belief, members of the group paradoxically strengthened their commitment. To alleviate the dissonance, they reinterpreted the outcome, claiming that their faith had prevented the apocalypse, and subsequently intensified their efforts to convert others (Festinger et al., 1956). Later, Aronson and Mills (1959) developed the effort justification paradigm to show that when individuals endure an unpleasant or effortful process to achieve a goal, they are likely to rate the outcome more positively than if little or no effort had been expended. This happens because people want to believe that their efforts were worthwhile. If they suffer or work hard for something that turns out to be disappointing, they experience cognitive dissonance. To reduce this discomfort, they convince themselves that the goal must have been valuable after all. In their original study, participants had to complete either a mild or severe initiation to join a discussion group. The severe initiation involved reading aloud unpleasant material, while the mild one involved reading neutral content. After joining, all participants listened to a deliberately dull and unengaging group discussion. Despite the boring content, those who had undergone the more severe initiation rated the group more favourably than those in the mild or control condition. This suggested that they justified the unpleasant experience by convincing themselves the group was more interesting than it actually was (Aronson & Mills, 1959). Festinger and Carlsmith (1959) developed the induced compliance paradigm to show that when people are persuaded to act in a way that goes against their beliefs, but are given little external justification for doing so, they often change their internal attitudes to match their behaviour. The key idea is that lying or acting against one's beliefs creates cognitive dissonance, especially when there isn’t a good enough reason (like a large reward) to explain the behaviour. In their

classic experiment, participants were asked to complete a very boring task. Afterwards, they were instructed to convince another person that the task had actually been enjoyable. Some participants were paid $20 to do this, while others were paid only $1. Those who received $20 had a clear external reason for lying, so they experienced little or no dissonance and continued to believe the task was boring. However, participants who were paid only $1 didn't have a strong external reason to justify the lie. As a result, they experienced dissonance between their behaviour (saying the task was fun) and their belief (knowing it was boring). To reduce this uncomfortable feeling, they changed their attitude, convincing themselves that the task wasn't so bad after all (Festinger & Carlsmith, 1959). Finally, Aronson et al. (1991) introduced the induced hypocrisy paradigm to explore how highlighting an individual's inconsistency between their values and their past behaviours creates cognitive dissonance. This method typically involves two key stages. First, participants are asked to publicly endorse a socially desirable behaviour. Second, they are prompted to recall personal instances where they failed to act accordingly. This confrontation between ideal and actual behaviour generates psychological discomfort rooted in dissonance. The individual is then motivated to resolve the inconsistency, often by aligning future actions with their stated beliefs. The original study applied this approach in the context of condom use among university students. Participants were asked to advocate for consistent condom use and then reflect on instances when they had not followed this recommendation themselves. This contrast between their stated beliefs and prior behaviour elicited cognitive dissonance. To reduce this discomfort, participants became more likely to commit to using condoms consistently in the future (Aronson et al., 1991).

In conclusion, the main paradigms of cognitive dissonance illustrate how inconsistencies between beliefs and behaviours generate discomfort that motivates change. Each paradigm offers unique insights into how people resolve dissonance in different contexts.

The limitations of the theory of cognitive dissonance

Malewski (1964) highlights several critical limitations in the theory of cognitive dissonance, arguing that many behaviours attributed to dissonance reduction can be equally explained by alternative motivations such as the desire to maintain self-esteem, avoid fear, or gain social approval. Dissonance-reducing actions often coincide with other rewards, making it difficult to isolate dissonance as the primary cause of behaviour. Moreover, dissonance does not always

lead to its own reduction, particularly when such reduction would involve accepting self-threatening or socially punishing cognitions. In cases where dissonance-reducing behaviour conflicts with self-esteem or introduces additional discomfort, individuals may forgo it entirely (Malewski, 1964). Another limitation of cognitive dissonance theory becomes clear when compared to Bem's (1967) self-perception theory. While the two theories don't necessarily contradict each other, Bem's view questions the idea that attitude change always happens because people feel uncomfortable when their thoughts or actions don't match. Instead, self-perception theory suggests that when people aren't sure how they feel about something, they often figure it out by looking at their own behaviour, without feeling any conflict or discomfort. This means attitudes can change even without dissonance, which challenges the idea that dissonance is always necessary. Although the theories can both be true in different situations, self-perception theory points out that cognitive dissonance might not explain all the ways people form or change their attitudes (Bem, 1967).

Although cognitive dissonance theory is influential, some researchers have criticised it and proposed alternative explanations for attitude and behaviour change.

Cognitive dissonance and behaviour change in the context of food decisions

Cognitive dissonance applied to general food consumption

Cognitive dissonance theory has been widely used to influence food-related decisions, encouraging more responsible and sustainable consumption behaviours. Nordvall (2014) demonstrates that even routine grocery shopping can trigger cognitive dissonance, especially when consumers with positive attitudes toward sustainability choose non-organic products due to factors like price or appearance. In a simulated shopping task, participants rated, selected, and re-rated organic and non-organic items. The results showed that after choosing between two similar products, participants tended to rate the one they picked more positively than before. This means they tried to reduce the discomfort of their choice by convincing themselves they had made the right decision. Interestingly, even though many participants cared about environmental issues, this did not lead them to choose organic products more often. Instead of changing their behaviour to match their values, they often explained their choice in a way that made it feel acceptable (Nordvall, 2014). Similarly, Rothgerber (2014) explored how people

who eat meat deal with cognitive dissonance when they were confronted with vegetarian values. Findings highlight that many meat-eaters feel uncomfortable or guilty when reminded that eating meat can harm animals. To reduce this discomfort, they often use different mental strategies. For example, they might convince themselves that eating meat is natural or necessary, deny that animals had suffered, or even speak negatively about vegetarians to protect their own behaviour. These strategies help restore a sense of internal consistency, allowing meat-eaters to maintain their dietary habits while reducing feelings of guilt (Rothgerber, 2014). Building on this idea, Dowsett et al. (2018) examined how dissonance can be activated through direct exposure to the reality of meat's animal origin. Participants were shown either information about the connection between meat and animals or neutral nutritional information. Those exposed to the animal link reported significantly higher negative emotions, indicating a clear dissonance response. However, despite the psychological discomfort, their overall attachment to meat and general attitudes toward animals remained largely unchanged, suggesting that such beliefs are deeply ingrained. Interestingly, gender differences played a moderating role, with women experiencing more dissonance and showing slightly reduced attachment to meat, while some men reacting with stronger meat attachment, possibly as a defensive response (Dowsett et al., 2018).

Therefore, cognitive dissonance can influence food-related decisions by creating discomfort when actions conflict with personal values. However, these studies show that this discomfort does not always lead to behaviour change. Instead, individuals often reduce dissonance through justification strategies that allow them to maintain existing habits.

Cognitive dissonance applied to healthy food consumption

The application of cognitive dissonance to the promotion of healthy eating behaviours has garnered increasing attention in recent years. Despite this growing interest, its direct use in guiding food choices remains relatively underexplored (Ong et al., 2017). In a study conducted by Wilson et al. (2002), cognitive dissonance principles were leveraged to promote healthier eating among adolescents by incorporating value-based reflection and self-affirmation exercises. Participants reflected on core personal values, such as health or future goals, and were guided to recognise how poor eating habits conflicted with those values. Self-affirmation activities reinforced their sense of identity and openness to change. This internal reflection

created a motivational push to resolve the inconsistency by adopting healthier behaviours, resulting in increased fruit and vegetable intake (Wilson et al., 2002). In a similar study, Stice et al. (2003) applied cognitive dissonance principles in a prevention program targeting adolescent girls at risk for eating disorders. Participants engaged in structured activities where they actively and publicly critiqued the thin-ideal promoted by media and culture, such as writing essays, participating in group discussions, and role-playing. This deliberate contradiction between their previous internalised beauty standards and their new declared behaviour created psychological discomfort, or dissonance. To reduce this tension, participants began to reject the thin ideal more genuinely, leading to a measurable decrease in body dissatisfaction, dieting behaviour, and other risk factors associated with eating disorders. The intervention's effectiveness illustrates how dissonance-based strategies, especially when involving social accountability and personal reflection, can realign internal beliefs and external actions in ways that support long-term mental and physical health (Stice et al., 2003). Stellefson et al. (2006) explored how different types of cognitive dissonance framing, centred on either health or appearance, affected college students' intentions to adopt healthier diet and exercise habits. Participants were asked to write reflective essays emphasising either the health or appearance-related benefits of a healthy lifestyle, thereby inducing dissonance between their current behaviours and the promoted ideals. Interestingly, those in the appearance-based dissonance group showed a stronger link between perceived appearance-related risks and intentions to change, compared to those in the health-focused group. This suggests that making dissonance personally relevant, by appealing to concerns more salient to the individual, such as physical appearance, can amplify the motivational impact of the intervention and more effectively influence health-related intentions (Stellefson et al., 2006). A study by Becker et al. (2010) showed that cognitive dissonance techniques can be effective in promoting healthier attitudes toward eating and body image, especially when delivered by peers. In this intervention, female university students facilitated group sessions promoting critical reflection on thin-ideal beauty standards. During the sessions, participants engaged in activities such as writing essays, discussing the negative aspects of chasing the thin ideal, and practising ways to challenge the pressures of external influences in everyday life. These actions were designed to create a sense of internal discomfort between the participants' old beliefs and their new behaviours. This discomfort encouraged them to shift their attitudes in a healthier direction, aligning more closely with their values. After the program, the students reported feeling less body dissatisfaction, reduced negative emotions, and fewer behaviours related to disordered eating.

These improvements also lasted over time, showing that dissonance-based interventions, especially when led by peers in a supportive setting, can be a powerful way to encourage lasting, healthy change (Becker et al., 2010). Knobloch-Westerwick et al. (2013) introduced a digital dimension to cognitive dissonance by exploring how selective exposure to online health messages reflects self-regulatory motivations. Their findings revealed that individuals are more inclined to engage with health messages that align with their current behaviours, such as consuming content about fruits or vegetables they already eat, thus reinforcing existing health choices. This behaviour points to a tendency to seek affirmation for one's lifestyle, which can reduce psychological discomfort and support identity consistency. However, the study also uncovered a nuanced dynamic: when discrepancies existed between participants' current behaviours and perceived health standards, they were more likely to engage with challenging messages, especially if these messages came from high-credibility sources, suggesting a self-motivating function of dissonance. Still, the tendency to choose comfortable content shows a key limit of dissonance-based strategies, as people can simply avoid messages that make them uncomfortable, reducing their impact. This shows how important it is to think carefully about the message transmitted, especially online. If done the right way, it can encourage people to pay attention to messages that challenge their habits, helping them reflect and make positive changes instead of avoiding the discomfort (Knobloch-Westerwick et al., 2013).

In conclusion, leveraging cognitive dissonance to promote healthy food consumption shows promising results. When individuals are made aware of inconsistencies between their values and behaviours, they may be motivated to change in the future to restore internal harmony. However, the success of such interventions depends on how the dissonance is highlighted. If it’s done poorly, people may ignore or avoid the message altogether. To be effective, interventions need to be thoughtfully designed to prompt genuine reflection and engagement, helping individuals move toward healthier habits without feeling judged or defensive.

III. CONCEPTUAL FRAMEWORK

This section sets out the conceptual foundations of the study, outlining the proposed hypotheses and illustrating the research model through a visual representation.

The formulation of the hypotheses

The first hypothesis

The first hypothesis investigates the association between cognitive dissonance and psychological discomfort in the context of healthy dietary behaviours. Specifically, it posits that when individuals become aware of a discrepancy between their beliefs about healthy eating and their actual eating habits, they experience psychological discomfort. This builds on Festinger's (1957) theory of cognitive dissonance, which states that discomfort arises when there is inconsistency between one's beliefs, values, or attitudes and one's actions. Therefore, individuals who place a high value on maintaining a healthy diet are likely to experience psychological discomfort when their eating behaviour contradicts that value, for instance, by frequently consuming fast food or sugary snacks.

Therefore, the first hypothesis (H1) can be articulated as follows: *Cognitive dissonance is positively associated with psychological discomfort.*

The second hypothesis

The second hypothesis examines the relationship between psychological discomfort and an individual's intention to adopt a healthier diet. Specifically, it posits that psychological discomfort serves as a motivational force that increases the intention to improve eating habits. This is grounded in Festinger's (1957) theory of cognitive dissonance, which suggests that psychological discomfort creates a drive to reduce inconsistency. In the context of this study, individuals experiencing psychological discomfort are expected to develop stronger intentions

to pursue healthier diets to resolve the dissonance. While dissonance reduction can occur through various mechanisms, here the focus is on the role of psychological discomfort as a catalyst for adopting healthier eating behaviours.

Therefore, the second hypothesis (H2) can be formulated as follows: *Psychological discomfort is positively associated with intentions to adopt healthier dietary habits.*

The third hypothesis

The third hypothesis proposes that psychological discomfort mediates the relationship between cognitive dissonance and the intention to adopt a healthier diet. In other words, cognitive dissonance induces psychological discomfort, which in turn serves as a key mechanism influencing individuals' intentions to change their dietary behaviour. According to Festinger (1957), when individuals experience inconsistency between their beliefs and behaviours, this psychological conflict generates a state of psychological discomfort or tension. To alleviate this psychological discomfort, individuals are motivated to reduce the dissonance by changing their behaviour, modifying their beliefs, or adding new information. In the context of this study, individuals with conflicting beliefs and behaviours are more likely to experience discomfort and, consequently, have a stronger intention to adopt healthier eating patterns as a means of restoring cognitive harmony.

Therefore, the third hypothesis (H3) can be expressed as follows: *Psychological discomfort mediates the relationship between cognitive dissonance and individuals' intentions to adopt a healthier diet.*

The fourth hypothesis

The fourth hypothesis presents a contrasting view to the previous one and explores the possibility that cognitive dissonance can directly influence the intention to adopt a healthier diet, independently of psychological discomfort. Specifically, it suggests that the motivational force behind behavioural change may stem not from emotional arousal, such as discomfort, but from a rational, cognitive process aimed at maintaining a consistent self-concept. This perspective is grounded in Bem's (1967) self-perception theory, which argues that individuals

often deduce their internal states by observing their behaviour and the context in which it occurs. When introspective cues are weak, people rely on external observations to evaluate their attitudes or intentions. From this standpoint, behavioural change may result from a cognitive evaluation aimed at preserving a coherent self-image, rather than from an emotional response to inconsistency. For instance, a person may recognise that their unhealthy eating patterns contradict their health values and, without experiencing significant emotional distress, may still adjust their future food choices to restore internal coherence.

Therefore, the third hypothesis (H4) can be formulated as follows: *Cognitive dissonance is directly associated with individuals' intentions to adopt healthier dietary behaviours, independently of psychological discomfort.*

The fifth hypothesis

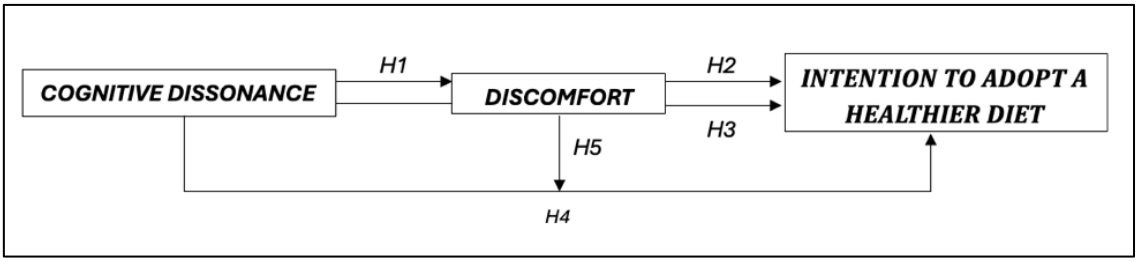
The fifth hypothesis examines the moderating role of psychological discomfort in the relationship between cognitive dissonance and the intention to adopt a healthier diet. Specifically, it proposes that the strength of the association between cognitive dissonance and the intention to adopt healthier eating habits depends on the level of psychological discomfort experienced by the individual. The degree of psychological discomfort elicited by a dissonant situation can vary significantly across individuals, potentially moderating the impact of cognitive dissonance on behavioural intentions. This hypothesis builds on Aronson's (1969) refinement of cognitive dissonance theory, which posits that the intensity of dissonance, as well as the resulting discomfort, depends not only on the inconsistency between attitudes and behaviours but also on the personal relevance and emotional salience of the situation. Individuals who are more sensitive to psychological discomfort may experience a stronger emotional reaction to cognitive dissonance, thereby showing greater motivation to adjust their behaviour. Conversely, individuals who are less sensitive to psychological discomfort may react less strongly to dissonant situations and thus be less likely to modify their behaviour.

Therefore, the fifth hypothesis (H5) can be stated as follows: *The relationship between cognitive dissonance and individuals' intention to adopt healthier dietary habits is moderated by psychological discomfort.*

A visual representation of the model

The visual representation outlines the key variables and the relationships of the study.

Figure 2: A visual representation of the conceptual framework



The three key variables of this study are cognitive dissonance, psychological discomfort, and the intention to adopt a healthier diet. In the context of this research, five relationships between these variables are investigated. The first relationship is between the independent variable, cognitive dissonance, and the dependent variable, psychological discomfort. This assumes that experiencing cognitive dissonance generates psychological discomfort. The second relationship explores the effect of the independent variable, psychological discomfort, on the dependent variable, intention to adopt a healthier diet. This suggests that the psychological discomfort experienced by individuals may drive them to adopt healthier eating habits in the future. The third relationship suggests that the independent variable, cognitive dissonance, has an impact on the dependent variable, intention to adopt a healthier diet, but this relationship is mediated by psychological discomfort. This suggests that cognitive dissonance influences intentions indirectly by first generating psychological discomfort, which in turn motivates healthier dietary choices. The fourth relationship analyses the direct impact of the independent variable, cognitive dissonance, on the dependent variable, the intention to adopt a healthier diet. This posits that cognitive dissonance alone, without the mediation of psychological discomfort, can directly influence intentions to change eating behaviour. The fifth relationship suggests that the independent variable, cognitive dissonance, has an impact on the dependent variable, intention to adopt a healthier diet, but this relationship is moderated by psychological discomfort. This implies that the strength or direction of the effect of cognitive dissonance on intention to adopt healthier eating may vary depending on the level of psychological discomfort experienced by each respondent.

IV. METHODOLOGY

This section describes the methodology used to collect the data and to test the study's hypotheses. This includes an overview of the study, the data collection instruments, the data collection process, and the statistical methods used for analysis.

An overview of the study

The general idea

This study aims to analyse the relationship between cognitive dissonance, psychological discomfort, and the intention to adopt a healthier diet. Specifically, it examines the extent to which cognitive dissonance elicits psychological discomfort and how this discomfort, in turn, influences individuals' intentions to improve their dietary habits. Furthermore, the study explores whether the effect of cognitive dissonance on behavioural intentions is direct, mediated, or moderated by discomfort.

The experimental design

The experimental design of this study was based on Aronson et al.'s (1991) hypocrisy paradigm, which aims to induce cognitive dissonance by making participants aware of the inconsistency between their stated values and actual behaviours. Participants were first asked to reflect on the importance they assigned to various food-related behaviours, and then to report how frequently they engaged in those same behaviours. Subsequently, they were presented with a summary table highlighting the discrepancies between their values and actions, thereby inducing cognitive dissonance. This procedure was intended to increase psychological discomfort, which in turn was expected to enhance their intention to adopt a healthier diet. The design was structured to maximise this discomfort to examine its effect on participants' motivation and behavioural intentions.

The data collection instruments

The questionnaire

The questionnaire (see annexe 1) was structured based on the experimental design of the study. In the first section, participants were asked to rate the importance they assigned to various food-related behaviours. In the second section, respondents were asked to rate how frequently they engaged in those same behaviours. These first two sections were designed based on the hypocrisy paradigm and aimed to uncover the potential cognitive dissonance existing within participants. In the third section, participants were presented with a personalised summary table displaying their previous responses regarding the importance and frequency of specific food-related behaviours side by side, as well as tailored feedback informing respondents of their general level of inconsistency. Both the summary table and the feedback were intentionally direct and explicit, intending to foster a genuine sense of awareness and concern among respondents. In the fourth section, participants were asked to assess the level of discomfort they were experiencing at that moment. Finally, after evaluating their level of discomfort, they were asked to indicate their intention to change behaviour concerning the same food-related behaviours assessed earlier. Finally, a set of demographic questions was included to gather data on the examined sample.

The items

Since no prior study has investigated this specific model, questions were adapted from various existing studies according to the objective of this research. To assess cognitive dissonance, participants were asked to rate the importance they attribute to certain food-related behaviours and then indicate how frequently they engaged in those same behaviours in their daily lives. The behaviours participants were asked to rate were selected from the Food Choice Questionnaire (FCQ) developed by Steptoe et al. (1995). The original FCQ contains thirty-six items measuring food-related behaviours across various dimensions, including health, convenience, sensory appeal, natural content, price, weight control, familiarity, and ethical concern. For the purposes of this study, only the behaviours related to health, natural content, and weight control were selected and presented to participants. Therefore, participants were asked to first evaluate how important and then how frequently they consumed (1) foods without

additives, (2) low-calorie foods, (3) foods containing natural ingredients, (4) low-fat foods, (5) high-fiber foods, (6) nutritious foods, (7) foods that help control weight, (8) foods rich in vitamins and minerals, (9) foods free from artificial ingredients, (10) high-protein foods, (11) foods that promote overall health, and (12) foods beneficial for physical appearance (e.g., skin, teeth, hair, and nails). To assess psychological discomfort, this study drew on Festinger's (1957) conceptualisation of cognitive dissonance and introduced three specific items designed to measure the extent to which participants felt uncomfortable, uneasy, and bothered. These items were selected to capture the psychological discomfort individuals experience when their beliefs are not aligned with their behaviours. The intention to adopt healthier eating habits was measured by asking respondents to evaluate the same behaviours selected from the FCQ, but this time based on their willingness to adopt healthier behaviours. This approach ensured consistency in measuring both current behaviours and future intentions. Finally, demographic questions, including gender, age, and nationality, were asked.

Table 1: Summary of the variables and items used in the questionnaire

Variable		Item	Source
Cognitive Dissonance	Importance	It is important to me that the food I eat on a typical day contains no additives	Adapted from Steptoe et al. (1995)
		It is important to me that the food I eat on a typical day is low in calories	
		It is important to me that the food I eat on a typical day contains natural ingredients	
		It is important to me that the food I eat on a typical day is low in fat	
		It is important to me that the food I eat on a typical day is high in fibre and roughage	
		It is important to me that the food I eat on a typical day is nutritious	
		It is important to me that the food I eat on a typical day helps me control my weight	
		It is important to me that the food I eat on a typical day contains lots of vitamins and minerals	
		It is important to me that the food I eat on a typical day contains no artificial ingredients	
		It is important to me that the food I eat on a typical day is high in protein	
		It is important to me that the food I eat on a typical day keeps me healthy	
		It is important to me that the food I eat on a typical day is good for my skin/teeth/hair/nails	
	Frequency	I pay attention to the fact that the food that I eat on a typical day contains no additives	Adapted from Steptoe et al. (1995)
		I pay attention to the fact that the food that I eat on a typical day is low in calories	
		I pay attention to the fact that the food that I eat on a typical day contains natural ingredients	
		I pay attention to the fact that the food that I eat on a typical day is low in fat	
		I pay attention to the fact that the food that I eat on a typical day	
		I pay attention to the fact that the food that I eat on a typical day is nutritious	
		I pay attention to the fact that the food that I eat on a typical day helps me control my weight	
		I pay attention to the fact that the food that I eat on a typical day contains lots of vitamins and minerals	
		I pay attention to the fact that the food that I eat on a typical day contains no artificial ingredients	
		I pay attention to the fact that the food that I eat on a typical day is high in protein	
		I pay attention to the fact that the food that I eat on a typical day keeps me healthy	
		I pay attention to the fact that the food that I eat on a typical day is good for my skin/teeth/hair/nails	
Discomfort	Uncomfortable	To what extend do you feel uncomfortable	Adapted from Festinger (1957)
	Uneasy	To what extend do you feel uneasy	
	Bothered	To what extend do you feel bothered	
Intention to adopt a healthier diet		In the future I will commit to consume foods that contains no additives	Adapted from Steptoe et al. (1995)
		In the future I will commit to consume foods that is low in calories	
		In the future I will commit to consume foods that contains natural ingredients	
		In the future I will commit to consume foods that is low in fat	
		In the future I will commit to consume foods that is high in fibre and roughage	
		In the future I will commit to consume foods that is nutritious	
		In the future I will commit to consume foods that helps me control my weight	
		In the future I will commit to consume foods that contains lots of vitamins and minerals	
		In the future I will commit to consume foods that contains no artificial ingredients	
		In the future I will commit to consume foods that is high in protein	
		In the future I will commit to consume foods that keeps me healthy	
		In the future I will commit to consume foods that is good for my skin/teeth/hair/nails	

The scales

All self-report items related to food behaviours, discomfort, and behavioural intentions were assessed using a 5-point Likert scale, with response options tailored to fit the nature of each question. For the twelve items measuring the importance of food-related behaviours, participants responded on a scale from 1 ("Not at all important") to 5 ("Very important"). The frequency of these behaviours was rated on a scale ranging from 1 ("Never") to 5 ("Always"), capturing how often participants engaged in each action. Psychological discomfort was measured by asking participants to rate their feelings on a scale from 1 ("Not at all") to 5 ("A lot"), indicating the intensity of discomfort experienced. For behavioural intentions, the scale ranged from 1 ("Strongly disagree") to 5 ("Strongly agree"), reflecting the participants' motivation to change their food-related habits. This standardised approach facilitated quantitative analysis and ensured consistency across these self-report measures. Demographic information was collected separately: gender was selected via a dropdown menu offering four options ("male," "female," "other," and "prefer not to respond"), age was requested as an open-ended response with participants entering their year of birth, and nationality was also collected through an open-ended question.

The pretest of the questionnaire

Before distributing the questionnaire, a pre-test was conducted with ten individuals. This step was essential to identify and reduce potential sources of error. Participants completed a paper version of the questionnaire and provided their feedback. This allowed for the detection of ambiguous wording, misinterpretations, or other issues related to item clarity and the data collection process, thereby improving the overall quality of the questionnaire (Grimm, 2010).

The data collection procedure

The administration of the questionnaire

The data for this study were collected over the course of one week through an online questionnaire distributed via a shared link. This method ensured maximum flexibility, allowing individuals to respond at their convenience and from any device of their choice.

The data analysis method

The statistical techniques

First, an exploratory factor analysis will be conducted to examine whether the items related to importance, frequency, psychological discomfort, and intention to adopt healthy eating behaviours cluster into coherent factors. If meaningful groupings emerge, their internal consistency will be assessed to ensure they reliably measure the same underlying construct. If no clear structure is found, the items will be considered individually. Subsequently, the five hypotheses formulated for this study will be examined using regression analyses.

The software tools

All statistical analyses will be conducted using SPSS, a widely used software for data analysis in the social sciences. To examine the mediating and moderating effects of discomfort in the relationship between cognitive dissonance and the intention to adopt a healthier diet, an extension within SPSS was installed and used. Specifically, the PROCESS macro was utilised, as it provided advanced statistical modelling tools for mediation and moderation analyses. This extension allowed for a more precise evaluation of indirect effects and interaction terms, ensuring a robust and comprehensive analysis of the data.

V. RESULTS

This section presents the results of the analysis based on the collected data. The section opens with a descriptive overview of the sample, followed by preliminary procedures to prepare the data, and concludes with the testing of the research hypotheses.

Descriptive analysis

A total of 159 respondents were considered for this study. Concerning the participants' gender, 49 identified as male (30.8%) and 110 as female (69.2%), reflecting a notable gender imbalance with a predominance of female participants. In terms of age, the youngest respondent was 15 years old, and the oldest was 72 years old. The sample included 94 participants (59.1 %) aged between 15 and 29 years, 14 participants (8.8%) aged between 30 and 44 years, 46 participants (28.9%) aged between 45 and 59 years and 5 participants (3.1%) aged between 60 and 74 years. This distribution indicates a predominance of younger individuals in the sample. Concerning nationality, 144 respondents were Swiss (90.6%), 14 were Italian (8.8%), and 1 was Brazilian (0.6%). This suggests a relatively culturally homogeneous sample.

Table 2: Summary of the descriptive statistics

Category		**Number of respondents**	**Percentage**
Gender	Male	49	30.8%
	Female	110	69.2%
Age	15-29	94	59.1%
	30-44	14	8.8%
	45-59	46	28.9%
	60-74	5	3.1%
Nationality	Swiss	144	90.6%
	Italy	14	8.8%
	Brazil	1	0.6%

Preliminary analyses

Exploratory factor analysis and reliability check

An exploratory factor analysis was conducted to examine whether the items measuring importance, frequency, psychological discomfort, and intention to adopt a healthier diet could be meaningfully grouped into composite variables. The analysis revealed that the three items related to psychological discomfort consistently loaded under a single factor, suggesting they reflect a common underlying construct. To verify the appropriateness of aggregating these items, a reliability analysis was performed. The resulting Cronbach's alpha ($\alpha = 0.960$) indicated good internal consistency, confirming that the items reliably capture the same dimension and can be aggregated into a single variable. In contrast, the items related to importance, frequency, and intention to adopt a healthier diet did not yield a coherent or interpretable factor structure. Ideally, all items related to importance would have been grouped under one factor, those related to frequency under another, and those pertaining to intention to adopt a healthier diet under a third. Alternatively, it would have been acceptable if the analysis had produced factors based on thematic similarity, such as grouping together items representing similar behaviours, as long as each factor included corresponding items across importance, frequency, and intention. This structure was necessary to later calculate cognitive dissonance (importance minus frequency) and compare it to future behavioural intentions. However, the factor analysis did not produce groupings that met these criteria. As a result, it was not possible to construct aggregated variables for these dimensions. Therefore, all items related to importance, frequency, and intention were treated as individual variables in the subsequent analyses.

Calculation of the cognitive dissonance scores

Considering that we kept each behaviour separate, we proceeded with the creation of the twelve cognitive dissonance scores by calculating the absolute difference between importance and frequency for each type of behaviour that was investigated. In SPSS, the absolute value of the difference between the importance and frequency scores was computed using the ABS function (ABS [importance–frequency]), which disregards whether the discrepancy is positive or negative and focuses instead on the magnitude of the inconsistency. For example, if a behaviour

was rated as very important (score of 5) and was also frequently performed (score of 5), the dissonance score would be 0, indicating consistency. Similarly, if both importance and frequency were rated low (e.g., score of 1), the dissonance score would again be 0. In contrast, a behaviour considered highly important (5) but rarely performed (1) would yield a dissonance score of 4, indicating significant cognitive dissonance. The same level of dissonance would be present if the behaviour was deemed unimportant (1) but frequently practised (5). In conclusion, the greater the gap between perceived importance and reported behaviour, the higher the dissonance score, reflecting stronger cognitive dissonance for that specific behaviour.

Hypotheses testing

Regression analyses were used to test whether one metric variable significantly predicted another metric variable.

The first hypothesis

The first hypothesis proposed that higher levels of cognitive dissonance regarding specific healthy eating behaviours would be positively associated with psychological discomfort. To test this hypothesis, twelve simple linear regressions were conducted, one for each item. In each regression, the previously calculated cognitive dissonance score served as the independent variable, while self-reported discomfort was used as the dependent variable. The relationships were considered statistically significant when the error likelihood (p-value) of the model was below 0.05. For significant models, the coefficient of determination (R^2) indicates the proportion of variance in the dependent variable explained by the predictor. The unstandardized coefficients (β) indicated the size and direction of the effect of the predictor, while their associated error likelihood (p-values) assessed whether this effect was statistically significant.

The first regression examined whether high levels of cognitive dissonance related to consuming foods that do not contain additives were associated with increased psychological discomfort. For example, someone who believes it is important to eat foods that do not contain additives, yet frequently consumes foods that contain additives, may experience psychological discomfort when this inconsistency is made salient. The regression model was statistically significant ($p < 0.001$; $F = 47.286$), indicating that cognitive dissonance concerning foods that contain additives

significantly predicted the level of psychological discomfort associated with it. In this model, cognitive dissonance explained 23.1% of the variance in self-reported psychological discomfort related specifically to this behaviour ($R^2 = 0.231$). This reflects a moderate effect size, suggesting that the discrepancy between belief and behaviour in this context contributes meaningfully to the psychological discomfort. The standardised regression coefficient was also significant ($p < 0.001$; $\beta = 0.481$), indicating a positive relationship, meaning that higher levels of cognitive dissonance concerning consuming foods without additives were associated with greater psychological discomfort.

The second regression examined whether high levels of cognitive dissonance related to consuming low-calorie foods were associated with increased psychological discomfort. For example, someone who believes it is important to eat foods that are low in calories, yet frequently fails to do so, may experience psychological discomfort when this inconsistency is pointed out. The regression model was statistically significant ($p < 0.001$; $F = 45.259$), indicating that cognitive dissonance concerning the consumption of low-calorie foods significantly predicted the level of psychological discomfort associated with this behaviour. In this model, cognitive dissonance explained 22.4% of the variance in self-reported psychological discomfort specific to this behaviour ($R^2 = 0.224$). This reflects a moderate effect size, suggesting that the misalignment between belief and behaviour meaningfully contributes to the discomfort reported for this item. The standardised regression coefficient was also significant ($p < 0.001$; $\beta = 0.473$), indicating a positive relationship, namely, that higher levels of cognitive dissonance regarding consuming low-calorie foods were associated with greater psychological discomfort.

The third regression examined whether high levels of cognitive dissonance related to the consumption of foods that contain natural ingredients were associated with increased psychological discomfort. The idea is that someone who believes it is important to eat foods that are made with natural ingredients, yet frequently consumes highly processed foods, may experience psychological discomfort when this inconsistency is exposed. The regression model was statistically significant ($p < 0.001$; $F = 31.612$), indicating that cognitive dissonance concerning the consumption of natural ingredients significantly predicted the level of psychological discomfort associated. In this model, cognitive dissonance explained 16.8% of the variance in self-reported psychological discomfort related specifically to this behaviour (R^2

= 0.168). This reflects a modest effect size, suggesting that the discrepancy between belief and behaviour in this context contributes meaningfully to the discomfort reported. The standardised regression coefficient was also significant ($p < 0.001$; $\beta = 0.409$), indicating a positive relationship, meaning that higher levels of cognitive dissonance concerning eating natural foods were associated with greater psychological discomfort.

The fourth regression examined whether high levels of cognitive dissonance related to consuming foods that are low in fat were associated with increased psychological discomfort. For example, someone who believes it is important to eat low-fat foods but frequently consumes foods high in fat may experience psychological discomfort when this inconsistency is made salient. The regression model was statistically significant ($p < 0.001$; $F = 47.683$), indicating that cognitive dissonance concerning the consumption of low-fat foods significantly predicted the level of psychological discomfort associated with it. In this model, cognitive dissonance explained 23.3% of the variance in self-reported psychological discomfort related specifically to this behaviour ($R^2 = 0.233$). This reflects a moderate effect size, suggesting that the discrepancy between belief and behaviour in this context contributes to the discomfort reported for this item. The standardised regression coefficient was also significant ($p < 0.001$; $\beta = 0.483$), indicating a positive relationship, meaning that higher levels of cognitive dissonance concerning eating low-fat foods were associated with greater psychological discomfort.

The fifth regression examined whether high levels of cognitive dissonance related to the consumption of foods that are high in fibre were associated with increased psychological discomfort. The idea is that someone who believes that eating fibre-rich foods is important, but rarely does so in practice, may experience psychological discomfort when this inconsistency is brought to attention. The regression model was statistically significant ($p < 0.001$; $F = 32.544$), indicating that cognitive dissonance concerning the consumption of high-fibre foods significantly predicted the level of psychological discomfort associated with it. In this model, cognitive dissonance explained 17.2% of the variance in self-reported psychological discomfort related specifically to this behaviour ($R^2 = 0.172$). This reflects a modest effect size, suggesting that the discrepancy between belief and behaviour in this context contributes meaningfully to the discomfort reported for this item. The standardised regression coefficient was also significant ($p < 0.001$; $\beta = 0.414$), indicating a positive relationship, meaning that higher levels

of cognitive dissonance concerning eating high-fibre foods were associated with greater psychological discomfort.

The sixth regression examined whether high levels of cognitive dissonance related to the consumption of food perceived as nutritious were associated with increased psychological discomfort. For example, someone who believes it is important to eat nutritious foods but frequently makes food choices that do not align with this belief may experience psychological discomfort when the inconsistency is pointed out. The regression model was statistically significant ($p < 0.001$; $F = 28.009$), indicating that cognitive dissonance concerning nutritious eating significantly predicted the level of psychological discomfort associated. In this model, cognitive dissonance explained 15.1% of the variance in self-reported psychological discomfort related specifically to this behaviour ($R^2 = 0.151$). This reflects a modest effect size, suggesting that the discrepancy between belief and behaviour in this context contributes to the discomfort reported for this item. The standardised regression coefficient was also significant ($p < 0.001$; $\beta = 0.389$), indicating a positive relationship, meaning that higher levels of cognitive dissonance concerning eating nutritious foods were associated with greater psychological discomfort.

The seventh regression examined whether high levels of cognitive dissonance related to the consumption of food aimed at supporting weight control were associated with increased psychological discomfort. The idea is that someone who considers it important to eat foods that help manage body weight, but regularly chooses foods that contradict this goal, may experience psychological discomfort when this inconsistency is highlighted. The regression model was statistically significant ($p < 0.001$; $F = 49.230$), indicating that cognitive dissonance concerning weight-control food significantly predicted the level of psychological discomfort associated with it. In this model, cognitive dissonance explained 23.9% of the variance in self-reported psychological discomfort related specifically to this behaviour ($R^2 = 0.239$). This reflects a moderate effect size, suggesting that the discrepancy between belief and behaviour in this context contributes meaningfully to the discomfort reported for this item. The standardised regression coefficient was also significant ($p < 0.001$; $\beta = 0.489$), indicating a positive relationship, meaning that higher levels of cognitive dissonance concerning weight-control eating were associated with greater psychological discomfort.

The eighth regression examined whether high levels of cognitive dissonance related to the consumption of foods rich in vitamins and minerals were associated with increased psychological discomfort. For example, someone who values eating foods that contain a lot of vitamins and minerals, but often neglects to do so, may experience psychological discomfort when the inconsistency is made salient. The regression model was statistically significant ($p < 0.001$; $F = 40.820$), indicating that cognitive dissonance concerning nutrient-rich food significantly predicted the level of psychological discomfort associated with it. In this model, cognitive dissonance explained 20.6% of the variance in self-reported psychological discomfort related specifically to this behaviour ($R^2 = 0.206$). This reflects a moderate effect size, suggesting that the discrepancy between belief and behaviour in this context contributes meaningfully to the discomfort reported for this item. The standardised regression coefficient was also significant ($p < 0.001$; $\beta = 0.454$), indicating a positive relationship, meaning that higher levels of cognitive dissonance concerning nutrient-rich food consumption were associated with greater psychological discomfort.

The ninth regression examined whether high levels of cognitive dissonance related to the avoidance of artificial ingredients were associated with increased psychological discomfort. For example, someone who believes that it is important to avoid artificial ingredients, yet frequently consumes foods containing them, may experience psychological discomfort when this contradiction is brought to light. The regression model was statistically significant ($p < 0.001$; $F = 45.193$), indicating that cognitive dissonance concerning artificial ingredient consumption significantly predicted the level of psychological discomfort associated with it. In this model, cognitive dissonance explained 22.4% of the variance in self-reported psychological discomfort related specifically to this behaviour ($R^2 = 0.224$). This reflects a moderate effect size, suggesting that the discrepancy between belief and behaviour in this context contributes meaningfully to the discomfort reported for this item. The standardised regression coefficient was also significant ($p < 0.001$; $\beta = 0.473$), indicating a positive relationship, meaning that higher levels of cognitive dissonance concerning artificial ingredients were associated with greater psychological discomfort.

The tenth regression examined whether high levels of cognitive dissonance related to the consumption of protein-rich foods were associated with increased psychological discomfort. For example, someone who believes it is important to consume foods high in protein, but does

not consistently do so, may experience psychological discomfort when this inconsistency is made salient. The regression model was statistically significant ($p < 0.001$; $F = 59.672$), indicating that cognitive dissonance concerning protein intake significantly predicted the level of psychological discomfort associated with it. In this model, cognitive dissonance explained 27.5% of the variance in self-reported psychological discomfort related specifically to this behaviour ($R^2 = 0.275$). This reflects one of the strongest effect sizes observed, suggesting that the discrepancy between belief and behaviour in this context contributes substantially to the discomfort reported for this item. The standardised regression coefficient was also significant ($p < 0.001$; $\beta = 0.525$), indicating a strong positive relationship, meaning that higher levels of cognitive dissonance concerning protein-rich food consumption were associated with greater psychological discomfort.

The eleventh regression examined whether high levels of cognitive dissonance related to eating food that contributes to overall health were associated with increased psychological discomfort. For example, someone who believes it is important to eat food that supports general health, yet often neglects this belief in everyday choices, may experience psychological discomfort when this inconsistency is pointed out. The regression model was statistically significant ($p < 0.001$; $F = 30.166$), indicating that cognitive dissonance concerning health-promoting food significantly predicted the level of psychological discomfort associated with it. In this model, cognitive dissonance explained 16.1% of the variance in self-reported psychological discomfort related specifically to this behaviour ($R^2 = 0.161$). This reflects a modest effect size, suggesting that the discrepancy between belief and behaviour in this context contributes meaningfully to the discomfort reported for this item. The standardised regression coefficient was also significant ($p < 0.001$; $\beta = 0.401$), indicating a positive relationship, meaning that higher levels of cognitive dissonance concerning health-related eating were associated with greater psychological discomfort.

The twelfth regression examined whether high levels of cognitive dissonance related to eating food that benefits skin, teeth, hair, nails, etc., were associated with increased psychological discomfort. For example, someone who believes that eating certain foods is important for maintaining physical appearance yet frequently eats in ways that do not support this goal may experience psychological discomfort when the inconsistency is highlighted. The regression model was statistically significant ($p < 0.001$; $F = 23.266$), indicating that cognitive dissonance

concerning appearance-related food significantly predicted the level of psychological discomfort associated with it. In this model, cognitive dissonance explained 12.9% of the variance in self-reported psychological discomfort related specifically to this behaviour (R^2 = 0.129). This reflects the smallest effect size among the behaviours studied, yet still a meaningful one, suggesting that the discrepancy between belief and behaviour in this context contributes to the discomfort reported for this item. The standardised regression coefficient was also significant ($p < 0.001$; $\beta = 0.359$), indicating a positive relationship, meaning that higher levels of cognitive dissonance concerning appearance-related eating were associated with greater psychological discomfort.

The first set of linear regressions confirms a significant positive link between cognitive dissonance and psychological discomfort for all behaviours tested.

Table 3: Summary of the results for the first set of regressions

Behavior	**R^2**	**F**	**p-value**	**β**	**p-value (β)**
Eating food that does not contain additives	0.231	47.286	< .001	0.481	< .001
Eating food that is low in calories	0.224	45.259	< .001	0.473	< .001
Eating food that contains natural ingredients	0.168	31.612	< .001	0.409	< .001
Eating food that is low in fat	0.233	47.683	< .001	0.483	< .001
Eating food that is high in fiber	0.172	32.544	< .001	0.414	< .001
Eating food that is nutritious	0.151	28.009	< .001	0.389	< .001
Eating food that helps control body weight	0.239	49.230	< .001	0.489	< .001
Eating food that contains many vitamins and minerals	0.206	40.820	< .001	0.454	< .001
Eating food that does not contain artificial ingredients	0.224	45.193	< .001	0.473	< .001
Eating food that is high in protein	0.275	59.672	< .001	0.525	< .001
Eating food that contributes to overall health	0.161	30.166	< .001	0.401	< .001
Eating food that benefits skin, teeth, hair, nails, etc.	0.129	23.266	< .001	0.359	< .001

The second hypothesis

The second hypothesis stated that higher levels of psychological discomfort caused by cognitive dissonance would be positively associated with participants' intention to adopt a healthier diet in the future. To test this hypothesis, twelve simple linear regressions were conducted, one for each item. In each model, psychological discomfort was entered as the independent variable,

while the intention to adopt a healthier diet was the dependent variable. The relationships were considered statistically significant when the error likelihood (p-value) of the model was below 0.05. For significant models, the coefficient of determination (R^2) indicates the proportion of variance in the dependent variable explained by the predictor. The unstandardized coefficients (β) indicated the size and direction of the effect of the predictor, while the associated error likelihood (p-values) assessed whether the effect was statistically significant.

The first regression tested whether psychological discomfort predicted the intention to adopt a healthier diet, specifically related to the consumption of foods without additives. For example, an individual who experiences psychological discomfort may be more likely to intend to adopt a healthier diet in the future by paying greater attention to avoiding foods that contain additives. The regression model was statistically significant ($p = 0.003$; $F = 9.393$), indicating that discomfort played a meaningful role in predicting intention. Discomfort explained 5.6% of the variance in intention ($R^2 = 0.056$), suggesting a small but reliable effect. The standardised beta coefficient was significant ($p = 0.003$; $\beta = 0.238$), indicating a positive association. This means that individuals who reported greater psychological discomfort were more likely to express the intention to improve their diet in this specific area.

The second regression tested whether psychological discomfort predicted the intention to adopt a healthier diet, specifically related to the consumption of foods that are low in calories. The idea is that an individual who experiences psychological discomfort may be more likely to intend to adopt a healthier diet in the future by paying greater attention to reducing the intake of high-calorie foods and instead choosing low-calorie options. The regression model was statistically significant ($p < 0.001$; $F = 30.773$), indicating that discomfort played a meaningful role in predicting intention. In this model, psychological discomfort explained 16.4% of the variance in intention ($R^2 = 0.164$), suggesting a moderate effect size. The standardised beta coefficient was also significant ($p < 0.001$; $\beta = 0.405$), indicating a positive association. This means that individuals who reported greater psychological discomfort concerning low-calorie food choices were more likely to express the intention to adopt a healthier dietary pattern focused on lowering calorie intake.

The third regression tested whether psychological discomfort predicted the intention to adopt a healthier diet, specifically related to increasing the consumption of foods containing natural

ingredients. For example, an individual who experiences psychological discomfort may be more likely to intend to improve their future dietary habits by choosing foods made with natural ingredients and avoiding more heavily processed alternatives. The regression model was statistically significant ($p = 0.002$; $F = 9.772$), indicating that discomfort played a meaningful role in predicting intention. In this model, psychological discomfort explained 5.9% of the variance in intention ($R^2 = 0.059$), suggesting a small but reliable effect. The standardised beta coefficient was also significant ($p = 0.002$; $\beta = 0.242$), indicating a positive association. This means that individuals who reported greater psychological discomfort about their consumption of natural foods were more likely to express the intention to increase their intake of such foods as part of a healthier diet.

The fourth regression tested whether psychological discomfort predicted the intention to adopt a healthier diet, specifically related to the consumption of foods that are low in fat. For example, an individual who experiences psychological discomfort may be more likely to intend to improve their dietary habits by reducing the intake of high-fat foods and placing greater emphasis on selecting low-fat alternatives. The regression model was statistically significant ($p < 0.001$; $F = 30.525$), indicating that discomfort played a meaningful role in predicting intention. In this model, psychological discomfort explained 16.3% of the variance in intention ($R^2 = 0.163$), suggesting a moderate effect size. The standardised beta coefficient was also significant ($p < 0.001$; $\beta = 0.403$), indicating a positive association. This means that individuals who reported greater psychological discomfort related to their consumption of fatty foods were more likely to express the intention to reduce fat intake and adopt a healthier dietary pattern.

The fifth regression tested whether psychological discomfort predicted the intention to adopt a healthier diet, specifically related to increasing the consumption of foods that are high in fibre. For example, an individual who experiences psychological discomfort may be more likely to intend to improve their future eating habits by paying greater attention to including fibre-rich foods such as whole grains, legumes, fruits, and vegetables in their daily diet. The regression model was statistically significant ($p < 0.001$; $F = 12.645$), indicating that discomfort played a meaningful role in predicting intention. In this model, psychological discomfort explained 7.5% of the variance in intention ($R^2 = 0.075$), suggesting a small to moderate effect size. The standardised beta coefficient was also significant ($p < 0.001$; $\beta = 0.273$), indicating a positive association. This means that individuals who reported higher levels of psychological discomfort

about their fibre intake were more likely to express the intention to increase their consumption of fibre-rich foods as part of a healthier diet.

The sixth regression tested whether psychological discomfort predicted the intention to adopt a healthier diet, specifically related to increasing the consumption of nutritious foods. The idea is that an individual who experiences psychological discomfort may be more likely to intend to improve their future dietary habits by making more conscious choices that prioritise foods with higher nutritional value, such as whole, unprocessed items rich in essential nutrients. The regression model was statistically significant ($p = 0.019$; $F = 5.591$), indicating that discomfort played a predictive role, though the effect was weaker compared to previous models. In this model, psychological discomfort explained 3.4% of the variance in intention ($R^2 = 0.034$), suggesting a small effect size. The standardised beta coefficient was also significant ($p = 0.019$; $\beta = 0.185$), indicating a positive relationship. This means that even relatively low levels of psychological discomfort were associated with a greater likelihood of expressing the intention to improve nutritional habits and consume more nutritious foods.

The seventh regression tested whether psychological discomfort predicted the intention to adopt a healthier diet, specifically related to increasing the consumption of foods that help control body weight. The idea is that an individual who experiences psychological discomfort may be more likely to intend to improve their future dietary behaviour by choosing foods that support weight management, such as those that are lower in calories, higher in fibre, or promote satiety. The regression model was statistically significant ($p < 0.001$; $F = 26.645$), indicating that discomfort played a meaningful role in predicting intention. In this model, psychological discomfort explained 14.5% of the variance in intention ($R^2 = 0.145$), suggesting a moderate effect size. The standardised beta coefficient was also significant ($p < 0.001$; $\beta = 0.381$), indicating a positive association. This means that individuals who reported greater psychological discomfort concerning weight-related food choices were more likely to express the intention to improve their diet in this specific area.

The eighth regression tested whether psychological discomfort predicted the intention to adopt a healthier diet, specifically related to increasing the consumption of foods rich in vitamins and minerals. For example, an individual who experiences psychological discomfort may be more likely to intend to improve their dietary habits by incorporating more nutrient-dense foods, such

as fruits, vegetables, legumes, and whole grains, that are high in essential vitamins and minerals. The regression model was statistically significant ($p < 0.001$; $F = 14.458$), indicating that discomfort played a meaningful role in predicting intention. In this model, psychological discomfort explained 8.4% of the variance in intention ($R^2 = 0.084$), reflecting a modest effect size. The standardised beta coefficient was also significant ($p < 0.001$; $\beta = 0.290$), indicating a positive association. This means that individuals who reported greater psychological discomfort related to their intake of vitamin- and mineral-rich foods were more likely to express the intention to adopt healthier eating behaviours in this area.

The ninth regression tested whether psychological discomfort predicted the intention to adopt a healthier diet, specifically related to avoiding foods that contain artificial ingredients. The underlying idea is that an individual who experiences psychological discomfort may be more likely to intend to improve their dietary habits by limiting or eliminating the consumption of products with artificial additives, preservatives, or colourants, and by choosing more natural alternatives. The regression model was statistically significant ($p = 0.002$; $F = 9.487$), indicating that discomfort played a meaningful role in predicting intention. In this model, psychological discomfort explained 5.7% of the variance in intention ($R^2 = 0.057$), suggesting a small but consistent effect size. The standardised beta coefficient was also significant ($p = 0.002$; $\beta = 0.239$), indicating a positive association. This means that individuals who reported greater psychological discomfort related to the consumption of artificial ingredients were more likely to express the intention to avoid such components in their diet.

The tenth regression tested whether psychological discomfort predicted the intention to adopt a healthier diet, specifically related to increasing the consumption of protein-rich foods. For example, an individual who experiences psychological discomfort may be more likely to intend to improve their dietary habits by paying greater attention to incorporating foods high in protein, such as legumes, lean meats, dairy products, eggs, or plant-based protein sources, into their regular diet. The regression model was statistically significant ($p < 0.001$; $F = 15.444$), indicating that discomfort played a meaningful role in predicting intention. In this model, psychological discomfort explained 9.0% of the variance in intention ($R^2 = 0.090$), suggesting a modest effect size. The standardised beta coefficient was also significant ($p < 0.001$; $\beta = 0.299$), indicating a positive association. This means that individuals who reported greater

psychological discomfort about their protein intake were more likely to express the intention to increase their consumption of protein-rich foods as part of a healthier diet.

The eleventh regression tested whether psychological discomfort predicted the intention to adopt a healthier diet, specifically related to the consumption of foods that contribute to overall health. For example, an individual who experiences psychological discomfort may be more likely to intend to improve their dietary habits by making more consistent choices that support general physical well-being, such as incorporating a balanced variety of nutrient-dense foods and reducing the intake of unhealthy options. The regression model was statistically significant ($p = 0.014$; $F = 6.223$), indicating that discomfort played a meaningful role in predicting intention. In this model, psychological discomfort explained 3.8% of the variance in intention ($R^2 = 0.038$), suggesting a small but reliable effect size. The standardised beta coefficient was also significant ($p = 0.014$; $\beta = 0.195$), indicating a positive association. This means that individuals who reported higher psychological discomfort about their general eating habits were more likely to express the intention to make healthier dietary choices that support overall health.

The twelfth regression tested whether psychological discomfort predicted the intention to adopt a healthier diet, specifically related to the consumption of foods that benefit skin, teeth, hair, nails, etc. For example, an individual who experiences psychological discomfort may be more likely to intend to improve their dietary habits by choosing foods known to support physical appearance, such as those rich in vitamins, antioxidants, and healthy fats that promote skin health and other aesthetic benefits. The regression model was statistically significant ($p < 0.001$; $F = 17.380$), indicating that discomfort played a meaningful role in predicting intention. In this model, psychological discomfort explained 10.0% of the variance in intention ($R^2 = 0.100$), suggesting a modest effect size. The standardised beta coefficient was also significant ($p < 0.001$; $\beta = 0.316$), indicating a positive association. This means that individuals who reported greater psychological discomfort concerning their eating habits and physical appearance were more likely to express the intention to make dietary improvements aimed at enhancing aesthetic outcomes.

The second set of linear regressions confirms a significant positive link between psychological discomfort and the intention to adopt a healthier behaviour for all behaviours tested.

Table 4: Summary of the results for the second set of regressions

Behavior	R^2	F	p-value	β	p-value (β)
Eating food that does not contain additives	0.056	9.393	.003	0.238	.003
Eating food that is low in calories	0.164	30.773	< .001	0.405	< .001
Eating food that contains natural ingredients	0.059	9.772	.002	0.242	.002
Eating food that is low in fat	0.163	30.525	< .001	0.403	< .001
Eating food that is high in fiber	0.075	12.645	< .001	0.273	< .001
Eating food that is nutritious	0.034	5.591	.019	0.185	.019
Eating food that helps control body weight	0.145	26.645	< .001	0.381	< .001
Eating food that contains many vitamins and minerals	0.084	14.458	< .001	0.290	< .001
Eating food that does not contain artificial ingredients	0.057	9.487	.002	0.239	.002
Eating food that is high in protein	0.090	15.444	< .001	0.299	< .001
Eating food that contributes to overall health	0.038	6.223	.014	0.195	.014
Eating food that benefits skin, teeth, hair, nails, etc.	0.100	17.380	< .001	0.316	< .001

The third hypothesis

The third hypothesis stated that psychological discomfort mediated the relationship between cognitive dissonance and the intention to adopt a healthier diet. To test this hypothesis, a series of twelve mediation analyses were conducted using an extension of SPSS, namely the PROCESS Model 4 (Hayes, 2017), each corresponding to a distinct health-related behaviour. In each analysis, cognitive dissonance was entered as the independent variable, the intention to adopt a specific healthy dietary behaviour as the dependent variable, and psychological discomfort as the mediator. The presence of a mediation effect was tested by examining the significance of the indirect effect. To evaluate the presence of a mediation effect, the bootstrap confidence intervals were examined in the section on direct and indirect effects. The indirect effect was considered significant if the BootLLCI and BootULCI did not include zero.

The first regression tested whether psychological discomfort mediated the relationship between cognitive dissonance and the intention to adopt a healthier diet relating to eating food that does not contain additives. The mediation was statistically significant, as the indirect effect confidence interval did not include zero (BootLLCI = 0.0154; BootULCI = 0.1724). This result suggests that psychological discomfort plays a meaningful role in explaining how cognitive dissonance increases one's motivation to reduce foods that contain additives. When individuals

feel that their behaviour does not align with their values regarding additives, the discomfort generated may prompt a greater intention to change behaviour.

The second regression tested whether psychological discomfort mediated the relationship between cognitive dissonance and the intention to adopt a healthier diet relating to the consumption of low-calorie foods. The mediation was statistically significant, as the indirect effect confidence interval did not include zero (BootLLCI = 0.1216; BootULCI = 0.3404). This result suggests that psychological discomfort plays a substantial role in explaining how cognitive dissonance in this domain contributes to the motivation to reduce the intake of high-calorie foods. When individuals perceive a mismatch between their values regarding low-calorie eating and their actual behaviour, the resulting discomfort may serve as a psychological mechanism that increases their intention to make healthier dietary choices in this specific area.

The third regression tested whether psychological discomfort mediated the relationship between cognitive dissonance and the intention to adopt a healthier diet relating to the consumption of foods containing natural ingredients. The mediation was statistically significant, as the indirect effect confidence interval did not include zero (BootLLCI = 0.0386; BootULCI = 0.1890). This result suggests that psychological discomfort plays a meaningful role in explaining how cognitive dissonance leads to an increased intention to consume more natural foods. When individuals perceive a discrepancy between their belief in the importance of natural ingredients and their actual food choices, the discomfort that arises may motivate them to adjust their behaviour and make more natural dietary selections.

The fourth regression tested whether psychological discomfort mediated the relationship between cognitive dissonance and the intention to adopt a healthier diet by reducing the consumption of high-fat foods. The mediation was statistically significant, as the indirect effect confidence interval did not include zero (BootLLCI = 0.0984; BootULCI = 0.2943). This finding indicates that discomfort functions as a mediating mechanism through which cognitive dissonance influences the intention to improve dietary habits regarding fat intake. When individuals feel that their current eating behaviour does not align with their values related to consuming low-fat foods, the resulting discomfort may prompt a greater willingness to change that behaviour.

The fifth regression tested whether psychological discomfort mediated the relationship between cognitive dissonance and the intention to adopt a healthier diet by increasing the consumption of high-fibre foods. The mediation was statistically significant, as the indirect effect confidence interval did not include zero (BootLLCI = 0.0473; BootULCI = 0.2273). This result suggests that psychological discomfort serves as a crucial emotional mechanism linking dissonance to behavioural intention. Specifically, when individuals recognise a gap between the value they place on fibre-rich foods and their actual consumption patterns, the discomfort experienced may drive them to realign their behaviour with their health-related values.

The sixth regression tested whether psychological discomfort mediated the relationship between cognitive dissonance and the intention to adopt a healthier diet, specifically by increasing the consumption of nutritious foods. The mediation was statistically significant, as the indirect effect confidence interval did not include zero (BootLLCI = 0.0272; BootULCI = 0.1810). This result suggests that psychological discomfort plays a meaningful role in explaining how internal inconsistencies regarding nutritional choices are translated into the motivation to eat more nutritiously. When individuals recognise a gap between their values and behaviours related to overall nutrition, the discomfort experienced may act as a motivational force that encourages the intention to improve their dietary quality.

The seventh regression tested whether psychological discomfort mediated the relationship between cognitive dissonance and the intention to adopt a healthier diet by increasing the consumption of foods that help control body weight. The mediation effect was statistically significant, as the indirect effect confidence interval did not include zero (BootLLCI = 0.1321; BootULCI = 0.3656). This robust result suggests that psychological discomfort is a key emotional process linking dissonance to intention in the context of weight-related eating behaviour. When individuals perceive a conflict between their eating habits and their desire to manage body weight, the resulting discomfort may increase their intention to modify their diet in a way that supports weight control.

The eighth regression tested whether psychological discomfort mediated the relationship between cognitive dissonance and the intention to adopt a healthier diet by increasing the consumption of foods rich in vitamins and minerals. The mediation was statistically significant, as the indirect effect confidence interval did not include zero (BootLLCI = 0.0608; BootULCI

= 0.2379). This finding indicates that discomfort serves as a motivational mechanism through which dissonance leads to behavioural intention. When individuals feel uneasy about not meeting their standards for micronutrient intake, this discomfort may drive them to realign their food choices with their beliefs about the importance of consuming vitamin- and mineral-rich foods.

The ninth regression tested whether psychological discomfort mediated the relationship between cognitive dissonance and the intention to adopt a healthier diet by avoiding foods that contain artificial ingredients. The mediation was statistically significant, as the indirect effect confidence interval did not include zero (BootLLCI = 0.0457; BootULCI = 0.2142). This result suggests that psychological discomfort plays a meaningful role in linking dissonance to intention in the context of artificial ingredient consumption. When individuals perceive a misalignment between their belief in avoiding artificial additives and their actual eating behaviour, the resulting discomfort may prompt a stronger intention to eliminate such ingredients from their diet.

The tenth regression tested whether psychological discomfort mediated the relationship between cognitive dissonance and the intention to adopt a healthier diet by increasing the consumption of protein-rich foods. The mediation was statistically significant, as the indirect effect confidence interval did not include zero (BootLLCI = 0.0677; BootULCI = 0.2661). This finding indicates that psychological discomfort serves as an emotional driver through which dissonance influences intention. When individuals recognise a gap between their beliefs about the importance of protein and their actual intake, the discomfort they experience may motivate them to bring their dietary behaviour more in line with their nutritional values.

The eleventh regression tested whether psychological discomfort mediated the relationship between cognitive dissonance and the intention to adopt a healthier diet by consuming foods that contribute to overall health. The mediation was statistically significant, as the indirect effect confidence interval did not include zero (BootLLCI = 0.0351; BootULCI = 0.1912). This result suggests that discomfort acts as a motivational mechanism in the relationship between dissonance and intention. When individuals feel uneasy about neglecting foods that support general well-being, this discomfort may lead them to form a stronger intention to adjust their dietary habits in a health-promoting direction.

The twelfth regression tested whether psychological discomfort mediated the relationship between cognitive dissonance and the intention to adopt a healthier diet by increasing the consumption of foods that benefit physical appearance (e.g., skin, teeth, hair, nails). The mediation was statistically significant, as the indirect effect confidence interval did not include zero (BootLLCI = 0.0447; BootULCI = 0.2409). This finding indicates that even when dietary motivations are aesthetic in nature, psychological discomfort plays a key role in translating dissonance into behavioural intention. When individuals feel a conflict between their appearance-related values and their actual eating behaviour, the discomfort that arises may increase their motivation to make healthier, appearance-supporting dietary changes.

These twelve mediation analyses provide consistent support for the third hypothesis, which states that psychological discomfort significantly mediates the relationship between cognitive dissonance and the intention to adopt a healthier diet.

Table 5: Summary of the results for the third set of regressions

Behavior	**BootLLCI**	**BootULCI**
Eating food that does not contain additives	0.0154	0.1724
Eating food that is low in calories	0.1216	0.3404
Eating food that contains natural ingredients	0.0386	0.1890
Eating food that is low in fat	0.0984	0.2943
Eating food that is high in fiber	0.0473	0.2273
Eating food that is nutritious	0.0272	0.1810
Eating food that helps control body weight	0.1321	0.3656
Eating food that contains many vitamins and minerals	0.0608	0.2379
Eating food that does not contain artificial ingredients	0.0457	0.2142
Eating food that is high in protein	0.0677	0.2661
Eating food that helps maintain general health	0.0351	0.1912
Eating food that benefits skin, teeth, hair, nails, etc.	0.0447	0.2409

The fourth hypothesis

The fourth hypothesis stated that cognitive dissonance has a direct impact on an individual's intention to change food-related behaviours in the future. To test this hypothesis, twelve linear regressions were conducted. To do so, cognitive dissonance was considered as the independent

variable and individuals' intention to change behaviours was considered as the dependent variable. Additionally, to guarantee that the direct effect of cognitive dissonance was assessed without the intervention of psychological discomfort, the latter was controlled in the regression so that it was possible to only account for the effect of cognitive dissonance on the dependent variable. To interpret the results and determine whether a direct effect of cognitive dissonance on intention was present, the first step was to assess the overall significance of the regression model. The model was considered statistically significant when the probability of error (p-value) was below 0.05. For models that met this criterion, the coefficient of determination (R^2) indicated the proportion of variance in the dependent variable explained by the predictors. However, this alone was not sufficient to confirm a direct effect of cognitive dissonance on the intention to adopt a healthier diet. To specifically evaluate the presence of a direct effect, the unstandardised regression coefficient (β) for cognitive dissonance was examined in the coefficients table. If this coefficient was statistically significant ($p < 0.05$), it indicated that cognitive dissonance had a meaningful predictive role, either increasing or decreasing intention depending on the direction of the coefficient. It was also possible for the overall model to be significant even if the coefficient for cognitive dissonance was not, due to the contribution of other variables, such as psychological discomfort.

The first regression had the objective to test whether cognitive dissonance directly predicted the intention to adopt a healthier diet related to eating food that does not contain additives, while controlling for the effect of psychological discomfort. The results demonstrated that the overall model was statistically significant ($p = 0.006$; $F = 5.317$), indicating that the set of predictors explained a meaningful portion of the variance in the intention to change dietary behaviour. Additionally, the model accounted for 6.4% of the variance in intention ($R^2 = 0.064$), which represents a small but reliable effect. However, the direct effect of cognitive dissonance on intention was not significant ($p = 0.270$; $\beta = 0.098$), suggesting that cognitive dissonance alone does not significantly predict this behavioural intention once psychological discomfort is considered. This finding aligns with prior analyses and supports the idea that psychological discomfort may function as a key mechanism linking dissonance to motivational outcomes.

The second regression had the objective to test whether cognitive dissonance directly predicted the intention to adopt a healthier diet related to the consumption of low-calorie foods, while controlling for the effect of psychological discomfort. The results demonstrated that the overall

model was statistically significant ($p < 0.001$; $F = 15.803$), indicating that the set of predictors explained a meaningful portion of the variance in the intention to change dietary behaviour. Additionally, the model accounted for 16.8% of the variance in intention ($R^2 = 0.168$), which represents a moderate effect. However, the direct effect of cognitive dissonance on intention was not significant ($p = 0.355$; $\beta = –0.077$), suggesting that dissonance alone does not significantly predict this behavioural intention once psychological discomfort is taken into account. This result reinforces the view that the motivational impact of dissonance may be more accurately understood through its emotional consequences, such as the discomfort it generates.

The third regression had the objective to test whether cognitive dissonance directly predicted the intention to adopt a healthier diet related to the consumption of foods containing natural ingredients, while controlling for the effect of psychological discomfort. The results demonstrated that the overall model was statistically significant ($p = 0.006$; $F = 5.259$), indicating that the set of predictors explained a meaningful portion of the variance in the intention to change dietary behaviour. Additionally, the model accounted for 6.3% of the variance in intention ($R^2 = 0.063$), which represents a small but reliable effect. However, the direct effect of cognitive dissonance on intention was not significant ($p = 0.384$; $\beta = –0.074$), suggesting that dissonance alone does not significantly predict this behavioural intention once psychological discomfort is taken into account. This finding supports the interpretation that the influence of dissonance on behavioural change may depend on the emotional discomfort it produces rather than on dissonance alone.

The fourth regression had the objective to test whether cognitive dissonance directly predicted the intention to adopt a healthier diet related to the consumption of low-fat foods, while controlling for the effect of psychological discomfort. The results demonstrated that the overall model was statistically significant ($p < 0.001$; $F = 15.187$), indicating that the set of predictors explained a meaningful portion of the variance in the intention to change dietary behaviour. Additionally, the model accounted for 16.3% of the variance in intention ($R^2 = 0.163$), which reflects a moderate effect. However, the direct effect of cognitive dissonance on intention was not significant ($p = 0.848$; $\beta = 0.016$), suggesting that dissonance alone does not significantly predict this behavioural intention once psychological discomfort is controlled. This outcome further underscores the idea that psychological discomfort, rather than dissonance in isolation, may serve as the critical factor driving individuals toward dietary change.

The fifth regression aimed to test whether cognitive dissonance directly predicted the intention to adopt a healthier diet by increasing the consumption of high-fibre foods, while controlling for psychological discomfort. The results showed that the overall model was statistically significant ($p = 0.001$; $F = 6.933$), indicating that the predictors accounted for a meaningful portion of the variance in the intention to change behaviour. The model explained 8.2% of the variance in intention ($R^2 = 0.082$), which reflects a small to moderate effect. However, the direct effect of cognitive dissonance on intention was not significant ($p = 0.274$; $\beta = –0.093$), suggesting that dissonance alone does not significantly predict this behavioural intention once discomfort is accounted for. This further emphasises the notion that the emotional consequences of dissonance, rather than dissonance itself, are more directly tied to the motivation to change dietary habits.

The sixth regression tested whether cognitive dissonance directly predicted the intention to adopt a healthier diet by consuming more nutritious foods, while controlling for psychological discomfort. The overall model was statistically significant ($p = 0.003$; $F = 5.898$), suggesting that the predictors jointly explained a meaningful part of the variance in the intention to change behaviour. The model accounted for 7.0% of the variance in intention ($R^2 = 0.070$), reflecting a modest effect. Notably, the direct effect of cognitive dissonance on intention was statistically significant ($p = 0.015$; $\beta = –0.206$), but negative in direction. This indicates that greater levels of cognitive dissonance were associated with lower intention to consume nutritious foods when psychological discomfort was controlled. This counterintuitive finding may suggest a defensive response mechanism, in which individuals experiencing dissonance without the associated discomfort might reject or resist behavioural change as a form of avoidance.

The seventh regression had the objective to test whether cognitive dissonance directly predicted the intention to adopt a healthier diet related to the consumption of foods that help control body weight, while controlling for the effect of psychological discomfort. The results demonstrated that the overall model was statistically significant ($p < 0.001$; $F = 13.440$), indicating that the set of predictors explained a meaningful portion of the variance in the intention to change dietary behaviour. Additionally, the model accounted for 14.7% of the variance in intention ($R^2 = 0.147$), which reflects a moderate effect. However, the direct effect of cognitive dissonance on intention was not significant ($p = 0.557$; $\beta = –0.050$), suggesting that dissonance alone does

not significantly predict this behavioural intention once psychological discomfort is taken into account. This finding supports the broader pattern that emotional discomfort may be the primary factor through which dissonance influences the intention to improve diet quality.

The eighth regression had the objective to test whether cognitive dissonance directly predicted the intention to adopt a healthier diet by increasing the consumption of foods rich in vitamins and minerals, while controlling for psychological discomfort. The results demonstrated that the overall model was statistically significant ($p < 0.001$; $F = 7.837$), indicating that the set of predictors explained a meaningful portion of the variance in behavioural intention. The model accounted for 9.1% of the variance in intention ($R^2 = 0.091$), which suggests a modest effect. However, the direct effect of cognitive dissonance on intention was not significant ($p = 0.276$; $\beta = –0.094$), indicating that dissonance alone does not significantly predict this behavioural intention when psychological discomfort is controlled. These findings further reinforce the role of discomfort as the mechanism through which dissonance may exert its motivational effects.

The ninth regression had the objective to test whether cognitive dissonance directly predicted the intention to adopt a healthier diet by avoiding foods that contain artificial ingredients, while controlling for the effect of psychological discomfort. The results demonstrated that the overall model was statistically significant ($p = 0.010$; $F = 4.751$), suggesting that the predictors together explained a meaningful portion of variance in the intention to change behaviour. The model accounted for 5.7% of the variance in intention ($R^2 = 0.057$), indicating a small but reliable effect. However, the direct effect of cognitive dissonance on intention was not significant ($p = 0.789$; $\beta = –0.024$), suggesting that dissonance alone does not significantly predict this behavioural intention once psychological discomfort is taken into account. This pattern continues to highlight the limited predictive power of dissonance in isolation and the potential centrality of discomfort in explaining behavioural motivation.

The tenth regression had the objective to test whether cognitive dissonance directly predicted the intention to adopt a healthier diet by increasing the consumption of protein-rich foods, while controlling for psychological discomfort. The results demonstrated that the overall model was statistically significant ($p < 0.001$; $F = 7.844$), indicating that the set of predictors accounted for a meaningful portion of the variance in intention. The model explained 9.1% of the variance in intention ($R^2 = 0.091$), reflecting a modest effect. However, the direct effect of cognitive

dissonance on intention was not significant ($p = 0.577$; $\beta = –0.050$), suggesting that dissonance alone does not significantly predict this behavioural intention once the effect of psychological discomfort is controlled. These findings align with previous results and further support the view that discomfort may be the key psychological mechanism through which dissonance promotes behavioural change.

The eleventh regression had the objective to test whether cognitive dissonance directly predicted the intention to adopt a healthier diet by increasing the consumption of foods that support general health, while controlling for the effect of psychological discomfort. The results demonstrated that the overall model was statistically significant ($p = 0.003$; $F = 6.129$), indicating that the predictors explained a meaningful portion of the variance in intention. The model accounted for 7.3% of the variance in intention ($R^2 = 0.073$), which reflects a small to moderate effect. Interestingly, the direct effect of cognitive dissonance on intention was significant and negative ($p = 0.017$; $\beta = –0.203$), suggesting that higher levels of dissonance were associated with a lower intention to consume health-promoting foods when psychological discomfort was held constant. This counterintuitive result may reflect a defensive or avoidance-oriented response to dissonance, in which individuals disengage from the intention to change when confronted with internal conflict but no accompanying emotional discomfort.

The twelfth regression had the objective to test whether cognitive dissonance directly predicted the intention to adopt a healthier diet by increasing the consumption of foods that benefit skin, teeth, hair, nails, etc. while controlling for the effect of psychological discomfort. The results demonstrated that the overall model was statistically significant ($p < 0.001$; $F = 8.794$), indicating that the set of predictors explained a meaningful portion of the variance in intention. The model accounted for 10.1% of the variance in intention ($R^2 = 0.101$), which represents a modest effect. However, the direct effect of cognitive dissonance on intention was not significant ($p = 0.594$; $\beta = –0.043$), suggesting that dissonance alone does not significantly predict this behavioural intention once psychological discomfort is taken into account. In contrast, psychological discomfort emerged as a significant predictor, reinforcing the idea that discomfort serves as a key mechanism linking internal conflict to the motivation for change.

The regression analyses accounting for the direct effect of cognitive dissonance on intention to adopt a healthier diet provided mixed results. Only in two behaviours, eating nutritious food

and eating food that helps maintain general health, was the direct effect of dissonance statistically significant, and in both cases, it was negative. This suggests that higher dissonance, in the absence of psychological discomfort, may reduce motivation to change.

Table 6: Summary of the results for the fourth set of regressions

Behaviour	**R^2**	**F**	**p-value**	**β**	**p-value (β)**
Eating food that does not contain additives	0.064	5.317	0.006	0.098	0.27
Eating food that is low in calories	0.168	15.803	<.001	-0.077	0.355
Eating food that contains natural ingredients	0.063	5.259	0.006	-0.074	0.384
Eating food that is low in fat	0.163	15.187	<.001	0.016	0.848
Eating food that is high in fiber	0.082	6.933	0.001	-0.093	0.274
Eating food that is nutritious	0.07	5.898	0.003	-0.206	0.015
Eating food that helps control body weight	0.147	13.44	<.001	-0.05	0.557
Eating food that contains many vitamins and minerals	0.091	7.837	<.001	-0.094	0.276
Eating food that does not contain artificial ingredients	0.057	4.751	0.01	-0.024	0.789
Eating food that is high in protein	0.091	7.844	<.001	-0.05	0.577
Eating food that helps maintain general health	0.073	6.129	0.003	-0.203	0.017
Eating food that benefits skin, teeth, hair, nails, etc.	0.101	8.794	<.001	-0.043	0.594

The fifth hypothesis

The fifth hypothesis stated that psychological discomfort moderated the relationship between cognitive dissonance and the intention to adopt a healthier diet. To test this hypothesis, a series of twelve moderation analyses were conducted using an extension of SPSS, namely the PROCESS Model 1 (Hayes, 2017), each corresponding to a distinct health-related dietary behaviour. In each analysis, cognitive dissonance was entered as the independent variable, the intention to adopt a specific healthy dietary behaviour as the dependent variable, and psychological discomfort as the moderator. The presence of a moderation effect was tested by examining the significance of the interaction term between cognitive dissonance and psychological discomfort. A moderating effect was considered statistically significant when the probability of error (p-value) of the interaction term was below 0.05. For significant

interactions, conditional effects were examined to determine how the relationship between dissonance and intention varied across different levels of psychological discomfort.

The first regression tested whether psychological discomfort moderated the relationship between cognitive dissonance and the intention to adopt a healthier diet relating to eating food that does not contain additives. The results showed that the interaction term between cognitive dissonance and psychological discomfort was not statistically significant ($p = 0.3051$; $F = 1.06$), indicating that psychological discomfort did not significantly moderate the relationship between cognitive dissonance and intention for this behaviour.

The second regression tested whether psychological discomfort moderated the relationship between cognitive dissonance and the intention to adopt a healthier diet relating to eating food that is low in calories. The results indicated that the interaction term was statistically significant ($p = 0.0470$; $F = 4.01$), indicating a significant moderating effect of psychological discomfort on the relationship between cognitive dissonance and intention to adopt a healthier diet. Conditional effects analysis showed that cognitive dissonance significantly predicted lower intention at low levels of discomfort ($p = 0.0310$ at -3.25 SD; $B = -0.3497$), but not at higher levels. This suggests that individuals experiencing low psychological discomfort are more susceptible to the demotivating effects of cognitive dissonance regarding this behaviour. In contrast, higher discomfort appears to buffer or neutralise this effect, possibly because the emotional burden interferes with the cognitive appraisal required for dissonance to influence the intention to adopt a healthier diet.

The third regression tested whether psychological discomfort moderated the relationship between cognitive dissonance and the intention to adopt a healthier diet relating to eating food that contains natural ingredients. The results indicated that the interaction term did not reach statistical significance ($p = 0.1008$; $F = 2.7249$), indicating that psychological discomfort did not significantly moderate the relationship between cognitive dissonance and intention for this behaviour.

The fourth regression tested whether psychological discomfort moderated the relationship between cognitive dissonance and the intention to adopt a healthier diet relating to eating food that is low in fat. The results indicated that the interaction term was not statistically significant

(p = 0.2115; F = 1.5738), indicating no significant moderating effect of psychological discomfort on the relationship between cognitive dissonance and the intention to adopt a healthier diet.

The fifth regression tested whether psychological discomfort moderated the relationship between cognitive dissonance and the intention to adopt a healthier diet relating to eating food that helps control weight. The results showed that the interaction term approached significance (p = 0.0937; F = 2.8840), suggesting a marginal moderating effect of psychological discomfort. Conditional effects analysis revealed a significant negative relationship between cognitive dissonance and intention at low levels of discomfort (p = 0.0482 at -3.25 SD; B = -0.2492), but not at higher levels. This implies that individuals with low psychological discomfort may be more influenced by dissonance-related concerns when forming behavioural intentions, while those experiencing higher discomfort might disengage from the dissonance-intention pathway.

The sixth regression tested whether psychological discomfort moderated the relationship between cognitive dissonance and the intention to adopt a healthier diet relating to eating food that contains vitamins and minerals. The results demonstrated that the interaction term was statistically significant (p = 0.0005; F = 12.5941), indicating a robust moderating effect of psychological discomfort. Conditional effects analysis revealed a strong negative relationship between cognitive dissonance and intention at low levels of discomfort (p < 0.001 at –3.25 SD; B = –0.4590), but no significant effect at higher levels of discomfort (p = 0.3072 at +3.75 SD; B = –0.0802). This suggests that individuals with low psychological discomfort are more vulnerable to the demotivating influence of dissonance, while those experiencing higher levels of discomfort may become less responsive to dissonant thoughts. Overall, psychological discomfort appears to buffer the effect of dissonance on intention, weakening its impact as discomfort increases.

The seventh regression tested whether psychological discomfort moderated the relationship between cognitive dissonance and the intention to adopt a healthier diet relating to eating food that does not contain artificial ingredients, The results indicated that the interaction term was not statistically significant (p = 0.3425; F = 0.9068), indicating that psychological discomfort did not significantly moderate the relationship between cognitive dissonance and intention to adopt a healthier diet.

The eighth regression tested whether psychological discomfort moderated the relationship between cognitive dissonance and the intention to adopt a healthier diet relating to eating food that is high in protein. The results indicated that the interaction term was not statistically significant ($p = 0.1783$; $F = 1.8285$), indicating that psychological discomfort did not significantly moderate the relationship.

The ninth regression tested whether psychological discomfort moderated the relationship between cognitive dissonance and the intention to adopt a healthier diet relating to eating food that helps maintain general health. The results indicated that the interaction term was not statistically significant ($p = 0.5469$; $F = 0.3645$), indicating that psychological discomfort did not significantly moderate the relationship between cognitive dissonance and intention to adopt a healthier diet.

The tenth regression tested whether psychological discomfort moderated the relationship between cognitive dissonance and the intention to adopt a healthier diet relating to eating food that is beneficial for skin/hair/nails. The results indicated that the interaction term was statistically significant ($p = 0.0016$; $F = 10.3397$), indicating a meaningful moderating effect of psychological discomfort. Conditional effects showed that cognitive dissonance predicted significantly lower intention at low discomfort levels ($p = 0.0049$ at -3.25 SD; $B = -0.3672$), but not at high levels ($p = 0.9689$ at +3.75 SD; $B = -0.0623$). This result aligns with previous findings and underscores a consistent pattern that psychological discomfort mitigates the impact of dissonance. Individuals who feel emotionally unaffected may be more prone to dissonance-driven reductions in behavioural intention, whereas high discomfort may override or redirect attention away from dissonance-related processing.

The eleventh regression tested whether psychological discomfort moderated the relationship between cognitive dissonance and the intention to adopt a healthier diet relating to eating food that is rich in fibre. The results indicated that the interaction term approached statistical significance ($p = 0.0798$; $F = 3.1090$), suggesting a marginal moderating effect of psychological discomfort. Conditional effects indicated that cognitive dissonance predicted intention more strongly at lower discomfort levels, though the effect was not robust. The pattern implies that lower discomfort may facilitate dissonance effects, but the moderating role of discomfort remains tentative in this case.

The twelfth regression tested whether psychological discomfort moderated the relationship between cognitive dissonance and the intention to adopt a healthier diet relating to eating food that benefits skin, teeth, hair, nails, etc. The results showed that the interaction term did not reach statistical significance ($p = 0.0869$; $F = 2.9691$), indicating that psychological discomfort did not significantly moderate the relationship between cognitive dissonance and intention to adopt a healthier diet.

Significant moderation effects on the relationship between cognitive dissonance and behavioural intention were found for low-calorie foods, vitamin-rich foods, and foods for physical appearance, with marginal effects for weight-control and high-fibre foods.

Table 7: Summary of the results for the fifth set of regressions

Behavior	**Interaction p-value**	**Interaction F**	**Low Discomfort**	**High Discomfort**
Eating food that does not contain additives	0.3051	1.06		
Eating food that is low in calories	0.0470	4.10	B = -0.3497, p = 0.031	B = -0.0769, p = 0.406
Eating food that contains natural ingredients	0.1008	2.7249		
Eating food that is low in fat	0.2115	1.5738		
Eating food that helps me control weight	0.0937	2.8840	B = -0.2492, p = 0.048	B = -0.0883, p = 0.593
Eating food that contains vitamins and minerals	0.0005	12.5941	B = -0.4590, p < 0.001	B = -0.0802, p = 0.307
Eating food that does not contain artificial ingredients	0.3425	0.9068		
Eating food that is high in protein	0.1783	1.8285		
Eating food that keeps me healthy	0.5469	0.3645		
Eating food that is beneficial for skin/hair/nails	0.0016	10.3397	B = -0.3672, p = 0.0049	B = -0.0623, p = 0.969
Eating food that is rich in fibre	0.0798	3.1090	B = -0.2492, p = 0.048	B = -0.0883, p = 0.593
Eating food that benefits skin, teeth, hair, nails, etc.	0.0869	2.9691		

VI. DISCUSSION

This section aims to discuss the results obtained from the previous analysis. First, an overview of the main findings that emerged from the study is provided. Then, the practical and managerial contributions of the research are explained. Finally, the study's limitations are discussed, and based on these, potential directions for future research are suggested.

Resume of findings

The first hypothesis, which proposed that cognitive dissonance, arising from the contradiction between the perceived importance and the actual frequency of healthy eating, is positively related to psychological discomfort, was supported. Participants reported feeling uncomfortable, uneasy, or bothered when they recognised that their stated values did not align with their eating behaviours. This finding is consistent with Festinger's (1957) theory, which posits that individuals strive for internal consistency and that discrepancies between beliefs and behaviours lead to a negative emotional state. The psychological discomfort reported in this study was more pronounced among participants who placed greater importance on healthy eating, aligning with the idea that the intensity of dissonance, and thus the resulting discomfort, depends on the personal relevance of the conflicting cognitions. However, although a relationship between cognitive dissonance and psychological discomfort was observed, it only partially explained the overall experience of psychological discomfort. This limited explanatory power may be due to the influence of additional variables not accounted for in the current model, which could also contribute to the emergence of psychological discomfort alongside cognitive dissonance. One such factor can be the fear of being judged by others. Indeed, even when individuals feel personally at peace with the inconsistency between their values and behaviours, psychological discomfort may still arise from the fear of being judged by others. In a society where healthy eating is highly valued, individuals might feel uneasy not because of internal conflict, but because they believe others will view them negatively for not adhering to those norms. Social comparisons, whether with peers, family members, or idealised representations on social media, can therefore intensify feelings of psychological discomfort

independently of cognitive dissonance. This suggests that while cognitive dissonance generates psychological discomfort, it is only one of several elements that have a role in this.

The second hypothesis, which proposed that psychological discomfort would in turn increase individuals' motivation to change their dietary behaviour, also found support. Participants who experienced more psychological discomfort after confronting their inconsistency were more likely to express a desire to eat more healthily in the future. This aligns with Festinger's (1957) theory that considered discomfort as a motivational force, pushing individuals to reduce the tension by realigning their behaviour with their values. These findings are consistent with similar studies, such as the one conducted by Wilson et al. (2002), who demonstrated that cognitive dissonance principles could be effectively applied to promote healthier eating among adolescents through value-based reflection and self-affirmation exercises. However, psychological discomfort alone did not fully explain people's intentions to change behaviour in the future, as the predictive value was quite low across all items tested. This suggests that other factors likely influence this process. Among them, perceived threats to one's health may play a significant role, as individuals who recognise potential health consequences might be more motivated to alter their behaviour. Additionally, external social pressures, such as fear of judgment, social norms, or the desire to conform to what others are doing, can also contribute to the motivation for dietary change, independently or in interaction with internal discomfort. These considerations suggest that while discomfort is a powerful driver, it is only one of several elements that shape the actual modification of behaviour.

The third hypothesis proposed that psychological discomfort functions as a key mediator between cognitive dissonance and the intention to change behaviour. The findings support this idea, showing that dissonance tends to produce discomfort, which in turn increases individuals' motivation to adjust their eating habits. This is consistent with Festinger (1957), who stated that inconsistency generates an emotional reaction that then fuels behavioural intention. People generally aim to be as consistent as possible in their actions. When they are not, a sense of frustration emerges, prompting the mind to automatically search for solutions to escape this uncomfortable state and restore consistency. If we think about our daily lives and hold the belief that eating healthily is beneficial for various reasons, such as preventing disease, but we fail to uphold this belief in practice by consuming more junk food than we should, or by not eating noutritious foods that benefit our bodies, then being reminded of this contradiction is likely to

cause a sense of frustration. Since we do not want to live with this psychological discomfort, we will actively seek ways to resolve the initial inconsistency. One way to do this is by changing our behaviour and moving toward healthier eating habits, which ultimately benefits us. Other methods might involve altering the belief that healthy eating is important, or adding new thoughts that minimise the severity of the inconsistency. However, if we focus on the fact that, to resolve the inconsistency, we might be willing to change our behaviour and eat more healthily, then cognitive dissonance, applied in this way, can help us modify our behaviours and adopt healthier ones almost automatically. If applied correctly in the field of social marketing, this represents a form of nudging that leads individuals, without forcing them, to adopt more sustainable behaviours, thereby benefiting both themselves and society as a whole.

The fourth hypothesis explored whether individuals might be motivated to change their behaviour simply by recognising the inconsistency between their values and actions, even in the absence of psychological discomfort. The direct influence of cognitive dissonance on the intention to adopt a healthier diet was supported for only a few specific behaviours, namely, eating nutritious foods and eating foods that help maintain general health. One possible explanation is that these behaviours are closely linked to internalised health values and are relatively easy to evaluate against one's standards. Because they are common, concrete, and widely discussed in health messaging, people may be more likely to recognise when their actions in these areas do not align with what they believe is important. As a result, the inconsistency becomes clearer and more cognitively accessible, which may be enough to trigger an intention to change, even without the presence of strong emotional discomfort. These findings align with what was proposed by Bem (1967), who posited that individuals often form or adjust their attitudes by observing their own behaviour, especially when internal cues, such as emotions, are weak or unclear. For some individuals, particularly those who are more self-reflective or cognitively engaged, recognising a misalignment between values and actions may be enough to initiate behavioural intentions, even in the absence of strong psychological discomfort.

The fifth hypothesis considered that psychological discomfort moderates the relationship between cognitive dissonance and intention to adopt a healthier diet. The results of the twelve moderation models provide mixed support for this hypothesis. Psychological discomfort was found to significantly moderate the relationship between cognitive dissonance and intention in

three of the dietary behaviours, which are eating food that is low in calories, eating food that contains vitamins and minerals, and eating food that is beneficial for skin, hair, and nails. In two additional cases, eating food that helps control weight and eating food that is rich in fiber, the interaction term approached significance, suggesting a marginal moderating effect. In each of the significant and marginally significant cases, the same consistent pattern emerged, which consisted of a negative impact of cognitive dissonance on intention to adopt a healthier diet that was present only at low levels of psychological discomfort. When psychological discomfort was high, the effect of cognitive dissonance on intention to adopt a healthier diet diminished or became non-significant. One possible explanation for these results is that high levels of discomfort can become overwhelming, making it harder for individuals to think clearly and notice the inconsistency between their thoughts and actions. As a result, individuals may avoid further self-confrontation and disengage from behaviour change mechanisms prompted by cognitive dissonance. Conversely, individuals with low psychological discomfort may be more cognitively available to process the inconsistency between their attitudes and behaviours, allowing dissonance to exert a clearer, though demotivating, influence on their intentions. In this sense, discomfort does not amplify the effect of dissonance, as might be assumed, but rather diminishes it. For the remaining seven behaviours, the interaction term was not statistically significant. This could be due to several factors, including variability in how relevant each behaviour was to participants' dietary goals or identity, measurement limitations, or insufficient statistical power for detecting smaller moderation effects. It's also possible that, for some types of dietary behaviours, psychological discomfort is simply less important in influencing the link between dissonance and intention. These findings suggest that the moderating effect of psychological discomfort is behaviour-specific and context-dependent. Rather than serving as a uniform intensifier of dissonance effects, psychological discomfort may, under certain conditions, act as a regulatory filter, weakening the link between cognitive dissonance and health-related intentions when the emotional cost is too high to process.

Theoretical and managerial implications

The main theoretical implications

This study contributes to the advancement of the literature of cognitive dissonance theory by applying it to the domain of consumer dietary behaviour. By demonstrating that inconsistencies

between individuals' health values and their actual eating habits can generate discomfort, the study highlights dissonance as a powerful motivational force driving behavioural intentions. Moreover, the findings suggest that psychological discomfort acts as a critical mediator in this process, enhancing existing models such as the TPB by introducing an affective mechanism that complements rational decision-making. Additionally, this study also suggests that cognitive dissonance can be linked with self-perception theory, as it demonstrated that in some cases, people might change their behaviour even when they do not feel strong psychological discomfort. Taken together, these insights deepen our understanding of the processes that underlie consumer behaviour. It offers a more complete view of how internal conflicts can influence health-related intentions and consequently health-related behaviours.

The main managerial implications

From a managerial perspective, the findings offer valuable guidance for marketers, particularly in the field of social marketing. The study shows that drawing attention to the inconsistency between consumers' dietary values and their actual habits can trigger a motivational discomfort that encourages healthier choices. This insight can be directly applied to the development of campaigns that aim to direct customers towards healthier and more sustainable behaviours.

Limits of the study and further developments

One key limitation of this study lies in its sample. Although the number of participants was adequate for the planned analyses, a larger and more diverse sample would improve the accuracy, generalizability, and robustness of the findings. The use of convenience sampling, primarily within the researcher's network, introduces bias and limits representativeness, making the results less applicable to the broader population. Additionally, the sample was demographically homogeneous, predominantly of one gender, younger in age, and mostly Swiss, which further restricts the study's ability to capture variations across gender, age groups, and cultural backgrounds. Future studies should adopt probabilistic sampling and aim for greater diversity to enhance external validity.

Another limitation of this study is the lack of a standardised tool to generate and measure cognitive dissonance. Since no validated scale exists, this study adapted the Food Choice

Questionnaire (FCQ) to assess the importance and frequency of certain behaviours, calculating a dissonance score by subtracting one from the other. While this approach is logically sound, it has not been validated in prior research. Future studies should focus on developing and validating a reliable self-report tool for measuring cognitive dissonance.

Another limitation is the potentially weak stimulus used to elicit cognitive dissonance. Asking participants to rate the importance of certain behaviours and then their frequency may not have been strong enough to trigger meaningful cognitive dissonance in them. This limitation may also be aggravated by the fact that individuals tend to avoid experiencing dissonance, and this could have led them to adjust their responses to appear more consistent within themselves. This adjustment may occur unconsciously, with participants downplaying the importance of certain behaviours to better align with their actual practices.

In addition, several methodological factors may have limited the effectiveness of the dissonance induction used in this study.

The approach involved asking participants to rate both the importance they assign to certain food-related behaviours and how frequently they actually engage in them. However, this method may not have been strong enough to provoke a meaningful sense of cognitive dissonance. Simply reflecting on one's values and actions in a questionnaire format may not generate the psychological discomfort typically associated with dissonance, especially in the absence of a real or perceived conflict. Many studies that have successfully used cognitive dissonance to induce discomfort—and subsequently, behavioural change- have required participants to perform a task, thereby increasing their involvement in the process and potentially amplifying the effect. Future research could focus on developing an experimental design that follows this approach, actively engaging participants in a task such as writing an essay or making a genuine choice.

Moreover, the weakness of the stimulation may also have been compounded by the tendency for individuals to unconsciously adjust their responses to appear more internally consistent. As highlighted in the theory of cognitive dissonance, people strive for internal consistency and do not appreciate feeling incoherent. Therefore, it might have happened that people consciously or unconsciously modified their responses in order not to feel this inconsistency. Participants

might have minimised any gap between their values and behaviours, either by overstating the frequency of the behaviour or by downplaying its importance, thereby reducing the dissonance they experience. This response bias is often not deliberate but rather a subtle self-protective mechanism. Future studies should pay attention to this and consider ways to avoid this situation, for example, by observing individuals' actual behaviour rather than asking them, and then reporting the inconsistency back to them.

Finally, the structure of the questionnaire may have unintentionally reinforced this effect. Since the questions about importance and frequency were presented close together, participants may have been influenced by their first set of responses when answering the second, making it easier to maintain coherence between the two. This could have further reduced the likelihood of eliciting the psychological tension central to cognitive dissonance. Future studies may benefit from using more immersive or emotionally engaging stimuli, and from spacing or disguising related items to minimise response bias.

VII. CONCLUSION

Despite the growing awareness of the importance of healthy eating, many individuals continue to struggle with translating their intentions into consistent behaviours. This study investigated the role of cognitive dissonance as a motivational driver for change, exploring whether making individuals aware of the inconsistencies between their values and their actual behaviours could generate psychological discomfort, and in turn, promote the adoption of healthier habits.

The statistical findings supported the hypotheses. Higher levels of cognitive dissonance were significantly associated with greater psychological discomfort, and this discomfort, in turn, was positively related to the intention to change behaviour toward healthier habits. In some cases, simply becoming aware of the dissonance, even without experiencing intense psychological discomfort, was enough to trigger respondents' intention to change.

These findings have important practical implications. They suggest that communication strategies and public health campaigns should go beyond simply giving advice or sharing information about healthy eating. Instead, a more effective approach may be to help individuals reflect on the gap between their values and their everyday eating habits. Encouraging this kind of self-reflection can increase self-awareness and create a stronger, more lasting motivation to change, leading to healthier and more sustainable behaviours over time.

Furthermore, this approach is particularly relevant in counterbalancing the influence of profit-driven marketing strategies by large food companies, which often prioritise the consumption of unhealthy foods over public health. Dissonance-based strategies appeal to personal values and offer a meaningful alternative to these approaches.

In conclusion, this research demonstrates that activating cognitive dissonance can serve as an effective lever to promote healthier food choices. Raising awareness of personal inconsistencies can motivate individuals to realign their actions with their values, offering a powerful tool for addressing today's public health challenges.

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IX. ANNEX

Questionnaire

UNI FR
UNIVERSITÉ DE FRIBOURG
UNIVERSITÄT FREIBURG

A research related to the impact of cognitive dissonance on consumers' purchase intentions in the choice of healthier foods

This research is conducted as part of my thesis, carried out at the Chair of Marketing at the University of Freiburg, under the supervision of Professor Olivier Furrer.

My research analyzes how cognitive dissonance - the mental discomfort you feel when your beliefs contrast with your actions - affects consumer intentions in choosing healthier foods.

This survey has been designed so that you can complete it in about 5 minutes.

The sincerity of your answers is essential, as it will guarantee results that faithfully reflect reality.

We assure you that your answers will remain strictly anonymous and confidential.

Forward

Chiara Vittori, University of Freiburg

0% completed

The following statements are intended to identify **the importance** of some of your eating behaviors.

For each statement, choose the answer that best reflects your perception.

For me it is important that the food I eat on a typical day...

...does not contain additives.

Not at all important	Unimportant	Neutral	Quite important	Very important
○	○	○	○	○

..is low in calories.

Not at all important	Unimportant	Neutral	Quite important	Very important
○	○	○	○	○

...contains natural ingredients.

Not at all important	Unimportant	Neutral	Quite important	Very important
○	○	○	○	○

...is low in fat.

Not at all important	Unimportant	Neutral	Quite important	Very important
○	○	○	○	○

...is rich in fiber.

Not at all important | Unimportant | Neutral | Quite important | Very important

...is nutritious.

Not at all important | Unimportant | Neutral | Quite important | Very important

...help me control my weight.

Not at all important | Unimportant | Neutral | Quite important | Very important

...contains many vitamins and minerals.

Not at all important | Unimportant | Neutral | Quite important | Very important

...does not contain artificial ingredients.

Not at all important | Unimportant | Neutral | Quite important | Very important

...is rich in protein.

Not at all important | Unimportant | Neutral | Quite important | Very important

...keep me healthy.

Not at all important | Unimportant | Neutral | Quite important | Very important

...is beneficial for my skin, my teeth, my hair, my nails, etc.

Not at all important | Unimportant | Neutral | Quite important | Very important

Forward

The following statements are intended to identify **the frequency** of some of your eating behaviors.

For each statement, choose the answer that best reflects your perception.

I pay attention to the fact that the food I eat on a typical day...

...does not contain additives.

Never | Rarely | Occasionally | Often | Always

...is low in calories.

Never | Rarely | Occasionally | Often | Always

...contains natural ingredients.

Never | Rarely | Occasionally | Often | Always

...is low in fat.

Never | Rarely | Occasionally | Often | Always

...is rich in fiber.

Never | Rarely | Occasionally | Often | Always

..is nutritious.

Never | Rarely | Occasionally | Often | Always

...help me control my weight.

Never | Rarely | Occasionally | Often | Always

...contains many vitamins and minerals.

Never | Rarely | Occasionally | Often | Always

...does not contain artificial ingredients.

Never | Rarely | Occasionally | Often | Always

...is rich in protein.

Never | Rarely | Occasionally | Often | Always

...keep me healthy.

Never | Rarely | Occasionally | Often | Always

...is beneficial for my skin, my teeth, my hair, my nails, etc.

Never | Rarely | Occasionally | Often | Always

Forward

Chiara Vittori, University of Freiburg

29% completed

Below is a comparison of your previous answers regarding the importance attributed to certain eating behaviors and how often you put them into practice.

If there is a difference between the importance you attach to a behavior and the frequency with which you adopt it, your behavior will be considered inconsistent. On the contrary, if there is no difference between the importance you attach to a behavior and how often you adopt it, your behavior will be considered consistent.

We invite you to take note of these results and keep them in mind for the continuation of the questionnaire.

Behavior	Importance	Frequency	Consistency
Consume food without additives	5/5	2/5	**2/5**
Consume low-calorie foods	5/5	3/5	**3/5**
Consume foods with natural ingredients	4/5	3/5	**4/5**
Consume low-fat foods	4/5	4/5	**5/5**
Consume foods rich in fiber	4/5	4/5	**5/5**
Consume nutritious foods	3/5	3/5	**5/5**
Consume foods that help me control my weight	3/5	3/5	**5/5**
Consume foods rich in vitamins and minerals	4/5	4/5	**5/5**
Consume foods free of artificial ingredients	5/5	3/5	**3/5**
Consume protein-rich foods	5/5	3/5	**3/5**
Consume foods that help me stay healthy	4/5	4/5	**5/5**
Consume beneficial foods for the skin, teeth, hair and nails	4/5	3/5	**4/5**
Average			**4.08/5**

The answers you have provided earlier show a certain **consistency** between the importance you attach to certain eating behaviors and the frequency with which you put them into practice.

Forward

After becoming aware of the comparison between the importance you attach to a given behavior and the frequency with which you put it into practice, we ask you to answer the following questions.

To what extent do you feel…

Uncomfortable

Not at all	Little	Moderately	Very	Very much
○	○	○	○	○

Uneasy

Not at all	Little	Moderately	Very	Very much
○	○	○	○	○

Bothered

Not at all	Little	Moderately	Very	Very much
○	○	○	○	○

Forward

We now invite you to think about the possibility that, after completing this questionnaire, you may feel motivated to change some of your eating behaviors.

In the future I will commit to consuming food that...

...does not contain additives.

Strongly disagree	In disagreement	Neutral	Agreed	Strongly agree
○	○	○	○	○

...is low in calories.

Strongly disagree	In disagreement	Neutral	Agreed	Strongly agree
○	○	○	○	○

...contains natural ingredients.

Strongly disagree	In disagreement	Neutral	Agreed	Strongly agree
○	○	○	○	○

...is low in fat.

Strongly disagree	In disagreement	Neutral	Agreed	Strongly agree
○	○	○	○	○

...is rich in fiber.

Strongly disagree | In disagreement | Neutral | Agreed | Strongly agree

...is nutritious.

Strongly disagree | In disagreement | Neutral | Agreed | Strongly agree

...help me control my weight.

Strongly disagree | In disagreement | Neutral | Agreed | Strongly agree

...that contains many vitamins and minerals.

Strongly disagree | In disagreement | Neutral | Agreed | Strongly agree

...does not contain artificial ingredients.

Strongly disagree | In disagreement | Neutral | Agreed | Strongly agree

...is rich in protein.

Strongly disagree | In disagreement | Neutral | Agreed | Strongly agree

...keep me healthy.

Strongly disagree | In disagreement | Neutral | Agreed | Strongly agree

...is beneficial for my skin, my teeth, my hair, my nails, etc.

Strongly disagree | In disagreement | Neutral | Agreed | Strongly agree

Forward

Chiara Vittori, University of Freiburg

71% completed

Finally, please answer the following questions.

What is your gender?

[Select]

In what year were you born (for example 1989)?

What is your nationality (for example Switzerland)?

Forward

Chiara Vittori, University of Freiburg

86% completed

Thank you for taking the time to fill out this questionnaire.

Your answers have been saved.

Chiara Vittori, University of Freiburg

SPSS outputs

Descriptive analysis

Gender:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	49	30.8	30.8	30.8
	2.00	110	69.2	69.2	100.0
	Total	159	100.0	100.0	

Age:

		Frequency	Percent	Cumulative Percent
Valid	1	94	59.1	59.1
	2	14	8.8	67.9
	3	46	28.9	96.9
	4	5	3.1	100.0
	Total	159	100.0	

N	Valid	159
	Missing	0
Minimum		15
Maximum		72

Nationality:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Brasil	1	.6	.6	.6
	Italy	14	8.8	8.8	9.4
	Switzerland	144	90.6	90.6	100.0
	Total	159	100.0	100.0	

Preliminary analysis

Exploratory factor analysis with all items:

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.772	32.748	32.748	12.772	32.748	32.748
2	6.076	15.579	48.327	6.076	15.579	48.327
3	3.712	9.517	57.844	3.712	9.517	57.844
4	2.915	7.475	65.318	2.915	7.475	65.318
5	2.233	5.726	71.045	2.233	5.726	71.045
6	1.433	3.675	74.719	1.433	3.675	74.719
7	1.115	2.859	77.578	1.115	2.859	77.578
8	1.060	2.718	80.296	1.060	2.718	80.296
9	.954	2.445	82.741			
10	.651	1.669	84.410			
11	.587	1.506	85.915			
12	.500	1.281	87.196			
13	.472	1.210	88.406			
14	.432	1.108	89.514			
15	.347	.890	90.404			
16	.312	.799	91.203			
17	.290	.743	91.945			
18	.271	.696	92.641			
19	.252	.646	93.287			
20	.241	.617	93.904			
21	.205	.526	94.430			
22	.196	.501	94.931			
23	.193	.494	95.426			
24	.171	.437	95.863			
25	.163	.418	96.282			
26	.156	.400	96.682			
27	.151	.388	97.070			
28	.137	.352	97.422			
29	.132	.337	97.759			
30	.125	.319	98.079			
31	.118	.302	98.381			
32	.102	.263	98.644			
33	.098	.252	98.895			
34	.091	.234	99.130			
35	.088	.226	99.356			
36	.079	.202	99.558			
37	.067	.172	99.730			
38	.053	.137	99.867			
39	.052	.133	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component							
	1	2	3	4	5	6	7	8
imp_01	.566	.041	-.175	.462	.347	-.207	.145	-.178
imp_02	.508	.308	.549	.210	.130	-.061	.083	-.014
imp_03	.628	-.017	-.275	.485	.145	.007	-.197	-.092
imp_04	.548	.271	.460	.359	.074	-.061	-.274	-.024
imp_05	.676	-.060	.012	.386	-.292	.011	-.192	.070
imp_06	.533	-.011	-.124	.277	-.515	-.244	-.187	.056
imp_07	.540	.218	.629	.113	-.057	-.098	.019	-.119
imp_08	.644	-.012	-.100	.469	-.209	.171	-.098	-.162
imp_09	.643	.045	-.267	.469	.301	-.089	.041	-.057
imp_10	.525	.141	.114	.450	-.407	-.219	.372	.022
imp_11	.666	-.015	.034	.254	-.343	-.108	-.134	.142
imp_12	.616	.049	-.039	.157	-.279	.430	.072	-.350
freq_01	.564	-.520	-.120	.153	.349	-.067	.195	-.025
freq_02	.461	-.267	.672	-.185	.248	.044	.043	.052
freq_03	.553	-.580	-.155	.051	.293	.079	-.132	.143
freq_04	.527	-.316	.556	-.138	.213	.008	-.152	.069
freq_05	.610	-.551	.107	-.123	-.119	.125	-.042	.175
freq_06	.560	-.585	-.058	-.139	-.208	-.070	-.095	.242
freq_07	.519	-.252	.654	-.259	.070	.039	.059	-.037
freq_08	.591	-.590	-.079	-.010	-.004	.296	-.090	-.024
freq_09	.547	-.511	-.229	.127	.447	-.029	.097	.069
freq_10	.523	-.480	.242	-.073	-.238	-.157	.405	.199
freq_11	.594	-.594	.055	-.144	.028	-.020	-.026	.184
freq_12	.588	-.393	.067	-.139	-.069	.517	.189	-.159
discm_01	.230	.776	.036	.168	.156	.302	.050	.339
discom_02	.240	.739	-.014	.172	.201	.305	.083	.365
discom_03	.193	.771	.083	.173	.141	.271	.099	.385
bein_01	.674	.205	-.376	-.177	.284	-.204	.170	-.133
bein_02	.535	.505	.339	-.259	.180	-.184	-.085	-.164
bein_03	.651	.210	-.418	-.251	.181	-.060	-.160	-.026
bein_04	.530	.504	.243	-.190	.094	-.143	-.288	-.134
bein_05	.681	.282	-.247	-.304	-.263	.043	-.061	.020
bein_06	.661	.161	-.372	-.350	-.147	-.157	-.107	.165
bein_07	.560	.460	.369	-.349	.021	-.084	.029	-.148
bein_08	.681	.264	-.307	-.307	-.133	.149	-.104	-.032
bein_09	.629	.160	-.445	-.179	.336	-.161	.124	.007
bein_10	.558	.368	-.097	-.202	-.328	-.222	.412	.042
bein_11	.682	.169	-.208	-.463	-.055	-.083	-.125	.120
bein_12	.641	.285	-.197	-.276	-.101	.349	.155	-.274

Extraction Method: Principal Component Analysis.

a. 8 components extracted.

Exploratory factor analysis only for items concerning importance:

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.964	49.698	49.698	5.964	49.698	49.698
2	1.475	12.293	61.991	1.475	12.293	61.991
3	1.122	9.349	71.340	1.122	9.349	71.340
4	.624	5.200	76.540			
5	.593	4.943	81.482			
6	.519	4.328	85.810			
7	.382	3.180	88.990			
8	.351	2.926	91.916			
9	.290	2.415	94.332			
10	.276	2.303	96.634			
11	.217	1.805	98.439			
12	.187	1.561	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component		
	1	2	3
imp_01	.667	-.188	.545
imp_02	.601	.663	.201
imp_03	.742	-.360	.309
imp_04	.698	.450	.148
imp_05	.798	-.109	-.177
imp_06	.666	-.213	-.470
imp_07	.616	.664	-.060
imp_08	.786	-.202	-.033
imp_09	.729	-.312	.409
imp_10	.727	.058	-.222
imp_11	.752	-.089	-.347
imp_12	.646	-.139	-.271

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

Exploratory factor analysis only for items concerning frequency:

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.895	57.462	57.462	6.895	57.462	57.462
2	1.536	12.800	70.262	1.536	12.800	70.262
3	.801	6.678	76.940			
4	.579	4.825	81.765			
5	.469	3.906	85.671			
6	.381	3.178	88.849			
7	.281	2.345	91.194			
8	.271	2.260	93.454			
9	.230	1.913	95.366			
10	.204	1.701	97.067			
11	.180	1.501	98.568			
12	.172	1.432	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component	
	1	2
freq_01	.748	-.365
freq_02	.666	.609
freq_03	.783	-.323
freq_04	.724	.466
freq_05	.840	-.010
freq_06	.779	-.163
freq_07	.678	.622
freq_08	.817	-.235
freq_09	.730	-.455
freq_10	.736	.151
freq_11	.844	-.111
freq_12	.730	.004

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Exploratory factor analysis only for items concerning discomfort:

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.757	91.910	91.910	2.757	91.910	91.910
2	.134	4.454	96.365			
3	.109	3.635	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
discm_01	.961
discom_02	.954
discom_03	.960

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Exploratory factor analysis only for items concerning intention to adopt a healthier diet:

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.009	58.408	58.408	7.009	58.408	58.408
2	1.432	11.930	70.338	1.432	11.930	70.338
3	.818	6.821	77.159			
4	.551	4.590	81.749			
5	.496	4.137	85.886			
6	.435	3.627	89.514			
7	.268	2.236	91.750			
8	.264	2.201	93.951			
9	.224	1.870	95.821			
10	.200	1.671	97.492			
11	.161	1.345	98.837			
12	.140	1.163	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1	2
bein_01	.792	-.223
bein_02	.678	.621
bein_03	.799	-.290
bein_04	.671	.574
bein_05	.829	-.078
bein_06	.806	-.267
bein_07	.690	.560
bein_08	.833	-.155
bein_09	.744	-.381
bein_10	.710	.064
bein_11	.831	-.124
bein_12	.761	-.044

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Reliability analysis for the aggregated variable of discomfort:

Cronbach's Alpha	N of Items
.956	3

Hypotheses testing

Hypothesis 1

Behaviour 1: ...does not contain additives

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	cd_1[b]	.	Enter

a. Dependent Variable: discomf
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.481[a]	.231	.227	3.10848

a. Predictors: (Constant), cd_1

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	456.903	1	456.903	47.286	<.001[b]
	Residual	1517.034	157	9.663		
	Total	1973.937	158			

a. Dependent Variable: discomf
b. Predictors: (Constant), cd_1

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	4.719	.332		14.201	<.001
	cd_1	1.716	.250	.481	6.876	<.001

a. Dependent Variable: discomf

Behaviour 2: ...is low in calories

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	cd_2[b]	.	Enter

a. Dependent Variable: discomf
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.473[a]	.224	.219	3.12401

a. Predictors: (Constant), cd_2

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	441.706	1	441.706	45.259	<.001[b]
	Residual	1532.231	157	9.759		
	Total	1973.937	158			

a. Dependent Variable: discomf
b. Predictors: (Constant), cd_2

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	4.976	.312		15.952	<.001
	cd_2	1.895	.282	.473	6.728	<.001

a. Dependent Variable: discomf

Behaviour 3: ...contains natural ingredients

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	cd_3[b]	.	Enter

a. Dependent Variable: discomf
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.409[a]	.168	.162	3.23505

a. Predictors: (Constant), cd_3

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	330.841	1	330.841	31.612	<.001[b]
	Residual	1643.096	157	10.466		
	Total	1973.937	158			

a. Dependent Variable: discomf
b. Predictors: (Constant), cd_3

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	5.079	.331		15.358	<.001
	cd_3	1.581	.281	.409	5.622	<.001

a. Dependent Variable: discomf

Behaviour 4: ...is low in fat

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	cd_4[b]	.	Enter

a. Dependent Variable: discomf
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.483[a]	.233	.228	3.10546

a. Predictors: (Constant), cd_4

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	459.846	1	459.846	47.683	<.001[b]
	Residual	1514.092	157	9.644		
	Total	1973.937	158			

a. Dependent Variable: discomf
b. Predictors: (Constant), cd_4

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	4.911	.314		15.659	<.001
	cd_4	1.854	.268	.483	6.905	<.001

a. Dependent Variable: discomf

Behaviour 5: ...is high in fibre

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	cd_5[b]	.	Enter

a. Dependent Variable: discomf
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.414[a]	.172	.166	3.22710

a. Predictors: (Constant), cd_5

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	338.915	1	338.915	32.544	<.001[b]
	Residual	1635.022	157	10.414		
	Total	1973.937	158			

a. Dependent Variable: discomf
b. Predictors: (Constant), cd_5

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	5.080	.328		15.480	<.001
	cd_5	1.649	.289	.414	5.705	<.001

a. Dependent Variable: discomf

Behaviour 6: ...is nutritious

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	cd_6[b]	.	Enter

a. Dependent Variable: discomf
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.389[a]	.151	.146	3.26640

a. Predictors: (Constant), cd_6

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	298.842	1	298.842	28.009	<.001[b]
	Residual	1675.095	157	10.669		
	Total	1973.937	158			

a. Dependent Variable: discomf
b. Predictors: (Constant), cd_6

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	5.141	.333		15.419	<.001
	cd_6	1.424	.269	.389	5.292	<.001

a. Dependent Variable: discomf

Behaviour 7: ...helps me control my weight

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	cd_7[b]	.	Enter

a. Dependent Variable: discomf

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.489[a]	.239	.234	3.09379

a. Predictors: (Constant), cd_7

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	471.207	1	471.207	49.230	<.001[b]
	Residual	1502.730	157	9.572		
	Total	1973.937	158			

a. Dependent Variable: discomf

b. Predictors: (Constant), cd_7

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	4.954	.307		16.120	<.001
	cd_7	2.043	.291	.489	7.016	<.001

a. Dependent Variable: discomf

Behaviour 8: ...contains plenty of vitamins and minerals

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	cd_8[b]	.	Enter

a. Dependent Variable: discomf

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.454[a]	.206	.201	3.15887

a. Predictors: (Constant), cd_8

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	407.320	1	407.320	40.820	<.001[b]
	Residual	1566.617	157	9.978		
	Total	1973.937	158			

a. Dependent Variable: discomf

b. Predictors: (Constant), cd_8

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	4.986	.319		15.613	<.001
	cd_8	1.735	.271	.454	6.389	<.001

a. Dependent Variable: discomf

Behaviour 9: ...does not contain artificial ingredients

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	cd_9[b]	.	Enter

a. Dependent Variable: discomf

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.473[a]	.224	.219	3.12452

a. Predictors: (Constant), cd_9

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	441.206	1	441.206	45.193	<.001[b]
	Residual	1532.731	157	9.763		
	Total	1973.937	158			

a. Dependent Variable: discomf

b. Predictors: (Constant), cd_9

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	4.872	.322		15.139	<.001
	cd_9	1.799	.268	.473	6.723	<.001

a. Dependent Variable: discomf

Behaviour 10: ...is high in protein

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	cd_10[b]	.	Enter

a. Dependent Variable: discomf

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.525[a]	.275	.271	3.01832

a. Predictors: (Constant), cd_10

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	543.629	1	543.629	59.672	<.001[b]
	Residual	1430.308	157	9.110		
	Total	1973.937	158			

a. Dependent Variable: discomf

b. Predictors: (Constant), cd_10

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	5.008	.288		17.357	<.001
	cd_10	1.939	.251	.525	7.725	<.001

a. Dependent Variable: discomf

Behaviour 11: ...keeps me healthy

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	cd_11[b]	.	Enter

a. Dependent Variable: discomf
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.401[a]	.161	.156	3.24753

a. Predictors: (Constant), cd_11

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	318.142	1	318.142	30.166	<.001[b]
	Residual	1655.795	157	10.546		
	Total	1973.937	158			

a. Dependent Variable: discomf
b. Predictors: (Constant), cd_11

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	4.974	.347		14.335	<.001
	cd_11	1.538	.280	.401	5.492	<.001

a. Dependent Variable: discomf

Behaviour 12: ...is beneficial for my skin, teeth, hair, nails, etc.

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	cd_12[b]	.	Enter

a. Dependent Variable: discomf
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.359[a]	.129	.124	3.30910

a. Predictors: (Constant), cd_12

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	254.763	1	254.763	23.266	<.001[b]
	Residual	1719.174	157	10.950		
	Total	1973.937	158			

a. Dependent Variable: discomf
b. Predictors: (Constant), cd_12

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	5.191	.342		15.159	<.001
	cd_12	1.339	.278	.359	4.823	<.001

a. Dependent Variable: discomf

Hypothesis 2

Behaviour 1: ...does not contain additives

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf[b]	.	Enter

a. Dependent Variable: bein_01

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.238[a]	.056	.050	.948

a. Predictors: (Constant), discomf

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.440	1	8.440	9.393	.003[b]
	Residual	141.069	157	.899		
	Total	149.509	158			

a. Dependent Variable: bein_01

b. Predictors: (Constant), discomf

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.289	.153		21.484	<.001
	discomf	.065	.021	.238	3.065	.003

a. Dependent Variable: bein_01

Behaviour 2: ...is low in calories

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf[b]	.	Enter

a. Dependent Variable: bein_02

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.405[a]	.164	.159	.909

a. Predictors: (Constant), discomf

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25.451	1	25.451	30.773	<.001[b]
	Residual	129.845	157	.827		
	Total	155.296	158			

a. Dependent Variable: bein_02

b. Predictors: (Constant), discomf

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.737	.147		18.631	<.001
	discomf	.114	.020	.405	5.547	<.001

a. Dependent Variable: bein_02

Behaviour 3: ...contains natural ingredients

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf[b]	.	Enter

a. Dependent Variable: bein_03

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.242[a]	.059	.053	.859

a. Predictors: (Constant), discomf

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.204	1	7.204	9.772	.002[b]
	Residual	115.740	157	.737		
	Total	122.943	158			

a. Dependent Variable: bein_03

b. Predictors: (Constant), discomf

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.641	.139		26.256	<.001
	discomf	.060	.019	.242	3.126	.002

a. Dependent Variable: bein_03

Behaviour 4: ...is low in fat

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf[b]	.	Enter

a. Dependent Variable: bein_04

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.403[a]	.163	.157	.856

a. Predictors: (Constant), discomf

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.365	1	22.365	30.525	<.001[b]
	Residual	115.031	157	.733		
	Total	137.396	158			

a. Dependent Variable: bein_04

b. Predictors: (Constant), discomf

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.882	.138		20.844	<.001
	discomf	.106	.019	.403	5.525	<.001

a. Dependent Variable: bein_04

Behaviour 5: ...is high in fibre

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf[b]	.	Enter

a. Dependent Variable: bein_05

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.273[a]	.075	.069	.860

a. Predictors: (Constant), discomf

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.345	1	9.345	12.645	<.001[b]
	Residual	116.026	157	.739		
	Total	125.371	158			

a. Dependent Variable: bein_05

b. Predictors: (Constant), discomf

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.299	.139		23.762	<.001
	discomf	.069	.019	.273	3.556	<.001

a. Dependent Variable: bein_05

Behaviour 6: ...is nutritious

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf[b]	.	Enter

a. Dependent Variable: bein_06

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.185[a]	.034	.028	.854

a. Predictors: (Constant), discomf

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.082	1	4.082	5.591	.019[b]
	Residual	114.610	157	.730		
	Total	118.692	158			

a. Dependent Variable: bein_06

b. Predictors: (Constant), discomf

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.672	.138		26.606	<.001
	discomf	.045	.019	.185	2.365	.019

a. Dependent Variable: bein_06

Behaviour 7: ...helps me control my weight

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf[b]	.	Enter

a. Dependent Variable: bein_07

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.381[a]	.145	.140	.968

a. Predictors: (Constant), discomf

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.990	1	24.990	26.645	<.001[b]
	Residual	147.249	157	.938		
	Total	172.239	158			

a. Dependent Variable: bein_07

b. Predictors: (Constant), discomf

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.894	.156		18.502	<.001
	discomf	.113	.022	.381	5.162	<.001

a. Dependent Variable: bein_07

Behaviour 8: ...contains plenty of vitamins and minerals

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf[b]	.	Enter

a. Dependent Variable: bein_08

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.290[a]	.084	.078	.829

a. Predictors: (Constant), discomf

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.937	1	9.937	14.458	<.001[b]
	Residual	107.912	157	.687		
	Total	117.849	158			

a. Dependent Variable: bein_08

b. Predictors: (Constant), discomf

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.330	.134		24.868	<.001
	discomf	.071	.019	.290	3.802	<.001

a. Dependent Variable: bein_08

Behaviour 9: ...does not contain artificial ingredients

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf[b]	.	Enter

a. Dependent Variable: bein_09

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.239[a]	.057	.051	.963

a. Predictors: (Constant), discomf

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.799	1	8.799	9.487	.002[b]
	Residual	145.616	157	.927		
	Total	154.415	158			

a. Dependent Variable: bein_09

b. Predictors: (Constant), discomf

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.413	.156		21.940	<.001
	discomf	.067	.022	.239	3.080	.002

a. Dependent Variable: bein_09

Behaviour 10: ...is high in protein

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf[b]	.	Enter

a. Dependent Variable: bein_10

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.299[a]	.090	.084	.857

a. Predictors: (Constant), discomf

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.338	1	11.338	15.444	<.001[b]
	Residual	115.265	157	.734		
	Total	126.604	158			

a. Dependent Variable: bein_10

b. Predictors: (Constant), discomf

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.111	.138		22.480	<.001
	discomf	.076	.019	.299	3.930	<.001

a. Dependent Variable: bein_10

Behaviour 11: ...keeps me healthy

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf[b]	.	Enter

a. Dependent Variable: bein_11

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.195[a]	.038	.032	.837

a. Predictors: (Constant), discomf

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.355	1	4.355	6.223	.014[b]
	Residual	109.871	157	.700		
	Total	114.226	158			

a. Dependent Variable: bein_11

b. Predictors: (Constant), discomf

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.838	.135		28.408	<.001
	discomf	.047	.019	.195	2.495	.014

a. Dependent Variable: bein_11

Behaviour 12: ...is beneficial for my skin, teeth, hair, nails, etc.

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf[b]	.	Enter

a. Dependent Variable: bein_12

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.316[a]	.100	.094	1.034

a. Predictors: (Constant), discomf

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.598	1	18.598	17.380	<.001[b]
	Residual	168.005	157	1.070		
	Total	186.604	158			

a. Dependent Variable: bein_12

b. Predictors: (Constant), discomf

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.978	.167		17.824	<.001
	discomf	.097	.023	.316	4.169	<.001

a. Dependent Variable: bein_12

Hypothesis 3

Behaviour 1: ...does not contain additives

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

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI
      .0961      .0867     1.1075      .2698     -.0753      .2674

Indirect effect(s) of X on Y:
            Effect     BootSE   BootLLCI   BootULCI
discomf      .0900      .0403      .0154      .1724
```

Behaviour 2: ...is low in calories

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

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI
     -.0864      .0931     -.9276      .3551     -.2703      .0976

Indirect effect(s) of X on Y:
            Effect     BootSE   BootLLCI   BootULCI
discomf      .2345      .0559      .1216      .3404
```

Behaviour 3: ...contains natural ingredients

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

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI
     -.0714      .0818     -.8725      .3843     -.2331      .0903

Indirect effect(s) of X on Y:
            Effect     BootSE   BootLLCI   BootULCI
discomf      .1075      .0384      .0386      .1890
```

Behaviour 4: ...is low in fat

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

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI
      .0163      .0847      .1920      .8480     -.1511      .1837

Indirect effect(s) of X on Y:
            Effect     BootSE   BootLLCI   BootULCI
discomf      .1935      .0499      .0984      .2943
```

Behaviour 5: ...is high in fibre

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

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI
     -.0928      .0845    -1.0978      .2740     -.2598      .0742

Indirect effect(s) of X on Y:
            Effect     BootSE   BootLLCI   BootULCI
discomf      .1294      .0466      .0473      .2273
```

Behaviour 6: ...is nutritious

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

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI
     -.1847      .0752    -2.4547      .0152     -.3333     -.0361

Indirect effect(s) of X on Y:
            Effect     BootSE   BootLLCI   BootULCI
discomf      .0927      .0393      .0272      .1810
```

Behaviour 7: ...helps me control my weight

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

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI
     -.0616      .1047     -.5883      .5572     -.2684      .1452

Indirect effect(s) of X on Y:
            Effect     BootSE   BootLLCI   BootULCI
discomf      .2446      .0585      .1321      .3656
```

Behaviour 8: ...contains plenty of vitamins and minerals

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

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI
     -.0875      .0799    -1.0942      .2756     -.2454      .0704

Indirect effect(s) of X on Y:
            Effect     BootSE   BootLLCI   BootULCI
discomf      .1411      .0461      .0608      .2379
```

Behaviour 9: ...does not contain artificial ingredients

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

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI
     -.0251      .0939     -.2677      .7893     -.2105      .1603

Indirect effect(s) of X on Y:
            Effect     BootSE   BootLLCI   BootULCI
discomf      .1257      .0428      .0457      .2142
```

Behaviour 10: ...is high in protein

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

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI
     -.0468      .0839     -.5583      .5774     -.2126      .1189

Indirect effect(s) of X on Y:
            Effect     BootSE   BootLLCI   BootULCI
discomf      .1599      .0521      .0677      .2661
```

Behaviour 11: ...keeps me healthy

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

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI
     -.1876      .0776    -2.4171      .0168     -.3408     -.0343

Indirect effect(s) of X on Y:
            Effect     BootSE   BootLLCI   BootULCI
discomf      .1025      .0397      .0351      .1912
```

Behaviour 12: ...is beneficial for my skin, teeth, hair, nails, etc.

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

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI
     -.0498      .0932     -.5348      .5935     -.2339      .1342

Indirect effect(s) of X on Y:
            Effect     BootSE   BootLLCI   BootULCI
discomf      .1364      .0499      .0447      .2409
```

Hypothesis 4

Behaviour 1: ...does not contain additives

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf, cd_1[b]	.	Enter

a. Dependent Variable: bein_01
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.253[a]	.064	.052	.947

a. Predictors: (Constant), discomf, cd_1

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.541	2	4.770	5.317	.006[b]
	Residual	139.969	156	.897		
	Total	149.509	158			

a. Dependent Variable: bein_01
b. Predictors: (Constant), discomf, cd_1

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.285	.153		21.460	<.001
	cd_1	.096	.087	.098	1.107	.270
	discomf	.052	.024	.191	2.156	.033

a. Dependent Variable: bein_01

Behaviour 2: ...is low in calories

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf, cd_2[b]	.	Enter

a. Dependent Variable: bein_02
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.410[a]	.168	.158	.910

a. Predictors: (Constant), discomf, cd_2

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26.163	2	13.081	15.803	<.001[b]
	Residual	129.133	156	.828		
	Total	155.296	158			

a. Dependent Variable: bein_02
b. Predictors: (Constant), discomf, cd_2

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.731	.147		18.569	<.001
	cd_2	-.086	.093	-.077	-.928	.355
	discomf	.124	.023	.441	5.324	<.001

a. Dependent Variable: bein_02

Behaviour 3: ...contains natural ingredients

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf, cd_3[b]	.	Enter

a. Dependent Variable: bein_03

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.251[a]	.063	.051	.859

a. Predictors: (Constant), discomf, cd_3

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.766	2	3.883	5.259	.006[b]
	Residual	115.178	156	.738		
	Total	122.943	158			

a. Dependent Variable: bein_03

b. Predictors: (Constant), discomf, cd_3

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.647	.139		26.248	<.001
	cd_3	-.071	.082	-.074	-.872	.384
	discomf	.068	.021	.272	3.207	.002

a. Dependent Variable: bein_03

Behaviour 4: ...is low in fat

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf, cd_4[b]	.	Enter

a. Dependent Variable: bein_04

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.404[a]	.163	.152	.859

a. Predictors: (Constant), discomf, cd_4

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.392	2	11.196	15.187	<.001[b]
	Residual	115.004	156	.737		
	Total	137.396	158			

a. Dependent Variable: bein_04

b. Predictors: (Constant), discomf, cd_4

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.883	.139		20.772	<.001
	cd_4	.016	.085	.016	.192	.848
	discomf	.104	.022	.396	4.731	<.001

a. Dependent Variable: bein_04

Behaviour 5: ...is high in fibre

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf, cd_5[b]	.	Enter

a. Dependent Variable: bein_05

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.286[a]	.082	.070	.859

a. Predictors: (Constant), discomf, cd_5

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.234	2	5.117	6.933	.001[b]
	Residual	115.137	156	.738		
	Total	125.371	158			

a. Dependent Variable: bein_05

b. Predictors: (Constant), discomf, cd_5

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.305	.139		23.802	<.001
	cd_5	-.093	.085	-.093	-1.098	.274
	discomf	.078	.021	.311	3.693	<.001

a. Dependent Variable: bein_05

Behaviour 6: ...is nutritious

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf, cd_6[b]	.	Enter

a. Dependent Variable: bein_06

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.265[a]	.070	.058	.841

a. Predictors: (Constant), discomf, cd_6

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.344	2	4.172	5.898	.003[b]
	Residual	110.348	156	.707		
	Total	118.692	158			

a. Dependent Variable: bein_06

b. Predictors: (Constant), discomf, cd_6

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.693	.136		27.130	<.001
	cd_6	-.185	.075	-.206	-2.455	.015
	discomf	.065	.021	.265	3.168	.002

a. Dependent Variable: bein_06

Behaviour 7: ...helps me control my weight

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf, cd_7[b]	.	Enter

a. Dependent Variable: bein_07
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.383[a]	.147	.136	.970

a. Predictors: (Constant), discomf, cd_7

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25.316	2	12.658	13.440	<.001[b]
	Residual	146.923	156	.942		
	Total	172.239	158			

a. Dependent Variable: bein_07
b. Predictors: (Constant), discomf, cd_7

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.888	.157		18.389	<.001
	cd_7	-.062	.105	-.050	-.588	.557
	discomf	.120	.025	.405	4.782	<.001

a. Dependent Variable: bein_07

Behaviour 8: ...contains plenty of vitamins and minerals

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf, cd_8[b]	.	Enter

a. Dependent Variable: bein_08
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.302[a]	.091	.080	.829

a. Predictors: (Constant), discomf, cd_8

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.759	2	5.380	7.837	<.001[b]
	Residual	107.090	156	.686		
	Total	117.849	158			

a. Dependent Variable: bein_08
b. Predictors: (Constant), discomf, cd_8

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.329	.134		24.873	<.001
	cd_8	-.087	.080	-.094	-1.094	.276
	discomf	.081	.021	.333	3.887	<.001

a. Dependent Variable: bein_08

Behaviour 9: ...does not contain artificial ingredients

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf, cd_9[b]	.	Enter

a. Dependent Variable: bein_09

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.240[a]	.057	.045	.966

a. Predictors: (Constant), discomf, cd_9

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.866	2	4.433	4.751	.010[b]
	Residual	145.549	156	.933		
	Total	154.415	158			

a. Dependent Variable: bein_09

b. Predictors: (Constant), discomf, cd_9

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.413	.156		21.873	<.001
	cd_9	-.025	.094	-.024	-.268	.789
	discomf	.070	.025	.250	2.833	.005

a. Dependent Variable: bein_09

Behaviour 10: ...is high in protein

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf, cd_10[b]	.	Enter

a. Dependent Variable: bein_10

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.302[a]	.091	.080	.859

a. Predictors: (Constant), discomf, cd_10

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.568	2	5.784	7.844	<.001[b]
	Residual	115.035	156	.737		
	Total	126.604	158			

a. Dependent Variable: bein_10

b. Predictors: (Constant), discomf, cd_10

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.100	.140		22.103	<.001
	cd_10	-.047	.084	-.050	-.558	.577
	discomf	.082	.023	.326	3.631	<.001

a. Dependent Variable: bein_10

Behaviour 11: ...keeps me healthy

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf, cd_11[b]	.	Enter

a. Dependent Variable: bein_11

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.270[a]	.073	.061	.824

a. Predictors: (Constant), discomf, cd_11

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.321	2	4.161	6.129	.003[b]
	Residual	105.905	156	.679		
	Total	114.226	158			

a. Dependent Variable: bein_11

b. Predictors: (Constant), discomf, cd_11

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.871	.134		28.939	<.001
	cd_11	-.188	.078	-.203	-2.417	.017
	discomf	.067	.020	.277	3.290	.001

a. Dependent Variable: bein_11

Behaviour 12: ...is beneficial for my skin, teeth, hair, nails, etc.

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	discomf, cd_12[b]	.	Enter

a. Dependent Variable: bein_12

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.318[a]	.101	.090	1.037

a. Predictors: (Constant), discomf, cd_12

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.906	2	9.453	8.794	<.001[b]
	Residual	167.698	156	1.075		
	Total	186.604	158			

a. Dependent Variable: bein_12

b. Predictors: (Constant), discomf, cd_12

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.988	.168		17.741	<.001
	cd_12	-.050	.093	-.043	-.535	.594
	discomf	.102	.025	.331	4.074	<.001

a. Dependent Variable: bein_12

Hypothesis 5

Behaviour 1: ...does not contain additives

```
Product terms key:
 Int_1    :        cd_1     x        discomf

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0064     1.0589     1.0000   155.0000      .3051
----------
    Focal predict: cd_1     (X)
          Mod var: discomf  (W)
```

Behaviour 2: ...is low in calories

```
Product terms key:
 Int_1    :        cd_2     x        discomf

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0210     4.0104     1.0000   155.0000      .0470
----------
    Focal predict: cd_2     (X)
          Mod var: discomf  (W)

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

    discomf     Effect         se          t          p       LLCI       ULCI
    -3.2516     -.3497      .1606    -2.1773      .0310     -.6670     -.0324
    -1.2516     -.2718      .1307    -2.0797      .0392     -.5299     -.0136
     3.7484     -.0769      .0924     -.8326      .4064     -.2593      .1055
```

Behaviour 3: ...contains natural ingredients

```
Product terms key:
 Int_1    :        cd_3     x        discomf

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0162     2.7249     1.0000   155.0000      .1008
----------
    Focal predict: cd_3     (X)
          Mod var: discomf  (W)
```

Behaviour 4: ...is low in fat

```
Product terms key:
 Int_1    :        cd_4     x        discomf

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0084     1.5738     1.0000   155.0000      .2115
----------
    Focal predict: cd_4     (X)
          Mod var: discomf  (W)
```

Behaviour 5: ...is high in fibre

```
Product terms key:
 Int_1    :        cd_5     x        discomf

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0165     2.8440     1.0000   155.0000      .0937
----------
    Focal predict: cd_5     (X)
          Mod var: discomf  (W)

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

    discomf     Effect         se          t          p       LLCI       ULCI
    -3.2516     -.2492      .1252    -1.9912      .0482     -.4965     -.0020
    -1.2516     -.1915      .1024    -1.8701      .0634     -.3939      .0108
     3.7484     -.0473      .0883     -.5357      .5929     -.2216      .1271
```

Behaviour 6: ...is nutritious

```
Product terms key:
 Int_1    :        cd_6     x        discomf

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0699    12.5941     1.0000   155.0000      .0005
----------
    Focal predict: cd_6     (X)
          Mod var: discomf  (W)

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

    discomf     Effect         se          t          p       LLCI       ULCI
    -3.2516     -.4590      .1060    -4.3287      .0000     -.6685     -.2496
    -1.2516     -.3508      .0864    -4.0618      .0001     -.5214     -.1802
     3.7484     -.0802      .0783    -1.0245      .3072     -.2349      .0745
```

Behaviour 7: ...helps me control my weight

```
Product terms key:
 Int_1    :        cd_7     x        discomf

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0050      .9068     1.0000   155.0000      .3425
----------
    Focal predict: cd_7     (X)
          Mod var: discomf  (W)
```

Behaviour 8: ...contains plenty of vitamins and minerals

```
Product terms key:
 Int_1    :        cd_8     x        discomf

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0106     1.8285     1.0000   155.0000      .1783
----------
    Focal predict: cd_8     (X)
          Mod var: discomf  (W)
```

Behaviour 9: ...does not contain artificial ingredients

```
Product terms key:
 Int_1    :        cd_9     x        discomf

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0022      .3645     1.0000   155.0000      .5469
----------
    Focal predict: cd_9     (X)
          Mod var: discomf  (W)
```

Behaviour 10: ...is high in protein

```
Product terms key:
 Int_1    :       cd_10    x        discomf

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0568    10.3397     1.0000   155.0000      .0016
----------
    Focal predict: cd_10    (X)
          Mod var: discomf  (W)

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

    discomf     Effect         se          t          p       LLCI       ULCI
    -3.2516     -.3672      .1287    -2.8528      .0049     -.6214     -.1129
    -1.2516     -.2632      .1057    -2.4904      .0138     -.4720     -.0544
     3.7484     -.0032      .0826     -.0390      .9689     -.1664      .1600
```

Behaviour 11: ...keeps me healthy

```
Product terms key:
 Int_1    :        cd_11    x        discomf

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0182     3.1090     1.0000   155.0000      .0798
----------
    Focal predict: cd_11    (X)
          Mod var: discomf  (W)

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

    discomf     Effect         se          t          p       LLCI       ULCI
    -3.2516     -.3306      .1119    -2.9544      .0036     -.5516     -.1095
    -1.2516     -.2729      .0910    -2.9984      .0032     -.4526     -.0931
     3.7484     -.1287      .0840    -1.5316      .1277     -.2946      .0373
```

Behaviour 12: ...is beneficial for my skin, teeth, hair, nails, etc.

```
Product terms key:
 Int_1    :        cd_12    x        discomf

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0169     2.9691     1.0000   155.0000      .0869
----------
    Focal predict: cd_12    (X)
          Mod var: discomf  (W)

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

    discomf     Effect         se          t          p       LLCI       ULCI
    -3.2516     -.2074      .1301    -1.5936      .1131     -.4644      .0497
    -1.2516     -.1412      .1067    -1.3234      .1877     -.3520      .0696
     3.7484      .0242      .1021      .2369      .8130     -.1775      .2258
```

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D E C L A R A T I O N

Par ma signature, j'atteste avoir rédigé personnellement ce travail écrit et n'avoir utilisé que les sources et moyens autorisés, et mentionné comme telles les citations et paraphrases.

J'ai pris connaissance de la décision du Conseil de Faculté du 09.11.2004 l'autorisant à me retirer le titre conféré sur la base du présent travail dans le cas où ma déclaration ne correspondrait pas à la vérité.

De plus, je déclare que ce travail ou des parties qui le composent, n'ont encore jamais été soumis sous cette forme comme épreuve à valider, conformément à la décision du Conseil de Faculté du 18.11.2013.

Fribourg, le 27 mai 2025

(signature)