

# Can an SME Understand Its Sustainable Practices? – A Case Analysis from the Combined Perspective of Nudging Theory and Sustainable Business Practices in A Small Retailing Business in Australia

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## Abstract

Sustainable business practices have been under a long-lasting and fierce debate about whether a business should pursue SDGs or make money. Several efforts have been made to answer this question, and the Nudging Theory, a new development in behavioral economics, has been introduced. However, research seldom emphasizes how to assist SMEs to fully understand the nudges and their related effectiveness to achieve SDGs, nor does it address the moral dilemmas potentially involved. To fill this gap, the paper, by combining two theoretical models, develops a new framework to help SMEs comprehend their sustainable nudges in a moral and cost-effective approach so that SMEs' potential might be fully stretched out. Also, a real-world case will be related to the theoretical Framework to assist with understanding which SMEs should place their emphasis on, coupled with descriptive and predictive analysis. The Process and the Outcomes of sustainable nudges are summarised as two crucial elements contributing to the effectiveness of such sustainable nudges.

**KeyWords:** *Nudges, Nudging Theory, Sustainable Business Practices, Sustainability, SMEs*

## 1. Introduction

Behavioral economics is a subdiscipline of economics that focuses on the decision-making processes of individuals when faced with uncertain and risky situations. In contrast to classical economics, which highlights the pursuit of self-interest for efficient allocation of resources (Smith, 2010), or neoclassical economics, which seeks to maximize utility (Von Neumann & Morgenstern, 1947; Becker, 1965), behavioral economics primarily concerns the examination of cognitive factors such as psychological and emotional influences that impact economic decision-making and consequent outcomes. One prominent theory in this field is the Prospect Theory (Kahneman & Tversky, 1979), which has been introduced to study several phenomena, including the endowment effect, status quo bias (Kahneman, Knetsch, & Thaler, 1991), and sunk cost fallacy (Edwards, 1996). Entering the 21st century, Nudge Theory (Thaler & Sunstein, 2008) has been developed as a new branch of behavioral economics to study small changes and environmental cues or how information is presented can significantly influence decision-making processes and behaviors shown in those processes. With a wide application in different contexts, the concept of Nudging has spurred up interest of multiple parties, including philosophers, psychologists, economists, neuroscientists, and legal scholars (Barton &

Grüne-Yanoff, 2015), and been applied in miscellaneous scenarios such as public policy initiatives (John, Smith, & Stoker, 2009) and business strategies aiming at better customer choices (Goldstein et al., 2008; Hansen & Jespersen, 2013; Barton & Grüne-Yanoff, 2015).

Remarkably, the application of nudging theory in pursuing Sustainable Development Goals is not exempt. Especially in recent years, the significance of sustainable business practices has become growingly prevalent and evolved into a critical facet of corporate social responsibility (hereafter CSR) (Carroll & Shabana, 2010) since businesses have acknowledged the necessity of operating in a socially, environmentally, and economically responsible manner, with an increasingly mounting concern of the impact of commercial activities on the whole society (Gladwin et al., 1995). While some applications are effective and feasible in multiple fields, questions have arisen regarding the compatibility of applying nudging theories for sustainable business practices. Interestingly, although numerous research has suggested that the application of nudging theories for sustainable business practices can indeed lead to the positive financial outcome or high customer and partner satisfaction (Carroll & Shabana, 2010; Dechezleprêtre et al., 2012; Eccles, Ioannou, & Serafeim, 2014), some potential problems, such as how to utilize limited resources to address sustainable issues faced by

Small and Medium-sized Enterprises (hereafter SME), who are more vulnerable and less effective to be aligned with Sustainable Development Goals (hereafter SDGs) (Orlitzky et al., 2003) concerning its limited resources and inability to address moral collisions triggered by SDGs, remain unsolved.

To the author's best extent of knowledge before the writing of this paper, there is less study specifically regarding how an SME can understand its sustainable business practices and related effectiveness within its resource limits and avoid ethical issues that might be involved. Also, limited research has been conducted to examine how an SME can fully comprehend its current performance of small changes for SDGs, or, say, sustainable nudges, to reach its best stretch and potential. By integrating sustainable business practices with behavioral economics methodologies, this comprehensive strategy aims at tackling complex sustainability challenges from a wider vantage point that consists of the diverse interests of various stakeholders in a community. This research will also include ambiguous ethical dilemmas that arise among different parties as an independent variable, enabling an SME to cost-effectively find and locate its sustainable insufficiencies and thus optimize its daily operations accordingly from the perspectives of customers, employees, and the broader community in which they grow and thrive.

The author will commence by conducting a comprehensive overview of the evolution of behavioral economics with a concentration on persistent patterns of thought. Subsequently, recent concerns and developments in sustainable business practices will be briefly introduced. Following this, a thorough analysis of existing real-world initiatives and business applications will be undertaken, critically evaluating their practicality for SMEs. A self-complementary theoretical framework based on two existing theories will thus be presented, outlining feasible ways for SMEs to leverage behavioral economic concepts to understand their "nudge" capacities and effectiveness in their pursuits of SDGs. After theoretical conceptualization, the Framework will be introduced to an SME located in Kensington, Melbourne, VIC, Australia, for critical analysis and to help the business understand its current sustainable business practices.

## 2. Literature Review

### 2.1 A New Development in Behavioural Economics

In behavioral economics, scholars paid considerable attention to the limitations of rational/traditional economic models and the impact of psychological concerns, such as

morals, sentiments, human impulses, and emotions, on the economic phenomena in that growing evidence showed that the principles of rationality were unrealistic with human beings' evolution (Kanev & Terziev, 2017). They suggested that it was the human act itself, not the motives behind it, that became problematic and questionable (Camerer, 2003), and rational behaviors had failed to play an adequate role as the prerequisite of neoclassical economics because they only assumed that individuals should have complete/perfect information about the market, together with the unlimited cognitive ability to process that information (Simon, 1956).

To analyze how irrational behaviors influence individuals' decision-making, Thaler and Sunstein (2008) first introduced Nudging as an approach to obtaining desirable outcomes without coercion. Nudging works well when some choice architectures are provided – the informational or physical structure of the environment that can influence the way of making choices (Thaler & Sunstein, 2008). These purposeful designs enable individuals to make choices almost automatically and non-deliberatively, as people are often unaware of the effects of the decision environment on their actions (Lehner, Mont, & Heiskanen, 2016). Specifically, framing defaults to nudge people's behaviors (Croson & Treich, 2014) and setting up anchors to influence individuals' choices (Wu & Cheng, 2011) have become prevalent; as a result, people's judgments and points of view might be potentially influenced and shaped (Tversky & Kahneman, 1974; Mussweiler, 2003) through these approaches.

And since the proposal, this ground-breaking concept has raised a noticeable echo among policymakers (Barton & Grüne-Yanoff, 2015) and business practitioners who apply such a concept in a broad context. Some criticisms, however, arise in this era when the increasing impact of globalization leads to an ongoing debate on the extent to which principles and boundaries of nudges are supposed to be applied (Gigerenzer, 2008; Gigerenzer & Berg, 2010). It also received some criticisms, such as the overuse of manipulations from those who have more power (Marteau et al., 2011; Felsen et al., 2013) and unfairness to the groups who do not know how to nudge functions (Goodwin, 2012).

### 2.2 A Long-lasting Debate on Sustainable Business Practices

The debate about "the business of business is to maximize profit" has been ongoing for a long time. One reason for the longevity of this debate is due to the involvement of controversial values and interests between the traditional business purpose of maximizing financial returns and the broader goal of achieving sustainability, both socially,

environmentally, and economically (Hardisty, Johnson, & Weber, 2010). Indeed, while businesses are accountable to their shareholders for generating profits or yielding a return on investment, they are also members of society and are supposed to embrace a duty to behave socially and environmentally responsible (Jones & Fleming, 2012). These two competing interests created tensions between traditional business notions and the party supporting sustainable development.

From the traditional perspective, shareholders' values are to be prioritized, and organisations are not socially responsible for the broader Community as the role of "civil servant" (Friedman, 2007). The supporters of this view also argue from the perspective of corporate sustainability itself that such pursuit inevitably has side effects, inclusive of a higher structural cost observed in an organization whose senior managers or board of directors receive private benefits from addressing sustainable issues (e.g., environmental and social sustainability) (Balotti & Hanks, 1999; Brown et al., 2006). Conversely, companies that do not attempt so would probably be more profitable and financially competitive (Jensen, 2001).

Nevertheless, a growing awareness has shown itself in the evidence that focusing on corporate sustainability can result in better operational performances than a business's rivals. Many businesses have now integrated sustainable practices into their corporate strategies as a response to the incremental consumer demand for environmentally and socially responsible products and services (Peattie, 2001), which can also assist companies in reducing expenses, enhancing efficiency, and cultivating long-lasting relationships with stakeholders (Porter & Kramer, 2006).

Indeed, while the concentration on sustainable practices in the past was on the environmental concerns for resource-based businesses (Brunns-Smith et al., 2015; Sohns et al., 2023), recent trends suggest that more organizations, albeit still limited in number, are incorporating sustainable business practices into their corporate governance (Dilling, 2010). Over the long run, enterprises that adopt sustainable business practices are more likely to be competitively advantaged over their peers (Carroll & Shabana, 2010) and achieve organizational outcomes of higher financial performance (Dechezleprêtre et al., 2012), greater employee and customer satisfaction, as well as a more moral operating environment (Eccles, Ioannou, & Serafeim, 2014). Additionally, considering recent developments, the emergence of the circular economy has provided new opportunities for sustainable business practices (Geissdoerfer et al., 2017). Companies are now adopting circular business models to optimize resource efficiency, prolong product lifecycles, and promote waste reduction (Lüdeke-Freund et al., 2018).

This paradigm shift has encouraged a broader and more systemic approach to sustainable business practices, inspiring businesses to consider the environmental and social implications of their entire value chain of stakeholders (Korhonen et al., 2018). Some studies, too, explore the negative effect if an organization fails to be sustainable. They suggest that the failure to address the requirements of non-shareholding stakeholders may lead to a detrimental effect on a broader shareholder level, such as consumer boycotts (Sen et al., 2001), the inability to attract skilled employees (Greening & Turban, 2000), or the imposition of punitive penalties by regulatory authorities (Eccles, Ioannou, & Serafeim, 2014).

With such increasing awareness, a notion concerning how and to what extent a business should be sustainable has also emerged. The traditional point of view on a business's sustainability concentrates on the economic, social, and environmental impact on an organization separately, with less emphasis on the business's CSRs, stakeholders, and SDGs and their interconnectivity (Harrison & Wicks, 2013; López-Concepción, Gil-Lacruz, & Saz-Gil, 2022). Interestingly, a new perspective suggests that sustainable performance can be improved both financially and non-financially by involving a broader community of stakeholders among which both inter- and intra-connections could be found (Harrison & Wicks, 2013; Jang, Zheng, & Bosselman, 2017) and several endeavors have been identified. López-Concepción, Gil-Lacruz, and Saz-Gil (2022) proposed a theoretical framework that integrates CSRs and employee well-being as key elements in achieving SDGs. Similarly, Roloff's study (2008) involves two approaches to stakeholder management. They are, respectively, organization-focused stakeholder management and issue-focused stakeholder management, which provide a comprehensive insight into the supplementary category related to stakeholder management for SDGs, with a clear dominated emphasis on issue-focused management as it helps organizations understand the complexity of the Community in which they operate.

Despite this argument, recent studies also explored the sustainable business practices of SMEs, who increasingly acknowledge the magnitude of sustainable business practices and engage in such practices. SMEs, serving as crucial agents in advancing the SDGs, constitute a substantial portion of the global economy and possess the potential to stimulate sustainable economic growth (Acs & Audretsch, 1993; Schaper, 2002), facilitating industrialization, innovation, and infrastructure development, thereby making a difference in regional economies. Nevertheless, scholars also suggest that sometimes only larger organizations prioritize

stakeholders' engagement to achieve sustainability goals; on the contrary, SMEs may only inform their stakeholders without proactively or actively involving them in their operations (Vrontis et al., 2022). As such, the size of companies is a significant indicator regarding whether a company is profit-oriented (traditional view) or more focused on sustainable business practices (Lau & Wong, 2022). SMEs are more inclined to prioritize financial goals rather than sustainability (Berrone et al., 2013), to maintain their competitiveness, which prominently contributes to global contamination (Sohns et al., 2023); they are, too, less likely to deeply get involved in the long-term sustainable business practices or even be willing to understand the sustainable disparities they are currently having due to limited resources they possess to overcome a perceived trade-off between financial attempts and sustainable endeavors (Orlitzky et al., 2003).

### 2.3 An Organic Link

Nudging is of paramount importance and acts as an organic assistant for helping an enterprise achieve its SDGs due to its flexible applicability in multiple contexts (Thaler & Sunstein, 2008; Lehner, Mont, & Heiskanen, 2016; Barton & Grüne-Yanoff, 2015). In detail, some studies (Johnson et al., 2002; Croson & Treich, 2014) explored how defaults can affect public behaviors. Reducing energy and materials consumption by setting up specific defaults has also been explored (Thaler & Sunstein, 2008; CAS, 2011). In addition to defaults, anchoring is also considered significant to influence customer behaviors by presenting initial information deliberately selected for them, such as price anchors and advertisement cues (Wu & Cheng, 2011).

The integration of Nudging and sustainable business practices can thus be seen as a complementary approach to reconcile the traditional profit-oriented perspective with a more sustainable and socially responsible view, as previously mentioned. First, by understanding and incorporating behavioral insights into their business practices, companies can address shareholders' financial concerns and effectively engage with a broader community of stakeholders to achieve long-term sustainability goals (Harrison & Wicks, 2013; Jang, Zheng, & Bosselman, 2017).

Second, applying nudging strategies in stakeholder engagement can help organizations better understand the complexity of their operating environment and thus adapt their practices accordingly. This can be particularly useful for SMEs, which often confront resource constraints and may prioritize short-term financial goals over long-term sustainable practices (Orlitzky et al., 2003; Berrone et al., 2013). By nudging behavioral insights, SMEs

can efficiently engage with stakeholders and align their business strategies with the principles of sustainable development, ultimately enhancing their competitiveness and reducing their environmental footprint (Lau & Wong, 2022; Sohns et al., 2023).

Some real-world applications of Nudging have been found, and Default-setting and Anchoring are believed to be powerful for sustainable business practices (Johnson et al., 2002; Thaler & Sunstein, 2008; Croson & Treich, 2014; Acuti, Pizzetti, & Dolnicar, 2022).

#### *Defaults*

Framing a default is one of the most compelling applications of nudging for sustainable business practices (Croson & Treich, 2014). Before the nudging theory came out and setting up defaults was systematically included in the nudging theory, Johnson et al. (2002) demonstrated in their research that strategically framing default options was significantly effective in influencing public behaviors, thereby partially shaping the outcomes sought by companies. Similarly, Thaler and Sunstein (2008) found that configuring energy-efficient settings as the default option on thermostats, such as setting the default temperature of A/C to 26°C, resulted in noteworthy reductions in energy consumption. Furthermore, an intervention at Rutgers University exemplifies the effectiveness of nudging strategies, where a default setting to print on both sides of pages saved over 7 million pages in a single semester, equivalent to preserving 620 trees (CAS, 2011). Byerly et al. (2018) argue that establishing contextual interventions as defaults is viable in various scenarios, particularly in areas like meat consumption, water use, waste production, and transportation choice.

While these studies address how large organizations can achieve SDGs from a macro perspective or how customers can engage in sustainable practices from a micro perspective, there is a noticeable gap in the literature concerning the meso level, specifically about SMEs. This oversight leads to a lack of awareness regarding how SMEs can revamp their organizational behaviors to reach such goals (Schaper, 2016). Moreover, the optimal degree to which the default-setting process should be conducted for customers or businesses remains unanswered. Over-interference, undoubtedly, can result from excessive default-setting policies implemented without proper societal supervision, potentially leading businesses to inadvertently jeopardize sustainable business practices to some extent (Bovens, 2009). In this regard, researchers like Loewenstein, Sunstein, and Golman (2014) highlight the importance of finding a balance between the use of nudging strategies and preserving individual autonomy, suggesting the need for further research into the point at

which a business can take advantage of its sustainable nudging practices without unethically hindering the actualization of self-autonomy.

Additionally, it is crucially important to involve the latent cultural, socio-economic, or regional diversities of the Community engaged while considering the effectiveness of nudging strategies in sustainable business practices (Leggett, 2014). Future research should answer such questions about how varying and broader contexts might impact the success of default-setting interventions in various scenarios, as well as address the potential negative consequences of overgeneralization with an attempt to meet the generic demands of the vast majority, which might not interest key stakeholders of the business. A more comprehensive understanding of these factors is required to ensure that nudging strategies contribute positively to the pursuit of sustainability.

### **Anchoring**

Another application of Nudging relates to situations where anchors are established. Specifically, setting up anchors has become popular for influencing commercial behaviors, particularly through price anchoring and advertisement cues (Wu & Cheng, 2011). The effectiveness of this tool has been studied extensively, with Shan, Diao, and Wu (2020) finding that presenting a price anchor of organic foods in advertisements significantly impacts consumers' judgment and, thus, thoughts of value to specific products. According to this study, although a low anchored price is generally more favorable than a high one, this effect is less pronounced for customers with limited knowledge of product information and are thus more susceptible to the anchoring effect.

While numerous studies have demonstrated that anchoring can shape people's expectations and judgments (Tversky & Kahneman, 1974; Mussweiler, 2003), ethical concerns regarding the practicality of anchoring prices for sustainable products have been raised. Critics argue that nudging exploits information gaps between customers and businesses, potentially misleading consumers (Bénabou & Tirole, 2010; Acuti, Pizzetti, & Dolnicar, 2022). This is especially prevalent in some marketing strategies where products are advertised based on their "image" rather than the authentic value they contain (Vugts et al., 2020).

In response to these concerns, there has been a shift towards increased consumer expectations for transparency, honesty, and tangible global impact from companies that offer sustainable, competitively priced, and high-quality products (Whelan & Fink, 2016). This alteration has prompted a re-evaluation of management's approach to ethical sustainability, with the greater commitment required to ensure that the implementation of anchoring

practices aligns with ethical and sustainable standards (Kleine & Von Hauff, 2009; Hartmann & Apaolaza-Ibáñez, 2012).

In light of these ethical considerations, it is also necessary to explore alternative anchoring approaches that promote sustainability without exploiting information asymmetries (Bénabou & Tirole, 2010). For instance, "ethical anchors" that emphasize sustainable products' social and environmental benefits (Caruana & Crane, 2008) rather than solely focusing on price factors can be examined and considered. This approach delivers an inspiration to balance the persuasive power of anchoring and the need to maintain ethical standards in marketing sustainable products, which implies a business to consider its sustainable nudges in a more equitable manner for the long run.

### **2.4 Theoretical Blindness and Questions to be Answered**

Despite the progress made in employing nudging for achieving SDGs, certain limitations and concerns persist. Analyzing previous attempts at sustainable Nudging, ethical dilemmas, limited emphasis on the business side in a broader context, and availability for SMEs are three questions that remain unanswered.

***Question I: Are the evaluation criteria on the business side assisting with the understanding of its sustainable nudges?***

Numerous existing efforts primarily concentrate on customers or consumer-oriented applications, with less emphasis on engaging a business and offering it assisted standards, or at least some ways of thinking, to comprehend how well its sustainable practices and nudges work. Consequently, there is a requirement for this research to get involved in the applicational effect of nudging on the business side to understand how well and sustainable the business has been operating in a community.

***Question II: Are such criteria moral and not manipulative but facilitative to the stakeholders engaged?***

Secondly, critics argue that nudging techniques, such as default settings or anchoring consumer behaviors, may be manipulative and compromise individual autonomy (Thaler & Sunstein, 2008; Vugts et al., 2020). Further exploration of the ethical implications of Nudging and the development of standards to ensure responsible nudging applications are undoubtedly necessary to address these concerns. As a result, understanding to what extent a nudge has influenced a business's operation or, in other words, finding the criteria of balancing manipulation and facilitation is the way to solutions.

**Question III: Are such criteria cost-effectively applicable for an SME?**

Lastly, the feasibility of implementing the approaches above in SMEs remains uncertain as they are relatively powerless to dramatic changes and may be less capable of adopting sustainable business practices cost-effectively (Orlitzky et al., 2003; Berrone et al., 2013), especially within a community of diversity. Therefore, this research is also needed to determine whether nudging strategies and their application of behavioral insights can be effectively tailored to SMEs’ unique needs and limitations in pursuing sustainable development goals.

**3. Methodology**

As previously mentioned, some applications of sustainable business practices and endeavors have been identified, and Nudging has been proven as a latent approach to enable a business for SDGs. It is believed that plenty of nudging attempts are insufficient for an SME to some extent. Hence, the author argues that constructing a systematic framework to evaluate how effectively nudging endeavors are implemented should be a feasible approach to help SMEs understand their internal management process and, thus, perform better to engage stakeholders with limited resources and organizational power.

Consequently, a theoretical framework would be constructed on the prerequisite of examining two basic theories – the Four-factor Theory (Harrison & Wicks, 2013) and the Autonomy Clarification Theory (Vugts et al., 2020) – to understand to what extent the stakeholders are engaged by nudging, coupled with a quantitative formula facilitating understanding and the analysis of each nudge utility. After the Framework and the mathematical formula are established, the Framework will be applied to a local and small retailing chain – Foodworks Kensington – based in Melbourne to critically evaluate whether its current sustainable business practices and sustainable nudges are satisfactory from stakeholders’ perspective in the Community.

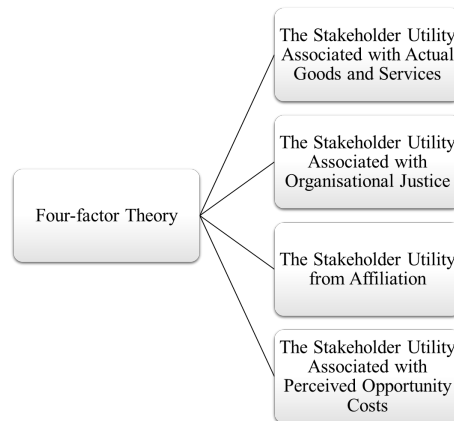
**3.1 Theoretical Framework**

Analyzing previous attempts at “sustainable nudging,” ethical dilemmas, limited emphasis on the business side in a broader context, and availability for SMEs are three questions that remain unanswered. To answer these three questions, two theories will be referred to for theoretical construction – The four-factor Theory (Harrison & Wicks, 2013) and the Autonomy Clarification Theory (Vugts et al., 2020), which might provide a glance at insights into the solutions of the business side inclusion, ethical collisions of nudging, and feasibility respectively.

**3.1.1 Four-factor Theory**

The Four-factor Theory was proposed as a stakeholder value evaluation theory, consisting of four major branches for analysis (Harrison & Wicks, 2013): 1) stakeholder utility associated with actual goods and services, 2) stakeholder utility associated with organizational justice, 3) stakeholder utility from affiliation, and 4) stakeholder utility associated with perceived opportunity costs (Figure 1).

This theory, disregarding specific groups in the Community but focusing on the utility that a business can provide to its stakeholders, plays an elementary role in examining what perspectives stakeholders are interested in and value, which consequently provides a potential outline for evaluating the utility of nudges that an SME fully presents to its customers.



**Figure 1 Four-factor Theory**

***The Stakeholder Utility Associated with Actual Goods and Services***

The Stakeholder Utility Associated with Actual Goods and Services refers to physical goods and services in various forms that stakeholders receive from the company. This utility plays an elementary role as it has been a central theme in economics (Marshall, 1920) and marketing (Kotler & Keller, 2016). Similarly, Barney (1997) emphasizes the importance of creating a positive ratio between the utility received and the value given up for uncertainty, which applies to all stakeholders, as proposed by Freeman (2010). While customers primarily focus on the utility they receive in exchange for monetary value, other stakeholders, such as employees, suppliers, and communities, have different expectations (Harrison, Freeman, & Abreu, 2015). The business’s ability to balance the needs and expectations of these diverse stakeholders is critical for its success and long-term sustainability (Mitchell, Agle, & Wood, 1997).

However, balancing a variety of stakeholder needs becomes a new concern. Some critics argue that the stakeholder theory may lead to managerial confusion because prioritizing multiple stakeholder demands can inevitably create conflicting interests (Jensen, 2001). Furthermore, the primary goal of a firm, according to the shareholder theory, should be maximizing shareholder value (Friedman, 1970), which may not always be compatible with the interests of other stakeholders. Thus, thinking from a broader perspective and treating stakeholders rather independently, as a whole, to achieve corporate shared value should be a new consideration.

### ***The Stakeholder Utility Associated with Organisational Justice***

Organizational justice focuses on fairness in distributional outcomes, systematic procedures to reach those outcomes, and interactions among stakeholders with different interests. It suggests that the firm's treatment of one stakeholder can influence relationships with others, leading to generalized exchange – a willingness of individual scarification for overall better returns (Harrison, Bosse, & Phillips, 2010) – and fostering trust, which is essential for cooperation, value creation, and information sharing.

However, as Jensen (2001) opposed, Four-factor Stakeholder Theory focusing too much on maintaining fairness and satisfying stakeholder expectations may lead organizations to stick to short-term goals over long-term growth. This short-termism may make it difficult for firms to make necessary adjustments or adoptions to confront future challenges, thus losing its stakeholder trust and the advantages of generalized exchanges. This also applies to the setting of sustainable nudges; if a sustainable nudge is distributed equally but ignores its interactivity and long-term focus of the Community, it will fail to address stakeholders' unique and diverse needs in the long run.

### ***The Stakeholder Utility from Affiliation***

The stakeholder utility from affiliation can be explained that stakeholders derive utility from affiliating with organizations exhibiting behaviors consistent with their values. A strong group affiliation can motivate stakeholders to care about each other's interests and the firm's success (Putnam, 2000; Hartman & Phillips, 2011). Affiliation can support collective action that benefits stakeholders and serves their larger goals. This can be reconsidered in the nudge effect aspect due to its focus on the collective goals and good for the whole Community and stakeholders engaged. Although it also provides esteem and satisfaction, as mentioned (Harrison & Wicks, 2013), no clear reason is shown to explain why and when

a stakeholder will feel dissatisfied when the business's directions are inconsistent with their values. As a result, considering a personal feature from his or her cultural background would be considered one of the ways out. In addition, it is suggested that when the values between the business and stakeholders are conflicting, the stakeholder would not simply cease the cooperation with that firm; instead, they will evaluate other factors, such as tangible utility and organizational justice, to draw a big picture.

### ***The Stakeholder Utility Associated with Perceived Opportunity Cost***

Stakeholders perceive utility based on how they believe they benefit from an organization compared to potential alternatives (Barney, 1997). Interestingly, the utility of opportunity costs is interconnected with all three previous utilities, significantly impacting the overall utility. Considering the previous argument concerning the conditions of a stakeholder ceasing his collaboration with a business (Harrison & Wicks, 2013), it could be concluded that if a business with a low perceived satisfactory sustainable practices/nudges but high physical contributions to the Community (e.g., high employment rate, attractive salaries, good quality of products and services, etc.), it has to maintain these physical contributions sky high to hold its stakeholders. In other words, stakeholders' opportunity costs will be unavoidably low and easier to shift to the business's competitors if the business fails to maintain the quality of physical offerings. As such, this implies two points: first, a business can reduce its operational costs or increase the opportunity costs for its stakeholders by aligning its business practices/nudges to stakeholders' expectations cost-effectively rather than merely increasing its physical contributions; second, the opportunity costs can affect the deduction of the overall utility but would not add additional utility when other utilities are fulfilled.

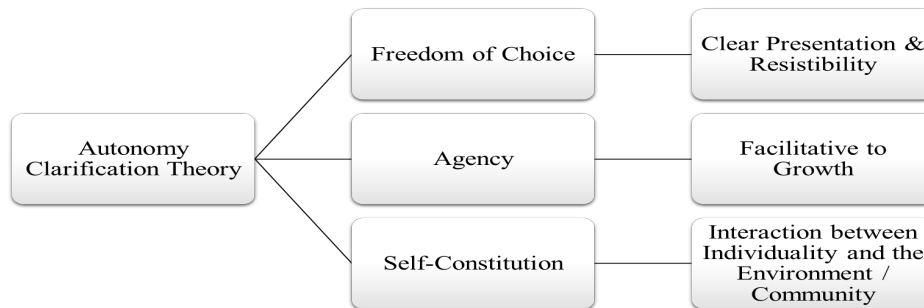
Overall, the Four-factor Theory might be the answer to research *question I* and *Question III* as it copes with both a business side – helping a business understand what factors are to be considered in a broader community if it wants to be sustainable, and a cost-effectiveness consideration – trying to increase stakeholders' opportunity costs rather than merely focusing on providing physical offerings. However, the research *Question II* concerning the ethical dilemmas involved if a business wants to utilize nudging schemes remains unanswered.

### **3.1.2 Autonomy Clarification Theory**

As previously mentioned, autonomy is the key to evaluating whether a nudging practice is moral (Loewenstein, Sunstein, & Golman, 2014). Consequently,

elucidating various conceptualizations of autonomy is an assistance to understanding moral issues involved in nudging schemes (Vugts et al., 2020), where three

key dimensions – freedom of choice, agency, and self-constitution (Figure 2) were critically examined for the ethical concerns involved in nudging attempts.



**Figure 2** *Autonomy Clarification Theory*

***Freedom of Choice***

The first dimension of autonomy, freedom of choice, emphasizes the magnitude of providing individuals with a range of viable and easily resistible alternatives (Saghai, 2013a) and options without imposing undue costs or negative consequences. This dimension also aligns with the principle of Libertarian Paternalism (hereafter L.P.) (Thaler & Sunstein, 2008), which advocates for nudging techniques that preserve freedom of choice while guiding individuals towards better decisions for their overall welfare.

Although arguably true, this point of view also receives criticism. Criticism has it that the liberty-welfare trade-off proposed by L.P. is incompatible with the liberal principles or the related justifications (Grüne-Yanoff, 2012). Nonetheless, the Purpose of making an environment with easily resistible choices is not to “reshape” or guide people to a specific value or diverge people from their core value beliefs, which would be further discussed in the Self-Constitution part. In essence, the key is an environment where resistible alternatives are explicitly existent, which allows people to navigate away from one option to another. Aversely, if the options are designed to implicitly force or coerce people to choose the default preferred by the policy maker or the relatively powerful business owner, this approach would not be regarded “easily resistible” and, thus, unethical because it obscures alternative options and, makes it difficult for individuals to exercise informed decision-making based on their willingness and freedom (Hansen & Jespersen, 2013). Hence, to avoid unethical conduct and achieve the trade-off between welfare and freedom preservation requires a clear presentation or explanation of the differences between each option (Vugts et al., 2020) and a balance between influencing choice and maintaining fairness in the distribution of alternative options and decision-making processes.

***Agency***

Agency, the capacity, such as related knowledge and know-how, to make decisions within an environment, is another essential aspect of autonomy. Critics argue that nudging may exploit individuals’ cognitive limitations and, thus, undermine their agency and autonomy (Bovens, 2009; Hausman & Welch, 2010; Sunstein, 2015).

Nudging schemes should focus on facilitative (Saghai, 2013b) rather than manipulative strategies to address these concerns. Some other scholars have also interpreted facilitative nudges as “boosts” whose Purpose is to foster people’s capability to make their own choices, in which conceptual clarity, somewhat analogous to the clear presentation of optional differences of alternatives we mentioned in *Freedom of Choice* part, is strongly required to exercise people’s agency (Hertwig & Grüne-Yanoff, 2017). By aiding individuals in overcoming cognitive biases, narrowing down reasoning gaps, and supporting the learning process, facilitative Nudging can empower individuals and strengthen their agency (Vugts et al., 2020). This approach is also potentially workable as it empowers and helps individuals grow long-term. It complements the Four-factor Theory’s shortage of ignoring the growth opportunity for the stakeholders involved.

***Self-Constitution***

The third dimension of autonomy, self-constitution, refers to an individual’s identity and core values, emphasizing individuality and authenticity (Vugts et al., 2020). Critics believe nudging might reshape targets’ ideas toward welfare, thus infringing on autonomy (Baldwin, 2014). A well-designed nudge, however, would not force people to make deliberate selections all the time; it will render its receiver a belief that helps them automatically trust that the social environment facilitates better choices



and enables them to pay attention to what they truly care about (Vugts et al., 2020). Studies have already proved its efficacy. For instance, Hummel and Maedche (2019) examined the influence of contexts and forms of nudge, concluding that digital nudges provided a new perspective for individualization in dynamic and various contexts, which policymakers might effectively utilize. Transparency of the environment, another example, also matters as it helps sustain the effects of nudged defaults and ethically makes people aware of the information received (Loewenstein, Haggmann, & Rajpal, 2015). Understandably, observing from such perspective, self-constitution is not solely independent or separate from others; instead, it implies that any individual identity or a person’s self is constituted by a network of relationships with others in a specific environment, in which mutual trust and support are indispensable prerequisites for autonomy (Baylis, Kenny, & Sherwin, 2008; Wardrope, 2015). This aligns with the requirement of interactive justice in the Four-factor Theory; in the meantime, it

provides a new perspective to observe different value requirements of stakeholders and implies the benefit of establishing and maintaining transparent, reliable, and trustworthy relationships among various parties in a dynamic context.

As a result, this theory complements the moral insufficiency while considering how to render a business, especially an SME, a holistic and cost-effective means to understand its sustainable nudges and practices, introducing autonomy and its sub-evaluating standards to address moral concerns of nudging schemes.

### 3.1.3 Framework Conceptualisation

By understanding the advantages and shortages of both theories, a self-complementary framework based on the combination of utility in a broad community and autonomy evaluation is constructed to holistically examine and help a business understand how stakeholders involved perceive its sustainability development (Figure 3).

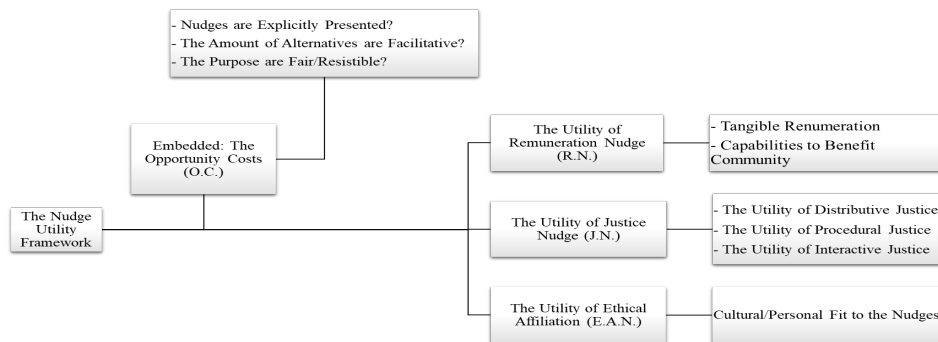


Figure 3 The Nudge Utility Model

#### The Utility of Remuneration Nudge

The utility of remuneration nudge can be understood as a combination of a business’s tangible outcomes and intangible nudges that contribute to the overall benefits of a Community where stakeholders are involved. Two sectors are found in its compositions. The first is tangible remuneration, which refers to the tangible outcomes where the evaluated targets are received from the business’s operations. For instance, for employees, tangible remunerations are salaries, bonuses, commissions, and other financial compensation for their work engagement. For customers, remunerations are quality goods or services received; environmentalists and governmental officials, business meeting the requirement of lower greenhouse gas emissions or resources consumptions, etc. Although these tangible remunerations might not be considered as nudges because they are not psychological or environmental cues and changes but the benefits brought to the physical

Community, they are still considered in the Framework as they are similar to hygiene factors (Herzberg, Mausner, & Snyderman, 1959), determine the “bottom line” of the effective engagement and form the basis of nudge.

The second one lies in whether the sustainable nudges a business possesses and makes are showing the business’s concerns and potential to benefit a broader community of stakeholders in the long run. Taking Australian businesses as an example, most Australian companies present a green and yellow kangaroo brand image if their products are made in Australia (Figure 4) or whether they are “Proudly Australian Made and Owned” (Figure 5), aligning with the Australian Made Campaign. This simple image reveals and implies several benefits to Australian Community from several perspectives, such as a reduced product footprint resulting from shortened transportation, support of local suppliers, or maintaining the employment rate, especially during the pandemic (Fozdar, 2021).



**Figure 4 “Australian Made Campaign”  
Brand Image [1]**



**Figure 5 “Proudly Australian Made and  
Owned” (Cobs) [2]**

### *The Utility of Justice Nudge*

The utility of a justice nudge can be understood in three aspects. In the first place, the utility of justice nudge refers to whether the sustainable nudges are distributed and received equitably to all stakeholders involved or whether the stakeholders involved equally know the existence and significance of and get involved in those nudges. This concept emphasizes the importance of ensuring that all individuals, regardless of their background or circumstances (Thaler & Sunstein, 2008), have equal knowledge of and benefit from sustainable nudges. To better understand the utility of justice nudges, it is crucial to examine the implementation of these nudges in a business context and consider their impact on different stakeholder groups.

Importantly, the procedure or the systematic way a business distributes its sustainable nudges justifiably and righteously matters. For instance, whether the business considers old people and their relatively harder reachability to the Internet when it publishes its sustainable nudges on multiple social media is significant, as older individuals in the stakeholder community may have difficulty accessing information online or using digital platforms (Pew

Research Centre, 2017). Therefore, a business striving for equitable distribution of sustainable nudges should consider alternative methods of communication, such as in-store campaigns or community workshops, to ensure that all stakeholders are informed and able to participate in sustainable initiatives.

Lastly, whether the sustainable nudges set up by the business can be positively interactive in an equal manner with the Community and whether such interaction is able to lead to the collective and equitable benefits of different stakeholders are two main points to be considered. Specifically, the Vaasa Government employed a cleantech story-tell nudge online to promote a cleantech cluster in Vaasa, Finland (Wiklund-Engblom et al., 2016). The campaign first changed numerous younger individuals' perspectives on the newly introduced cleantech. Then the young people voiced their opinions and shared their stories as ambassadors during the campaign to actively interact with the whole Community. This progressive campaign not only took the equal opportunity of interacting with sustainable nudges but also contributed to a shift in the Community's perspective on green energy initiatives; subsequently, the soft norms and values, such as a renewed understanding of green energy use, across the entire region were established.

### *The Utility of Ethical Affiliation*

The Utility of Ethical Affiliation presents the feature of personal and cultural viewpoints, which will have a significant effect on how the stakeholders perceive the nudges in the environment – whether the business nudges facilitate the pursuit of collective stakeholder benefits from their cultural and personal perspectives and make them feel affiliated in the Community; or a disparity between personal values and nudges is shown and thus, limits or even prevents some stakeholders from their goals. Indeed, this Ethical Affiliation is embedded in an individual's personality traits and his or her own belief or values, which cultural and social conditions can also influence. And some studies have already explored and shown that cultural or social perspectives impact people's sustainable choices. For example, Bolderdijk et al. (2013) found that people with strong environmental values were more likely to respond positively to nudges promoting sustainable behavior, while those with weak environmental values were less likely to be influenced by such nudges. Similarly, Komatsu et al. (2022) examined the effectiveness of nudges in different social backgrounds, including Japan, the U.S., and Canada, stressing the important impact imposed by social cultures, such as open and conservative, and social events, especially related to current Covid-19 Pandemic, on nudges' effect size.

Technically, the Purpose of setting up the Ethical Affiliation is not to explore to what extent some cultural or value elements lead to a high or low alignment between one’s perception and the sustainable nudges. Instead, targeting the interactive relationship between Ethical Affiliation and sustainable nudges a business has so that the business can understand the effectiveness of its sustainable nudges and thus improve its sustainable practice constitutes the aim.

**The Nudge of the Opportunity Cost**

The opportunity cost refers to the physical quantity and value forgone (Parkin, 2016). This also impacts the utility of nudges because three crucial factors are discovered to influence whether the stakeholders will get less associated with the business if they find the business’s sustainable nudges that affect their decision-making are problematic.

First, a business needs to make sure the nudges are explicitly, easy-resistibly, and not misleadingly presented in the Community for all stakeholders; differences between each nudge might also be listed and shown to stakeholders so that they have complete know about to which option they can move for their best interest. Let’s take Australia and New Zealand as an example, energy and calorie indications, together with specific references, are a must for nearly all food manufacturers (Figure 6), which aims at helping and guiding people to make decisions when they intake nutrition. Hence, Australian people and New Zealanders would have guidance on healthy food selections for a healthier life, which can be regarded as both ethical and tangible sustainability in the long run.

| NUTRITION INFORMATION   |                              |                           |
|-------------------------|------------------------------|---------------------------|
| Servings per package: 1 |                              |                           |
| Serving size: 401g      |                              |                           |
|                         | Average Quantity per Serving | Average Quantity per 100g |
| ENERGY                  | 4680kJ (1120Cal)             | 1170kJ (279Cal)           |
| PROTEIN                 | 44.0g                        | 11.0g                     |
| FAT, TOTAL              | 63.5g                        | 15.8g                     |
| - SATURATED             | 26.4g                        | 6.6g                      |
| CARBOHYDRATE            | 91.5g                        | 22.8g                     |
| - SUGARS                | 25.4g                        | 6.3g                      |
| SODIUM                  | 3070mg                       | 766mg                     |

**Figure 6 Food Nutrition Information Panels (NIP) [3]**

Second, a business must then consider whether the amount of nudges it sets in the environment where the stakeholders are engaged is quantitatively satisfactory or is enough but not overwhelming to facilitate the decision-making process, as a limited amount of selections would potentially lead to less autonomy and be considered as manipulative (Thaler & Sunstein, 2008); on the other hand, too many options can also be demotivating and strengthen the status quo bias (Iyengar & Lepper, 2000; Schwartz & Schwartz, 2004).

Lastly and most importantly, the Purpose of nudges crucially matters as this decides whether the nudges are coercive or fair for stakeholders. A facilitative nudge should be to improve people’s well-being, decision-making ability, and fairness among stakeholders; in the meantime, it shall not jeopardize their autonomy nor coerce them into specific behaviors (Bovens, 2009; Hausman & Welch, 2010; Sunstein, 2014). This evaluative criterion is decisive as it influences the previous two and ultimately decides their features. If the Purpose of the nudge is to coercively shape people’s behaviors, no matter how reasonable the amount of alternatives is or how clear they are presented, the utility of the nudge would end up low and dissatisfactory as the opportunity cost will ultimately drive stakeholders away.

In conclusion, the theoretical Framework, based on the Four-factor Theory and Autonomy Clarification Theory, can answer the three research questions, offering a comprehensive criterion for an SME to think from the perspective of a “Big Picture” to understand its existing sustainable nudges and considering the moral issues involved by introducing the concept of Ethical Affiliation and observed Purpose of Nudges; in the meantime, it is also perceived to provide an opportunity-cost-increasing viewpoint to SMEs, focusing on itself combining with the demand of its stakeholders, rather than making the business practices sustainable or setting up sustainable nudges across the whole supply chain, which might arise new concerns regarding effective supply chain management (Quayle, 2003).

To test how well the Framework is performing, an SME in the real-world business atmosphere would be introduced and studied, and some relevant data collected by interviewing groups of stakeholders of that business would also be analyzed.

**3.2 Data Collection and Formula Construction**

The data is collected by sending questionnaires to the manager and his assistant, together with 30 anonymous stakeholders with different interests and cultural backgrounds engaged in the Kensington District community, Melbourne, where the targeted retail store

operates. After the crude data were collected to form the database, the author endeavored to reach out to each stakeholder, making responses and conducting the interview with specially tailored questions. Due to the complexity of the Community and some stakeholders' failure to make decent and timely responses, eight questionnaires with responses were identified as effective and selected for analysis (Table 1 & 2). Some responses are also recorded with details to examine why they gave scores to specific criteria. Together with these data, the relational analysis will also be introduced, including descriptive correlation demonstration and predictive regression analysis, as the Purpose of this paper is to help an SME understand its current sustainable nudges. In this sense, regression analysis is a compulsory mechanism

to help a SME comprehend on which basis it can rely to make the most suitable decision for its sustainable business practices.

As such, their opinions related to how effective sustainable nudges are in Foodworks Kensington are scored based on four sectors – the Utility of Remuneration Nudge, the Utility of Justice Nudge, the Utility of Ethical Affiliation, and the Nudge of Opportunity Cost, which can be further divided into nine detailed evaluating criteria: tangible remuneration, ability to benefit the Community, distributive, procedural, and interactive utility of justice nudge, personal & cultural fit, explicitness, fair amounts of nudges, and lastly, Purpose of nudges (Table 2).

| Basic Bio-info     |           |                   |                     |             |                   |
|--------------------|-----------|-------------------|---------------------|-------------|-------------------|
|                    | Age Range | Gender            | Occupation          | Nationality | Religious Belief  |
| Manager, Victor Z. | 50-55     | M                 | Self-employed       | Australian  | N/A               |
| Employee, Anyd     | 50-55     | M                 | Shop Assistant      | Australian  | N/A               |
| Stakeholder 1      | 56-60     | M                 | Government Official | Australian  | Christianity      |
| Stakeholder 2      | 20-25     | F                 | Restaurant Chef     | Indonesian  | Islam             |
| Stakeholder 3      | 25-30     | F                 | House Wife          | Indonesian  | Islam             |
| Stakeholder 4      | 30-35     | F                 | Deliverer           | Malaysian   | Prefer Not to Say |
| Stakeholder 5      | 20-25     | F                 | University Student  | Chinese     | N/A               |
| Stakeholder 6      | 35-40     | M                 | Travel Agent        | Chinese     | N/A               |
| Stakeholder 7      | 35-40     | M                 | Busines Consultant  | Chinese     | Prefer Not to Say |
| Stakeholder 8      | Over 65   | Prefer Not to Say | Retired             | Italian     | Prefer Not to Say |

**Table 1 Basic Bio Information of Stakeholders Interviewed**

| Socres of Nudge Utility Stakeholders Perceive | Utility of Remuneration Nudge |                              | Utility of Justice Nudge |            |             | Utility of Ethical Affiliation | Nudge of Opportunity Cost |         |                    |                        |
|---|-------------------------------|------------------------------|--------------------------|------------|-------------|--------------------------------|---------------------------|---------|--------------------|------------------------|
|   | Tangible Remuneration         | Ability to Benefit Community | Distributive             | Procedural | Interactive | Personal & Cultural Fit        | Explicitness              | Amounts | Fairness / Purpose | Total Opportunity Cost |
| Manager, Victor Z.                            | 5                             | 4                            | 5                        | 4          | 5           | 1                              | 0                         | 0       | 0                  | 0                      |
| Employee, Andy                                | 4                             | 3                            | 4                        | 3          | 4           | 0.9                            | 0                         | 1       | 0                  | 0                      |
| Stakeholder 1                                 | 4                             | 3                            | 4                        | 3          | 5           | 0.75                           | 1                         | 1       | 0                  | 0                      |
| Stakeholder 2                                 | 4                             | 2                            | 3                        | 1          | 4           | 0.1                            | 4                         | 3       | 1                  | 7                      |
| Stakeholder 3                                 | 4                             | 4                            | 4                        | 3          | 5           | 0.9                            | 1                         | 2       | 0                  | 0                      |
| Stakeholder 4                                 | 4                             | 3                            | 4                        | 3          | 4           | 0.8                            | 1                         | 2       | 0                  | 0                      |
| Stakeholder 5                                 | 4                             | 3                            | 3                        | 2          | 4           | 0.7                            | 1                         | 2       | 0                  | 0                      |
| Stakeholder 6                                 | 3                             | 5                            | 3                        | 3          | 5           | 0.75                           | 1                         | 2       | 0                  | 0                      |
| Stakeholder 7                                 | 2                             | 2                            | 3                        | 2          | 3           | 0.25                           | 3                         | 3       | 1                  | 6                      |
| Stakeholder 8                                 | 4                             | 3                            | 4                        | 3          | 3           | 0.65                           | 2                         | 2       | 0                  | 0                      |
| Average                                       | 3.8                           | 3.2                          | 3.7                      | 2.7        | 4.2         |                                |                           | 1.8     |                    |                        |

**Table 2 Remarks of Stakeholders on the Utility of Sustainable Nudges**

A naive mathematical formula is constructed to get into the relationships among all the variables in the theoretical Framework, and interrelationships are also to be examined and described. First, to estimate the utility of remuneration nudges, an additive relationship could be

formulated between tangible remuneration and intangible ones, as the former acts as the basis of the overall utility of remuneration nudges; if stakeholders are only satisfied with the tangible remunerations, the overall utility of such nudge would not be high and thus considered as effective.

Secondly, combining the utility of remuneration with the utility of justice nudge, a cumulative relationship might be detected to calculate the “gross utility of nudges”; however, some cultural influences on such “gross utility of nudges” are also required, and the utility of ethical affiliation is thus considered and added to determine the ethical fit of these “gross nudges.”

Indeed, from previous analysis, a strong influence of people’s affiliation (Bolderdijk et al., 2013; Komatsu et al., 2022) and their sociocultural backgrounds (Putnam, 2000; Hartman & Phillips, 2011) are observed, and their significance is defined. Hence, the utility of ethical affiliation is supposed to affect how effective the sum of the utility of remuneration and justice is; consequently, a multiplicative relationship is to be assumed and constructed as a result.

Lastly, a combined approach is introduced to mathematically calculate the overall cost opportunity of nudge. For the explicitness and amount of nudges, a simple cumulative relationship would be considered, where the higher the number, the lower the opportunity costs. Also, a binary calculation would be introduced to represent the Purpose of nudges. If the nudge is perceived

as coercive, it will be marked as “1”; if not, then “0”. Hence, a multiplicative relationship would be assumed and constructed to represent the overall opportunity cost. As such, to quantitatively understand the utility of each nudging factor and evaluate the effectiveness of sustainable nudges, a mathematical formula is supposed and assumed as follows:

$$TotalUtilityofNudge = (R.N + J.N.) \times E.A. - O.C.$$

Where:

*R.N.* = (tangible remunerations to the stakeholders) + (potentially perceived capabilities to benefit the community)

*J.N.* = (the nudge of distributive justice) + (the nudge of procedural justice) + (the nudge of interactive justice)

*E.A.* = (cultural and personal fit to the sustainable nudges)

*O.C.* = [(transparency of nudge alternatives) + (satisfactory amount of alternatives)] × (if coercive or fair alternatives)

Based on this naive mathematical formula, the effectiveness of sustainable nudges can be calculated (Table 3):

|                    | Gross Sustainable Utility of Nudge | Personal & Cultural Fit | Sustainable Utility after Ethical Affiliation | Total Opportunity Cost | Effective Sustainable Utility (After Opportunity Cost) |
|--------------------|------------------------------------|-------------------------|---|------------------------|--|
| Manager, Victor Z. | 23                                 | 1                       | 23  | 0                      | 23   |
| Employee, Andy     | 18                                 | 0.9                     | 16.2  | 0                      | 16.2   |
| Stakeholder 1      | 19                                 | 0.75                    | 14.25   | 0                      | 14.25  |
| Stakeholder 2      | 14                                 | 0.1                     | 1.4   | 7                      | -5.6   |
| Stakeholder 3      | 20                                 | 0.9                     | 18  | 0                      | 18   |
| Stakeholder 4      | 18                                 | 0.8                     | 14.4  | 0                      | 14.4   |
| Stakeholder 5      | 16                                 | 0.7                     | 11.2  | 0                      | 11.2   |
| Stakeholder 6      | 19                                 | 0.75                    | 14.25   | 0                      | 14.25  |
| Stakeholder 7      | 12                                 | 0.25                    | 3   | 6                      | -3   |
| Stakeholder 8      | 17                                 | 0.65                    | 11.05   | 0                      | 11.05  |
| Average            | 17.6                               |                         | 12.675  |                        | 11.375   |

Table 3 Effectiveness of Sustainable Nudges in Foodworks Kensington

The data is generated by interviews with 30 randomly selected stakeholders who frequently shop in the targeted retailer within the Kensington community and the manager and one employee that work for this retail store; 8 effective data groups are selected. The interview is mainly conducted by asking how many scores a stakeholder would give to Foodworks Kensington for its sustainable endeavors, what environmental and psychological phenomena or demonstrations a stakeholder has perceived, and why he/she thinks those demonstrations, or

such nudges, deserve this score. Based on the interviews, stakeholders’ attitudes, and their observations towards the sustainable nudges that Foodworks Kensington possesses have been scored as follows and subject to:

1) **Tangible Remuneration, Ability to Benefit the Community, Distributive, Procedural, and Interactive:** scored from 0 to 5 ( $0 < x \leq 5$ ); the higher the score, the greater the perceived utility.

2) **Ethical Affiliation (Personal & Cultural Fit):** scored from 0 to 1 ( $0 \leq x \leq 1$ ); the higher the score, the greater

the compatibility between personal/cultural features and sustainable nudges would be.

**3) Explicitness and Amounts:** scored from 0 to 5 ( $0 \leq x \leq 5$ ); the higher the score, the less explicit a stakeholder would perceive the sustainable nudges and less likely to get involved with the current business; the higher the score, the less a stakeholder would think there is a fairly enough amounts of sustainable nudges observed.

**4) Fairness or Purpose:** scored as 0 or 1; where 1 = stakeholder perceives the Purpose of sustainable nudges is coercive, 0 = stakeholder perceives the Purpose of sustainable nudges is fair enough

## 4. Case Analysis:

### 4.1 Examinations on the Gross Utility of Sustainable Nudges

#### 4.1.1 The Utility of Remuneration Nudge and Its Interaction with the Utility of Justice Nudge

As discussed above, the Utility of Remuneration Nudge refers to the combination of tangible remunerations that sustainable nudges have brought to the Community and their potential to benefit all stakeholders in the future or the long run. Overall, Foodworks Kensington demonstrated a satisfactory ability to deliver tangible remuneration to the Community, with an average score of Tangible Remuneration of 3.8 and of Ability to Benefit the Community of 3.2 (Table 2). Some sustainable nudges are identified as evidence.

According to Andy, the manager assistant who is in charge of produce and alcohol sales of the store, he is always proud of what he did and his efforts to guarantee the best-quality produce is offered (Appendix 3 & Figure

7). Supporting evidence is also found in the Interviews of Stakeholder 1 and Stakeholder 3 (Appendix 3). Unsurprisingly, the sustainable nudge regarding a clear demonstration of high-quality produce not only repeatedly attracts customers and maintains their loyalty in the long term but also illustrates the store's ability and concern to treat the supply chain as an integrated whole. In addition to this "freshness demonstration," the store's other efforts are believed to have a positive long-run effect on the community atmosphere. For instance, efforts have been detected in the donations to and engagements in some community events (Figure 8), showing an effort to include the Community and "investing the future" (Victor, Appendix 3). Besides, one particularly interesting point is the store's attempts at plastic usage reduction. Instead of asking a customer whether he or she wants a plastic carry bag if he or she does not have one, the store encourages the use of recycled and environmental-friendly boxes by setting a default of changing the question of "plastic carry bag" into "free box" (Stakeholder 3, Appendix 3).



**Figure 7 Fresh Produce Demonstration in Foodworks Kensington [4]**



**Figure 8 Demonstration of Community Engagement of Foodworks Kensington**

Unsurprisingly, these explicit presentations of sustainable nudges turn out to be an indicator of the effectiveness of the sustainable nudges that the store possesses, showing its focus on the Community and sustainable development for the future. In particular, these nudges are delivered to customers who the demonstrations have persuaded of such sustainable nudges to believe that potential material benefits are rendered to the Community and the whole supply chain based on Victorian agriculture and suppliers, or at least, in Melbourne’s. That is to say, a latent interrelation can be discovered between the observable benefits that the sustainable nudges have and the consequences resulting from those nudges – an interrelationship between the Tangible Remuneration and the Utility of Distributive Justice of Nudge.

Furthermore, the development of such sustainable nudges might also be self-sufficient, with its long-term effect being “sustainable,” because the likelihood that an individual contributes to a public good will increase when there has a greater value with the public good or a smaller personal cost in contributing (Kollock, 1998; Van Lange et al., 1992); also, people who have a strong sense of identification to their groups are more likely to contribute to such groups (Cabrera & Cabrera, 2005). From the interview (Appendix 3), both Victor and Andy believed that they have been contributing to the public good of Victoria to some extent, and their impact has also been passed down to the store’s loyal and frequent customers, which might further trigger sustainable business practices across the whole Community. Indeed, this also implies a latent relationship between long-term community impact and the Interactive Utility of Justice nudges, similar to that between the Tangible Remuneration and the Distributive Utility previously analyzed. And unsurprisingly, these two relationships are also proved strong by the data and the correlations collected and examined (Table 4).

|                     | <i>Tangible Remuneration</i> | <i>Ability to Benefit Community</i> |
|---------------------|------------------------------|-------------------------------------|
| <b>Distributive</b> | <b>0.70956629</b>            | 0.286629746                         |
| <b>Interactive</b>  | 0.428571429                  | <b>0.70511024</b>                   |

**Table 4 Relationships of Tangible Remuneration - Distributive Utility and Ability to Benefit Community - the Interactive Utility**

As these relationships turned out to be clear, another new point arose: how did the system based on which the sustainable nudges are distributed, and the interactions between those nudges and the Community are made render its utility to the Community? Or simply, is the Procedural Utility of Justice Nudge a significant indicator influencing the Utility of Remuneration Nudge and interacting with the other two factors of the Utility of Justice Nudge? Hence, a relational examination is required.

**4.1.2 The Utility of Justice Nudge and Relational Examination of Procedural Utility**

The Utility of Justice Nudge is mainly evaluated from three perspectives: whether the consequences of sustainable nudges are equally delivered to the Community, whether the system that distributes such nudges is equal and nonbiased, and whether they can positively interact with all members of the Community and benefit the vast majority. And from previous analysis, the significance of Distributive and Interactive Utility has been found in the Utility of Tangible Remuneration in two aspects: tangible remuneration of the sustainable nudges and their abilities to benefit the Community. Especially with an average score of 2.7 (Table 2), the Procedural Utility was inferior to other utilities. To better understand, a relational examination is conducted between the Utility of Remuneration Nudge and the Utility of Justice Nudge, together with the Ethical Affiliation.

|                                     | <i>Tangible Remuneration</i> | <i>Ability to Benefit Community</i> | <i>Distributive</i> | <i>Procedural</i> |
|-------------------------------------|------------------------------|-------------------------------------|---------------------|-------------------|
| <b>Tangible Remuneration</b>        | 1                            |                                     |                     |                   |
| <b>Ability to Benefit Community</b> | 0.214598769                  | 1                                   |                     |                   |

|                     |                   |                   |                    |                     |
|---------------------|-------------------|-------------------|--------------------|---------------------|
| Distributive        | <b>0.70956629</b> | 0.286629746       | 1                  |                     |
| Procedural          | 0.410631546       | 0.67559452        | <b>0.819836049</b> | 1                   |
| Interactive         | 0.428571429       | <b>0.70511024</b> | 0.333913548        | 0.444850842         |
| Ethical Affiliation | 0.543074676       | 0.709758324       | 0.709023032        | <b>0.885987252</b>  |
| Explicitness        | -0.467707173      | -0.650011246      | -0.624695048       | <b>-0.83223972</b>  |
| Amounts             | -0.674453273      | -0.473684211      | -0.824060518       | <b>-0.822462894</b> |
| Fariness / Purpose  | -0.534522484      | -0.688247202      | -0.546608167       | <b>-0.76822128</b>  |

**Table 5 Relational Examinations among Different Utilities of Nudges, Ethical Affiliation, and Opportunity Costs**

Surprisingly, the Procedural Utility of Justice Nudge does not show a direct and significant relation to the Utility of Tangible Remuneration but demonstrates a high absolute value of the corresponding index (approximately 0.82) of correlation between itself and the Distributive Utility of Sustainable Nudge (Table 5). Also notably, significant correlations are targeted between the Procedural Utility of Justice Nudge and the Ethical Affiliation and between the Procedural Utility and three indicators of Opportunity Costs. Thus, several considerations and assumptions are proposed:

**Assumption 1:** *The Procedural Utility of Justice Nudge indicates the Distributive Utility of Justice Nudge.*

This assumption has that, with a strong correlation with the Procedural Utility, the Distributive Utility can be used to help a business, especially an SME, improve its sustainable performances and the effectiveness of sustainable nudges by optimizing its nudge-distributing system to deliver better consequences.

**Assumption 2:** *The Procedural Utility of Justice Nudge indicates Ethical Affiliation.*

This assumption focuses on the impact imposed by the

Procedural Utility’s interaction with Ethical Affiliation, examining whether a sustainable-nudges-distributing system of justice can lead to a greater Ethical Affiliation of stakeholders in the Community.

**Assumption 3:** *The Procedural Utility of Justice Nudge indicates the Opportunity Costs.*

The interaction between the Opportunity Costs and the Procedural Utility of Justice Nudge constitutes the third assumption; the better the nudge-distributing system is, the greater the opportunity costs the stakeholders will have to shift to another business.

**Procedural Utility vs. Distributive Utility**

The regression analysis is introduced for the predictive examination, and the result is shown below (Table 6). The Procedural Utility is a dependent variable, while the Distributive Utility is independent. The R Square and the Adjusted R Square are about 0.672 and 0.631, respectively, although with a good significance F and P-value, indicating no persuasive explanation where the significance between a dependent variable and an independent variable is highly interrelated.

| SUMMARY OUTPUT               |                    |             |             |          |                       |
|------------------------------|--------------------|-------------|-------------|----------|-----------------------|
| <i>Regression Statistics</i> |                    |             |             |          |                       |
| Multiple R                   | 0.819836049        |             |             |          |                       |
| R Square                     | <b>0.672131148</b> |             |             |          |                       |
| Adjusted R Square            | <b>0.631147541</b> |             |             |          |                       |
| Standard Error               | 0.409918025        |             |             |          |                       |
| Observations                 | 10                 |             |             |          |                       |
| <i>ANOVA</i>                 |                    |             |             |          |                       |
|                              | <i>df</i>          | <i>SS</i>   | <i>MS</i>   | <i>F</i> | <i>Significance F</i> |
| Regression                   | 1                  | 2.755737705 | 2.755737705 | 16.4     | <b>0.00368579</b>     |
| Residual                     | 8                  | 1.344262295 | 0.168032787 |          |                       |
| Total                        | 9                  | 4.1         |             |          |                       |



|            | Coefficients | Standard Error | t Stat      | P-value           | Lower 95%   | Upper 95%   | Lower 95.0% | Upper 95.0% |
|------------|--------------|----------------|-------------|-------------------|-------------|-------------|-------------|-------------|
| Intercept  | 1.885245902  | 0.46649355     | 4.041311829 | 0.003728942       | 0.809509846 | 2.960981957 | 0.809509846 | 2.960981957 |
| Procedural | 0.672131148  | 0.165970957    | 4.049691346 | <b>0.00368579</b> | 0.289401435 | 1.05486086  | 0.289401435 | 1.05486086  |

**Table 6 Regression Analysis of the Relationship between Procedural Utility and Distributive Utility**

In practice, there also has less convincing evidence indicating that the Procedural Utility can impose an influential impact on the Distributive Utility; that is to say, whether the system designated to distribute the sustainable nudges will not have paramount importance to the results of the distribution, or the consequences that the sustainable nudges achieve do not guarantee a good distributive system that benefits all members in the Community. The interview of the Stakeholder 2 (Appendix 3) implies this fact. The stakeholder reveals that the store does not show decent care to the inferior groups in the Community, trying to “squeeze” their value by selling them expired foods or products which are labeled as “Special” (Figure 9), although the efforts of the store designing a system to benefit its value chain in the long-run and in a sustainable way are still observed. Several tangible and intangible positive consequences for customers and the local supply chain are also perceived. As such, *Assumption 1* is rejected.

**Procedural Utility vs. Ethical Affiliation**

As mentioned, individuals’ cultures and values impact the effectiveness of nudges (Bolderdijk et al., 2013; Komatsu et al., 2022). This point is also reflected in the system where the sustainable nudges are distributed, as an enterprise system, whether congruent with the cultural context, can contribute to the effectiveness of the adoption concerning information or data sharing (Vos & Boonstra, 2022). In this case, a strong relationship that the Ethical Affiliation has to the Procedural Utility of Justice Nudge is observed, with an R Square of 0.785, Adjusted R Square of 759, and Significance F less than 0.05, indicating good reliability of the overall relationship between the two variables.



**Figure 9 “Special Sales” [7]**

| SUMMARY OUTPUT               |                     |                       |               |                    |                       |                  |                    |                    |
|------------------------------|---------------------|-----------------------|---------------|--------------------|-----------------------|------------------|--------------------|--------------------|
| <i>Regression Statistics</i> |                     |                       |               |                    |                       |                  |                    |                    |
| Multiple R                   | 0.885987252         |                       |               |                    |                       |                  |                    |                    |
| R Square                     | <b>0.78497341</b>   |                       |               |                    |                       |                  |                    |                    |
| Adjusted R Square            | <b>0.758095086</b>  |                       |               |                    |                       |                  |                    |                    |
| Standard Error               | 0.141602364         |                       |               |                    |                       |                  |                    |                    |
| Observations                 | 10                  |                       |               |                    |                       |                  |                    |                    |
| <i>ANOVA</i>                 |                     |                       |               |                    |                       |                  |                    |                    |
|                              | <i>df</i>           | <i>SS</i>             | <i>MS</i>     | <i>F</i>           | <i>Significance F</i> |                  |                    |                    |
| Regression                   | 1                   | 0.585590164           | 0.585590164   | 29.20470107        | <b>0.000642836</b>    |                  |                    |                    |
| Residual                     | 8                   | 0.160409836           | 0.02005123    |                    |                       |                  |                    |                    |
| Total                        | 9                   | 0.746                 |               |                    |                       |                  |                    |                    |
|                              | <i>Coefficients</i> | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i>     | <i>Lower 95%</i>      | <i>Upper 95%</i> | <i>Lower 95.0%</i> | <i>Upper 95.0%</i> |
| Intercept                    | -0.156557377        | 0.161145852           | -0.971525948  | 0.35974023         | -0.528160379          | 0.215045625      | -0.528160379       | 0.215045625        |
| Procedural                   | 0.309836066         | 0.057333121           | 5.404137403   | <b>0.000642836</b> | 0.177625651           | 0.442046481      | 0.177625651        | 0.442046481        |

**Table 7 Regression Analysis of the Relationship between Procedural Utility and Ethical Affiliation**

An equation is thus formulated as follows:

$$\hat{y} = -0.157 + 0.310x$$

Mathematically, the higher the Procedural Justice is, the greater the Ethical Affiliation will be. However, considering the value range of the Ethical Affiliation ( $0 < \hat{y} \leq 1$ ), then the value of the Procedural Utility will be no less than around 0.506 ( $0.506 < x \leq 5$ ). In practice, however, there might be situations in the real business world where the Procedural Utility is perceived as lower than 0.506, leading the Ethical Affiliation to a negative value. Unsurprisingly, the business system, namely corporate diplomacy (Henisz, 2017), fails to respond to the employees, customers, or a broader community of stakeholders. In that case, there will be more corporate risks and less stakeholder loyalty to the business. In this case, if the distributional system of sustainable nudges is observed as unfairly inefficient and under the bottom line of 0.506, then the Ethical Affiliation would decrease. Thus, the overall utility of the sustainable nudges setup would go nowhere. Notably, having a number going over 0.506 is not equivalent to a safe Procedural Utility of sustainable nudges or a high Ethical Affiliation; instead, a business should only treat this as a bottom line and has to endeavor to think about the “Big Picture.”

**Procedural Utility vs. Opportunity Costs**

Although correlations are detected between the Procedural Utility and each of the components of the Opportunity Costs, there is no evidence that the Procedural Utility can reliably predict how sustainable nudges performed from the perspective of the Opportunity Costs; none of the R Square and the Adjusted R Square exceed 0.7, and the Purpose contributes to the lowest number. As such, *Assumption 3* is rejected.

|                              |                    |                     |  |
|------------------------------|--------------------|---------------------|--|
| <i>Regression Statistics</i> |                    | <i>Explicitness</i> |  |
| Multiple R                   | 0.83223972         |                     |  |
| R Square                     | <b>0.692622951</b> |                     |  |
| Adjusted R Square            | <b>0.65420082</b>  |                     |  |
| Standard Error               | 0.743827056        |                     |  |
| Observations                 | 10                 |                     |  |
| <i>Regression Statistics</i> |                    | <i>Amounts</i>      |  |
| Multiple R                   | 0.822462894        |                     |  |
| R Square                     | <b>0.676445211</b> |                     |  |
| Adjusted R Square            | <b>0.636000863</b> |                     |  |
| Standard Error               | 0.554415953        |                     |  |
| Observations                 | 10                 |                     |  |
| <i>Regression Statistics</i> |                    | <i>Purpose</i>      |  |
| Multiple R                   | 0.76822128         |                     |  |
| R Square                     | <b>0.590163934</b> |                     |  |
| Adjusted R Square            | <b>0.538934426</b> |                     |  |
| Standard Error               | 0.286299167        |                     |  |
| Observations                 | 10                 |                     |  |

**Table 8 Regression Analysis of the Relationship between Procedural Utility and Opportunity Costs**

However, considering the correlation between the Procedural Utility and the Ethical Affiliation, which has been proved in *Assumption 2*, together with the correlation between the Procedural Utility and the Opportunity Costs, although this correlation is proved insufficient for prediction in the *Assumption 3*, a new inspiration leads to the next research step: Whether there is a strong relationship between the Ethical Affiliation and the Opportunity Costs, which can be used to predict how

stakeholders perceive the sustainable nudges of a business aligning with their ethical standards. Therefore, such a relationship will be examined.

**4.2 Impact of Ethical Affiliation on the Opportunity Costs**

The utility of Ethical Affiliation can also be understood as whether there is a disparity between a business’s sustainable nudges and stakeholders’ cultural and personal viewpoints towards those sustainable nudges. It is crucially important as it plays a role as an “ethical and cultural judge,” imposing significant or even, to some extent, decisive impact on the “gross utility of sustainable nudges” as well as on the opportunity costs of nudges in some ways, as previously suggested. Whether there is a gap between a stakeholder’s perception and currently existing sustainable nudges are explored through descriptive analysis; several relationships have also been observed based on relational analysis.

**4.2.1 Descriptive Analysis of the Ethical Affiliation Involved**

From the perspective of descriptive analysis, the Ethical Affiliation (Personal/Cultural Fit) of the samples demonstrates a decently good level of the sustainable nudges that Foodworks Kensington has. Based on the formula, the smaller the affiliation index (ranging from 0 to 1) is, the less compatible between the effectiveness of a business’s sustainable nudges and a stakeholder’s viewpoints towards the business’s sustainable nudges will be.

| <i>Personal and Curtural Fit</i> |              |
|----------------------------------|--------------|
| Mean                             | 0.68         |
| Standard Error                   | 0.091043335  |
| Median                           | 0.75         |
| Mode                             | 0.9          |
| Standard Deviation               | 0.287904305  |
| Sample Variance                  | 0.082888889  |
| Kurtosis                         | 0.831673239  |
| Skewness                         | -1.269691322 |
| Range                            | 0.9          |
| Minimum                          | 0.1          |
| Maximum                          | 1            |
| Sum                              | 6.8          |
| Count                            | 10           |
| Largest(1)                       | 1            |
| Smallest(1)                      | 0.1          |
| Confidence Level(95.0%)          | 0.205954333  |

**Table 9 Descriptive Statistics of Personal and Cultural Fit**

Overall, the average fit index of 0.68 is observed among ten interviewees in the community; undoubtedly, the highest fit index, 1, arises from the manager of the retail store, followed by his manager assistant, Andy, with an index of 0.9 (Table 9). From the interview (Appendix 3), the reasons and ideas behind the choices are explained, exactly supporting the data shown.

Such a positive interactive relationship between these two key stakeholders in the store shows a compatibility of values and perceptions of a business operation, casting a high acceptance of the business’s sustainable nudges and implying a positive view of their effects. Unsurprisingly, as the owner of the store and the key involver of the business, these two people occupy greater ownership of the business (Fraga-Doran, 1996) to some extent and show both a great value congruence and a perceptual congruence (Lu et al., 2023) to the company, elucidating that their values and perceptions are highly compatible with the business’s norms and thus sustainable nudges of which it takes advantages to manage the business operations. Another point worthy of discussing is that analogous to the study conducted by Jiang, Lin, and Lin (2011) examining business moral values of supervisors and subordinates, sustainable nudges set up by the manager might also have a positive impact on his subordinates over time if the cultural beliefs between the manager and his subordinates are observed compatible. In this case, Manager Victor and Manager Assistant Andy shared highly similar cultural and personal viewpoints towards the business, which enables them to contribute more to the business’s daily operations and, thus, perceive what they did and their demonstrations of sustainable efforts (nudges) in the community as perfectly compatible. As a result, such compatibility strengthens the “facilitative” elements of the sustainable nudges (Saghai, 2013b), as discussed above in the previous part (4.1), contributing to and assisting with customers’ decision-making process for their best interest without coercing them or doing harm to their autonomy when they make decisions (Bovens, 2009; Hausman & Welch, 2010; Sunstein, 2014).

However, some other non-store-staff stakeholders hold a completely adverse opinion and a low cultural/personal fit to the sustainable nudges that the store contains (Stakeholder 2 and Stakeholder 7), illustrating the lowest and the second lowest fit (0.1 and 0.25, respectively), contributing to a high range (0.9) of data collected. For deeper insight, Stakeholder 2 and Stakeholder 7 were also interviewed for detailed reasons (Appendix 3).

From these two descriptions of Stakeholder 2 and Stakeholder 7, an enormous gap between personal/cultural fit and existing sustainable nudges is observed, which

can be partially attributed to those two stakeholders' various occupations or cultural beliefs. Nevertheless, the Purpose of this descriptive Ethical Affiliation examination is not to discover what exactly cultural factors and belief diversity can contribute to such compatibility and disparity of sustainable nudges or business practices because a plethora of sophisticated studies have dug out influential factors to such incompatibility, such as the role of enjoyment, external factors, and curiosity (Putz & Treiblmaier, 2018) or the gender differences (Kaakeh, Shirazi, & Gokmenoglu, 2021). Instead, the aim of this Ethical Affiliation analysis applies itself to the very fact that how all these factors, integrated as a whole and demonstrated based on the interviewees' self-evaluation, show their impacts on the overall effectiveness of the sustainable nudges studied.

Remarkably, several insights have been discovered according to these four listed interviews, based on which several hypotheses also been proposed:

**Assumption 4:** *The Explicitness of sustainable nudges is the factor that might have an impact on Ethical Affiliation.* Andy's efforts in managing fresh produce and displaying them on the shelf attractively are to facilitate customers' selections and accessibility to "everyday freshness." On the other hand, Stakeholder 2 deems the store's attempts to address expired foods and products as immoral, with the Purpose of hiding something, and thus, the community is harmed.

**Assumption 5:** *The observation of the Number of sustainable nudges displayed has a potential impact on Ethical Affiliation.*

From the view of Victor and Andy, who have the highest fit to the nudges they set up for their business, they are satisfied with their sustainable nudges and business practices (fresh produce display, care for the community, or their practices of customer first, etc.); on the contrary, the Stakeholder 7, with a low fit index, holds a belief that current sustainable nudges of Foodworks Kensington do not consider the employees involved, which implies an insufficiency of its sustainable nudges.

**Assumption 6:** *The Ethical Affiliation influenced by the purposes behind the sustainable nudges constitutes the overall effectiveness of sustainable nudges.*

The third assumption is proposed for the reason that by judging how Explicitness and amounts of sustainable nudges are demonstrated, a stakeholder might brew his or her opinions to decide whether such sustainable nudges are coercive or facilitative, and thus, the effectiveness of a business's sustainable nudges will be impacted.

All these three assumptions seemingly relate to some concepts and perceptions of the opportunity cost in the

theoretical framework, which are to be examined in the Relational Analysis part to determine how Ethical Affiliation influences the opportunity costs and whether some other relationships interactively affect one another.

**Relational Analysis of the Ethical Affiliation Involved**

Numerous studies have suggested the extent to which personal- and organizational cultural fit can affect how the business's purposes are perceived. Wilkins and Ouchi (1983) maintained that goal congruence is crucially significant, which facilitates both individuals and businesses to achieve their purposes. Furthermore, regarding sustainable practices, CSR is widely accepted, stressing that the perceived corporate culture fit has a higher impact on employees' CSR authenticity evaluation than the perceived CSR motives (Schaefer, Terlutter, & Diehl, 2019). These findings, unsurprisingly, indicate a significant interrelationship between an individual's cultural fit to the business and that individual's own observation of the Purpose of the business, which can be understood as applied to sustainable nudges in this case as well.

In particular, several significant relationships among cultural/personal fit and other elements based on the analytical framework are seen (Table 10) on the prerequisite that we assume if the absolute value of the correlation index is over 0.8, then a significant interrelationship is perceived, including Ethical Affiliation vs. Explicitness, Ethical Affiliation vs. Amounts, Ethical Affiliation vs. Purpose, and Ethical Affiliation vs. Procedural Utility of Justice Nudge.

|                           | <b><i>Ethical Affiliation</i></b> |
|---------------------------|-----------------------------------|
| <b>Explicitness</b>       | <b>-0.967182884</b>               |
| <b>Amounts</b>            | <b>-0.814752159</b>               |
| <b>Fairness / Purpose</b> | <b>-0.924468183</b>               |

**Table 10 Correlations of Ethical Affiliation and Other Factors**

***Ethical Affiliation vs. Explicitness***

A significant interrelationship is discovered between the Ethical Affiliation and the Explicitness of the sustainable nudges displayed (Table 10). The highest correlation index is observed, with an approximate absolute value of 0.97, illustrating an utterly important relationship between these two factors. A simple linear regression model is then constructed to examine how Explicitness can impact a stakeholder's ethical affiliation (Table 11).

| SUMMARY OUTPUT               |                     |                       |               |                    |                       |                  |                    |                    |
|------------------------------|---------------------|-----------------------|---------------|--------------------|-----------------------|------------------|--------------------|--------------------|
| <i>Regression Statistics</i> |                     |                       |               |                    |                       |                  |                    |                    |
| Multiple R                   | 0.967182884         |                       |               |                    |                       |                  |                    |                    |
| R Square                     | <b>0.935442732</b>  |                       |               |                    |                       |                  |                    |                    |
| Adjusted R Square            | <b>0.927373073</b>  |                       |               |                    |                       |                  |                    |                    |
| Standard Error               | 0.077588435         |                       |               |                    |                       |                  |                    |                    |
| Observations                 | 10                  |                       |               |                    |                       |                  |                    |                    |
| <i>ANOVA</i>                 |                     |                       |               |                    |                       |                  |                    |                    |
|                              | <i>df</i>           | <i>SS</i>             | <i>MS</i>     | <i>F</i>           | <i>Significance F</i> |                  |                    |                    |
| Regression                   | 1                   | 0.697840278           | 0.697840278   | 115.9209805        | <b>4.87723E-06</b>    |                  |                    |                    |
| Residual                     | 8                   | 0.048159722           | 0.006019965   |                    |                       |                  |                    |                    |
| Total                        | 9                   | 0.746                 |               |                    |                       |                  |                    |                    |
|                              | <i>Coefficients</i> | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i>     | <i>Lower 95%</i>      | <i>Upper 95%</i> | <i>Lower 95.0%</i> | <i>Upper 95.0%</i> |
| Intercept                    | 0.988194444         | 0.037701203           | 26.21121799   | <b>4.8219E-09</b>  | 0.901255315           | 1.075133574      | 0.901255315        | 1.075133574        |
| Explicitness                 | -0.220138889        | 0.020446348           | -10.7666606   | <b>4.87723E-06</b> | -0.267288252          | -0.172989526     | -0.267288252       | -0.172989526       |

**Table 11 Regression Analysis of Correlation between Explicitness and Ethical Affiliation**

From the regression analysis, an extremely strong overall relationship (Significance F far smaller than 0.05) between the dependent variable (the Ethical Affiliation) and independent variable (Explicitness) is discovered, with an approximate 0.93 R Square and Adjusted R Square, indicating that a good percentage of a dependent variable can be explained by the independent variable in this regression model. A naive mathematical formula is thus built up to demonstrate this relationship:

$$\hat{y} = 0.988 - 0.22x$$

Notably, since the Ethical Affiliation is no greater than one and no less than 0, the value of  $x$  must exceed -0.05 and be smaller than 4.5 ( $-0.05 \leq x \leq 4.49$ ); while considering the estimated range of Explicitness is from 0 to 5 ( $0 \leq x \leq 5$ ), then the equation can be set up and explained in this way: when the range of  $x$  is from 0 to 4.49, it expresses that the value of  $\hat{y}$  represents a decreasing trend of Ethical Affiliation since the higher the Ethical Affiliation Index is, the greater the fit will be found; when  $x$  exceeds 4.49, where the value of  $\hat{y}$  becomes negative, then we consider  $\hat{y}$  still as 0. Thus, the equation will be reformulated as follows:

$$\hat{y} = \begin{cases} 0.988 - 0.22x, & \text{where } 0 \leq x \leq 4.49 \\ 0, & \text{where } 4.49 \leq x \leq 5 \end{cases}$$

Notice-worthily, this equation provides an approach to understanding the relationship between the Explicitness of sustainable nudges and Ethical Affiliation and quantitatively estimates to what degree such Explicitness can influence a stakeholder’s perception and affiliation to sustainable nudges. The more explicit the sustainable nudges are, or the smaller the explicitness index is on the mathematical level, the higher the Ethical Affiliation index would be. As a result, it is safe to conclude that the Explicitness of

sustainable nudges that a business has significantly impacts the extent to which stakeholders believe such nudges align with their cultural/personal viewpoints. As such, *Assumption 4* is approved.

Practically, this also gives a business an approach to think from itself and the Explicitness of its sustainable nudges – whether they are perceived as “explicit,” whether there is latent insufficiency or party that might be not seen, or whether it is safe to say that the sustainable nudges are fairly clear to every stakeholder involved in the community so that they can interact with such groups of nudges to achieve the collective good. Interestingly, this explicitness demonstration can also be related to the Distributive Utility of Justice Nudges, as discussed above, as they similarly evaluate the consequences resulting from the sustainable nudges. The Distributive Utility evaluates whether equal awareness of sustainable nudges is achieved, while the Explicitness stresses whether the nudges are presented. This might imply an overall significance interrelatedly embedded in the analytical frame, giving an SME a holistic and comprehensive angle to understand its sustainable nudges.

**Ethical Affiliation vs. Amounts**

According to the correlation examination in Table 10, whether the amount of sustainable nudges is fairly enough accounts for the third influential factor. However, the absolute value of this index presents the least significance (0.815) compared to the other three. A regression analysis has been applied for information to understand to what extent and what role this relatively less significance plays (Table 12).

| SUMMARY OUTPUT               |                     |                       |               |                    |                       |                  |                    |                    |
|------------------------------|---------------------|-----------------------|---------------|--------------------|-----------------------|------------------|--------------------|--------------------|
| <i>Regression Statistics</i> |                     |                       |               |                    |                       |                  |                    |                    |
| Multiple R                   | 0.814752159         |                       |               |                    |                       |                  |                    |                    |
| R Square                     | <b>0.663821081</b>  |                       |               |                    |                       |                  |                    |                    |
| Adjusted R Square            | <b>0.621798716</b>  |                       |               |                    |                       |                  |                    |                    |
| Standard Error               | 0.177055596         |                       |               |                    |                       |                  |                    |                    |
| Observations                 | 10                  |                       |               |                    |                       |                  |                    |                    |
| <i>ANOVA</i>                 |                     |                       |               |                    |                       |                  |                    |                    |
|                              | <i>df</i>           | <i>SS</i>             | <i>MS</i>     | <i>F</i>           | <i>Significance F</i> |                  |                    |                    |
| Regression                   | 1                   | 0.495210526           | 0.495210526   | 15.79685205        | <b>0.004092924</b>    |                  |                    |                    |
| Residual                     | 8                   | 0.250789474           | 0.031348684   |                    |                       |                  |                    |                    |
| Total                        | 9                   | 0.746                 |               |                    |                       |                  |                    |                    |
|                              | <i>Coefficients</i> | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i>     | <i>Lower 95%</i>      | <i>Upper 95%</i> | <i>Lower 95.0%</i> | <i>Upper 95.0%</i> |
| Intercept                    | 1.139473684         | 0.12844963            | 8.870976764   | 2.06041E-05        | 0.843268306           | 1.435679062      | 0.843268306        | 1.435679062        |
| Amounts                      | -0.255263158        | 0.064224815           | -3.974525386  | <b>0.004092924</b> | -0.403365847          | -0.107160469     | -0.403365847       | -0.107160469       |

**Table 12 Regression Analysis of Correlation between Amounts and Ethical Affiliation**

Despite a good Significance F and P-value, the R Square and the Adjusted R Square are not as persuasive as the regression analysis of Explicitness, demonstrating approximate indexes of 0.664 and 0.622, respectively. This phenomenon refers to the fact that the independent variable Amounts only contribute to 60% of the explanation of the dependent variable, Ethical Affiliation. To dig deeper and find out what triggers this less significant relationship, the correlations are again examined (Table 13); unsurprisingly, a correlation is discovered between the Amounts of sustainable nudges and the Explicitness, with an absolute value of correlation index of about 0.841, even higher than the absolute value of the correlation index between the Amounts and the Ethical Affiliation. Hence, a simple linear regression will not be suitable to describe this relationship and make an estimation.

|                            | <i>Procedural</i> | <i>Ethical Affiliation</i> | <i>Explicitness</i> |
|----------------------------|-------------------|----------------------------|---------------------|
| <b>Ethical Affiliation</b> | 0.885987252       | 1                          |                     |
| <b>Explicitness</b>        | -0.83223972       | -0.967182884               | 1                   |
| <b>Amounts</b>             | -0.822462894      | -0.814752159               | <b>0.841191024</b>  |
| <b>Fairness / Purpose</b>  | -0.76822128       | -0.924468183               | 0.875               |

**Table 13 Correlation Analysis between Explicitness and Amounts**

Since an interactive relationship is detected between the Explicitness and the Amounts, a new non-linear regression analysis is proposed:

$$\hat{y} = d0 + d1 \times Amount + d2 \times Interactions$$

Where:

$d0 =$  Intercept,

$d1, d2 =$  coefficients of Amounts and Interactions

$Interactions =$  Amounts  $\times$  Explicitness

Based on this new equation considering the interaction of each two factors, a new regression analysis can thus be implemented, with results shown below (Table 14):

| SUMMARY OUTPUT               |                    |             |             |             |                       |  |  |  |
|------------------------------|--------------------|-------------|-------------|-------------|-----------------------|--|--|--|
| <i>Regression Statistics</i> |                    |             |             |             |                       |  |  |  |
| Multiple R                   | 0.972964839        |             |             |             |                       |  |  |  |
| R Square                     | <b>0.946660578</b> |             |             |             |                       |  |  |  |
| Adjusted R Square            | <b>0.931420743</b> |             |             |             |                       |  |  |  |
| Standard Error               | 0.075395347        |             |             |             |                       |  |  |  |
| Observations                 | 10                 |             |             |             |                       |  |  |  |
| <i>ANOVA</i>                 |                    |             |             |             |                       |  |  |  |
|                              | <i>df</i>          | <i>SS</i>   | <i>MS</i>   | <i>F</i>    | <i>Significance F</i> |  |  |  |
| Regression                   | 2                  | 0.706208791 | 0.353104396 | 62.11750898 | <b>3.50485E-05</b>    |  |  |  |
| Residual                     | 7                  | 0.039791209 | 0.005684458 |             |                       |  |  |  |
| Total                        | 9                  | 0.746       |             |             |                       |  |  |  |

|   | Coefficients | Standard Error | t Stat       | P-value            | Lower 95%    | Upper 95%    | Lower 95.0%  | Upper 95.0%  |
|---|--------------|----------------|--------------|--------------------|--------------|--------------|--------------|--------------|
| Intercept                                     | 0.943846154  | 0.063425921    | 14.88107915  | 1.48345E-06        | 0.793867682  | 1.093824625  | 0.793867682  | 1.093824625  |
| Amounts                                       | -0.021208791 | 0.047157291    | -0.44974575  | <b>0.666490197</b> | -0.132718065 | 0.090300483  | -0.132718065 | 0.090300483  |
| Interactions between Explicitness and Amounts | -0.066373626 | 0.010894333    | -6.092490992 | <b>0.000494731</b> | -0.092134631 | -0.040612622 | -0.092134631 | -0.040612622 |

**Table 14 Regression Analysis of Correlation among Amounts, Interactions with Explicitness, and Ethical Affiliation**

Notably, the P-value of the Amounts exceeds 5%, illustrating that the factor Amount does not have a paramount significance to influence the Ethical Affiliation. Still, together with the Amount and their interactions, it signifies the Ethical Affiliation. Combining with the result displayed in the previous analysis of the relationship between the Amounts and the Ethical Affiliation, the conclusion can be optimized as such: The Explicitness of sustainable nudges demonstrated has a crucially vital impact on the Ethical Affiliation with those sustainable nudges, and since the Explicitness also influences the how stakeholders observe the Amounts of sustainable, an interactive relationship is also found between these two variables and interactively and collectively contributes to the overall Ethical Affiliation. Thus, Assumption 5 is partially approved, but with a new consideration of the combined effect between the Amounts and the

Explicitness.

Having a practical interpretation, a business should not only focus on equitably rendering fairly explicit and easy-resistibly (Saghai, 2013a) sustainable nudges to the stakeholders in the community but also set up enough but not overwhelming Number of sustainable nudges for selections; otherwise, the maximum potential of such sustainable nudges would not be reached.

**Ethical Affiliation vs. Purpose**

As shown in Table 15, the absolute value of the index of the correlations between personal & cultural fit and fairness/purpose is around 0.92, indicating a strong interrelationship between how a stakeholder’s ethical affiliation relates to his or her observation of the Purpose of specific sustainable nudges a business has. To have a better understanding, a regression analysis is also conducted (Table 15):

| SUMMARY OUTPUT               |                    |                |              |                    |                    |              |              |              |
|------------------------------|--------------------|----------------|--------------|--------------------|--------------------|--------------|--------------|--------------|
| <b>Regression Statistics</b> |                    |                |              |                    |                    |              |              |              |
| Multiple R                   | 0.924468183        |                |              |                    |                    |              |              |              |
| R Square                     | <b>0.854641421</b> |                |              |                    |                    |              |              |              |
| Adjusted R Square            | <b>0.836471599</b> |                |              |                    |                    |              |              |              |
| Standard Error               | 0.1164246          |                |              |                    |                    |              |              |              |
| Observations                 | 10                 |                |              |                    |                    |              |              |              |
| <b>ANOVA</b>                 |                    |                |              |                    |                    |              |              |              |
|                              | df                 | SS             | MS           | F                  | Significance F     |              |              |              |
| Regression                   | 1                  | 0.6375625      | 0.6375625    | 47.03631124        | <b>0.000129891</b> |              |              |              |
| Residual                     | 8                  | 0.1084375      | 0.013554688  |                    |                    |              |              |              |
| Total                        | 9                  | 0.746          |              |                    |                    |              |              |              |
|                              | Coefficients       | Standard Error | t Stat       | P-value            | Lower 95%          | Upper 95%    | Lower 95.0%  | Upper 95.0%  |
| Intercept                    | 0.80625            | 0.041162312    | 19.58709214  | 4.7994E-08         | 0.711329538        | 0.901170462  | 0.711329538  | 0.901170462  |
| Fairness / Purpose           | -0.63125           | 0.092041728    | -6.858302358 | <b>0.000129891</b> | -0.843498605       | -0.419001395 | -0.843498605 | -0.419001395 |

**Table 15 Regression Analysis of Correlation between Purpose and Ethical Affiliation**

Based on the information in Table X, an equation is established to demonstrate the correlation:  $\hat{y}$  refers to an individual’s ethical affiliation or his personal & cultural fit to the sustainable nudges;  $x$  refers to the Purpose of sustainable nudges.

$$\hat{y} = 0.806 - 0.631x$$

A simple linear relationship is found from the regression

equation, and approximately 84% (R Square and Adjusted R Square) of the variance for a dependent variable can be explained by an independent variable in this regression model. Considering the value of  $x$  is binary ( $x = 0 \text{ or } 1$ ), this regression equation can only construe that when a stakeholder believes the Purpose of sustainable nudges is fair ( $x = 0$ ), then the overall Ethical Affiliation would be

around 0.8 in principle, or even higher in practice; on the other hand, if the Purpose is thought as unfair ( $x = 1$ ), then the overall Ethical Affiliation would not be ideal and thus, negatively affect the overall opportunity costs.

This seems mathematically less convincing due to the binary treat of  $x$ . Still, considering from a practical perspective and thinking about a “big picture” regarding the Gross Utility of Sustainable Nudges, this provides a valuable analytical criterion (0.8 for the fair Purpose perceived and 0.2 for the unfair one) to predict and estimate the average utility of sustainable nudge. If several sampled or most stakeholders perceive the Purpose as “fair” ( $x = 0$ ), then the overall utility would be the Gross Utility of Sustainable Nudges times 0.8, indicating a good level of their effectiveness and ability to influence the community fairly, comprehensively, and interactively. On the contrary, if the Purpose is believed as “unfair,” then however well the Gross Utility of Sustainable Nudges will look, the overall or effective utility of sustainable nudges would still be not ideal, or it can be maintained relatively high but with an excessive amount of efforts to sustain a high level of the Gross Utility of Nudges, which is equivalent to more money and time spent and a less sustainable approach. Considering its theoretical and practical significance, *Assumption 6* can be approved.

### 5. Discussion and Ending Conclusion:

The investigation of the research has uncovered a few key correlations and underlying principles through the verification of six assumptions, all with the Purpose of addressing the three research *questions* indicated in the *Methodology* sector – whether the criteria are for businesses to understand the whole community, whether they have moral considerations, and whether they are cost-effectively feasible. A descriptive analysis rooted in interviews was employed for an overarching view of the business’s sustainable nudges. It was coupled with predictive regression analysis to help businesses, especially SMEs, roughly forecast the impact of their sustainable nudges and thus improve the overall performance.

The first set of relationships in the Case Analysis sector is detected between the Tangible Remuneration and the Distributive Utility of Justice Nudges and between the Ability to Benefit the Community and the Interactive Utility of Justice Nudges. Unsurprisingly, such relationships turn out to be an efforts-worthy point at which an SME can try to optimize the consequences that its sustainable nudges might bring to the community, particularly illustrating how those nudges interact with community members concerned. By doing so, an SME’s

cost-effectiveness will not be strained because this does not necessitate extra expenses for supply chain management optimization, which might surpass an SME’s resources and budget constraints (Orlitzky et al., 2003; Lau & Wong, 2022). Indeed, SMEs are encouraged to optimize sustainable nudges or practices by proactively communicating with the community (Vrontis et al., 2022). This approach is also proven self-sufficient in that increased community value will promote greater stakeholder engagement (Kollock, 1998), potentially strengthening community group identification and increasing participation in sustainable initiatives (Cabrera & Cabrera, 2005).

The second relationship identified is that between the Procedural Utility and the Ethical Affiliation, illustrating that the higher the utility of the sustainable-nudge-distributing system is where as many as possible amount stakeholders are equitably engaged, the more compatible the stakeholders’ affiliation will be to the sustainable nudges a business has. This finding is out-striking in a scenario where an SME needs to meticulously design its sustainable-nudge-distribution system and engage stakeholders, aiming to mitigate corporate diplomacy risks (Henisz, 2017). With reduced risk, the maximum potential of sustainable nudges might be achieved.

The third set of relationships is discovered between the Ethical Affiliation and the Opportunity Costs, under which three branches – the Explicitness, the Amounts, and the Purpose – are analyzed, respectively. The findings illustrate that:

1) Explicitness stands out as the most significant indicator of stakeholders’ Ethical Affiliation. A combined view with the Distributive Utility can be used to understand how this branch works. Sustainable nudges should be displayed with equitable access for all stakeholders who are equally aware of such nudges, and with a positively observed consequence for the whole community, following the principle of resistible alternatives (Saghai, 2013a).

2) The amount of sustainable nudges is discovered to have an interplay with Explicitness; the Number of sustainable nudges should be enough to facilitate stakeholders’ decision-making but not excessive for the community. Otherwise, the stakeholders might be overwhelmed, and manipulative ethical concerns would arise (Thaler & Sunstein, 2008; Vugts et al., 2020).

3) The purpose is another crucial determinant of Ethical Affiliation, and a business is supposed to ascertain that its stakeholders recognize the fairness of the Intended Purpose of sustainable nudges, as this could affect the overall Gross Utility of Sustainable Nudges.

Based on these discoveries, Ethical Affiliation is affirmed and proved as the most critical determinant impacting



the effectiveness of sustainable nudges, based on which an SME can evaluate its sustainable nudges' impact on the community and identify ways to increase their

effectiveness (Figure 10). And therefore, the three research Questions can be answered as follows:

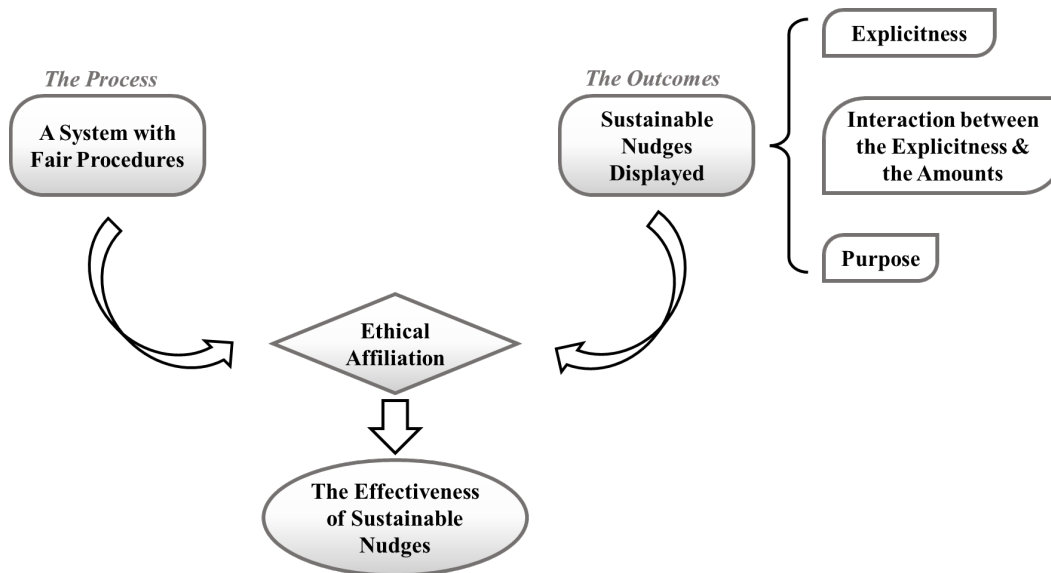


Figure 10 The Visual Logic for Comprehension

**Answer 1:** There does have a group of criteria assisting an SME in understanding how well its sustainable nudges work from the business side. An SME should especially focus on two aspects concerning the sustainable nudges it possesses: the process, or, namely, the system distributing sustainable nudges, and the outcomes, or, namely, the impact the sustainable nudges might have on the community. In detail, an SME needs to guarantee the system distributing sustainable nudges is equally accessible to every member of the community, including the minority and the inferior groups. Additionally, an SME has also to pay enormous attention to the potential outcomes resulting from sustainable nudges – whether they are explicitly received and accepted by at least the vast majority in the community, whether the sustainable nudges can facilitate the decision-making through the interaction between a clear display and reasonable Amount, and whether the Purpose of setting up these nudges are shared and communicated appropriately with the community members.

**Answer 2:** This set of criteria considers moral issues that might be latently involved and rooted in the community. All evaluative criteria enjoy the same basis – Ethical Affiliation. Truly, the process and the outcome of nudges are to be considered and evaluated following some ethical standards because, from the previous analysis, they are all significant predictors of Ethical Affiliation. This also means that Ethical Affiliation is in the paramount position where an SME needs to consider whether its system

distributing sustainable nudges and the consequences of these nudges are both of justice and fairness.

**Answer 3:** This set of criteria is also cost-effective for an SME as there are no other expenses required but an in-depth understanding of its currently existing practices, which means that an SME must fully utilize its current business resources and fine-tune its behavior to reach its maximum potential. In detail, all three branches of the outcomes side are associated with the Opportunity Costs, which means that a business can increase such costs to customers by optimizing its currently existent sustainable practices and nudges rather than maintaining high operational costs to keep customer loyalty. Remember, this approach should always be subject to *Answer 2*, where moral issues are always placed first.

Albite the three research Questions are answered successfully, the study is not believed to be without limitations. The first is an imperfect mathematical prediction of the relationship between the Explicitness and the Amount. In the original formula, their relationship was assumed to be additive, not multiplicative, which may not accurately reflect the interaction between Amount and Ethical Affiliation. The reason causing this might be attributed to a lack of previous research indicating the relationships between the Number of nudges and their levels of Explicitness. Therefore, the overall data calculated is revised and shown in *Table 16*.

|                    | Gross Sustainable Utility of Nudge | Ethical Affiliation | Sustainable Utility after Ethical Affiliation | Total Opportunity Cost | Effective Sustainable Utility (After Opportunity Cost) |
|--------------------|------------------------------------|---------------------|---|------------------------|--|
| Manager, Victor Z. | 23                                 | 1                   | 23  | 0                      | 23   |
| Employee, Andy     | 18                                 | 0.9                 | 16.2  | 0                      | 16.2   |
| Stakeholder 1      | 19                                 | 0.75                | 14.25   | 0                      | 14.25  |
| Stakeholder 2      | 14                                 | 0.1                 | 1.4   | 12                     | -10.6  |
| Stakeholder 3      | 20                                 | 0.9                 | 18  | 0                      | 18   |
| Stakeholder 4      | 18                                 | 0.8                 | 14.4  | 0                      | 14.4   |
| Stakeholder 5      | 16                                 | 0.7                 | 11.2  | 0                      | 11.2   |
| Stakeholder 6      | 19                                 | 0.75                | 14.25   | 0                      | 14.25  |
| Stakeholder 7      | 12                                 | 0.25                | 3   | 9                      | -6   |
| Stakeholder 8      | 17                                 | 0.65                | 11.05   | 0                      | 11.05  |
| Average            | 17.6                               |                     | 12.675  |                        | 10.575   |

**Table 16 Revised Overall Utility of Sustainable Nudges Calculation**

A group of small data samples forms the second limitation. Partially due to limited individual efforts and time, lack of team support, or ineffective responses from some interviewees, the collected data was confined to a narrow community range, which might potentially lead to confounding effects from multicollinearity. A high correlation between several factors sometimes suggests high multicollinearity, which might cause uncertainty as to whether one factor influences another or is influenced by another, possibly leading to the ambiguity of specific prediction triggers. To avoid potential multicollinearity, this paper examines the correlations between two factors independently rather than examining the relationships as a whole, which might be infeasible if more evaluating factors are included in the framework.

As such, future research orientation will be placed around solving these limitations; more efforts and support from the research team might be required. And in summary, with the application of nudging theory, the paper explores how an SME can understand its sustainable nudges from a broader perspective of community inclusion and moral concerns. The results show that an SME can majorly focus on the procedure and the outcomes of its sustainable nudges rather than increasing the operational investment to maintain customers.

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## Appendix 2: Sources of Figures and Graphs

[1] Retrieved on April 9, 2023, from:

<https://www.abc.net.au/news/2020-07-01/is-the-famous-australian-made-kangaroo-logo-really-changing/12410214>.

[2] Retrieved on April 9, 2023, from:

[https://m.facebook.com/CobsPopcorn/posts/4993342164038632/?comment\\_id=4994850350554480](https://m.facebook.com/CobsPopcorn/posts/4993342164038632/?comment_id=4994850350554480)

[3] Retrieved on April 23, 2023, from:

<http://www.correctfoodsystems.com.au/help-with-nutrition-information-panel.html>.

[4] [5] [6] [7] Photos taken on April 13, 2023, by Yiming MA, under the permission and with the assistance of store staff Zoe.

## Appendix 3: Part of Interview Recordings (Verbal Form with Amendments)

**Victor:** *I (have) operated this store for over twenty years with Andy since we knew each other. ... Andy supported my ideas of benefiting the community because we love it, and that's why we always value a healthy relationship with our customers! Some customers have been our loyal visitors for more than ten years. ... We always guarantee that we provide our customers with the best possible services, like fresh produce and meat, though Andy and I know it might not be that profitable. We will do this because we believe we are not a for-profit business but a "community engineer" for all the goods! ... Andy ... is an expert in alcohol and produce, so he knows better than me how we can make our customers aware of our business practices and sustainability. ... We, of course, do something more than delivering fresh produce to perform as a "community engineer." As you see, we have been a generous supporter of the community, from VIC social events to local schools. ... This strengthens the foundation on which we set up, the people! ... It's always a great joy that we have played our parts in the community, ... you know, we are just investing in*

*the community, so as the future.*

**Andy:** *I pretty much like having business with Victor because we share the same value and perception of our business, say doing good things to benefit the community or just making friends! ... Every day, I get up early, at 5 a.m. ... to examine our fruits and vegetables (for) the best quality, and I fixed the shelf in the sense that customers would be easily attracted by the freshness of our produce. ... There is no need to label our produce as "organic" because we only outsource them from local farmers to guarantee such good quality and freshness, ... all our customers know that... support locals and VIC Gov's Initiative! (Author: initiatives conducted and/or supported by the Victoria State Government, such as "Made in Victoria," similar to "Australian Made") ... What I did is just to help our clients understand we are doing good things and delivering the products with the best quality we can reach ... the result is they choose us and become loyal*

**Stakeholder 1:** *I pretty much like ... fruits in your (the Foodworks Kensington is applied to all "you" and "your" mentioned in the following interviews) store. It's convenient, particularly after work and grabbing a bag of apples. ... This demonstration really matters (Author: The demonstration refers to the freshness display of the produce) as we all know the power of "tinny clue." ... I work for the local gov and have studied public policies for years ... usually, we use a hint, or nudge as you describe, ... to lead public opinions for collective benefits. ... This demonstration tells me two things first, you care about your quality and customers, and second the local supply chain of the State (is supported). ... It's an exactly a splendid stuff for everyone, for like customers' health and eating experience, ... and farmers revenue. ... And I think you can do more, for as listing their (fruits') traceability or place of origin, to make it clearer and easily persuade customers; this is my opinion from the governmental level.*

**Stakeholder 2:** *I know you are trying your best to make a difference in the community, but I just think it's camouflage. I don't believe you are a not-for-profit. ... The reason (why) I think so is that you dispose of about-to-expire food or even some food out of "the best-before date" only by tagging them as "Special Sales" (Figure 9) in a really murky and gloomy corner near the pool sink! ... just gives me a sense of hiding something. ... And think about the community, who will buy such "special" foods? The homeless or those with low income, those inferior groups, and who will be responsible for them if they get sick after this "special price treatment"? Even in the restaurant I worked, we won't consider "giving away" such "immorally special" foods to those homeless. ... We usually have extra fresh foods to give away ... and our supplier also knows this, so they sometimes even deliver more than we expected! ... We keep it clear between us and our community, not hiding. ... I think, at least, you should clearly show these are "about-to-expire" foods to make everyone, from the illiterate or the poor to the so-called higher*

*class in society, aware of what you are selling, rather covering something with “special” ...*

**Stakeholder 3:** *I came to this community after I got married to my husband. ... My husband trusts you because he has been a loyal customer for around six years. ... He said you are the best fruit provider in this region, ... and he is a banana lover, so he can always rely on you to find the best banana. ... Our children also usually came to the store after school because they said they know you supported their primary school for events (Figure 8), and they are looking forward to this support again before they graduate. ... I especially like your attempt to reduce the use of plastic bags. When I was first asked ‘you want a box?’ in the store, I was a little surprised. Usually, one should ask, ‘You want a carry bag’ or something. ... I now know you adopted this way to reduce plastic consumption*

**Stakeholder 7:** *As a professional service provider, I cannot tell you more about (whether) your business is sustainable or (how effective) such related “nudges” you have (are). But I do believe*

*you are just “break-even.”... For example, how do we know you treat your workers well? Do you have any labor union members included? It’s unavoidable that a small business’s employee has to be multi-skilled, (and it) also means a potential threat (that) they could be under hyper-pressure compared to those who work for large organizations. I’d like to know more about staff sustainability, or in your words, a nudge that demonstrates that your employees are treated well, but (it) seems like you don’t have such stuff. ... I notice that some of your staff are from China ... but the boss seems like he doesn’t care about, or ... put much importance on their traditions, like giving them a break or some welfare during the Spring Festival. Muslims have their traditions respected here, ... you should make this a fair play ... though I know, it’s (the Spring Festival) not a public holiday in Victoria. This is really a good way to motivate employees from different cultural backgrounds, especially in this colorful community and country ...*