

## POSTMODERN CONSUMERS' CONSCIOUSNESS OF CLIMATE CHANGE AND ACTIONS THAT COULD MITIGATE UNSUSTAINABLE CONSUMPTION

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### ABSTRACT

Addressing the fast-paced lifestyles that postmodern consumers lead, and the impact thereof on the natural environment, is high on the agenda in many political, economic, academic and social circles. Issues relating to the true impact of consumer behaviour on the environment, and the ultimate sustainability thereof for future generations, is becoming more and more important. Along with these debates, there is a growing interest in constructs such as pollution, waste, greenhouse gases, climate change and unsustainable consumption. Although the problem at hand and the relevant constructs have received much needed attention, it is not clear whether the South African public fully grasps the problem and/or whether they are conscious of why they need to change their current ingrained habits and unsustainable consumer behaviour. This study investigated postmodern consumers' knowledge of climate change and their subsequent food consumption practices. A non-probability, convenience sampling approach was used to recruit a sample ( $n = 302$ ) of both male and female consumers residing in the greater region of Tshwane who differed in terms of age, income, and socio-economic backgrounds. The research identified certain sustainable consumption practices and revealed deficits with regard to consumers' knowledge of climate change. It was found that consumers who are willing to live more sustainably struggled to do so due to societal pressures, poor support, and a knowledge deficit in terms of skills in climate intervention. It is evident that current societal situations limit the likelihood of consumers making concerted efforts to reduce their overall impact on the environment. This is believed to be due to consumers experiencing a deficit of adequate knowledge, skills and/or access to possible avenues that could assist them in being more sustainable, which is often a result of poor community, municipal, and retail involvement.

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### INTRODUCTION

The postmodern society in which we find ourselves is one in which citizens create their unique identities and a sense of belonging, not by whom they associate with, but rather by what they consume (Arrow & Dasgupta, 2009). In a market-place shrouded by memories of a modern society that was characterised by mass produced goods, services and communication, we now face a different scenario with rapidly evolving consumer segments that display fragmented and unstable purchasing identities (Berner & van Tonder, 2003). As it stands currently, consumers are finding it increasingly challenging to find a common-ground between their social beliefs and ways in which to translate these into sustainable purchases (Young *et al.*, 2009). It is also said that leading a more sustainable lifestyle requires concerted effort and deliberation, which are elements that are not easily available to time-poor postmodern consumers. Therefore, in many instances sustainability is not implemented in daily consumption behaviour (Scott, 2006).

In terms of food consumption, this is reflected in the growing sales of convenience food products (Botonaki & Mattas, 2010). These days, few

consumers have enough time or are willing to apply any effort when preparing food (Brunner, van der Horst & Siegrist, 2010). Convenience therefore has an immense impact on the food choices of consumers today (Arrow & Dasgupta, 2009). This is a critical concern for the entire food industry as it affects not only product development, but also industry's social responsibility as the production of these products often leaves a worrisome carbon footprint (De Boer, McCarthy, Cowan & Ryan, 2003). Due to the current time-pressured lifestyle, for example, coupled with an increasing lack of cooking skills, it is a common trend among many postmodern households to rely on convenience food products without considering the consequences this might have in terms of additional waste creation and ultimately climate change.

A consumer's consumption behaviour is said to be shaped most expressively by his/her chosen lifestyle (Bin & Dowlatabadi, 2005). To date, the true lifestyle of a green consumer has not been comprehensively explained, since the description for this cohort is still unclear (Peattie, 2001). Along with the gap in our understanding of green consumers' lifestyles, there is a paucity of knowledge on the complex makeup of postmodern consumers. The paradigm of consumer lifestyles and its role in driving consumption behaviours is, in many instances, the key to understanding the motivation for adopting certain behaviours, such as sustainable food consumption. Empirical evidence derived from more developed countries has established that the typical sustainable consumer is female with above average schooling, is older, of a higher socio-economic background (D'Souza, Taghian, Lamb & Peretiako, 2006), and has a conscious tendency to adopt practices that are less harmful to the environment. Whether this description holds true for the consumer in the local South African context is debatable and further empirical research is needed. Despite the attention given to 'green' practices throughout society over the last decade (Chen & Chai, 2010), there is still no material evidence of these efforts and how the environment is indeed being relieved of the detrimental pressures of human inhabitation, especially in emerging economies such as South Africa.

In order to understand the reasoning behind the postmodern consumer's decision-making in the local context, and subsequently their involvement or lack of involvement in

sustainable food consumption practices, one needs to ascertain their learned knowledge on the subject, i.e. the problem of climate change. Ungar (2000) argues that consumers are stuck in the "knowledge-ignorance paradox", which he defines as the process by which the growth of specialised knowledge results in a simultaneous increase in ignorance. Since consumers have no detailed understanding of what climate change entails, they often feel overwhelmed by the magnitude of the information provided. They may experience a detachment to climate change and consequently, feel no need to take action. This also explains why little support is shown by the general public of more developed countries in terms of taking part and carrying out intervention policies. However, research is needed to confirm the current status quo in emerging markets such as South Africa. Based on the aforementioned arguments, this study was focused on investigating postmodern consumers' knowledge of climate change and subsequent food consumption practices in the local context. The following section provides further insight into the literature that served as a backdrop for this study.

## **THEORETICAL BACKGROUND**

### **Consumption and the mitigation of climate change**

Despite international agreements to make an effort to curb climate change (such as the Kyoto Protocol that was signed in 1997), it is evident that the world is getting warmer largely due to the presence of greenhouse gas emissions. This is a sign of a situation that might already be beyond control (Steg, Reijerink & Abrahamse, 2005). Since 1970, the Earth has warmed by 0.74 °C and projections indicate that the temperature will rise by at least 1 °C before 2050 (Wills, 2008). The World Bank (2013) cautions that the most recent estimates indicate that temperature increases could be as high as 4 °C. Although many might not consider this to be noteworthy, research done in South Africa by Ziervogel and Zermoglio (2009) has already shown that the current rise in temperature is profoundly affecting the country's food crop yields and that the projected rise in temperature could be detrimental as far as food security in the country is concerned (Madzwamuse, 2014).

Already two decades ago, the 1995 Intergovernmental Panel Report on Climate Change (IPCC) recorded a discernible human influence on the global climate, with subsequent

degradation of essential natural resources (IPCC, 1996). More recent reports have further cautioned that careless consumer lifestyles and behaviour are to blame for the rising temperatures that cause the reduction and depletion of the Earth's natural resources such as agricultural land, groundwater, air, minerals, and even life itself (Wills, 2008). According to the UK's Department for Environment, Food and Rural Affairs (DEFRA), the main human influence on global climate is the emission of key gases, namely, carbon dioxide, methane, and nitrous oxide (DEFRA, 2006). Reports issued by the International Council for Science (ICSU) (2011) add that globalisation, i.e. the growing and accelerated interconnectedness of the world, as well as the pressure that population growth exerts, are inducing planetary-scale changes in the Earth's life support system. Human activities and consumption apparently match, and more often exceed, the natural forces that regulate the Earth's system. The problem, however, is that human activity in the form of over-consumption is often encouraged by mass media and globalisation as this introduces a way of life that consumers aspire to (Lertwannawit & Mandhachitara, 2012).

Today, the ideal of "living life to the fullest, by means of increased consumption" contributes to the fact that 'consumption' is slowly gaining a negative destructive connotation (Kennedy, 2011). According to the 2011 International Council for Science (ICSU) report, developed economies are said to be "societies that are hyper-consumerist, with much of their consumption focused on improving their lifestyles" (ICSU, 2011:23). China, well-known as being a nation that is 'human-nature' orientated, is currently viewed as "the most ecologically unsound place in the world" (Chan & Lau, 2000:339). Many countries with a similar viewpoint are currently bearing the brunt of the industrialisation era. Most of these countries are paying a high ecological price for their rapid economic growth as they are worsening pollution and creating an accelerated depletion of critical resources such as drinkable water and clean air (Chan & Lau, 2000). Unless attention is given to this growing problem, in the near future consumers might find themselves not only desiring product variety on retail shelves but also longing for simple things like clean drinkable water (Gerbens-leenes & Nonhebel, 2002).

Based on the aforementioned arguments, it

becomes apparent that economic progress and consumers' increased consumption propensity have, over time, created a dilemma that may have irreversible consequences for the future. Intervention measures are fuelled by a growing recognition of this dilemma in several disciplines. If the human race wishes to sustain its standard of living, mankind needs to conserve natural resources such as land, air, water, minerals, and all living things, which may require a drastic reduction in the present rate of consumption (Marx-Pienaar & Erasmus, 2014). It is postulated that neglecting to address the above issues will result in future generations having to resort to a strategy of adaptation, which refers to dealing with the impact of climate change (IPCC, 2014). Rather than simply dealing with this impact, intervention, which in this situation refers to efforts to mitigate, reduce or prevent the emission of greenhouse gases (IPCC, 2014), is a more desirable course of action. Intervention could involve anything from the complex use of new technologies and renewable energy, or it could be as simple as changing retail practices or improving consumers' knowledge (including tacit and/or explicit knowledge) of climate change (IPCC, 2014).

#### **Postmodern consumers' tacit and explicit knowledge of climate change**

The Structuration Theory, which was initially proposed by Giddens (1984) and further applied by other researchers such as Tsoukas (2002), as well as Jones and Leonard (2009), dictates that there are two primary fields of knowledge at play in shaping consumer behaviour within a society, namely, explicit and tacit knowledge. Explicit knowledge is that which a consumer consciously relies on to make a decision (Jones & Leonard, 2009). This translates into the decisions that consumers make deliberately based on a repository of information they have on a particular matter. Nikols (2010) states that an individual's knowledge is seldom complete or errorless. Hence, consumers might know about a problem (explicit) but nevertheless lack knowledge about possible skills and/or avenues (tacit) that empower them with the 'know-how' to address the situation.

The rational thought process referred to in light of the modern consumer is identified as being structured and planned in nature. These types of decisions are said to be based on learned knowledge and acted upon by means of habit, an ingrained means of thinking. The postmodern

**TABLE 1: KNOWLEDGE OF CLIMATE CHANGE**

Climate change issues		CORRECT	INCORRECT
<b>Excellent</b> (80% - 100%)	An increase in the South African population will put further strain on our natural resources	95.7%	4.3%
	Saving electricity in our everyday living will contribute to saving our planet	91.4%	8.6%
	Pollution is currently one of the most critical problems in terms of the sustainability of South Africa's natural resources	83.3%	16.7%
<b>Good</b> (70% - 80%)	Pollution affects me personally to the same extent that it affects fellow citizens in South Africa	79.1%	20.9%
	The amount of energy used by my household has a significant impact on the environment	71.4%	28.6%
	My current purchase decisions will have consequences for the product availability of future generations	71.4%	28.6%
<b>Above average</b> (60% - 70%)	Climate change is caused by the presence of greenhouse gases in the air	69.5%	30.5%
	The economic growth of South Africa is influenced by environmental problems encountered	67.8%	32.2%
<b>Av.</b> (40% - 50%)	Climate change is a direct consequence of the hole in the ozone layer	58.6%	41.5%
<b>Poor</b> (below 40% mean)	The USA is the biggest producer of gases that contribute to air pollution	37.8%	62.2%
	Organic materials like compost heaps emit green-house gases that are harmful to the environment	26.1%	73.9%
	The average citizen can do very little to curb climate change	24.9%	75.1%
	The earth's resources are infinite and should be used to the full to increase the standard of living of all South African citizens	19.7%	80.3%
	I think that global warming is caused by the sun radiating (giving off) more heat	17.6%	82.4%
	All locally produced products are environmentally friendly	12.5%	87.6%
	Methane, which is responsible for a great deal of environmental damage, is only emitted by cars that are powered by fossil fuels	10.3%	89.7%
	Environmental pollution taking place in China does not have any impact on South Africa	5.2%	94.9%
Average score attained by the sample (n = 302) across all scale items		<b>49.5%</b>	<b>50.5%</b>

consumer varies in their thinking in this regard since they are said to act on an intuition level more than relying on explicit knowledge (Scott, 2006). Although the postmodern consumer is exposed to and has access to a wealth of information, their attitude towards climate change still appears to be primitive and ignorant in many respects. Various studies indicate that the layman individual often mistakes climate change for weather irregularities (Reynolds, 2010 in Tobler, Visschers & Siegrist, 2012). The lack of basic knowledge about what climate change is, how it works, and how it is impacted by the average consumer is said to be the single most important reason why there is a lack of personal engagement on the topic (Tobler, Visschers & Siegrist, 2012).

In addition to a lack of knowledge about climate change, which may prevent consumers from firstly grasping the problem at hand, and

secondly addressing the problem through applicable skills, current statistics show that most consumer behaviour reflects unsustainable food procurement practices (Marx-Pienaar & Erasmus, 2014). A deficit in either tacit or explicit knowledge could be the root problem as to why consumers are not incorporating sustainable food consumption behaviour in their everyday lifestyles. In other words, they might not have the facts (explicit knowledge), or may merely lack the skills to deal with it (tacit knowledge). With the above in mind, this study set out to provide some insight into postmodern consumers' explicit and tacit knowledge of climate change and subsequent food consumption practices in the local context.

## RESEARCH METHODOLOGY

The research design for this study was exploratory-descriptive and focused on gaining a

**TABLE 2: CONSUMERS' EXPLICIT KNOWLEDGE OF CLIMATE CHANGE ACROSS DEMOGRAPHIC CATEGORIES**

<b>Gender</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>
Male	93	52.44	31.062
Female	208	49.69	29.345
Total	301		
P-value (t-test)	0.462		
<b>Education</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>
Grade 12 or lower	71	47.81	29.844
Grade 12 and a degree / diploma	141	48.30	31.006
Postgraduate	89	56.64	27.352
Total	301	50.54	29.861
p-value (ANOVA)	0.070		
<b>Age</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>
15-20	4	61.76	14.003
21-25	48	61.76	30.263
26-30	68	44.12	29.947
31-35	56	47.92	31.573
36-40	56	47.58	29.877
41-45	27	50.84	32.599
46-50	12	55.34	27.227
51-55	13	53.92	26.103
56-60	10	63.35	23.821
61+	7	63.53	10.107
Total	301	68.07	29.861
p-value (Anova)	0.248		
<b>Population group</b>	<b>N</b>	<b>Mean</b>	<b>Standard deviation</b>
Asian	27	37.69	33.604
Black	37	39.59	30.899
Coloured	6	27.45	31.052
White	231	54.39	28.239
Total	301	50.54	29.861
P-value (Anova)	<b>0.000</b>		

**Bolded** p-values indicate significant differences ( $p \leq 0.05$ )

deeper understanding of the topic. A non-probability, convenience sampling approach was used to recruit consumers residing in the greater region of Tshwane with a demographic profile incorporating adult (over 18 years) males and females of various ethnic backgrounds. Using a cross-sectional research method allowed the researcher a snapshot of the sample at a given time (Babbie, 2010), and thus reflects the current state of the sustainable consumption knowledge of postmodern consumers in the Tshwane region. The research was conducted using a structured questionnaire consisting of five sections, and was administrated via an online channel. The online survey was forwarded to an initial respondent group who in turn further distributed the survey by means of snowball sampling. The responses were captured as each respondent completed the survey in their own time and at their own

discretion. Participation was voluntary and the respondents were assured of the confidentiality of their responses. The questions included those that are nominal (e.g. gender, age, area of residence); ordinal (e.g. income, retailer preference) and then also 4-point Likert scales (agree/disagree statements). Consumers' explicit knowledge of climate change was measured by asking them 17 true/false questions. The scale was a combination of six self-designed items, with eight items drawn from the Eco Scale (Stones, Barnes & Montgomery, 1995); two items drawn from the Social Responsible Consumption Scale (Antil & Bennet, 1979), and one item drawn from Dos Santos (2011). In order to investigate consumers' tacit knowledge of the subject, respondents were subjected to a pool of nine self-designed questions that reflected possible skills and avenues pertaining to sustainable

**TABLE 3: CONSUMERS TACIT KNOWLEDGE PERTAINING TO POSSIBLE SUSTAINABLE PRACTICES**

Consumers' tacit knowledge pertaining to possible sustainable practices	% Agree	% Disagree	Tacit knowledge score
Purchasing <b>refill items</b> instead of new containers is considered as environmentally friendly behaviour	87.2	12.8	Very good
<b>Buying goods</b> from retailers that are making a meaningful effort to reduce their carbon footprint is considered as environmentally friendly behaviour	82.8	17.2	
Having a <b>recycling system</b> in place is considered as environmentally friendly behaviour	84.8	15.2	
Using <b>food cut-offs</b> (e.g. peels, trimmings) to make a compost heap is considered as environmentally friendly behaviour	74.6	25.4	Poor
Supporting <b>locally produced food</b> items is considered as environmentally friendly behaviour	73.6	26.5	Very good
<b>Carefully planning</b> meals so that there is limited wastage = environmentally friendly behaviour	73.5	26.5	
Buying products in <b>bulk to save</b> from going to the shop too often is considered as environmentally friendly behaviour*	64.6	35.4	Poor
<b>Purchasing</b> pre-cutting vegetables limits waste and is considered to be environmentally friendly behaviour*	55.1	44.9	
Using <b>convenience food</b> products, e.g. ready-made meals, is considered to be environmentally friendly behaviour because producing a meal from scratch creates more waste*	72.9	27.1	Above average
Average score attained by the sample (n = 302) across all scale items	68.1	31.9	
	n	247	

\*reversed coded items

behaviour. The responses were then grouped into categories ranging from poor to excellent, which presented their level of knowledge on this subject. An average below 50% was interpreted as a **poor** reflection of explicit knowledge; 50 to <60 % was interpreted as average; 60 to <70% above average; 70 to <80% good; and 80 to <90% as very good. An average of 90% and above was considered excellent. Descriptive statistics, and an analysis of variance (ANOVA) were used to analyse and interpret the data, which is presented in the section to follow.

## RESULTS AND DISCUSSION

The results, as indicated in Table 1, reveal that the respondents' overall, explicit knowledge regarding issues pertaining to climate change was at most average, with respondents managing to answer only 49.5% of the questions correctly. Considering that these respondents were willing to complete the survey based on some interest regarding climate change issues, the actual knowledge deficit among the larger population might even be greater. This is concerning because the literature dictates that a poor explicit knowledge

regarding a topic such as climate change hinders potential remedial action, i.e. sustainable consumption.

Although, overall, the test results seem somewhat problematic and thus amplify the need for general education for all citizens regarding climate change, the findings pertaining to individual scale items, however, reveal some positive insights. The respondents mostly scored very good (above 80%) on issues such as the strain that a growing South African population places on the environment, the role of saving electricity at home, and the fact that pollution is currently a critical problem worldwide.

The respondents possessed good knowledge regarding issues such as the fact that pollution affects all citizens equally, the significance of electricity usage per household, and the fact that personal purchasing decisions have serious consequences for the natural environment. Fewer respondents, however, acknowledged that climate change influences the economic growth of South Africa. This can be interpreted

that most respondents failed to recognise the interdependency between the economy and the natural environment. Marx-Pienaar and Erasmus (2014) presented similar findings and concluded that consumers are often detached from the problem of climate change in their everyday life, which confirms that much can still be done to educate consumers about this issue.

Critical areas of concern are reflected in the respondents' lack of explicit knowledge regarding the contribution of organic materials, compost heaps and the role of the sun and ozone layer per se. As with this cohort, other studies have indicated that consumers often confuse the impact of the sun on the natural environment, specifically on the hole in the ozone layer, with changing climate conditions (Ungar, 2000). The respondents also scored poorly in terms of the role of methane, environmentally friendly products, as well as the infinity of the earth's natural resources. These could be viewed as highly theoretical issues that need to be explained in more simplistic terms to the general public in order to mitigate and encourage change. Gaining a deeper insight into the sample's explicit knowledge of climate change required performing a one-way analysis of variance (ANOVA), which showed significant differences within the Age, Education level, and Population group categories, while T-tests were done to identify significant differences between gender groups. The findings are presented in terms of the different demographic categories in Table 2. From the results presented in Table 2, it is evident that marginal differences exist in the level of explicit knowledge pertaining to climate change among the various demographic segments within the sample.

As presented by various authors, the demographic profile of a consumer does not necessarily lend itself naturally to certain behaviours, such as gaining proper explicit knowledge regarding climate change (D'Souza *et al.*, 2007). Having said this, some literature does support the profiling of the so called 'green consumer' (Patchen, 2006), and recently, the association of demographic characteristics, such as being female, older and more financially astute, with 'green consumers' is seen as acceptable practice.

#### **Consumers' explicit knowledge of climate change: Gender differences**

The sample of 301 respondents was dominated

by 69.1% females. There was, however, no significant difference ( $p = 0.462$ ) between the male and female explicit knowledge scores. The results in terms of the respective means revealed that males' ( $M = 52.44$ ) explicit knowledge was slightly higher than females' ( $M = 49.69$ ), although this was not statistically significant. It is evident from previous empirical studies that men have been found to be more knowledgeable about environmental issues, including climate change (i.e. explicit knowledge), whereas women have been observed to implement more sustainable consumer consumption behaviour (i.e. tacit knowledge) (D'Souza *et al.*, 2006).

#### **Consumers' explicit knowledge of climate change: Age differences**

Most of the respondents (59.8%) were between the ages of 26 and 40. In terms of the sample's explicit knowledge, no significant differences ( $p = 0.248$ ) could be confirmed among the respective age groups. It is therefore concluded in terms of this study that one's age cannot be used as a valid indicator of one's explicit knowledge on climate change. Although not statistically significant, it was noted that the age group 21 - 25 had the lowest score ( $M = 44.12$ ), which is somewhat concerning because they are the future consumers and should have ample access to sources of explicit knowledge. Overall, the respondents aged 50+ seemed to have a better understanding of climate change as opposed to the younger groups. This is confirmed by literature that indicates that the typical 'sustainable consumer' is older and has a higher socio-economic status (Marx-Pienaar & Erasmus, 2014).

#### **Consumers' explicit knowledge of climate change: Educational differences**

Consumers' explicit knowledge was investigated among the three educational level categories. Although the lowest educational level category (Grade 12 and lower) scored the lowest ( $M = 47.81$ ) regarding explicit knowledge, no significant differences ( $p = 0.070$ ) could be confirmed statistically. From this study, it emerged that the level of education is not a useful predictor of a person's explicit knowledge. It was interesting to note that respondents from the highest education level (Postgraduate) achieved the highest score ( $M = 56.64$ ), thus they are perceived to have the best explicit

**TABLE 4: POSSIBLE REASONS THAT PREVENT GENERAL INTERVENTION**

Statement	% Agree	% Disagree
My community/city does not have facilities to assist with/support sustainable living	51.6	48.4
I do not know enough about sustainable practices to implement any of them in my life	47.5	52.5
I do not think that children today are raised to show concern for the environment through everyday consumption practices	71.7	28.3

knowledge regarding climate change. This could be viewed as confirmation of the Structuration Theory's notion that 'structure' influences 'agents', i.e. exposure to higher level schooling results in better access to, and application of explicit knowledge.

### Consumers' Explicit Knowledge of Climate Change: Population (Ethnic) Differences

Patchen (2006) emphasises that different population groups inevitably result in different cultures, norms, and values. These differences, ultimately, could influence exposure to sources of explicit knowledge and thus influence consciousness and concern about climate change. The only area showing statistical differences was that of the population group. By means of ANOVA, significant differences were identified among the different population groups ( $p = 0.000$ ). The White population group ( $M = 54.39$ ) obtained a significantly higher score than the rest, who scored respectively 39.6% (Blacks); 37.7% (Asians) and 27.5% (Coloureds). Currently, the Black population group is the fastest growing market segment in South Africa. This should be viewed as a matter of great concern due to their poor insight (explicit knowledge) regarding climate change.

### Postmodern consumers' tacit knowledge in terms of sustainable food procurement practices

As touched on in the previous section, a consumer's frame of reference is based on two primary sources of information, namely, explicit and tacit knowledge. Nikols (2010) states that an individual's knowledge is seldom complete or error free. Hence, consumers might know about a problem (i.e. explicit) but nevertheless lack knowledge about possible skills and/or avenues (i.e. tacit) that empowers them with the 'know-how' to address the situation. Table 3 provides a summary of the responses and accompanying scores.

The respondents showed above average (68.1%) tacit knowledge regarding sustainable practices and thus it could be interpreted that most of the respondents had a sound understanding of and insight into possible avenues and skills that could be applied towards sustainable living. The findings relating to the individual scale items revealed that respondents had 'very good tacit knowledge' in terms of items pertaining to refilling products instead of buying new ones; buying products from reputable retailers; and having a recycling system. The results also indicate that the respondents had 'good tacit knowledge' regarding using household composting; supporting locally produced products; and limiting wastage by carefully planning meals.

When asked what the respondents' thoughts were on the disposing of kitchen waste and cut-offs, 74.6% believed that making a compost heap out of their kitchen trimmings and waste was an environmentally friendly notion. Although, this is a noble gesture (and in this study indicates good tacit knowledge), other studies, however, indicate that small-scale compost heaps such as those made by individuals or households are more detrimental to the atmosphere since individuals do not manage them in the correct manner. In turn, this assists the debris in fermenting in an unsustainable manner, thus giving off harmful greenhouse gas emissions (Marx-Pienaar & Erasmus, 2014). Furthermore, when food piles are not properly aerated, colonies of anaerobic bacteria flourish and produce methane gas along with carbon dioxide produced from the decomposing food stuffs. These gases both contribute to the problem of greenhouse gases in the atmosphere, which leads to global warming, and ultimately climate change. Apart from poorly maintained compost heaps giving off unpleasant odours (Lin, 2008), it is also a serious concern because of the high percentage of heavy metals that these heaps drain into the soil. Although these studies could argue that household composting is detrimental, this study argues that balancing the current tacit knowledge with sufficient explicit knowledge



regarding this highly scientific topic, along with support from the relevant 'structure' agents (such as the municipality or retailers), should encourage consumers to manage their compost heaps more responsibly.

Critical areas of concern were reflected by the respondents with below average – poor scores pertaining to bulk purchasing, purchasing of pre-cut produce, and the use of convenience foods. These household activities are mistaken as being beneficial to the environment, however, it is evident that there is a lack of explicit knowledge regarding these subjects. Studies have indicated that consumers often tend to waste more when their supplies are bountiful, such as when purchasing in bulk. The use of convenience foods is in many instances not the most efficient manner of food production and consumption, and contributes negatively to the environment. From the results, it is evident that the sample had some thought towards sound environmental behaviour with 73.5% (n = 247) of the sample indicating that they carefully planned their meals to minimise wastage and tried to buy their products from retailers that support sustainable vending.

These results are somewhat dampened by the fact that the majority of the respondents seemed to rely on convenience foods as a method of limiting wastage as 72.9% of the sample agreed that ready-made meals produce less waste than preparing meals from scratch. It is also worrisome to consider the high percentage of respondents that considered buying in bulk as being environmentally friendly, especially when reflecting on the fact that the majority of the respondents had very small households. It is therefore essential that consumers receive sufficient information about the consequences of not only using convenient food products, but also buying in bulk (hence planning their shopping lists better). This is, however, not a simple task due to the complexity and the particular fast-paced lifestyle maintained by most of the respondents. The sample under investigation were predominantly working females residing in above average residential areas with higher education, and greater exposure to external consumption practices. As explained by Bottonaki and Mattas (2010), time in the kitchen is often limited due to work constraints and family responsibilities, which explains a high reliance on convenience foods. This is an example of the influence of 'structure', which confirms Giddens' theory (1984) that the external environment has a fundamental impact

on 'agents' daily behaviour. The fact that they might purchase in bulk format is also a result of access to, or the availability of current product packaging. Both these findings are, once again, a confirmation of Giddens (1984) Structuration Theory's notion pertaining to the influence of 'structure' on the 'agent', i.e. the social pressures that encourage women to work long hours, which unfortunately results in them having to rely on time saving, pre-packaged, convenience food products (Buckley, Cowan, McCarthy & O'Sullivan, 2005).

### **Reasons that prevent general intervention**

As with most consumer behaviour phenomena, many explanations may describe reasons why certain behaviours are evident, whilst counter behaviour is not observed. This may be explained, for instance, with reference to postmodern consumers having sufficient knowledge of sustainable consumption behaviour yet their daily routines do not implement any of their learning. The initial assumption of this research suggests that the reason for postmodern consumers not being more actively engaged in sustainable food consumption behaviour is that they do not have the necessary knowledge to facilitate this behaviour. In order to investigate this issue further, the concluding section of the "consumer – willingness to change" scale included three additional questions that pertinently probed respondents about possible alternative reasons that might deter them from amending their current behaviour. These questions included, "My community/city does not have facilities to assist with or support sustainable living"; "I do not know enough about sustainable practices to implement any of them in my life," as well as, "I do not think that children today are raised to show concern for the environment". The results are shown in Table 4.

Although the immediate environment in which individuals dwell has a direct impact on their everyday routines, it cannot account for entire consumer thought-sets or associated behaviour. It is worthwhile noting that although a majority of 51.6% of the respondents pointed to their community not having adequate facilities to support or assist with sustainable living, 48.4% felt that their communities did support them. This raises the question of whether there could be other reasons, besides the community in which individuals live, that could have a direct impact on sustainable living practices or the lack

thereof. The Structuration Theory (Giddens, 1984) explains that 'structure' (the food retailer and the surrounding community in this case) are important role-players in affecting the behaviour of the agent (here, the postmodern consumer). The theory, however, also states that the agent is equally influential to the behaviour of the 'structure' (i.e. that is the role postmodern consumers have in influencing the business activities of their preferred food retailers). The results of this study reveal that the postmodern consumer is somewhat reluctant in terms of initiating sustainable consumption practices on their own, and they would rather rely on the retailers to do so on their behalf. The most common reason for postmodern consumers not taking the first step in this green journey could be attributed to their knowledge deficit.

At the time of the study, most of the respondents had access to services that assist with sustainability, which do not require strenuous effort from them to benefit from. Such services include weekly waste removal by municipal bodies. There are also, for instance, numerous retailers in the community that have recycling bins in their stores, which consumers could make use of. According to the 2011 Census data, 80.7% of Tshwane residents have weekly refuse removal, however, this is not specified as being refuse type specific, i.e. all refuse is collected mixed without separating glass, plastic, paper or metals. Other refuse removal services available in the district include Mondi paper collections on a weekly basis, although this does not explain the reasons for not separating refuse materials at present. It merely shows that the cohort in question had access to basic refuse removal facilities.

The overall difference in current postmodern consumers' behaviour and what they indicate they are willing to change to become custodians of sustainable consumption practices is dominated by a lack of proper knowledge (explicit knowledge) on the subject, as well as an absence of mitigating skills (tacit knowledge) in implementing this understanding into their daily practices. A catalyst is required to initiate this behaviour and make it a lifestyle rather than a chore. Since community and retailer involvement is so important in the view of postmodern consumers, perhaps this is a starting point for instigating change. Sustainable consumption does require a deliberate choice in the direction of societal transition – this includes the input of retailers, consumers, organisations and government, and therefore any hope of

becoming a greener society cannot hinge on one party only, it is a community effort (Aero, 2006; Chawla & Cushing, 2007). This cohort may have been of the opinion that under better guidance and community support their consumption behaviour would change in favour of the environment, however, 26% of South African adults (9.1 million citizens) admit to not making an effort to buy products that do not pollute the environment (AMPS, 2012). The conditions surrounding the lack of mitigation among this cohort is of concern and suggests that a more thorough investigation be made in order to attempt to address the problem of unsustainable consumer consumption behaviour.

## CONCLUSIONS AND RECOMMENDATIONS

The results from the research indicate that although consumers have an average explicit knowledge and above average tacit knowledge of climate change and possible general 'green' practices, there is still much room for improvement. Reflecting holistically on consumer's knowledge/consciousness reveals an imbalance between explicit and tacit knowledge, and it seems that respondents might have a better understanding regarding possible mitigation strategies versus actual knowledge. Consumers that were identified as most vulnerable due to their poor explicit knowledge were Black and other populations groups, as well as the young groups, despite their exposure to primary and secondary education that increasingly focus on climate change issues. When reflecting on the findings pertaining to tacit knowledge in particular, as compared to consumers' current practices, the question can be raised that if consumers already have sufficient knowledge, why do they refrain from applying it in their daily lives? What hinders their willingness to commit?

The findings indicated that although this cohort was very mindful of their consumption practices, they were not yet fully equipped with the relevant knowledge (explicit knowledge) to engage in sustainable consumption practices, nor did they believe their immediate surroundings offered the necessary infrastructure to do so ('structure'). Consumers' current food procurement practices ('practical consciousness') makes it apparent that much can still be done regarding the sustainability thereof. Critical areas of concern were identified, and it was confirmed that consumers could

benefit from more education regarding the topic of sustainability, which should change their current self-righteous outlooks, their skewed perceptions regarding price, quality and convenience and ultimately encourage them towards wiser consumer decision-making. It is suggested that the influence of retailers and marketers ('structure') be better harnessed and that the focus be shifted to building a sustainable future by supporting rather than exploiting consumers ('agents'). From the research conducted, it became evident that the respondents were humans before they were consumers, and their innate nature to preserve and protect themselves through a cloud of self-actualisation and instant gratification was seen as natural behaviour. This is even more concerning when considering that these respondents were perhaps more motivated than the general population because they were interested enough to complete an online survey on climate change. If anything, then, the research findings might understate the problem and more stringent effort is required to support and educate the next generation to become members of society that consume values and not only goods.

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