

Understanding energy-efficiency choices through consumption values: the central role of consumer's attention and trust in environmental claims

Paul Blaise Issock Issock

School of Business Sciences, University of Witwatersrand, Johannesburg, South Africa, and

Asphat Muposhi

Department of Information and Marketing Sciences, Faculty of Business Sciences, Midlands State University, Gweru, Zimbabwe

Abstract

Purpose – This study examines how consumption values influence consumers' purchase intention of energy-efficient home appliances in South Africa, an emerging market. The study further investigates the mediating role of consumers' attention to energy-efficient labels affixed on home appliances while making a purchase decision and the moderating effect of consumer trust in the environmental claims.

Design/methodology/approach – Using a quantitative approach, this study relied on self-administered questionnaires to collect data from 505 household representatives in South Africa's Gauteng Province. The proposed conceptual model was empirically tested using structural equation modelling, moderation and mediation analyses.

Findings – The results revealed that economic, emotional and social values can only influence consumers' intention to purchase energy-efficient appliances if consumers pay attention to the energy-efficiency label affixed on the appliance. Functional value, however, has a significant direct impact on purchase intention. Moreover, the results indicate that trust in energy-efficiency labels strengthens the effect of functional and emotional values on consumers' attention to energy-efficiency labels.

Originality/value – Findings of this study highlight the importance of capturing the attention of consumers to energy-efficiency labels during the buying process as well as increasing their trust in those labels. Results indicate that consumers are more attracted to the functional and social values that energy-efficient appliances provide. This study is of particular interest to policymakers, retailers and manufacturers, as it sheds light on key strategies to implement to effectively promote the purchase of energy-efficient household appliances in South Africa.

Keywords Energy-efficiency labels, Consumption values, Consumer attention, Consumer trust, South Africa

Paper type Research paper

1. Introduction

The United Nations Sustainable Development Goal number seven (SDG7) aims to ensure access to affordable and reliable energy as a way of mitigating global warming and climate change (United Nations, 2018). One way in which the manufacturing sector can contribute towards achieving SDG7 is through investment in energy-efficient products (Green and Pelozo, 2011; Zhang *et al.*, 2020). The production and marketing of energy-efficient household appliances are particularly important for attaining the target of zero energy homes (Saman, 2013). A focus on efficient use of energy is pertinent to South Africa as the country has been struggling with intermittent electricity supplies for the past decade (Ateba *et al.*, 2019). South Africa's residential sector is identified as strategic in promoting sustainable electricity use due to the growth in ownership and frequent use of massive electricity consuming appliances (Davis and Metcalf, 2016). The residential sector accounts for almost 19% of total electricity



consumption (Department of Mineral Resources and Energy, 2018). With the market size of major home appliances in South Africa expected to increase to 53.61% by the year 2025 (A Goldstein Market Intelligence Report, 2020), electricity consumption by household appliances is expected to increase. To enhance efficient use of energy, the South African government introduced a mandatory energy-efficiency label for all electrical appliances such as televisions, refrigerators and air conditioners sold in the country with effect from 2014 (Department of Mineral Resources and Energy, 2018). The implementation of a mandatory energy-efficient label for all-electric home appliances was motivated by the fact that energy-efficiency offers significant electricity conservation benefits than curtailment measures such as electricity rationing (Davis and Metcalf, 2016).

Worldwide, the scope of energy-efficiency labels varies based on the information they provide, the level of information that underpins them and whether they are voluntary or mandatory (Stadelmann and Schubert, 2018). The focus of this study is on mandatory energy-efficiency labels. Mandatory energy-efficiency labels such as EU Energy Label or South African Energy Label are guided by a legal framework that is regularly enforced and monitored. Although the need to save electricity is shared by most South African households (Khobai *et al.*, 2017), the purchase and use of home appliances with high energy-efficient remain low in the country (Davis and Metcalf, 2016; Issock *et al.*, 2018). A Goldstein Market Intelligence Report (2020) estimated sales of appliances with a high energy-efficiency rating in South Africa to be less than 20% of the total appliance market. This has resulted in what is known as the “energy-efficient gap”, a situation whereby a household’s electricity-saving concern does not translate into the actual behaviour of saving energy (Gerarden *et al.*, 2017). Therefore, there is a need for more insightful research on the consumption of energy-efficient products in an emerging market such as South Africa. This study is also premised on the view that the role of manufacturers of energy-efficient appliances should be extended to include stimulating consumer demand.

Previous studies on the use of energy-efficient appliances mainly focussed on the role of attitudes (Gaspar and Autunes, 2011), moral and rational factors (Tan *et al.*, 2017), the role of consumer knowledge (Gorton *et al.*, 2021), and the effect of subsidies (Wang *et al.*, 2017). The major limitation of previous studies (Tan *et al.*, 2017; Waris and Hameed, 2020; Yadav and Pathak, 2017) emanates from the over-reliance on rational theories such as the theory of planned behaviour and the theory of reasoned action. Specifically, these studies have failed to account for the attitude-intention-behaviour gap (Biswas and Roy, 2015). While understanding the influence of rational factors is of great importance, examining the influence of consumption values is critical (Amin and Tarun, 2021; Mohd Suki *et al.*, 2022). This is pertinent because, unlike rational factors, values are stable and transcend buying situations (Schiffman *et al.*, 2010). This view is further supported by empirical evidence which suggests that the choice of environmentally friendly products is guided by consumption-oriented values (Lin and Huang, 2012; Biswas and Roy, 2015). Thus, this study employs the theory of consumption values (TCV) (Sheth *et al.*, 1991) to understand the role of consumption values in informing the purchase intention of energy-efficiency products. In doing so, the present study further investigates whether while making a purchase decision, the impact of these consumption values on the intention to purchase energy-efficient appliances is conditioned by consumers’ attention to energy-efficiency labels affixed to household appliances.

Although paying attention to the environmental credentials displayed on a product is a key component of the consumers’ decision process (Drexler *et al.*, 2018; Issock *et al.*, 2018), consumers’ attention to such labels is often taken for granted (Wang *et al.*, 2019; Babakhani *et al.*, 2020). Evidence suggests that countless stimuli might distract consumers from paying attention to the environmental credentials when they make a purchase decision (Babakhani *et al.*, 2020; Drexler *et al.*, 2018). Thus, more effort is needed to stimulate consumers’ attention

to the environmental attributes displayed on the labels. Furthermore, the crucial contribution of consumer trust in fostering eco-friendly consumption cannot be overemphasised (Amin and Tarun, 2021; Waris and Hameed, 2020). The energy-efficiency attribute of a product is often difficult to prove as it is not as tangible as other attributes such as size, weight or package (Atkinson and Rosenthal, 2014). Thus, this paper sheds light on the potential moderating role of trust in the energy-efficiency label in the relationships between consumption values and consumers' attention to energy-efficiency labels.

The objectives of this study are threefold: (1) to examine the influence of consumption values on households' purchase intention of energy-efficient labelled appliances, (2) to examine whether paying attention to energy-efficiency label mediates the relationship between consumption values and paying attention and (3) to assess whether trust in eco-label moderates the relationship between consumption values and paying attention. Achieving these objectives will significantly contribute to the extant literature on the pro-environmental behaviour of promoting energy-efficient appliances. Moreover, by empirically testing a conceptual model, this study seeks to provide clarity on the dominant consumption values that lead to the purchase behaviour of energy-efficient household appliances. This study also contributes to efforts related to understanding the role of consumers' attention and trust in influencing the purchase behaviour of energy-efficient appliances. The findings of this study are expected to provide input for the design of effective campaigns aimed at promoting sustainable electricity consumption in South Africa which according to Davis and Metcalf (2016) is stalling a possibility of an energy crisis due to over-reliance on coal.

2. Energy-efficiency and consumer responsibility

Consumers and regulators are increasingly exerting pressure on corporates to consider the adverse impact of their products on the environment (Damert *et al.*, 2019; Zhang *et al.*, 2020). As a response, corporates in the manufacturing sector are embracing clean manufacturing technologies. In this regard, energy-efficient products are emerging as a form of sustainable innovation (Damert *et al.*, 2019; Zhang *et al.*, 2020). For example, Dell is manufacturing energy-efficient computers and recycling electronic wastes as part of its sustainable innovation strategy (Zhang *et al.*, 2020).

The importance of responsible consumption is supported by sustainable development goal number twelve (Kumar and Dholakia, 2016). Consumers' responsibility extends to include pushing companies to invest in low carbon emissions initiatives (Damert *et al.*, 2019). This is being done through responsible consumption by way of preference for environmentally friendly products (Jira and Toffel, 2013; Jabbour *et al.*, 2018). Moreover, consumers through the emerging green consumerism movement are compelling companies to act responsibly (Delmas and Montiel, 2009; Jabbour *et al.*, 2018). In return, consumers also should engage in responsible consumption which is stimulated by paying attention to the energy-saving messages conveyed through energy-efficient labels (Waris and Hameed, 2020).

The limited availability of alternative sources of energy in South Africa makes electricity-saving behaviour critical. For instance, Davis and Metcalf (2016) note that the infrastructure of alternative sources of energy such as solar and wind are not yet fully developed for mainstream use. In terms of accessibility, energy-efficient appliances are readily available as all manufacturers are mandated to produce them (Issock *et al.*, 2018). Thus, consumers are expected to act responsibly to bridge the energy-efficiency gap by buying energy-efficient appliances. As the energy-efficient label in South Africa is mandated and monitored by the government, the expectation is that perceptions of consumer mistrust should be minimum. In return, consumers also expect energy-efficient appliances to be of higher quality, affordable and contribute towards environmental sustainability (Issock *et al.*, 2018).

3. Theoretical framework and hypotheses development

This study is underpinned by the TVC. The TVC was propounded by Sheth *et al.* (1991) and postulates that consumer choice is influenced by functional, social, emotional, conditional and epistemic values (Sheth *et al.*, 1991). The integrative nature of the TVC, due to a combination of several consumer values (Amin and Tarun, 2021), makes it appropriate to explain the consumer decision-making process related to the purchase of energy-efficient appliances. To date, the TVC has been applied to understand factors influencing choice behaviour in several studies such as the purchase of green products (Biswas and Roy, 2015; Mohd Suki *et al.*, 2022), and brand preference (Sweeney and Soutar, 2001). This study focusses on functional, economic, social and emotional values because they are known to influence the purchase of durable goods such as household appliances (Schiffman *et al.*, 2010). Conditional and epistemic values are not considered in this study as they often have a limited impact on the decision to purchase high involvement products (Sweeney and Soutar, 2001).

To expand the TVC, this study also considers consumer trust as it is regarded as a key determinant of the purchase of products with environmental attributes (Chen, 2010; Amin and Tarun, 2021). Moreover, the proposed model also investigates the role of consumers' attention to energy-efficient labels in relation to the TVC variables. A recent study by Waris and Hameed (2020) note the dearth of studies focussing on understanding whether consumers pay attention to the value propositions of energy-efficient labels. The present study thus assesses the extent to which consumers pay attention to energy-efficient labels affixed on household appliances.

3.1 Functional value

In this study, "functional value" refers to the utilitarian beliefs associated with the use of energy-efficient household appliances. Quality and performance are primary considerations when selecting a product including household appliances (Zhang *et al.*, 2020). The functional value attributed to energy-efficient appliances emanates from advanced energy-saving innovation attributes that enhance operating efficiencies (Gaspar and Antunes, 2011) or working effect (Wang *et al.*, 2017). The functional value associated with energy-efficient appliances entices households to pay more attention to appliances affixed to such labels when making purchase decisions (Wang *et al.*, 2017; Waris and Hameed, 2020). Moreover, the functional value of energy-efficient appliances was found to have a significant effect on purchase intention (Tan *et al.*, 2017; Waris and Hameed, 2020). However, the depiction of the utilitarian cues of energy-efficient appliances has not been consistent across markets (Zhang *et al.*, 2020; Waris and Hameed, 2020). This is manifested in the marketplace by consumer differences in willingness to pay the higher price associated with such appliances (Ohler and Billger, 2014). To achieve this, the dissemination of accurate information on the benefits of energy-efficient appliances is imperative to enhance consumer attention. Based on empirical literature reviewed, we argue that the utilitarian belief of superior performance of energy-efficient appliances has the potential to influence households' purchase intention. It is thus postulated that:

H1a, b. Functional value has a positive effect on (a) paying attention (PA) and (b) purchase intention of energy-efficient appliances.

3.2 Economic value

In the current study, "economic value" alludes to electricity cost-saving advantages enjoyed by households upon buying energy-efficient household appliances. In theory, economic value is based on the principles of "mental accounting" which posits that individuals evaluate products based on the cost and benefit analysis framework (Kotler and Keller, 2012).

The value proposition used to market energy-efficient appliances is based on long-term cost savings that accrue to households due to electricity savings (Zhang *et al.*, 2020). In particular, the cost savings depicted on energy-efficient labels were found to draw consumers' attention and influence purchase decisions more than carbon emissions reduction metrics (Newell and Siikamäki, 2013; Gerarden *et al.*, 2015). However, Camilleri and Larrick (2014) observed the cognitive burden often confronted by households in attempts to calculate the long-term cost savings associated with buying energy-efficiency labels. For this reason, Gerarden *et al.* (2015) caution against the practice of displaying unclear messages on energy-efficient labels as they act as a constraint to consumer purchase decisions. Previous studies (Ohler and Billger, 2014; Gerarden *et al.*, 2015) found that the need to reap long-term cost savings associated with the purchase of energy-efficient appliances has the potential to entice consumers' attention and foster purchase intention. Thus, it is hypothesised that:

H2a, b. Economic value has a positive effect on (a) paying attention (PA) and (b) purchase intention of energy-efficient appliances.

3.3 Emotional value

Emotional value refers to a set of feelings associated with the purchase of energy-efficient appliances (Mohd Suki *et al.*, 2022). The performance of pro-environmental behaviour or failure thereof is known to trigger feelings of fear, guilt or pride (Lin and Huang, 2012). In South Africa, electricity outages and load shedding have triggered emotional responses from households and businesses (Ateba *et al.*, 2019). It thus becomes imperative for households to be mindful of their consumption of electricity. Empirical evidence indicates that when environmentally concerned individuals are made aware of their higher carbon footprint associated with energy consumption, they develop feelings of guilt while positive feedback on energy-saving behaviour was found to engender feelings of pride (Amin and Tarun, 2021). In the context of organic food consumption, Mohd Suki *et al.* (2022) established that consumers purchase organic food because they feel it is a personal contribution to the good of society and quality of life. Exposure to country-level information about excessive energy use has been found to trigger collective feelings of guilt that translate to energy-saving behaviour (Harth *et al.*, 2013). Consistent with the empirical literature reviewed, it is posited that:

H3. Emotional value has a positive effect on (a) paying attention (PA) and (b) purchase intention of energy-efficient appliances.

3.4 Social value

"Social value" refers to social benefits such as approval by peers or status enjoyed by a household from buying an energy-efficient appliance. The use of energy-efficient labelled appliances assists communities to mitigate adverse effects associated with greenhouse gas emissions such as climate change (Stadelmann and Schubert, 2018). Based on the tenets of TCV, consumers tend to prefer purchasing products that enhance in-group association, social identification, self-presentation and symbolism (Sweeney and Soutar, 2001). Regarding the purchase of energy-efficient appliances, prevailing social norms were found to enhance purchases of such appliances and electricity consumption monitoring behaviour (Tan *et al.*, 2017; Wang *et al.*, 2017). Also, altruistic social interest related to the desire to mitigate climate change was found to promote energy-saving behaviours (Ohler and Billger, 2014). When a household purchases an energy-efficient appliance, it shows concern for the environment, likely to gain social approval from peers and the resultant pro-environmental image has the potential to enhance purchase intention (Nguyen *et al.*, 2017). The social interests associated with climate change mitigation and reducing electricity shortage is expected to foster purchase intention of energy-efficient appliances. At the household level, family members

and environmental groups act as key socialisation agents in influencing purchase intentions of energy-efficient appliances (Gaspar and Antunes, 2011). Based on the ongoing account, it is thus postulated that,

H4a, b. Social value has a positive effect on (a) paying attention (PA) and (b) purchase intention of energy-efficient appliances.

3.5 Paying attention and purchase intention of energy-efficient labelled appliances

In the context of this study, “paying attention” measures the degree to which households are attentive to energy-efficiency labels when buying home appliances. The most critical point in the decision-making process of purchasing an eco-friendly product is when a consumer pays attention to an energy-efficiency label (Babakhani *et al.*, 2020). Past studies showed that the purchase of eco-labelled products depends on the degree to which households pay attention to the energy-efficiency labels at the point of purchase (Drexler *et al.*, 2018). Babakhani *et al.* (2020) found that there is a low propensity towards ordering low emissions menu items in restaurants because restaurant patrons pay little attention to carbon labels on the menu description. Drexler *et al.* (2018) had an opposite view as their experiments demonstrated that organic labels have a significant impact on the consumption of organic food products, but also indicated 73% of participants paid attention to organic labels in their decision-making. Visual augmentation of energy-efficiency labels was found to enhance the extent to which households pay attention and intent to purchase such appliances (Bull, 2012). By being attentive to energy-efficient labels, consumers are in a position to understand their value proposition, the ecological value of the product, and subsequently develop favourable purchase intentions (Tan *et al.*, 2017; Waris and Hameed, 2020). To be effective in eliciting consumer attention, energy-efficient labels should present technical product information in a manner that grabs consumer attention and that does not create ambiguity (Babakhani *et al.*, 2020). Thus, it is hypothesised that,

H5. Paying attention has a positive effect on the purchase intention of energy-efficient appliances.

Most decision-making theories models perceive visual attention as a central component of the consumer decision-making process and more precisely when choosing eco-labelled products (Drexler *et al.*, 2018; Babakhani *et al.*, 2020). When consumers pay attention to energy-efficient labelled appliances, their perceptions of value are created based on the value proposition conveyed through such labels (Waechter *et al.*, 2016). For instance, energy-efficiency ratings such as A+ or A++ communicate the economic value of the product in terms of energy-saving, functional value in terms of the expected useful life cycle of the household appliances, and the symbolic meaning relating to the social value associated with energy-efficiency labels (Meissner *et al.*, 2013). To effectively communicate a set of consumption values important to consumers, such labels ought to be identified as a differentiating factor from conventional appliances (Waechter *et al.*, 2016). This view gains support from a study by Babakhani *et al.* (2020) who emphasised that visual attention is the most important prerequisite to the choice of food with a carbon label. Moreover, Gorton *et al.* (2021) observed that environmental labels that have a similar appearance dilute the unique value propositions provided by the label. Based on the foregoing discussion, it is hypothesised that,

H6. Paying attention mediates the effect of (a) functional value, (b) economic value, (c) emotional value and (d) social value on purchase intention of energy-efficient appliances.

3.6 Moderating effect of trust

In relation to this study, “trust” refers to the extent to which the value and the claims used to market energy-efficient appliances are perceived as credible by consumers. Due to their

credence nature, the acceptance of energy-efficiency labels is highly dependent on trust (Gorton *et al.*, 2021). This is because consumers want to be reassured of the credibility of environmental claims described on eco-labels (Gorton *et al.*, 2021; Nuttavuthisit and Thøgersen, 2017). Trust in energy-efficiency labels enhances consumers' perception of value and assists in consumer decision-making (Gorton *et al.*, 2021).

However, poorly worded energy-efficiency labels were found to obscure product value which decreases brand visibility (Drexler *et al.*, 2018). This has the effect of confusing consumers and subsequently creates a negative purchase experience (Wobker *et al.*, 2015). Trust in eco-label is thus regarded as a key determinant of the consumers' attention to environmental labels (Klockner, 2012) and the purchase of labelled products (Nuttavuthisit and Thøgersen, 2017). Empirical research by Gorton *et al.* (2021) found that consumers' trust in an eco-label positively influence the usage of that eco-label. In addition, the trust accorded to energy-efficiency labels is contingent on the perception of customer value as measured by the quality and symbolic attributes (Chen and Chang, 2012). Several studies have posited trust as a critical moderating variable in models explaining consumption choices (Rampl *et al.*, 2012; Wobker *et al.*, 2015). For example, Rampl *et al.* (2012) found that consumer trust in the food retailing industry is an important enabler given the perceived risk and uncertainty when purchasing food at a retail store. Given the long-term replacement cycle of major household appliances such as refrigerators, the importance of trust is even more crucial for this study. It is thus hypothesised that,

- H7. Trust moderates the influence of (a) functional value, (b) economic value, (c) emotional value and (d) social value on paying attention.

4. Materials and methods

4.1 Fieldwork administration and sample profile

Following the positivist research philosophy, this study used a quantitative approach to test the proposed conceptual model and hypotheses. To collect the data, a survey was conducted using self-administered questionnaires. The paper-based questionnaires were collected in the Gauteng Province in South Africa. The reason for selecting the Gauteng Province is because although it is the smallest province in the country, Gauteng is home to consumers from various demographics and living standards (Stats SA, 2020). Moreover, the city of Johannesburg, the economic hub of the country and Tshwane (also known as Pretoria) the capital city, are located in the Gauteng Province. The target population of this study included consumers older than 18 years within the LSM 6–10 category residing in the Gauteng Province, and that have purchased home appliances with an energy-efficiency label in the past five years. This is because all distributors and manufacturers of home appliances sold in South Africa were compelled to display the energy rating on their products from the year 2014 (Department of Mineral Resources and Energy, 2018). Using a convenience sampling technique, 600 questionnaires were distributed to potential respondents. Four trained fieldworkers were recruited to distribute the questionnaires in various places including malls, houses, places of work and worship. The data collection spanned for two weeks. Out of the 600 questionnaires distributed, 505 questionnaires were found useable for data analysis which is above the required sample size for structural equation modelling (Hair *et al.*, 2014) and makes a notable 84% response rate.

Table 1 shows the demographic profile of the sample. The table indicates that most respondents in this study are below 45 years old (67%), female (58.6%) and educated given that 32% hold a degree and 21% have a postgraduate degree. Moreover, given the multicultural nature of the South African nation, all four racial groups are well represented in this study.

| Variable | Criteria | N | % |
|------------------|----------------|-----|------|
| Gender | Male | 208 | 41.4 |
| | Female | 295 | 58.6 |
| Age group | 18–25 | 68 | 13.7 |
| | 26–35 | 146 | 29.4 |
| | 36–45 | 125 | 25.2 |
| | 46–55 | 89 | 17.9 |
| | 56–65 | 56 | 11.3 |
| | Above 65 | 13 | 2.6 |
| Education | Primary School | 5 | 1.0 |
| | High School | 122 | 24.6 |
| | Diploma | 104 | 21.0 |
| | Degree | 161 | 32.5 |
| | Postgraduate | 103 | 20.8 |
| Racial group | Black | 226 | 45.5 |
| | White | 144 | 29.0 |
| | Coloured | 66 | 13.3 |
| | Indian | 61 | 12.3 |
| Household income | Less than 5 | 45 | 9.1 |
| | 5,001–10,000 | 77 | 15.7 |
| | 10,001–20,000 | 102 | 20.7 |
| | 20,001–30,000 | 88 | 17.9 |
| | 30,001–50,000 | 93 | 18.9 |
| | Above 50,000 | 87 | 17.7 |

Table 1.
Sample profile

4.2 Measurement scale and data analysis

The questionnaire used to gather the data in this study comprises three main sections. The first included two screening questions to ensure that all respondents are above 18 and have purchased a home appliance with an energy-efficiency label in the past five [1] years. The second section covered demographic variables as presented in Table 1. The last section measured the seven constructs that constitute the proposed conceptual model. All the scale items employed in this study were adapted from existing studies and almost all constructs except “paying attention” used a five-point Likert scale. To measure the consumption values, participants were requested to rate their level agreement while considering one home appliance having an energy-efficiency rating. Functional, economic, social and emotional values were adapted from Khan and Mohsin (2017). Functional values were measured through four items, while social, economic and emotional values used three scale items respectively. Environmental trust used five scale items adapted from Taufique *et al.* (2017). The study by Yadav and Pathak (2017) informed the measure of the construct purchase intention through four statements. Four scale items adapted from Thøgersen (2000) were used to measure the construct paying attention. For example, participants were asked how often they “Pay attention to the energy-efficiency label affixed to their home appliance before the purchase”. The response options ranged from never to always. Table 2 includes the statements used to measure the scale items.

Structural equation modelling (SEM) was used to empirically test the proposed model and hypothesised relationships. SEM is regarded as a robust and more precise statistical analysis technique for model validation as well as testing the interaction between model constructs (Hair *et al.*, 2014; Saunders *et al.*, 2016). SEM was conducted in AMOS version 26. In addition to SEM, descriptive statistics such as frequency, percentage, mean, median, standard deviation and common method bias assessment were performed on SPSS version 26.

| Constructs | Scale items | Factor loadings | CA | CR | AVE |
|---------------------|--|-----------------|-------|-------|-------|
| Functional values | My appliance is reliable | 0.830 | 0.897 | 0.898 | 0.687 |
| | My appliance is dependable | 0.872 | | | |
| | My appliance functions well | 0.812 | | | |
| | My appliance has an acceptable standard of performance | 0.799 | | | |
| Economic values | My appliance offers value for money | 0.812 | 0.851 | 0.851 | 0.656 |
| | My appliance is reasonably priced | 0.780 | | | |
| | My appliance is a buy for the purchase price | 0.836 | | | |
| Emotional values | My appliance makes me feel good | 0.818 | 0.875 | 0.877 | 0.704 |
| | My appliance gives me joy | 0.879 | | | |
| | Using this appliance gives me pleasure | 0.819 | | | |
| Social values | My appliance improves the way I am perceived by others | 0.885 | 0.948 | 0.949 | 0.862 |
| | My appliance helps me to feel acceptable in society | 0.973 | | | |
| Paying attention | Buying this appliance gives me social approval | 0.925 | 0.939 | 0.939 | 0.793 |
| | Pay attention to the energy-efficiency label pasted on it before the purchase | 0.876 | | | |
| | Compare environmental information on the energy-efficiency labels between home appliances | 0.873 | | | |
| | Show interest in the energy-efficiency labels on home appliances | 0.935 | | | |
| | Take notice of information about the energy-efficiency performance of home appliances | 0.877 | | | |
| Purchase intention | The probability that I purchase energy-efficient home appliances is very high | 0.852 | 0.906 | 0.907 | 0.71 |
| | I am willing to purchase home appliances that are more energy-efficient | 0.870 | | | |
| | I will make an effort to purchase home appliances that are more energy-efficient | 0.815 | | | |
| | I intend to buy home appliances that are more energy-efficient the next time I make a purchase | 0.832 | | | |
| | I believe that the energy-efficiency claims on home appliances are generally reliable | 0.876 | | | |
| Environmental trust | I think that the energy-efficiency labels on home appliances are generally dependable | 0.904 | 0.927 | 0.928 | 0.72 |
| | Overall, I believe that the energy-efficiency claims related to electronic home appliances are trustworthy | 0.853 | | | |
| | I believe energy-efficiency certification on home appliances are delivered by renowned experts and institutions | 0.825 | | | |
| | I believe energy-efficiency labels go through a systematic inspection before being affixed to the home appliance | 0.781 | | | |

Table 2.
Assessment of the reliability and convergent validity of the scales

5. Results and findings

5.1 Preliminary analysis

Harman's single-factor test was used to examine the possibility of common method bias given that this study relied on self-reported data. An exploratory factor analysis was conducted. All observed variables in the model were loaded on a single factor using an unrotated factor solution in the exploratory factor analysis on SPSS 26. The variance explained by the single factor was 39.23% which is below the recommended 50% cut-off (Podsakoff *et al.*, 2003).

Thus, common method bias was not an issue in this study. Moreover, the central tendency measures, and the assessment of normality through the skewness and kurtosis values are provided in Table 2. The results show that respondents agreed with most statements. All the kurtosis values are below 7 indicating that no measurement item is considerably kurtotic (Malhotra *et al.*, 2017). Although the variables are slightly skewed to the right, the skewness values are below |1|. There are therefore no substantial deviations from normality.

5.2 Reliability and validity

Confirmatory factor analysis was employed to assess scale reliability and validity. The reliability of the scale assessed through the Cronbach Alpha (CA) and confirmed by the composite reliability (CR) showed positive results as all scales have a CA and CR value above 0.7 (Hair *et al.*, 2014).

In terms of construct validity, the convergent validity was first assessed to determine whether the measurement significantly items load in their respective latent constructs. The convergent validity was established by the factor loadings of observed variables which ranged from 0.78 to 0.973, above the 0.5 cut-off (Saunders *et al.*, 2016). The convergent validity of scales was further confirmed by the average variance extracted (AVE) presented in Table 2 which all surpassed the threshold of 0.5 (Hair *et al.*, 2014).

Discriminant validity was assessed to determine the extent to wish a latent construct is distinct from other constructs. Discriminant validity was evaluated using two techniques. The first technique was developed by Fornell and Larcker (1981) and it compares the \sqrt{AVE} and the highest inter-construct correlation coefficients. The upper part of Table 3 indicates that discriminant validity was established, given that the \sqrt{AVE} was above all the inter-construct correlation values. The second technique was the heterotrait-monotrait (HTMT) ratio of correlations developed by Henseler *et al.* (2015) presented in the lower part of Table 3. The results show that HTMT ratio values ranged from 0.155 to 0.744, which were lower than the prescribed 0.85 threshold value. This indicates that discriminant validity of all constructs in the model is confirmed.

| Correlation matrix | | | | | | | |
|--------------------|----------|----------|----------|----------|----------|----------|-------|
| | FV | EmV | EcV | SV | PA | PI | Trust |
| FV | 0.829 | | | | | | |
| EmV | 0.690*** | 0.839 | | | | | |
| EcV | 0.749*** | 0.655*** | 0.81 | | | | |
| SV | 0.276*** | 0.458*** | 0.317*** | 0.928 | | | |
| PA | 0.328*** | 0.340*** | 0.158** | 0.331*** | 0.891 | | |
| PI | 0.488*** | 0.460*** | 0.364*** | 0.270*** | 0.573*** | 0.842 | |
| EnTrust | 0.440*** | 0.461*** | 0.393*** | 0.377*** | 0.435*** | 0.530*** | 0.848 |

| HTMT Ratio | | | | | | | |
|------------|-------|-------|-------|-------|-------|-------|-------|
| | FV | EmV | EcV | SV | PA | PI | Trust |
| FV | | | | | | | |
| EmV | 0.694 | | | | | | |
| EcV | 0.744 | 0.658 | | | | | |
| SV | 0.29 | 0.478 | 0.334 | | | | |
| PA | 0.328 | 0.34 | 0.155 | 0.331 | | | |
| PI | 0.489 | 0.465 | 0.359 | 0.289 | 0.571 | | |
| Trust | 0.445 | 0.469 | 0.399 | 0.397 | 0.432 | 0.536 | |

Note(s): *** significant at 0.01 level | \sqrt{AVE} (on the diagonal)

Note(s): FV: Functional values; EmV: Emotional values; EcV: Economic Value; SV: Social value; PA: Paying attention; PI: Purchase intention; Trust: Trust in eco-labels

Table 3.
Assessment of
discriminant validity

5. 3 Results on the hypotheses: structural model, mediation and moderation

The model fit indices of the structural model show that the data fits the proposed structural model as all the fit indices are above the required threshold (Saunders *et al.*, 2016). Chi-square/degree of freedom (CMIN/DF) = 2.710; Comparative Fit Index (CFI) = 0.965; Goodness of Fit Index (GFI) = 0.919; Tucker–Lewis Index (TLI) = 0.958; Normed Fit Index (NFI) = 0.946; root mean square error of approximation (RMSEA) = 0.058; standardised root means square residual (SRMR) = 0.039. The results on the hypothesised structural relationships in the model are summarised in Table 4 and presented in Figure 1.

The results presented in Table 4 indicate that all the four consumption values in the model significantly influence the consumer’s attention to eco-labels explaining 21% of its variance ($R^2 = 0.21$). While functional ($\beta = 0.376$; $p < 0.01$), emotional ($\beta = 0.174$; $p < 0.01$) and social values ($\beta = 0.248$; $p < 0.01$) have a positive impact on paying attention, the results show that economic value ($\beta = -0.317$; $p < 0.01$) has a negative but significant influence on paying attention. The hypotheses H1a, H3a and H4a are accepted while H2a, is rejected. Moreover, the results show that the model explains 44% of the variance of purchase intention ($R^2 = 0.44$). The intention to purchase eco-labelled products is thus mostly influenced by the attention consumers pay to eco-labels ($\beta = 0.445$; $p < 0.01$) and the functional value they hold ($\beta = 0.215$; $p < 0.01$). The hypotheses H1a and H5 are accepted. The direct impact of emotional, economic and social on the intention to purchase eco-labelled products is not statistically significant ($p > 0.05$). Therefore, the hypotheses H2b, H3b and H4b are rejected.

Furthermore, the conceptual model suggests that the influence of consumption values on purchase intention is mediated by the attention that consumers pay to eco-labels affixed to products. The mediating role of paying attention was thus tested on AMOS version 26 using the maximum likelihood estimation technique, a bias-corrected confidence interval of 95% and a bootstrapping with 5,000 resamples. The results presented in Table 5 show the indirect effects (mediating effect) and direct effects as hypothesised in the conceptual model.

Consumer’s attention to eco-labels mediates the impact of all four consumption values on the intention to purchase eco-labelled products as the indirect effects (mediating effects) are significant ($p < 0.05$). The non-significant direct effect of economic, social and emotional values on purchase intention indicates that paying attention fully mediates the impact of these values on purchase intention. This means that consumers’ social, economic and emotional values influence consumers’ purchase intention only when they pay attention to eco-labels.

| Predictors | Outcome variable | Explained variance | Critical ratio | <i>p</i> -value | Path estimate | Decision on hypotheses |
|------------------|----------------------|--------------------|----------------|-----------------|---------------|------------------------|
| Functional value | → Paying attention | 0.21 | 4.376 | 0.01 | 0.376 | H1a Accepted |
| Economic value | → | | -3.776 | 0.01 | -0.317 | H2a Rejected |
| Emotional value | → | | 2.265 | 0.024 | 0.174 | H3a Accepted |
| Social value | → | | 4.979 | 0.01 | 0.248 | H4a Accepted |
| Functional value | → Purchase intention | 0.44 | 2.763 | 0.006 | 0.215 | H1b Accepted |
| Economic value | → | | 0.683 | 0.495 | 0.051 | H2b Rejected |
| Emotional value | → | | 1.93 | 0.064 | 0.131 | H3b Rejected |
| Social value | → | | -0.36 | 0.719 | -0.016 | H4b Rejected |
| Paying attention | → | | 9.741 | 0.01 | 0.455 | H5b Accepted |

Table 4.
Results of the structural model

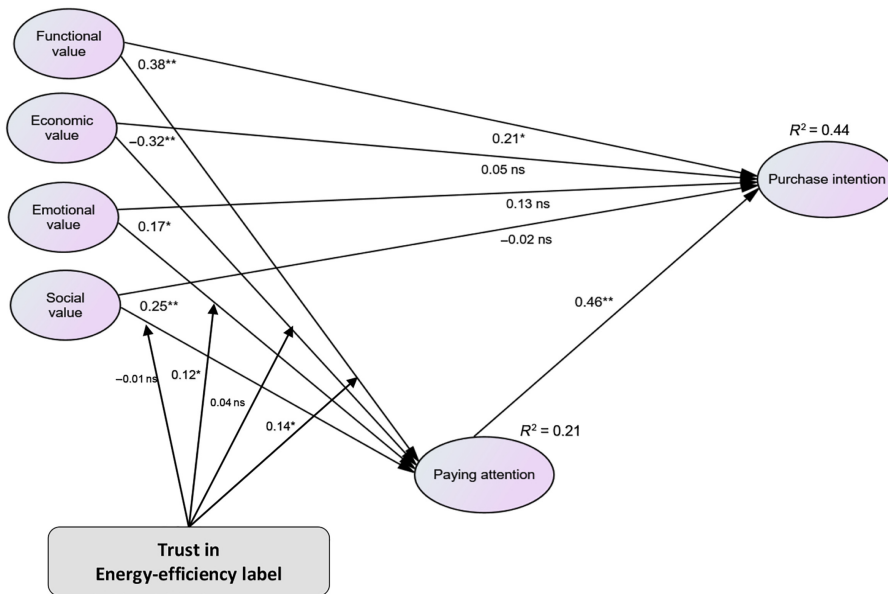


Figure 1. Structural model

| Mediation of <i>paying attention</i> | | Functional value | Economic | Emotional value | Social |
|--------------------------------------|-----------------|-------------------|----------------|-----------------|----------------|
| Indirect effect | <i>p</i> -value | 0.002 | 0.002 | 0.05 | 0.001 |
| | Estimate | 0.171 | -0.144 | 0.079 | 0.113 |
| Direct effect | <i>p</i> -value | 0.02 | 0.55 | 0.086 | 0.74 |
| | Estimate | 0.215 | 0.051 | 0.131 | -0.016 |
| Total effect | <i>p</i> -value | 0.001 | 0.311 | 0.011 | 0.049 |
| | Estimate | 0.386 | -0.093 | 0.21 | 0.097 |
| Decision on hypothesis | | H6a: Accepted | H6b: Accepted | H6c: Accepted | H6d: Accepted |
| Type of mediating effect | | Partial mediation | Full mediation | Full mediation | Full mediation |

Table 5. Mediating effects of paying attention

Conversely, a partial mediation was observed in the path functional value -purchase intention because the direct effect is statistically significant. This indicates that consumers' functional value can directly influence purchase intention without paying attention to eco-labels.

The moderating effect of trust in the relationship between consumption values and paying attention was tested. The macro PROCESS in SPSS version 26 developed by Hayes (2013) was used to test the moderation. The grand mean centring was used to transform the moderator trust into low and high levels of trust (Field, 2013). A bootstrapping technique (with 5,000 resamples) was used to test the significance of the interaction effect (moderating effect). Trust in eco-labels as shown in Table 6 and depicted in Figure 2, significantly moderates the impact of functional value ($\beta = 0.145; p < 0.05$) and emotional value ($\beta = 0.126; p < 0.05$) on paying attention but not the effect of economic and social values ($p > 0.05$). These results infer that trust in eco-label reinforces the positive influence of functional and emotional values on paying attention respectively. This provides empirical supports for hypotheses H7a and H7c, while H7b and H7d are rejected.

6. Discussion of findings

This study relied on the theory of consumption value to examine the effect of four key consumption values (functional, economic, emotional and social) on paying attention, and subsequently on the intention to purchase eco-labelled products. A positive effect of functional value on paying attention and purchase intention of energy-efficient appliances was found in this study. This finding suggests that households perceive energy-efficient appliances to be of high functional value, which may compel them to pay attention to such appliances and further, intend to purchase these appliances. Moreover, consistent with previous studies (Gaspar and Antunes, 2011; Wang *et al.*, 2017), this finding suggests the importance of emphasising the utilitarian attributes of energy-efficient appliances such as quality and performance as selling propositions.

Another result relates to the significant but negative impact of economic value on the attention to eco-labels. This points to the fact that the economic value perceived by consumers deviates their attention to the eco-labels on electronic products. Interestingly, this study revealed that consumers' intention to purchase home appliances is not influenced by economic values. Consequently, there is a possibility that the premium price associated with energy-efficient appliances deters consumers from paying attention and thus leading them not to develop favourable purchase intentions. This result may also suggest that consumers are not yet capacitated to calculate the lifetime economic value of energy-efficiency labels. This view is supported by Liobikiene and Bernatoniene (2017) who note the challenges confronting consumers in deducing the long-term economic returns of investing in energy-efficient products.

Social and emotional values were found to have significant positive effects on paying attention. This result suggests that social influences of important others such as family and peer networks are playing an important role in promoting attentiveness to energy-efficient labelled appliances. Also, high involvement products with environmental attributes are known to provide a "green" status to consumers (Elliott, 2013). Thus, feelings of pride associated with engaging in environmental citizenship behaviours may explain this heightened attention to energy-efficiency labels. Conversely, social and emotional values had an insignificant effect on purchase intention. Given this surprising result, a further analysis was conducted to investigate the possible mediating effect of paying attention to the relationship between these consumption values and the intention to purchase energy-efficient home appliances.

The findings on the mediating role of paying attention revealed that consumers' perceived social and emotional values influence purchase intention only when they pay attention to the energy-efficient label affixed to the appliance. Conversely, the economic value does not directly weaken the consumer's intention to purchase energy-efficient labelled appliances, unless a consumer pays attention to the energy label in a purchase situation. Concerning functional value, this study reveals that consumers' intention to purchase energy-efficient labelled products is directly influenced by the perceived functional values retrieved from the product. This influence of functional value is however reinforced when they pay attention to energy-efficient labels affixed on appliances.

Table 6.
Moderating effect of
paying attention

| Path relationships | <i>p</i> -value | <i>t</i> -value | Moderating (interaction) effect | Hypothesis |
|-------------------------------------|-----------------|-----------------|------------------------------------|---------------|
| Functional value → Paying attention | 0.012 | 2.577 | 0.146 | H7a: Accepted |
| Economic value → Paying attention | 0.449 | 0.7563 | 0.041 | H7b: Rejected |
| Emotional value → Paying attention | 0.027 | 2.212 | 0.126 | H7c: Accepted |
| Social value → Paying attention | 0.723 | -0.354 | -0.016 | H7d: Rejected |

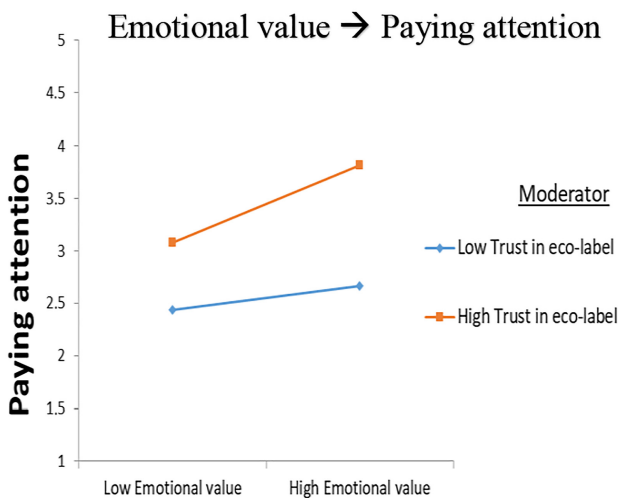
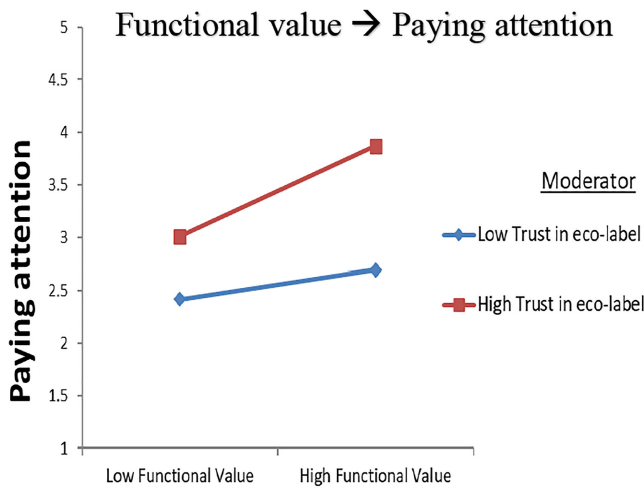


Figure 2.
Plots on the significant
moderating effect of
trust in eco-labels

The centrality of the consumer paying attention to energy-efficiency labels as a conduit of enhancing purchase intention was confirmed by previous studies (Drexler *et al.*, 2018; Babakhani *et al.*, 2020). Despite this important role of energy-efficiency labels in fostering purchase intentions of energy-efficient appliances, Babakhani *et al.* (2020) note that some energy-efficiency labels often go unnoticed by consumers. This explains the importance of enhancing the visibility of energy-efficient labels.

The third and final critical finding of this study is the moderating role of the trust that consumers have in energy-efficiency labels. The respective impact that consumers' perceived functional and emotional values have on their attention to an eco-label affixed to a product is intensified when they trust the environmental credentials portrayed on the eco-label. This finding is consistent with past research (Nuttavuthisit and Thøgersen, 2017; Wang *et al.*, 2019). Trust is of strategic importance, as consumers often feel incapable to authenticate

claims used to market energy-efficiency labels. For example, a study by Wang *et al.* (2019) found that suspicion of information displayed on energy-efficient labels has the effect of reducing purchase intentions. Therefore, the trust in information affixed on energy-efficiency labels should be considered as a prerequisite if consumers are to pay attention to such labels (Gorton *et al.*, 2021).

7. Implications

7.1 Theoretical implications

This study makes important research contributions on the consumption values-purchase intention relationship under the moderating effect of paying attention. First, this research extended the literature on energy-efficiency labels and consumption values. Previous studies mostly focussed on rational drivers drawn from theories such as the theory of planned behaviour (e.g. Tan *et al.*, 2017; Waris and Hameed, 2020; Yadav and Pathak, 2017). Our research sheds light on the role of consumption values as precursors of purchase intention. More importantly, it demonstrates the central role of consumers' attention to energy-efficiency labels on products in influencing their intention to purchase these labelled products. Our finding provides a different perspective to the literature on the drivers of consumption choices of eco-labelled products. Paying attention and trust are thus established as crucial elements in the consumer's decision-making process to purchase an eco-labelled product. The addition of paying attention and trust resonates with the calls by Sweeney and Soutar (2001) to improve the TCV as a way to enhance its predictive power. The conceptual model tested in this study explains 44% of the variance in intention to purchase energy-efficient appliances, which is above the average variance of 39% explained by established theories such as the theory of planned behaviour (Conner and Armitage, 1998).

Another important theoretical implication is the crucial moderating role of trust in the relationship between consumptions values and consumers' attention to eco-labels. Functional and emotional values have a stronger effect on consumers' attention to eco-label when their level of trust in the environmental claims on the product is high. This is an important finding as it confirms the centrality of consumer trust in the context of eco-friendly products. Environmental claims depicted on eco-labels are not usually palpable and provable like other attributes such as the price, the design, or the packaging of the product. Consumers, therefore, need to trust the environmental credentials disclosed by the manufacturer of the product.

7.2 Practical implications

Marketers, retailers and policymakers can benefit from these findings at several levels. First, the central role of households' attention to energy-efficiency labels calls for more efforts to ensure consumers pay attention to such labels. This can be done by ensuring that energy-efficient labels are not only noticeable but also attractive and informative, as suggested in the extant literature (Bull, 2012; Stadelmann and Schubert, 2018). In the specific case of home appliances, Stadelmann and Schubert (2018) emphasised the importance of positioning energy-efficient labelled samples on a vintage point in retail outs to enhance visibility. Consistent with this view and study findings, manufactures should consider increasing the size of energy-efficiency labels to enhance their visibility to customers. Salespersons in retail stores should also be cognisant of the energy ratings of their appliances and add the environmental credentials of such products in the sales pitch.

Trust emerged as a key moderator of the relationship between consumption values and paying attention. Based on this result, marketers and policy need to enhance consumer trust

to increase the likelihood of consumers paying attention to energy-efficiency labels. In this regard, policymakers should regularly monitor manufacturers to check adherence to energy-efficient products standards. This will go a long way in allaying consumer fears regarding the use of unsubstantiated environmental claims, a recurring concern in previous studies (Atkinson and Rosenthal, 2014; Nuttavuthisit and Thøgersen, 2017). Trust can also be stimulated through programmes initiated by appliance manufacturers with the aim to educate consumers about the environmental attributes of energy-efficient appliances as well as empowering them calculate the long-term cost-saving advantages provided by energy-efficient appliances. The role of energy-efficient labels is expected to grow in South Africa whose electricity generation is heavily dependent on coal which is fast depleting. Thus, to enhance trust and market appeal, the South African government may also consider including third party certification bodies in monitoring and auditing of manufacturers and retailers as this improves the credibility of the energy-efficient label (Vanclay *et al.*, 2011; Wang *et al.*, 2019).

The negative relationship between economic value and purchase intention of energy-efficient appliances suggests that consumers perceive economic challenges when it comes to the buying of such appliances. The premium price of energy-efficient products has been identified as a major deterrent of purchase behaviour (Gaspar and Antunes, 2011; Davis and Metcalf, 2016), more so in developing markets characterised by low-income levels. For instance, Davis and Metcalf (2016) note that the high cost of energy-efficient appliances compels consumers to overlook the long-term cost savings. Based on Gaspar and Antunes's (2011) recommendation, manufacturers and retailers of energy-efficient appliances may need to consider offering subsidies to assist consumers to have access to premium-priced energy-efficient appliances.

As the environmental attributes of energy-efficient appliances are not easily noticeable by consumers (Wang *et al.*, 2019), marketers may need to conduct educational campaigns aimed at improving current understanding of energy-efficient labels in South Africa. To be effective, as recommended by Polonsky *et al.* (2012) as well as Taufique *et al.* (2017), such campaigns should focus on disseminating specific knowledge about the societal and environmental benefits of energy-efficient appliances such as cost benefits and reduction in emissions. This is important as context specific environmental knowledge was found to enhance pro-environmental behaviour more than general environmental knowledge (Polonsky *et al.*, 2012). This can be done through the use of norm-based and moral suasion messages using opinion leaders. This according to Elliott (2013) proved to be useful in the marketing of high involvement products with environmental attributes.

The findings of this study may also be used as a basis for the development of an energy-efficient information policy by the Department of Mineral Resources and Energy which is the custodian of the energy-efficient label in South Africa. Such an information policy which was recommended by Shen and Saijo (2009) and implemented with success in China (Wang *et al.*, 2019), may be shared with consumers through South Africa's National Consumer Commission, which is responsible for consumer education and advocacy. Through the National Consumer Commission, consumers may also be empowered on how to get redress in the event of complaints related to the energy-efficient label. Public advertisements in the mainstream media can also be utilised to generate awareness of the energy-efficient information policy. To be effective, the piece of information should be conveyed in a manner that makes it easier for consumers to understand. Wang *et al.* (2019) discourage the use of too much technical information as it has the potential of limiting the understanding levels of consumers.

The South African government may also promote efficient use of energy through the implementation on international commitments on carbon emissions reduction. This can be done by adopting an energy mix strategy that focusses on promoting clean energy sources

such as photovoltaic, biomass and wind. The South African government can also speed up the liberalisation of the energy sector by granting licences to more private companies to produce and distribute electricity from sustainable sources.

8. Conclusion, limitations and directions for future research

This research sought to provide a different perspective on the topic of energy-efficient consumption at the household level. Households surveyed perceived energy-efficient appliances to be of high functional value and an important trigger of positive emotions that compel them to pay attention to such appliances and develop favourable purchase intentions. However, the high price of energy-efficient products as demonstrated by the negative impact of economic value on paying attention and purchase intention, emphasises the economic challenges confronting consumers in their efforts to adopt an eco-friendly lifestyle. Moreover, the non-significant influence of social value suggests that the behaviour of buying energy-efficient appliances is yet to be embedded amongst households. More importantly, the study demonstrated that unless consumers take time to pay attention to energy-efficiency labels, consumption values have little to no effect on their intention to purchase eco-friendly appliances. The study also confirmed the important role of trust in the energy-efficiency rating affixed on the product especially in the process of enhancing functional and emotional values.

Retailers, manufacturers and the South African government should consider investing in consumer education to empower them with necessary information to use during energy-efficient appliance product search. Disseminating information about the benefits of energy-efficient appliances has the potential of increasing demand. Such information is more likely to be effective when it is focussed on explaining the association between use of energy-efficient appliances and carbon emissions reduction. The purchase of energy-efficient appliances can also be monetised by communicating the long-term electricity and cost savings during their lifetime. In order to reach a broad target audience, multiple media channels such as digital, electronic and print can be utilised.

While this study makes some important contributions, the findings need to be taken with caution due to some limitations of this study. Firstly, this study relied on a cross-sectional design and self-reported data collected from households. There is a likelihood that some of the respondents may have inflated or deflated their responses. Moreover, the study relied on a convenient sampling technique. To address this, future studies should consider using other methods of data collection such as observations or field experiments that are considered more robust. More rigorous probability sampling techniques such as stratified sampling can be considered if there is access to an exhaustive sampling frame. Secondly, this research also relied on data collected in South Africa's Gauteng Province. Future studies may extend the study to other emerging countries to improve the generalisability of study findings. Lastly, the proposed conceptual model was limited to four consumption values. Future studies may examine the influence of other values such as conditional, knowledge, environmental, hedonic and epistemic values that were not considered in this study. This study also notes that South Africa's electricity generation is heavily dependent on coal which is fast depleting. Thus, future studies on energy-efficiency may also investigate the potential of clean energy sources such as photovoltaic, biomass and wind including their market perceptions.

Note

1. Past five years because the energy-efficiency policy was implemented in 2014 in South Africa. Thus, since 2014, all home appliances sold in South Africa had an energy-efficiency labelled affixed to them.

References

- A Goldstein Market Intelligence Report (2020), "South Africa home appliances market segmentation", available at: <https://www.goldsteinresearch.com/report/south-africa-home-appliances-market-analysis-forecast-to-2025> (accessed 2 November 2021).
- Amin, S. and Tarun, M.T. (2021), "Effect of consumption values on customers' green purchase intention: a mediating role of green trust", *Social Responsibility Journal*, Vol. 17 No. 8, pp. 1320-1336, doi: [10.1108/SRJ-05-2020-0191](https://doi.org/10.1108/SRJ-05-2020-0191).
- Ateba, B.A., Prinsloo, J.J. and Gawlik, R. (2019), "The significance of electricity supply sustainability to industrial growth in South Africa", *Energy Reports*, Vol. 5, pp. 1324-1338.
- Atkinson, L. and Rosenthal, S. (2014), "Signaling the green sell: the influence of ecolabel source, argument specificity and product involvement on consumer trust", *Journal of Advertising*, Vol. 43 No. 1, pp. 33-45.
- Babakhani, N., Lee, A. and Dolnicar, S. (2020), "Carbon labels on restaurant menus: do people pay attention to them?", *Journal of Sustainable Tourism*, Vol. 28 No. 1, pp. 51-68.
- Biswas, A. and Roy, M. (2015), "Green products: an exploratory study on the consumer behaviour in emerging economies of the east", *Journal of Cleaner Production*, Vol. 87, pp. 463-468.
- Bull, J.J. (2012), "Loads of green washing- can behavioural economics increase willingness- to-pay for efficient washing machines in the UK?", *Energy Policy*, Vol. 50, pp. 242-252.
- Camilleri, A.R.A.R. and Larrick, R.P.R.P. (2014), "Metric and scale design as choice architecture tools", *Journal of Public Policy and Marketing*, Vol. 33 No. 1, pp. 108-125.
- Chen, Y.S. (2010), "The drivers of green brand equity: green brand image, green satisfaction, and green trust", *Journal of Business Ethics*, Vol. 93 No. 2, pp. 307-319.
- Chen, Y.S. and Chang, C.H. (2012), "Enhance green purchase intentions: the roles of green perceived value, green perceived risk, and green trust", *Management Decision*, Vol. 50 No. 3, pp. 502-520.
- Conner, M. and Armitage, C.J. (1998), "Extending the theory of planned behaviour: a review and avenues for further research", *Journal of Applied Social Psychology*, Vol. 28 No. 15, pp. 1429-1464.
- Damert, M., Feng, Y., Zhu, Q. and Baumgartner, R.J. (2019), "Motivating low-carbon initiatives among suppliers: the role of risk and opportunity perception", *Resources, Conservation and Recycling*, Vol. 136, pp. 276-286.
- Davis, L.W.L.W. and Metcalf, G.E.G.E. (2016), "Does better information lead to better choices? Evidence from energy-efficiency labels", *JAERE*, Vol. 3 No. 3, pp. 589-625.
- Delmas, M. and Montiel, I. (2009), "Greening the supply chain. When is customer pressure effective?", *Journal of Economics and Management Strategy*, Vol. 18, pp. 171-201.
- Department of Mineral Resources and Energy (2018), "South African energy efficiency label", available at: <https://www.savingenergy.org.za/wp-content/uploads/2018/05/Energy-Label-Learner-Guide> (assessed 20 December 2021).
- Drexler, D., Fiala, J., Havlíčková, A., Potůčková, A. and Souček, M. (2018), "The effect of organic food labels on consumer attention", *Journal of Food Products Marketing*, Vol. 24 No. 4, pp. 441-455. No.
- Elliott, R. (2013), "The taste for green: the possibilities and dynamics of status differentiation through green consumption", *Poetics*, Vol. 41, pp. 294-322.
- Field, A. (2013), *Discovering Statistics Using IBM SPSS Statistics*, Sage, Los Angeles.
- Fornell, C. and Larcker, D.F. (1981), "Structural equation models with unobservable variables and measurement error: algebra and statistics", *Journal Marketing Research*, Vol. 18 No. 3, pp. 382-388.
- Gaspar, R. and Antunes, D. (2011), "Energy efficiency and appliance purchases in Europe: consumer profiles and choice determinants", *Energy Policy*, Vol. 39, pp. 7335-7346.

- Gerarden, T., Newell, R.G. and Stavins, R.N. (2015), "Deconstructing the energy-efficiency gap: conceptual frameworks and evidence", *American Economic Review*, Vol. 105 No. 5, pp. 183-186.
- Gerarden, T.D., Newell, R.G. and Stavins, R.N. (2017), "Assessing the energy-efficiency gap", *Journal of Economic Literature*, Vol. 55 No. 4, pp. 1486-1525.
- Gorton, M., Tocco, B., Yeh, C.H. and Hartmann, M. (2021), "What determines consumers' use of eco-labels? Taking a close look at label trust", *Ecological Economics*, Vol. 189, 107173.
- Green, T. and Peloza, J. (2011), "How does corporate social responsibility create value for consumers?", *Journal of Consumer Marketing*, Vol. 28 No. 1, pp. 48-56.
- Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. (2014), *Multivariate Data Analysis*, 7th ed., Pearson Education, Harlow, Essex.
- Harth, N.S., Leach, C.W. and Kessler, T. (2013), "Guilt, anger, and pride about in-group environmental behaviour: different emotions predict distinct intentions", *Journal of Environmental Psychology*, Vol. 34, pp. 18-26.
- Hayes, A.F. (2013), *Introduction to Mediation, Moderation and Conditional Process Analysis: A Regression-Based*, The Guilford Press, New York.
- Henseler, J., Ringle, C.M. and Sarstedt, M. (2015), "A new criterion for assessing discriminant validity in variance-based structural equation modeling", *Journal of the Academy of Marketing Science*, Vol. 43, pp. 115-135.
- Issock, P.B.I., Mpinganjira, M. and Roberts-Lombard, M. (2018), "Drivers of consumer attention to mandatory energy-efficiency labels affixed to home appliances: an emerging market perspective", *Journal of Cleaner Production*, Vol. 204, pp. 672-684.
- Jabbour, A., Jabbour, C., Sarkis, J., Gunasekaran, A., Alves, M. and Ribeiro, D. (2018), "Decarbonisation of operations management-looking back, moving forward: a review and implications for the production research community", *International Journal of Production Research*, Vol. 57 Nos 15-16, pp. 4743-4765.
- Jira, C. and Toffel, M.W. (2013), "Engaging supply chains in climate change", *Manufacturing and Service Operations Management*, Vol. 15, pp. 559-577.
- Khan, S.N. and Mohsin, M. (2017), "The power of emotional value: exploring the effects of values on green product consumer choice behavior", *Journal of Cleaner Production*, Vol. 150, pp. 65-74.
- Khobai, H., Mugano, G. and Roux, L. (2017), "Exploring the nexus of electricity supply and economic growth in South Africa", ESRA Working Paper 656, Economic Research South Africa, Cape Town.
- Klockner, C.A. (2012), "Should I buy organic food? A psychological perspective on € purchase decisions", *Organic Food and Agriculture: New Trends and Developments in the Social Sciences*, InTech.
- Kotler, P. and Keller, K.L. (2012), *Marketing Management*, Global edition, Pearson Education, New York.
- Kumar, B. and Dholakia, N. (2016), "Toward pro-sustainability actions: a macro-behavioral perspective", *Marketing in and for a Sustainable Society*, Emerald Group Publishing, Bingley, pp. 169-192.
- Lin, P. and Huang, L. (2012), "The influence factors on choice behaviour regarding green products based on the theory of consumption values", *Journal of Cleaner Production*, Vol. 22, pp. 11-18.
- Liobikienė, G. and Bernatoniene, J. (2017), "Why determinants of green purchase cannot be treated equally? The case of green cosmetics: literature review", *Journal of Cleaner Production*, Vol. 162, pp. 109-120.
- Malhotra, N., Nunan, D. and Birks, D. (2017), *Marketing Research: An Applied Approach*, 5th ed., Pearson, London.
- Meissner, M.M., Heinze, S.L.S.L. and Decker, R.R. (2013), "Not worth the extra cost? Diluting the differentiation ability of highly rated products by altering the meaning of rating scale levels", *Journal of Consumer Behaviour*, Vol. 12 No. 3, pp. 223-231.

- Mohd Suki, N., Majeed, A. and Mohd Suki, N. (2022), "Impact of consumption values on consumers' purchase of organic food and green environmental concerns", *Social Responsibility Journal*, Vol. 18 No. 6, pp. 1128-1141, doi: [10.1108/SRJ-01-2021-0026](https://doi.org/10.1108/SRJ-01-2021-0026).
- Newell, R.G. and Siikamäki, J. (2013), "Nudging energy efficiency behavior", *Journal of Association of Environmental and Resource Economists*, Vol. 1 No. 4, pp. 555-598.
- Nguyen, N., Antonio Lobo, A. and Greenland, S. (2017), "Energy-efficient household appliances in emerging markets: the influence of consumers' values and knowledge on their attitudes and purchase behaviour", *International Journal of Consumer Studies*, Vol. 41, pp. 167-177.
- Nuttavuthisit, K. and Thøgersen, J. (2017), "The importance of consumer trust for the emergence of a market for green products: the case of organic food", *Journal of Business Ethics*, Vol. 140 No. 2, pp. 323-337.
- Ohler, A.M. and Billger, S.M. (2014), "Does environmental concern change the tragedy of the commons? Factors affecting energy saving behaviors and electricity usage", *Ecological Economics*, Vol. 107, pp. 1-12.
- Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y. and Podsakoff, P.M. (2003), "Common method biases in behavioural research: a critical review of literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88 No. 7, p. 879.
- Polonsky, M.J., Vocino, A., Grau, S.L., Garma, R. and Ferdous, A.S. (2012), "The impact of general and carbon-related environmental knowledge on attitudes and behaviour of US consumers", *Journal of Marketing Management*, Vol. 28 Nos 3/4, pp. 238-263.
- Rampl, L.V., Eberhardt, T., Schütte, R. and Kenning, P. (2012), "Consumer trust in food retailers: conceptual framework and empirical evidence", *International Journal of Retail and Distribution Management*, Vol. 40 No. 4, pp. 254-272.
- Saman, W.Y. (2013), "Towards zero energy homes down under", *Renewable Energy*, Vol. 49, pp. 211-215.
- Saunders, M., Lewis, P. and Thornhill, A. (2016), *Research Methods for Business Students*, Pearson Education, England.
- Schiffman, L., Kanuk, L.L. and Wisenblit, J. (2010), *Consumer Behavior*, 11th ed., Pearson Prentice-Hall, Boston, London.
- Shen, J. and Saijo, T. (2009), "Does an energy efficiency label alter consumers' purchasing decisions? A latent class approach based on a stated choice experiment in Shanghai", *Journal of Environment Management*, Vol. 90 No. 11, pp. 3561-3573.
- Sheth, J.N., Newman, B.I. and Gross, B.L. (1991), "Why we buy what we buy: a theory of consumption values", *Journal of Business Research*, Vol. 22 No. 2, pp. 159-170.
- Stadelmann, M. and Schubert, R. (2018), "How do different designs of energy labels Influence purchases of household appliances? A field study in Switzerland", *Ecological Economics*, Vol. 144, pp. 112-123.
- Sweeney, J.C. and Soutar, G.N. (2001), "Consumer perceived value: the development of a multiple item scale", *Journal of Retailing*, Vol. 77, pp. 203-220.
- Tan, C., Ooi, H. and Goh, Y. (2017), "A moral extension of the theory of planned behavior to predict consumers' purchase intention for energy-efficient household appliances in Malaysia", *Energy Policy*, Vol. 107, pp. 459-471.
- Taufique, K.M.R., Vocino, A. and Polonsky, M.J. (2017), "The influence of eco-label knowledge and trust on pro-environmental consumer behaviour in an emerging market", *Journal of Strategic Marketing*, Vol. 25 No. 7, pp. 511-529.
- Thøgersen, J. (2000), "Psychological determinants of paying attention to eco-labels in purchase decisions: model development and multinational validation", *Journal of Consumer Policy*, Vol. 23 No. 3, pp. 285-313.
- United Nations (2018), *Sustainable Development Goal 7: Ensure Access to Affordable, Reliable, Sustainable and Modern Energy for All*, United Nations Environmental Programme, New York.

-
- Vanclay, J.K., Aulsebrook, S., Gillespie, A.M., Howell, B.C., Johanni, R., Maher, M.J., Mitchell, K.M., Stewart, M.D. and Yates, J. (2011), "Customer response to carbon labelling of groceries", *Journal of Consumer Policy*, Vol. 34 No. 1, pp. 153-160.
- Waechter, S.S., Sütterlin, B.B., Borghoff, J.J. and Siegrist, M.M. (2016), "Letters, signs, and colors: how the display of energy-efficiency information influences consumer assessments of products", *Energy Research and Social Science*, Vol. 15, pp. 86-95.
- Wang, Z., Wang, X. and Guo, D. (2017), "Policy implications of the purchasing intentions towards energy-efficient appliances among China's urban residents: do subsidies work?", *Energy Policy*, Vol. 102, pp. 430-439.
- Wang, Z., Sun, Q., Wang, B. and Zhang, B. (2019), "Purchasing intentions of Chinese consumers on energy-efficient appliances: is the energy efficiency label effective?", *Journal of Cleaner Production*, Vol. 238, 117896.
- Waris, I. and Hameed, I. (2020), "An empirical study of consumers' intention to purchase energy efficient appliances", *Social Responsibility Journal*, Vol. 17 No. 4, pp. 489-507.
- Wobker, I., Eberhardt, T. and Kenning, P. (2015), "Consumer confusion in German food retailing: the moderating role of trust", *International Journal of Retail and Distribution Management*, Vol. 43 No. 8, pp. 752-774.
- Yadav, R. and Pathak, G.S. (2017), "Determinants of consumers' green purchase behavior in a developing nation: applying and extending the theory of planned behavior", *Ecological Economics*, Vol. 134, pp. 114-122.
- Zhang, Y., Xiao, C. and Zhou, G. (2020), "Willingness to pay a price premium for energy- saving appliances: role of perceived value and energy efficiency labeling", *Journal of Cleaner Production*, Vol. 242, 118555.

Corresponding author

Asphat Muposhi can be contacted at: vmunhewu@gmail.com