

The importance of customer trust for social marketing interventions: A case of energy-efficiency consumption

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Abstract

Purpose – The study examines the importance of relationship marketing and particularly customer trust in energy-efficiency labels in social marketing interventions geared towards energy-efficient consumption.

Methodology – A conceptual model was empirically tested on a sample of 517 users of electronic appliances living in South Africa. The study involved a cross-sectional design, and data were collected through a self-administered survey. Structural equation modelling and mediation analysis were used to test the hypothesised relationships.

Findings – The results indicated that customer trust is influenced by customers' perception of the price and quality of energy-efficiency products, their attitude towards such products, and their level of satisfaction with the environmental performance of the products. Customer trust, in turn, showed a positive influence on the customers' intention to purchase energy-efficiency products and their loyalty to such products. As a central variable, customer trust was found to be an important mediator in the conceptual model.

Practical implications – The findings provide social marketers with important insights on the critical role that customer trust plays in achieving a long-term behavioural shift towards energy-efficient consumption.

Originality/value – Focusing on customer trust in energy-efficiency labels, this study provides empirical evidence of the mediating role of trust in influencing the intention to purchase and the decision to remain loyal to eco-friendly products. Moreover, this paper provides greater clarity on various levers to be activated to enhance the trust that customers have in energy-efficiency labels.

Keywords Customer trust, Energy-efficiency labels, Relationship marketing, Social marketing, Purchase intention, Customer loyalty

1. Introduction

Social marketing is described as the application of commercial marketing principles to the analysis, planning, execution and evaluation of programmes designed to influence behaviours that will benefit society as a whole (Andreasen, 2006). Although social marketing is not confined to applying commercial marketing principles (French and Russell-Bennett, 2015), its core tenets emulate those of commercial marketing (Butler *et al.*, 2016; Gordon *et al.*, 2018; Lee and Kotler, 2016; Mulcahy *et al.*, 2015). However, since inception, social marketing has largely embraced the transactional paradigm of the commercial marketing toolbox and been slow to adopt its relational thinking (Hastings, 2003; Marques and Domegan, 2011; Díaz Meneses and Rodríguez, 2015). This overlooking of Relationship Marketing (RM) components can be explained by the fact that social marketing programmes are dominated by publicly funded short-term programmes (Donovan *et al.*, 2015) that do not always allow for long-term relationship building with the targeted audience (Hastings, 2003). Therefore, there have been repeated calls (Hastings, 2003; Marques and Domegan, 2011; Brennan *et al.*, 2016; Díaz Meneses and Rodríguez, 2015; Wood, 2016) for social marketers to embrace RM as a strategic paradigm for sustained behaviour changes. Relationship marketing is a growing school of thought that incorporates all the processes of identifying, developing, maintaining and terminating relational exchanges with the purpose of enhancing performance (Marques and Domegan, 2011; Ndubisi, 2007).

While social marketing has been successful in changing a myriad of behaviours, maintaining a long-term behavioural change has often been a challenge (Brennan *et al.*, 2016; Díaz Meneses and Rodríguez, 2015). The behavioural change advocated by social marketing programmes should not be merely a short-term venture but a long-term one that requires time to occur (Brennan *et al.*, 2016; Dessart and Van Bavel, 2017). It is therefore important for social marketers to have a long-term perspective in understanding and engaging with their target audiences for sustained behaviour change (Hastings, 2003; Marques and Domegan, 2011).

The RM literature identifies customer trust as a key enabler for sustained relationships with customers (Brown *et al.*, 2018; Ndubisi, 2007; Hobbs and Goddard, 2015) and as an important driver for successful social marketing interventions (Brennan *et al.*, 2016; Letheren *et al.*, 2019; Marques and Domegan, 2011;). Hastings (2003, p. 9) is of the opinion that “social marketing is founded on trust” because trust is the foundation of a long-term commitment between parties (see also Hobbs and Goddard, 2015; Ndubisi, 2007; Brown *et al.*, 2018). Furthermore, in advocating for relational thinking in social marketing, Brennan *et al.* (2016), as well as Letheren *et al.* (2019), highlight the centrality of trust in the behavioural change process. However, based on recent social marketing literature reviews (Almosa *et al.*, 2017; Truong and Dietrich, 2018), there is limited empirical work connecting RM components such as customer trust to social marketing strategies.

The aim of this study is therefore to examine the role of customer trust in building the long-term adoption of energy-efficient products in South Africa. By expounding the importance of customer trust in social marketing research, this study contributes to a progressive shift of social marketing thinking towards the relational paradigm of marketing. The focus of this study is on the ongoing product-based social marketing intervention¹ that champions the usage of electronic appliances with high energy-efficiency features. The purpose of the policy is to compel all manufacturers of electronic home appliances to display an energy-efficiency label on their products in order to guide customers in their purchase decision. Thus, all electronic appliances sold in South Africa undergo a quality test to guarantee that they meet South African standards, with the costs being absorbed by manufacturers. The policy also requires all retailers to explain to buyers the benefits of purchasing appliances with high energy-efficiency ratings, as part of their sales pitch (Department of Energy, 2018).

Having highlighted the central role of customer trust in social marketing interventions, with reference to the current eco-labelling scheme applied in South Africa, the paper next examines the dominant antecedents and outcomes of customer trust in energy-efficiency labels, with reference to existing theory and relevant research, and proposes a conceptual model in this regard. This is followed by a description of the research methodology employed and the results obtained from the data analysis. The paper ends with a discussion of the results, some

recommendations and implications, the potential limitations of the study, and directions for future research.

2. Theories grounding the study

The commitment-trust theory of relationship marketing developed in the seminal work of Morgan and Hunt (1994) is a fundamental theory in the RM field. The theory stipulates that relationship commitment and trust are essential to creating and maintaining long-term RM (Morgan and Hunt, 1994; Brown *et al.*, 2018). At the heart of the theory is trust, because relationship commitment is premised on trust (Morgan and Hunt, 1994). The RM literature agrees on the centrality of trust, which is considered to lubricate social and commercial interactions between parties (Hobbs and Goddard, 2015; Ndubisi, 2007; Chen *et al.*, 2015). As customer trust increases, the uncertainty and anxiety related to an interaction decrease.

Trust has been defined as the “willingness to rely on an exchange partner in whom one has confidence” (Moorman *et al.*, 1993, p. 82). Rousseau *et al.* (1998) view trust as the intention of one party to accept vulnerability based on the positive expectations of the behaviour of the other party. From a green marketing perspective, customer trust in an energy-efficiency label is described as the expectation that the product’s performance will justify the information, promises and environmental obligations stated on the label (Taufique *et al.*, 2017).

These definitions point to the fact that customers get into relationships with partners that they can trust because a trusted partner reduces the risks associated with relational exchange (Palacios-Florencio, 2018; Hobbs and Goddard, 2015; Letheren *et al.*, 2019). Similarly, from a social marketing perspective, it has been proven that individuals endorse social propositions or programmes (e.g. energy-efficient consumption) that are trustworthy (Marques and Domegan, 2011). Participation in environmental protection initiatives through energy-efficient consumption is subject to the customer’s trust in the environmental claims displayed on the product by the manufacturers (Atkinson and Rosenthal, 2014; Taufique *et al.*, 2017). In a similar perspective, Letheren *et al.* (2019) advocate for the need to

understand how trust can improve the level of customer engagement with connected-home technologies which is a new innovation.

In addition, the definitions of trust above posit the acceptance of vulnerability by a party as an enabler of trust. This vulnerability applies particularly to the purchase of energy-efficiency products, a situation in which the customer is in a weak position due to their limited ability to authenticate the energy rating displayed on the energy-efficiency label (Atkinson and Rosenthal, 2014; Darnall *et al.*, 2018). Given that the environmental features of a product are not as tangible as other attributes such as packaging, shape or taste, appraising environmental claims is often a challenge for customers, sometimes even after using the product (Darnall *et al.*, 2018; Taufique *et al.*, 2017). In such a purchase situation, the buyer has no choice but to trust the environmental claims displayed by the seller. This study focuses on the trust customers hold towards information displayed on energy-efficiency labels affixed to electronic appliances.

3. Theoretical model development: drivers and outcomes of customer trust in energy-efficiency labels

The pro-environmental scholarship uncovers diverse categories of factors that shape customer trust in environmental claims. These include RM variables such as customer satisfaction (Wang *et al.*, 2018a), psychological motives such as environmental attitudes (Thøgersen, 2000), social norms (Jansson *et al.*, 2017), environmental knowledge (Taufique *et al.*, 2017) and marketing signals such as perceived quality and price (Atkinson and Rosenthal, 2014). The conceptual model proposed in this study (Figure 1) amalgamates these key factors [2] by reflecting the potential determinants of customer trust towards energy-efficient labels.

3.1. Relationship marketing variable: customer satisfaction

Customer satisfaction is a well-researched RM component (Roberts-Lombard and Petzer, 2018; Mpinganjira *et al.*, 2017; Gallarza *et al.*, 2016) that is described as an assessment of the relative value drawn from an exchange (Marques and Domegan, 2011). Customer satisfaction arises when a product or service meets or surpasses customers' expectations after they have used or experienced it (Marques and Domegan, 2011; Roberts-Lombard and Petzer, 2018). From a social marketing

perspective, such satisfaction is a core component of maintaining a favourable perception of the benefits (tangible and intangible) that individuals draw from endorsing a social marketing initiative (Marques and Domegan, 2011; Lee and Kotler, 2016).

While the nexus satisfaction - trust is a crucial linkage in RM, the consensus on the direction of this relationship is yet to be achieved in the extant literature. While some scholars are of the view that trust leads to satisfaction (Giovanis and Athanasopoulou, 2018; Martínez et al., 2015), several studies in the field of marketing have reported that customer satisfaction generally precedes customer trust (Gallarza *et al.*, 2016; Mpinganjira *et al.*, 2017). This is because customers usually trust products and services after having a satisfactory experience when using the product or service (Wu, Chen and Ai., 2018). The extent pro-environmental literature has widely reported the positive impact that a satisfactory experience with the environmental performance of a product has on an individual's level of trust in the environmental claims made about the product (Han *et al.*, 2018; Chen and Chang, 2013; Chen et al., 2015; Wang *et al.*, 2018b). Trust in eco-labels is thus considered a result of this satisfactory experience with the eco-friendly offers. Therefore, the following hypothesis is proposed:

H₁. Customer satisfaction positively affects customer trust in the energy efficiency of a product.

3.2. Psychological influences: environmental knowledge, attitudes towards the environment, and social norms

3.2.1. Environmental knowledge.

Environmental knowledge is described as general knowledge about the facts, concepts or information related to the environment and its ecosystems (Liobikienė and Bernatoniene, 2017; White *et al.*, 2019). This form of knowledge shapes an individual's interpretation and appraisal of available preferences (Taufique *et al.*, 2017). Evidence suggests that when customers are knowledgeable about environmental issues, they are inclined to display greater trust in eco-friendly products (Taufique *et al.*, 2017; Liobikienė and Bernatoniene, 2017; Hameed and

Waris, 2018). This positive influence of knowledge on trust was supported by Wang *et al.* (2018b) in a study on eco-friendly remanufactured automobile parts. With more specific reference to eco-labelled products, Taufique *et al.* (2017), as well as Hameed and Waris (2018), argue that increased knowledge and understanding of eco-labelling processes produce greater trust in eco-labels. The following hypothesis can therefore be proposed:

H₂. Subjective environmental knowledge positively influences customer trust in energy-efficiency labels.

3.2.2. Attitude towards the environment. Attitude is one key psychological determinant of customer adoption of eco-friendly products that are well documented in the pro-environmental literature (Ricci *et al.*, 2018; Liobikienė and Bernatoniene, 2017; Gregory-Smith *et al.*, 2015). An individual's attitude towards the environment will influence their evaluation of the environmental friendliness of products either negatively or positively (Chekima *et al.*, 2016). The more positive customers feel about environmental protection, the higher the probability is that they will purchase a pro-environmental product (Ricci *et al.*, 2018; Taufique *et al.*, 2017; Lee *et al.*, 2018; Darnall *et al.*, 2018). Social marketing interventions recognise attitude as an important enabler of behaviour change (Donovan and Henley, 2010; Russell-Bennett *et al.*, 2018). This is why several interventions are geared towards shifting individuals' attitudes towards targeted behaviour (Issock *et al.*, 2017; Gregory-Smith *et al.*, 2015; Russell-Bennett *et al.*, 2018).

Moreover, findings point to the fact that when customers hold positive attitudes towards the environment, they are likely to trust environmental products (Thøgersen, 2000; Taufique *et al.*, 2017). Chen *et al.* (2015) argue that customers' positive attitudes towards environmental issues significantly influence their propensity to trust environmental claims. Regarding organic products, Ricci *et al.* (2018) found that customer trust in environmental claims is positively related to their attitudes towards the purchase of eco-labelled food. Thus, the following hypothesis can be proposed:

H₃. Customers' attitudes towards the environment positively influence customer trust in eco-labels.

3.2.3. *Social norms.* Social norms comprise what other people do and what they approve of doing (McKenzie-Mohr and Schultz, 2014; Schuster *et al.*, 2016). Social marketing recognises social influence as a crucial driver of behaviour change (Kenny and Hastings, 2011; McKenzie-Mohr and Schultz, 2014; Schuster *et al.*, 2016). Customers usually comply with social norms because of social pressures exerted by important others such as family members, friends and neighbours (Jansson *et al.*, 2017; Kenny and Hastings, 2011; Russell-Bennett *et al.*, 2018). This explains why norms have been extensively used by social marketers to promote the adoption of environmentally friendly behaviour (McKenzie-Mohr and Schultz, 2014; Schuster *et al.*, 2016; Isock *et al.*, 2017; Russell-Bennett *et al.*, 2018).

Prior studies (Testa *et al.*, 2016; Liobikienė and Bernatoniene, 2017; White *et al.*, 2019) have indicated that when an individual's significant others such as family, friends, or colleagues undertake and approve of pro-environmental behaviour, the individual is also likely to adopt such behaviour. Moreover, this influence of important others can also influence the extent to which the individual trusts environmentally friendly products (Jansson *et al.*, 2017; Testa *et al.*, 2016; Darnall *et al.*, 2018). This influence emanates from the fact that individuals tend to behave to please people they trust and to accept the information about outcomes provided by trusted sources (Darnall *et al.*, 2018). The following hypothesis can therefore be proposed:

H₄: Social norms positively influence customer trust in energy-efficiency labels.

3.3. *Marketing signals: perceived product quality and product price*

Marketing cues or signals guide the customer's decision to purchase products (Atkinson and Rosenthal, 2014; Spence, 1973). Signalling theory (Spence, 1973) offers an appropriate framework to explain how customer trust can be enhanced through marketing signals. The theory argues that signals can be used to reduce the uncertainty associated with customers' choice in a situation where the information about a product is unequally distributed between the parties (Spence, 1973; Chen *et al.*, 2019). The purchase of energy-efficient products involves a situation in which the buyer cannot ascertain the credibility of the environmental attributes of a product claimed by the seller (Atkinson and Rosenthal, 2014; Chen *et al.*, 2019). The price and quality of the product have been identified as two relevant signals that can affect customer trust towards pro-environmental products (Chen and Chang, 2013;

Marakanon and Panjakajornsak, 2017; Mulcahy *et al.*, 2015; Haryanto and Budiman, 2016).

3.3.1. Perceived product quality. Perceived product quality reflects the customer's overall assessment of a product's superiority, which is shaped by a preconceived customer impression of the product (Chen and Chang, 2013). Extant research points to the fact that a higher perceived quality of eco-labelled products increases customer trust in the environmental attributes claimed by the seller (Chen *et al.*, 2015; Chen and Chang, 2013; Marakanon and Panjakajornsak, 2017). However, when companies exaggerate the environmental credentials of their products through misleading green claims, customers are reluctant to trust the products and are likely to question their averred quality (Chen *et al.*, 2019; Ricci *et al.*, 2018). This shows the strong linkage between perceived quality and customer trust towards eco-friendly claims. This relationship was reported in the context of organic food, where a significant relationship was found between perceived quality and customer trust in the retail industry (Pandey and Khare, 2017; Chen *et al.*, 2015). Similar results were found by Chen and Chang (2013) as well as Marakanon and Panjakajornsak (2017) in the context of electronic products, where their perceived quality was found to be a strong predictor of both customer green trust. The following hypothesis can therefore be formulated:

H₅. Perceived product quality has a positive impact on customer trust in energy-efficiency labels.

3.3.2. Perceived product price. Perceived product price is considered a crucial determinant of the customer's decision to purchase eco-friendly products since they are often more expensive than conventional products (Testa *et al.*, 2015). Evidence suggests that customers' perception of a product's economic value strongly influences their level of trust in the product (Haryanto and Budiman, 2016; Chen and Chang, 2013). An investigation into customer trust in organic food by Pandey and Khare (2017) indicated that perceived price is the strongest predictor of customer trust in the environmental attributes of organic food. Lee *et al.* (2018) show that the degree to which customers perceive price enhances their trust in the ability of the product to deliver environmental benefits. Based on this discussion, the following hypothesis can be proposed:

*H*₆. Perceived product price has a positive impact on customer trust in energy-efficiency labels.

3.4. *Outcomes of customer trust*

The pro-environmental literature posits customer trust in environmental claims as an important determinant of various behavioural outcomes, such as eco-friendly purchase intention (Wang *et al.*, 2018b), actual purchase (Darnall *et al.*, 2018), green customer loyalty (Palacios-Florencio *et al.*, 2018) and word of mouth about environmental attributes (Chen *et al.*, 2019). The proposed conceptual model in this study (refer to Figure 1) focuses on the effect of customer trust on purchase intention^[3] and customer loyalty.

3.4.1. Intention to purchase products with high energy-efficiency ratings. Purchase intention is considered the proximal antecedent of pro-environmental purchasing behaviour (Liobikienė and Bernatoniene, 2017). Thus, several studies have posited behavioural intention as the behavioural outcome (Wang *et al.*, 2018b; Zhang *et al.*, 2018; Russell-Bennett *et al.*, 2018).

Customers intend to purchase products that they can trust (Lam *et al.*, 2016; Wang *et al.*, 2018b). This behavioural response applies particularly to environmental or eco-friendly products because of their characteristic credibility issues (Atkinson and Rosenthal, 2014). For instance, Zhang *et al.* (2018) found that when customers distrust the environmental claims made by the seller (greenwashing), they are less likely to have an intention to purchase eco-friendly products. Similar findings are echoed by several other studies (Nuttavuthisit and Thøgersen, 2017; Testa *et al.*, 2015; Wang *et al.*, 2018b) demonstrating that the degree of customers' trust in the environmental attributes of products has a significant impact on their intention and actual purchase of eco-friendly products.

The following hypothesis can be formulated.

*H*₇. Customer trust in energy-efficiency labels positively influences the intention to purchase products with higher energy efficiency.

3.4.2. Customer attitudinal loyalty to energy-efficient products.

Two dimensions of customer loyalty are widely reported in the literature: behavioural and attitudinal loyalty (Watson *et al.*, 2015; Oliver, 1999; Tabrani *et al.*, 2018). The behavioural dimension is related to repurchase or repeated patronage, while the attitudinal dimension refers to customers' commitment to remaining loyal despite situational influences and promotional activities with the potential to cause switching behaviour (Watson *et al.*, 2015; Oliver, 1999). Attitudinal loyalty is believed to be the true loyalty because it reflects customers' commitment to re-patronise, their advocacy and their willingness to pay more for a preferred product or service consistently in the future; therefore it has more impact on the sustainability of a relationship (Gallarza *et al.*, 2016; Tabrani *et al.*, 2018). In the social marketing context, Díaz Meneses and Rodríguez (2015) maintain that attitudinal loyalty promotes more effective long-term behavioural change. This view was echoed by Mulcahy *et al.* (2015) who demonstrate that attitudinal loyalty can be an important piece in maintaining moderate drinking behaviour. Thus, this study puts emphasis on the attitudinal dimension of customer loyalty, which is more relevant to social marketing programmes aiming to address long-term complex behaviours that require continuity, consistency and commitment in adopting the desired behaviour (Marques and Domegan, 2011; Díaz Meneses and Rodríguez, 2015).

Empirical evidence from the marketing literature points to the fact that trusting customers are loyal to a product, service or brand (Watson *et al.*, 2015; Brown *et al.*, 2018; Ndubisi, 2007). The impact of customer trust on loyalty has been proven in various contexts, including Islamic banking (Tabrani *et al.*, 2018), financial services (Ndubisi, 2007) and hospitality (Palacios-Florencio *et al.*, 2018). Similarly, the pro-environmental literature has demonstrated that the greater the customer trust in environmental claims, the more likely customers are to continue using eco-friendly products and services (Chen, 2013; Martínez, 2015; Chen *et al.*, 2019; Lam *et al.*, 2016). Based on this review, the following hypothesis can be proposed:

H₈. Customer trust in energy-efficiency labels positively affects customer attitudinal loyalty towards energy-efficient products.

3.5. *The mediating role of customer trust*

The conceptual model developed in this study investigates the potential mediating^[4] effect of customer trust in the relationships between the determinants of customer

trust (environmental knowledge, environmental attitude, social norms, perceived price, perceived quality and customer satisfaction) and the two outcome variables (purchase intention and customer attitudinal loyalty). The commitment-trust theory has positioned customer trust as a key mediating variable (KMV model) in the build-up of marketing relationships (Brown *et al.*, 2018; Morgan and Hunt, 1994). Several empirical studies in the field of marketing have established the mediating effect of trust in influencing purchasing behaviour and building long-term relationships with customers (Palacios-Florencio *et al.*, 2018; Fatma *et al.*, 2015).

Similarly, in investigating customer loyalty and purchase intention several pro-environmental studies (Marakanon and Panjakajornsak, 2017; Chen, 2013; Lam *et al.*, 2016; Chen and Chang, 2013; Chen *et al.*, 2019) have positioned customer trust as an intervening variable without empirically testing the mediating effect of trust. However, a few pro-environmental studies (Chen and Chang, 2013; Hameed and Waris, 2018) have tested and validated the mediating effect of customer trust when promoting the long-term adoption of environmentally friendly products. This confirms the central role of customer trust in influencing long-term adoption of eco-friendly products. Thus, the following hypothesis can be postulated:

H₉. Customer trust mediates the relationship between the antecedent variables and the outcome variables in the proposed model.

Figure 1 illustrates the proposed conceptual model for this study, indicating the six constructs of the study and the hypothesised relationships between them.

Figure 1. Proposed conceptual model

4. Methodology

Following a positivist paradigm, this study used a quantitative approach and a cross-sectional design. A survey method using self-administered paper-based questionnaires, written in English, was used to collect the data. To be eligible to participate as a user of home appliances with energy-efficiency ratings, the respondents were required to be more than 18 years old and to have purchased and used such an appliance in the preceding three years. A three-year period prior to the

purchase of an electronic home appliance was applied in this study given that the mandatory energy-efficiency labelling scheme was introduced in the year 2014 (Department of Energy, 2018) and the study was conducted in December 2017. Trained fieldworkers collected the questionnaires in various settings, for example in workplaces, malls, places of worship and parks. All data were collected in the Gauteng province of South Africa, which is not only the most populated province in the country but also its economic hub. A quota sampling technique was applied to select respondents for this study since a list of all users of home appliances was not accessible. The quota was based on demographic variables such as gender, racial groups and income groups in order to secure the equal representation of all groups.

From the 700 questionnaires initially distributed, 517 were deemed usable which makes a 74% response rate. Most respondents were female (58.4%), black (46.6%) and aged between 26 and 35 years (30%), and most had at least a university degree (51%) and earned above 20 000 rand (52%) (1USD= 14 Rands) per month. Despite seeking a balance in terms of demographic groups as per the national census (Statistics SA, 2016), the sample had a skew towards females, those with an income level above 20 000 Rand, and those with a university degree and above. This skewness can be explained by the fact that respondents with higher incomes tend to be more educated and more likely to have purchased energy-efficient home appliances in the past three years.

Previously validated measurement items were adapted to the context of this study. Table 1 presents how existing studies such as those by Martínez (2015), Taufique *et al.* (2017), Mohd Suki (2016), Shih-Tse *et al.* (2014), Haryanto and Budiman (2016) and Yadav and Pathak (2017) were adapted to measure the constructs in this study. The measures were operationalised with a five-point Likert scale. To ensure content and face validity, two pilot tests involving 20 and 18 participants respectively were subsequently conducted. Feedback on the clarity of the items and the appropriateness of the terminology was requested from the respondents in these pilot tests in order to refine the questionnaire.

The survey data were collected and captured into the IBM SPSS version 24 package for the descriptive analysis. The hypotheses formulated in the proposed model were tested by means of structural equation modelling (SEM), applied using

the IBM Amos version 24. SEM was deemed the most appropriate technique given its robustness and precision in testing multivariate relationships (Malhotra *et al.*, 2017; Hair *et al.*, 2014). The measurement model was therefore tested using a confirmatory factor analysis (CFA) approach, and a structural model was established to test the hypothesised structural relationships in the model. The mediating role of customer trust was also measured using the IBM Amos version 25 software (2017).

5. Results

5.1. Measurement model

Prior to data analysis, the values of skewness and kurtosis were examined to appraise the deviation from the norm. Examination of the skewness and kurtosis of each item showed values below ± 3 and ± 10 respectively, implying that the deviation from the norm does not affect the data analysis (Kline, 2015).

Given that multiple constructs were measured by scale items, it was important to ensure that the common method bias was not a threat to the validity. Harman's (1976) one-factor test was accordingly conducted to assess the common method bias. All the scale items were loaded into one common factor and subjected to an exploratory factor analysis. The unrotated factor solution indicates that the one factor only explained 40% of the variance which was lower than the benchmark value of 50% (Harman, 1976). This suggests that the common bias method will not affect the validity of the constructs assessed in the CFA.

A measurement model using the CFA approach was initially conducted before assessing the structural model. The results of the CFA summarised in Table I indicate that the model fitted the data: $\chi^2 = 1342.26$; $df = 523$; $\chi^2/DF = 2.566$; AGFI = 0.847; CFI = 0.943; TLI = 0.935; NFI = 0.910; IFI = 0.943; RMSEA = 0.055; SRMR = 0.037; PCLOSE = 0.016.

The factor loadings of each item were all significant ($p < 0.001$) and above 0.7 as indicated in Table I. The values the composite reliability ranged from 0.70 to 0.949 and were therefore all acceptable, exceeding the suggested cut-off of 0.60 (Malhotra

et al., 2017). In addition, Cronbach's alpha values were all above the minimum threshold of 0.60 (Malhotra *et al.*, 2017), indicating internal consistency in measurement items. The average variance extracted (AVE) of each construct was calculated and ranged from 0.541 to 0.775, suggesting convergent validity for all the constructs in this study.

Table I. Measurement model analysis

Table II presents the inter-construct correlation matrix. The square roots of the AVE values on the diagonal of the matrix were compared to the correlation values between pairs of constructs to ascertain discriminant validity. Given that the square roots of AVE values were above the highest inter-construct correlation value, discriminant validity was evident (Fornell and Larcker, 1981).

Table II. Discriminant validity assessment

5.2. Structural model and hypotheses testing

Following confirmation of the measurement model, the maximum likelihood estimation procedure was applied to test the structural model. The results showed an acceptable model fit ($\chi^2 = 1694863$; $df = 535$; $\chi^2/DF = 3.168$; $CFI = 0.919$; $AGFI = 0.825$; $TLI = 0.909$; $IFI = 0.919$; $RMSEA = 0.065$; $SRMR = 0.106$).

Table III. Results of the structural model

The proposed model sufficiently accounted for 53% ($R^2 = 0.53$) of the variance of customer trust, which explains 32% and 28% of the variance of purchase intention and loyalty respectively. The structural results presented in Table II indicate that customer satisfaction ($\beta = 0.151$; $p\text{-value} < 0.01$), attitude towards environmental issues ($\beta = 0.170$; $p\text{-value} < 0.01$), perceived quality ($\beta = 0.140$; $p\text{-value} < 0.01$) and perceived price ($\beta = 0.360$; $p\text{-value} < 0.01$) have a positive and statistically significant effect on customer trust. These results support hypotheses H_1 , H_3 , H_5 and H_6 . Table II shows that environmental knowledge ($\beta = 0.073$; $p\text{-value} > 0.05$) and social norms ($\beta = 0.039$; $p\text{-value} > 0.05$) have no influence on trust. Hypotheses H_2 and H_4 are therefore rejected. Concerning the outcomes of trust, the results indicate that customer trust has a positive and statistically significant effect on customer loyalty to

energy-efficient products ($\beta = 0.562$; $p\text{-value} < 0.01$) and customer intention to purchase energy-efficient appliances ($\beta = 0.528$; $p\text{-value} < 0.01$). This validates hypotheses H₇ and H₈.

A competing model was run to test whether satisfaction can be used as a mediator instead of trust. The structural model produced poor model fit indices: CMIN= 3.480; CFI= 0.907; TLI=0.896; AGFI= 0.799; RMSEA=0.070; SRMR=0.199. This competing model only accounts for 38% of the variance of satisfaction. Interestingly, the influence of trust on satisfaction was statistically significant and the path estimate was $\beta = 0.22$. Given the poor model fit, the proposed model is chosen over the competing model.

5.3. *Mediating effect of customer trust*

The indirect mediating effect of trust as depicted in the model was subsequently examined for each independent variable. As suggested by Hayes and Preacher (2013), the mediation effect is worth testing when the independent variable has a significant effect on the mediator. The mediating effect of trust in relation to social norms and environmental knowledge was not tested because of the non-significant effect on the mediator. To test the mediating effect of customer trust, bootstrapping using 5 000 bootstrap samples with a bias-corrected interval of 95% was performed on Amos version 25. The indirect (mediating) effect, direct effects, and total effect are presented in Table IV.

Table IV. Mediation analysis

The results show that the indirect effect of customer trust is statistically significant ($p < 0.001$) for all the relationships between independent and outcome variables, except for the relationship between perceived price and loyalty, where no mediation was found. The statistically significant direct effects of the independent variables on the dependent variables indicate that customer trust partially mediates the effect of customer satisfaction, attitude towards energy-efficiency labels, and perceived quality on purchase intention and customer loyalty, and the effect of perceived price on purchase intention. These results point to the fact that the independent variables have a direct effect on the two outcome variables, but this effect is intensified by the mediator customer trust. Hypothesis H₉ is therefore validated.

Figure II. Structural model

6. Discussion

The purpose of this study was to examine some key determinants and outcomes of customer trust and provide insight into the central role of customer trust in fostering energy-efficient consumption behaviours. The evidence provided shows that customer trust in energy-efficiency labels results from the level of satisfaction of customers with regard to the environmental performance of the product (relationship marketing variable), from the customer's attitude towards environmental issues (psychological motives) and from the customer's perception of product quality and price (marketing signals). These positive and significant influences are supported by previous pro-environmental research conducted by Wang *et al.* (2018a), Chen *et al.* (2015), Pandey and Khare (2017) and Haryanto and Budiman (2016) respectively.

Interestingly, the effect of social norms and environmental knowledge on customer trust was not validated, providing a contrasting finding from previous research (Taufique *et al.*, 2017; Darnall *et al.*, 2018). These findings reveal that the manner in which a customer perceives social pressures for the adoption of energy-efficient consumption has no impact on their level of trust in environmental claims. Similarly, the level of customer knowledge of energy-efficiency labels has no impact on the amount of trust a customer has in the environmental credentials displayed that are attributed to a product. These findings provide new insight into the role of social norms and environmental knowledge in building customer trust in energy-efficiency labels from a South African perspective.

The findings also reveal that customer trust in energy-efficiency labels shapes the customer's intention to purchase a product with a higher energy-efficiency rating and their attitudinal loyalty to eco-friendly offers. This result is consistent with the relationship marketing and pro-environmental literature, which posits customer trust as a central variable for positive behavioural outcomes (Hobbs and Goddard, 2015; Ndubisi, 2007; Hameed and Waris, 2018). The fundamental role of customer trust in the context of energy-efficient behaviour was validated by the partial mediating effects found in this study. This contributes to the view that customer trust strengthens the existing impact that customer satisfaction, attitude, perceived product quality and price have on the customer's purchase intention and loyalty

towards environmental offers. From these findings, several theoretical and practical contributions emerge.

6.1. Theoretical implications

From a theoretical perspective, the study makes three main contributions. Firstly, this research provides an empirical example of the application of relationship marketing variables such as customer satisfaction, trust and loyalty to improve social marketing programmes geared toward energy efficiency. To the best of the authors' current knowledge, there is limited empirical work on the application of relationship marketing variables to social marketing programmes (Wood, 2016). The present research is thus relevant as it addresses calls (Hastings, 2003; Marques and Domegan, 2011; Brennan *et al.*, 2016) for integrating relationship marketing components and adopting a long-term strategic approach to social marketing programmes. Even though some social marketing scholars are of the view that social marketing needs to demarcate from the commercial marketing (Dibbs, 2014) and fly solo to develop its own identity (Peattie and Peattie, 2003), social marketing as a discipline can leverage on effective commercial marketing concepts such as relationship marketing, branding or perceived values. Studies by Gordon *et al.* (2016), Mulcahy *et al.* (2015) unravelling the potential of branding in improving social marketing services provide examples demonstrating the usefulness of theoretical insights drawn from commercial marketing in understanding social marketing challenges. In a similar vein, Butler *et al.* (2016) and Gordon *et al.* (2018) examine the role of values in social marketing programmes geared toward energy efficiency.

Secondly, the centrality of customer trust as the pillar for sustainable behaviour change towards energy-efficiency consumption has been demonstrated in this study. The study posits customer trust in energy-efficiency labels as a pivotal concept shaped by various types of variables (relationship marketing, and psychological and marketing signals) and as an enabler of the customer's purchase intention and attitudinal loyalty towards energy-efficient products. This finding therefore enriches the social marketing and pro-environmental literature in particular with empirical evidence on the mediating and central role of the specific trust that customers hold towards energy-efficiency labels, which have been recently introduced in several

countries around the globe (Darnall *et al.*, 2018). The proposed model can therefore be tested and applied to other social marketing interventions (Letheren *et al.*, 2019), where trust is critical for behaviour change.

The third contribution of this study is related to the empirically tested conceptual model, which amalgamates various factors shaping customer trust, including relationship marketing, psychological motives and marketing signals. In combining these different categories of variables, this study provides clarity on the joint influence of these diverse types of variables. Customer trust is a complex concept that simply cannot be explained by only one category of variables (Hobbs and Goddard, 2015; Ndubisi, 2007; Hameed and Waris, 2018). Examining these various antecedents of trust provides more avenues for social marketers to influence customer trust in energy-efficiency labels.

6.2. *Managerial contributions*

This research provides clarity on the importance of relationship marketing components such as customer trust for effective and sustainable behaviour change in the context of energy efficiency. To build customer trust in energy-efficiency claims, customers need to be reassured that the high energy efficiency (i.e. low consumption of energy) of a product does not compromise its performance and quality (Chekima *et al.*, 2016; Testa *et al.*, 2016). Demonstration of the product performance at the points of sale combined with a proper advertisement can help social marketers reverse this misconception of underperforming energy-efficient products. Additionally, third parties such as the South African Bureau of Standards and the South African Department of Energy should provide a stronger endorsement of energy-efficient labels (Nuttavuthisit and Thøgersen, 2017; Taufique *et al.*, 2017). This endorsement could be reinforced by providing customers with details in the user manual about the energy-efficiency rating processes.

Another recommendation specific to the South African context is that social marketers need to work alongside retailers and manufacturers to provide customer-oriented offers to support current product-based interventions such as an energy-efficient appliance. This may already be happening in developed markets such as the United States of America for example with the energy star program (Murray and Mills, 2013) but the same cannot be said for most countries in Africa including South

Africa. The energy-efficiency rating of a product should be clear and reflect the actual energy performance of the product so that the customer's expectations relating to the energy-efficiency features would be met. Energy-efficiency products should not only meet the expectations of customers in terms of performance but also meet the environmental requirements. While ensuring the quality and fair pricing of energy-efficiency products, retailers and manufacturers should add to their current offer professional after-sale assistance with the purpose of helping customers to optimise the energy efficiency of their electronic products through relevant energy-efficiency tips and professional post-purchase support (Wood, 2016). These constant interactions with the customer could create a long-term relationship with customers and progressively bring about a behavioural shift to energy efficiency.

7. Conclusion

The purpose of this study was to investigate the role of customer trust in fostering long-term energy-efficient consumption. The importance of adopting relational thinking for social marketing applications to eco-friendly consumption has been highlighted in this paper. The relevance of customer trust in environmental claims in the process of behaviour change towards eco-friendliness has been strongly defended. While this study makes important contributions towards the body of knowledge and social marketing practices, this research is limited by the fact that more determinants of customer trust could have been added, such as perceived risk, brand image or certification procedures. Although the selected variables already account for more than half of the variance of customer trust, future research could include these additional variables in order to explain the variance of customer trust more fully. Another limitation of this study is the use of self-reported loyalty, purchase intention, trust, and so forth. Future studies could make use of experimental design or a longitudinal design and involve other emerging markets in order to provide more elaborated and holistic data.

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¹ While this study considers the application of energy-efficient labels as a social marketing initiative, it is important to note that this intervention can also be viewed as a green marketing intervention in the sense that it provides consumers with sustainable options when purchasing appliances. As explained by Gordon *et al.* (2011), the concepts of green marketing and social marketing fall under the broad concept of sustainable marketing. While the concepts are different, they might also be strongly related given that at the upstream level, social marketing advocates for greener marketing and regulations.

² The list of antecedents of trust in this study is not exhaustive. While other drivers of consumer trust towards green claims such as certification procedures and eco-labelling (Kikuchi-Uehara, 2016) could have been added in the model, the purpose of this model is to shed light on the major groups of variables that can influence consumers to trust eco-labelled products.

³ The choice of consumer purchase intention rather than actual purchase is motivated by the fact that the study involved consumers who had already purchased and were using rated electronic appliances. The purchase intention thus measures the intent to purchase other electronic products based on the environmental benefits. This is why consumer loyalty is linked to intention in the model, reflecting consumer commitment to eco-friendly products in the future.

⁴ The overarching objective of this study is to demonstrate the central role of consumer trust in promoting energy efficiency from a social marketing perspective and to test its potential mediating role in the proposed model. Investigating the effect of the antecedents of consumer trust (environmental knowledge, environmental attitude, social norms, perceived price, perceived quality and customer satisfaction) on the two outcome variables (purchase intention and customer attitudinal loyalty) is not the priority of this study. Therefore, these relationships are not displayed and hypothesised in the proposed model.