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Retail Environmental Responsibility and the Consumer Waste Behaviour Gap: Evidence from South Africa

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Abstract

Retailers sit between production and household consumption, which makes their environmental corporate social responsibility programmes plausible instruments of behavioural change. Whether customer recognition of those programmes translates into waste management behaviour remains unclear in secondary cities of the global South, where recovery infrastructure is uneven. We surveyed 281 adult customers at two retail complexes in Mbombela, Mpumalanga, South Africa. The questionnaire measured awareness of environmental CSR, information channels, noticed initiatives, perceived effectiveness, perceived influence on waste behaviour, reported household recycling, participation in store led recovery schemes, changes in shopping practice, and barriers to sustainable consumption. We screened the captured data against the permitted response codes, decomposed multiple response items into binary indicators, and used Spearman rank correlations with Benjamini and Hochberg correction for 66 pairwise tests. Awareness was reported by 194 of 279 interpretable respondents, or 69.5%. However, only 75 respondents, or 26.7%, reported recycling household waste, and 147 of 281 reported regular or occasional participation in store led recovery schemes. Among respondents giving an interpretable answer, 187 of 228, or 82.0% believed that retailer initiatives had influenced their waste behaviour. Awareness was associated with perceived influence, but not with household recycling and store scheme participation. Education and age were more consistent correlates of scheme participation, while perceived barriers were more salient among respondents who reported greater engagement. The findings indicate that retailer CSR can be highly visible and persuasive at the level of perception without being sufficient to produce downstream waste behaviour. Consumer communication therefore needs to be coupled to accessible collection, sorting, and recovery systems.

Introduction

Retailing is where material decisions made upstream become ordinary household choices. Retailers influence the packaging, product mix, transport, and disposal pathways encountered by customers, while their stores provide one of the most frequent public settings in which environmental messages are delivered. This gives the sector a dual significance. Retailers contribute to the material flows that generate waste, but they also have repeated opportunities to make lower waste choices visible, convenient, and socially normal. These operational and communicative roles place retail corporate social responsibility at the intersection of corporate accountability and consumer response, although the presence of a responsibility claim does not demonstrate an environmental outcome (Carroll, 1991, Elg and Hultman, 2016, Schramm Klein et al., 2016, Godefroit Winkel et al., 2022). The relevant question is therefore not whether retailers communicate environmental concern, but whether that communication changes what customers do and whether the surrounding system allows those actions to matter.

Research on CSR and customers shows that the response to corporate responsibility is conditional. Consumers can reward firms whose actions address harms generated by their own operations, but they do not respond uniformly to all CSR activities. They distinguish between corrective actions, compensatory actions, and initiatives that cultivate goodwill, and their responses depend on perceived fit, credibility, personal values, and the visibility of the activity (Sen and Bhattacharya, 2001, Nickerson et al., 2022). Retail

studies similarly show that CSR can influence perceptions, attitudes, trust, loyalty, and purchase intentions, particularly when the initiative is legible in the shopping environment (Elg and Hultman, 2016, Schramm Klein et al., 2016, Godefroit Winkel et al., 2022). These findings establish that CSR can matter to customers. They do not establish that customer recognition produces household waste reduction or that perceived responsibility is a reliable proxy for environmental performance. The distinction is important because environmental behaviour is not a simple downstream expression of awareness. The theory of planned behaviour places attitudes, perceived control, and social norms between information and action (Ajzen, 1991), while the SHIFT framework emphasises social influence, habits, identity, feelings, cognition, and tangibility as routes through which sustainable behaviour can be enabled (White et al., 2019). Both perspectives leave room for context. A person may value recycling and still be unable to separate materials if collection is irregular, depots are distant, or the material has no reliable recovery pathway. The environmental value action gap is therefore not necessarily evidence of indifference or poor knowledge. It may also reflect the distance between a requested behaviour and the infrastructure needed to perform it (Kollmuss and Agyeman, 2002).

South Africa provides a useful setting in which to examine this distinction. Major supermarket chains operate across metropolitan and secondary city markets, and national policy has increasingly combined environmental communication with producer responsibility. The plastic bag levy reduced consumption sharply at first, but the effect weakened as the real cost of the levy declined and consumers adapted to it (Hasson et al., 2007, Dikgang et al., 2012a, b). The country has since introduced extended producer responsibility measures for packaging and selected single use products, while the National Waste Management Strategy 2020 promotes prevention, reuse, recycling, recovery, and diversion from landfill (Department of Forestry, Fisheries and the Environment, 2020, Republic of South Africa, 2021). These policies depend on households separating materials, but they also depend on collection and recovery systems that can receive those materials. Evidence from the South African supermarket sector shows that consumers recognise and generally support environmental initiatives, but the relationship between that recognition and reported waste behaviour remains under tested (Naidoo and Gasparatos, 2023). We investigated this relationship in Mbombela, a secondary city in Mpumalanga, were we (i) quantified customer awareness of environmental CSR and described the information channels and initiative categories through which CSR became visible, (ii) tested whether awareness and perceived effectiveness were associated with reported household recycling, participation in store led recovery schemes, and change in shopping practice, and assessed the barriers customers experienced and whether those barriers were less salient among respondents who reported greater engagement. We expected awareness and perceived effectiveness to be positively associated with reported behaviour, and we expected barriers to be less salient among more engaged respondents. Because the data are cross sectional and self reported, these expectations are evaluated as associational hypotheses rather than causal tests.

Materials and methods

Study area

The study was conducted in Mbombela, formerly Nelspruit, the administrative and commercial centre of Mpumalanga Province in northeastern South Africa. The city lies in the Crocodile River valley at approximately 25°27'57" S and 30°59'07" E and forms part of the Lowveld urban and agricultural system. Census 2022 records provide the most recent national demographic context for the city and province (Statistics South Africa, 2023). Mbombela was selected because the main national grocery chains operate in the urban area, while access to municipal collection and recovery services varies across formal, peri urban, and township settings. The city therefore provides a relevant secondary city context in which customer perceptions can be examined alongside the practical conditions required for waste management.

Sampling and respondents

Data were collected from adult customers at two high traffic retail complexes in central Mbombela. The complexes were selected because they jointly hosted branches of the major chains considered in the questionnaire and attracted customers from more than one residential catchment. Fieldworkers approached customers in concourse areas during weekday and weekend sessions distributed across the trading day. Eligibility required an age of at least 18 years, presence at the retail complex during a sampling session, and informed consent. A total of 281 completed questionnaires was obtained through convenience sampling because no sampling frame of retail customers was available. This design supports comparison among respondents in the study setting but does not support population estimates for all Mbombela residents or all customers of the participating chains.

Data questionnaire

The structured questionnaire was administered face to face in English, with fieldworkers available to interpret items into siSwati or isiZulu when preferred by a respondent. The instrument contained four sections. The first recorded age group, gender, highest completed education, and the retail chains at which respondents frequently shopped, with respondents permitted to select more than one chain. The second asked whether respondents were aware of environmental CSR initiatives in retail stores, how they had learned about them through in store promotions or posters, social media, retailer websites, or word of mouth, and which initiatives they had noticed. The latter item allowed multiple selections from biodegradable or ecofriendly packaging, recycling programmes, reduced plastic use, sustainable sourcing, and energy and water conservation measures. The information source item was treated as a single response item in the questionnaire, whereas store patronage and initiative recognition were multiple response items. The third section asked whether retailers were doing enough to promote environmental sustainability, how effective their CSR initiatives were on a five point scale from very effective to not effective at all, and whether the initiatives had influenced the respondent’s waste management behaviour significantly, slightly, not at all, or with uncertainty. Respondents were also asked which chain had the strongest environmental CSR programme, which type of initiative had influenced them most, and what effects they attributed to the initiatives. The latter questions covered recycled or biodegradable packaging, in store recycling programmes, energy saving campaigns, promotions on environmentally friendly products,

increased use of recycled materials, reduced packaging waste, reduced single use plastic bags, raised sustainability awareness, and improved waste sorting or disposal. The fourth section asked how often respondents recycled household waste, whether they participated in store led recycling programmes such as returning plastic bags or using recycling bins, and whether CSR had changed their shopping behaviour significantly, slightly, not at all, or uncertainly. Respondents then rated five possible barriers on a five point agreement scale, including cost, access to recycling facilities, inconvenience, knowledge, and support from stores or the community, and selected motivations for environmentally responsible shopping from environmental concern, retailer initiatives and promotions, government regulation, and social influence. The questionnaire was piloted with 20 customers who were excluded from the analysed sample, and wording was revised where the pilot revealed ambiguity. The five barrier items were treated as a descriptive formative index rather than as reflective indicators of a single latent trait because each item represents a distinct constraint. Cronbach's $p = 0.54$. This value is reported as a description of item covariance and is not used to claim that the items form a unidimensional psychological scale.

Data analysis

Captured responses were screened against the permitted codes before analysis. The age field contained the four observed categories coded as 2 to 5, corresponding to the reported bands from 18–25 years, 26–35 years, 36–45 years, and 46–55 years. Effectiveness was reverse coded so that higher values represented greater perceived effectiveness. The not sure category for perceived influence and for shopping change was excluded from rank correlation because it is not ordered relative to the substantive response categories. For the correlation analysis, perceived influence was coded from no influence to significant influence, shopping change from no change to significant change, household recycling from never to always, and store scheme participation from not aware to regular participation. Barrier items were reverse coded so that higher values represented greater perceived constraint, and the index was calculated as the mean of the valid items when at least four of the five items were interpretable.

Associations among 12 demographic, perceptual, and behavioural variables were examined using Spearman rank correlation. The analysis produced 66 pairwise tests. The p values were adjusted using the Benjamini and Hochberg procedure with a false discovery rate of 0.05. We report effect sizes and adjusted q values, and we interpret the correlation matrix as evidence of association rather than prediction or causation. The analysis was conducted with Python using pandas, NumPy, and SciPy. The workbook and the manuscript were cross checked so that reported counts and denominators correspond to the screened respondent records.

Results

Respondent profile and store patronage

The sample comprised 281 customers, with the largest age group being 18–25 years with 134 respondents followed by 36–45 years with 65 respondents, 26–35 years with 55, and 46–55 years with 27 respondents. Gender was valid for 280 respondents, of whom 138 were men and 142 were women. Education was

comparatively high for a convenience sample of retail customers. A total of 175 respondents, reported a diploma, certificate, or degree, while 35 reported no formal education and 23 reported primary education only. Shoprite was selected by 147 respondents, Woolworths by 102 respondents, Spar by 100 respondents, Pick n Pay by 92 respondents, and Checkers by 72 respondents. Because respondents could select more than one chain, these patronage counts describe reach within the sample rather than exclusive market share (Table 1).

Table 1
Respondent profile and reported regular patronage of retail chains. %ages are based on 281 respondents except gender, for which the valid denominator is 280.

Variable	**Category**	***n***	**%**
Age group	18 to 25 years	134	47.7
	26 to 35 years	55	19.6
	36 to 45 years	65	23.1
	46 to 55 years	27	9.6
Gender	Men	138	49.1
	Women	142	50.7
	Not stated	1	0.4
Education	No formal education	35	12.5
	Primary school	23	8.2
	High school	48	17.1
	Diploma or certificate	84	29.9
	Degree or higher	91	32.4
Regular patronage	Shoprite	147	52.3
	Woolworths	102	36.3
	Spar	100	35.6
	Pick n Pay	92	32.7
	Checkers	72	25.6

Awareness and perceptions of retailer environmental CSR

Awareness of environmental CSR was reported by 194 of 279 respondents with interpretable awareness responses, equivalent to 69.5%. The remaining 85 respondents reported no awareness, and two records contained codes outside the permitted response set (Fig. 2a). Among the 280 respondents who provided

an interpretable information source, in store promotions or posters were selected by 108 respondents, social media by 102 respondents, word of mouth by 39 respondents, and retailer websites by 31 respondents (Fig. 2b). Because the source item was not conditionally skipped for all respondents who reported no awareness, these counts are reported as respondent stated information channels rather than as a direct decomposition of the aware group. The most frequently noticed initiatives were recycling programmes, selected by 152 respondents, ecofriendly packaging, selected by 106 respondents, and reduced plastic use, selected by 105 (Fig. 2c). Sustainable sourcing and energy and water conservation were selected by 76 respondents and 64 respondents, respectively. Recognition was therefore concentrated on initiatives that were physically or visually encountered during shopping.

Perceptions of retailer effort were divided, were 229 interpretable responses to whether retailers were doing enough, 98 respondents answered yes, 94 answered no, and 37 were unsure. Fifty two additional records contained codes that did not correspond to the response options and were excluded from this item. Perceived effectiveness was more favourable. On the reversed five point scale, 75 respondents rated initiatives as very effective, 68 respondents as somewhat effective, 81 respondents were neutral, 24 respondents considered them not very effective, and 32 respondents considered them not effective at all. The median rating was 4 respondents, corresponding to somewhat effective. Perceived influence was stronger than reported behaviour. Ninety seven respondents reported significant influence and 90 respondents slight influence, while 41 respondents reported no influence and 53 were unsure. Excluding the unsure category, 187 of 228 respondents (82.0%) attributed at least some influence to retailer initiatives (Fig. 2d). This is a perception of influence and should not be treated as an observed behavioural outcome.

Woolworths was judged to have the strongest environmental CSR programme by 121 respondents (43.1%), while Shoprite was selected by 69 respondents, Pick n Pay by 56 respondents, and Spar by 35 respondents. The reputational ranking did not mirror reported patronage. Woolworths was selected as a regular store by 102 respondents, whereas Shoprite was selected by 147 respondents. This divergence is consistent with the possibility that comparative CSR reputation reflects brand positioning and public communication as well as direct experience in the store. The survey cannot identify the contribution of each source and does not establish that customers who did not shop at a chain had no exposure to its environmental activities.

Reported waste behaviour and barriers

Reported waste behaviour was weaker than the perception data would suggest (Fig. 3). Seventy five respondents (26.7%) of the sample, reported always recycling household waste. Ninety nine recycled sometimes, 56 respondents rarely, and 51 respondents never. Store led recovery participation was more common but still incomplete (Fig. 3a). Sixty two respondents participated regularly and 85 respondents occasionally, while 73 respondents knew about store schemes but did not use them and 61 respondents reported that they were unaware of them (Fig. 3b). Change in shopping practice was reported by 193 respondents, including 82 respondents who reported a significant change and 111 respondents who reported a slight change. Forty eight respondents reported no change and 40 respondents were unsure

(Fig. 3c). Among the 279 respondents who selected at least one specific shopping change, reusable bags were selected by 156 respondents, shopping less to reduce waste by 97 respondents, reading product labels by 88, and avoiding excess packaging by 83 respondents. The most frequent reported changes were therefore those that could be performed at or near the point of purchase, while household recycling required a continuing post purchase pathway.

The two most strongly endorsed barriers were the absence of accessible recycling facilities and the cost of environmentally preferable options. Agreement or strong agreement with the lack of facilities item was reported by 146 respondents, and agreement or strong agreement that environmentally preferable options were too costly was reported by 143 respondents (Fig. 4a). The corresponding counts were 129 respondents for lack of knowledge, 123 respondents for inconvenience, and 120 respondents for insufficient support from stores or communities. Intrinsic environmental concern was the most common motivation, selected by 171 of 280 respondents with an interpretable motivation response. Social influence was selected by 105 respondents, retailer initiatives by 101 respondents, and government regulation by 74 respondents (Fig. 4b).

Associations among awareness, perception, and behaviour

The association analysis produced 24 unadjusted coefficients with p values below 0.05, of which 16 remained below the false discovery rate threshold. All surviving coefficients were weak, ranging in absolute value from 0.16 to 0.26. Awareness was associated with perceived influence, rho = 0.19 and q = 0.025, but not with household recycling, rho = 0.02, store scheme participation, rho = 0.08, reusable bag use, rho = 0.06, or shopping change, rho = 0.09. Perceived effectiveness was associated with perceived influence, rho = 0.17 and q = 0.040, but not with household recycling or store scheme participation (Table 2). The first expectation was therefore not supported for reported behaviour. The data indicate coherence among perceptions of CSR and perceived influence, but no evidence that awareness or perceived effectiveness was associated with the reported waste outcomes measured here.

Social position and engagement showed more consistent associations. Education was positively associated with perceived influence, rho = 0.22 and q = 0.009, store scheme participation, rho = 0.21 and q = 0.004, and perceived barriers, rho = 0.21 and q = 0.004. Age was negatively associated with perceived influence, rho = – 0.20 and q = 0.015, store scheme participation, rho = – 0.24 and q = 0.001, and perceived barriers, rho = – 0.19 and q = 0.012. Age was positively associated with avoiding excess packaging, rho = 0.16 and q = 0.036. Household recycling and reported shopping change had the strongest association in the matrix, rho = 0.26 and q = 0.001. Perceived barriers were positively associated with store scheme participation, rho = 0.18 and q = 0.015, and with household recycling, rho = 0.13 and q = 0.042 (Table 2). The second expectation was therefore not supported. Respondents who reported more engagement also tended to report more severe constraints.

Table 2
Pairwise associations that remained after Benjamini and Hochberg correction across 66 tests. Associations involving multiple response indicators should be interpreted as co–occurrence patterns, not as evidence that one behaviour displaces another.

Variable A	Variable B	Spearman rho	Adjusted *q*
Age	Education	– 0.25	0.001
Age	Perceived influence	– 0.20	0.015
Age	Avoids excess packaging	0.16	0.036
Age	Store scheme participation	– 0.24	0.001
Age	Perceived barriers	– 0.19	0.012
Education	Perceived influence	0.22	0.009
Education	Store scheme participation	0.21	0.004
Education	Perceived barriers	0.21	0.004
CSR awareness	Perceived influence	0.19	0.025
Perceived effectiveness	Perceived influence	0.17	0.04
Perceived effectiveness	Perceived barriers	0.18	0.018
Perceived influence	Store scheme participation	0.17	0.047
Reusable bags	Avoids excess packaging	– 0.24	0.001
Avoids excess packaging	Store scheme participation	– 0.17	0.019
Household recycling	Shopping change	0.26	0.001
Store scheme participation	Perceived barriers	0.18	0.015

Discussion

The central finding is a separation between what customers recognise, what they believe CSR has changed, and what they report doing with waste. Awareness was common and perceived influence was very high among respondents who gave an interpretable answer. However, awareness and perceived effectiveness were not associated with household recycling or store recovery participation after the response structure and multiple testing were accounted for. This pattern does not show that retailer CSR has no effect on customers. It shows that recognition and perceived influence are not interchangeable with measured behaviour, and that cross sectional customer data cannot identify a causal pathway from CSR communication to waste outcomes. The visibility pattern is consistent with the logic of the shopping environment. Customers most often noticed recycling programmes, packaging, and reduced plastic use, while sustainable sourcing and energy and water conservation were less visible. This does not mean that visible initiatives are environmentally unimportant, nor does it demonstrate that retailers favour symbolic action. It does mean that customer perception is likely to be shaped by physical encounter. Operational

impacts that occur in procurement, refrigeration, logistics, and waste contracting may be substantial while remaining difficult for customers to observe. The CSR reputation is therefore an incomplete measure of environmental performance, a concern already raised in work on CSR accountability and decoupling (Halme et al., 2020, Nickerson et al., 2022).

The perceived influence result deserves a cautious interpretation, as a large majority of respondents who answered the influence item attributed at least some improvement in their waste behaviour to retailer initiatives, but only about one quarter reported always recycling at home. This mismatch is compatible with evidence that ethical consumption intentions do not reliably translate into observed purchasing behaviour and that self reported pro environmental behaviour may not correspond closely to independently observed action (Carrington et al., 2014, Kormos and Gifford, 2014). It may therefore reflect social desirability, broad interpretations of what counts as better waste management, or a real difference between point of purchase decisions and post purchase disposal. The questionnaire did not observe behaviour, measure waste quantities, establish the location of recycling facilities, or verify whether materials placed in a store bin entered a recovery pathway. The appropriate conclusion is therefore not that customers were mistaken, but that customer reported influence is a perceptual endpoint that must be linked to behavioural and material measures before it can be treated as an environmental outcome. At the same time, the absence of a clear association in this dataset should not be interpreted as evidence that perceptions and intentions never predict behaviour. Meta analytic and recycling specific research has found that attitudes, intentions, knowledge, perceived control, and opportunities can contribute to recycling and pro environmental behaviour when enabling conditions are present (Bamberg and Möser, 2007, Tonglet et al., 2004). The barrier results point to a second part of the explanation. Evidence from household waste research likewise indicates that environmental values and psychological factors operate together with situational characteristics such as facility access, convenience, and service design (Barr, 2007, Steg and Vlek, 2009, Miafodzyeva and Brandt, 2013). Respondents who reported more store scheme participation and household recycling also tended to report more severe barriers. This is inconsistent with the idea that barriers are mainly excuses offered by disengaged respondents. It is consistent with the alternative that people who attempt sustainable actions encounter cost, distance, inconvenience, uncertainty, and weak support more directly. Education showed the same pattern, with more educated respondents reporting greater scheme engagement and more severe barriers. These associations are weak and cannot establish direction, but they indicate that willingness and constraint can coexist. A customer can be motivated and still experience the system as difficult to use.

The South African policy context makes this distinction consequential, and the EPR framework assigns responsibilities for identified products beyond the point of sale, and the National Waste Management Strategy emphasises diversion from landfill and a circular economy (Department of Forestry, Fisheries and the Environment, 2020, Republic of South Africa, 2021). Those objectives cannot be delivered by communication alone. Producer funded campaigns and in store collection points are useful only when they are connected to reliable collection, sorting, aggregation, markets, and transparent reporting. Earlier evidence from South Africa also shows that policy instruments work differently across materials depending on price, reuse, and recovery value (Nahman, 2010, Dikgang et al., 2012a,b). Our results add the customer perspective. The visible communication system can be functioning while the broader recovery

system remains difficult to use. The practical implication is a shift in how retailer environmental CSR should be evaluated. Customer awareness and perceived effectiveness are relevant indicators of communication reach, but they should not be used as substitutes for packaging reduction, material recovery, service accessibility, or verified environmental performance. Retailers and producer responsibility organisations should report how customer facing initiatives connect to measurable reductions in packaging, increased reuse, source separation, and recovery. Municipalities and producers should also report the spatial accessibility and reliability of the systems that customers are being asked to use. These measures would allow future research to test whether improved infrastructure changes the relationship between awareness and behaviour instead of assuming that the relationship already exists.

Conclusions

Customers in Mbombela commonly recognised environmental CSR in grocery retail and often believed that retailer initiatives had influenced their behaviour. That perception was not accompanied by a corresponding association between CSR awareness and reported household recycling, store recovery participation, or shopping change. Instead, age and education were more consistent correlates of formal recovery engagement, while respondents who engaged more also reported greater barriers. Retail environmental CSR is therefore visible and meaningful as a customer perception, but it is not sufficient evidence of waste behaviour or environmental impact. The policy challenge is not simply to make customers care. It is to connect credible retailer action and customer communication to recovery systems that are accessible, reliable, and measurable.

Declarations

Conflict of interest

The authors declare no conflicts of interest.

Ethical considerations

The study has been ethical approved by University of Mpumalanga Research Ethics Committee (RC–HSS): original submission (Ref: UMP/Dalu/1/2022) and extension of research ethics clearance (Ref: UMP/Dalu/FANS/2025/01/Extension). All research procedures were performed in accordance with the ethical guidelines and regulations of the Rhodes University and the principles outlined in the Declaration of Helsinki. All participants were fully informed about the purpose and procedures of the research, and verbal informed consent was obtained before participation. Participation was voluntary, and respondents were assured of their right to withdraw at any stage without penalty. All data were anonymised and treated confidentially, with no personally identifiable information disclosed or recorded.

Consent for publication

Not applicable. The manuscript contains no identifiable individual data or images.

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Author Contribution

Authors' contributions RM: conceptualization, methodology, investigation, visualisation, data analysis, writing – reviewing and editing; TD: conceptualization, methodology, investigation, supervision, visualisation, data analysis, funding, writing – reviewing and editing; MTBD: conceptualization, methodology, investigation, supervision, visualisation, data analysis, funding, writing – reviewing and editing.

Data availability

All data have been presented in the manuscript.

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Figures

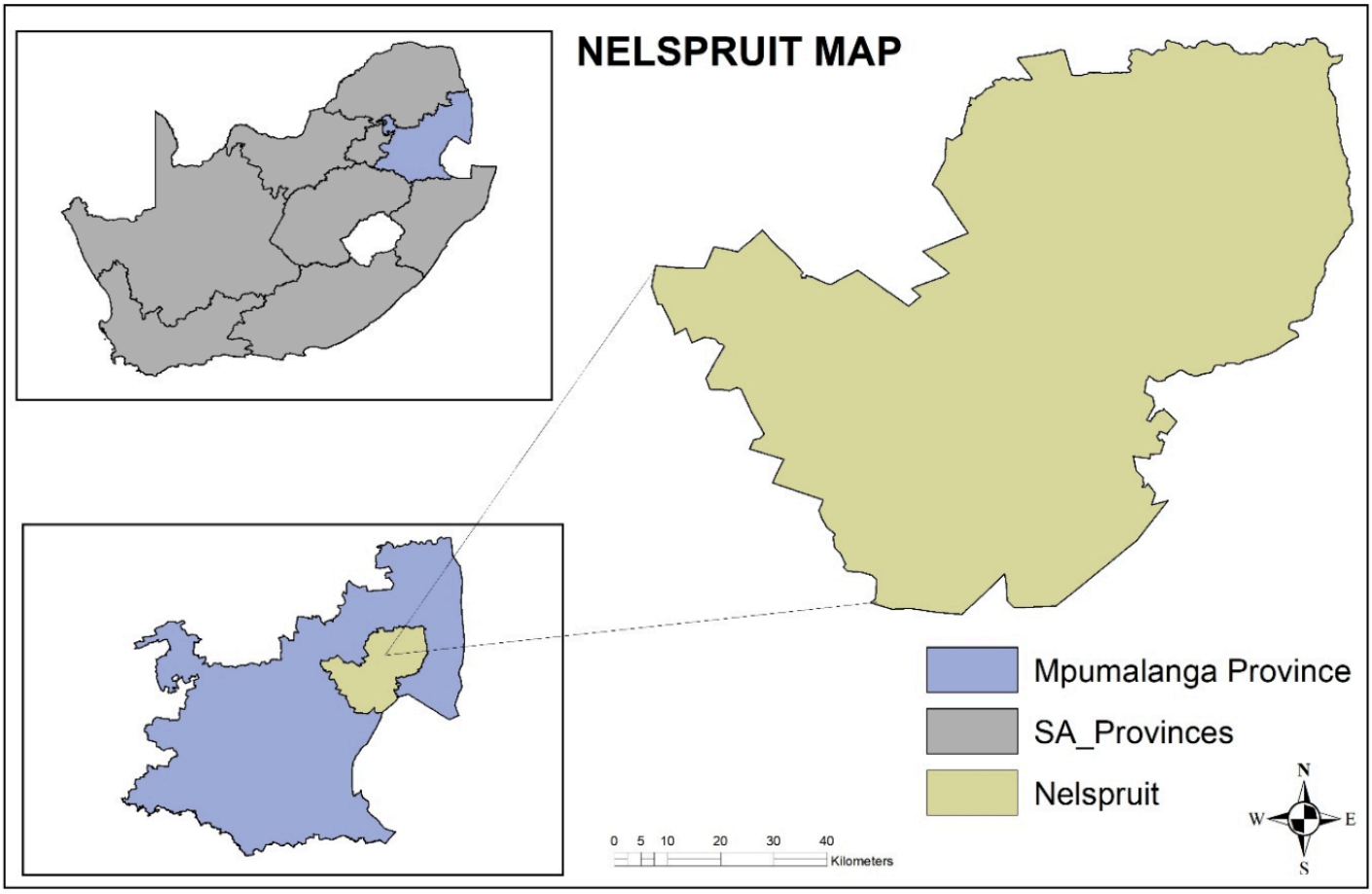


Figure 1

Location of Mbombela, Mpumalanga Province, South Africa. The map is retained from the study materials and the former place name Nelspruit is used within the map artwork.

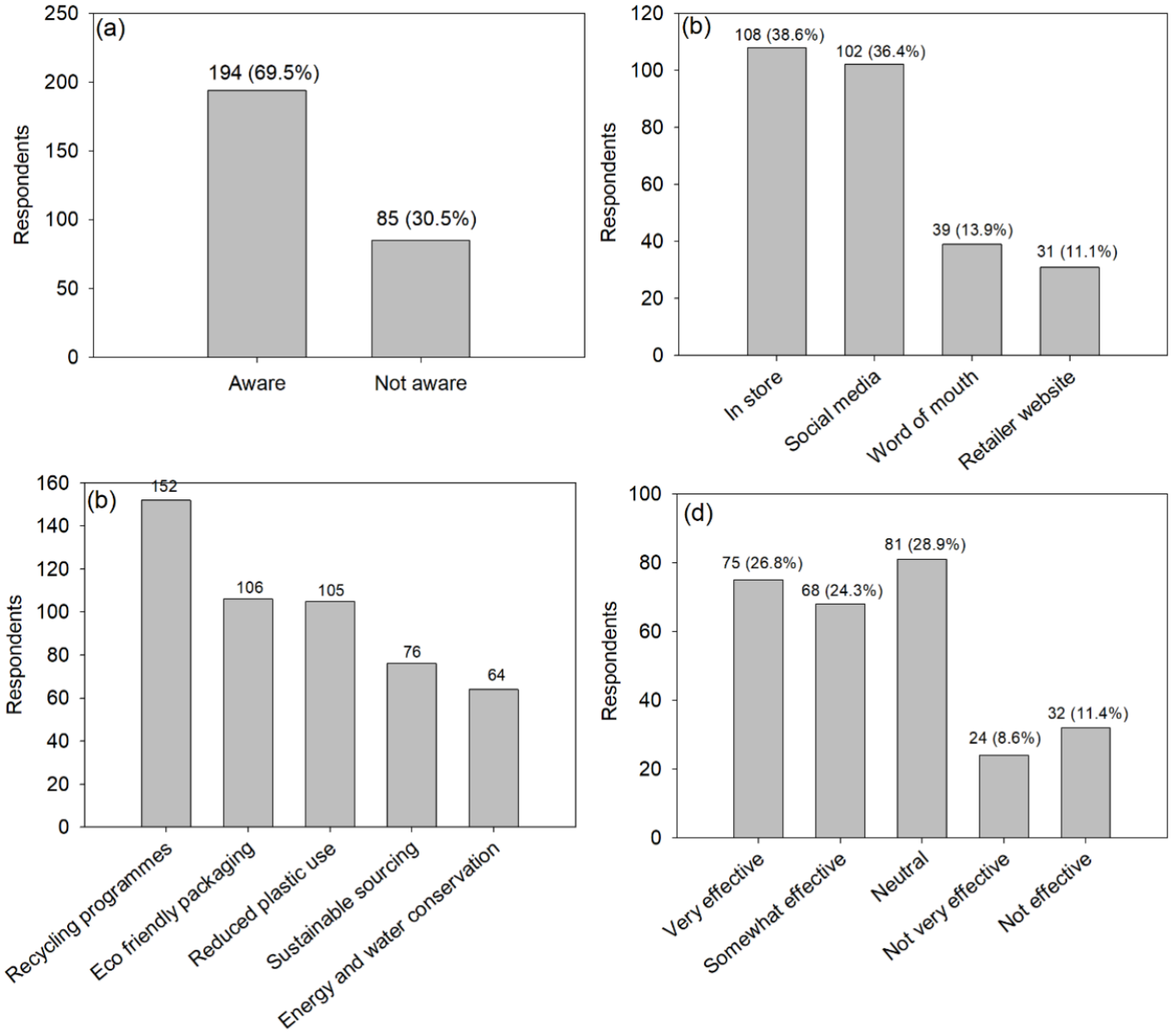


Figure 2

Customer awareness, reported information channels, initiatives noticed in stores, and perceived effectiveness of retailer environmental CSR: (a) awareness (n = 279), (b) reported information channels (n = 280), (c) initiatives noticed in stores (n = 279), and (d) perceived effectiveness (n = 280)

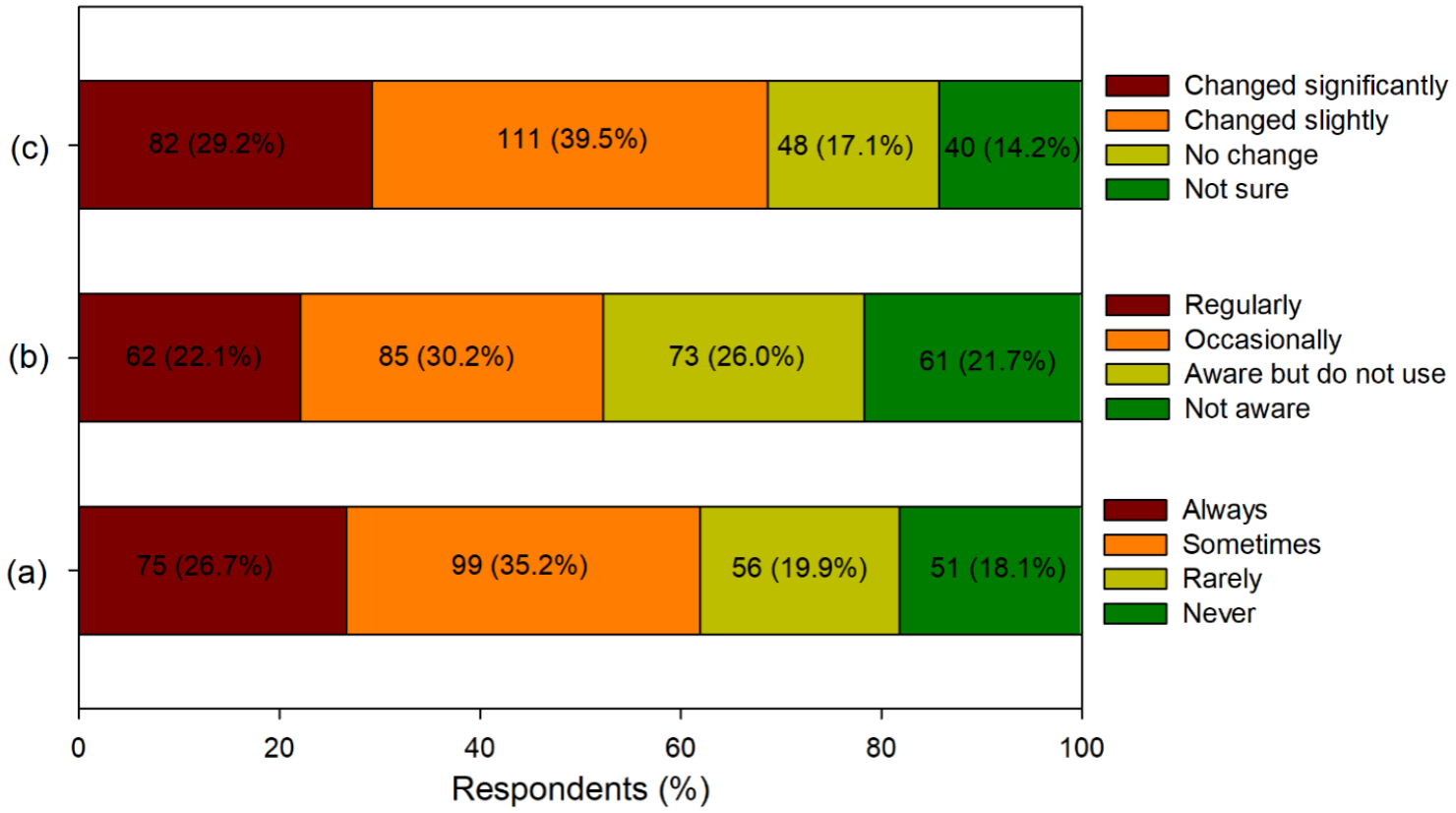


Figure 3

(a) Reported household recycling, (b) participation in store led recovery schemes, and (c) change in shopping practice

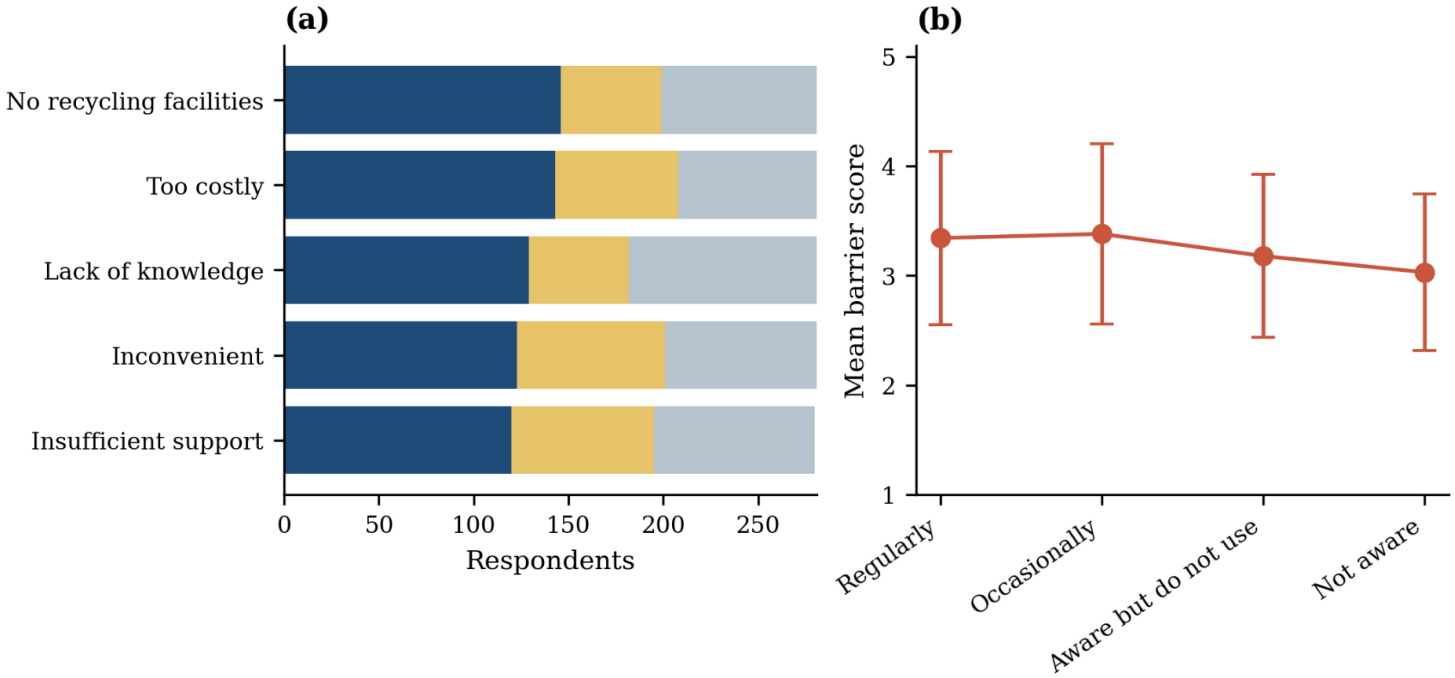


Figure 4

Reported barriers and mean barrier salience across levels of store recovery scheme engagement in panels (a) and (b), respectively: (a) the stacked segments represent agreement, neutrality, and disagreement from left to right, and (b) ranges from 1 to 5, with higher values indicating greater perceived constraint. Error bars show one standard deviation.