

The packaging redesign modernisation dilemma: The relationship with familiarity, likeability, and its effect on purchase intent

William Caruso^{a,*}, Jenni Romaniuk^a, Bill Page^a, Zachary William Anesbury^a, Rashid Saeed^b, John Williams^c

^a Ehrenberg-Bass Institute, Adelaide University, 70 North Terrace, Adelaide, 5000, Australia

^b The University of Queensland, Queensland, Australia

^c Otago Business School, PO Box 56, Dunedin, New Zealand

ARTICLE INFO

Keywords:

Packaging redesigns
packaging modernisation
Likeability
Familiarity
Gestalt theory
Associate network theory
Purchase intention

ABSTRACT

Modernisation is a common objective in packaging redesign briefs, yet consumer-perceived modernity has rarely been examined as a distinct construct. Drawing on existing memory (Associative Network Theory) and design (Gestalt) theories, this study uses structural equation modelling to examine how packaging modernity influences purchase intention through likeability and familiarity. Online surveys with 484 United States and 491 United Kingdom consumers provided evaluations of 48 redesigned packages across seven packaging types (e.g., bag or bottle) and six diverse categories. Results show modernisation affects purchase intention primarily through indirect mechanisms, rather than via a direct effect, underscoring the dual role of aesthetic appeal and recognisable brand cues. From a managerial perspective, the results offer actionable guidance for managing redesign risk: modernise when pack likeability declines, protect distinctive assets that support recognition, and plan communications to rebuild familiarity following substantial change. The study also demonstrates how these decisions can be operationalised through research, including tracking likeability over time and testing brand identification and findability to ensure redesigned packages remain easy to locate and correctly linked to the brand.

1. Introduction

Redesigning a packaging range can cost up to USD\$1 million (Gallop, 2020). Modernisation is a frequent objective in such projects: redesign briefs commonly call for a more modern design (Hagen, 2023), and 58% of marketers report modernisation as the primary purpose of their most recent redesign (Caruso, 2021). Despite its prevalence in practice, consumer-perceived modernisation remains underexplored in academic research, leaving limited evidence on how modernisation shapes purchase decisions in real-world packaging redesigns.

A limited understanding of effective modernisation can produce redesigns that attract practitioner acclaim yet generate negative market outcomes; two widely reported cases illustrate this risk. Tropicana replaced its classic representation of an orange with a straw emerging from it with a glass of juice, intending to present a more contemporary expression (Andrivet, 2022). Sales decreased by 20% (USD 33 million) within one month, prompting the brand to revert to the previous design (Zmuda, 2009). Similarly, Bahlsen adopted a contemporary redesign

that received significant industry acclaim, including a global D&AD award (Qureshi, 2021), yet sales declined by approximately 12%, and the brand lost category leadership in several markets (Foley, 2023).

For design practitioners, modernisation reflects the incorporation of contemporary cultural visual codes (Favier et al., 2019; Pracejus et al., 2006), commonly through simplification, greater white space, or the reduction of visual elements (e.g., Favier et al., 2019; Pracejus et al., 2006). These design trends contribute to consumer-perceived contemporariness (our focus, distinct from technological/symbolic modernity), which shifts over time as aesthetic tastes evolve.

Prior research demonstrates packaging influences consumer attitudes and behaviour (Bloch, 1995; Lee et al., 2010; Rettie and Brewer, 2000; Rundh, 2016). However, much of this work examines individual design elements in isolation, such as colour (Garber et al., 2000; Huang and Dai, 2025; Tian and Huang, 2025), shape (Folkes and Matta, 2004), typography (Doyle and Bottomley, 2004), material (Magnier and Schoormans, 2017), or label position (Sundar and Noseworthy, 2014).

Gestalt theory suggests that consumers process visual stimuli

* Corresponding author.

E-mail addresses: Will.Caruso@marketingscience.info (W. Caruso), Jenni.Romaniuk@marketingscience.info (J. Romaniuk), Bill.Page@marketingscience.info (B. Page), zac.anesbury@unisa.edu.au (Z.W. Anesbury), m.saeed@business.uq.edu.au (R. Saeed), john.williams@otago.ac.nz (J. Williams).

<https://doi.org/10.1016/j.jretconser.2026.104800>

Received 27 November 2025; Received in revised form 2 March 2026; Accepted 9 March 2026

Available online 11 March 2026

0969-6989/© 2026 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

holistically (Chang et al., 2002; Graham, 2008), implying judgements of modernity derive from the overall composition rather than individual design elements. Branding evidence is mixed: visual change can enhance salience and choice (Pieters and Warlop, 1999; Schoormans and Robben, 1997), whereas alterations to key brand cues (e.g., logo, colour, shape, style) often reduce recognition and search efficiency (Grossman and Wisenblit, 1999; Romaniuk and Caruso, 2018).

2. Conceptual model and hypotheses

Our research draws on Gestalt design theories (Chang et al., 2002; Graham, 2008) and Associative Network Theories of human memory (Anderson and Bower, 1979) to examine the modernisation of packaging redesigns. Fig. 1 presents the conceptual model and outlines the framework for the hypotheses. We now elaborate on the theoretical bases.

2.1. Gestalt Theory

Gestalt, loosely translated as configuration, originated from three German psychologists in 1910 (Behrens, 1998) and was expanded throughout the 1920s (e.g. Koffka, 1922) following work in psychology, logic, and epistemology (as discussed in Wertheimer, 1938). The central proposition is that people typically process complex multi-item stimuli as unified wholes rather than separate components (Chuang et al., 2023; Liu and Yang, 2025). For instance, a word is recognised as a coherent form rather than a sequence of individual letters (Graham, 2008).

Over one hundred Gestalt principles have been identified, with six regarded as most relevant to visual form. Two are particularly applicable here: proximity, where elements positioned close together are perceived as related, and figure-ground contrast, which allows individuals to distinguish an object from its background (Chang et al., 2002; Liu and Yang, 2025). These principles have been examined across visual art, instructional screen design, and photography, where they influence visual fixation and subjective evaluation (Chuang et al., 2023; Graham, 2008). Because packaging contains many co-located visual elements, its perception and the perception of redesigns are likely governed by Gestalt processing, meaning even small modifications can interfere with recognition.

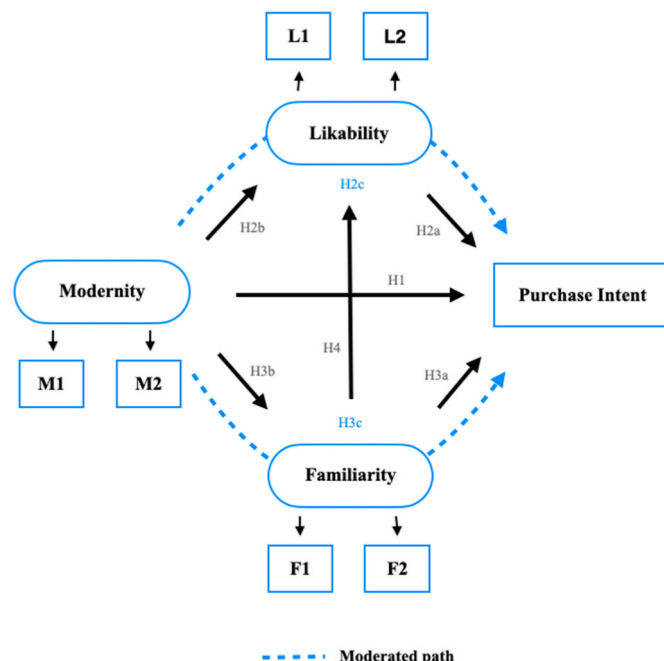


Fig. 1. Conceptual model.

2.2. Associative Network Theories of human memory

Associative Network Theories describe memory as a system of interconnected nodes, where repeated co-activation strengthens links and activating one node can trigger others (Anderson and Bower, 1979; Collins and Loftus, 1975). In branding, this perspective suggests the brand name operates as a central node, with meaning derived from its connected associations (Keller, 1991). Such links develop through exposure to advertising, word of mouth, and accumulated brand experience (Krishnan, 1996). Within packaged goods, interaction with the pack in store, at home, or in marketing communication can cue existing associations or generate new ones from the visual and structural elements of the design (Dimofte and Yalch, 2011; McCracken and Macklin, 1998; Stocchi et al., 2021). When redesigns modify these visual cues, they risk weakening established connections in memory, thereby reducing recognition and purchase likelihood.

2.3. Modernisation in the context of visual packaging design

In packaging research, modernisation has focused on identifying visual cues that convey a modern appearance, such as simplified graphics or flat logos, rather than examining the effect of these changes on consumer response (Hagen, 2023; Peng et al., 2024). Packaging design influences decision processes, with visually appealing designs eliciting more favourable evaluations and a higher likelihood of selection (Bloch, 1995; Creusen and Schoormans, 2005; Veryzer, 1993). However, findings on simplicity are mixed. Simple designs can signal lower production costs, reducing willingness to pay (Min et al., 2024), yet in hedonic or personal care categories, simplicity can increase willingness to pay, possibly because it suggests purity or healthfulness rather than modernity (Ton et al., 2024).

Effective packaging updates require careful attention to visual components such as typography, shape, and imagery, all of which contribute to overall appeal (Bloch, 2011; Hu et al., 2025; Veryzer, 1993). Modernisation typically involves cleaner lines and more minimal layouts, as illustrated by the Burberry logotype change in 2018 (Parkes, 2023). Although the visual language of modernity continues to evolve, consumer perception remains pivotal. Packaging perceived as more modern is commonly assumed in industry to increase purchase likelihood directly, as reflected in the prevalence of modernisation-focused redesign briefs; however, direct empirical evidence supporting this assumption remains underexamined in academic research. Reflecting this industry assumption, the first hypothesis is:

H1. Packaging modernity is positively related to purchase intent.

2.4. Packaging likeability

Likeability reflects a positive evaluation of an object and influences behaviour, as people respond more favourably to appealing stimuli (Cook, 1992). In packaging, it represents the affective response elicited by the pack's visual presentation, with more attractive designs increasing brand engagement (Reimann et al., 2010). Higher likeability has been linked to stronger purchase intent in categories such as wine and cars, where aesthetic appeal enhances product preference (Celhay and Trinquost, 2015; Landwehr et al., 2012; Orlowski et al., 2022). Similar effects are observed in advertising, where creative likeability improves purchase intent (Callcott and Phillips, 1996). Together, these findings highlight the importance of likeability in shaping positive consumer responses across products and communications. The present study extends this to consumer-packaged goods, typically low-involvement categories where packaging functions as a static cue at shelf. Therefore, the second hypothesis is:

H2a. Packaging likeability will be positively related to purchase intent.

Updating packaging to align with prevailing aesthetic tastes should

increase likeability, as consumers tend to favour designs that reflect their changing preferences. Packaging design also shapes broader product perceptions, including sustainability, quality, and tastiness, reinforcing its role in consumer evaluations (Pelet et al., 2020; Steenis et al., 2017). Rather than exerting a direct influence, modernisation may affect purchase intentions indirectly by enhancing consumers' likeability of the packaging. Therefore, the following hypotheses are proposed:

H2b. *Consumers will rate more modern packaging designs as more likeable.*

H2c. *Likeability mediates the effect of modernity on purchase intent.*

2.5. Packaging familiarity

Packaging familiarity is how recognisable a pack feels; higher familiarity increases decision confidence and improves brand recall and recognition (Hoyer and Brown, 1990). Familiarity builds through repeated exposure to advertising, purchasing, and use (Stokes, 1985), while elements such as strong shelf presence and visual contrast support search and can increase purchases (Clement et al., 2013). Therefore, the hypothesis is for a direct, positive relationship between packaging familiarity and purchase intent.

H3a. *Packaging familiarity is positively related to purchase intent.*

However, modernising packaging requires change, which can reduce familiarity by increasing divergence from the previous design. Consistent with this view, Reimann et al. (2010) found familiar brands lost less choice share when presented in a standard (vs aesthetic) format than unfamiliar brands. Given packaged goods decisions are often made quickly (Anesbury et al., 2016), redesign risks disrupting recognition at the point of purchase. Prior research shows familiarity increases preference (Montoya et al., 2017); however, feelings of familiarity may be misattributed to "feels right/current," inflating perceived modernity (Reber et al., 2004; Schwarz et al., 2021). Processing fluency may also make contemporary designs feel familiar by matching current cultural prototypes (Reber et al., 2004), potentially offsetting redesign disruption. Although redesign often introduces new cues, increases prior packaging divergence thereby reducing familiarity (Orth et al., 2019), packaging familiarity may mediate the effect of modernisation on purchase intent. Thus, the following hypotheses are explored:

H3b. *Packaging modernisation is negatively related to packaging familiarity.*

H3c. *Familiarity mediates the effect of modernity on purchase intent.*

Familiarity and likeability are closely linked. Repeated exposure increases positive attitudes, even toward unfamiliar stimuli (Montoya et al., 2017; Zajonc, 1968). Mere exposure can shape attitudes without conscious recognition, and a meta-analysis confirms these effects for visual stimuli (Montoya et al., 2017). We therefore propose familiarity increases likeability and test this relationship in the packaging context through the following hypothesis:

H4. *More familiar packaging designs will be perceived as more likeable.*

3. Data and method

The study assessed 48 packaging redesigns across seven pack types (bag, bottle, box, wrapper, can, jar, tub) drawn from six categories (snacks, beverages, breakfast foods, canned meals, seafood, dairy, and personal care) introduced between 2011 and 2020. Included redesigns had a modernisation objective identified through publicly available sources or through personal communication. Original and redesigned packaging versions are presented in Appendix A.

Between the 2nd March and April 5, 2020, 975 primary household shoppers (484 US; 491 UK) were recruited via a professional panel provider for an online survey. The sample reflected national shopper

demographics (Food Standards Agency, 2021; The Hartman Group, 2023): 60% female, 24% aged 18–34, 35% aged 35–54, 36% aged 55–75, and 5% over 75. Respondents were screened for recent category purchases, with non-buyers, incompletes, speeders, straight-liners, and duplicates excluded. Participants were allocated to stimulus groups based on their purchase history and then randomized into six quota groups (approximately 80 respondents per group). Random assignment ensured demographic factors such as age and gender were evenly distributed across groups, eliminating the need for additional controls in the model (Hu and Bentler, 1999; Hooper et al., 2008). Each respondent evaluated eight designs across two stages, viewing both original and modern versions. Between stages, respondents completed open-ended distraction tasks. Designs were rated on seven-point scales for modernity, likeability, and familiarity (two items per construct), followed by a randomized A/B forced-choice purchase decision. Common method bias was assessed post-hoc (Podsakoff et al., 2003). Harman's single-factor test on all items explained 38% of variance (<50% threshold), and full collinearity VIFs on composites were <5 (Kock, 2015), indicating common method bias is unlikely.

3.1. Measurement of variables

We examine four measures in this study: modernity, likeability, familiarity, and purchase intention.

Modernity, measured by the items "This design is modern" [M1] and "This design is up to date" [M2], was developed using the C-OAR-SE procedure (Rossiter, 2002), which ensures precise construct definition and alignment among the construct, its object, and measurement items. Modernity was defined as the degree to which a packaging design is perceived as current or consistent with contemporary aesthetic standards. The object of evaluation was a specific packaging design, treated as a concrete singular attribute, reflecting a holistic visual perception capturing consumers' perceptual judgement of temporal relevance. Items were written in plain consumer language, reviewed by marketing professionals for content validity, and pilot tested to confirm clarity and response variation.

Likeability (i.e., the design of the packaging looks nice [L1]; I like the packaging design [L2]) was adapted from previous research (Khan et al., 2015; Underwood and Klein, 2002). Familiarity (i.e., I am familiar with this products design [F1], and this design is known to me [F2]) was adapted from (Dawar, 1996; Martínez and Pina, 2010), and Purchase intent (i.e., which of the packages below would you purchase?) was adapted from previous research (Papagiannidis et al., 2013).

The first three constructs were collected using a seven-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (7). As shown in Table 1, all variables reported had an acceptable level of reliability (i.e., Cronbach's alpha).

Table 1
Results related to convergent validity.

Constructs and items	Loading	Std Error	P-Value
<i>Modernity (AVE = .873, CR = .932)</i>			
This design is modern	.93	.023	.01
This design is up to date	.94	.023	.01
<i>Likeability (AVE = .891, CR = .942)</i>			
I like the packaging design	.94	.024	.01
The design of packaging looks nice	.94	.023	.02
<i>Familiarity (AVE = .923, CR = .960)</i>			
I am familiar with this products design	.97	.035	.01
This design is known to me	.95	.035	.02

Notes: AVE = average variance extracted; CR = composite reliability.

4. Results and discussion

4.1. Measurement model

Before testing the hypotheses, the reliability and validity of all constructs (familiarity, likeability, and modernity) were assessed. Cronbach's alpha values exceeded the recommended threshold of .70 (Nunnally, 1978). Convergent and discriminant validity were evaluated through a confirmatory factor analysis (CFA) using AMOS 21. The model demonstrated acceptable fit indices (Hu and Bentler, 1999). Convergent validity was confirmed following the criteria proposed by Fornell and Larcker (Fornell and Larcker, 1981). Table 1 shows the composite reliability (CR > .70), factor loadings (>.50), and average variance extracted (AVE >.50), surpassed these benchmarks, establishing construct reliability and validity.

Discriminant validity was assessed using the Fornell–Larcker criterion (Fornell and Larcker, 1981). Table 2 shows the square root of each construct's average variance extracted (AVE) exceeded its correlations with other constructs, indicating each construct shared more variance with its own indicators than with other constructs. The Heterotrait–Monotrait ratio (HTMT) was also examined. The simplified HTMT, based on averaged construct scores, was .919, slightly above the recommended .85–.90 guideline; however, the item-level HTMT2 statistic (Roemer et al., 2021) was .81, below the conservative .85 cutoff, supporting discriminant validity.

Variance inflation factors (VIF) were examined to assess multicollinearity. All values were well below the threshold of five (modernity = 3.87, likeability = 4.30, familiarity = 1.45), confirming multicollinearity was not an issue.

Together, the Fornell and Larcker test, HTMT2, and VIF results confirm modernity, likeability, and familiarity are empirically distinct and statistically appropriate for inclusion in the same model.

Theoretically, familiarity, modernity, and likeability are conceptually distinct. Familiarity reflects recognition of, or prior knowledge about, a brand's design (Hoyer and Brown, 1990); modernity captures a cognitive judgement regarding how contemporary a design appears (Hagen, 2023; Peng et al., 2024); and likeability reflects the affective appeal of the design (Cook, 1992). Although modern designs are often liked, hence the stronger correlations, conceptual independence remains: a design can appear modern yet be disliked (e.g., overly minimal or sterile) or be liked without being modern (e.g., nostalgic packaging). The results confirm familiarity, modernity, and likeability should be analysed as separate constructs.

4.2. Structural model

We ran a structural model to test the proposed hypotheses (see Fig. 2). The overall model fit was significant [$\chi^2(9) = 43.83$ ($p < .00$), $\chi^2/DF = 4.87$, RMSEA = .032, CFI = .99, IFI = .99, and NFI = .99], and key statistics indicated a good model fit (Hu and Bentler, 1999).

Regarding direct effects, the results demonstrated packaging modernisation had a positive impact on packaging likeability ($\beta = .840$, $p < .001$), but no effect on purchase intent ($\beta = -.026$, $p = .616$) and modernisation had a positive effect on familiarity ($\beta = .510$, $p < .001$). Thus, regarding the direct effects of packaging modernisation, H2b (likeability) was accepted, but H1 (purchase intent) and H3b

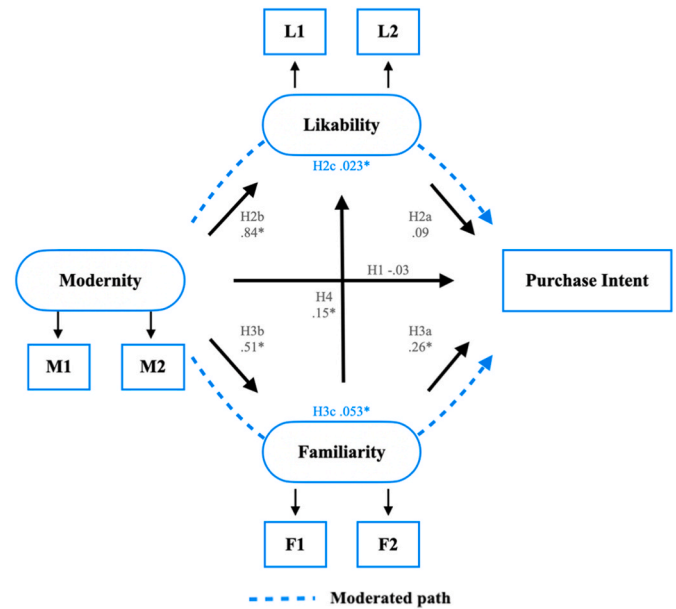


Fig. 2. Structural equation model (SEM) results.

Notes: * $p < .05$, Numbers are standardised regression weights.

(familiarity) were rejected. Contrary to H3b, modernity positively predicted familiarity (.510, $p < .001$). This reflects and interaction between familiarity and processing fluency (Reber et al., 2004): contemporary designs feel more recognisable as they cue stylistic modernity (relevance) rather than disrupting memory networks, explaining the counterintuitive result while preserving the modernisation-familiarity tension.

In relationships not including modernisation, familiarity had a positive impact on purchase intent ($\beta = .260$, $p < .001$) and likeability ($\beta = .154$, $p < .001$), leading to acceptance of H3a and H4. Finally, results showed no direct relationship between likeability on purchase intent ($\beta = .092$, $p = .099$). Therefore, H2a was rejected. Taken together, these direct paths indicate packaging modernisation shapes purchase intention primarily via its effects on likeability and familiarity, rather than as a standalone driver of choice.

4.3. Mediation analysis

Mediation effects for Hypothesis 2c and Hypothesis 3c were tested using the bootstrap method with 5000 resamples and 95% confidence intervals (Zhao et al., 2010). As shown in Table 3, both indirect paths were significant: modernity influenced purchase intent through likeability ($\beta = .023$, $p < .001$) and through familiarity ($\beta = .053$, $p < .001$). The indirect effect via familiarity was slightly stronger, indicating both likeability and familiarity serve as mediators between modernity and purchase intent. Overall, these mediation results indicate modernity operates as an indirect lever on purchase intention through recognition and evaluative mechanisms, with familiarity playing the more influential role.

The non-supported paths in our model are best interpreted as refinements to theorised relationships, clarifying where modernity and

Table 2
Construct statistics and correlation matrix.

Construct	CR	M	L	F
Modernity (M)	.932	.93		
Likeability (L)	.942	.92	.94	
Familiarity (F)	.960	.51	.58	.96

Notes: Square root of AVE estimates are shown in boldfaced diagonal entries; CR = composite reliability.

Table 3
Mediation analysis.

Relationship	Indirect Effects	Standard Error
Likeability (H2c)		
Modernity → Likeability → Purchase Intent	.023**	.006
Familiarity (H3c)		
Modernity → Familiarity → Purchase Intent	.053**	.004

** $p < .001$.

likeability do and do not exert independent effects. Specifically, the non-significant direct paths from modernity and likeability to purchase intent indicate these constructs primarily influence choice through familiarity, which emerges as the dominant driver of purchase intention in this context.

These results offer theoretical and practical value, and consistent patterns across the US-UK samples (Appendix B) support cross-market consistency within Western markets.

5. Theoretical implications

This study advances redesign theory beyond confirming mediation by examining consumer-perceived modernity beyond its traditional link to likeability and purchase intent. Assessing packaging holistically through Gestalt Theory (Chuang et al., 2023; Graham, 2008; Koffka, 1922) shows likeability is crucial for modernity acceptance. Modernity does not directly affect purchase intent but operates through a likeability mediator, indicating redesigns should occur only when the packaging no longer reflects current aesthetic expectations.

Successful modernisation must also consider familiarity both design and brand. According to Associative Network Theory (Grossman and Wisenblit, 1999), consumers find it difficult to form new brand associations once established links are embedded in memory. Replacing familiar brand elements with new or unknown ones purely for visual change can be counterproductive, as shown by high-profile redesign failures. Our findings position familiarity as the dominant pathway to purchase intent ($\beta = .260$, $p < .001$ vs. likeability $\beta = .092$, ns), design familiarity fosters trust and recognition, helping consumers locate and choose products quickly at the point of purchase.

Modernity functions as an aesthetic antecedent that aligns packaging with contemporary norms, whereas familiarity exerts a stronger behavioural influence by facilitating decision-making and ensuring brand continuity. Familiar brand elements such as colour, logo, and shape - core distinctive assets in Romaniuk and Caruso (2018) enhance processing fluency and support brand search (Hartnett et al., 2016). Maintaining equilibrium between modernity and familiarity (design and brand) ensures designs remain current without disrupting recognition or purchase intent.

6. Practical implications

The results provide practical insights for managers performing packaging redesign. Redesigns should occur only when measurable declines in likeability are observed. Ongoing tracking of likeability enables firms to detect declines early and avoid changes driven by preference rather than need. When redesigns are justified, two objectives should guide implementation: restoring likeability and preserving familiarity. Enhancing likeability without maintaining the familiarity consumers rely on can reduce brand recognition and weaken purchase intent. Since retail decisions are often quick and habitual, retaining recognisable brand cues remains essential for product retrieval.

Organisations should link perceptual and behavioural metrics, using likeability and distinctive asset recognisability to guide redesign evaluation (Caruso et al., 2024; Reimann et al., 2010). Collaboration between marketing and design teams will ensure aesthetically appealing updates preserve familiarity.

7. Limitations and future studies

This study has some limitations that inform future research. First, the

analysis viewed packaging holistically, consistent with Gestalt principles; modernity measured parsimoniously (two items), potentially conflating with likeability despite strong discriminant validity evidence. Future studies could isolate design components such as logos, structure, or materials to assess their influence on perceptions of modernity and likeability. Second, while US-UK results show cross-market consistency within similar Western, English-speaking, high-individualism contexts, cultural differences in design interpretation (e.g., aesthetics, symbolism) may limit applicability elsewhere. Future cross-cultural studies in collectivist/emerging markets are needed. Third, expanding sample size and design variety could deepen understanding of how specific trends influence consumer perception and decision-making.

In summary, modernisation should not be viewed as an inherent driver of success but as a targeted response to declining likeability that preserves familiarity, the two constructs jointly underpinning effective packaging redesign.

CRedit authorship contribution statement

William Caruso: Writing – review & editing, Writing – original draft, Visualization, Validation, Software, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Jenni Romaniuk:** Writing – review & editing, Writing – original draft, Supervision. **Bill Page:** Writing – review & editing, Writing – original draft, Supervision. **Zachary William Anesbury:** Writing – review & editing, Writing – original draft, Supervision. **Rashid Saeed:** Writing – original draft, Software, Methodology. **John Williams:** Writing – original draft, Supervision, Conceptualization.

Informed consent

Informed consent was obtained through the panel provider during the original data collection process.

Ethics approval

Data was collected from human subjects through a panel provider, ensuring proper anonymisation.

Summary statement of contribution

Packaging modernisation influences purchase intent indirectly through enhanced likeability and familiarity rather than directly. Contrary to expectations, modern designs maintain or even enhance familiarity via processing fluency. This helps resolve the practical modernisation dilemma while refining Associative Network Theory, ensuring equilibrium between modernity and familiarity preserves brand recognition and purchase intent.

Funding

N/A.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Original and Modern Designs (n = 48)

Images and supporting information were sourced from design blogs such as Packaging of the World (packagingoftheworld.com) and Brand New

(underconsideration.com/brandnew), then cross-checked against major online supermarket websites to confirm the modern packs were current.

United States							
Original	Modern	Original	Modern	Original	Modern	Original	Modern
			</				

- Anesbury, Z., Nienycz-Thiel, M., Dawes, J., Kennedy, R., 2016. How do shoppers behave online? An observational study of online grocery shopping. *J. Consum. Behav.* 15 (3), 261–270. <https://doi.org/10.1002/cb.1566>.
- Behrens, R.R., 1998. Art, design and gestalt theory. *Leonardo* 31 (4), 299–303.
- Bloch, P.H., 1995. Seeking the ideal form: product design and consumer response. *J. Market.* 16–29. <https://doi.org/10.2307/1252116>.
- Bloch, P.H., 2011. Product design and marketing: reflections after fifteen years. *J. Prod. Innovat. Manag.* 28 (3), 378–380. <https://doi.org/10.1111/j.1540-5885.2011.00805.x>.
- Calcott, M.F., Phillips, B.J., 1996. Observations: elves make good cookies: creating likable spokes-character advertising. *J. Advert. Res.* 36 (September/October), 73–79. <https://doi.org/10.1080/00218499.1996.12466631>.
- Caruso, W., 2021. *Evolution, Not Revolution! An Investigation Into how to Effectively Redesign Consumer Packaged Products*. (Doctoral dissertation, University of South Australia).
- Caruso, W., Romaniuk, J., Page, B., William Anesbury, Z., Williams, J., 2024. The role of market research in pack redesign performance. *Int. J. Mark. Res.* <https://doi.org/10.1177/14707853241296656>.
- Celhay, F., Trinquet, J.F., 2015. Package graphic design: investigating the variables that moderate consumer response to atypical designs. *J. Prod. Innovat. Manag.* 32 (6), 1014–1032. <https://doi.org/10.1111/jipm.12212>.
- Chang, D., Dooley, L., Tuovinen, J.E., 2002. *Gestalt theory in visual screen design: a new look at an old subject*. Seventh. World Conference on Computers in Education, Australia. <https://dl.acm.org/doi/abs/10.5555/820060.820062>.
- Chuang, H.-C., Tseng, H.-Y., Tang, D.-L., 2023. An eye tracking study of the application of gestalt theory in photography. *Journal of Eye movement research* 16 (1), 10–16910. <https://doi.org/10.16910/jemr.16.1.5>.
- Clement, J., Kristensen, T., Grønhaug, K., 2013. Understanding consumers' in-store visual perception: the influence of package design features on visual attention. *J. Retailing Consum. Serv.* 20 (2), 234–239. <https://doi.org/10.1016/j.jretconser.2013.01.003>.
- Collins, A.M., Loftus, E.F., 1975. A spreading activation theory of semantic processing. *Psychol. Rev.* 82 (6), 407–428. <https://doi.org/10.1037/0033-295X.82.6.407>.
- Cook, W.A., 1992. Love, hate, and likability. *J. Advert. Res.* 32 (March/April), 7–9.
- Creusen, M.J.E.H., Schoormans, J.P.L., 2005. The different roles of product appearance in consumer choice. *J. Prod. Innovat. Manag.* 22 (1), 63–81. <https://doi.org/10.1111/j.0737-6782.2005.00103.x>.
- Dawar, N., 1996. Extensions of broad brands: the role of retrieval in evaluations of fit. *J. Consum. Psychol.* 5 (2), 189–207. https://doi.org/10.1207/s15327663jcp0502_05.
- Dimofte, C.V., Yalch, R.F., 2011. The mere association effect and brand evaluations. *J. Consum. Psychol.* 21 (1), 24–37. <https://doi.org/10.1016/j.jcps.2010.09.005>.
- Doyle, J.R., Bottomley, P.A., 2004. Font appropriateness and brand choice. *J. Bus. Res.* 57 (8), 873–880. [https://doi.org/10.1016/S0148-2963\(02\)00487-3](https://doi.org/10.1016/S0148-2963(02)00487-3).
- Favier, M., Celhay, F., Pantin-Sohier, G., 2019. Is less more or a bore? Package design simplicity and brand perception: an application to Champagne. *J. Retailing Consum. Serv.* 46, 11–20. <https://doi.org/10.1016/j.jretconser.2018.09.013>.
- Foley, J., 2023. Does this failed biscuit rebrand show designers sometimes get it wrong? *Creative Bloq*. <https://www.creativebloq.com/news/bahlsen-rebrand-fail>.
- Folkes, V., Matta, S., 2004. The effect of package shape on consumers' judgments of product volume: attention as a mental contaminant. *J. Consum. Res.* 31 (2), 390–401. <https://doi.org/10.1086/422117>.
- Food Standards Agency, 2021. Share of male and female consumers in the United Kingdom (UK) who generally do the food shopping for their household in 2020. <https://www-statista-com.eu1.proxy.openathens.net/statistics/1256034/share-of-uk-consumers-who-usually-shop-for-food-by-gender/>.
- Fornell, C., Larcker, D., 1981. Evaluating structural equation models with unobservable variables and measurement error. *J. Mark. Res.* XVIII (39–50). <https://doi.org/10.2307/3151312>. Feb.
- Gallop, H., 2020. Cadbury in first design overhaul for 50 years. *Barques*. <https://www.barques.co.uk/insight/cadbury-reveals-its-first-major-design-overhaul-in-50-years>.
- Garber, L.L., Burke, R.R., Jones, J.M., 2000. The role of package color in consumer purchase consideration and choice. *Marketing Science Institute*.
- Graham, L., 2008. Gestalt theory in interactive media design. *Journal of Humanities & Social Sciences* 2 (1).
- Grossman, R.P., Wisenblit, J.Z., 1999. What we know about consumers' color choices. *J. Market. Pract. Appl. Market Sci.* 5 (3), 78–88. <https://doi.org/10.1108/EUM000000004565>.
- Hagen, C., 2023. The quest for modern packaging design. *Reach Brands*. <https://www.reachbrands.co.uk/blog/the-quest-for-modern-packaging-design/>.
- Hartnett, N., Romaniuk, J., Kennedy, R., 2016. Comparing direct and indirect branding in advertising. *Australas. Mark. J.* 24 (1), 20–28. <https://doi.org/10.1016/j.ausmj.2015.12.002>.
- Hoooper, D., Coughlan, J., Mullen, M., 2008. Structural equation modelling: guidelines for determining model fit. *Electron. J. Bus. Res. Methods* (2), 53–60.
- Hoyer, W.D., Brown, S.P., 1990. Effects of brand awareness on choice for a common, repeat-purchase product. *J. Consum. Res.* 17 (2), 141–148. <https://doi.org/10.1086/208544>.
- Hu, L., Wang, S., Zheng, J., Xu, Q., 2025. How to present food images on packaging? The influence of aesthetics design on consumers' perceived healthiness. *J. Retailing Consum. Serv.* 85, 104264. <https://doi.org/10.1016/j.jretconser.2025.104264>.
- Hu, L.T., Bentler, P.M., 1999. Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *Struct. Equ. Model.: A Multidiscip. J.* 6, 1–55. <https://doi.org/10.1080/10705519909540118>.
- Huang, Z., Dai, X., 2025. Less colorful = purer? The effect of packaging colorfulness on product purity perception. *J. Retailing Consum. Serv.* 85, 104283. <https://doi.org/10.1016/j.jretconser.2025.104283>.
- Keller, K.L., 1991. Cue compatibility and framing in advertising. *J. Mark. Res.* 28 (February), 42–57. <https://doi.org/10.1177/002224379102800104>.
- Khan, H., Lee, R., Lockshin, L., 2015. Localising the packaging of foreign food brands: a case of Muslim consumers in Pakistan. *J. Prod. Brand Manag.* 24 (4), 386–398. <https://doi.org/10.1108/JPB-08-2016-1302>.
- Kock, N., 2015. Common method bias in PLS-SEM: a full collinearity assessment approach. *Int. J. e-Collaboration* 11 (4), 1–18. <https://doi.org/10.4018/ijec.2015100101>.
- Koffka, K., 1922. Perception: an introduction to the Gestalt-Theorie. *Psychol. Bull.* 19 (10), 531. <https://doi.org/10.1037/h0072422>.
- Krishnan, H.S., 1996. Characteristics of memory associations: a consumer-based brand equity perspective. *Int. J. Res. Market.* 13 (4), 389–405. [https://doi.org/10.1016/S0167-8116\(96\)00021-3](https://doi.org/10.1016/S0167-8116(96)00021-3).
- Landwehr, J.R., Wentzel, D., Herrmann, A., 2012. The tipping point of design: how product design and brands interact to affect consumers' preferences. *Psychol. Market.* 29 (6), 422–433. <https://doi.org/10.1002/mar.20531>.
- Lee, J.Y., Gao, Z., Brown, M.G., 2010. A study of the impact of package changes on orange juice demand. *J. Retailing Consum. Serv.* 17 (6), 487–491. <https://doi.org/10.1016/j.jretconser.2010.08.003>.
- Liu, G.-H., Yang, J.-Y., 2025. Modeling visual attention based on gestalt theory. *Cogn. Comput.* 17 (2), 1–14. <https://doi.org/10.1007/s12559-025-10410-8>.
- Magnier, L., Schoormans, J., 2017. How Do packaging material, colour and environmental claim influence package, brand and product evaluations? *Packag. Technol. Sci.* 30 (11), 735–751. <https://doi.org/10.1002/pts.2318>.
- Martínez, E., Pina, J., 2010. Consumer responses to brand extensions: a comprehensive model. *Eur. J. Market.* 44 (7/8), 1182–1205. <https://doi.org/10.1108/03090561011047580>.
- McCracken, J., Macklin, M., 1998. The role of brand names and visual cues in enhancing memory for consumer packaged goods. *Mark. (Lond.)* 9 (2), 209–226. <https://doi.org/10.1023/A:1007965117170>.
- Min, L., Liu, P.J., Anderson, C.L., 2024. The visual complexity = higher production cost lay belief. *J. Consum. Res.* 51 (6), 1167–1185. <https://doi.org/10.1093/jcr/ucac044>.
- Montoya, R.M., Horton, R.S., Vevea, J.L., Citkowicz, M., Lauber, E.A., 2017. A re-examination of the mere exposure effect: the influence of repeated exposure on recognition, familiarity, and liking. *Psychol. Bull.* 143 (5), 459–498. <https://doi.org/10.1037/bul0000085>.
- Nunnally, J.C., 1978. *Psychometric Theory*, second ed. McGraw Hill.
- Orlowski, M., Lefebvre, S., Back, R.M., 2022. Thinking outside the bottle: effects of alternative wine packaging. *J. Retailing Consum. Serv.* 69, 1–14. <https://doi.org/10.1016/j.jretconser.2022.103117>.
- Orth, U.R., Rose, G.M., Merchant, A., 2019. Preservation, rejuvenation, or confusion? Changing package designs for heritage brands. *Psychol. Market.* 36 (9), 831–843. <https://doi.org/10.1002/mar.21215>.
- Papagiannidis, S., Pantano, E., See-To, E.W.K., Bourlakis, M., 2013. Modelling the determinants of a simulated experience in a virtual retail store and users' product purchasing intentions. *J. Market. Manag.* 29 (13–14), 1462–1492. <https://doi.org/10.1080/0267257X.2013.821150>.
- Parke, J., 2023. Burberry Unveils 'archive-inspired' Charging Knight Logo. <https://www.dezeen.com/2023/02/07/burberry-daniel-lee-logo-equestrian-knight-design/#:~:text=The%202018%20rebrand%20saw%20British,of%20interlocking%20and%20tessellating%20TB's>.
- Pelet, J.-E., Durrieu, F., Lick, E., 2020. Label design of wines sold online: effects of perceived authenticity on purchase intentions. *J. Retailing Consum. Serv.* 55, 102087. <https://doi.org/10.1016/j.jretconser.2020.102087>.
- Peng, L., Wei, Y., Zhang, X., Wang, D., 2024. Flatness promotes modernity: logo flatness and consumers' perception of brand image. *Asia Pac. J. Mark. Logist.* 36 (2), 315–333. <https://doi.org/10.1108/APJML-02-2023-0111>.
- Pieters, R., Warlop, L., 1999. Visual attention during brand choice: the impact of time pressure and task motivation. *Int. J. Res. Market.* 16 (1), 1–16. [https://doi.org/10.1016/S0167-8116\(98\)00022-6](https://doi.org/10.1016/S0167-8116(98)00022-6).
- Podsakoff, P.M., MacKenzie, S.B., Jeong-Yeon, L., Podsakoff, N.P., 2003. Common method biases in behavioral research: a critical review of the literature and recommended remedies. *J. Appl. Psychol.* 88 (5), 879. <https://doi.org/10.1037/0021-9010.88.5.879>.
- Pracejus, J.W., Olsen, G.D., O'Guinn, T.C., 2006. How nothing became something: white space, rhetoric, history, and meaning. *J. Consum. Res.* 33 (1), 82–90. <https://doi.org/10.1086/504138>.
- Qureshi, W., 2021. Bahlsen Unveils 'Striking' New Branding. *Packaging News*. <https://www.packagingnews.co.uk/design/new-packs/bahlsen-unveils-striking-new-branding-12-03-2021>.
- Reber, R., Schwarz, N., Winkielman, P., 2004. Processing fluency and aesthetic pleasure: is beauty in the perceiver's processing experience? *Pers. Soc. Psychol. Rev.* 8 (4), 364. https://doi.org/10.1207/s15327957pspr0804_3.
- Reimann, M., Zaichkowsky, J., Neuhaus, C., Bender, T., Weber, B., 2010. Aesthetic package design: a behavioral, neural, and psychological investigation. *J. Consum. Psychol.* 20, 431–441. <https://doi.org/10.1016/j.jcps.2010.06.009>.
- Rettie, R., Brewer, C., 2000. The verbal and visual components of package design. *J. Prod. Brand Manag.* 9 (1), 56–70. <https://doi.org/10.1108/10610420010316339>.
- Roemer, E., Schubert, F., Henseler, J., 2021. HTMT2—an improved criterion for assessing discriminant validity in structural equation modeling. *Ind. Manag. Data Syst.* 121 (12), 2637–2650. <https://doi.org/10.1080/02650487.2024.2370678>.
- Romaniuk, J., Caruso, W., 2018. Building physical availability with distinctive assets. In: Romaniuk, J. (Ed.), *Building Distinctive Brand Assets*. Oxford University Press, pp. 43–55.

- Rossiter, J.R., 2002. The C-OAR-SE procedure for scale development in marketing. *Int. J. Res. Market.* 19 (4), 305–335. [https://doi.org/10.1016/S0167-8116\(02\)00097-6](https://doi.org/10.1016/S0167-8116(02)00097-6).
- Rundh, B., 2016. The role of packaging within marketing and value creation. *Br. Food J.* 118 (10), 2491–2511. <https://doi.org/10.1108/BFJ-10-2015-0390>.
- Schoormans, J.P.L., Robben, H.S.J., 1997. The effect of new package design on product attention, categorization and evaluation. *J. Econ. Psychol.* 18 (2-3), 271–287. [https://doi.org/10.1016/S0167-4870\(97\)00008-1](https://doi.org/10.1016/S0167-4870(97)00008-1).
- Schwarz, N., Jalbert, M., Noah, T., Zhang, L., 2021. Metacognitive experiences as information: processing fluency in consumer judgment and decision making. *Consumer Psychology Review* 4 (1), 4–25. <https://doi.org/10.1002/arcp.1067>.
- Steenis, N.D., van Herpen, E., van der Lans, I.A., Ligthart, T.N., van Trijp, H.C.M., 2017. Consumer response to packaging design: the role of packaging materials and graphics in sustainability perceptions and product evaluations. *J. Clean. Prod.* 162, 286–298. <https://doi.org/10.1016/j.jclepro.2017.06.036>.
- Stocchi, L., Kemps, E., Anesbury, Z., 2021. The effect of mental availability on snack food choices. *J. Retailing Consum. Serv.* 60. <https://doi.org/10.1016/j.jretconser.2021.102471>.
- Stokes, R.C., 1985. The effects of price, package design, and brand familiarity on perceived quality. In: *Perceived Quality*. Lexington Books, pp. 233–246.
- Sundar, A., Noseworthy, T.J., 2014. Place the logo high or low? Using conceptual metaphors of power in packaging design. *J. Market.* 78 (5), 138–151. <https://doi.org/10.1509/jm.13.0253>.
- The Hartman Group, 2023. Co-shopping split of groceries in multi-person households in the United States in 2022, by gender. <https://www-statista-com.eu1.proxy.openathens.net/statistics/817500/grocery-shopping-responsibility-share-us-by-gender/>.
- Tian, Z., Huang, C.-H., 2025. Effects of color-typeface congruence on product evaluation. *J. Retailing Consum. Serv.* 82, 104104. <https://doi.org/10.1016/j.jretconser.2024.104104>.
- Ton, L.A.N., Smith, R.K., Sevilla, J., 2024. Symbolically simple: how simple packaging design influences willingness to pay for consumable products. *J. Market.* 88 (2), 121–140. <https://doi.org/10.1177/00222429231192049>.
- Underwood, R.L., Klein, N.M., 2002. Packaging as brand communication: effects of product pictures on consumer responses to the package and brand. *J. Market. Theor. Pract.* 58–68. <https://doi.org/10.1080/10696679.2002.11501926>.
- Veryzer, R., 1993. Aesthetic response and the influence of design principles on product preferences. *Adv. Consum. Res.* 20 (1), 224–228.
- Wertheimer, M., 1938. General problems, gestalt theory. In: Ellis, W.D. (Ed.), *A Source Book of Gestalt Psychology*. Routledge, pp. 1–11. <https://doi.org/10.1037/11496-001>.
- Zajonc, R.B., 1968. Attitudinal effects of mere exposure. *J. Pers. Soc. Psychol.* 9 (2), 1–27. <https://doi.org/10.1037/h0025848>.
- Zhao, X., Lynch, J.G., Chen, Q., 2010. Reconsidering Baron and Kenny: myths and truths about mediation analysis. *J. Consum. Res.* 37 (2), 197–206. <https://doi.org/10.1086/651257>.
- Zmuda, N., 2009. Tropicana Line's Sales Plunge 20% Post-Rebranding. *Advert. Age*. <http://adage.com/article/news/tropicana-line-s-sales-plunge-20-post-rebranding/135735/>.