

Users' Responses to Visual Aesthetics of Electrical and Electronic (E&E) Products: A Malaysian Perspective

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ABSTRACT

Visual aesthetics influences how consumers notice, compare, and consider products during purchase decisions. This quantitative study examines responses from 30 end users who evaluated a vacuum cleaner in shopping mall retail settings in the Klang Valley, Malaysia. Seven indicators represent aesthetic concern, aesthetics relative to price, market relevance, purchase influence, willingness to spend more for uniqueness and prestige, previous product experience, and confidence in personal judgement. Responses across five ordered categories were analysed using frequencies, percentages, and direct percentage point comparisons. Positive endorsement was highest for purchase influence (86.7%), followed by market relevance (83.3%), aesthetic concern (76.7%), previous experience (76.7%), willingness to spend more (73.3%), aesthetics over price (46.7%), and personal judgement (46.7%). The 40.0 percentage point difference between purchase influence and aesthetics over price shows that aesthetic influence and price priority are related but different parts of consumer evaluation. The study contributes a clear response structure that separates aesthetic salience, purchase influence, price consideration, and willingness to spend. This structure gives product designers a more precise way to interpret user responses and provides a strong basis for further consumer research and design evaluation.

Keywords: Visual product aesthetics, Consumer evaluation, Price priority, Vacuum cleaner, Malaysia.

1 INTRODUCTION

Visual appearance provides information before users can verify a product's technical performance. In product design, visible form communicates aesthetic, semantic, and symbolic cues that shape interpretation and preference (Crilly et al., 2004). Product design involves multiple dimensions in which functionality, symbolism, form, and consumer meaning operate together while retaining distinct roles (Homburg et al., 2015). For household appliances, this distinction matters because visual appeal can attract attention and influence preference alongside price, familiarity, expected performance, and previous experience.

Recent cumulative evidence confirms that product visual aesthetics are associated with consumer attitudes and behaviours, while its influence varies across products, consumer, communication, and market conditions (Peng et al., 2026). This evidence creates an important measurement question concerning how different consumer responses to aesthetics are distinguished. Concern for appearance, perceived influence on purchase, relative importance of aesthetics and price, and willingness to spend more each represent a different evaluative judgement. Examining them separately provides a clearer account of how visual aesthetics enters consumer decision making.

This distinction is especially relevant in product evaluation research. Visual aesthetics has been connected to purchase intention through social and emotional value (Toufani et al., 2017), to willingness to pay a premium in technology products (Lee, 2022), and to consumer mindset effects for highly aesthetic products (Lin & Chang, 2021). These pathways show that aesthetic judgement, price consideration, and willingness to spend are related aspects of consumer evaluation, but each represents a different part of the purchase decision. The present study therefore examines each response dimension separately.

The study examines seven response distributions from 30 end users in the Klang Valley, Malaysia. Its objective is to describe how aesthetic salience, price priority, purchase judgement, previous experience, and confidence in personal judgement vary within the same vacuum cleaner evaluation context. The research question is: How do the response distributions differ across aesthetic concern, aesthetics relative to price, market relevance, purchase influence, willingness to spend, previous experience, and personal judgement? The study contributes a focused conceptual clarification, a clear descriptive response profile, and a practical measurement direction for understanding how visual aesthetics enters consumer evaluation.

2 LITERATURE REVIEW

2.1 Visual Aesthetics as a Consumer Evaluation Signal

Visual product aesthetics concerns the perceived appeal and organisation of visible product characteristics. It is closely related to perceived quality while representing a distinct evaluative dimension. Styliadis et al. (2020) frame perceived product quality through sensory attributes and their relationship to engineering decisions, whereas aesthetic appraisal focuses on the appeal attributed to appearance. A consumer may therefore value the visual character of a product while technical reliability, durability, and performance remain separate dimensions of quality evaluation.

Product appearance can carry several kinds of information at the same time. Creusen and Schoormans (2005) identify aesthetic, symbolic, functional, ergonomic, attention drawing, and categorisation roles in consumer choice. A visible form can therefore attract attention while also suggesting how a product may perform, how easy it may be to use, and what kind of identity it communicates. Hoegg et al. (2010) further show that aesthetics can change the way consumers process product feature information when appearance and performance cues do not point in the same direction. For household appliances, appearance should therefore be understood as part of a wider evaluation process rather than as decoration alone.

The way a design is visually processed also influences aesthetic response. Reber et al. (2004) explain that perceptual fluency can increase aesthetic pleasure when a visual form is easier to organise and understand. At the same time, preference differs between users. Bloch et al. (2003) show that people vary in the importance they give to visual product aesthetics, while Peng et al. (2026) report that the overall effect of visual aesthetics differs across product and consumer conditions. These findings explain why a product can receive strong general interest while still producing different levels of agreement across specific consumer judgements.

The distinction is also consistent with product experience theory. Desmet and Hekkert (2007) separate aesthetic experience, experience of meaning, and emotional experience, showing that users respond to products through several connected layers. Bloch et al. (2003) describe the centrality of visual product aesthetics as an individual difference in how strongly people value product appearance, while Mowen et al. (2010) link visual aesthetics with personal values and behavioural response. Md. Nazri et al. (2025) also show how emotional experience can be shaped through product design. Together, these studies support separate consideration of aesthetic salience, personal meaning, and behavioural response during product evaluation.

2.2 Aesthetic Salience, Price Priority and Purchase Response

Aesthetic liking and purchase choice are related, but they are not the same judgement. Toufani et al. (2017) show that aesthetics can influence smartphone purchase intention through social and emotional value, while Lee (2022) demonstrates that visual aesthetics can contribute to willingness to pay a premium depending partly on product category involvement. Lin and Chang (2021) further show that consumer mindsets shape responses to highly aesthetic products. Abdul Jamil and Abu Bakar (2025) also demonstrate that design development can influence public acceptance. These findings show that visual aesthetics can affect product choice while price, willingness to spend, and acceptance remain separate parts of the decision process.

Price gives the aesthetic response a different meaning. Mumcu and Kimzan (2015) found that stronger visual product aesthetics was associated with lower price sensitivity, showing that appearance can add value to a product. However, a lower sensitivity to price is different from ignoring price. Lee (2022) found that willingness to pay for highly aesthetic technology products depends partly on product category involvement. Townsend and Sood (2012) also show that highly aesthetic products can provide personal value beyond basic function. These studies support separate measurement of aesthetics over price and willingness to spend because the two judgements reflect different parts of consumer choice.

This separation becomes more important when aesthetics is discussed as a driver of purchase. Homburg et al. (2015) show that product design has several consequences for market response, while Toufani et al. (2017) connect aesthetics with purchase intention through emotional and social value. The meta-analysis by Peng et al. (2026) provides wider support for the positive influence of visual aesthetics but also shows that context matters. A useful product evaluation therefore needs to identify which response is strong, which response is moderate, and where price or personal judgement changes the pattern.

Novelty and status meaning add further depth to aesthetic evaluation. Liu et al. (2020) show that preferences for design novelty are conditional on regulatory focus and product type. In the present study, the willingness to spend indicator combines uniqueness and prestige and therefore captures a broad stated value orientation. Subsequent research can develop this dimension further by separating novelty, distinctiveness, prestige, and willingness to pay through explicit price levels or structured choice tasks.

2.3 Context, Experience and Confidence in Judgement

Previous product experience can shape the way a new design is interpreted because users compare current visual cues with earlier use, memory, and category expectations. Desmet and Hekkert (2007) explain that product experience develops through aesthetic, meaning, and emotional responses, while Mowen et al. (2010) connect visual product aesthetics with personal values and behavioural response. Previous experience therefore provides a meaningful reference for judging whether a new product appears familiar, suitable, distinctive, or desirable.

Memory and experience also help users judge form, ease of use, and expected quality. Md. Nazri et al. (2025) discuss how visual and sensory elements shape emotional product experience, while Lin and Chang (2021) show that consumer mindset can change responses to highly aesthetic products. Together, these studies indicate that the same design can be interpreted differently depending on what the user has experienced before and how the user approaches the evaluation.

Personal judgement is another part of the response process. Bloch et al. (2003) show clear individual differences in the centrality of visual product aesthetics, and Reber et al. (2004) explain that aesthetic pleasure is linked to the way visual information is processed. Confidence in personal judgement can therefore vary because users do not enter the evaluation with identical knowledge, taste, or experience.

For design research, this supports reporting personal judgement separately from general concern for aesthetics.

Taken together, these perspectives show that product evaluation is shaped by immediate visual response, previous experience, personal meaning, and price related judgement. This provides a useful basis for studying household appliances, where consumers consider appearance together with price, purchase intention, market relevance, and past product experience.

2.4 Research Gap, Novelty and Study Contribution

Previous research clearly shows that visual aesthetics matters in consumer response, but three issues still require clearer explanation. First, many studies report an overall positive effect of aesthetics without separating the different judgements that produce that effect (Peng et al., 2026). Second, purchase influence, price consideration, and willingness to spend are closely related in a buying situation, yet they represent different decisions and should not be treated as one response (Toufani et al., 2017; Lee, 2022). Third, previous product experience can shape evaluation, but it is less often compared directly with aesthetic concern and price related judgement within the same product context (Bloch et al., 2003; Mowen et al., 2010). This study addresses these issues by comparing seven response dimensions side by side and by showing how they form a clearer structure for product evaluation.

Much of the literature examines one relationship at a time, such as aesthetics and purchase intention, aesthetics and willingness to pay, or design and public acceptance (Lee, 2022; Toufani et al., 2017; Abdul Jamil & Abu Bakar, 2025). This approach is useful for testing individual relationships, but it gives less attention to how several response dimensions sit beside each other in one product evaluation. The key research gap is therefore how aesthetic concern, price comparison, market relevance, purchase influence, willingness to spend, previous experience, and personal judgement form a response profile within the same product context.

Recent design studies also show why this distinction matters. Du and Ayob (2024) connect aesthetic thinking with sustainable product design, while Md. Nazri et al. (2025) show how emotional and sensory experience can shape product interaction. Abdul Jamil and Abu Bakar (2025) demonstrate that design development can influence public acceptance and purchase related response. These studies strengthen the case for user centred design evaluation, while the present study adds a household appliance perspective by comparing several consumer judgements within one visual evaluation.

Table 1 Research Gap and Study Positioning

Research area	What previous studies show	Issue that remains	How this study responds
Overall role of visual aesthetics	Visual aesthetics is linked with attitudes, preference, and behaviour (Peng et al., 2026).	An overall effect does not show which type of consumer judgement is driving the response.	Compares aesthetic concern, market relevance, purchase influence, price consideration, and willingness to spend separately.
Aesthetics and purchase decision	Aesthetics can influence purchase intention and willingness to pay (Toufani et al., 2017; Lee, 2022).	Purchase influence, price priority, and willingness to spend can be discussed together even though they have different meanings.	Shows the size of the differences between these purchase and price response dimensions.
Experience and personal judgement	Experience, personal values, and aesthetic centrality influence product response (Bloch et al., 2003; Mowen et al., 2010).	The role of previous experience is less often compared directly with aesthetic concern and price related judgement.	Places previous experience and personal judgement within the same response profile.

Research area	What previous studies show	Issue that remains	How this study responds
Design context in Malaysia	Design studies connect aesthetics with sustainability, public acceptance, and emotional experience (Du & Ayob, 2024; Abdul Jamil & Abu Bakar, 2025; Md. Nazri et al., 2025).	More direct consumer comparison is useful for everyday household products.	Examines a vacuum cleaner in a retail consumer setting and links the results to design decisions.

(Source: Authors' synthesis)

The novelty of this study is the direct comparison of response dimensions that are often grouped under the broad idea of aesthetic importance. The results separate aesthetic salience, perceived purchase influence, price consideration, and willingness to spend within one product evaluation context. This distinction makes the consumer response easier to interpret and provides a clearer basis for design decisions and future measurement.

2.5 Operational Definitions

Table 2 explains the meaning of each indicator used in the analysis. Each indicator represents a different part of consumer evaluation, allowing the results to be compared without combining different judgements into one overall score. Higher responses indicate stronger agreement with the meaning represented by each indicator.

Table 2 Operational Definitions and Meaning in This Study

Item	Construct label	Operational meaning	Meaning in this study
I1	Aesthetic concern	Reported concern for the visual appearance of the vacuum cleaner.	Shows the importance assigned to visual appearance during product evaluation.
I2	Aesthetics over price	Reported tendency to favour aesthetics when compared directly with price.	Shows the relative weight given to aesthetics when price is also considered.
I3	Market relevance	Belief that visual appearance can help a product remain relevant in the market.	Shows the perceived role of visual appearance in keeping a product relevant in the market.
I4	Purchase influence	Reported role of visual aesthetics in the respondent's purchase decision.	Shows the reported influence of visual aesthetics on the purchase decision.
I5	Willingness to spend	Stated willingness to spend more on a product described as unique and prestigious.	Shows willingness to assign additional value to uniqueness and prestige.
I6	Previous experience	Reported influence of prior product experience on design evaluation.	Shows how previous product experience contributes to design evaluation.
I7	Personal judgement	Reported confidence in relying on one's own opinion during aesthetic evaluation.	Shows confidence in personal judgement during aesthetic evaluation.

(Source: Authors' instrument descriptions)

2.6 Literature Alignment of the Seven Response Dimensions

The seven indicators are supported by established work in product aesthetics, consumer response, design experience, and purchase behaviour. Table 3 shows the main literature link for each response dimension. The purpose of this comparison is to place the indicators within existing theory while keeping their meanings separate. This structure supports a clearer interpretation of the results because each indicator can be discussed against literature that addresses the same type of judgement.

Table 3 Literature Support for the Seven Response Dimensions

Indicator	Response dimension	Main literature support	Link to the present study
I1	Aesthetic concern	Bloch et al. (2003); Reber et al. (2004); Peng et al. (2026)	Supports the importance of visual appearance and differences in how strongly users value it.
I2	Aesthetics over price	Mumcu and Kimzan (2015); Lee (2022)	Supports comparison between visual value and economic consideration.
I3	Market relevance	Creusen and Schoormans (2005); Homburg et al. (2015); Abdul Jamil and Abu Bakar (2025)	Supports the role of design in attention, differentiation, acceptance, and market response.
I4	Purchase influence	Toufani et al. (2017); Homburg et al. (2015); Peng et al. (2026)	Supports the connection between visual design and purchase related response.
I5	Willingness to spend	Lee (2022); Townsend and Sood (2012)	Supports added value and personal meaning attached to highly aesthetic products.
I6	Previous experience	Desmet and Hekkert (2007); Mowen et al. (2010); Md. Nazri et al. (2025)	Supports the role of memory, meaning, and experience in product evaluation.
I7	Personal judgement	Bloch et al. (2003); Lin and Chang (2021)	Supports individual differences in aesthetic preference and decision style.

(Source: Authors' synthesis)

3 METHOD

3.1 Research Design

The study used a quantitative survey design involving 30 end users. Fieldwork was conducted between September and November 2020. The unit of analysis was the individual user response to seven indicators concerning the evaluation of a vacuum cleaner. The study compares response patterns across the seven indicators to show how aesthetic concern, price consideration, purchase influence, market relevance, previous experience, and personal judgement differ within the same product context.

The analysis uses frequencies, percentages, and percentage point differences to compare the strength of response across indicators. This approach is suitable for the study because the main objective is to identify clear patterns in consumer evaluation and to compare the relative strength of each response dimension.

3.2 Sampling and Data Collection

Data were collected in the Klang Valley between September and November 2020 using mall intercept sampling. This approach is widely used in consumer research because it places data collection within the retail environment where shoppers are already considering products and purchase choices (Bush & Hair, 1985). Bruwer et al. (1996) further note that the timing of data collection and the selection of respondents are important for maintaining a consistent mall intercept procedure. In this study,

respondents were approached after leaving electrical and electronic appliance stores in shopping centres.

Eligible respondents were at least 18 years old and had previous experience using a vacuum cleaner. A purchase was not required for participation. Before answering the questionnaire, respondents received a brief explanation in person and decided voluntarily whether to take part. The questionnaire was completed by the respondents themselves, while the researcher remained available to clarify questions when needed. Thirty complete questionnaires formed the study sample. General demographic information was collected, while direct personal identifiers such as identity card numbers were excluded.

3.3 Product Context, Instrument and Administration

A vacuum cleaner was selected as the study product because it combines a clearly visible form with practical considerations that consumers commonly assess when choosing a household appliance. These considerations include performance, usability, reliability, durability, brand, price, and energy use. Research on vacuum cleaner purchasing shows that buyers weigh several product attributes together, including reliability, durability, features, brand, value for money, and sustainability (Visser et al., 2018). Vacuum cleaners have also been used in design research to examine customer preference, product development, and user product interaction, making the category appropriate for studying how visual design is considered alongside practical product value (Chen & Lee, 2008; Hsiao & Chen, 2017; Xiao et al., 2022).

Respondents viewed one vacuum cleaner design from several angles, while price information was not shown during the visual evaluation. The seven indicators used five ordered response categories: Definitely not, Probably not, Possibly, Very probably, and Definitely yes. For analysis, these categories were ordered from 1 to 5, with Possibly representing the middle response position.

The category is particularly suitable for visual evaluation because the external form is immediately visible while the product remains strongly utilitarian. Product appearance can communicate aesthetic, symbolic, functional, ergonomic, and quality related information at the same time (Creusen & Schoormans, 2005), while visual design can also shape how consumers interpret product features and expected performance (Hoegg et al., 2010). Visser et al. (2018) show that vacuum cleaner buyers consider both functional and market related attributes, and Xiao et al. (2022) use the vacuum cleaner market to study customer consideration and choice. These characteristics allow visual aesthetics to be examined within a realistic product context where appearance is important but is evaluated alongside practical product value.

Table 4 Basis for Selecting the Vacuum Cleaner as the Study Product

Rationale	Literature support
Familiar household product	Vacuum cleaners are established household appliances with clear consumer purchase and usage contexts (Visser et al., 2018).
Multiple purchase trade offs	Consumers consider reliability, durability, product features, brand, value for money, and sustainability when choosing vacuum cleaners (Visser et al., 2018).
Suitable for design evaluation	Vacuum cleaners have been used to study product form, design development, and user product interaction (Chen & Lee, 2008; Hsiao & Chen, 2017).
Relevant to customer preference research	Vacuum cleaner markets have been used to examine customer consideration, choice, and product preference in engineering design research (Xiao et al., 2022).

(Source: Authors' synthesis)

The questionnaire was administered in a physical bilingual format in English and Malay. Respondents completed the questionnaire themselves while the researcher remained present to explain the task or clarify a question when needed. Informal conversation was limited to clarification and was

not treated as a separate source of data. This procedure helped maintain a consistent survey process across participants.

3.4 Measurement Structure

The seven indicators were analysed as separate response dimensions. This structure keeps aesthetic concern, price consideration, market relevance, purchase influence, willingness to spend, previous experience, and personal judgement conceptually clear. Treating the indicators separately is important because a strong response to one dimension does not automatically represent a strong response to another. For example, a consumer may report that aesthetics influences purchase while still giving price an important role in product comparison.

This separation is consistent with measurement development guidance, which stresses the need to define each measured idea clearly before combining or comparing responses (Boateng et al., 2018). It is also consistent with product design research showing that appearance, perceived quality, symbolic value, and behavioural response are related but different parts of consumer evaluation (Bloch et al., 2003; Homburg et al., 2015; Styliadis et al., 2020). The measurement structure therefore supports direct interpretation of each response dimension before broader design implications are discussed.

The measurement structure was organised to preserve the distinct meaning of each response dimension while allowing the seven indicators to be compared within a common evaluation framework. Clear construct definition improves the interpretation of survey responses and supports more systematic measurement development (Boateng et al., 2018). This organisation is important because aesthetic concern, price consideration, purchase influence, and previous experience may interact during product evaluation, but each represents a different judgement that can contribute differently to the final consumer response.

3.5 Data Analysis

The five response categories were treated as ordered survey responses. Analysis therefore focused on the response distribution for each indicator using frequencies, percentages, medians, and modes. Frequency distributions retain the pattern across all response categories, while median and mode provide appropriate summaries of the central response for ordinal items (Boone & Boone, 2012; Sullivan & Artino, 2013). Positive endorsement was calculated by combining Very probably and Definitely yes, providing a clear measure of the proportion of respondents expressing a favourable response to each indicator. Percentage point differences were then used to compare selected indicators directly.

Each indicator was first examined separately and was then compared across the seven response dimensions. This descriptive approach at two levels makes it possible to identify the dominant response within each item and to compare the relative strength of aesthetic concern, price consideration, purchase influence, market relevance, willingness to spend, previous experience, and personal judgement. The analysis therefore emphasises both the shape of each response distribution and the differences between related consumer judgements.

4. RESULTS

Table 5 presents the response distribution for all seven indicators. The pattern shows clear differences in the strength of consumer response across the indicators. Purchase influence and market relevance received the strongest positive responses, while aesthetics over price and personal judgement

produced more mixed responses. These differences provide a direct basis for comparing the role of aesthetics across consumer evaluation and price related judgement.

Table 5 Response Frequencies and Percentages

Item	Definitely not	Probably not	Possibly	Very probably	Definitely yes	Positive
I1	0 (0.0)	3 (10.0)	4 (13.3)	17 (56.7)	6 (20.0)	23 (76.7)
I2	0 (0.0)	10 (33.3)	6 (20.0)	14 (46.7)	0 (0.0)	14 (46.7)
I3	0 (0.0)	3 (10.0)	2 (6.7)	18 (60.0)	7 (23.3)	25 (83.3)
I4	0 (0.0)	0 (0.0)	4 (13.3)	21 (70.0)	5 (16.7)	26 (86.7)
I5	0 (0.0)	3 (10.0)	5 (16.7)	18 (60.0)	4 (13.3)	22 (73.3)
I6	0 (0.0)	3 (10.0)	4 (13.3)	16 (53.3)	7 (23.3)	23 (76.7)
I7	0 (0.0)	3 (10.0)	13 (43.3)	12 (40.0)	2 (6.7)	14 (46.7)

Note. Cells show n (%). Positive = Very probably + Definitely yes.

(Source: Authors' analysis)

Table 6 Ordinal Summary of the Seven Response Indicators

Indicator	Median	Mode	Positive response (%)	Rank
I1 Aesthetic concern	4	4	76.7	3
I2 Aesthetics over price	3	4	46.7	6
I3 Market relevance	4	4	83.3	2
I4 Purchase influence	4	4	86.7	1
I5 Willingness to spend	4	4	73.3	5
I6 Previous experience	4	4	76.7	3
I7 Personal judgement	3	3	46.7	6

Note. Median and mode are reported on the five-point ordered response scale. Rank is based on positive response percentage, with tied values sharing the same rank.

(Source: Authors' analysis)

The ordinal summary strengthens the comparison across indicators. Purchase influence and market relevance both have a median and mode of 4, showing that responses were concentrated in the Very probably category. Aesthetic concern, willingness to spend, and previous experience show a similar central pattern. In contrast, aesthetics over price has a median of 3 and personal judgement has both a median and mode of 3, indicating a more balanced response around the middle category. These results support the percentage comparison while preserving the ordered nature of the response scale.

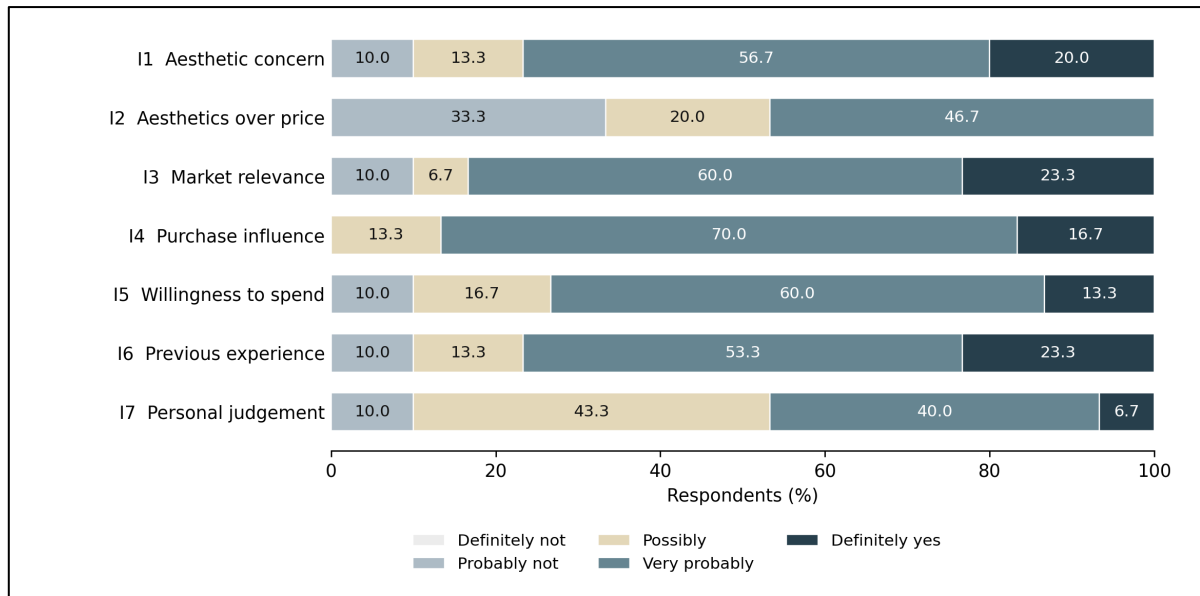


Figure 1 Five Category Response Profile
(Source: Authors' analysis)

4.1 Aesthetic Concern and Price Priority

Aesthetic concern received 23 positive responses (76.7%), comprising 17 Very probably and six Definitely yes responses. Four respondents selected Possibly and three selected the lower response category. By comparison, aesthetics over price received 14 positive responses (46.7%), all in Very probably. Six selected Possibly and ten selected the lower response category. Favourable aesthetic concern was therefore more common than explicit prioritisation of aesthetics over price in the aggregate profile.

4.2 Market Relevance, Purchase Influence and Willingness to Spend

Perceived market relevance received 25 positive responses (83.3%), while reported purchase influence received 26 (86.7%). Willingness to spend more for uniqueness and prestige received 22 positive responses (73.3%). Purchase influence exceeded aesthetics over price by 40.0 percentage points. This difference highlights a clear separation between the perceived influence of visual aesthetics on purchase and the relative importance assigned to aesthetics when price is considered.

4.3 Previous Experience and Personal Judgement

Previous experience received 23 positive responses (76.7%), with four responses in Possibly and three in the lower response category. Confidence in personal judgement received 14 positive responses (46.7%). Its largest single category was Possibly, selected by 13 respondents (43.3%). The distribution shows greater uncertainty in personal judgement confidence and provides a useful direction for examining the roles of familiarity, social influence, and experience in future product evaluation research.

Table 7 Selected Descriptive Contrasts in Positive Endorsement

Contrast	Indicator A (%)	Indicator B (%)	Difference (pp)
Purchase influence (I4) vs aesthetics over price (I2)	86.7	46.7	+40.0
Market relevance (I3) vs aesthetics over price (I2)	83.3	46.7	+36.6
Aesthetic concern (I1) vs personal judgement (I7)	76.7	46.7	+30.0
Willingness to spend (I5) vs aesthetics over price (I2)	73.3	46.7	+26.6

Note. pp = percentage points. Contrasts are presented as descriptive comparisons of the response distributions.

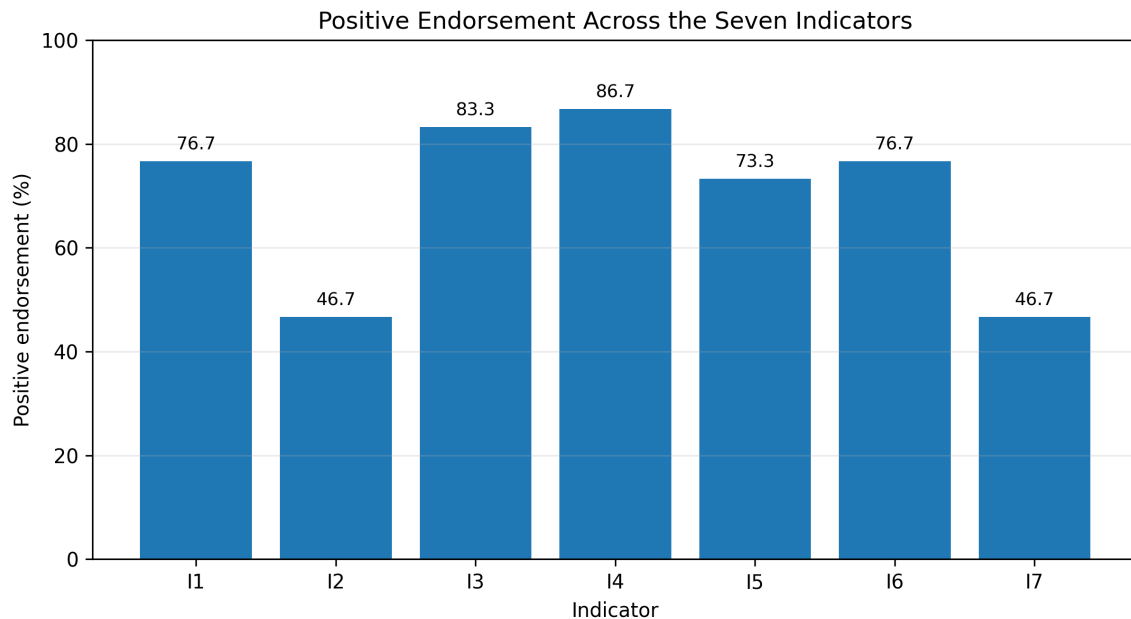


Figure 2 Positive Endorsement Across the Seven Indicators
(Source: Authors' analysis)

4.4 Cross Indicator Response Pattern

The seven indicators form three clear response patterns. Purchase influence and market relevance show the strongest positive concentration, while aesthetic concern, willingness to spend, and previous experience also show clear positive majorities. Aesthetics over price and personal judgement have broader distributions, with a larger share of responses in the middle or lower categories. This difference shows that respondents were more consistent when judging the general influence and relevance of aesthetics than when making a direct price comparison or expressing confidence in personal judgement.

Figure 3 groups the five response categories into lower response, Possibly, and positive response. The grouped view makes the contrast easier to see while the full five category distribution remains available in Figure 1. The pattern supports the interpretation of aesthetic concern, purchase influence, price comparison, and personal judgement as separate parts of consumer evaluation.

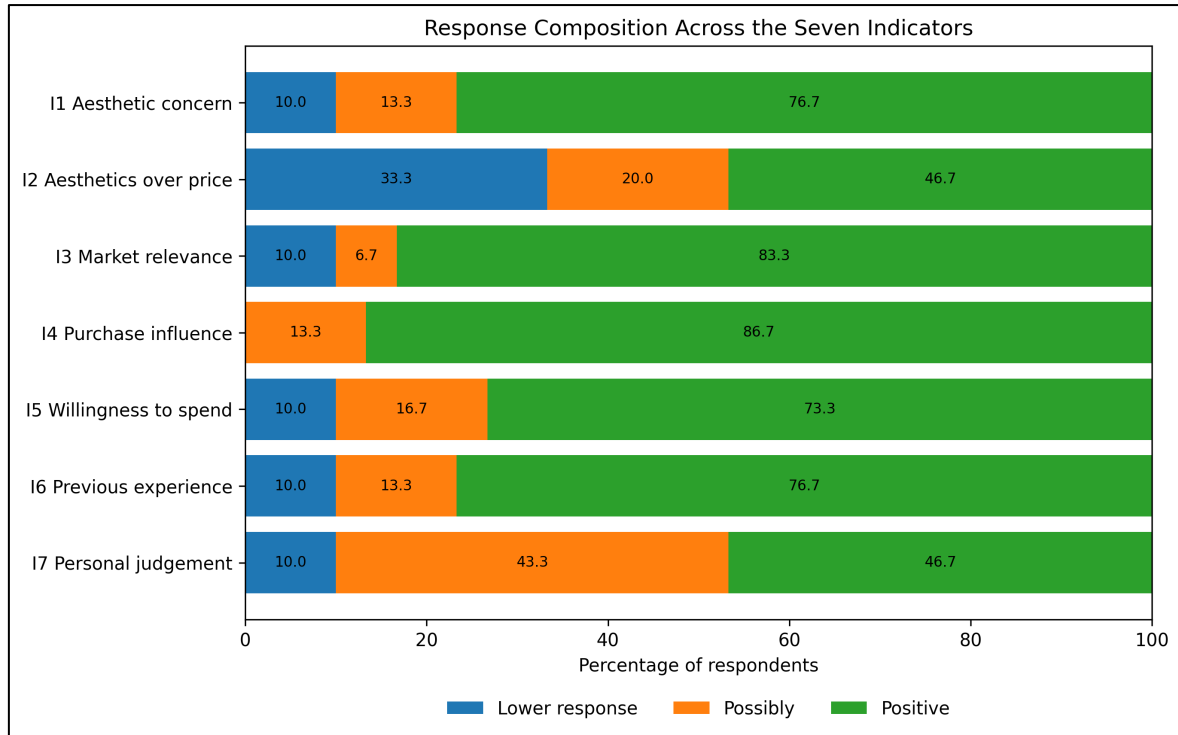


Figure 3 Grouped Response Composition Across the Seven Indicators
(Source: Authors' analysis)

5 DISCUSSIONS

5.1 Aesthetic Salience, Purchase Influence and Price

The central result is the coexistence of strong aesthetic relevance with a more moderate emphasis on price priority. Purchase influence was positively endorsed by 86.7% of respondents, while 46.7% positively endorsed aesthetics over price. This pattern supports a contextual account of product aesthetics in which appearance contributes meaningfully to evaluation while price remains a distinct choice criterion. Peng et al. (2026) show that the effects of product visual aesthetics vary across moderators, while Homburg et al. (2015) emphasise the multidimensional nature of product design. The present response profile strengthens the case for separating aesthetic influence from price priority in consumer evaluation.

The willingness to spend item adds a further price dimension. Research on visual aesthetics and willingness to pay shows that a beauty premium can emerge under specific conditions (Lee, 2022). In the present study, 73.3% positive endorsement indicates a strong stated value orientation toward products described as unique and prestigious. This finding creates a clear basis for future price comparison evaluation that can distinguish distinctiveness, prestige, and willingness to pay more precisely.

This pattern is consistent with the wider literature on product appearance. Creusen and Schoormans (2005) show that appearance supports several roles in consumer choice, including aesthetic value, symbolic meaning, attention, and quality impressions. Hoegg et al. (2010) also demonstrate that visual design can influence how consumers process product feature information. The current results add a useful distinction: respondents can recognise a strong influence of aesthetics on purchase while still keeping price as a meaningful comparison point. For designers, the practical message is to strengthen visual appeal without assuming that appearance will compensate for weak value, function, or affordability.

5.2 Price Comparison and Willingness to Spend

The price findings show two different consumer positions. The aesthetics over price indicator received 46.7% positive endorsement, while willingness to spend more for uniqueness and prestige received 73.3%. This difference suggests that respondents were more open to paying more for added visual or symbolic value than to placing aesthetics ahead of price in a direct comparison. Mumcu and Kimzan (2015) report that stronger visual product aesthetics can reduce price sensitivity, while Lee (2022) shows that willingness to pay for aesthetic products depends partly on product involvement. The present pattern supports both ideas while showing that willingness to spend and price priority should remain separate judgements.

The finding also has a symbolic dimension. Townsend and Sood (2012) show that highly aesthetic products can provide personal value, while Homburg et al. (2015) show that product design can influence market outcomes through several design dimensions. Uniqueness and prestige can therefore add value beyond basic function, but the strength of that value depends on the user and the product context. For a household appliance, premium styling can support perceived differentiation when it is matched with clear functional value and a credible price position.

5.3 Market Relevance, Previous Experience and Personal Judgement

Market relevance received 83.3% positive endorsement, showing that respondents strongly connected visual aesthetics with a product's ability to remain attractive in the market. This result is consistent with Creusen and Schoormans (2005), who describe attention and differentiation as important roles of product appearance, and with Abdul Jamil and Abu Bakar (2025), who show that design development can influence public acceptance. The result also fits Homburg et al. (2015), where product design is treated as a strategic part of market response rather than a surface feature.

Previous experience also received 76.7% positive endorsement. Product experience theory explains that users interpret products through aesthetics, meaning, emotion, and interaction (Desmet & Hekkert, 2007). Mowen et al. (2010) further connect visual product aesthetics with personal values and behavioural response, while Md. Nazri et al. (2025) show how visual and sensory design can shape emotional experience. The present result suggests that earlier product use provides a reference for judging a new appearance, especially when the product belongs to a familiar household category.

Personal judgement produced a more mixed profile, with 46.7% positive endorsement and 43.3% in Possibly. This is consistent with research showing that users differ in how strongly they value visual aesthetics and in how they approach aesthetic decisions (Bloch et al., 2003; Lin & Chang, 2021). The mixed pattern is meaningful for design practice because it shows that users may agree that appearance matters while still being less certain about relying only on their own aesthetic judgement. Design evaluation should therefore combine user preference with clear product information, function, and context.

5.4 Theoretical Contribution: A Response Distinction Framework

The main theoretical contribution is a response distinction framework that separates four important parts of consumer evaluation. Aesthetic salience shows how strongly appearance matters to the user. Purchase influence shows whether appearance affects the buying decision. Price consideration shows how aesthetics is weighed when price is also considered. Premium orientation shows the willingness to spend more for uniqueness and prestige. Separating these responses gives a clearer explanation of how visual aesthetics moves from perception into purchase judgement.

This framework adds to earlier research by showing that a positive response to aesthetics should not be interpreted as one single type of consumer preference. In this study, 86.7% reported that aesthetics

influenced purchase, but only 46.7% gave positive responses when aesthetics was considered against price. The 40.0 percentage point difference shows that visual appeal can influence a decision without replacing price as an important comparison factor. This is a key distinction for both consumer research and product design.

The framework is consistent with research that separates the different roles of product appearance. Creusen and Schoormans (2005) show that appearance can communicate aesthetic, symbolic, functional, and ergonomic information, while Homburg et al. (2015) distinguish product design dimensions and their market consequences. The present study extends this logic by organising the response pattern around salience, purchase influence, price consideration, market relevance, spending willingness, experience, and personal judgement. The contribution is a clearer way to read consumer aesthetic responses during early product evaluation.

Table 8 Response Distinction Framework and Design Meaning

Response dimension	Main indicator	Observed positive response	Meaning for design evaluation
Aesthetic salience	I1 Aesthetic concern	76.7%	Appearance is an important part of product evaluation for most respondents.
Purchase influence	I4 Purchase influence	86.7%	Visual aesthetics has a strong role in the reported purchase decision.
Price consideration	I2 Aesthetics over price	46.7%	Aesthetics competes with price rather than automatically taking priority over it.
Premium orientation	I5 Willingness to spend	73.3%	Uniqueness and prestige can add perceived value and support willingness to spend more.

(Source: Authors' synthesis)

Previous experience adds another layer to the framework. It received 76.7% positive endorsement, while personal judgement received 46.7% positive endorsement and 43.3% Possibly responses. This pattern suggests that consumers may rely strongly on past product experience while remaining less certain about their own aesthetic judgement. Bloch et al. (2003), Mowen et al. (2010), and Desmet and Hekkert (2007) provide useful theoretical support for examining how experience, confidence, and aesthetic response work together.

5.5 Measurement Contribution and Comparison with Previous Studies

A strong point of the study is the direct comparison of several response dimensions using the same product context. Table 9 links the main findings with previous research and shows how the current response profile relates to established knowledge. This comparison strengthens interpretation because each percentage is discussed against literature that addresses the same type of consumer judgement.

Table 9 Comparison of Current Findings with Previous Studies

Current finding	Related literature	Critical interpretation	Design meaning
Aesthetic concern: 76.7% positive	Bloch et al. (2003); Reber et al. (2004); Peng et al. (2026)	Supports the central role of appearance while recognising differences between users.	Visual appeal should be tested with target users rather than treated as a universal preference.
Aesthetics over price: 46.7% positive	Mumcu and Kimzan (2015); Lee (2022)	Shows that visual value can matter without replacing price as a comparison factor.	Aesthetic improvement should be matched with credible value and price positioning.
Market relevance: 83.3% positive	Creusen and Schoormans (2005); Homburg et al. (2015); Abdul Jamil and Abu Bakar (2025)	Supports the role of design in attention, differentiation, and acceptance.	Appearance can support market distinction when aligned with product purpose.
Purchase influence: 86.7% positive	Toufani et al. (2017); Peng et al. (2026)	Shows a strong purchase related response to visual aesthetics in this product context.	Visual design should be considered early in concept selection and consumer evaluation.
Willingness to spend: 73.3% positive	Lee (2022); Townsend and Sood (2012)	Shows that uniqueness and prestige can create added value for many users.	Premium visual cues are most useful when supported by function and user relevance.
Previous experience: 76.7% positive	Desmet and Hekkert (2007); Mowen et al. (2010); Md. Nazri et al. (2025)	Shows that earlier product experience provides a reference for judging new design.	Design evaluation should consider familiar category expectations and prior use.
Personal judgement: 46.7% positive	Bloch et al. (2003); Lin and Chang (2021)	Shows wider variation in confidence and decision style across users.	User testing should include different experience levels and preference profiles.

(Source: Authors' synthesis)

A further contribution is the clear separation of seven responses that are often discussed under the broad idea of aesthetic importance. Reporting the indicators separately shows where consumer responses move in the same direction and where they differ. This prevents a strong score on one indicator from being used to represent a different judgement. For design research, this structure improves clarity in questionnaire design, analysis, and interpretation.

The same structure can be extended in later studies by using several items for each response dimension and testing reliability and validity with a larger sample. Price based comparisons can also use explicit price levels or controlled product choices. These additions would test the relationships identified here while keeping the meaning of each response dimension clear.

The literature comparison also shows why the seven indicators should remain visible as separate results. A single overall score would hide the difference between high purchase influence, moderate price comparison, strong market relevance, and mixed confidence in personal judgement. Boateng et al. (2018) emphasise that measurement development depends on clear definition of what each item represents. For design research, separate reporting therefore provides more useful information for concept decisions than one combined aesthetic score.

5.6 Design Implications and Sustainability Context

For designers, the findings show that visual appeal should be evaluated alongside affordability and expected performance as complementary decision criteria. Concept evaluation can examine separately whether users notice and value an appearance, whether that appearance affects purchase consideration, and whether users are willing to accept a higher price. This structure gives design teams a more precise basis for translating favourable aesthetic responses into product development decisions.

This approach is consistent with user-oriented design research. Veryzer and Borja de Mozota (2005) show that user-oriented design can improve the new product development process by bringing user understanding into development decisions. Creusen and Schoormans (2005) similarly recommend testing product appearance with the target group because the same form can communicate different values to different consumers. The present response profile can therefore be used as an early design discussion tool for checking whether appearance is supporting attention, purchase interest, perceived relevance, and acceptable value at the same time.

The market relevance indicator reflects the role of visual appearance in maintaining consumer interest over time. This has a useful connection with sustainable product design because products that remain desirable may also support longer use when quality and function are maintained. Du and Ayob (2024) show that aesthetic thinking can relate to sustainable product design, while He et al. (2024) demonstrate that aesthetic expression can influence green consumption. These studies support a broader design approach in which visual appeal, durability, energy use, repairability, material impact, and life cycle performance are considered together.

Aesthetic value should be integrated with the wider sustainability strategy rather than treated as a substitute for environmental performance. Bocken et al. (2016) show that circular product design depends on strategies that slow, close, and narrow resource loops through decisions such as durability, reuse, and material efficiency. Du and Ayob (2024) also connect aesthetic meaning with sustainable product thinking, while He et al. (2024) show that aesthetic appearance can influence green consumption. A product that remains visually desirable, useful, durable, and repairable has a stronger basis for long term acceptance than a product that depends on appearance alone.

5.7 Research Scope and Future Direction

The study captures consumer responses from 30 participants recruited in Klang Valley retail settings through mall intercept sampling. The use of one household appliance category creates a consistent product context for comparing the seven response dimensions. The findings therefore provide a clear baseline for extending the same framework to larger samples, additional regions, and other product categories.

Future studies can expand the framework through broader demographic coverage, several items for each response dimension, and direct comparisons across product categories. Controlled comparisons between price and appearance would be especially useful for showing when visual appeal becomes more important, less important, or equally important to price. This direction would deepen understanding of how aesthetic response changes across different consumer and market conditions.

Further work can also compare different levels of product familiarity because previous experience was strongly endorsed in the present study. Comparing novice users with experienced users may show whether visual design is interpreted differently when category knowledge increases. Comparison across product categories would also help identify which response dimensions are stable across categories and which depend on the specific meaning, use, and price of the product. These extensions would build directly on the response distinctions identified in the present study.

6 CONCLUDING REMARKS

In this study of 30 participants with experience using vacuum cleaners, positive responses were strongest for purchase influence and market relevance, followed by aesthetic concern, previous experience, and willingness to spend more. Aesthetics over price and personal judgement showed more moderate patterns. The main contribution is the clear separation between recognising aesthetics as influential and giving aesthetics priority when price is also considered. The 40.0 percentage point difference between purchase influence and aesthetics over price gives a strong reason to keep these responses separate in consumer research and design evaluation.

The study provides a clear response profile and a practical framework for interpreting visual aesthetics in product evaluation. For product designers, the findings show that appearance can shape purchase consideration while price remains an independent decision factor. For researchers, the response distinction framework gives a clear structure for examining aesthetic salience, purchase influence, price consideration, willingness to spend, previous experience, and personal judgement in future studies.

The broader contribution is a more precise reading of what consumers mean when they respond positively to product aesthetics. Strong purchase influence, strong market relevance, willingness to spend, and concern for appearance do not represent the same judgement. By separating these responses, the study gives designers a clearer basis for deciding where visual design creates value and where other factors remain important. This supports a balanced approach to product development in which aesthetics works together with function, price, user experience, and sustainability.

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All authors contributed to the study and preparation of the manuscript. Mohamad Hasriq Haiqal Mohd Rashid is the main author. All authors reviewed and approved the final manuscript.

CONFLICT OF INTEREST

The authors declare no conflict of interest related to the research, authorship, or publication of this article.

DATA AVAILABILITY

Statistical outputs and research documentation supporting the findings are retained as private research records by the corresponding author and maintained in line with participant confidentiality and institutional requirements.

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