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Research in emotional design and Kansei Engineering has shown that aesthetics play a significant role in the appeal of a product. This paper contributes to establishing a methodology to identify the relationships between perceptions, aesthetic features, desire to own and background of consumers. Surveys were conducted with 71 participants to gather their perceptions of 11 vase concepts. Advanced statistical analyses, including mixed models, were applied to allow generalisation of the results beyond the data sample. Significant relations between the desire to own a product and how the product is perceived were found (the desire to own was found to be related to beautiful, expensive, elegant, exciting, feminine, common and dynamic vases), as well as between the perceptions and the parameters describing the form of the vases (a vase was perceived as beautiful if it had many curved lines and was simple and tall). An automated mixed model analysis was conducted and revealed that general rules can be found between aesthetic features, perceptions and ownership, which can apply across gender and culture. The findings include design rules that link aesthetic features with perceptions. These contribute to research as guidelines for design synthesis and can either be implemented via shape grammars or parametric modelling approaches. These rules are also interesting for 3D printing applications, especially important when the consumer is the designer. Some of these design rules are linked to the desire to own a product, they have implications for industry, and they offer guidelines to creating attractive products that people want to own.

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