

# Customer experience of product quality: a new metric

Henry Ford famously said that quality means doing it right when no one is looking. That is certainly what customers hope has happened in the production of the durable products they purchase, from cars to smartphones. But what do we really mean by product quality and how should it be measured? Professor Marcel Paulssen and Dr Ramesh Roshan Das Guru from the University of Geneva in Switzerland have developed and validated a new multi-dimensional product quality scale – the Customer Experienced Product Quality (CEPQ) metric – to help manufacturers use product quality to drive business performance.

Product quality has long been recognised as a key factor in driving business performance and achieving competitive advantage, but what we mean by quality can be subjective and hard to define. For example, while an engineer might judge quality according to whether a car conforms to certain design standards and specifications, a customer might perceive quality according to whether the door closes with the right kind of click, and yet another might judge quality according to the size of the engine.

Customers' perceptions count. Their experience of product quality – their judgement of the overall excellence or superiority of a particular product relative to alternatives – influences their future purchasing behaviour, their willingness to pay as well as the degree to which they would recommend a product to another potential purchaser. Customer experience of quality is different from customer satisfaction; it is more complex than simply giving a four-star rating on an online shopping portal. Digging deeper into customer behaviour, we find that customers experience product

quality in a multi-dimensional way. It involves consideration of a product's performance and primary operating characteristics, as well as other characteristics that 'supplement' the base product – for example, additional features, its durability or its aesthetics.

It is therefore vitally important for manufacturers of durable goods to know how different dimensions of product quality are experienced by their customers. While there are recognised research instruments such as SERVQUAL and SERVPERF, which measure customer service quality, metrics for assessing exactly how customers experience product quality have been lacking.

New research to develop such a metric is therefore timely. Professor Marcel Paulssen and Dr Ramesh Roshan Das Guru, from the Geneva School of Economics and Management at the University of Geneva in Switzerland, have developed a multi-dimensional scale called the 'Customer Experienced Product Quality' (CEPQ) scale, which identifies and measures how customers experience and respond to the quality of products. They have tested the validity and reliability of the CEPQ metric across diverse product categories.

## THE STUDY

Professor Paulssen and Dr Das Guru began with exploratory research into the factors that influence customers' quality experience for durable products. Online surveys with customers were carried out in both India and the United States in four product categories, which covered: cars, smartphones, headphones and running shoes.

DIMENSION	VERBATIM ILLUSTRATION THROUGH CUSTOMERS
<b>AESTHETICS:</b> How a product looks, feels, sounds, tastes, or smells	"To me, a high-quality product has to have the look and feel of high craftsmanship." "A high-quality car needs to look very sleek and attractive from outside and should make everyone feel great with its inside looks."
<b>DURABILITY:</b> Measure of the product's useful life	"A product with perfect quality will work flawlessly forever without any interventions." "High quality is durable but low quality is not durable."
<b>EASE OF USE:</b> Ease of understandability and comfort in using the product	"A high-quality product should be comfortable to use and should not need too much of effort to perform its work." "The easier to drive in any conditions the more high quality the product it is."
<b>FEATURES:</b> Secondary aspects of performance, the "bells and whistles" of products	"Its camera, music player, support for various web browser, its RAM and high internal memory and other such extra features make the smartphone high quality product for me." "More upgraded features like leather, heated seats, satellite radio and navigation, back up camera, Bluetooth capability. Any kind of fancy wheels or sunroof."
<b>PERFORMANCE:</b> The product's primary operating characteristics	"A high quality product is defined by its performance compared to its competitors. It should beat out most if not all other products of its type." "A high-quality smartphone would be one that provides very clear and reliable call function."
<b>RELIABILITY:</b> The probability of a product malfunctioning or failing within a specified period	"Product quality to me means a product that is something dependable and can be used in everyday life without worrying about it breaking down." "A low quality product gives various issues every now and then but a high quality product gives a nice working experience and stays a class apart."
<b>SERVICEABILITY:</b> The speed, courtesy, competence, and ease of repair associated with the product	"If the product breaks down, it can be repaired easily without much hassle." "A high-quality car should need minimum servicing and when it does need it, the service must be of high quality."
<b>MATERIAL:</b> The standard and robustness of materials used for the body and the interior as well as the accessories of a product	"A high-quality product would include higher-end fabrics, finishes, and materials. A piece of 'high quality' furniture, for example, would be made of all real wood." "The material used to make the running shoe must be of the first-class because that is the most important aspect, and everything depends on it."

Table 1. Dimensions of Customer Experienced Product Quality (CEPQ) illustrated with verbatim responses from the exploratory study.

A preliminary literature review had led the researchers to expect seven quality dimensions.

These dimensions were: performance, features, reliability, durability, ease of use, aesthetics and serviceability. These were confirmed in the

exploratory research across categories. In addition, the surveys identified the importance of an eighth factor: the quality of materials used in the product's manufacture. The eight identified dimensions of quality were validated in a pre-test in two product categories with US customers.

The main study covered four product categories – cars, dishwashers, headphones, and tablet computers – and was completed by 2500 respondents from the United States. Respondents

must have owned and used the respective product regularly (at least once a week)

## The most significant product quality dimension across all products was performance.

for a minimum of 6 months and were asked about their product experience on the eight identified dimensions of product quality.

### ANALYSIS OF DATA

Analysis of the data from the main study produced significant insights. First, the eight identified product quality dimensions could be validated in all four product categories of the main study.

Second, previous research considered product quality as a mere antecedent of

or input to customer satisfaction, which in turn is supposed to drive relationship

outcomes such as willingness to pay premium (WTPP) or repurchase intention (RI). In contrast, the study results clearly support that CEPQ has a strong, direct effect on both WTPP and RI over and

above customer satisfaction. Customer satisfaction only partially mediates the effect of CEPQ on relationship outcomes. Especially for WTPP, the direct effect of CEPQ accounts for around 50% of the total effect across categories. For RI, the relative impact of the direct CEPQ effect is comparatively weaker but still accounts for about 40% of the total effect. It is particularly noteworthy that the total effect of CEPQ is stronger than the total effect of satisfaction for both RI and WTPP across all product categories.







Knowing how different product quality dimensions are experienced by their customers is vitally important for manufacturers of cars and other goods.

new product development. It can also enable operations managers and product managers to focus on critical product quality dimensions and thus allocate resources more effectively for improving the quality of their products.

In addition, the CEPOQ metric can be applied to different market segments within a product category, for example to help companies develop products or target messages at specific market segments. Professor Paulssen and Dr Das Guru explain: "This segment-specific, dimensional significance is crucial for product managers when targeting and positioning existing and new products by allowing them to prioritise which product aspects to focus on in research development for new products."

**A KEY MEASURE FOR BUSINESS**

While customer satisfaction has traditionally been regarded by companies as the most significant customer metric, this alone is not a sufficient predictor of

Moderators for the relevance of CEPOQ were also identified. The degree to which a consumer focuses on buying high-quality products, their 'quality consciousness', as well as their level of expertise moderated the impact of CEPOQ on outcomes (RI and WTPP). For high-quality conscious customers and experts, the direct effects of CEPOQ on RI and WTPP are stronger than the effects of satisfaction in seven out of eight cases. In all four product categories, the direct effect of satisfaction on WTPP is not significant for high-quality conscious customers. Thus, for some substantial and relevant customer groups, i.e. experts and quality-conscious customers, satisfaction is simply not the most relevant metric, but instead CEPOQ is.

**A NEW METRIC**

Importantly, the multi-dimensional product quality scale with its eight quality dimensions developed by Professor Paulssen and Dr Das Guru has by now been validated across a diverse set of product categories ranging from lawn mowers to televisions.

Dr Paulssen and Dr Das Guru have found that their CEPOQ metric is more sophisticated in its insights when compared to alternative quality metrics, such as those used by online shopping platforms. By drilling down and revealing how the quality dimensions relate to each other, the CEPOQ metric provides a more comprehensive and diagnostic insight into how product quality is experienced in a category.

The most significant product quality dimension across all products was performance. However, for all other dimensions, results differed depending on the product. For tablet computers, the additional dimensions were serviceability, ease of use, and features; for dishwashers they were material, features, and

durability. This makes a lot of sense – what is important for one product will not necessarily be important for another. And herein lies the beauty of CEPOQ: it allows companies to understand what aspects of quality are most important to their specific customers.

**APPLICATION**

CEPOQ is a new product quality metric for manufacturers, which aggregates customer evaluation of a product's performance across eight quality dimensions into an overall quality

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judgement. Based on actual experience, the CEPOQ metric helps companies understand how customers define product quality in specific product categories.

Professor Paulssen and Dr Das Guru's research shows that CEPOQ is a better predictor of customer behaviour than other established metrics such as customer satisfaction. In addition, they suggest that measuring and tracking CEPOQ on a regular basis can help companies "to decode exactly how their customers experience product quality and can pinpoint strengths and weaknesses of a company's product portfolio on a quality dimension level". The insights generated can help to both improve production processes and inform

future purchase behaviour. Rather than being regarded as an antecedent to customer satisfaction, Professor Paulssen and Dr Das Guru's study shows that Customer Experienced Product Quality (CEPOQ) drives key customer behaviours such as repurchase and willingness to pay. It follows that the CEPOQ metric they have developed should become both a key measure of business performance and a subject for further research.



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# Behind the Research



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## Research Objectives

Professor Marcel Paulssen and Dr Ramesh Roshan Das Guru have developed a multi-dimensional Customer Experienced Product Quality (CEPOQ) scale to help boost business performance through assessment of product quality.

## Detail

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**Bio**

Marcel Paulssen is a Professor of Marketing and Director of the Institute of Management. Ramesh Roshan Das Guru is a Research Assistant at the Geneva School of Economics and Management. In their current research projects, both work on product defects and product quality perceptions.

## References

Paulssen, M. and Das Guru, R. (2020). Customers' experienced product quality: scale development and validation. *European Journal of Marketing*, 54(4), 645-670. Available at: <https://doi.org/10.1108/EJM-03-2018-0156>



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## Personal Response

**What was the most surprising insight into customer experienced product quality gained from your research?**

It was quite surprising to observe that despite theoretical conceptualisation of product quality insisted on its multidimensional nature, no scale existed to capture such a fundamental construct despite of a service quality scale being so significant and around for decades.