



## Immersing consumers in a virtual world

Assessing consumer experience in a realistic setting

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48

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# Immersing consumers in a virtual world

The experience of sipping a glass of white wine in a trattoria by the beach in Sardinia can hardly compare to tasting a glass of wine in a central location facility on a rainy day in England. But what if you could recreate that Sardinian experience while consumers test wine in their own home?

Consumer and sensory research is now considered a mainstay of product development in order to understand consumer opinion, preference and intentions. Yet, around 65% of the food products that go into the market fail in the first year. So what are the new techniques emerging in consumer and sensory research to enable higher product success rates?

## When overall liking is not enough

Liking scores, agreement statements, self-reported purchase intention and other quantifiable indicators used in sensory and consumer research have faced some criticism for not being good predictors of a product's success in the marketplace. Is the problem the nature of the question, or is it the nature of the test? How much can we realistically assume and infer from results collected in a central location versus in home?

## Traditional vs immersive research

Consumer testing is traditionally performed in a neutral, central location in order to focus only on the intrinsic or inherent characteristics of the product and exclude any influence from product perception or contextual variables. Sensory evaluation with trained panellists is conducted in isolated sensory booths that aim to minimise any perceptual noise. Home trials are closer to real-life testing, but then researchers have no

control over how or indeed whether the test is actually performed.

## Context

Context is everything. And as a result context can mean anything. It can be a situation, an emotional state, a certain time, place or environment, being alone or in the company of others, as well as meaning many other things. What is even more interesting, is that in modern daily life, no context is consistent. Our food choices differ depending on the occasion. Is your tittle of choice the same on the beach and the pub? Think about trying a bottle of wine on holiday in Italy and then bringing back a few bottles to enjoy at home. Is the wine at home as fruity as you remembered it to be? It might actually be that you cannot identify why your perception of the product has changed, but what you can tell is that it certainly has!

## Testing in context

Testing in context using Virtual Reality (VR) provides endless opportunities. Consumers can be immersed in virtual settings so that we can understand their behaviours, the mechanics of choice when deciding between products, and their emotional disposition. The advantage of this approach is that none of this information is self-reported anymore. It is now data collected implicitly from consumers during their

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experience or post experience in the setting your product is developed for.

So far, work that has utilised VR to provide context for a consumer's experience with a product has demonstrated results that are more discriminatory between samples and more representative than results received from self-reporting, central locations, home trial questionnaires or surveys results. They are also closer to real life outcomes and behaviours.

More creative and experimental projects have even accomplished the manipulation of flavour perception of tasteless food, enabling a calorie-free and poor-in-taste product to be perceived as more intense or even of a totally different flavour.

### **What is Virtual and Augmented Reality (AR)?**

Virtual immersive environments offer a great level of control to research conditions. As environments are generated, they are consistent across all participants and can be available both in central locations and remotely.

Virtual reality is technology that allows generation of realistic images, sounds and other sensations like smell that replicate a real environment or create an imaginary setting. It can simulate a user's physical presence in the generated environment by multisensory integration. The definition allows for different technical means and quality standards to achieve the simulation. These can range from a high-tech sophisticated head-mounted display that projects an immersive video experience, to a physical bar mock-up where people are invited for a beer tasting session.

An area that VR has taken by storm is the gaming industry. Before VR, gamers were very much aware of their control over the game. After virtual reality kicked in, they have become a part of it – immersed in the experience.

Augmented reality is different as it superimposes graphics, audio and other sensory enhancements over a real-world environment in real time.

Both of these emerging technologies can change the way we research food and consumer goods and even our food consumption experience.

### **Applications of virtual context in consumer and sensory research**

Applications of VR and AR can be both qualitative and quantitative. Immersive technologies can be used to assess the aesthetic qualities of a product, its interactivity with users, usability and design, preference, liking, appreciation and concept evaluation, either including consumption or on a concept level. VR and AR may even prove to be the solution when investigating emotions when approached by means other than neuroimaging.

Generated settings allow consumers to interact with the projected environments and the concepts/prototypes while the researcher can observe, track and monitor this interaction and the results. From virtual supermarkets, to virtual bars and exotic destinations, we will now have the opportunity to focus on assessing the experience of consumers in realistic conditions.

### **Virtual context testing today**

At present, VR and AR applications have gained attention and have been employed with

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applications in the drinks category, as well as to support packaging innovations. Flavours and flavouring ingredients is another sector where immersive technologies have emerged and are being evaluated for their fit with concepts, spaces and experiences.

On the plus side, VR and AR can boast high levels of consumer engagement during testing and can deliver detailed insights into prototypes, especially when used in qualitative research. On the downside, the cost of equipment, training of participants and data collection, especially for quantitative pieces of work, are still holding back VR and AR from taking off in the consumer and sensory world. With equipment and devices becoming more intuitive to use, much more integrated to our lives and more cost effective, however, these techniques are set to be highly beneficial for the food and beverage industry in capturing meaningful consumer insight.

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## **How Leatherhead can help**

Leatherhead Food Research is investing in Virtual Reality research to enhance the experience during product evaluation and understand consumer behaviour in context. Leatherhead and our sister company, Sagentia, can help you create a bespoke virtual environment to test your products, enabling you to develop a highly nuanced understanding of your target customer and helping you make decisions how best to position your product.

## **About the author**

Elena is a Senior Consumer & Sensory Scientist within the Consumer, Sensory and Market Insight department at Leatherhead. Her role involves client communication, project management, data analysis and reporting. After completing her BSc studies in Nutrition and Food Science in Greece, Elena obtained an MSc in Sensory Science from Wageningen University (Netherlands). Following her studies, she worked in PepsiCo's Sensory & Consumer Insights department (Hamburg R&D Centre) prior to joining Leatherhead Food Research.

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## About Leatherhead Food Research

Leatherhead Food Research provides expertise and support to the global food and drink sector with practical solutions that cover all stages of a product's life cycle from consumer insight, ingredient innovation and sensory testing to food safety consultancy and global regulatory advice. Leatherhead operates a membership programme which represents a who's who of the global food and drinks industry. Supporting all members and clients, large or small, Leatherhead provides consultancy and advice, as well as training, market news, published reports and bespoke projects. Alongside the Member support and project work, our world-renowned experts deliver cutting-edge research in areas that drive long term commercial benefit for the food and drink industry.

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Originally founded by Professor Gordon Edge as Scientific Generics in 1986, Science Group was one of the founding companies to form the globally recognised Cambridge, UK high technology and engineering cluster. Today Science Group continues to have its headquarters in Cambridge, UK with additional offices in London, Epsom, Boston, Houston, San Mateo and Dubai.

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