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Automation: is your product too good?

By **Eugina Leung, Gabriele Paolacci and Stefano Puntoni**

In business, efficiency is almost always considered a good thing. Economic historians generally agree that people's lives are easier and longer today than in past generations because we have learned how to do more with less. Most of the time, the idea that a more efficient product is more desirable holds as true for consumers as for factory managers. We're happier when we're offered products that are more powerful, easier to use, and often even cheaper than the gizmos they replace. But there are exceptions.

In certain special situations, higher efficiency can actually lead to lower consumer satisfaction. One case in point: in the 1950s, when General Mills began selling Betty Crocker brand cake mixes in the US that only needed to be mixed with water, the company found that sales were disappointing.

General Mills marketers discovered that although housewives didn't want to bake the cake from scratch, they did want to feel they had done some of the work themselves. When the company changed the recipe, so the home baker had to add an egg, *sales went up*.

Interestingly, this situation is not unusual. We have found many products where substantial numbers of consumers don't want the improvements that companies have worked so hard to give them. Serious hobbyists often reject products when they make the task too easy. From sonar fish-finders to bread-baking machines, tools that take the skilled work out of a task are often not welcomed by people who like to invest themselves in the process.

Economists and sociologists have thought a lot about automation. However, from Karl Marx on, this lit-

erature has mostly taken a supply-side perspective and examined the consequences of automation in *production* for workers, unemployment, and societal welfare. We wanted to look at the consequences of automation for *consumption*, a side that hasn't been considered very much.

To learn more about why some people feel so strongly about certain kinds of automated products, we conducted a series of six experiments in which we tried to understand when consumers are likely to reject automation and when they are likely to accept it. We looked at how consumers respond to automation in a variety of product categories (vehicles, fishing devices, kitchen appliances) using several methods (surveys of real choices, experiments), and sampling techniques (several online and offline participant pools).

Cars: Our first study looked at the decision to buy an automatic versus a manual transmission among 2,431 American drivers. We wanted to see how closely their perception of themselves as serious drivers correlated with their ownership of a car with a manual transmission.

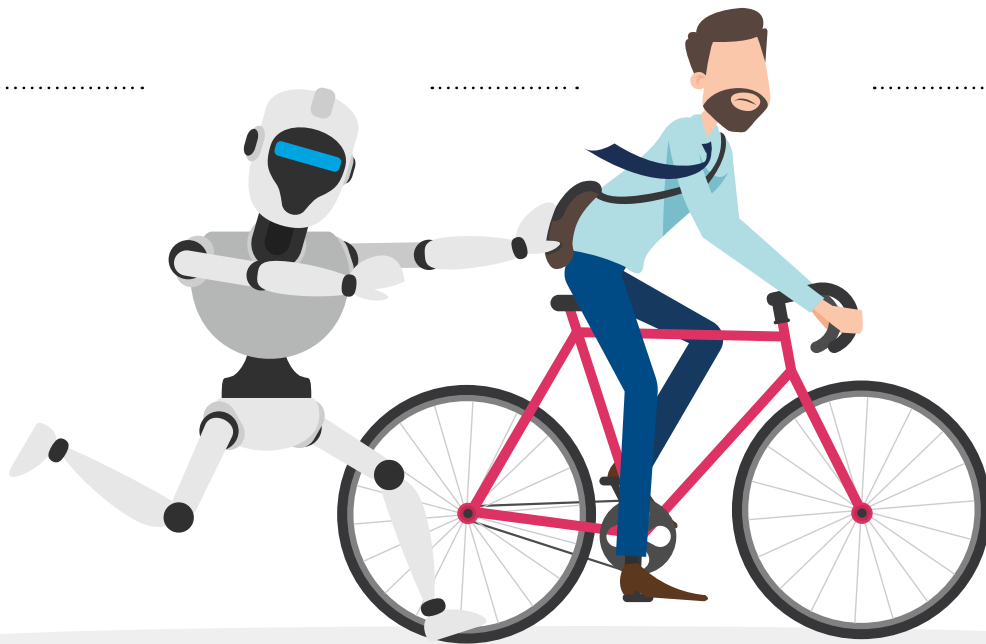
We found that this was indeed the case: owning a car with a manual transmission correlated fairly strongly with the degree to which the person saw driving as an important part of his or her identity. In other words, people who identified with a particular social category – in this case, serious drivers – did not buy cars that compromised that self-image.

Bikes: The car study demonstrated a correlation, but we wanted to show causation as well. In the second study, we asked 338 Dutch university students whether they would consider buying a new bike with a free battery pack attached at no extra charge.

We selected biking as the context for the study because it is an activity that virtually all Dutch university students perform regularly (daily in most cases) but that can be performed for different reasons and with different levels of involvement. For some students, biking is just a cheap and efficient way to go from one place to another, whereas for others it is pursued as a sport.

This study showed that students who identified themselves as serious bikers were much more likely to turn down the electric option. The results further supported our theory that people resist automation when they identify with the use of the product.

Bread baking: For our third study, we separated a group of US residents recruited on Amazon's Mechanical Turk (MTurk) into one of two hypothetical roles: people who took their baking seriously and people who didn't. We gave each group descriptions of an automated bread-baking machine



and an automated dough-mixing machine and asked them to rate how likely they would be to borrow one from their neighbour. We described two machines because we wanted to learn whether people would be less averse to automation when it took over a manual task that reflected less on their skill.

This study found that people who were asked to think of themselves as serious amateur bakers were resistant to the automated baking machine but more open to the dough-making machine, which we presented as a chore and not a skilled aspect of baking.

Fishing: In this study, we focused on an automated feature that could yield superior outcomes – a fishing rod equipped with an automatic hook-setting device. The automatic hook setter would make it possible to catch fish while the rod is unmanned, a feature that could enable larger catches. Although participants believed that the rod would lead them to bring home

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more fish, those who identified as serious anglers still rejected the automatic hook-setter. This eliminated the possibility that people in the study rejected automation because it performed worse than manual operation.

Electric bike commuting: In our fifth study, we asked 200 US residents on MTurk about commuting with an electric-powered bicycle. Our intent in this study was to find out whether people

would feel differently about an automated device based on the use case. Here, we found that people who saw themselves as serious bikers (strong identifiers), were fine with electric bikes if we described it as being for their commute and not for their sport.

Cooking machine: In our sixth study, we asked 402 business school students in the Netherlands to evaluate an automated cooking machine. We wanted

"A less-automated product can reinforce their self-image, while automation may call that identity into question."

to show that simply letting consumers take credit for their work could modify their attitude toward the automated device. The participants were each given a text describing an automated cooking machine. We described the machine in two ways. In the first text, we described the machine as taking care of the cooking for you. In the second, we attributed the action not to the machine, but to the user. Then we asked participants whether they considered themselves serious cooks.

We found that simply reframing the automated product in a way so that the action is attributed to the user rather than the machine made the serious cook feel somewhat more positive about the device. This suggests that simply by advertising automated products as compatible with people's expression of their cooking skills, marketers should be able to reduce the level of rejection among people who think of themselves as serious cooks.

Overall, these studies all showed that consumers generally appreciate automation that maximises their convenience with one crucial exception: when some aspect of the promised conveni-

ence undercuts their own self-image as a skilled producer or practitioner. Consumers not only care about the outcome, but also the process they followed to achieve that outcome. A less-automated product can reinforce their self-image, while automation may call that identity into question.

Start doing less

We often think of automation as something that *defines* consumer progress, as washing machines did in the past and autonomous cars will in the near future. Yet the consumer should not be left out of the development loop. Now more than ever, a successful consumer product or service will depend on the empathy of its designers with both the practical and the identification needs of the consumer. In our automated age, part of the utility of a product will be tied up in how well it aligns with the consumer's own self-identification as an operator of that product. If the task your product supports is one that your customer can take pride in, you will want to be very cautious about how you enhance and present your product. ■

This article draws its inspiration from the paper *Man Versus Machine: Resisting Automation in Identity-Based Consumer Behavior*, written by Eugina Leung, Gabriele Paolacci, and Stefano Puntoni. *Journal of Marketing Research* (in press). DOI: <https://doi.org/10.1509/jmr.16.0443>

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