The Fixed Unit Effect: When Size Does Not Matter, But Number of Units Does

Myla Bui, Loyola Marymount University, USA
Brennan Davis, Caifornia Polytecnic University, USA
Collin Payne, New Mexico State University, USA
Maura Scott, Florida State University, USA

We introduce the fixed-unit effect (FUE). Eight studies with a variety of foods (e.g., pizza, pastries, snack crackers), demonstrate that consumers eat a fixed number of units (e.g., two slices of pizza) regardless of unit size when eating with others. Consuming alone and eating healthy foods attenuates the effect.

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Myla Bui, Loyola Marymount University, USA
Brennan Davis, California Polytechnic University, USA
Collin Payne, New Mexico State University, USA
Maura L. Scott, Florida State University, USA

EXTENDED ABSTRACT

We introduce the “fixed unit effect” (FUE), such that in the presence of others, consumers choose and eat a fixed number of food units, regardless of the size of the unit, based on what they perceive to be a socially appropriate quantity for a given food (e.g., eating two slices of pizza is appropriate). Consumers have prior notions of what is appropriate and use internal standards, as opposed to being guided by what others are consuming. The result of this effect is that, while the unit quantity selected is fixed, the total caloric intake varies with unit size (i.e., smaller or larger units), and consumers will eat more calories from larger units.

We contend that the FUE occurs in social, rather than non-social, eating situations. However, the FUE does not merely occur based on matching the behavior of others. It is an internal standard meant to convey personally consistent yet socially acceptable behavior. The FUE is a heuristic that consumers use in social situations to consume a socially appropriate amount of food, particularly for vice foods where consumers may feel more social judgment toward their consumption behavior.

Eight studies demonstrate the FUE. Four of the eight studies involve demonstrating the FUE by asking participants to consume actual food including cinnamon rolls, donuts, snack crackers, and pizza. Experiment 1A and 1B demonstrate the basic FUE with pizza and cinnamon rolls. Experiments 2, 3, 4A and 4B uncover the social parameters of the FUE. Studies (Experiments 5A and 5B) demonstrate the moderating role of food type (vice vs. virtue). Taken together, these studies provide robust support for the FUE across multiple food types, and demonstrate the social and product factors that cause the FUE.

In experiment 1A, participants read a scenario about movie night at their apartment with friends and plenty of pizza, and then saw the full pizza, which was either sliced in 16ths or 8ths. Participants then indicated how many slices they would like to eat. Results support the fixed unit effect: there was no difference in the number of pizza units selected, but there was a significant difference in the number of calories selected.

Experiment 1B was a field experiment at a farmer’s market. In this case, participants were offered free cinnamon rolls that were either small or large units, depending on the booth. As in experiment 1A, there was no difference in the number of cinnamon rolls participants ate, but there was a significant difference in the number of calories consumed.

The next studies demonstrate the parameters of the FUE: that this is a social phenomenon, although it is social it is not driven by mimicry of others’ behavior. Experiment 2 employed a 2(consumption: public, private) x 2(small, large) between subjects design. Participants were invited to a pizza taste testing study (with either all small slices or all large slice), where they ate either alone or at a table with 3-4 people. Results showed that when consumers ate with others, the FUE emerged (i.e., no difference in the number of slices selected, but significant difference in number of calories consumed). When consumers ate alone, they ate a significantly greater number of the smaller slices, but showed no difference in caloric intake. This provides preliminary evidence of the social nature of the FUE.

Experiment 3 replicates the FUE using a different food: actual eating of cheese filled Ritz crackers during a social networking event. It also tests whether consumers eating these foods mimic the behaviors of others or follow an internal standard; in this case, consumption is public, but we removed the ability for participants to see how much others put on their plates. In other words, participants will know they are going into a social context where they will be eating with others, but they must select their food in isolation without seeing what anyone else has selected. We found that the FUE still arises in this context, even though participants are not able to mimic the amount taken by others.

Experiments 4A/4B delve further into the question of social behavior by examining the question of how participants expect others to consume. Both studies employ a 2(donut size: small, large) between subjects design. Experiment 4A replicates the FUE using actual eating of another food: donuts (i.e., participants eating in full view of other people showed no difference in the number of units selected, but a significant difference in the calories consumed). After eating, we asked participants how much they thought others would eat in the same situation; participants thought participants would eat significantly more units of the smaller donuts than the larger ones. In Experiment 4B, using an online format, we showed participants one of the two types of donuts and asked two questions: how much they thought other people would eat, and what would be the appropriate amount for other people to eat. Consistent with experiment 4A, participants expected others to select significantly more donuts from the small donut condition, however, when asked about what is appropriate, consistent with the FUE, participants showed no difference in the number of donuts they thought would be appropriate for other people to select.

Experiments 5A/5B both employed a 2(2(food unit size: small, large) x 2(vice, virtue)) between subjects design. Consistent with our theorizing about the FUE being a heuristic to help consumers manage social judgments about their consumption, and the idea that consumption of vice foods carries more judgment than consumption of virtuous foods, we find across two studies that the FUE holds for vice foods, and is attenuated for virtue foods.

Taken together, our research findings establish that in social settings, food unit size does not impact the number of units taken, as consumers rely more on internally guided fixed-units to consume; however, it does impact total calories consumed. This suggests that smaller food units can help attenuate consumption of vice foods, while larger units facilitate such eating behavior.

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