Does Triple Jeopardy Exist for Retail Chains?

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Abstract

The famous 'double jeopardy' empirical generalisation has been well documented for many competitive choice situations, including store shopping. A third 'disadvantage' (hence triple jeopardy) has been proposed (Bhat and Fox, 1996; Uncles, 1995) that grocery chains with lower market share have fewer customers, who shop slightly less often, and who also spend less each visit. Unlike double jeopardy there is no theoretical explanation for why such a third jeopardy effect might occur. We examined panel data on grocery shopping in an Australasian region in the late 1990's and found double, but no triple jeopardy. Differences between chains in terms of average spend per visit seem instead easily explained by idiosyncratic brand differences of average store size and pricing policy. The research has implications for how average spend per visit might be changed.

Key search words – retail, repeat-buying, marketing metrics, loyalty

Introduction

In this paper, we report a study into triple jeopardy for store chain choice. This research extends the investigation of such effects through explicitly examining potential causes of ‘triple jeopardy’, which was recently documented for grocery stores in a US study.

Double and Triple Jeopardy

The double jeopardy empirical generalisation is well documented for store choice (Keng and Ehrenberg 1984; Uncles and Hammond 1995), just as it is for other repertoire product categories (Ehrenberg, Goodhardt and Barwise, 1990). Small brands get ‘hit twice’, in that they have fewer customers who are also less loyal, i.e. those customers buy these brands less often (Ehrenberg et al. 1990; McPhee 1963).

Table 1: Double Jeopardy in Fabric Conditioners

Brands (by market share)	% buying in a year	Av. Purchase rate
Downy	48	3.6
Snuggy	34	3.1
Bounce	18	1.7
Cling	8	2.0
Arm & H.	5	2.1

Fabric conditioners USA- source IRI 1991

The DJ pattern is illustrated in Table 1 by the corresponding decreases in both penetration and average purchase rate for lower market share brands. When analysing attitudinal data, McPhee (1963) noticed that less popular radio announcers and comic strips not only had fewer listeners or readers, but these listeners and readers also liked them less- a double jeopardy pattern. This same pattern in attitudes was later also observed for brand buying behaviours, the bigger brands in a market are also bought more often by their buyers (Ehrenberg, et. al. 1990).

Some have speculated that stores and store chains might also experience triple jeopardy where customers also spend less per visit in smaller market share chains (Uncles and Hammond 1995). Such a triple jeopardy phenomenon sounds, to many, to be intuitively reasonable. Yet, unlike double jeopardy, there is no theoretical explanation for why triple jeopardy should exist. Double Jeopardy (DJ) is a structural statistical sampling effect, due to the asymmetry of familiarity/availability that occurs with market share differences (Bhattacharya, 1997). In theory it must occur where competitive choices vary in popularity but are not differentiated (sell to segmented audiences). The famous explanation (McPhee, 1963) being if there were two near identical restaurants in a town, but with one very well known and with high market share and the other known by only a small proportion of residents.

The less known restaurant would have fewer customers than the big restaurant, and these customers would also be slightly less loyal because many of them would also know of the big restaurant and would also eat there. In comparison, very few of the well-known restaurants' customers would know of, and therefore eat at, the smaller, unfamiliar restaurant. So the smaller market share restaurant would be expected to have fewer customers who are also slightly less loyal, i.e. they eat there less often. Smaller brands suffer this statistical selection effect as they have more exposure to competition (Ehrenberg 2004). But statistical selection does not explain any triple jeopardy effect. One would not expect customers to eat a smaller meal when they eat at the restaurant with the smaller market share. Nor for the meal to cost less - indeed DJ suggests that should be very similar otherwise they might sell to separate segments.

So, from a theoretical perspective, we have no reason to expect triple jeopardy. That said, we might empirically observe a triple jeopardy pattern in a situation where market shares for stores, and store chains, happened to be strongly correlated with store size and product range - as consumers would probably find it more difficult to buy a lot on a visit to a small store with a more limited range. If we saw triple jeopardy with the physical size of stores being related to their market share, this would mean that triple jeopardy occurs for quite a different reason than for double jeopardy. Such an event would be more likely to occur for grocery stores, where range limitations would be likely to restrict average spend. For clothing boutiques, for example, store size and range might presumably have less of an effect on spend per purchase.

There has been a single empirical study of store jeopardy patterns and it was conducted for individual grocery stores (Bhat and Fox 1996). Interestingly, the analysis of repeat-purchase panel data showed evidence of triple jeopardy effects. It showed a weak triple jeopardy pattern across 28 individual grocery stores; higher sales stores had more customers who made more visits and who spent more on each visit. Previous studies of double jeopardy effects used purchases of particular products to make comparisons across stores and/or only analysed number of visits, ignoring overall expenditure (basket size or spend per visit). This was the first study to examine overall store shopping and to include both number of visits and expenditure. We follow in these footsteps.

In comparison to Bhat and Fox (1996), we examine grocery store chains rather than individual store outlets. Examining individual stores might possibly increase the chance of finding a triple jeopardy effect. Examining individual stores is similar to examining a particular brand with a distinctive pack size, say small, which would probably lead to a conclusion that customers bought fewer grams of the product whenever they bought this brand. Individual stores' sales, are not comparable to market share because individual stores have limited geographical catchment areas, a store with 'low' sales might really have a very high share of its particular market. In comparison, such issues largely do not occur when examining the brand performance measures of store chains, as presumably all brands in the market will have a range of stores of different sizes. There is no reason to expect that higher market share store chains will necessarily have larger individual stores than other chains in the market. More likely they will simply have more stores. If some chains have larger stores, this would more likely be the result of managerial decision making rather than a natural characteristic of the market.

Results

Our panel data covers 3 months and repeat buying from 600 households. The data were collected within an Australasian market in the late 1990's by a large market research company. We analysed the following aggregate (chain level) brand performance measures:

- market share (dollars spent in the period and the number of supermarket shopping trips made over the period),
- relative penetration (the proportion of supermarket customers who shopped at the chain during the period),
- average visit frequency (how often the chain's customers shopped there)
- and the average spend per visit that each chain's customers made when shopping there (basket size).

These marketing metrics are presented in **Table 2** ordered according to penetration. In the interests of brevity, only the top six brands are presented and discussed (the patterns remain the same when the other chains are added). The metrics were originally shown in alphabetical order, which meant that neither double jeopardy, nor any evidence of a triple jeopardy pattern, were originally discernable for the chains. We applied data reduction principles (Ehrenberg 2000).

Table 2: Brand Performance Measures Ordered by Market Share[1]

Chain Category Total	MktShare (visits)	Penetratio n 100%	Av Visit Frequency 19.4	Av $ per visit (basket size) $65
Woolworths	32%	70%	7.6	$56
Franklins	22%	55%	6.7	$81
Foodland	16%	38%	7.2	$62
Jewel	13%	40%	5.2	$45
New World	6%	21%	4.4	$68
Bi-Lo	5%	24%	3.7	$75

Penetration (the proportion of supermarket shopping households visiting a chain at least once) is a measure of the number of customers each chain has and shows an obvious rank association with market share. In line with the normal double jeopardy pattern there is less variation in visit frequency than penetration, and this variation is also in line with market share. So we see the normal double jeopardy effect (Ehrenberg et al. 1990; McPhee 1963).

But we see no evidence of a triple jeopardy effect. The relatively small variation in average basket size shows no association with market share. The two very biggest brands in the market have an average basket size of $69 and the two smallest brands have a similar figure of $72.

[1] Brand names have been disguised and the marketing metrics used in this table do differ from those traditionally used for brand performance as the ones used in this table seem more appropriate for chain performance.

So the variation in average spend is not explainable as some sort of systematic market pattern, as double jeopardy is. It is, however, at least in this case, apparently easily explainable. In line with all previous commentators, we earlier proposed that store size should be associated, indeed cause, differences in average spend per visit. In this case, there are two chains with particularly large stores, Franklins and Bi-Lo. Each of these chains has a larger than average basket size, $81 and $75 respectively. The chain with the smallest stores, Jewel, records the lowest average basket size.

This does not seem enough to entirely explain these differences in basket size, however. For instance, Franklins and Bi-Lo have very similar store sizes, yet there is still some difference in average basket size.

It might be tempting to invoke some sort of a triple jeopardy explanation for these small differences that exist after accounting for store size. There is, however, an alternative causal explanation which fits with research conducted on heavy and light basket grocery shopping. Bell and Lattin (1998) have shown that large basket shoppers prefer stores that offer ‘Everyday Low Pricing’ policies over stores that offer ‘Hi-Lo’ pricing policies. This is rational behaviour in that large basket shoppers gain more from lower prices across a broad range of products than they do from deep discounts on a few lines. Thus, ‘Hi-Lo’ pricing encourages ‘top-up’ shopping and generally smaller basket shoppers leading to a lower average basket size for the chain.

In our data set, Franklins is the only store chain that has a pricing policy that could be clearly classed as ‘Everyday low prices’ and it has the largest average basket size. Larger even, than Bi-Lo, which while having similar sized stores and not being an expensive supermarket, still uses a ‘Hi-Lo’ pricing policy with heavy emphasis on items on special each week.

Summary and Implications

The theoretical explanation for the famous double jeopardy pattern is not sufficient to explain a triple jeopardy pattern. The only rationale for triple jeopardy that has been offered is that it should occur if store size (and hence product range) was strongly related to market share AND if store size/product range influenced customers to spend more on each visit. Such a scenario is not unreasonable, particularly in some contexts. And we studied one of these likely contexts: grocery shopping.

For grocery store shopping it is quite believable that having larger stores might increase market share in terms of getting more customers who also shopped more often. It is also believable that larger stores might induce customers to spend more on each visit because of the larger product range. That said, spending more on each visit might depress the total number of visits a customer makes. The outcome is not clear, it is an empirical question.

Our empirical research in this paper found no triple jeopardy effect. Though it did strongly support the expectation that larger stores would have a positive effect on average basket size and market share (particularly share of total expenditure rather than total number of visits). This suggests that, at least for grocery store chains, triple jeopardy is not a general phenomenon, though presumably it can occur if average store size is strongly related to a chain's market share rank. But even then, other factors can intervene such as pricing policy.

Formal knowledge concerning expected patterns/benchmarks provide marketing metrics with context and meaning. Managers need to know if a double jeopardy or triple jeopardy pattern should be expected, otherwise they cannot assess whether their brand/chain is performing oddly or as should be expected. We've shown that double jeopardy is to be expected but triple jeopardy is not. Average spend per visit is independent of market share, unlike average number of visits. To increase customers' repeat-purchase loyalty a store has to gain more customers, that is, increase in market share. Visiting frequency is structural, whereas average basket size can be brand (marketing mix) idiosyncratic, depending, at least, on the brand's breadth of product range and pricing policy.

Efforts to raise loyalty, such as loyalty programmes, are unlikely to have much of an effect on purchase frequency (Sharp and Sharp 1997), unless these efforts increase market share. Average basket size is different, rather than being constrained by a brand's market share, it seems more related to the brand's marketing mix.

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