**Footfall, attraction and conversion; a retail empirical generalisation**

**Abstract**

The three critical measures of retail performance are often suggested to be *“location, location, location”*. However this generalisation, like many others in the literature, is of little practical use without underpinning empirical evidence. We report replications from mass observations of shopping behaviour in two categories, covering eight brands, competing in four location types and two countries. Our aim was to identify predictable behavioural norms between the key retail metrics; footfall density, shopper attraction and shopper conversion. Such evidence-based relationships, empirical generalisations, would then imply that the one number that matters is footfall, tentatively quantifying the retailers’ mantra.

Our replications revealed surprising systematic regularities. Despite great differences in multiple conditions (base footfall, timings, brands, trading locations, frontage) attraction rates remained close to 4% for each competing outlet with an average conversion rate of 43%. Attraction patterns conformed to the well-known Law of Double Jeopardy (McPhee, 1963; Ehrenberg, Goodhardt & Barwise, 1990), such that higher share brands attracted slightly more shoppers into store. Double Jeopardy was not so clear in the conversion ratio. Results therefore suggest a law-like relationship between footfall and retail sales that can be usefully applied in a wide range of circumstances.

**Keywords:** Retail Footfall, Shopper Marketing, Double Jeopardy, Empirical Generalisations, Marketing Effectiveness

**Footfall, attraction and conversion; a retail empirical generalisation**

**Introduction**

It is widely held that the three most important factors in retail effectiveness are *“location, location, location”,* and animportant defining aspect of any mall or high street is certainly the base footfall density available (Denison, 2005; Kirkup, 1999). Existing retailers pay attention to footfall quality across the day and to its like-for-like consistency over time, and footfall density plays an important role in site selection. Footfall is the foundation of retail sales, from which individual stores must then compete to attract and convert shoppers into customers. There is still some debate about the attraction rate of available shoppers into store (Underhill, 2011), and an extensive literature has developed in shopper marketing – conversion - (Hui, Bradlow & Fader, 2009; Sorensen, 2009; Stahlberg and Maila, 2011), and yet to date there is surprisingly little research which relates all three and validates the retailers’ axiom.

In an exploratory study Graham (2016) reported the impact of footfall on customer attraction and conversion in the *masstige* bodycare retail category, finding a broadly constant “rule of four” across competing retailers in different locations and at different times – four in every hundred attracted into store and four in ten converted. The emerging empirical generalisation if shown to be more widely robust has many obvious managerial uses in predicting and evaluating retail performance against competitors (as against the usual like-for like comparisons) from simple footfall data. This study replicates and extends the empirical generalisation in three ways:

First, Graham (2016) is limited to a single category and so does not test for category effects on the fixed relationship uncovered. Different categories have more or fewer buyers, and are bought more or less often, both measures that might influence retail attraction and conversion rates. Here we extend the prior study to fashion, and collect comparative observations between four competing brands in three location types.

Second, the data in the initial study was entirely collected by observation; manual counts of footfall and attraction are robust enough if research team members are rotated and data is recorded systematically, but conversion is rather harder to observe even from small retail stores. In this study we were given access to commercial timed sales data and to store attraction rates, rather more methodologically robust.

Third, the replication is differentiated by country. The initial study was conducted in London’s West End, high streets, malls and transportation terminals. The present study was conducted in shopping centres, high streets and malls in the United Arab Emirates introducing cultural effects into the replication, which might influence the strength or negate the relationship found between footfall, attraction and conversion.

**Background**

Consumers choose between high streets and malls, between retail brands, and between in-store offers, and on any visit to a high street, mall or to a store they may choose not to buy at all. If retail brand choice is as habitual as FMCG buying, its aggregate steady-state purchasing behaviour might be explained by existing theory.

***Base Footfall Density :*** Consumers typically divide their shopping between a range of available high streets, depending on occasion or convenience. The number of visitors on any high street, the footfall density, is normally determined by retail gravitation theory (*e.g.* Converse, 1949; Ghosh and Craig, 1983; Huff, 1964; Reilly, 1931), which estimates the competitive effects of distance and attractiveness or size on retail catchment area. There are many purposes for a visit beyond retail as Dobson (2012) and East *et al.,* (2008) point out. Individual trips occur when they do, often habitually, for good reason, and those reasons are different between individuals but likely to be relatively long-term stable. It is therefore reasonable to expect that the number of available shoppers would vary by location and by time but would remain relatively stable *over* time. While some (e.g. British Retail Consortium 2012; Deloitte, 2015; Sheth and Sisodia, 1999) have predicted declining high street vitality the evidence is complex. Wrigley and Lambini (2014) found from a national study that consumer purchasing is moving back into town, while Pauwels & Neslin (2015) suggest that on and offline retail strategies lead to an overall increase in purchase frequency rather than entirely cannibalising traditional sales.

***Attraction into Store:*** Brewis-Levie and Harris (2000) and Kennedy and Ehrenberg (2001) applied stochastic brand choice theory to fashion and multiple grocery retail to demonstrate that retail-level choice, like household FMCG brand choice remains un-segmented across the population. Consumers hold individual store repertoires, switching among them regularly over time. Attraction rates are therefore unlikely to differ much between competing retailers, and are likely to remain steady among consumers. Shah, Kumar & Kim (2014) reviewed evidence to suggest that as much as 45% of human behaviour can be deemed habitual, supporting the likelihood of a steady state behavioural norm.

***Conversion Rates.*** The third measure we consider here is the effectiveness of shopper marketing in each retailer, the rate at which browsers become buyers. Underhill (1999) reports the astonishment of his retail clients to discover that not everyone in their outlets was a buyer. He found that the conversion rate in New York department stores was 48% (in fact line with our finding of 42% in London). A literature in Shopper Marketing has developed which describes ways to increase that conversion rate. Desforge & Anthony, (2013) describe this as a revolution, and Sorensen, (2009) suggests that the key is to make best use of shopper time. Once in store though, behaviour again appears to be quick and almost unthinking. Anesbury *et al.* (2014) showed that most brand choices take less than ten seconds while Sorensen (2005) suggests that the average shopping trip covers only 25% of the store in the interests of speed, and the most commonly seen basket at the checkout contains just one item.

**“*Location, location, location”*** implies that the footfall density passing the shop door is the main contributor to retail performance. Some suggest that attraction and conversion rates are manageable by the retailer, and differentiate retail performance (the theory underpinning category management after all). If so, then the “rule of four” could not hold constant between competing retailers. Others described here consider that in aggregate habitual behaviour is stochastic and predictable, which would then imply that retailers can do little to influence sales beyond picking a better location. Attraction and conversion will then follow. Strengthening the evidence for this fixed relationship is the basis of the study.

**Methodology**

Our study is designed to replicate and strengthen a promising but emerging empirical generalisation (EG). An EG is *"a pattern or regularity that repeats over different circumstances and that can be described simply by mathematical, graphic, or symbolic methods."* (Bass,1995). Some of the best known are Newton’s Laws of Motion but EG’s also exist in marketing, and especially in consumer behaviour where useful examples such as Ehrenberg’s Law of Double Jeopardy (Ehrenberg, Goodhardt and Barwise, 1990) are in everyday managerial use (Sharp, 2010). Our aim is to develop the strength, scope and limits of the emerging EG through systematic replication and extension (Anderson, 1983; Wright & Kearns, 1998) identifying links to explanatory theories (Ehrenberg, 1995; 2002). There is (initially at least) no model, and so statistical testing is not possible. Instead, Barwise (1995) suggests that good EG’s have scope, precision, parsimony, usefulness and links with theory. We will present and examine our findings through that lens.

We worked with an international fashion retailer to collect data for four brands (referred to in size order as A, B, C, & D for commercial reasons) in three settings; mall, retail centre and high street. For each brand one store was identified at each location type, and footfall observations made in three one-hour periods on each of four Wednesdays and Saturdays over the course of one month. Store visitor data was made available for each period at each store and timed till records gave conversion numbers. In London our data was collected for four brands in four locations each, for two hours - 32 replications. In the UAE the dataset contains 72 sets per week for four weeks, around 720,000 footfall observations and over 20,000 purchase records.

**Analysis and Findings**

We next present our analysis. Table 1 compares the summary findings from Graham (2016) with the new data collected in the UAE. Simple tabulation revealed the patterns and associations in hourly base footfall (S) at each location type and on each day, the hourly attraction rates for each store brand (*v*), and relative effectiveness in the conversion rates (*b*). Further reducing the data, as here to observe the mean rates for weekend and weekday hours then reveals the generalising associations and patterns observable across the competitive set.

*The Empirical Generalisation*

Recapping the original EG in the bodycare category first, the evidence from the column averages is astonishing. Even though hourly footfall varies by 100% between Wednesday and Saturday, the brand attraction rate remains stable at just under 4%, while the conversion metric is around 42%, regardless of footfall. This is a low-level EG across brands, contexts and days, which gives validity to the retailers *“location, location, location”* axiom. It provides a benchmark with which to assess brand performance, since **whatever the footfall**, the expectation is that about 4% of shoppers will be attracted and 42% converted.

The dominant factor in sales per store must therefore be the number of potential shoppers passing the front door. Any shop in this category should expect to bring in about four out of every hundred passers-by, and sell something to about four in ten of those it attracts. The regularity of that relationship within the category across locations, days, base footfall levels and brands is quite surprising and had not been previously reported to the best of our knowledge.

**Table 1. An emerging empirical generalisation**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Category, Brand & Location** |   | **Base Footfall (S)** |  | **Attraction *(v)*** |  | **Conversion *(b)*** |
|  | *,000's /hour* |  | *% entering* |  | *% buying* |
|  | **Week** | **W/end** |  | **Week** | **W/end** |  | **Week** | **W/end** |
| **Bodycare** |  |  |  |  |  |  |  |  |  |
| Body Shop |  | 2.0 | 4.2 |  | 5.9 | 4.3 |  | 39 | 33 |
| Lush |  | 1.0 | 1.8 |  | 4.1 | 5.9 |  | 61 | 48 |
| L'Occitane |  | 1.2 | 2.1 |  | 2.5 | 2.6 |  | 19 | 31 |
| Kiehl's |  | 0.7 | 1.2 |  | 2.7 | 2.5 |  | 55 | 56 |
|  *Mean Values* |  | ***1.2*** | ***2.3*** |  | ***3.8*** | ***3.8*** |  | ***43*** | ***42*** |
| **Fashion** |  |  |  |  |  |  |  |  |  |
|  Brand A |  | 2.8 | 4.2 |  | 4.6 | 4.4 |  | 41 | 49 |
|  Brand B |  | 2.6 | 3.1 |  | 6.6 | 6.3 |  | 45 | 47 |
|  Brand C |  | 1.8 | 2.7 |  | 6.6 | 6.5 |  | 45 | 47 |
|  Brand D |  | 1.5 | 2.2 |  | 5.9 | 6.0 |  | 49 | 47 |
| *Mean Values* |  | ***2.2*** | ***3.1*** |  | ***5.9*** | ***5.8*** |  | ***45*** | ***48*** |
| **Average** |  | **1.7** | **2.7** |  | **4.9** | **4.8** |  | **44** | **45** |

A second pattern revealed from the analysis is that some retailers (and especially The Body Shop) are better at acquiring higher traffic locations. The Body Shop trades in locations benefitting from twice the base footfall observed for the other brands. As brand leader, its resources allow it to derive a competitive advantage from busier more expensive sites and the EG shows how this becomes a meaningful entry barrier.

A third pattern is revealed in the variances around the means. Attraction rates tend to be higher where there is higher footfall, a characteristic of the Double Jeopardy phenomenon commonly found in mass observation (Ehrenberg, Goodhardt & Barwise, 1990; McPhee, 1963; Sharp, 2010), and in theory this would be expected to endow an extra location advantage. The EG may also reveal shopper marketing effectiveness in the variances in conversion rate between brands – both Kiehl’s and Lush appear to be systematically better than expected at selling to their shoppers.

*The Replication*

Next, the far larger dataset from the UAE was tabulated and reduced in the same manner to give mean rates of S, *v* and *b* by brandacross locations in a typical hour on Weekday (Wednesdays) or Weekend (Saturdays). The main pattern observed is that despite the various manipulations of country, category and retail context and the more robust dataset, the EG is strongly replicated. We once again find constant attraction and conversion rates regardless of footfall. Mean attraction is however about 2% points higher in the fashion category than the bodycare category. This may be a function of category purchase frequency, store size (the fashion outlets observed being rather larger than the bodycare shops) or differences in shopping habits. These are questions for further replications though. In this study it was also found that the variances from the means for each measure are rather tighter than before and this may be a result of a lower sample error in our larger commercial dataset.

The emerging fixed relationship between S,*v* and *b* gives a constant (C*vb*) as a simple model to predict the number of hourly buyers expected in an outlet from base footfall data. Table 2 demonstrates its use from observed weekend data in both bodycare and fashion. The model fits well (predictions within 4% of observed data) highlighting some important facets of individual brand performance with managerial implications.

**Table 2. Predicting and evaluating weekend sales performance**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Category, Brand & Location** | **Base** | **Observed** | **Predicted** | **Deviation** |
| **Footfall** | **Customers** | **Customers** |  |
| (S) | S(*vb*) | S(C*vb*) | *(O-T/O)* |
| **Bodycare (C*vb*) =1.6** |  |  |  |  |
|  Body Shop | 4200 | 60 | *67* | -12% |
|  Lush | 1800 | 51 | *29* | 44% |
|  L'Occitane | 2100 | 17 | *33* | -97% |
|  Kiehl's | 1200 | 17 | *19* | -14% |
| **Hour** | **9300** | **144** | ***148*** | **-3%** |
| **Fashion (C*vb*) = 2.8** |   |  |  |  |
| Brand A | 4223 | 91 | *117* | -30% |
| Brand B | 3107 | 92 | *86* | 6% |
| Brand C | 2723 | 82 | *76* | 8% |
| Brand D | 2185 | 62 | *61* | 2% |
| **Hour** | **12238** | **327** | ***340*** | **-4%** |

For example the model over-predicts sales performance at one bodycare retailer by 97%. The existence of the EG suggests that there must be a very strong possibility to improve returns per square foot at branches of this store, and the model indicates by how much. This analysis would not be evident from the like-for-like metrics used by most retailers if the issues are systematic. Here, in comparison with the competitive set, the Table 1 data suggests that the problems are not with location, since the footfall is in line with competitors’. It is clear to see that too few shoppers are being attracted into store and of these shoppers conversions are running at just 75% of expectation.

Again, from the UAE model fitting, the new EG reveals that despite its superior footfall, Retailer A is underperforming its category. Referring to Table 1 we can see that the problem is not with its conversion rates, which are as expected, but with attraction. Knowing this, and confident in its shopper marketing effectiveness, further investment in visitor numbers is therefore called for in order to develop higher sales.

**Discussion**

Retailers know how difficult it is to make sales – this new EG demonstrates it. In just two hours of category observation in London we counted nearly 57,000 people in four location types passing by the competing shop doors. A high proportion of the passing trade was likely to have been category consumers, and yet from this promising base just 1.6% was converted. The EG shows that despite the low conversion rate footfall is by far the dominant measure in leveraging the most expensive asset – retail space.

We found from the second study that the relationship between the three retail measures S, *v* and *b* was replicated in a larger dataset in a different category and country and that both datasets had a Double Jeopardy characteristic. The law suggests that small brands suffer twice. In comparison to bigger competitors they have fewer buyers who buy a little less often, a visible phenomenon in our data. Differences in market share here are largely accounted for in the numbers of shoppers attracted into store, and that number depends entirely on footfall density outside the shop. The known patterns of brand choice are consequently reflected in the new EG, and linked to explanatory theory. This suggests that there is little to be gained in a differentiated brand image – it is more important to attract shoppers by being distinctive.

Sharp (2010) and Ehrenberg *et al.* (1990) assert that brand level segmentation is seldom seen in FMCG because brands share category buyers predictably in line with size, and so purchase frequencies differ little between competing brands. The observed rate at which our shoppers were converted across brands in both countries reflects this norm, being broadly a constant four out of ten – so shoppers in Brand B appear to like B as much as shoppers in Brand A appear to like A. We found that there are exceptions in this conversion rate so that effective shopper marketing (or its opposite) brings a variance from expected performance, but the EG broadly suggests that no retail brand is being bought much differently by its buyers than any other. The defining feature of retail performance is that some brands have *more buyers* than others, which is simply a function of location.

The EG therefore suggests that the retailers axiom is probably correct – if superior footfall is consistently delivered in one location over another, all that can matter is *“location, location location”.* The findings outlined here describe that numerically, and fit, we suggest, the definition of a good EG (Barwise,1995) by having:

* **Scope** – it holds under varied and differing conditions.
* **Precision** - being a comprehensive description of an observed phenomenon.
* **Parsimony** –summarising that phenomenon in just a few variables.
* **Usefulness** – being of obvious benefit to practitioners
* **Links to theory** –here for example, to the assumptions of Double Jeopardy

*Further Research*

These replications have produced promising findings, which suggest that only a quick and simple footfall observation is required to evaluate or support fundamental management decisions for any retailer in a given category. A rigorous programme of systematic scientific replication is now indicated to strengthen this EG. First, further replications are required in the same categories to improve the reliability of the relationship in further periods, different days of the week, and in other locations. Second, differentiated replication is needed in many more categories, controlling for retail space as well as for location, to explore the inter-category variance in the ratio found here. Third, the EG should be tested between location types with even wider variation in footfall densities and in other countries with further cultural variations in shopping behaviour.

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