

Editorial

Empirical Generalisation in Marketing

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Abstract

An empirical generalisation is a *relationship* between two or more variables that has been observed across a range of conditions. By knowing that an observed relationship holds under a range of conditions (and that it does not hold under other conditions) it is possible to use knowledge of the relationship for practical purposes, such as making routine predictions and stating principles. It is also possible to start to theorise why the relationship occurs, and why it holds under some conditions and not others, thereby moving from empirical description to theory-building. The importance of this form of knowledge for marketing is examined. Practical measures are suggested to encourage the search for empirical generalisations.

Keywords: Empirical generalisation, Replication, Scope, Boundary conditions

1. Introduction

Empirical generalisations (EGs) are a central feature of scientific investigation. An oft-cited example is Boyle's Law, stating that for any given body of gas, the greater the volume, the less the pressure. This relationship between the pressure P and the volume V of a body of gas is expressed formally as $P = C/V$, where C is a constant. There are hundreds of other generalisations in the annals of the natural, biological and biomedical sciences, and even in the social sciences. The purpose of this article is to examine some of the characteristics of EGs as they relate to marketing by addressing six questions:

- Q1: What is an empirical generalisation?
- Q2: Why are empirical generalisations so important?
- Q3: What is a "good" empirical generalisation?
- Q4: How are empirical generalisations established?
- Q5: What inhibits the establishment of empirical generalisations?
- Q6: How is the establishment of empirical generalisations to be facilitated?

2. Definition of an Empirical Generalisation

An EG is a *relationship* between two or more variables

that has been observed across a range of conditions. Because the relationship is observed to occur and recur it is regarded as a pattern, regularity or law, and it can be represented formally using a mathematical, graphic or symbolic language. By knowing that an observed relationship holds under a range of conditions (and that it does not hold under other conditions) it is possible to use knowledge of the relationship for practical purposes, such as making routine predictions and stating principles. It is also possible to start to theorise why the relationship occurs, and why it holds under some conditions and not others, thereby moving from empirical description to theory-building.

Some aspects of this definition are worth emphasizing:

- (a) *It is a relationship*, such as the fact that pressure varies inversely with the volume of a body of gas (Boyle's Law). Or – outside of the world of the natural sciences – the observation made by Auerbach almost a hundred years ago that there is a regular relationship between the size of cities and their rank (defined in terms of population size) (the "rank-size rule").
- (b) *The relationship is regarded as a pattern, regularity or law that has been observed to occur and recur*. This results from repeated empirical observation. Boyle's Law was investigated hundreds of times before it achieved its

taken-for-granted status: “[It] has been found to hold for different gases and mixtures of gases, different amounts of gas, different kinds of apparatus, different experiments, different times and places, when pressure is *increasing* and when pressure is *decreasing*” (Ehrenberg, 1975, pp 72-73). The rank-size rule has been studied across dozens of countries and across time for certain countries (summarised in Haggett, Cliff and Frey, 1977, chapter 4).

(c) Typically, *the relationship is known not to hold under certain conditions*. The empirical relationship between pressure and the volume of a body of gas does not hold “when the temperature changes, when there is a chemical reaction, when there is a leak in the apparatus, when there is physical absorption or condensation of the gas, or when we tried to prove the law at school” (Ehrenberg, 1975, pp 73). These conditions may themselves form the basis for further EGs. Given the limitations of Boyle’s Law, for example, a natural extension would be to determine the relationship between pressure and volume when the temperature changes. The answer to this query forms the basis of the Gas Equation: $PV=RT$, where R is constant for any given amount of gas and T is the temperature (Ehrenberg, 1995, pp 145-146). The rank-size rule has been applied at the state level and it fits quite well for U.S. cities, but in Australia five of the six states are dominated by exceptionally large urban centres and the rank-size ratio is much lower than the rule would predict (quoted Haggett, et al., pp 112-113). But, with urban growth in places like the Gold Coast and the Sunshine Coast, Australian states may not now be so exceptional – this is a question for further empirical investigation.

(d) *The relationship can be represented using a mathematical, graphic or symbolic language*, thus Boyle’s Law is simply denoted as $P = C/V$, or we can say the product PV remains constant C. The rank-size rule is shown as $p_i = p_1/i$, where p_i is the population of the i^{th} town in the series 1,2,3, ... n in which all towns in a region are arranged in descending order by population, and p_1 is the population of the largest city. When population size of city is plotted against rank of city the relationship is visualised as a reverse J-shaped concave curve (or a downward sloping straight-line when plotted on a log-log scale).

(e) *Knowing there is a relationship means it can be used to make routine predictions and formulate principles*. Thus, if we know C and V it is a simple matter to calculate P – but note that this is only simple because the underlying EG has been established. In the absence of an EG it

would be very risky, if not foolhardy, to make predictions of P; while the relationship might be known to hold once, this tells us nothing about whether it would hold again in another place or at another time. In marketing there is a practical need for predictions and principles, but too often all we know is that the relationship holds once (Ehrenberg and Bound, 1993).

(f) *Theorisation is possible too*. Once it is known that pressure varies inversely with the volume of a body of gas (under certain known conditions), it is worthwhile to theorise why this is so. Similarly, once it is known that the largest city will dominate a country (in a predictable way) there is interest in knowing why. Is it because of the agglomeration of business activities, the centralisation of government functions, the focus of transportation systems, or all of these factors working in combination? And, if the effect is so systematically observed, is it virtually inevitable – “a law” - or is it something that occurs very often – “a lawlike relationship” – but it could be altered (perhaps, in the case of the rank-size rule, it could be altered through regional economic policies)? In marketing, approximate lawlike relationships are to be expected, not laws in a strict or universal sense.

The definition of EGs provided here also helps us appreciate what is *not* an empirical generalisation.

First, there are empirical studies that do not generalise; for instance, isolated facts (“today the market share of Colgate is 60%”), one-off cases (the story behind the launch of Macleans Whitening Gel Stripe toothpaste in the Sydney marketplace), ad hoc anecdotes (a manager’s interpretation of the Macleans story), and isolated experiments (a one-off test among 30 students of a hypothesis about toothpaste brand choice). These empirical studies have their place; at the very least they can stimulate ideas and thoughts that deserve to be studied systematically at a later date. Unfortunately, the temptation is to generalise from these kinds of studies – to generalise from a Harvard-style case, to treat the anecdote as a fact, and to assert general conclusions from isolated experiments. The dangers of doing this without offering caveats, or with a disregard for cautionary statements to warn readers that results should not be generalised, have been emphasized repeatedly (Leone and Schultz, 1980; Monroe, 1992; Hubbard and Lindsay, 2002).

Second, there are generalisations that are not empirical. Abstract mathematical theorems based on sets of well-defined axioms fall into this category. So too do the

normative theories of economics; these serve the useful purpose of helping us to think how the world could be or ought to be, given certain assumptions or axioms. Such theories exhibit many characteristics that are associated with EGs (there is a focus on relationships, a formal language is employed, etc.), but they are not, and not intended to be, EGs.

Also in this category are abstract frameworks – e.g., Maslow's hierarchy of needs, Howard and Sheth's model of consumer behaviour, and Dick and Basu's model of customer loyalty. Arguably, these are elegant conceptualisations of the combined effects of attitude and behaviour on various aspects of consumer activity, but in their initial formulations they were not operationalised nor tested. Such abstract models are empirically and theoretically problematic, in that there is no systematic empirical evidence to support the framework and no formal language to express the relationships. They are simply boxes and arrows to depict a logic that seemed plausible to their authors.

Looking at the discipline of marketing we see many empirical studies that *might* generalise and many generalisations that *could* have an empirical grounding, but as they stand they are articles of faith or statements of internal logic whose "truth status" is unknown (Uncles, 2002; November, 2004). They could be generally right, or generally wrong.

3. The Importance of Empirical Generalisations

EGs are of crucial importance for four major reasons.

First, *they are a basic form of marketing knowledge* (see Rossiter 2002 on the five forms of marketing knowledge). They describe relationships that are observed to exist over a range of different circumstances which have been studied systematically. Good description, in turn, provides a basis for making routine predictions and highlights associations that are worth explaining. This knowledge then can be embodied in principles. This whole process is clearly and unambiguously articulated, allowing independent verification of any claims made by the original researchers. The Double Jeopardy pattern is an example that has been widely observed over time, across places and in many product categories. It states that competing brands vary little in terms of average frequencies of purchase compared to substantial differences in the size of their customer base. Many other candidate EGs have been proposed, ranging from the observation that the price elasticity for closely substitutable brands is -2.6, to

the finding that higher market share brands are less deal elastic (see a summary table in Bass and Wind, 1995).

Second, *EGs are the building blocks for more complex knowledge*. Boyle's Law was a stepping-stone on the way to deriving the more general Gas Equation (the Law is a special case of the Equation when temperature T is constant). Or, from the area of buyer behaviour analysis, consider the NBD-Dirichlet model (Ehrenberg, Uncles and Goodhardt, 2004). This is an amalgam of observations, patterns and models that have accumulated over four decades. Early on it was shown that for frequently bought goods the distribution of the number of purchases of a brand or product category is predictable. An empirically-grounded theory was put forward to account for these patterns (encapsulated in Repeat-Buying theory and the NBD model). More recently, attention has turned to brand choice, as well as purchase incidence (including the Double Jeopardy pattern that links the two). Once again, it proved possible to put forward an empirically-grounded theory (this time in the form of the NBD-Dirichlet model). This more complete model integrates findings that were previously considered separately, but this would not have been possible without the building blocks being thoroughly established as basic forms of marketing knowledge. The Generalised Bass model (GBM) in the diffusion literature is another example of a more complete model built upon earlier partial models and observations. In its original form the Bass model describes the diffusion of innovation, whereas only in the GBM are decision variables such as price and advertising included (Bass, 1995).

Third, *EGs have utility*. They can be used. For instance, knowledge of Double Jeopardy shows a marketing manager what to expect when attempting to grow sales; sales growth is more likely to come from securing more customers than it is from expecting a dramatic increase in the frequency of purchase from existing customers. This implies programs designed to enhance loyalty (e.g., loyalty, affinity and rewards programs) will also need to expand the customer base if they are to succeed. The alternative path of securing more frequency than expected given the size of the customer base could be attempted, but that would mean going against the grain. That would be hard to achieve, especially if directly competing brands simultaneously launch programs to enhance loyalty. Another sense in which EGs are useful is that they highlight deviations (where there are norms it is easier to see deviations). Some of these deviations will prove to be random, and of little general interest.

Others, however, might prove to be systematic and deserving of further investigation. For instance, a number of systematic discrepancies are associated with the NBD and NBD-Dirichlet models (for some market leaders annual purchase frequencies are a unit or so higher than predicted by the models, Fader and Schmittlein, 1993).

Fourth, *EGs are a guard against falsehoods and unsubstantiated claims to knowledge* (Hubbard and Armstrong, 1994; Hubbard and Lindsay, 2002; Wright and Kearns, 1998). Falsehoods take several forms. In a research context, the falsehood may be the perpetuation of erroneous and questionable results – something that can easily occur when a relationship is asserted and popularised on the basis of a single “innovative” or “original” study. A further study might quickly show the relationship to be false. This would not be surprising because there are plenty of things that can go wrong in a research study, particularly one that is highly innovative or original (not least: sampling error and imperfect data collection procedures; measurement error and encoding error; analytical error, confounding influences and omitted variables; interpretation error, subjectivity and bias; and plain dishonesty from the observing researcher). Added to which is the fear that editors and reviewers are biased against null results, possibly leading to the proliferation of Type 1 errors (i.e., erroneous rejection of the null hypothesis) (Hubbard and Armstrong, 1992). Without additional studies these errors go unchallenged.

In a managerial context, many things that marketers believe to be true will be true because managers have opportunities to test their ideas everyday (these “truths” are rules of thumb and folk wisdom, or what have been dubbed “managerial factoids” and “CUGs” – currently useful generalisations). But, equally, there will be things that managers wish to be true that are not – because they are predicated on myths, wishful thinking and an “anything goes” mentality that ignores constraints and market norms. The problem is how to distinguish between the truths and falsehoods in the absence of systematic empirical studies to identify generalisations, norms and constraints.

4. “Good” Empirical Generalisation

Even when we have EGs it is inappropriate to treat them all alike. Some rely on shoddy evidence. Undoubtedly, some are trivial and trite. Others are very well established and describe important relationships. What,

then, are the characteristics of a “good” EG? A very clear answer to this question was provided by Barwise (1995), who suggested there are five criteria to consider when assessing an EG.

(a) *Scope-Boundary Conditions*. An EG that is known to be true over a certain range of conditions is said to have scope. Thus, Boyle’s Law holds for different gases and mixtures of gases (which can be specified), different amounts of gas (which can be quantified), different kinds of apparatus (which can be demonstrated), and so forth. The rank-size rule holds for different countries. Because these relationships are known to be true it is possible to make routine predictions: we can predict pressure P from knowing C/V or we can predict the population of the i^{th} city knowing p_1/i . However, EGs do not have to be true everywhere. Boyle’s Law does not hold when the temperature changes, and even the more general Gas Equation only holds in a strict sense for perfect gases. The rank-size rule might not hold within a megalopolis where several large cities have coalesced (e.g., the north-eastern seaboard of the U.S. from New Hampshire to Maryland) or in regions where urban growth is strictly governed by planners (e.g., Randstad-Holland in the Netherlands).

A good EG is one where these “boundary conditions” are known as well as the scope. The ability to articulate boundary conditions is a sign of the maturity of an EG, as well as offering protection against vagueness and overstatement. The range of possible boundary conditions is vast – goods versus services, high versus low market shares, new products versus existing ones, and so forth. If boundary conditions have not been examined the generalisation must be regarded as preliminary.

(b) *Precision*. If routine predictions are to be made it is desirable to have generalisations that are reasonably exact (e.g., a relationship that can be expressed algebraically allows an analyst to insert known values and calculate unknowns). By contrast, loose or equivocal generalisations may be too vague for making routine predictions or, worse, misleading. On the other hand, too narrow a focus on precision tends to mean that other criteria are overlooked. For instance, a very precise result can be obtained by fitting a regression line to a single-set of data; this provides a “specifically best fit”, but it tells us nothing about whether the result will generalise to another dataset or another context. Of far more value is something that provides a “generally good fit”, even though it will be only approximately true in any specific instance. Therefore, EGs are best seen as approximations, which ignore minor perturbations for the time being.

(c) **Parsimony.** The world is complex and therefore it is easy to add layers of complexity to a research study; extra variables, more contingencies, and further nuances and subtleties. A quagmire of complexity now surrounds notions such as “trust” and “value”. Yet, in scientific investigation, less is more. Something that is simply expressed (though not necessarily simple in conception) is likely to be more memorable, more tractable, and more readily used. What could be more simple than $P=C/V$, or $p_i=p_1/i$, or $E=MC^2$? Some of the most impressive leaps in scientific investigation have occurred when vast amounts of nuanced data have been reduced to quite simple EGs. The work of Kepler in astronomy and Mendeleev in biology are supreme examples of empirically-grounded generalisations that offer parsimony *and* precision. This is no less important in contemporary marketing, where we are faced with a morass of company, customer and competitor data, but are short on simple EGs that summarise patterns, regularities and laws.

(d) **Relevance.** A precise and parsimonious result, that is known to hold over a range of conditions, is useful in at least three ways: (i) to make routine predictions (e.g., gravitational force at sea level); (ii) to offer a benchmark or norm against which new information can be compared (e.g., gravitational force on the surface of the Moon is one-sixth that at sea level on Earth); and (iii) to provide a context for thinking about practical issues (e.g., in order to fly we will have to overcome the gravitational force of the Earth). Significantly, these are scientific uses of EGs, not engineering ones. Knowledge of gravity does not directly tell you anything about the various ways to overcome it (which are as ingenious as rockets, jet-engine aeroplanes, helicopters, propeller planes, balloons and blimps). Nevertheless, it helps to know that there is a gravitational force. Marketers are sometimes frustrated by this – they want answers to specific practical issues, not generalisations. They appear to want to build a better rocket (preferably one that is seen as distinctive from all other rockets), without necessarily knowing what a rocket has to do if it is to fly.

(e) **Basis for theory-building.** Having established an EG in terms of its scope and boundary conditions, there is then something to explain. There is then a need for theory to account for the scope and boundary conditions. Why does pressure vary inversely with the volume of a body of gas? Why does the relationship between pressure and volume change when the temperature changes? Why do largest cities dominate in a predictable way?

From a scientific standpoint, there would be little point in trying to explain these relationships if we did not already know of their existence. It is for this reason that Ehrenberg (1994) argues strongly for an “empirical-then-theoretical” approach (EtT) to knowledge generation. The researcher starts by systematically exploring data, looking for patterns, from which EGs are derived and, only then, is there a basis for theorising. This sharply contrasts with the “theory-in-isolation” approach (TiL), whereby the researcher puts forward an original theory or hypothesis, tests it with a small, isolated and arbitrary dataset, and assesses the test using inferential statistics.

Unfortunately the EtT versus TiL debate quickly degenerates into a chicken-before-the-egg problem (see Bass 1995 and commentaries by Bemmaor, Rossiter and Schmittlein in response to Ehrenberg 1994). Of course, hardly any research in an applied area such as marketing is likely to be purely theoretical. Likewise, no research is purely empirical. There is no tabular rasa. No pure induction. The process of undertaking research is theory-laden (in the sense of having to decide what to study, how to take measurements, which variables to consider, etc.). Ehrenberg is the first to emphasize the importance of (empirically-grounded) prior knowledge when examining new data. For instance, in looking at new data in product categories as diverse as chemical additives, paper and packaging, gasoline and aviation fuel contracts, the NBD and NBD-Dirichlet models have been used as reference points or benchmarks – this has seemed preferable to mindless data mining. See also Nelder (1986) who advises statisticians to take more account of prior knowledge and think more about the context from which data have been obtained.

Therefore, the issue is not necessarily whether the empirical (E) or the theoretical (T) should come first, but the status accorded E and T in the research process. Those seeking EGs emphasize the importance of data, systematically analysed, with a view to finding patterns (EtTEt...). By contrast, those who fail to see the importance of EGs tend to be content with one-off studies that test a theory without any attempt to uncover patterns; were a series of tests to be undertaken in a systematic fashion patterns might become more apparent (TETE...).

4. Establishing Empirical Generalisations

To establish EGs empirical observations must be accumulated across studies. This much is agreed. However, marketers approach the task in two very different ways.

4.1 Reviews, Meta-Analyses and Best-Evidence Synthesis

By far the most common approach is to generalise from a set of empirical studies. For instance, a number of studies might have been undertaken in which the relationship between “advertising expenditure” and “brand sales” is investigated. At some point an attempt will be made to review and summarise the findings of these studies. Typically, this is done with a loose narrative discussion – the reviewer mentions result (b) from paper A and result (c) from paper B, but we never hear about result (b) in paper B, or result (c) in paper A, or result (a) at all. The problem is compounded by the fact that the studies are disparate: constructs are defined and measured in different ways, sample designs and sizes vary, significance thresholds differ, and so forth. It is as if we are being invited to compare apples and bananas, in a very casual way.

Meta-analysis offers the prospect of providing greater rigour. Formally, meta-analysis is the “analysis of analyses”. Models are compared using formal statistical procedures, enabling quantitative generalisation in that both the sign and values of a relationship can be reported (parameter estimates, elasticities, effect sizes, etc.). For instance, a meta-analysis of 128 studies shows advertising elasticity to be approximately 0.3 (Farley, Lehmann and Sawyer, 1995). Or, more specifically, those studies focused on short-run effects reveal an advertising elasticity of 0.27 and among long-run studies the advertising elasticity is 0.39. In this manner we end up with a situation where red apples are compared to green ones.

The statistical methods involved in meta-analysis provide useful techniques for combining datasets and for testing moderating variables – which may also be boundary conditions. However, meta-analysis does not promote either parsimony or an understanding of more subtle relationships. Like any technique, it is also restricted by the quality and type of data available. Usually it has to work with dependent and independent variables that have been measured in quite different ways and under different circumstances. Previously used analysis techniques might be quite different too; for instance, where the effects of advertising have been investigated with regression models and structural equation models. Moreover, the original studies can be of variable quality – it is then as if rotten apples are mixed with those that would win a prize, whereas it would be better just to consider the prize-winners.

An alternative to meta-analysis is to conduct a very formal and systematic review, taking care to record all significant results and to document key aspects of the research procedure (methods, sample sizes, etc.). The list then needs to be reviewed carefully, to determine which studies merit further consideration. Poor studies are discarded, leaving only the best evidence with which to construct the final review. Such “best-evidence synthesis” has been advocated in marketing (Rossiter, 2004; see also Slavin, 1986). The determination of judges and judging criteria are very important elements of this approach. For this reason perhaps there are few explicit examples in marketing where best-evidence syntheses has been undertaken, although in spirit the “advertising principles” and “forecasting principles” projects come close (Armstrong and Pagell, 2003 and associated commentaries).

The underlying problem with all these approaches is that they are trying to make sense of very disparate studies, where the establishment of EGs was not on the mind of the original researchers. This differs from approaches found in many other branches of science.

4.2 Replication

“That which isn’t worth replicating isn’t worth knowing” - this quote from Mittelstaedt and Zorn (1984) highlights the importance of replication as one of the pillars of normal scientific investigation. The point has been emphasized time and again (Monroe, 1992; Hubbard and Armstrong, 1994; Hubbard, Vetter and Little, 1998) and it was a central theme in the *Journal of Business Research* special issue on replications and extensions in marketing and management research (Easley and Madden, 2000; Easley, Madden and Dunn, 2000).

There are three forms of replication: repeat studies, close replication and differentiated replication. The latter two are particularly important from the standpoint of establishing EGs (Lindsay and Ehrenberg, 1993).

(a) *Repeat studies* are uncommon in marketing and many researchers would regard them as unnecessary: why re-do what has been undertaken already? Indeed, where we have confidence in the way the original study was designed, executed and interpreted there is little reason for repeating the work. However, as was pointed out earlier, many things can go wrong in a research study, particularly in a highly innovative one. A repeat study, conducted by an independent research team, enables sampling schemes, data collection procedures and measurements to be checked, and it is an opportunity to

assess the interpretations and biases of the original researchers. The rejection of cold fusion because of the failure to replicate results is a poignant example of the importance of these factors. Because repeat studies are so rare outside the natural sciences it is hard to say how many cold fusion stories are lurking in marketing – probably there are quite a few.

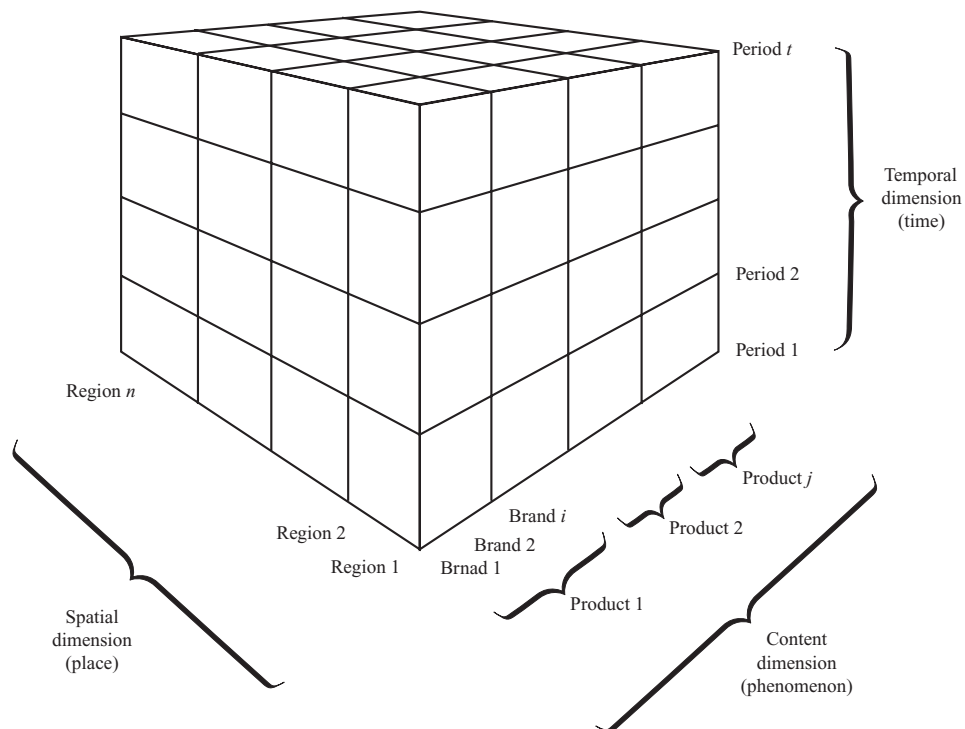
In the absence of repeat studies some researchers have resorted to using hold-out samples. These are of no value if the hold-out sample comprises randomly selected cases from the full dataset – by definition, the random sample must conform to the data from which it is sampled, other than for random sampling error. By contrast, a non-randomly selected hold-out sample might be of some use (e.g., separating out the most recent year from a 10-year record, or separating out the very young and very old from a sample of people of various ages). These are not tough tests, but they help establish the truth of the first study and begin the process of seeing whether an empirical relationship holds more than once.

(b) *Close replication* is where most aspects of a study are kept invariant, but not quite everything. There might be interest in observing the dependency on cars of shoppers

at Edmonton Mall, with surveys undertaken in August and December – across these two surveys there may be no major change in the population of shoppers, the sampling procedure, the measurement techniques, the methods of analysis, nor the geography, but the fact that temperatures drop dramatically in the Canadian winter means that at least one condition varies (this could have an impact on car dependency or it might be that most shoppers drive irrespective of the season). Close replications like this serve as a quick check to see if an empirical relationship holds again, and whether there is at least some basis for generalisation.

(c) *Differentiated replication* is designed to discover whether a relationship generalises to different conditions. The conditions themselves are deliberately chosen, with a view to establishing the scope and boundary conditions of an EG. The fact that conditions are deliberately chosen means this form of replication can be undertaken in a reasonably formal and systematic way, which contrast with the more opportunistic approach of close replication. With differentiation the emphasis is not on doing more replications just for the sake of it, but of carefully considering new conditions

Figure 1: The Marketing Data Matrix



where the EG might hold, observing whether it does hold, and then theorising why it holds. Or, in the case of a boundary condition, why the EG does not hold.

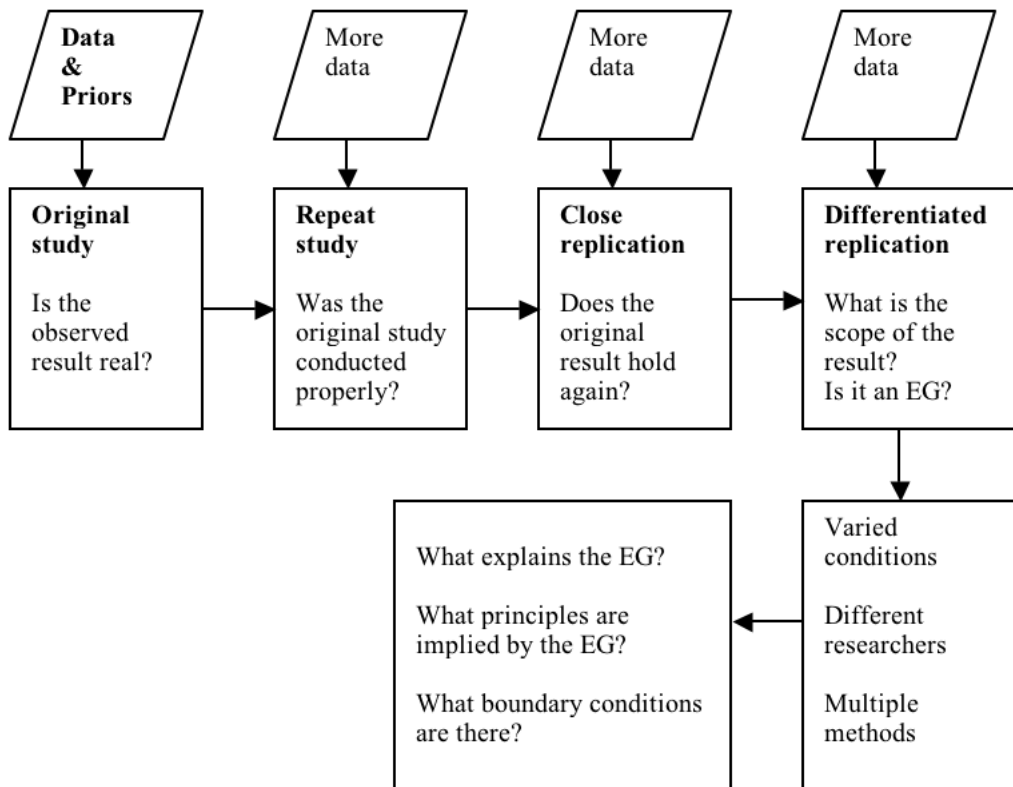
Effective replication (especially of the differentiated form) requires researchers to shift from a reliance on single sets of data (SSoDs) to many sets of data (MSoDs) (Ehrenberg, 1995). This can be visualised as drawing a sample from a data matrix comprising different places, times, product categories, etc. (see Figure 1, adapted from Hagggett et al., 1977, pp 15). The researcher decides whether to move through the matrix along one dimension (say, time) or to sample from a block of the matrix (say, two time periods, one place, and ten product categories).

For example, in a study of consumer purchasing Uncles, Hammond, Ehrenberg and Davis (1995) looked at average purchase frequencies and share of category requirements in 34 separate product categories – not just Omo in the Laundry Detergent category for instance. This study was confined to the U.S., however in related work place was varied, with geographical extensions to Australia and New Zealand (Wright, Sharp and Sharp,

1998). Similarly, in looking at the exceptionally high average purchase frequencies of some leading brands, Fader and Schmittlein (1993) examined not just one product category but 39 in Japan and 28 in the U.S. All these examples concern the purchasing of packaged goods, but further studies have examined categories as disparate as aviation fuel contracts and drug prescribing behaviour (summarised in Ehrenberg, et al., 2004). Through a process of replication the data matrix can be examined, seeing where EGs hold or fail.

The ideal is to have the validity of an EG tested by *different researchers* (inter-subjectivity), under *varied conditions* (deliberately and systematically selected from the data matrix), using *multiple methods* (with a view to achieving convergent validity). A summary of the whole process is shown in Figure 2. In practice, few EGs in marketing will be derived in exactly the manner described here because of constraints (available time, resources, access to databases, etc.) and of the need to rely on less formal processes. Nevertheless, researchers should not be deterred from moving in the direction of

Figure 2: The Process of Establishing Empirical Generalisations



the process described in Figure 2. A good starting place is with the original study. Consider the researcher embarking on a project in the area of customer satisfaction, he can choose to focus on only high-involvement situations or examine low-involvement ones too, he can select only high-contact services (hairdressing) or low-contact services (on-line banking) as well. If a relationship was found across all four conditions the researcher might be well on the way to finding an EG. Starting the process of replication in this way with the original study serves three purposes: (i) it is a check on whether the relationship holds again (at least once), (ii) it demonstrates the relationship is replicable (if it can be replicated once it possibly can be replicated many times), and (iii) it signals the importance of replication (the original researcher believes this to be important, so perhaps others will be encouraged to conduct follow-up studies).

5. Problems Establishing Empirical Generalisations

A number of marketing EGs have been mentioned above. Noteworthy as these examples are, should there be many more of them? Opinions are divided. One view is that there are as many EGs as would be expected for a youthful discipline; compared to physics, say, marketing has had much less time to search for and find EGs. An alternative view is that given the predilection of marketers to make predictions, state principles and theorise (e.g., in textbooks and in the classroom) there should be far more EGs than we in fact see. There is concern that perhaps too many predictions, principles and theories rest on insufficient systematic empirical evidence.

A key problem is the absence of formal replications. Despite the importance of replication as an essential component of normal science, it is not routine in marketing. Zinkhan, et al. (1990) found that only 4.9% of empirical papers published in marketing journals were replications with extensions. In a similar study, Hubbard & Armstrong (1994) found that replications with extensions made up just 2.4% of published empirical papers, and that the frequency of publication of replications had been decreasing since the 1970s. A study across the disciplines of marketing, management, accounting, economics and finance for the years 1970 to 1991 reported similarly low rates of replication, averaging 6.2% of articles (Hubbard and Vetter, 1996). More recently, Danaher and Brodie reported ongoing problems in finding replication and extension studies in the area of price elasticity research (Danaher and Brodie, 2000).

Significantly, of the replications that have been published in marketing, Zinkhan, et al. (1990) found that 46% gave results that conflicted with the original study, while Hubbard and Armstrong (1994) found 60% gave conflicting results. Furthermore, sustained investigations of particular topics by a succession of researchers show that some widely-known original studies need to be couched around with caveats. In marketing, for instance, there have been at least eight replications of Aaker and Keller's (1990) work on brand associations (summarised by Bottomley and Holden, 2001).

There are several reasons for the lack of replications, and therefore EGs, in marketing.

(a) The *marketing mindset is not in tune with the goals of empirical generalisation*. There are those who argue that because of the uncertain and unpredictable nature of human agency we are unlikely to find patterns or regularities in marketing (the argument is that management disciplines are more art than science and, as such, more concerned with specific contexts than generalisations) (for a critical discussion see Dowling, 2004). This viewpoint is hard to sustain when faced with evidence showing the existence of regularities, but a contemporary twist on the argument is to suggest that the combination of human agency *and* major contextual discontinuities (brought about by the Internet, the knowledge economy, coopetition, and so forth) makes most of our existing EGs look out-of-date and challenges our ability to find new ones (Sheth and Sisodia, 1999). In a world where the only constant is change, how can there be enduring EGs?

Others argue that marketers have an engineering mentality which requires the development of useful tools and techniques, in contrast to a truly scientific approach. They seek to build the marketing equivalent of a rocket, and are not too concerned to find the marketing equivalent of gravity. Yet others in marketing are prepared to accept there are EGs, but claim most of the patterns and regularities that have been found are trivial or merely corroborate what managers already know. As November (2004) writes: "... the proposition that, in general, advertising has a positive impact on sales is hardly news to a marketing practitioner" (pp 46).

The mentality carries over into marketing practice itself (or is a reflection of marketing practice), in that marketers are rewarded for the innovations they make. They seek to launch new brands, change existing ones, re-think communications strategies and be creative in

getting goods to market. If any of these initiatives do not work the damage is unlikely to be life-threatening, unlike in scientific and biomedical areas – perhaps the manager loses her job (if she has not already had the wit to change job). It is as if marketers are doctors in a gold rush – they are very busy tackling business problems and making some difference, but they do not always make the most informed decisions, are not completely clear why they make a difference, and do not have the time to reflect on decisions and outcomes.

When taken together these mindsets are not compatible with the patient, steady and long-term outlook that is required to undertake a program of research leading to the establishment of EGs. And yet, at the same time, most marketers are quite prepared to make predictions and espouse principles in textbooks, in the classroom, in the popular press, and in practice as if there are empirically observable patterns, regularities and laws.

(b) *The process of establishing EGs is perceived by marketers as time-consuming and laborious.* This is a correct perception – for good reason. Like most things in life, effort has to be put into achieving quality outcomes; an Olympian swimmer must swim an untold number of laps before competing at an elite level, and the fledgling pianist must practice daily if he is to master the piano. Scientific inquiry is no different: “science is 10% inspiration and 90% perspiration”. Perhaps the problem in marketing is not so much that the process is seen as time-consuming and laborious, but that it is also seen as tedious, boring, trivial, unglamorous and ultimately not worth doing. Why examine ten datasets when it is possible to publish from just one? Why yet another study? What is the incremental contribution of an additional study? Why not leave the task of replication to others? In fact, why not leave the perspiration to others and focus on the inspiration? The problem is compounded by a Catch-22 effect that a researcher who finds no support for the original study will be accused of not repeating the study carefully enough, whereas if support is found then there is the view that nothing new has been learned (Monroe, 1992). So, why bother?

(c) *Publication processes are blamed for having a bias against replications, which in turn reduces the chances of finding EGs.* This perceived bias takes various forms: editors, it is argued, do not see replication as worth the journal space; referees primarily look for innovative work (especially new techniques); and the criteria used by editors and referees focus on technical proficiency not the establishment of empirically-grounded

knowledge, nor the repeated application and use of techniques, nor even the likelihood of replication and use (replicability is rarely listed as an evaluative criterion). The overall effect of this is to discourage researchers from undertaking replications – with the effect of turning a perceived bias into the reality of few published replications (Armstrong, 1982; Madden, Easley and Dunn, 1995). Why engage in this activity if it is not rewarded? Why raise this with early-career researchers if it will not help their career prospects? This, of course, is to miss the point of normal scientific inquiry: “It largely is (or should be) a professional activity concerned with developing “objective” (meaning “widely agreed upon”) knowledge and understanding and also practical applications of this, rather than with the researcher’s self-promotion and possible tenured appointment” (Lindsay and Ehrenberg, 1993, pp 218).

Of course, some replications are published. But the perception of bias carries over into the arena of published replications. Specifically, there is a view that replications which do not support the original study are more likely to be published (this might help to counter the problem of proliferating Type I errors, but is then in danger of committing Type II errors). Also, invariably an extended discussion of the deviations is seen as more interesting than an account of “mere regularities” (in fact the reverse ought to be the case: exceptional deviations are of limited interest – because they are unique, idiosyncratic and exceptional perturbations – whereas it is the pattern or regularity that deserves our attention and any *systematic* deviations from the main effect).

(d) *There are problems of a methodological nature.* First, there is the issue of how to design replication studies. This is not easy. Figures 1 and 2 highlight some considerations, but there are no neat answers to questions such as which cells in the data matrix to examine initially, or how many axes of the matrix ought to be considered, or how many replications are enough. In practice, data become available to researchers in different ways. Perhaps there is ready access to temporal information, but only for one country – the researcher has to accept these constraints for the time being, and exercise common-sense in the way such data are used. Real datasets are messy. It is not possible to control for every extraneous factor. In such circumstances it is not possible to be highly prescriptive. There are guides (e.g., Lindsay and Ehrenberg, 1993), but these stop-short of offering a cook-book approach, in contrast to the more controlled world of experimental design.

Second, the statistical toolkit with which most marketing researchers are equipped is deficient for looking at MSODs. The toolkit they have is ideal for drawing inferences from an isolated SSOD where n is greater than 30 and less than 1,000, to which a “best-fit” model can be applied. This was exactly the situation faced by W.S. Gossett, the man who published “Student’s t ” as the solution to the problem of describing the sampling distribution of the mean for single, fairly small, datasets (Ehrenberg, 1975, p 302). But that was in 1908. Nowadays we have multiple datasets with which to undertake replications, and yet we remain under the sway of “the cult of the isolated study” (Nelder, 1986). There is little understanding of such basic ideas as sampling cases from the data matrix, or of the concept of an “approximately good fit” across a number of datasets or of the desirability of identifying “significant similarities” (which, arguably, is of more use than the habit of focusing most effort on looking for “significant differences”). Procedures are available, ranging from “eye-balling”, through data reduction and exploratory data analysis, to formalised pattern-recognition techniques (such as neural networking, data-mining and visualisation), and finally to expert systems. On the whole these procedures have not entered mainstream research in marketing, either in terms of usage or training. The problem was articulated twenty years ago by Nelder (1985) and there has been surprisingly little improvement over the intervening years: “The search for the reproducible result is the search for *sameness*, in contrast to the emphasis on the significant *difference* from a single experiment. The problem here is that the scientist or technologist may be quite unaware that statistics has a useful role in this kind of activity. Certainly most textbooks give little sign that it has”.

6. Facilitating the Search for Empirical Generalisation

“That there is more order in the world than appears at first sight is not discovered till the order is looked for” (quoted by Haggett et al, 1977, pp 1). This statement upholds us to look for patterns, regularities and laws, with a view to establishing EGs. This can be facilitated in several ways; here we mention five key steps.

First, *the establishment of EGs needs to be given higher priority in the discipline*. At an institutional level this has been recognised for some time. For example, twenty years ago the American Marketing Association had a taskforce concerned with the development, dissemination and use of marketing knowledge;

periodically empirical generalisation has been on the Market Science Institute’s list of priority areas; and recently it appeared as a special interest topic for the U.K.’s Academy of Marketing. However, institutional “calls to action” do not by themselves change the attitudes and behaviours of individual academics. These changes are more likely to occur if the search for EGs is seen as a routine component of normal scientific investigation. This means: including the topic on the syllabus of research training programmes and doctoral colloquia, having students undertake replications as part of their research training, and getting the topic featured in standard market research and market analysis textbooks. Some progress has been made in having research students undertake replications, but there are few signs that this training has flowed down to non-research students and almost no standard market research textbook includes a discussion of EGs, replication, meta-analysis or the analysis of many sets of data (e.g., neither McDaniel and Gates, 2002 nor Smith and Albaum, 2005 address these topics although both claim to be introducing marketing students to scientific methods).

Second, *research needs to be set up in such a way that it can be replicated*. “Replicability ... is the Supreme Court of the scientific systems” (Collins, 1985), but it is not uncommon in marketing to be faced with a lengthy paper that does not contain the basic information which would allow an independent researcher to replicate the study (e.g., sample sizes, sample characteristics, copies of the questionnaire and other survey instruments, software and algorithms used, assumptions regarding the treatment of missing values, descriptive statistics, etc.). This information may not be an exciting read, but it can be placed succinctly in appendices or on the journal website. Online repositories of raw data might be useful too, although without knowing how the data have been cleaned and edited it would remain difficult to undertake replications.

Third, *systematic approaches to research should be encouraged*. Ideally, this is achieved by building replications and extensions into programmatic research, along the lines described in section 4.2. But it also can be achieved through systematic empirical tests of prior findings in areas where replications have been rare, as discussed in section 4.1 in relation to systematic literature reviews and formal meta-analyses. Literature reviews should be comprehensive and insightful, and should provide useful, evidence-based, generalisations for researchers. Meta-analyses that statistically combine

prior results to develop robust findings should pay particular attention to potential moderator variables and possible boundary conditions. Importantly, these activities cannot be done effectively without some innovative thinking and inspiration. As we saw earlier, charts like Figures 1 and 2 can offer guidance, but there is no cook-book to say how replications should be undertaken.

Fourth, *the methodological challenges of searching for EGs need to be better understood and studied*. A statistically significant result obtained from one study does not say anything about whether the result will hold again if the study was replicated under different conditions. Getting a statistically significant result once is merely a first step (all it says is that the observed result is probably real and not due to sampling error), there then needs to be a process of replication. When statisticians like Gossett were writing it may have been difficult to obtain additional datasets, but today we can readily access datasets from across the data matrix. We are drowning in data and have virtually unlimited computing power. Therefore, methods, procedures and techniques that are appropriate for the analysis of MSODs need to come to the fore.

Fifth, *there may be a need to change aspects of our publication processes*. Opinions appear to be divided on how to do this. One view is to see empirical generalisation as a specialist topic – not unlike substantive topics in marketing (“brand management”, “marketing communications”, etc.). It then follows that there should be specialist journals (e.g., *Journal of Empirical Generalisations in Marketing Science*, www.empgens.com) and special issues (e.g., *Marketing Science* in 1995, the *Journal of Business Research* in 2000, and this issue of the *Australasian Marketing Journal*). In tangible and visible ways these “specials” keep the topic of empirical generalisation on the agenda. The danger, however, is authors in mainstream journals continue to ignore the topic, seeing it as something others do. This puts EGs in a ghetto.

An alternative view argues that the mainstream must change. This is most likely to be brought about if refereeing criteria alter. Referees need to ask: has there been any attempt by the authors to replicate the work (a “replicated” criterion)? Can the work be replicated from the information provided in the article or from a publicly-accessible website (a “replicable” criterion)? It might also be useful to question the likelihood of the work being replicated. Such criteria are now to be found in leading psychology, political science and social

research journals where there has been a shift away from reliance on isolated experimental studies.

An intermediate position is to include a replications section in mainstream journals or, at the very least, to have a section devoted to “rejoinders, research notes and commentaries” where EGs can be published and discussed. Such sections are highly valued in other disciplines (e.g., in the decision-sciences journal *Interfaces* and in the *Journal of the Royal Statistical Society* in statistics, both of which publish commentaries and sometimes re-analyses alongside the original article). The record in marketing is patchy: the *Journal of Marketing Research* has had notes, abandoned them and reinstated them; the *Journal of Consumer Research* currently has a “re-inquiries” section; *Marketing Science* has created a special submission category for empirical papers. Unfortunately, as the experience of *Journal of Marketing Research* shows, these sections do not necessarily survive changes of editorship.

Steps such as these ought to lead to more EGs appearing in print – generating the marketing equivalent of Boyle’s Law and Auerbach’s rank-size rule. Collectively, the actions described here should help advance the discipline and provide the rewards and recognition that individual researchers seek. In doing this, replication and the establishment of EGs should become second-nature, not a rare and exotic activity undertaken by a minority of researchers.

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Executive Summaries

Consistent Consumer Responses To Price Changes

John Scriven & Andrew Ehrenberg

Textbooks often say or imply that each brand will have a characteristic price-elasticity, for example -1.8 . Correspondingly, econometric models often specify a single regression coefficient for each brand's price. But many practising pricing experts doubt this. Instead, price elasticities are thought to depend on the wider context (competitor prices, advertising perhaps, etc.) and not, or not only, on the brand itself. However, there is little comprehensive evidence in the literature to show which contextual factors lead consistently to higher or lower elasticity.

Our wide-ranging series of experiments confirm that brands do not have fixed elasticities, and show that there are factors that consistently lead to higher or lower elasticity across conditions such as countries, products, and brands. We identify five contextual factors and three consumer related factors that consistently lead to bigger price elasticity. For example, how closely competitive prices are to start with and whether a brand passes the price position of other brands with the change. Consumers who are younger classify themselves as more price conscious, and consumers who are light buyers of the brand have bigger elasticity.

We also found several factors that do not seem to affect elasticity consistently. Some of these factors are perhaps quite surprising, such as that advertised brands did not have bigger elasticity (once size was taken into account), nor did lower income consumers.

Most of our findings tie in well with the existing previously isolated results in the literature, and go some way towards identifying the more important elements influencing variations in response to price changes. The well-established notion that consumers use reference points in price-related decision making comes through

strongly in all the results, and an important point to emerge is the need for further research into how consumers combine the various reference structures that are available to them.

For those who have to make pricing decisions, the study provides a set of benchmarks that can suggest which factors to consider in changing a price (for example, the importance of passing a competitor's price or not), and against which to evaluate their own past and future results.

Dove vs. Dior: Extending the Brand Extension Decision-Making Process from Mass to Luxury

Francesca Dall'Olmo Riley, Wendy Lomax & Angela Blunden

Few articles have examined how managers choose whether to launch a new product as a line extension or as a second brand, or the decision process underlying such decisions. Furthermore, little research has sought to establish whether managers' decision process concerning brand extensions and the factors underlying such decisions are the same in different industries and for products and brands with different characteristics. For example, while brand and line extensions are widespread within both the mass-market fast moving consumer goods sector and the luxury goods industry, we know little about the strategic antecedents, decision criteria and launch judgement process across these different markets and circumstances.

This paper examines the decision process used by luxury goods managers when extending their brands. In particular, we investigate whether the process model of extension decisions put forward by Ambler and Styles (1997) for fast moving consumer goods can be stretched to the luxury sector environment. The present study can be viewed as an attempt to see where the earlier model generalises and where it needs to be contextualised.

We find that the general structure of the brand extension decision process remains the same for fast moving and luxury goods (in terms, for example, of antecedents, decision-criteria and launch), but specific elements such as tradition, heritage and craftsmanship are key – and distinctive – considerations before deciding to extend a luxury brand. Furthermore, luxury goods experts recognise the importance of after-sales service in supporting the launch of luxury brands extensions.

The Stochastic Nature of Purchasing a State's Lottery Products

Dick Mizerski, Rohan Miller, Katherine Mizerski & Desmond Lam

State Lotteries have significant effects on those state's revenues, their residents' behaviours and their ultimate welfare. Impressive sales figures for schemes such as six-number Lotto and Instant (scratch-off) games are backed by sophisticated marketing and promotion budgets. This study of reported lottery product purchasing suggests high levels of habitual behaviour, the key aspects of which can be described by simple stochastic models of buyer behaviour.

For lottery marketers, the implications of stochastic preference primarily influence the relative effect of the marketing mix through the gambling product's Product Life Cycle. Given the high level of habit exhibited in game purchase for the lottery schemes studied, the ability of advertising and promotion to affect the aggregate size of the market is questionable beyond the early stages of the PLC. Distribution appears to be the most important of the mix factors, perhaps even more important than jackpot size.

A strong habit-driven consumer franchise presents some public policy challenges. To the extent that cognitive-

based information processing is limited, the role of warning information about addiction and its manifested problems would appear to be of little influence. Efforts to address buyer misconceptions about the random nature of the game would also be compromised by habitual buying.

The area of stochastic models may offer policy makers more appropriate tools to judge when game play deviates from the "normal" purchase patterns expected. Use of these "baseline" measures needs more validation, but they may offer more accurate measures than the present instruments, when judging an acceptable level of compulsive play in a population.

Brand and Advertising Awareness: A Replication and Extension of a Known Empirical Generalisation

Jenni Romaniuk, Byron Sharp, Samantha Paech & Carl Driesener

Awareness measures (top of mind, spontaneous and aided) are commonly used marketing metrics in both the brand and advertising domains. However, little is known about how the different measures relate to each other. This research shows that specific awareness measures may be more important for larger than for smaller brands. For example, with larger brands aided awareness is typically stable, whereas spontaneous (unaided) awareness can vary considerably. By contrast, with small brands spontaneous awareness measures are typically stable, and it is the aided awareness scores that vary. Knowing this provides insight into which measure is more useful for managers to watch. We recommend that the more stable statistic should be the focus of management attention; for these statistics variation is unusual and therefore, when there is some variation, it is likely to indicate real market changes rather than be the result of sampling variation.

Consistent Consumer Responses To Price Changes

John Scriven & Andrew Ehrenberg

Abstract

A variety of exploratory laboratory-style tests compared brand-choices at different controlled prices. This has led to consistent findings across different brands and products (including durables and services) and other conditions.

Price elasticity, rather than being a specific characteristic of a brand, varied consistently with the competitive context, such as proximity to competitors' prices, brand share, how overt the price change was, and consumer characteristics such as being younger, or a light buyer of the brand. Measurement procedures affected the size of the effects, but the relative patterns persisted.

Such results can provide a grounded base for developing and testing pricing hypotheses.

Keywords: Pricing research, Price elasticity, Pricing experiments, Reference prices

1. Introduction

This paper reports on an extensive study designed to explore the effects of price changes on consumer choice under a wide range of experimental conditions. This is in the scientific tradition of laboratory work which would later be followed by validation and calibration studies. The aim was to investigate whether there are consistent results about pricing that can be generalised across different conditions, such as for products, brands, price levels, movements to higher and lower price and so on. For example, are price elasticities the same for changes that move above an initial base price as they are for prices that move below, or are they consistently bigger?

The background is that the pricing literature mostly reports that price elasticities vary greatly (e.g. Telser in his classic 1962 paper reported elasticities from 0 to -19). This variation has been attributed in various individual studies to many factors such as the brand, the price level, category characteristics, frequency of discounting, market share, etc. (e.g. see Danaher and Brodie, 1999). Nevertheless, few generalisable results have been claimed, and broad understanding about how pricing works has been slow to emerge from the studies conducted (e.g. see reviews by Blattberg and Neslin,

1990; Gijbrecchts, 1993; Hanssens, Parsons and Schultz; 1990; Tellis, 1988). Textbooks often imply that brands have their own idiosyncratic elasticity, and many regression models reflect this. But Gabor (1988) long ago questioned whether the concept of a brand having a single elasticity at all times is in any way useful. As an example, in our studies we measured the elasticity of Maxwell House instant coffee as varying from -1 to -4 across 10 studies. Why is that? Are there consistent factors underlying such differences?

Against this background, we are not aware of any study that looks systematically at variation in elasticities across brands and circumstances with a view to isolating conditions that may lead consistently to different levels of price response and which might eventually lead to conclusions about the hierarchy and magnitude of effects in general. In contrast, pricing experts stress that price is very sensitive to context but without systematic findings, and some say that successful prediction of pricing effects depends on recreating the particular circumstances as accurately as possible (Blamires, 1997). Our broad hypothesis here is that generalities can be found. An analogy might be with the botanist, Linnaeus (1735), famously seeking to classify flora and fauna into species.

This classification created some general knowledge about relationships within and between species, and formed a foundation for the modern scheme of taxonomy.

Extensive use of scanner panels has facilitated analysis of in-market pricing data and led to some useful findings, such as that elasticities vary greatly around an average of about -2 (Bolton, 1989; Tellis, 1988). But it has also created a large number of “unresolved issues” (Bucklin and Gupta, 1999). Their discussion of what is generally agreed amongst both academics and practitioners from scanner panel research reveals “conflicting results” and “confusion in completely separating” for example the effects of price from the accompanying “attention-getting” activities. It is difficult to classify pricing effects from real life. This is because in-market prices either don’t change much, or tend to change together, and they are usually complicated by other marketing activity. Disentangling the various factors and attributing effects is complex. As Pessemier wrote in 1960 “It appears that, so long as the market is used as the source of data, there is little hope of overcoming these difficulties”. We think this issue still exists, despite advances in data availability and methodology.

Hence, in the current study, we used an experimental Central Location Test methodology in order to control and vary conditions systematically. Experimental methodology is widespread in academic work, as well as in a very large amount of commercial market research (e.g. product and ad testing).

Our methodology was developed from earlier work (Ehrenberg and England, 1990), which used a Sales Wave technique where a recruited panel of households were visited at home at fortnightly intervals and offered brands for sale. Prices were varied at successive calls. This Sales Wave method was relatively realistic since it involved actual purchase and elapsed time, but proved too expensive to conduct the broad-scale work we wanted to carry out here. Our current procedure effectively collapsed the panel into one event in a Central Location, where participants were shown a sequence of scenarios of the same four brands at various controlled prices in rapid succession. We replaced purchasing with a purchase intent question (“Which one of these would you buy, if any?”). Our aim was not to mimic normal choice conditions, which we believe at best to be an unreliable process (Wright, Gendall and Lewis, 1999). Nor do we expect to measure real-life elasticity levels accurately from the experiments. Instead, the purpose of the work was to discover whether there are factors that

produce consistent variation in price elasticities under experimental conditions – but conditions that present respondents with “an experimental environment that is not unworkably artificial” (Pessemier, 1960). A pilot study assured us that this was the case, and replicated earlier Ehrenberg and England results (Scriven, Ehrenberg and Goodhardt, 1995).

As described in detail in Section 2, a single Test (of 160 respondents) elicited choices for ten pricing scenarios featuring the same four brands, for each of four products. In all, we carried out 30 such Tests, with 4,400 respondents in the UK, USA and Germany. The Tests covered 25 products (including groceries, durables and services), 100 brands and 1,000+ price scenarios, with various major and other minor technique variations.

By conducting many tests we were able to vary factors, such as products, brands, or prices being higher than normal or lower, in a systematic way, whilst controlling others. This enabled us to establish some empirical regularities under quite a few differing conditions, both in factors we designed into the tests and in other results that emerged from the analysis, such as size of brand, and consumers’ general price sensitivity.

In the design of many of our experiments, for example, we used two different methods to expose price changes. In the first (which we call Successive Scenarios, SS) respondents saw a rapid succession of price changes for different brands of the same product. In the second, changes for brands within one product were interspersed with scenarios for other products (like a mini Shopping Trip, ST), thus effectively disguising which price had changed. Successive Scenarios *consistently* produced higher elasticities than the Stopping Trip method. This has implications about the complex way that consumers use reference criteria, other than just the relative prices available, which we discuss in Section 4.

In contrast, an example emerging from the results is demonstrated in Table 1 in Section 3, that across all sorts of other conditions, both varying and fixed, a brand has about twice the elasticity when a 15% price change takes it past the price of the leading brand (in the test), than when it does not. This, and other results, lead to the major conclusion that relative order of price is more important than relative distance.

Our over-riding conclusion is that pricing responses are context-related, but not brand specific. We found five context-related factors that consistently produced bigger elasticities, for example that elasticities are bigger for

smaller share brands and when passing a local reference price. We also found three consumer groupings, for example lighter buyers of the brand are more price sensitive than heavier buyers. Equally important perhaps, a further six factors examined consistently produced no effect on elasticities.

In Section 2 we describe the methodology in some depth, and in Section 3 the detailed results. We take the somewhat unusual approach of discussing the main streams of pricing research literature only in Section 4, where we can then relate our results to the existing body of knowledge. This seems to us to enhance the connections between our empirical results-based method, and existing findings (Ehrenberg 1992).

2. The Methodology

We give an overview of our method, followed by a detailed description. The aim was to expose consumers to various choice situations under a variety of controlled conditions, without attempting to mimic the shopping process. We therefore used a traditional “Hall” or “Central Location” test procedure to measure the expressed intentions of consumers to buy a brand. Qualitative evidence from respondents’ and field managers’ comments, and our own observation of the process suggests respondents found the task straightforward and realistic.

The core methodology and much of the detail remained the same between all the Tests, as follows. Respondents visited a series of tables (“price scenarios”), at each of which the same four brands of one product were displayed at various controlled prices (e.g. four brands of cereal). At each table respondents had simply to respond to the on-going question “Which one of these would you buy, if any?”. The four brands started at their normal in-market prices “N” (mostly not the same for the different brands). Prices were then varied in such a way that each brand was shown at some point at 15% above its starting (“N”) price and at some point at 15% below, on tables where the other three brands were at their starting “N” price.

Brand shares for each scenario were tabulated from the choices made. Price elasticities for a brand (e.g. at +15%) were then calculated as the percent change in choice of the brand from its starting price scenario (the “All-N” scenario) and when it was at N+15%, divided by the percent change in the brand’s price (i.e. 15%). The formula used, including a slight technical adjustment, is shown in Section 2.3.

The elasticities produced were summarised as averages across various combinations of (i) the product categories, (ii) the brands, (iii) the 15% higher or lower prices, and (iv) the relative price positions (e.g. passing a reference point or not). Carefully designed experimental procedures, including replication and extensive partial replications, ensured that these averages were not merely haphazard. Results were tabulated also for sub-groups of demographic, brand and product usership, and certain experimental variables. These are the results presented in this paper.

We now describe more fully the basic procedure in the UK, the so-called “Successive Scenarios”, followed by variations used, for example in “Shopping Trips”, display procedures and sample composition.

2.1 The Basic Procedure: Successive Price Scenarios

Data were collected from respondents in experimental “Central Location” or “Hall” Tests. A “Test” comprised a series of choices between the same four brands, in ten price scenarios, for each of four product categories in turn (hence Successive Scenarios (SS): respondents were exposed to all the price changes for one product before moving on to the price changes for another product). 160 female respondents per test were recruited using a traditional intercept technique. Respondents were screened to be buyers of at least three of the four products in the given test.

2.1.1 Differing Price Scenarios

Within a Test, prices of each brand were deliberately varied between a normal in-market price “N” for that brand, and a higher price, mostly N+15%, and also a lower price, N-15%, as shown in Figure 1. Thus, after a short briefing on the procedure, a respondent was shown four brands of one product, each at their N price (represented by the packs on a table with a price on a small card) and asked: “Which one of these would you buy, if any?”

Each respondent then moved to the next table where the same four brands were shown, with the price of one brand changed by +15% or -15%, and the same question was asked (implicitly, on a self-completion questionnaire). At the next table, the price of the previously altered brand was returned to N, and another brand was changed by +15% or -15%. This was repeated - there were ten such tables - with the price of one brand shown successively at + or -15% whilst all others were at N, until all brands had been shown at both + and

-15%. Finally, the original scenario with all the brands at their N prices was repeated. This amounts to the total of ten scenarios as set out in Figure 1b.

The order of the price changes was varied, as shown in Figure 1. In "Consecutive" changes, the + and -15% changes for any one brand, A say, occurred one after the other. In "Non-consecutive" changes, changes for A were separated by ±15% changes for the other three brands. This is quite a rich variation. For example, consecutive changes could lead to more focus on a brand's price, as the same brand changes price twice in succession (three times including returning to N), with the second change being by 30% from one scenario to the next. Half the respondents saw the scenarios in the order 1 to 10 in Figure 1 and half in the order 10 to 1.

Price changes of ±15% (i.e. only one magnitude of price change) were used in most tests to simplify the variants. In combination with the different N prices (e.g. close together or not), this still provided an indirect but controlled way of examining different effective changes in price relativities. 15% was chosen because it was considered big enough to produce stable measurable results, and was not a totally unrealistic level for both cuts and increases, if perhaps somewhat larger than most real-

life increases. Extending the testing to different levels of price changes can now be done more easily in future work in the light of the consistent results we have found here on the importance of relative price position.

2.1.2 Products and Brands

After exposure to the ten price scenarios for one product category, respondents then moved on to ten tables with four brands in a different product category, and followed the same procedure. In all, each respondent covered four categories (e.g. Coffee, Cereals, Toothpaste, Analgesics). Products were presented in one order for half the respondents and in the reverse order for the other half.

25 product categories in groceries, durables and services were featured in 30 Tests, as listed in the Appendix. Some categories were used in many tests to help establish consistencies for parameters such as brands per se or initial price levels. Some brands were used repeatedly. Over 100 different brands were used in total in the 30 tests. Selections of medium and small share brands were used (at least in the early tests, partly to avoid dominating choice with big brands). The spread of average, high and low "N" starting prices generally reflected the prices in stores locally.

Figure 1: +15% and -15% Price Changes
(N is a suitable Normal price for each brand)

1a. "Consecutive" Changes

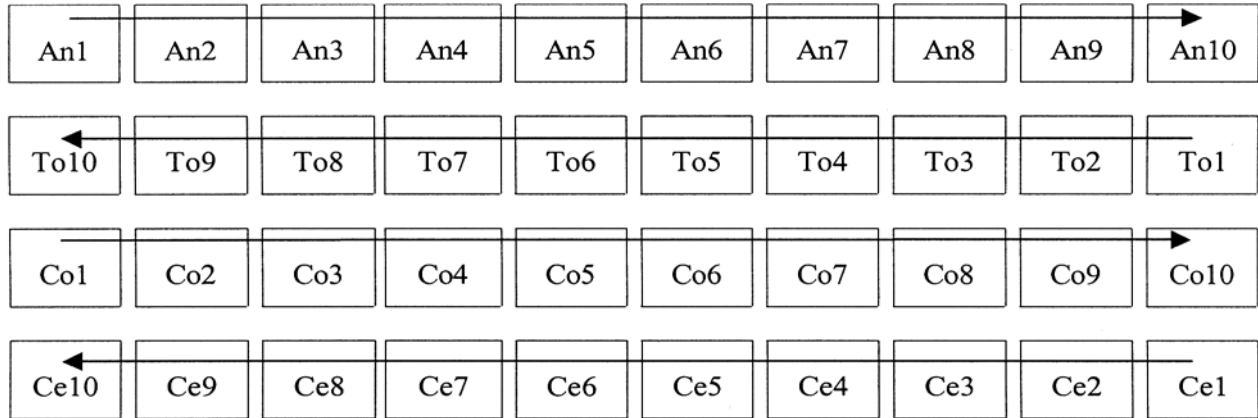
Brand	Scenarios (Tables)									
	1	2	3	4	5	6	7	8	9	10
A	N _a	+15%	-15%	N _a	N _a	N _a	N _a	N _a	N _a	N _a
B	N _b	N _b	N _b	+15%	-15%	N _b	N _b	N _b	N _b	N _b
C	N _c	N _c	N _c	N _c	N _c	+15%	-15%	N _c	N _c	N _c
D	N _d	N _d	N _d	N _d	N _d	N _d	N _d	+15%	-15%	N _d

1b. "Non-consecutive" Changes

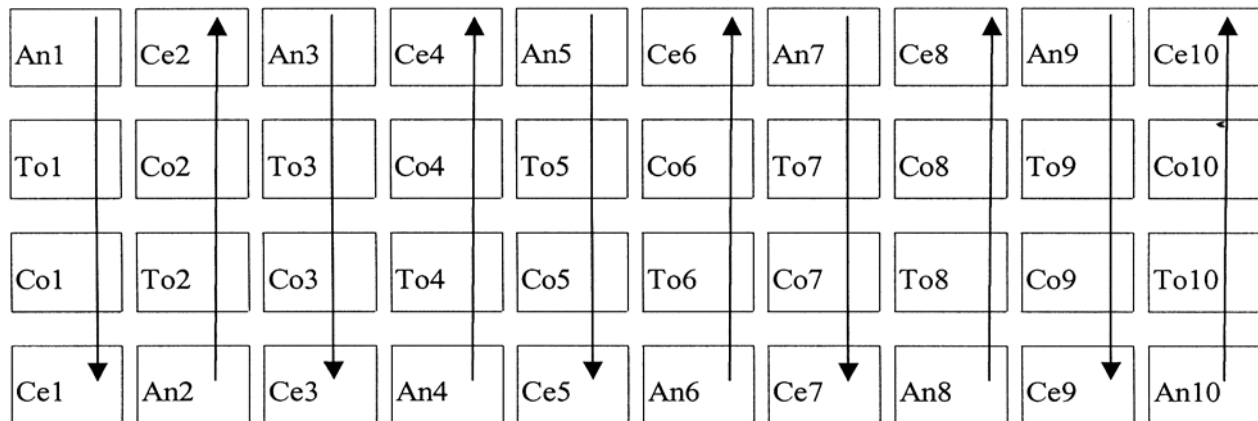
Brand	Scenarios (Tables)									
	1	2	3	4	5	6	7	8	9	10
A	N _a	+15%	N _a	N _a	N _a	-15%	N _a	N _a	N _a	N _a
B	N _b	N _b	-15%	N _b	N _b	N _b	+15%	N _b	N _b	N _b
C	N _c	N _c	N _c	-15%	N _c	N _c	N _c	+15%	N _c	N _c
D	N _d	N _d	N _d	N _d	+15%	N _d	N _d	N _d	-15%	N _d

Figure 2: The Physical Layout of the Tests
 (Arrows show direction of respondent route through the tables)

Successive Scenarios:



Shopping Trips:



An=Analgesics, To=Toothpaste, Co=Coffee, Ce=Cereals – the same four brands of each.

1, 2, 3 etc. refer to the price scenarios as in Fig. 1

A technical question about our test design is whether the participants' claimed intention-to-buy choices would reflect real-world market shares, or be seriously biased. We found overall shares of choice at the “N” prices broadly reflected the ratio of shares of the brands concerned in the market (thanks to TNS Superpanel for market data), within the parameters of our 160 samples, and with a couple of consistent exceptions (e.g. private label) and the odd anomaly. The relevant correlations were strongly positive (.8 or .9), excluding subpatterns for private labels and special product formulations (such

as Alpen, the only Muesli cereal, and Colgate Gel toothpaste, mostly the only Gel formulation in a test). Such isolated speciality brands were over-selected, we think, because alternatives offered were limited – e.g. a Tesco private label stood perhaps for any PL. More detail is available on request from the authors. All subsequent reference to brand-leaders and brand shares in this paper refers to share of choice in a specific experiment (“brand leader in the test”). In later tests, the starting “N” prices were more deliberately manipulated (e.g. to test what happened if all four brands were at the same N price).

2.2 Variations in the Basic Procedure

Major and minor differences were designed in the procedure to obtain further exploratory data, such as to test the effect of reducing the “immediate” succession of price changes for a product by introducing scenarios for other products in between (the mini Shopping Trip already mentioned). Other variations involved different display procedures in the USA and Germany; using durables and services as well as grocery products; and offering the equivalent of price cuts by extra volume free.

2.2.1 “Shopping Trips: ST”

In this method, respondents saw one table of four brands for cereals, say, then a table with four brands of instant coffee, and then four brands in each of the two other product categories (e.g. toothpaste and analgesics). They could choose a brand from each of four products in turn, as on a normal but mini “shopping trip”.

They then moved on to another set of four four-brand scenarios, one scenario in each product category (in the same order as before), with one of the brands in each category having its price changed by + or -15%, as usual. And so on for another four, like a succession of “Shopping Trips”, though in quick succession.

Figure 2 shows how this was achieved in practice. In SS, respondents move along the long rows, whereas in ST they move across the short rows (front to back, or vice versa). The ST method does not fully mimic real shopping procedures, but it does reduce participants’ ability either to remember or to compare the price changes for any product from one scenario to another. The analysis reveals the importance of this.

2.2.2 Durables and Services

Durables and services were included in six of the tests. The sample then included men as well as women. Illustrative boards including a logo were used to represent the products, rather than product packs.

2.2.3 Additional Pricing Scenarios

In some later Tests in the UK we introduced other forms of price-cutting, such as “extra product free”, usually of the order of 33% or 50% extra. These tests were replicated with the equivalent cut given in cash, and did not have a price increase scenario (i.e. no +33%).

In other later Tests, we altered some initial “N” prices, for example so that all four brands had the same N price. We also used much smaller price changes (mostly of

±2%), to test specific hypotheses about passing reference prices, as described in Section 3.2.1 below.

2.2.4 Germany and USA

Tests were conducted in Germany and the USA as additional factors in establishing whether the results generalise. In both countries we capitalised on local experience or conditions and changed both the precise test procedure and the country. The plan was to follow-up with varying one such factor at a time in subsequent work, if called for by any differences in the results, either using the original test procedure in these countries or by using the US and German procedures in the UK. Most results were sufficiently consistent across countries for additional work to be unnecessary, but we undertook some additional tests in the UK using the US method, to check an unusual result found in the US, that “SS” and “ST” methods did not produce consistently different elasticities. The US result was partially replicated in this further work, leading to the conclusion that the way we implemented SS and ST in the USA (see next paragraph), did not wholly reflect the differences in the procedure as implemented in the UK.

In the USA, because of the lack of space in modern shopping malls large enough for the 40 table displays, we used only four tables (one for each product). The price-display-cards were then changed for each scenario at the table. 400 respondents followed a split SS/ST procedure. In Germany, the price scenarios were presented to respondents via a computer display of the four packs (from a scanned photo) each with a price. 150 respondents evaluated six products using only the successive scenarios method.

2.3 The Analysis Procedure

For each price scenario (i.e. four brands at certain prices as shown in each column in Figure 1), brand shares of the claimed purchases (i.e. “Which one of these would you buy, if any?”) were tabulated for the four brands shown. From these shares, elasticities E_{+15} were calculated for each brand when shown at N+15% (“Higher”) versus the average of the two “all N” price scenarios (i.e. as for scenarios 1 and 10 in Figure 1). Similarly elasticities E_{-15} were calculated for N-15% (“Lower”).

Elasticity is here defined as the proportional change in sales divided by the proportional change in price, for a given price change for a brand. For E_{+15} , elasticity was calculated using the “mid-point” or arc formula (Buchholz, 1996)

$$\frac{S_{+15} - S_N}{(S_{+15} + S_N)/2} = E_{+15} \frac{P_{+15} - P_N}{(P_{+15} + P_N)/2}$$

where S_N = share of purchases for brand A at "Normal" price P_N . Scriven and Goodhardt (1997) discuss the issues involved in using alternative formulae.

The main elasticities thus produced are summarised and presented in Section 3 as averages across the various combinations of products, brands, 15% higher or lower test prices, experimental variations (e.g. SS and ST) and so on. This is equivalent to first establishing the "Main Effects" of the experimental design (as in an "Analysis of Variance"). We then checked that the main effects occur consistently in sub-groupings of tests, and sought to identify any interaction effects (e.g. between higher price and brand size).

Several thousand additional elasticities have also been estimated and analysed to produce the results reported here for sub-groups of demographics, usership, and experimental variables (e.g. age, brand buyers, order of price changes seen).

3. The Findings

The main outcomes of the exploratory tests are twofold:

1. To show that price elasticity is not a fixed idiosyncratic characteristic of a brand.
2. To show and to an extent quantify how the elasticities relate consistently to brands' competitive pricing context.

Five contextual factors consistently led to bigger price elasticities throughout the tests, namely when:

- (i) The brand's price moved past a local "Reference Price".
- (ii) The price change was easy to perceive (e.g. as in the SS method), or was explicitly signalled.
- (iii) The brand's share was low.
- (iv) The changed price was higher (i.e. to $N+15\%$).
- (v) The brand's normal price N was close to the average of all the brands.

Elasticities were also consistently bigger for those consumers who were:

- (vi) Lighter buyers of the brand.
- (vii) Self-classified as price conscious.
- (viii) Younger.

In addition, the experiments also identified several conditions that consistently *did not* affect elasticities:

- (a) All the demographic and usage variables we checked (other than vi to viii above), such as social class/income or product-category buying levels.
- (b) Prior knowledge of brands' prices.
- (c) TV advertising.
- (d) Whether brands were close substitutes or more differentiated.
- (e) Whether price reductions were in cash or kind.
- (f) Most of our experimental design variables, such as order of products and brands.

Factors sometimes combined in more complex hierarchical interactions, such as that big-share brands have very small elasticities when price is cut below Normal, but only slightly smaller elasticities (compared to other brands) when prices rise above N . However, we do not yet have enough cases to analyse and understand all such interactions and hierarchies.

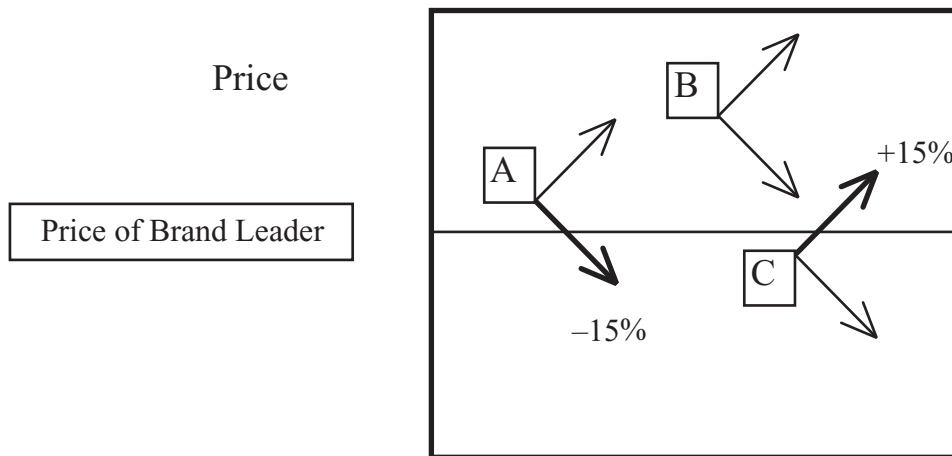
3.1 The Overall Level of Elasticities

Elasticities were almost all negative, i.e. an increase in price was associated with a decrease in sales and vice versa. The level of elasticities across all the tests averaged -3.2 , with over half the magnitudes less than 2.5 , and 75% less than 4 . This was bigger, but mostly not dramatically bigger than the average -2 or so at times reported in real-life studies (Bolton, 1989; Tellis, 1988). The bigger values can mainly be accounted for by the pricing context we had created (e.g. when all the base N prices were the same). Extreme values were largely due to sampling and response errors. We did not expect our experimental technique to measure in-market elasticity levels accurately; nevertheless it gives a degree of external validity to know that our technique does not produce wildly different levels from real life.

3.2 Factors Leading To Bigger Elasticities

We now describe the conditions that led consistently to bigger elasticities, e.g. for passing reference prices or for small brands. Tables 1 to 10 summarise the average elasticities for all the relevant brands and tests. Some also illustrate the consistency of the results across countries, products, etc. As an example, several of the tables split the results by USA/Germany and UK "Early" (Tests 1–15) and "Later" (Tests 16–24). This embraces

Figure 3: Moving Past the Price of the Brand Leader



different countries, experimental methods, brands, prices, etc. For the UK the main difference between early and later tests was that in the early tests we set the N prices at in-market levels and used 15% as the level of price change, whereas in the later tests some N prices were manipulated for exploratory reasons, and some other levels of price change were used. The point is that the patterns in the results are the same, and this consistency mostly occurred on a test by test basis.

3.2.1 Passing Local Reference Prices

The biggest effect we found was when passing a locally defined reference price. Passing is illustrated in Figure 3 using the brand leader in the test's price as the reference. Here Brand A moves past the brand leader when its price is changed to N-15%, and Brand C moves past the leader when at N+15%. The other four moves shown do not take brands A, B, and C past the leader. Thus every price change in the test can be classified as passing or not passing.

This is a more operational use of the term than reference price in the literature, where it is used in several ways (Lowengardt, 2002), but mainly as what a consumer believes an item costs or should cost (e.g. Krishnamurthi, Mazumdar and Raj, 1992). The relationship between our definition and the more general reference price concepts is discussed in Section 4, and warrants much more future study.

We used three definitions of a local reference price:

a. The price of the brand-leader in the specific test.

b. The average of the four N prices in the test.

c. Any other price in the test (we analysed by the number of prices of other brands passed by the changing price).

These prices were not identified explicitly for participants as references. Whichever measure we used in the analyses, the notion comes through strongly of the importance of passing a perceptible reference price.

Thus elasticities were high (averaging -5.6 across all tests) when a brand's price changed from below to above the price of the brand leader, or vice versa. Elasticities were lower, averaging -2.8 (for the same average price change) when the change left the price still below or still above that of the local brand leader.

Similarly, as a second measure of local reference price, elasticities averaged -4.8 when passing the average N price of the four brands in a Test, compared with -2.5 when the price change did not pass that average.

The third use of a local reference point was to analyse elasticities by the *number* of other brand-prices passed when a price changed. Table 2 shows that elasticities were also markedly bigger the more other brand-prices were passed. Elasticities were nearly three times as big when all three other brand-prices in the test were passed, compared with none being passed.

A particularly striking case of the effect of passing a reference point came from tests where we set all four brands at the same starting price N. It was then quite apparent to our participants when a price had changed and was "out-of-line", even with a very small price

Table 1: Passing the Price of Local Brand Leader: Bigger Elasticity

Price Change Involves:	Average Elasticity	UK Tests		Germany & USA
		Early	Later	
Passing leader	-5.6	-4.7	-4.7	-6.5
NOT passing leader	-2.8	-2.4	-2.9	-3.0

Note: These results exclude the brand leader in each test.

Table 2: More Brand-Prices Passed: Bigger Elasticity

Brands Passed	Average Elasticity All tests
3	-5.2
2	-4.0
1	-3.2
0	-1.8
Average	-3.2

Table 3: Small Price Change Passing The Reference Price: Very Big Elasticities

Price Change Between	Passing	Average Elasticity	Coffee	Toothpaste	Biscuits	Cereals
N + 2% and N - 2%	All 3	-11	-22	-11	-8	-5
N+15% and N + 2%	None	-2	-2	-3	-1	-4
N - 2% and N-15%	None	-1	-2	-1	-1	-2

change. We implemented such a small change by moving the price of a brand also to $N \pm 2\%$ (as well as the more usual $N \pm 15\%$). Elasticities averaged as high as -11 across brands for price changes between $N+2\%$ and $N-2\%$, compared with about -2 for price changes between $N+2\%$ and $N+15\%$, as in Table 3. (Danaher and Brodie (1999) note erratic and sometimes large elasticities for small price changes generally. Our controlled findings here for very small price changes are consistently large).

Future work can check brands for 2% price changes, but different starting prices, so that there is no passing of any prices.

3.2.2 Price Changes that were Clear or Signalled

In our “Successive Scenarios” (SS), respondents saw all the different pricing scenarios for the same product (e.g. coffee) in succession (see Figure 2). Respondents could for example quite easily remember previous prices (without the interruption of other scenarios), or even

look back to check if they wished. This was expected to focus and sensitise respondents to the price changes being made. To lessen the impact of the price changes, we used in some other tests the alternative method “Shopping Trips”(ST). Respondents seeing one scenario for each test product (e.g. coffee, cereals, toothpaste, painkillers) like a mini-shopping trip, before starting the next scenarios for the four products would make it much more difficult for them to remember which prices had changed, or to look back to check.

Elasticities were consistently bigger, generally by about 1 unit, in all the scenarios using Successive Scenarios (SS) averaging -3.4, versus -2.4 in matched Shopping Trips (ST) scenarios.

To study further the effect of participants knowing that a price had changed, in two tests we explicitly indicated any price change by also showing the normal N price crossed out (e.g. 1.61 ~~1.40~~). This made a change obvious, whether using the SS or ST method. For Shopping Trips, elasticities were bigger with this signalling than without (-2.7 versus -1.6). But signalling had virtually no impact with Successive Scenarios (-2.9 versus -2.6 without signalling), presumably because participants could remember or see the non-signalled price change anyway. The implication is that some consumers will respond to

a price change when they are aware it is a change, but do not respond simply to the price change having happened. Some consumers however do not need such overt cues to respond to the price change. This ties in to issues of awareness and how consumers use reference points, and has potentially important consequences for the operationalisation of reference prices as we discuss further in Section 4.

3.2.3 Low-Share Brands

Elasticities were consistently bigger for smaller brands. Elasticities averaged -4.2 for brands with shares of less than 10% (in our four-brand test), more than twice the average elasticity for brands of 50%+ share (Table 5). The same pattern was repeated in almost every individual test. Only two exceptional cases were found — *small* elasticity for small brands. These two - sensitive toothpaste and Alka Seltzer when offered as an analgesic - were unusually differentiated (i.e. less substitutable) in function and price from the alternatives offered in those tests. But we did not find lower elasticities generally for differentiated brands (see section 3.3.4).

3.2.4 The Changed Price was Higher (i.e. N +15%)

Elasticities were about 1 unit bigger (-3.9 versus -2.6) when price rose from N up to N+15% rather than was cut

Table 4: Clearer Price Changes (SS v ST): Bigger Elasticities
Comparable Scenarios for each Product

UK Tests	Method	
	SS	ST
Cars	-6.1	-4.0
Spirits	-4.7	-4.3
Orange Juice	-3.9	-3.2
Coffee	-3.1	-1.9
Burgers	-2.9	-2.0
Biscuits	-2.6	-1.8
Cereals	-2.6	-1.7
Toothpaste	-2.4	-2.0
Analgesics	-2.1	-0.8
Average	-3.4	-2.4

Table 5: Lower Brand Shares: Bigger Elasticities
All Tests

Share at "All-N" prices	Average Elasticity	UK Tests		Germany & USA
		Early	Later	
<10%	-4.2	-3.2	-5.7	-4.0
10-29%	-3.3	-2.9	-3.2	-3.5
30-49%	-2.8	-2.7	-2.9	-2.7
50%+	-1.9	-1.7	-2.3	-1.7
Average	-3.2	-2.8	-3.4	-3.3

Table 6: Price Higher (Above N): Bigger Elasticities
By brand share in test

All Tests	Average	Price change to:	
		Higher (N+15)	Lower (N-15)
Shares <10%	-4.2	-4.5	-4.1
10-29%	-3.3	-3.9	-2.8
30-49%	-2.8	-3.4	-2.0
50% +	-1.9	-3.2	-0.9
Average	-3.2	-3.9	-2.6

Table 6a: Promotional Rises and Cuts Above and Below N
(UK Tests 1-15 only)

Change is:	Between N and Above		Between N and Below		Ave
	N → N+15%		N-15% → N		
Price Rise	N → N+15%	-3.7	N-15% → N	-2.8	-3.3
Price Cut	N+15% → N	-3.5	N → N-15%	-2.7	-3.1
Average		-3.6		-2.7	-3.2

to $N-15\%$. Table 6 shows that this differential was much more marked for big brands.

To an extent, the low elasticity found for big brands when changing to a lower price is an arithmetical capping effect. For example, a big brand cannot grow beyond 100% when it lowers its price, and in practice might be considered rather unlikely even to do that. However, a 5% share brand might triple its share to be 15%, giving a much bigger elasticity. The result remains that big brands are relatively much less responsive to lower prices.

A special (but widespread) case of price cuts and rises occurs in a price promotion, where price is cut for the promotional period, then typically rises back to the original level. Ehrenberg, Hammond and Goodhardt (1994) found that sales also return to original levels following a price promotion, implying elasticity is the same for rises and cuts *in this situation*. We found the same result, as shown in Table 6a.

The complication is that the rises and cuts in the promotion case are between the same two points (e.g. from N to $N-15\%$ then from $N-15\%$ to N) whereas those shown in Table 6 relate to prices moving higher or lower from the same starting point (e.g. N to $N+15\%$ versus N to $N-15\%$). Table 6a (penultimate column) shows that the elasticities for a cut from $N \rightarrow N-15\%$ and for a rise from $N-15\% \rightarrow N$ are the same (-2.7), but smaller than the elasticities going between N and the higher $N+15\%$. The deciding factor is the starting and finishing point, not whether the move is itself a rise or a cut.

3.2.5 Normal Price Near Average

For brands that had their initial price N close to (within 5 percent of) the average of all four N prices in that test, elasticities were markedly bigger (see Table 7). Elasticities were smaller as a brand's N price was further away from that average. Elasticities are therefore bigger when brands are in close price competition to start with. This might be expected from the findings about passing reference prices, as passing is more likely to occur when prices start close together. The finding is also consistent with the existing literature on neighbourhood pricing effects (Sethuraman, Srinivisan and Kim, 1999).

3.2.6 Light Brand-Buyers, Price-Sensitives and Younger Consumers

Elasticities were consistently bigger amongst these three groups of consumers, as shown in Table 8. Price Sensitive consumers are those who identify themselves, when asked at recruitment, as more likely generally to consider

prices when shopping. We used a simple question which contrasted "mostly buying preferred brands regardless of price" (not price sensitive) with "shopping around and choosing brands I like at good prices" (price sensitive) and "buying the cheapest available". About 10% to 15% classified themselves in the latter category, which proved too small to analyse reliably, and they are omitted from the results in Table 8. The remaining respondents split roughly half and half into the first two groups, overall and in most individual tests.

3.3 Factors Which Did NOT Affect Price Elasticities

In contrast, the experiments showed that all the other demographic and usage groups we analysed (see Table 9), along with several other factors we now discuss, had hardly any effect on price elasticities, again consistently across brands, products and countries. Findings of no differences also aid our understanding of price effects. For example in our experiments, price sensitivity was *not* affected (perhaps surprisingly) by people's low income, heavy product-category buying, or accurate recall of prices.

3.3.1 Demographics and Category-Usage Groups

Elasticities hardly differed between certain demographic or category usage sub-groups, namely with/without children, region, social class (income), or heavy/light product buying (as opposed to *brand* buying in Table 8). This is summarised in Table 9. For example, in the Early Tests in the UK, the Elasticities for "With & Without Children", "North and South", etc. were always very close to the average of -2.8 .

We note that the social class (income) result means that those on lower income are no more responsive to *changes* in price. But that does not necessarily mean that they do not have a greater tendency to buy less expensive brands.

3.3.2 Prior Awareness of Price

In later tests, we asked respondents before starting the test to provide the in-market price of a range of the test brands. This was a simple attempt to measure whether price sensitivity was greater among those who had a fairly accurate idea about product prices. In line with widespread findings (Estelami and Lehmann, 2001), most respondents were poor at recalling prices (only one response in 5 was correct to within 10%). In particular, those who classified themselves as price sensitive had no better prior awareness of price. This is not inconsistent, as people can respond to relative prices and price differences without accurate recall of market prices, as discussed in Vanhuele and Dreze, 2002.

Table 7: Brand's N Price is Close to Average: Bigger Elasticities

N price versus Average in test	Average Elasticity	UK Tests		Germany & USA
		Early	Later	
At Average ($\pm 5\%$)	-4.6	-4.5	-4.7	-4.2
Above Average	-3.1	-2.6	-3.4	-3.3
Below Average	-2.7	-2.4	-2.7	-2.8
Highest (>20%*)	-2.4	-2.0	-2.4	-2.6
Lowest (>20%)	-1.9	-2.6	-1.7	-1.7
Average	-3.2	-2.8	-3.4	-3.3

*i.e. N is at least 20% above average of all four N prices

Table 8: Light Buyers, Price-Sensitive and Younger: Bigger Elasticities

Sub-group		Elasticities
Age	Under 25	-3.9
	Over 55	-2.2
Brand Buying	Heavy	-3.8
	Light	-2.6
Price Sensitive	Yes	-3.8
	No	-2.3

There was no consistent relationship between our price awareness measure and price sensitivity in the tests, although there was some evidence of slightly lower elasticities among those who do not attempt to estimate a price at all when asked (and therefore perhaps do not even think about it).

3.3.3 Advertised and Non-Advertised Brands

We were able to classify brands as advertised in the previous two years or not (they were about half and half), using market data supplied by mediaedge:cia. The elasticities were much the same for the two groups. Market share had to be taken into account, because advertised brands are often bigger, and bigger brands have smaller elasticities (Table 5).

3.3.4 Differentiated or Closely-Substitutable Brands

In earlier work which used a more “realistic” but much more expensive Sales-Wave technique (Ehrenberg, 1986), it was found that a product category such as biscuits, where all the test brands were somewhat differentiated (such as Rich Tea biscuits and Digestive biscuits), had lower elasticities than less differentiated products such as tea. This result might be expected from that part of economic theory that defines products as differentiated where they have low price elasticity.

To check the result more widely with the current methodology, we designed several tests with brands in pairs of close substitutes, e.g. Frosties and CoCo Pops; Kellogg’s Bran Flakes and Tesco Bran Flakes, and other tests with four more differentiated brands, e.g. Bran Flakes, CoCo Pops, Shredded Wheat and Muesli. We

used our own subjective “commonsense” definition of close substitutes and more differentiated brands.

However we did not reproduce the earlier result, and found no differences in elasticities between our differentiated and closely substitutable brands. We did find low elasticities for one or two isolated cases involving much more differentiated brands, such as toothpastes for sensitive teeth, or Alka Seltzer when offered as an analgesic. However, *cross-elasticities* were on average twice as big for the differentiated brands as for close substitutes (Watson–Gandy and Scriven, 2000). The implication is that the presence of more directly substitutable brands does not influence the size of response to a brand’s own price action, but it does affect where switched purchases come from or go to.

3.3.5 Cash Discounts or Free Product

In five matched tests we offered price cuts either as extra product or as cash (e.g. 50% cash cut equals a “two for one” offer). Over all the cases, the elasticities averaged out the same, although with some inconsistent variations as shown in Table 10.

3.3.6 Pack Sizes

We started to explore pack-size effects in some tests, either one size versus another in different tests, or mixed

brands and sizes in one test. No overall consistent patterns have been found in our limited experiments so far. The complicated interaction between brand and size provides an opportunity for future work.

3.3.7 Experimental Order Effects

The order of different price changes was varied in our experimental design to check on possible biases, for example through learning effects.

The order variations were:

1. Whether a + change (for example) was the first or the second change for a brand.
2. Whether + and – price changes were seen consecutively, or not (see Figures 1a and 1b).
3. The order in which the four product categories in a test was seen.
4. Whether a brand was the first, second, third or fourth in that category to have a price change.

None of the rotations of the order of seeing products or price changes produced a consistent effect on price elasticities. This has greatly simplified the analysis requirements and allowed us to combine results here to give more robust conclusions.

Table 9: Demographic and Usage Subgroups*: No Differences

Sub-groups	Average	UK Tests		Germany & USA
		Early	Later	
Children With Without	-3.4	-2.8	-3.5	-3.7
	-3.1	-2.9	-3.0	-3.8
Region North South	-3.1	-2.9	-3.1	na
	-3.0	-2.8	-3.2	na
Social Class (Income) ABC1 C2DE	-3.4	-2.9	-3.2	-3.6
	-3.2	-2.7	-3.3	-3.5
Product Buying Light Heavy	-3.2	-2.8	-3.2	-3.4
	-3.4	-2.7	-3.1	-3.5
Average	-3.2	-2.8	-3.4	-3.3

* Excluding those in Table 8

Table 10: Cash Price cuts versus Extra Product Free: No Differences

	Cash	Extra free volume
Orange Juice	-1.4	-1.3
Coffee	-2.3	-1.6
Cereal	-2.3	-2.2
Beer	-3.3	-3.0
Toothpaste	-3.8	-4.6
Average Elasticity	-2.6	-2.5

4. Discussion

Individual price elasticities for different brands under different conditions in this range of experimental tests varied considerably, mostly between about -1 and -4. But within this variability, highly consistent patterns have emerged.

Some conditions consistently enhanced the “sales effect”, some depressed it and other conditions had no effect. Thus passing the price of another brand consistently raised price elasticities. Heavy product use, or whether a brand was advertised or not, was not associated with bigger or smaller elasticities. Such consistent experimental findings help our understanding of the pricing process.

The results confirm the long-standing doubt that a brand does not have an idiosyncratic elasticity of its own (Gabor, 1988), i.e. some absolute value for that brand which applies in almost any circumstance. Responses to price changes depended more on the context than on the brand as such. This also ties in to the findings of Tversky and Simonson (1993) on the context dependency of choice.

In all cases, changing a price had an effect on brand choice (almost all the elasticities we measured were negative). But most people, in our experiments and in real life, are not affected by any one price-change. The mechanism works through a few people changing their choice, while most carried on with the same choice they had indicated before. In our experiments, for any one 15% price change, in most cases less than 5% of all respondents changed their claimed behaviour. Those who did change were more likely to be already light buyers of the brand, and to be generally more sensitive to price. In real life, an even smaller proportion of the population

could be affected by any price change, especially a temporary one, as many would not be purchasing the category at the time or would not see the change. But we believe the effects would be the same as in our experiments, only the absolute level might differ.

The experimental results go some way towards identifying the more important elements influencing variations in response to price changes. We review these now in the context of the literature.

(i) The brand's price moved past a local “Reference Price”

The extensive literature on reference prices hypothesises that consumers relate their response to price to some standard or reference point (e.g. Krishnamurthi, Mazumdar, and Raj, 1992; Rajendran and Tellis, 1994; Grewal, Monroe and Krishnan, 1998). The reference price is often operationalised as some weighted average of previous prices paid for the brand (memory based), or the current price of another brand (stimulus based, Briesch, Krishnamurthi, Mazumdar, 1997). Memory based reference seems to sit uneasily with extensive findings (including in our study) that consumer knowledge of actual prices is generally poor. However Vanhuele and Drèze (2002) argue that this is a consequence of the simplistic recall-based measures generally used, which do not measure accurately the way that consumers store and use reference relationships.

Our finding shows that the stimulus of other brands' displayed prices are clearly an important aspect of reference. However, response to price is more complex, as shown by our systematically different results using SS and ST methods for matching scenarios. Hence the notion of awareness that a price is “a bargain”, which involves reference to previous own price and competitive

prices, would seem to have some effect, as reflected in the literature on transaction effects (e.g. Grewal, Monroe and Krishnan, 1998). A further complication is the possible effect of 'odd prices', ending in 9 or 99, and special memorable price points, such as £1.00 (Gendall, Fox and Wilton, 1998). The empirical patterns confirm the complexity of the reference price notion, and can help to pin down operationalisation in practice.

(ii) The price change was easy to perceive (e.g. as in the SS method), or was explicitly signalled.

The signalling results more generally are consistent with extensive findings that price based (i.e. mostly feature) advertising leads to greater price sensitivity (Bell, Chiang and Padmanabhan, 1999; Bolton, 1989; Bemmaor and Mouchoux, 1991; Kaul and Wittink, 1995 (and references therein)).

(iii) The brand's share was low.

Danaher and Brodie (2000) find smaller elasticities for big brands to be one of three consistent factors in their multi-category study, as did Bell, Chiang and Padmanabhan (1999), Bolton (1989) and Guadagni and Little (1983) in their paper on logit modelling in marketing.

There seem to be no reports of contrary findings on brand size effect. This seems consistent with many other findings in marketing that brand size is a major factor to be considered (such as when studying loyalty; Ehrenberg, Uncles and Goodhardt, 2004).

(iv) The price changed to a higher level (i.e. to +15%).

Perhaps unsurprisingly, there is far less research or discussion on price increases than price cuts especially short-term promotions. A few studies do compare 'gain' coefficients to 'loss' coefficients (e.g. Bell and Lattin, 2000; Hardie, Johnson and Fader, 1993) but many studies assume that elasticities are the same for both, which we have shown is not the case. Studies of asymmetric price competition (e.g. Sivakumar, 1997; Sethuraman, Srinivisan and Kim, 1999) might seem to address this, but it seems to us are really about brand size and passing effects. Prospect theory (Kahneman and Tversky, 1979) advances hypotheses about risk aversion and the carriers of value that would lead to bigger elasticities for price rises, in line with our findings.

(v) The brand's normal price N was close to average.

Sethuraman, Srinivisan and Kim (1999) find neighbourhood pricing effects (bigger cross-price effects between brands that are immediately adjacent in price),

which seem consistent with our finding that elasticities are bigger where brands are in close price competition to start with.

(vi) No effect for most demographic and usage variables, except light brand users, younger, and self-defined generally price conscious.

Bell, Chiang and Padmanabhan (1999) also show very little in the way of demographic effects on elasticities in their results, in line with the bulk of our findings (other than age). Hoch, Kim, Montgomery and Rossi (1995) find that low income consumers have bigger price elasticities, which seems to conflict with our finding of no difference in elasticities for income levels. Many logit based studies use latent classes of respondents who are more or less price sensitive but without defining the latent characteristics of the groupings. We have found no other studies that show that previous light buyers of the brand, and those defining themselves as price conscious are the most responsive to price changes.

(vii) No effect for brands with TV advertising

Our findings that brand advertising does not produce any effect on elasticities run contrary to the conclusions of Kaul and Wittink (1995), who cite nine studies that find advertised brands are less sensitive to price. However they also cite five studies with the opposite finding. It seems to us that most of the evidence in the literature of advertising affecting price sensitivity is equally equivocal. One question is whether studies reporting lower elasticities for advertised brands are actually capturing effects due to brand-size, given that advertised brands are often bigger.

5. Conclusion

Our experimental study has produced elasticity levels that are reasonably coherent, at about -2 to -3 on average, with those produced from in-market studies. The patterns of variation show conditions that lead to greater or lesser response to price, within the range of the experiment, and give an indication of by how much. The consistency of the results across all the tests, and the existence of similar findings across a broad range of other studies, shows that we have been measuring genuine factors that affect consumers' response to price changes. The conclusions can be validated further through other isolated consistent results including in real life, or in specific experimental designs, preferably of a different type. Nonetheless, the simple test procedure worked well, and the consistency of the findings so far

Appendix: Products Covered in Tests

Analgesics	Chocolate	Newspapers
Beer	City Breaks	Orange Juice
Biscuits	Coffee	Petrol
Body Lotion	Credit Cards	Satellite TV
Burgers	Detergent	Shampoo
Cameras	Eggs	Soup
Cars	Face Cream	Spirits
Cereal	Flights	Toothpaste
	Mobile Phones	

can give direction and provide benchmarks to evaluate pricing factors more widely.

An example of the benefits of having prior expectations based on empirical generalisations was that initially our US results were quite different from those we had already seen elsewhere in the study. As firm believers in Twyman's Law ("Any figure which is different or interesting is usually wrong"), we checked and rechecked and eventually revealed a pervasive coding error.

Some of the practical implications for managing prices, consequent on the results of our study are:

1. The biggest sales changes come from passing a major competitor (e.g. a closely-priced brand, or a big brand).
2. Big brands, expensive brands and private label brands are particularly unresponsive to having their prices lowered.
3. In contrast, small brands respond most to price changes, up or down.
4. More *light* brand buyers react to a price change. This links with the previous point, as small brands have more light buyers.
5. Pricing effects are enhanced if consumers are aware that a change has taken place.

Finally, we emphasise that we do not expect to be able to predict price elasticity from our study or methodology, rather to understand the factors that do and do not affect elasticity, and from that to gain insight into how pricing works.

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Dove vs. Dior: Extending the Brand Extension Decision-Making Process from Mass to Luxury

Francesca Dall'Olmo Riley, Wendy Lomax & Angela Blunden

Abstract

This paper furthers the understanding of the decision process used by managers when extending their brands. In particular, we investigate the extent to which the model of extension decision process outlined by Ambler and Styles (1997) for fast moving consumer goods is relevant to the luxury sector. We find that the broad structure and components of the A & S model extend to the luxury sector. However, some modifications are required to reflect the differences between luxury and fast moving consumer goods. In contrast with fast moving consumer goods, growth, rather than defence, is the main driver for extending luxury brands. The marketing function, rather than R&D, has the strongest influence on brand extension decisions in the luxury sector. Tradition and brand heritage are identified by luxury goods experts both as the first driver and an important decision criterion for brand extensions.

Keywords: Brand extension, Luxury goods, Business process models, Empirical generalisations

1. Introduction

As recent reviews of the literature attest (Czellar, 2003; Grime et al., 2002), there has been a plethora of research on consumer attitudes to and evaluation of brand extensions and on their impact on the 'equity' of the parent brand. Much of this research has been of the replication and generalisation kind, particularly of Aaker and Keller's (1990) paper (e.g. Barrett et al., 1999; Bottomley and Doyle, 1996; Sunde and Brodie, 1993). However, few articles have examined how managers choose whether to launch a new product as a line extension or as a second brand (Speed, 1998) or the decision process underlying such decisions (Amber and Styles, 1997; Nijssen et al., 1996). To our knowledge, little research has sought to establish whether managers' decision process concerning brand extensions and the factors underlying such decisions are the same in different industries and for products and brands with different characteristics (e.g. McWilliam, 1993). Indeed the 'functional' versus 'symbolic' positioning of a brand or its degree of 'abstract meaning' (McWilliam, 1993) not only may affect the content and the process of consumers' evaluation of brand extensions, but also may make a difference in the managerial decision process and extension strategy (Czellar, 2003). While brand and line

extensions are widespread within both the mass-market fast moving consumer goods sector and the luxury goods industry, we know little about the strategic antecedents, decision criteria and launch judgement process across significantly different markets and circumstances.

This paper examines the decision process used by luxury goods managers when extending their brands. In particular, we aim to progress towards the development of a generalised managerial process model aimed at structuring decision making for brand extensions, optimising the quality of such decisions. The Ambler and Styles (1997) study '*was an initial, exploratory step in this direction*' (p. 233), and offered a 'launch pad' towards achieving an empirically generalised model. From the viewpoint of identifying the boundaries of existing knowledge and of incrementally generating 'new' knowledge, we investigate whether the process model of extension decisions put forward by Ambler and Styles (1997) (hereafter A & S) for fast moving consumer goods (e.g., an "fmcg" such as Dove soap) can be stretched to the luxury sector environment (e.g., for a Christian Dior fragrance).

2. Background

In recent years the luxury goods industry has come under

increased pressure, with low consumer confidence and the rise of the Euro against the dollar reducing global consumer expenditure on luxury brands (The Economist, 2003). Although launching brand extensions has proven to be a potentially successful and profitable growth strategy in the luxury sector, such defining factors as high awareness, exclusivity and desirability can be lost as the brand and its luxury appeal becomes diluted. Indeed, many luxury brand organisations have re-evaluated the breadth of their brand extensions and the number of licensing agreements they grant (The Economist, 2004). In the words of Bernard Arnault, Chairman and controlling owner of LVMH: “Some brands (...) have slid off the map of prestigious goods to become a sort of mass market of luxury items” (The Economist, 2003; p. 67). Furthermore, some brands have extended well beyond their traditional sphere of expertise, for instance moving from fashion to hospitality (e.g. the ‘Palazzo Versace’ Hôtel in Australia’s Gold Coast or Salvatore Ferragamo’s the ‘Continente’ in Florence).

These trends highlight the importance for luxury brand managers to understand the strategic drivers (antecedents) to brand extension decisions, the factors that constitute important decision criteria and their impact on launching the extension. To what extent these antecedents, decision and launch criteria are the same for fast moving and for luxury goods is the focus of this paper.

We find that while the general structure of the brand extension decision process remains the same for fast moving and luxury goods, specific elements such as tradition, heritage and craftsmanship are key considerations before deciding to extend a luxury brand.

After a brief review of the relevant literature, we examine our findings in the context of A & S’s brand extension decisions framework. We then put forward propositions for a generalised decision process model for extending luxury brands.

3. Previous Literature

This section summarises the issues relating to brands and their extensions, and the differences between the branding of fmcg and luxury goods that may affect the extension decision process. Finally, the A & S management process model for brand extensions decisions is outlined.

3.1. Brands and Their Extension

To allow continuity of comparison with the model we seek to generalise, we outline the definitions of brand (and related concepts), brand extension and line

extension as adopted by A & S (1997). These authors identified two approaches to brand definition. The first is the traditional product plus definition, whereby the product is the driver and the brand is primarily the identifier. The second is the holistic view, which focuses on the brand itself, encompassing more than just the product. This is typified by de Chernatony and McDonald (2003, p. 25):

“A successful brand is an identifiable product, service, person or place, augmented in such a way that the buyer or user perceives relevant, unique added values which match their needs most closely. Furthermore, its success results from being able to sustain these added values in the face of competition.”

Such a holistic view lends itself well to luxury brands, which by definition are high in symbolic added values (e.g. Vickers and Renand, 2003). This view is also relevant to the current research, since it creates the context in which brand extensions must be managed.

Holistic management of a brand encompasses all elements of the marketing mix, with product as only one element alongside price, promotion and distribution. The holistic view of a brand is also relevant to the concept of ‘brand equity’, as proposed by A & S and Srivastava and Shocker (1991):

“Brand equity is the aggregation of all accumulated attitudes and behavior patterns in the extended minds of consumers, distribution channels and influence agents, which will enhance future profits and long term cash flow”

A & S (1997) noted that previous literature had linked the concepts of a brand’s ‘equity’ and of its extendibility in a reciprocal relationship. Not only can a firm leverage a brand’s equity in new categories (e.g. Shocker and Weitz, 1988), but brand extensions are likely to affect (either positively or negatively) the equity of the core brand (e.g. Keller and Aaker, 1992; Loken and John, 1993).

Finally, A & S (1997, p. 15) condense the available literature to adopt the following definitions of extensions:

“Brand extensions involve the use of an established brand name to enter a new product category (Aaker and Keller, 1990). ... Line extensions, in contrast, involve the use of an established brand name for a new offering in the same product category (Reddy et al., 1994).”

Consistently with A & S, in this paper we examine the process of how luxury brands extensions and line extensions are brought to market and examine possible differences with fmcg.

3.2. The Concept of Luxury and the Branding of Luxury Goods

Phau and Prendergast (2000) point out that whilst ‘luxury’ is a subjective concept, *“luxury brands compete on the ability to evoke exclusivity, a well-known brand identity, [...] brand awareness and perceived quality.”*

Nueno and Quelch (1998) further define luxury brands as *“those whose ratio of functional utility to price is low while the ratio of intangible and situational utility to price is high”*. Whilst competitive value remains important, price is not the prime issue for consumers attracted by status symbols. This is a key difference between the mass consumer group who purchase a fmcg, and the minority population who purchase luxury goods. While consumers of a fmcg may be influenced by the brand and its associations, they will usually give priority to functionality and price. Conversely, purchasers of luxury goods are influenced primarily by brand and status, while functionality is assumed.

Consistently, Vickers and Renand (2003, p. 473) remark that *“although luxury and non-luxury goods can be conceptualised on the basis of functional, experiential and interactional symbolic dimensions, there is a distinctive difference in the mix of these components.”* Specifically, they remark that luxury goods are higher in the psychological, social and symbolic dimensions, while non-luxury goods score higher in the functional dimension. According to Vickers and Renand (2003), the symbolic dimension is what enables luxury brands to maintain their status and continue to command a premium price, whereas luxury goods which become too dependent on technological development risk losing such status, becoming ‘too functional’. This is likely to

have an impact on brand extension strategies. For instance, consumers may evaluate the fit between the luxury parent brand and its extension on an abstract and symbolic level, with a focus on non-product related associations, whereas they might evaluate fmcg brands on a concrete, product-related level (see Czellar, 2003). As a consequence, the marketing strategy of luxury brands and of their extensions should focus on the symbolic, rather than functional, component. In contrast, continuous technological development and R&D are often essential to sustain the added value of fmcg brands (e.g. de Chernatony and McDonald, 2003).

Another concept related to luxury brands is the *“rarity principle”*: the prestige of the brand gets eroded, if too many people own it (Dubois and Paternault, 1995; Kapferer, 1998). This creates a paradox for luxury brand management (Roux and Floch, 1996): the company needs to maximise its profits but can never sell or standardise too much. Luxury brands organisations have to maintain a fragile equilibrium between high exposure and awareness but a controlled level of sales. To maintain their dream value and avoid the risk of commoditisation, *“luxury brands must be desired by all, consumed only by the happy few”* (Kapferer, 1997). This differentiates fmcg from luxury goods: fmcg address mass consumer markets (Dibb et al., 2001), whilst luxury goods companies target a relatively small, high disposable income group of consumers (Phau and Prendergast, 2000). An essential component of luxury brands’ ‘equity’ is therefore their desirability and inaccessibility (Roux, 1991; Kapferer, 1998).

An indiscriminate brand extension and distribution strategy can erode this rarity principle, and therefore dilute a luxury brand core essence of desirability and

Table 1: Comparison of Fast Moving and Luxury Goods Characteristics

Fast Moving Consumer Goods		Luxury Goods	
Address a mass market	Dibb et al. (2001)	Target a niche market	Phau & Prendergast (2000)
Mass distribution	Dibb et al. (2001)	Exclusive distribution	Kapferer (1997)
Functionality	Vickers & Renand (2003)	Symbolism	Vickers & Renand (2003)
Purchase transaction	Grönroos (1994)	After-care service	Dall’Olmo Riley & Lacroix (2000)
Price focus	Nueno & Quelch (1998)	Status focus	Nueno & Quelch (1998)
Technology, R&D	de Chernatony & McDonald (2003)	Craftsmanship	Kapferer (1998)
		Founder’s heritage	Kapferer (1998)

status. Because of their high prices, luxury brands must not only deliver the best but also “*extensively customise them [their products] in order to prove how customer-focused they are*” (Kapferer, 1997). Furthermore, personal relationships with customers, forged at the point of sale, and after sale services are important in the luxury goods sector (Dall’Olmo Riley and Lacroix, 2000). For fmcg, on the other hand, transactional marketing activities may suffice (cfr. Grönroos, 1994). Again, this has repercussions for luxury brand extensions and their distribution, since the same standards of quality, craftsmanship and service will be expected for all products carrying the luxury brand name, no matter what they are and where they are sold. Indeed, craftsmanship and the tradition and heritage deriving from the company founder are essential components of the equity of a luxury brand and form the pillars of any strategic and marketing decision. In the words of Kapferer (1998; p. 86): “*The golden rule, therefore, is never to compromise on the brand’s set of values or its deeply rooted identity trait. The brand is a living memory (of the founder)*”. In contrast, for many fmcg brands, success has arisen from abandoning the original positioning and roots (e.g. Lucozade’s and Coca Cola’s transformation from ‘medicinal’ to ‘power’ brands).

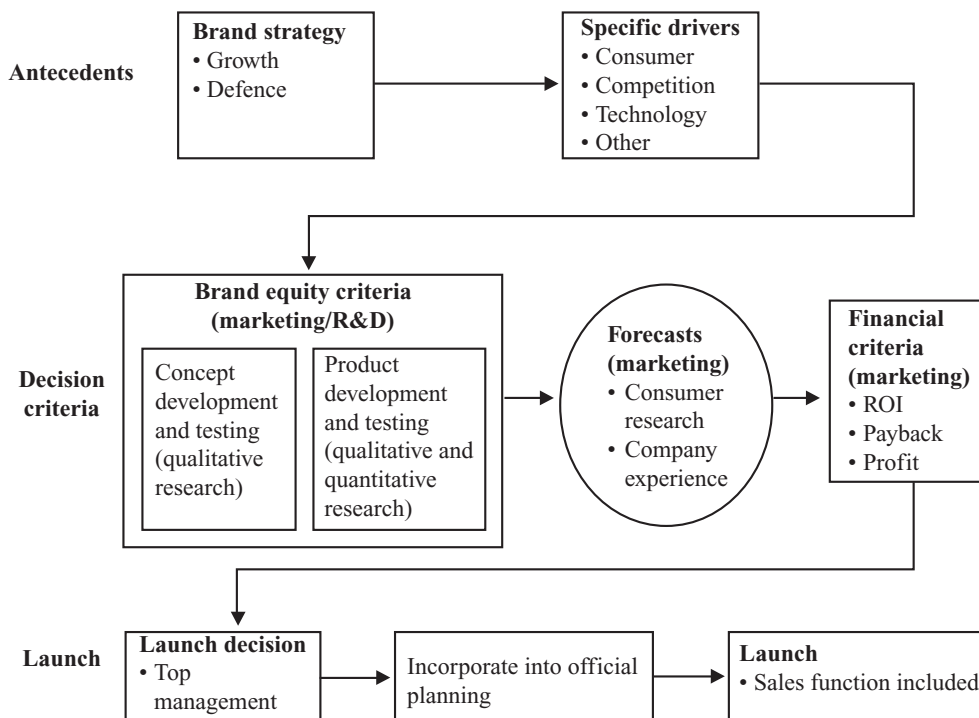
From the literature, therefore, a number of differences can be identified between fmcg and luxury goods characteristics, as summarised in Table 1.

The differences between fmcg and luxury goods indicate the need to test whether any decision process model pertaining to the extension of fast moving consumer goods generalises to the specific context of luxury brands. A managerial process model can provide a structure to manage internal relationships and contribute to the assessment of intangible values in brand extension decisions for luxury goods. Hankinson and Cowking (1997) found companies slow to adopt new structures, resulting in an increasingly fragmented brand management process. This suggests that research into the application of a managerial process model to different contexts will be beneficial.

3.3. Managerial Process Models: A & S Model of Extension Decisions

A & S (1997) investigated the process followed by eleven managers when launching line and brand extensions of fast moving consumer goods, based on data collected by The Boston Consulting Group (BCG). Their research led to the development of a set of

Figure 1: Amber & Styles (1997) Model



propositions about the extension process, summarised in the form of the process model outlined by the diagram in Figure 1. A & S framework is divided in three parts: (i) antecedents (the main drivers behind extension decisions); (ii) decision criteria (upon which decisions are made to proceed or not with the extension); and (iii) launch (the key players in the development and launch process) – as described below.

Antecedents

The antecedents of extension decisions were divided into strategic drivers (related to growth or defence brand strategy) and specific drivers (including a variety of factors of which consumer needs, competition and technology were the most prominent).

Decision criteria

A & S found that fmcg managers used two main sets of criteria for brand extension decisions: brand equity and financial. Brand equity criteria were tested early in the development process through qualitative research relating to the consistency with and image of the original brand and its extension (e.g. concept and/or product tests with consumers). Financial criteria included measures such as ROI, payback periods or NPV. Qualitative consumer research and company experience emerged as the major sources of data for extension forecasts. Managers were not found to use market simulation models in their forecasts.

Launch

Marketing was found to be the most important function in the development of extensions, however, R&D would prevail for technology driven extensions. At the end of the process, the sales function was involved with launch issues such as promotions and presentations to the trade. Finally, the extension development process was found to occur outside the formal planning process. This contradicts normative models of formal planning (e.g. Booz et al., 1982).

If found to extend to non-fmcg sectors, the framework of A & S (1997) could offer a generic decision-making managerial process model for brand extensions.

4. Aims of the Study and Methods of Research

Our study investigates whether the A & S model can be extended to a different context. Specifically, the paper investigates the following:

1. The drivers (antecedents) of extension strategy in the luxury sector.

2. The decision criteria used to determine whether to proceed with the extension.
3. The decision process used to plan and launch luxury brands extensions.
4. Whether a managerial or an academic process model is being used for brand extensions.

Qualitative research, consistent with the A & S (1997) study, was considered appropriate for this research, since we were concerned with understanding issues rather than measuring them (Gordon and Langmaid, 1988; Carson et al., 2001).

Sample

Since extending a brand is a strategic decision, contact was sought with marketing directors, brand managers and other managers involved in the marketing of luxury goods in the UK. The original A & S project involved eleven fmcg companies; our study encompassed seven companies within the luxury goods industry. The seven companies that participated in the study were five luxury goods suppliers, one luxury goods commentator, and one luxury goods financial analyst. To preserve anonymity, a letter of the alphabet will identify each participating organisation. Details of the companies involved in the study are summarised in Table 2.

Research Procedure

Respondents were interviewed by means of a semi-structured questionnaire, aimed at gaining a better understanding of brand strategy and management practices in the luxury goods sector, in general and for extensions in particular. Since our ultimate goal was to assess whether the A & S decision-process model could be stretched to encompass luxury brand extension decisions, the questionnaire was designed by decomposing the A & S model into its three main components parts (Antecedents, Decision Criteria and Launch). For each component part and relative section in the A & S paper, we asked specific questions relating to the reality of brand extension decision-making within the luxury goods sector. For instance, with reference to the main drivers behind line and brand extensions, we asked respondents to identify whether growth or defence strategic objectives predominated, and which specific factors (from a list based upon the A & S model) drove the respondent organisations to choose a brand extension strategy. For each question, we asked respondents to identify any additional factor and to add any comments they wished, for instance regarding the relative

Table 2: Sample Characteristics

Company	Role of Interviewee (Mode of Interview)	Location of Head Office	Range of Products (as described by interviewees)	Focus of Interview	Ranking (as perceived by interviewees)
W (part of Richemont Group)	Managing Director (reflecting views of UK office) (Face-to-face)	Continental Europe	'Multi-product luxury goods company' (no clothes)	Largest luxury product category supplied	1st (by market share and customer perception) (UK)
T (part of Richemont Group)	Marketing Director (reflecting views of UK Head Office) (Face-to-face)	UK (but Group Head Office located in Continental Europe)	'Quintessentially British, style-based multi-product luxury goods range' (including clothes)	Range of luxury product categories supplied	5th (by market share) 2nd /3rd (by customer perception) (UK)
G (part of LVMH group)	UK Marketing Manager (reflecting views of UK office) (Face-to-face)	Continental Europe	'Multi-product luxury goods company' (including clothes)	Range of luxury product categories supplied	1st (by market share) 3rd (by customer perception) (global)
P	European Brand Planner (Face-to-face)	USA	'Multi-product luxury goods company' (including clothes)	Range of luxury product categories supplied	3rd (by market share and customer perception)
L	Brand Manager (Telephone)	UK	'Multi-product luxury goods company' (including clothes)	Range of luxury product categories supplied	Unknown
J	Managing Director (Postal)	UK	Luxury goods information services	Luxury goods industry	1st (by market share)
C	Analyst (Telephone)	Switzerland	Luxury goods sector financial analysis	Luxury goods industry	Unknown

importance of each specific factor. To ensure consistency of terminology and understanding, at each stage of the research we ensured that respondents were familiar with the terminology and the definitions provided by A & S in their 1997 paper (e.g. regarding the concepts of 'brand

equity', 'line' vs. 'brand' extensions).

Four interviews were conducted face-to-face, two by telephone and one by post (see Table 2). Results were therefore obtained from a combination of structured (e.g. factors ticked by each respondent) and unstructured

responses (e.g. comments on relative importance of factors). Face-to-face interviews were tape-recorded and subsequently transcribed. Comprehensive notes were taken during the telephone interviews. Face-to-face interview transcripts, telephone interviews notes and responses of the postal questionnaire were analysed for patterns and themes by two of the researchers. The components and sub-components of the A & S model were used as a coding frame, broadly following the 'axial coding' procedure described by Strauss and Corbin (1998). Any differences in interpretation between the two researchers were discussed and resolved.

Finally, the literature on luxury brands was used as a secondary source of data to supplement the responses of the interviewees, as suggested by Strauss and Corbin (1998, p. 51). Primary and secondary data were then integrated to derive propositions for an extended decision-process model for luxury brands extension decisions. The use of multiple sources of evidence (respondents' opinions and extant literature) also contributed to the construct validity of the findings. Finally, external validity was addressed by the replication logic inherent in the use of multiple interviews, although this was limited to only seven 'case studies'.

In the context of developing empirical generalisations, a table in the Appendix compares the fieldwork and analysis undertaken for this study and that undertaken for the A & S study. The table follows the framework sketched by Romaniuk (2004).

5. Analysis of semi-structured questionnaires

In this section we report key findings resulting from the analysis of the semi-structured questionnaires.

5.1. Antecedents of Brand Extensions in the Luxury Sector

Strategic drivers

Respondents emphasised the long history of their companies. This tradition, combined with the founder's views, was a significant influence on corporate strategy. This is consistent with the luxury brands literature reviewed above. All managers reported the existence of a corporate strategy focused on growth, rather than defence; this strategic approach also influenced decisions concerning brand extensions. Brand strategies appeared to be driven by Head Office (often in another country), not by brand managers.

Specific drivers

When asked "What factors drive your organisation to choose brand extension", the majority of respondents (5) mentioned consumer demand, in spite of an apparent lack of reliance on market research. For instance:

"both line and brand extensions are necessary. Brand extension is used to engage new customers, line extension to achieve additional sales with existing customers" (Marketing Manager, Company G).

Brand equity emerged as the second driver (4 respondents), followed by distribution acceptance (3 respondents). Competition, brand recognition and technology were selected either by 1 or 2 respondents. Reduced costs were not recognised as a factor, even though it was acknowledged that distribution and technology might result in significant potential cost reductions. This apparent lack of concern for cost reduction is consistent with the relative freedom from price constraint enjoyed by luxury brands (Kapferer, 1998).

5.2. Decision Criteria

Brand Equity Criteria

Consistently with A & S, brand equity criteria were deemed most important. All managers accepted the need for a measure of success in brand strategy and that brand extensions should increase brand equity, for instance:

"brand equity grows through extension procedures" (Marketing Manager, Company G); and

"brand equity and brand extensions are interdependent because one is the result of the other" (Brand Planner, Company P).

Accordingly, the top six criteria for brand extension decisions were: 'brand equity'; 'building on the original brand'; 'leveraging the brand'; 'protecting the brand' and 'meeting profit forecasts'. 'Perception of fit' and 'existing core brand of high quality' also emerged as important criteria in brand extension decisions. On the other hand, the main risks associated with brand extension decisions were: 'poor fit'; 'benefits over-estimated'; 'risk to core brand'; 'brand dilution' and 'logistics/ manufacturing inefficiencies'. For instance: *"fit must be determined before brand extension launch – it must establish a brand link with the historic tradition"* (Marketing Manager, Company G).

Research and forecasting

Consistently with the A & S results, while both quantitative and qualitative research were perceived as useful, the latter was considered as the most important, for instance:

“qualitative research is more important than quantitative research in brand extension decisions” (Managing Director, Company J)

However:

“qualitative research is more important than quantitative, but the value is enhanced when they converge” (Marketing Manager, Company G).

Regarding the type of data used in brand extension forecasting, our investigation revealed little evidence of consumer research, although consumer demand had been claimed as a driver of brand extension. The strongest source for brand extension decisions was considered to be ‘company experience’. For example:

“company experience is the most important of the sources for brand extension decision-making” (Brand Planner, Company P).

Moreover, there was a mention of the need to consider cannibalisation forecasts, not only as a potential danger, but also as a deliberately managed technique to exploit a short-term market opportunity, such as discontinuing a product line. For example:

“Cannibalisation is acceptable when responding by extension to meet and ‘opportunistic’ trend” (Marketing Manager, Company G).

Financial criteria

All respondents saw financial returns as a performance measure for brand extensions. Consistently with A & S, the brand equity criteria were said to precede financial criteria.

Key players in the development process

Consistently with A & S, the marketing department resulted as the main function in brand extension decisions, followed by sales. Five respondents rated the marketing function as ‘very important’ in determining the brand extension process (four did so for ‘sales’). Marketing and sales were rated as ‘important’ by one respondent, respectively (see Table 3). For instance:

“Marketing will become very important as brand guardians and the agents of communications” (Marketing Director, Company T).

Responses were equally split between respondents on the relative importance of R&D in the brand extension process (see Table 3). In contrast to A & S, no respondent related the R&D function to innovation, creativity or technology. R&D was not applied to innovation throughout the supply chain and some respondents were confused by the term ‘R&D’. Some interpreted this as ‘design’ while others saw it as ‘product buying and specification’. This finding is consistent with the literature on luxury branding reviewed earlier.

5.3. Launch

Respondents revealed that, in general, brand managers did not make decisions on brand extension. Brand

Table 3: Key Players in the Development Process

Function	Indicate the relative importance of the following players in determining the brand extension process		
	Not important	Important	Very important
Marketing	–	1	5
Sales	1	1	4
R & D	2	2	2

NB: Company C is a luxury goods financial analyst and therefore did not answer this question

extension decisions were made by directors at the Head Office, sometimes with the help of external advisors. The role of the founder of the organisation was also stressed, for example:

“...there is no defined managerial process. The process is instinctive through the founder supported by a long-standing small group of senior staff.” (Brand Planner, Company P).

Respondents were also asked to identify whether and how brand extension decisions are integrated within the company’s planning process. Annual budgets emerged as the primary planning control mechanisms for extensions. Where rolling three-year plans did exist, the extension targets were incorporated. Ad hoc systems appeared to be widely used, with the result that extension budgets are incorporated retrospectively. In the words of the Managing Director of Company J:

“Extension decisions are integrated at quarterly strategy

meetings and usually integrated after the extension has been authorised”.

This pattern of results is consistent with the findings of A & S. However, this is contrary to what is advocated by Porter (1996) and by Prahalad and Hamel (1990) where strategic planning and core skills are intended to drive budgeting processes and thus set the demand level for extensions.

Examples of the range of responses given by the interviewees concerning the planning process are reported in Table 4.

5.4. Use of process models

Finally, respondents were asked to indicate whether there was a defined ‘managerial process’ for brand extension in their organisations and whether they used any ‘academic’ process model. In-house models were controlled by the Head Office, often in a different

Table 4: Planning Process

Company	How are extension decisions integrated into routine planning?	Are brand extensions integrated into the formal planning and budget processes AFTER the extension has been given authorisation?	Are ad hoc systems outside of formal planning used for brand extension?
W	At financial planning stage	Yes	Yes
T	Next year’s budget and 3 year plan	Unknown	Yes
G	Annual budget and 3 year plan	Sometimes yes, but it should happen before	No – exceptional
P	Budgets with twice per year update	Yes, try to	No – try to incorporate at the beginning
L	Budgets	No	Yes
J	Quarterly strategy meeting	Yes	Yes

NB: Company C is a luxury goods financial analyst and therefore was excluded from this analysis

country. Personal models were generally attributed to the company's founder. There was a lack of formalisation, reflected in the general lack of connectivity with the concept of process models:

"The management process model used is personal (in the head of the founder) and not documented. ... It is clear, to transform inspiration into a managerial process model would prove difficult." (Brand Planner, Company P).

Awareness of the contribution of the academic world was low. The gap between academics and practitioners is illustrated by failure to draw upon any academic studies. There was no reported knowledge of the A & S model even where the company had a connection with the BCG (who had collected the data upon which A & S's analysis had been undertaken). Only the analyst demonstrated higher awareness of academic sources: *"we value academic literature as a reference source"* (Marketing Director, Company T).

Consistently with A & S findings, two respondents thought that the use of a managerial process model would hinder innovation:

"A managerial process model will encourage efficient business, but contains the danger of inhibiting innovation and creativity" (Brand Planner, Company P); and:

"In luxury goods, innovation/ creativity is stimulated by knowledge, exposure, archives, competition, other industries, suppliers, markets" (Managing Director, Company W).

In contrast, others saw a role for a process enabling the commitment of resources for NPD and for the establishment of formal arrangements for managing NPD and extensions. Significantly, there was less support for product strategy linked to the managerial process model.

6. An extended process model

As already mentioned, the literature on luxury brands was used to supplement the primary data and generate propositions from which an extended decision-process model suitable to luxury brands extension decisions could be derived. In this section, we draw upon the analysis of the semi-structured questionnaire responses presented in the previous section and of the literature review and present our propositions for extending the A & S decision-process model to the context of luxury brands.

When conducting the primary data collection and

analysis, the general framework of 'antecedents', 'decision criteria' and 'launch' was found to be helpful in the context of planning luxury brand extensions.

Among the 'antecedents', strategic brand objectives of defence and growth had been found by A & S as the most important drivers for extending a fmcg brand. Our primary research has indicated that strategic growth is an important driver to extending a luxury brand. However, consistently with the literature (e.g. Kapferer, 1998), respondents have stressed the need to engage the influence of the founding entrepreneurs and of the Head Office (top management) in the development of luxury brands extension strategy. This is because allocation of accountability for industry position and growth, respecting the tradition and the origin of the luxury brand, must be the responsibility of the Board. This requires the inclusion of these specific drivers in a modified model to reflect the accountabilities highlighted in this research. Hence, we propose the following:

Proposition 1: *A managerial process model for the extension of luxury brands identifies corporate strategy accountabilities for growth within the tradition and heritage of the organisation.*

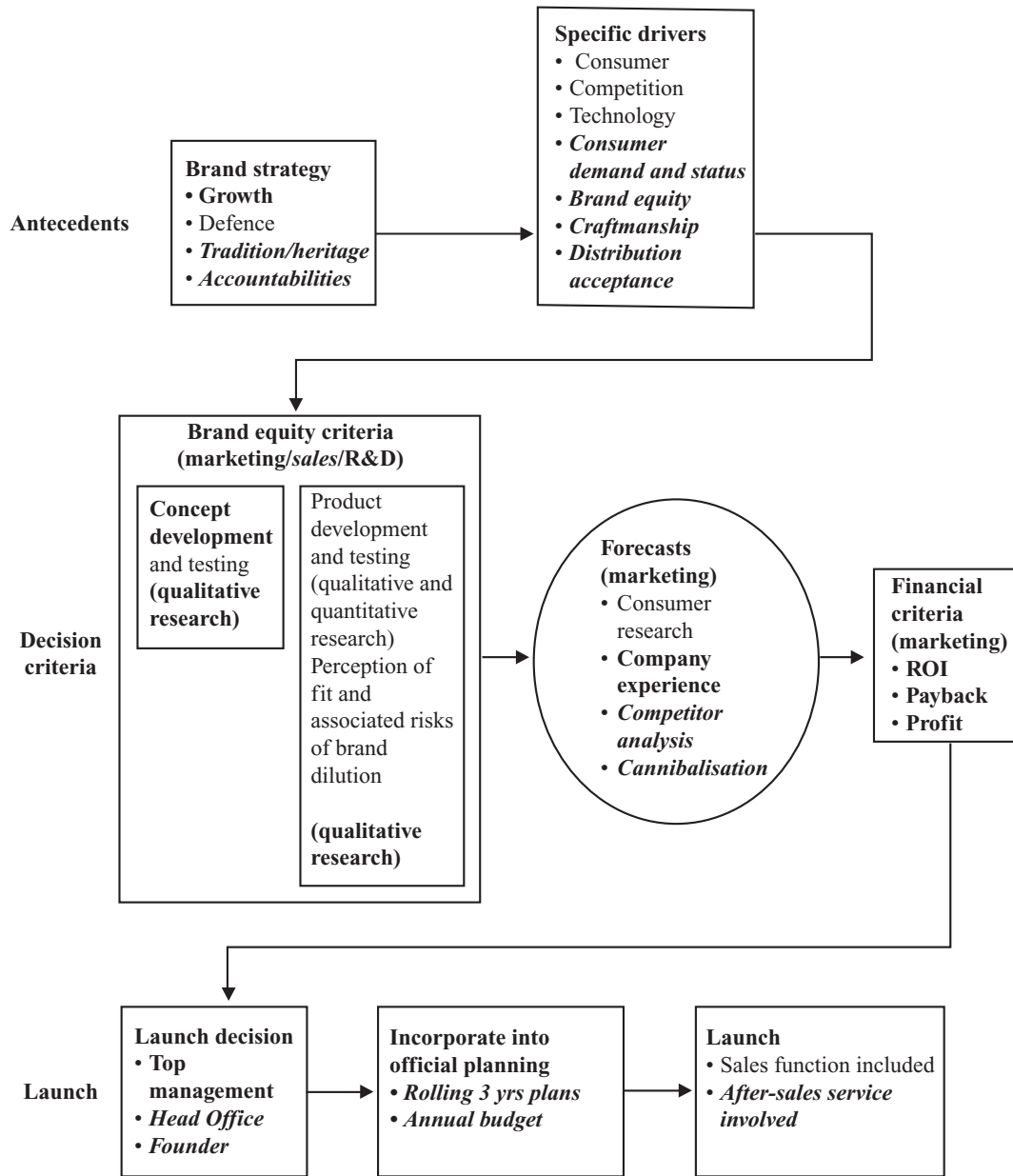
Consumer demand, competition and technology are specific drivers found to be appropriate to fmcg by A & S. For luxury goods, our research and the literature (see Table 1) show status and brand symbolism to be more important than the functional aspects of the product.

Brand equity criteria are important for the extension of both fmcg and luxury goods, but the emphasis falls upon different components. In fmcg, the focus is on concept and product development. For luxury goods, it is necessary to make these criteria more specific. Alongside brand equity criteria, additional elements must be evaluated, as arisen from our primary research and from the literature review. These elements are: consumer demand for status and symbolism, quality/craftsmanship, channel (distribution) acceptance, and fit with brand symbolic associations. Therefore, our second proposition is:

Proposition 2: *A managerial process model for the extension of luxury brands includes the drivers of consumer demand for status and symbolism, quality/craftsmanship, channel (distribution) acceptance, and fit with brand symbolic associations.*

Our primary research and the literature (e.g. Roux, 1991)

Figure 2: Extended Model



NB: **Bold** type denotes elements **common** to both fmcg and luxury brands
Italics type denotes elements *specific* to luxury brands
 Normal type denotes elements more important for fmcg than for luxury brands

also indicate that when considering decision criteria, evaluating symbolic perception of fit and associated risks of brand dilution is essential to the development of enhanced brand equity within the historic tradition of the brand. These are tested by means of qualitative research (see also Kapferer, 1998), and are managed by the marketing and sales functions. Thus, our third proposition is:

Proposition 3: *A managerial process model for the extension of luxury goods brands prioritises decision criteria focused on enhanced brand equity, consistent with the historic tradition and status of the brand.*

Luxury goods managers show a degree of resistance to forecasts and instead rely on the founder's experience and on the company tradition. However, luxury goods companies should also be concerned with competitor analysis as well as consumer demand, cannibalisation (a degree of which may be acceptable) and brand dilution, all of which may destroy the concept of luxury status (e.g. Dubois and Paternault, 1995; Kapferer, 1997 and 1998). From this evidence we derive the following:

Proposition 4: *Luxury goods companies must account for competitor analysis, company experience, consumer demand, acceptable cannibalisation and the danger of brand dilution.*

While both fmcg and luxury goods brand extension launches must have support from top management, essential decision criteria concern the allocation of financial accountabilities, budget provisions and budget targets. Hence:

Proposition 5: *Top management allocates accountabilities and success measures. Accountability must be exercised for return on investment (ROI), payback and profit.*

Finally, at the launch stage, the Head Office, acting as the guardian of the tradition, identity and status of the luxury brand (Kapferer, 1998), should be accountable for the final brand extension decision. Furthermore, the literature suggests that after-sales service is an essential element of luxury brand management (Dall'Olmo Riley and Lacroix, 2000). While the A & S model for fmcg extensions was not concerned with after-sales service, luxury brand extensions still require attention to after-sales service and connectivity of customer satisfaction/dissatisfaction to top management. Closing this feedback loop to evolution of the corporate strategy via top management will encourage a luxury goods

company to use managerial processes to preserve the tradition and heritage of the brand and of its extensions.

Proposition 6: *For luxury goods, after-sales service, customer care and feedback to top management are essential to the successful launch of extensions.*

The six propositions can be used to extend the A & S model to the context of luxury brands extensions. The extended model is presented in graphic form in Figure 2. **Common elements** to the process of extending fmcg (A & S 1997) and luxury brands are presented in **bold**. **Elements specific** to the extension of luxury brands are presented in *italics*.

7. Conclusions

This paper contributes to the understanding of the decision process followed by managers when extending their brands. In the context of developing empirical generalisations, the scope and boundaries of existing knowledge pertaining to the extension of fast moving consumer goods has been tested. We have done so by examining whether an existing model designed to portray the decision-process for extending fmcg brands (Amber and Styles, 1997) could be stretched to depict the luxury brands extension-process. As discussed in the literature review, luxury brands are considered to differ significantly from 'mass' fmcg brands in terms, for instance, of the balance between functional and symbolic characteristics, targeting and positioning. The peculiar characteristics of luxury brands are considered by researchers important enough to make a difference in their managerial decision process and extension strategy (e.g. Roux and Lorange, 1993; Czellar, 2003).

On the basis of our research and of the extant literature, we have put forward a managerial process model for the extension of luxury brands. The proposed model is an extension of the managerial process model designed by A & S (1997) for fast moving consumer goods. This research therefore constitutes a further step towards designing a generalised decision-process model that would enable managers operating in different sectors, markets and circumstances to undertake more effective and efficient brand extension decisions. A managerial process model for extension decisions might also stimulate systematic reduction of exposure to risk.

The decision-process framework of 'antecedents', 'decision criteria' and 'launch' put forward by A & S (1997) was found to be helpful in the context of planning luxury brand extensions. Furthermore, consistently with

A & S, most of the luxury goods experts we interviewed recognised the importance of corporate strategy, driven by growth. Growth appeared to be the primary driver of any form of extension. Luxury goods companies regarded growth strategy as the best form of defence, even when they were the market leaders.

Other common features in the decision-process of fmcg and of luxury goods brands included the importance of the marketing function in the development process, and concept development based on qualitative research. Forecasts based on the company experience and financial decision criteria based on projected ROI, payback and profit were also found to apply to both sectors.

However, the A & S model required some additions to reflect the different nature of luxury goods, compared to fast moving consumer goods. Emphasis on the luxury brand's heritage and tradition is the first important element of the extended model put forward in Figure 2. The second important characteristic of the revised model, when compared with the A&S model, arose from the experts' perception of the concept of brand equity. Respondents often identified brand equity as both an important driver as well as a decision criterion for the extension of luxury brands. The subject is critical for the use of a managerial process model for brand extension because enhanced brand equity appears to be the greatest influence on a company seeking extension success. Brand equity also related to the notion of 'fit', avoiding the risk of brand dilution particularly in terms of consumers' perceptions of status, symbolism and craftsmanship. Hence qualitative research was considered as the best way to ensure the consistency of any extension. Furthermore, the sales function, rather than the R & D function, emerged as a second key player (after marketing) in the development process. Finally, the literature review suggested that after-sales service has an important role to play even after the launch of a brand extension.

Investigation of the role of marketing directors and brand managers revealed the complexity, individuality and variety of managerial structures, which exist in luxury goods companies. Respondents, while sympathetic to a managerial process model, suggested the dangers of such

systems inhibiting creativity. The greater the influence of the founding entrepreneur, the greater the resistance to the use of a managerial process methodology. That resistance may be valid, but might result in a severe knowledge management crisis when the founder is removed and there is no established methodology for managing processes. The research results indicated the need for balance between these two forces – inspiration and system. Indeed, business commentators remark that while creativity is essential, no luxury brand has generated long-term profit without strong business management (The Economist, 2004). The research findings also coincide with those of King (1991), in recognising the need for systems which contribute to the building of communities and internal communications as the basis of the future business model.

However, we also found little connection between practitioners and academic sources in the development of corporate strategy. This is consistent with findings by the Chartered Institute of Marketing (2002) that many practitioners do not regard marketing theories to be relevant to their day-to-day working lives.

8. Limitations and further research

Although this research has advanced the understanding of the drivers and decision criteria followed by managers when extending their brands, it suffers from several limitations. Specifically, our research, like A & S's own study, is based on a limited number of cases in a specific industry. This research is therefore only an additional, exploratory step towards the establishment of a generalised decision process model enabling managers in different industries to enhance their decision-making concerning brand and line extensions. While we have identified commonalities and differences in the decision-process of extending fmcg and luxury brands, more research is needed in different sectors such as services, non-profit and business-to-business, to enable the construction of a truly generalised model.

Finally, researchers may want to formalise these initial, exploratory findings with the development of suitable measurement scales, similarly to what has already been done in other areas of research, such as, for instance, in the case of market orientation.

Appendix: Comparison of Previous and Current Studies

Study	Amber and Styles (1997)	Current study (2004)
Market (s)	Fast Moving Consumer Goods	Luxury Brands
Sampling Frame	Brand/marketing manager or other key executive responsible for brand extension launch	Marketing directors, brand managers and other managers involved in the marketing of luxury goods, plus 1 financial analyst.
Sample size	11 case studies	7 companies
Data collection method	Face-to-face depth interviews	Semi-structured questionnaires. 4 face-to-face, 1 postal, 2 telephone interviews
Key measures	Category/brand definition and background. Company policy/ philosophy on brand and line extensions. Description of the extension development process. Planning process.	Category/brand definition and background. Drivers of extension strategy in the luxury sector;. Decision criteria. Decision process. Use of process models.
Qualitative relationship	Antecedents (strategic and specific drivers) Decision criteria (Brand equity, forecast and financial criteria) Launch	A & S framework generally applicable, but additional specific elements for luxury brands, e.g.: tradition/ heritage; company founder; status and craftsmanship; after-sales service
Quantitative relationship	NA	NA

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The Stochastic Nature of Purchasing a State's Lottery Products

Dick Mizerski, Rohan Miller, Katherine Mizerski & Desmond Lam

Abstract

Legal State Lotteries have significant effects on those state's revenues, their residents' behaviours and their ultimate welfare. Reported Lottery product purchase appears to reflect patterns that suggest high levels of habitual behaviour. Analysis of a US State's Lottery data found that this pattern was exhibited early in a game's introduction, and was evident in three apparently different product offerings: six-number and three-number Lotto, and Instant (scratch-off) games. These findings have important implications for understanding gambling behaviour, lottery marketing and gambling regulation.

Keywords: Lotteries, Gaming, Habit, Stochastic modelling

1. Introduction

Worldwide lottery sales in 1999 were estimated to be over US\$124,185,000,000 and are arguably the largest and most popular form of legalized gambling. US lotteries account for over 35% of this total (National Gambling Impact Study Commission, 1999; Productivity Commission, 1999), with a growth rate of more than 8% per annum (Miyazaki, Brumbaugh and Sprott, 2001). The importance of lottery revenues to US state governments is clear with lotteries accounting for between the fourth and sixth largest source of state revenue for most of the 37 states with lotteries.

These impressive sales are backed by sophisticated marketing and promotion budgets that are often over \$50 million per year. State lotteries offer a range of games in addition to Lotto that usually have relatively high levels of use in a population (penetration) compared to almost all other repeat purchase consumer goods. For example, US lottery games generally have in excess of 52% of the adult population buy at least one game over the year (National Gambling Impact Study Commission, 1999). Nonetheless, there are few empirically-based reports that investigate the decision-making or behaviour of gamblers when they purchase lottery games.

2. Background

2.1 Problem and Regular Gambling

The vast majority of the published research on gambling,

including lottery product decision-making and behaviour, has taken a psychological model for its study. The research tends to focus on how cognitions, affect and the gambler's perception of the control they have in the process lead to problem gambling. Problem gambling is also known as pathological gambling (National Gambling Impact Study Commission, 1999) or compulsive gambling, and is typically defined on some clinical measures such as The Southern Oaks Gambling Screen (SOGS). These problem gamblers account for approximately 2% of gamblers, although their rates of prevalence are affected by the group collecting the data, the scale used to determine problem gambling, and the venue where the information is collected. Lottery play has been viewed as the "softest" form of gambling, with a relatively low proportion of problem gamblers associated with Lottery products (Productivity Commission, 1999; National Gambling Impact Study, 1999).

2.2 Cognitive Based Gambling Models

The influential role of cognitive processes has been well documented in the gambling literature. For example, Langer (1975) used an experimental method to show that gamblers display an "illusion of control" and believe in luck when gambling. Ladouceur and Walker (1996) proposed that gamblers have two types of cognitive bias. They believe they can influence the outcome of their gambling, and that they can often predict it.

A considerable body of literature has explored the

application of expectancy-value, the Theory of Reasoned Action and other attitude model variants as ways to explain gambling behaviour. For example, Miyazaki et al. (1998) suggest that general attitudes toward gambling are likely to influence attitudes and behaviours related to Lotto play.

Landman and Petty (2000) proposed a theory suggesting that counterfactual thinking ("the process of imaging what might have been ...") plays a role in repeat purchase of lottery games, particularly where they most often lose:

"Some of those that buy a lottery ticket and lose may be hooked into continuing to purchase through the desire to escape the adverse reality by engaging in useful counterfactual thoughts of winning" (p.303).

Heavy buyers of lottery games are also suggested to fantasize more and thus produce more counterfactual thoughts. Unfortunately, no empirical tests of these cognitions and their effects were provided.

Forrest, Simmons and Chesters (2002) tested an economic model with results that would counter the assumptions about counterfactual thought. They cite evidence in derived price elasticities that would support the argument that Lotto players do act rationally to make use of the best information available when they purchase Lotto games. Scott and Gullay (1995) provide additional economic modeling support for the existence of rational consumers in their analyses of Lotto data from the US states of Kentucky, Ohio and Massachusetts.

For both problem and regular gamblers, the most popular present paradigm for studying gambling behaviour is Ajzen and Fishbein's 1980 Theory of Reasoned Action, and its present successor, Ajzen's (1991) Theory of Planned Behaviour (Rogers, 1998). Application of these cognitive-based models typically view the core beliefs of all gamblers as flawed, and continued gambling behaviour as being maintained by irrational thinking (Walker, 1993), "misconceptions" about the random nature of gambling on Lottery products, and gamblers mistaken beliefs they can control the outcome of games like Lotto (Miyazaki et al., 2001).

Although cognitive based theories and measures have explained some variance in primarily problem gambling behaviour, they have had little support for their efficacy in explaining or predicting gambling behaviour in a market. For example, research investigating whether marketing activities were associated with developing favourable beliefs about, and affect toward Lottery

games, found only ethnic background (Mizerski et al., 1998) explained reported Lotto game purchase. Daswani (2003) found that no significant attitudinal responses were associated with the purchase of instant Lottery games. Heiens (1993) analysed the State of Colorado's Lotto sales in the sixth year after its introduction. He looked for the relationship of marketing activities like media advertising, jackpot size, publicity and point of purchase with Lotto game sales. The Lotto jackpot size explained almost all of the variance, with publicity the only other significant (but small) effect on sales. DeBoer (1990) found similar effects of jackpot size in New York State Lotto sales. Population growth has been the only other factor that has shown to be an effect in gambling purchase for Lotto products (Gullay and Scott, 1995; Mason, Steagall and Fabitius, 1998)

2.3 The Effect of Past Behaviour

Several researchers have argued that past behaviour should be included in testing the applicability of Reasoned and Planned Action models for frequent decisions. Ouellette and Wood (1998) used a meta-analysis across a range of behaviours that are done frequently (e.g., brushing teeth, seatbelt use) and infrequently (donating blood). They found that past behaviour was a significantly stronger direct effect and more predictive than cognitive factors when the behaviours were undertaken frequently (up to every two weeks). The frequent behaviours usually occurred in relatively stable contexts, so the effect of past behaviour was termed habit by the authors. Norman, Conner and Bell (2000) found frequent past behaviour a better predictor, than cognitive factors, of future health behaviours like physical exercise.

Oh and Hsu (2001) tested the Theories of Reasoned / Planned Action against past gambling behaviour in predicting future gambling. While many of the cognitive constructs had a significant influence on future gambling behaviour, the direct path of past gambling behaviour to future gambling was almost twice the size effect as the direct path behavioural intention to future behaviour. They found no significant direct effect of attitude to future behaviour. Although Oh and Hsu found that past gambling behaviour was a better predictor, there has been little research into the form that past gambling takes in this process.

2.4 A Stochastic Explanation

One possible reason for finding little effect of promotion on sales (Heiens, 1993; Mizerski et al., 1998) is that most

State lotteries have reached the maturity stage of their Product Life Cycle (PLC) and there is little beyond large jackpots that affect these rather stable product markets. The "jackpot effect" also appears to have no influence on sales following the winning (lag effect) of a large Lotto jackpot (Heiens, 1993). In the few areas where lotteries compete, such as the border areas of adjoining states, these markets quickly stabilize in terms of brand share for competing lottery products. Because lottery games are a stable and mature product, usually rely on retailers, require shelf space and are frequently purchased, they exhibit the salient factors that identify a fast moving consumer package good. If they act in that manner, the purchase of these lottery games may reflect an underlying stochastic pattern often observed in many consumer and industrial markets (Ehrenberg, 1972; East, 1997). If lottery products reflect an NBD pattern, that could have an impact on industry and public policy marketing strategies, and the efficacy of those strategies. For example, warnings about gambling or information odds would appear to have little impact on future gambling with strong habitual patterns of play (Mizerski and Mizerski, 2001).

The general theory associated with the recognition and application of patterns of behaviour is often referred to as NBD-type models or Stochastic Preference (Massy, Montgomery and Morrison, 1970; Morrison and Schmittlein, 1988; Wagner and Taudes, 1986). These models are often very accurate in predicting usage, future purchase incidence and brand choice based on only behaviour or reported behaviour over a period of time. Because no attitudinal or marketing variables (e.g., advertising expenditures) are input to the models, explanations for the patterns are not addressed.

2.5 The NBD Model

The negative binomial distribution (NBD) is perhaps the most widely reported of the stochastic models. Initially discussed by Greenwood and Yule (1920) in terms of the incidence of reoccurring diseases and accidents, it was first introduced into the marketing literature by Ehrenberg in 1959. Typically, the NBD model has been applied to study purchase incidence for the total product category or for a single brand. A derivation of the NBD, the Dirichlet, is used to predict brand shares in a product category. The outcome of applying the NBD to data about past behaviour are estimates of future penetration of population use, and estimates of usage by groups (e.g., nonusers, heavy and light users) over time (see East, 1997). This model is often quite accurate (c.f., Morrison

and Schmittlein, 1988), and can be more accurate than using cognitive data (Ehrenberg, Goodhardt and Barwise, 1990) to explain and predict future purchase behaviour. Given the characteristics of Lottery product purchase, it is expected that there should be no difference between the proportion of buyers of Lottery games and their expected purchase derived from the NBD model.

3. Methodology

3.1 Sample

The data came from a quarterly nine-wave series of phone surveys conducted by a commercial market research firm for the Florida State Lottery Commission. The surveys collected self-reported demographics, psychographics, attitudinal and purchase information from quota-based samples of approximately $n=800$ each (total $n=7401$) Florida residents. The samples were developed to represent the demographic profile of the state resident population, and used different respondents and often different questions on each quarterly survey. Therefore, the survey data provided cross-sectional data over time.

3.2 Measures

Interviewers asked the respondents in all nine surveys if they had played Lotto, Instant and/or Cash-3 in the last two weeks. They also asked how many games of each the respondent had purchased over those 14 days. Respondents that provided a yes or no about their play in the previous two weeks, and also reported the number of games they purchased, were used to determine the 'penetration' and 'purchase frequency' (Ehrenberg, 1972) of each Lottery game. The use of number of games rather than frequency of purchase does not invalidate the use of the NBD (Ehrenberg, 1972; Morrison and Schmittlein, 1988).

3.3 The State of Florida Lottery Products

Lotteries can be defined as games of chance in which a large number of players produce a fund from which prizes, whose worth greatly surpasses the value of individual contributions, are distributed by lot (Weiss and Weiss, 1966). Each State Lottery typically has a number of different lottery brands in their product portfolio that differ on a number of characteristics.

The State of Florida Lottery has been one of the most successful of the sellers of lottery games in the United States (Mason, et al., 1997). It began by selling tickets for its first Instant (scratch-off) game, MILLIONAIRE, on January 12, 1988. First week Instant game sales

totaled approximately \$95 million and exceeded the previous national record (set by the California Lottery in 1985) by approximately \$15 million. COOL MILLION, the Florida Lottery's second Instant game, was introduced on January 28 of that same year, beginning a cycle of successful Florida lottery games. On January 29, 1989, 17 days after sales began, the Florida Lottery paid back over \$15 million to the General Revenue Fund for the Lottery's start-up loan plus interest.

In April 1988, the Florida Lottery introduced Lotto and Cash-3 products through a network of 3,100 retailers. By June 1988, Lotto and Cash-3 generated \$52 million of sales in just one month. The Florida Lottery added other game products over the subsequent years.

3.3.1 Instant Lottery Tickets

'Instant' lotteries are widely considered easier to purchase than all other forms of gambling in the lottery product portfolio, and are commonly referred to as "paper slot

machines" (Abt, Smith and Christiansen,1985). In 1999, Instant game sales from the Florida Lottery exceeded \$663 million and represented around 25% of the Florida Lottery's revenue. As simple games of chance, 'Instant' lotteries offer the immediate winning of prizes with better odds than other Lottery games. Perhaps as important in driving instant sales is the opportunity for winners to reinvest immediately (Triplett, 1994). Unlike other lottery products that have their numbers periodically drawn and announced (e.g., Florida's Lotto was initially drawn each Saturday), Instant tickets provide consumers the opportunity of an immediate reward after scratching off the numbers (Triplett, 1994).

3.3.2 Cash-3

Cash-3 is played by choosing any three-digit number from 000 through 999, and matching those with three numbers drawn by the Lottery. There is the potential to win prizes up to \$500, depending on the type of play purchased and the amount wagered. As such, it is a form

Figure 1: Penetration of Lottery Games Over Nine Quarterly Surveys
(Penetration = reported purchase in last 14 days)

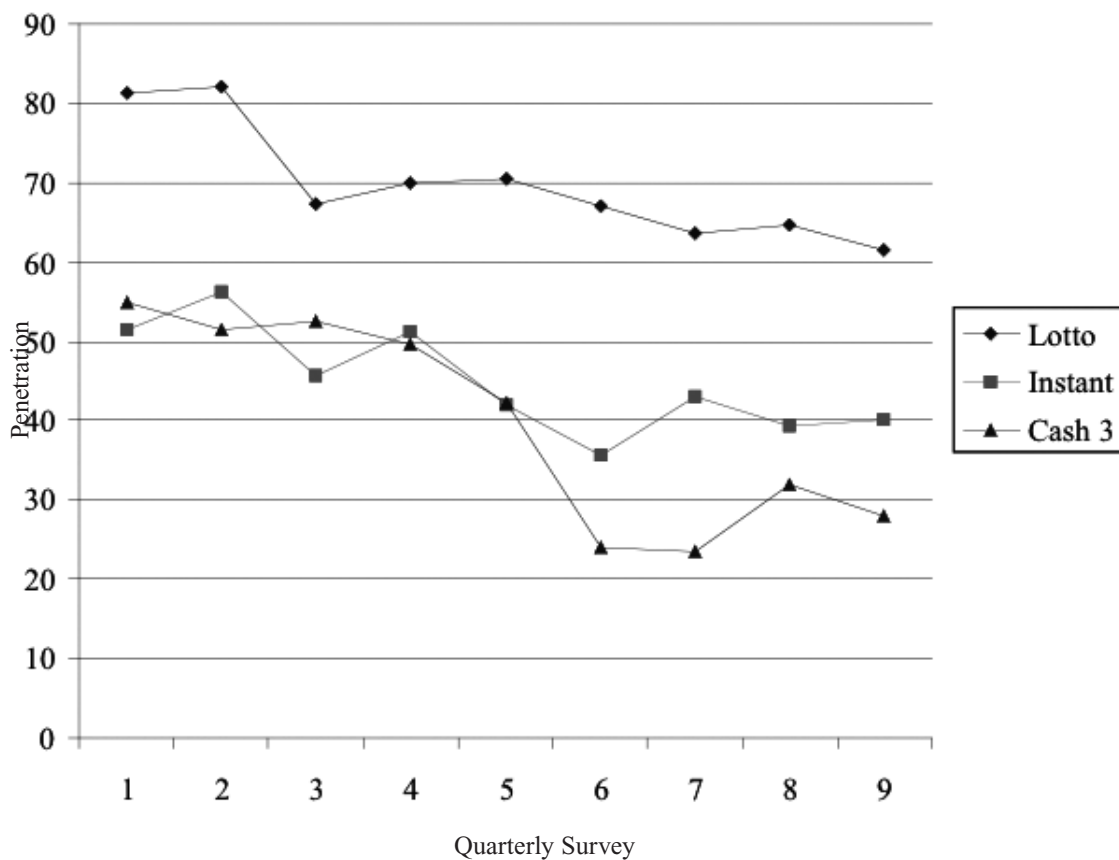
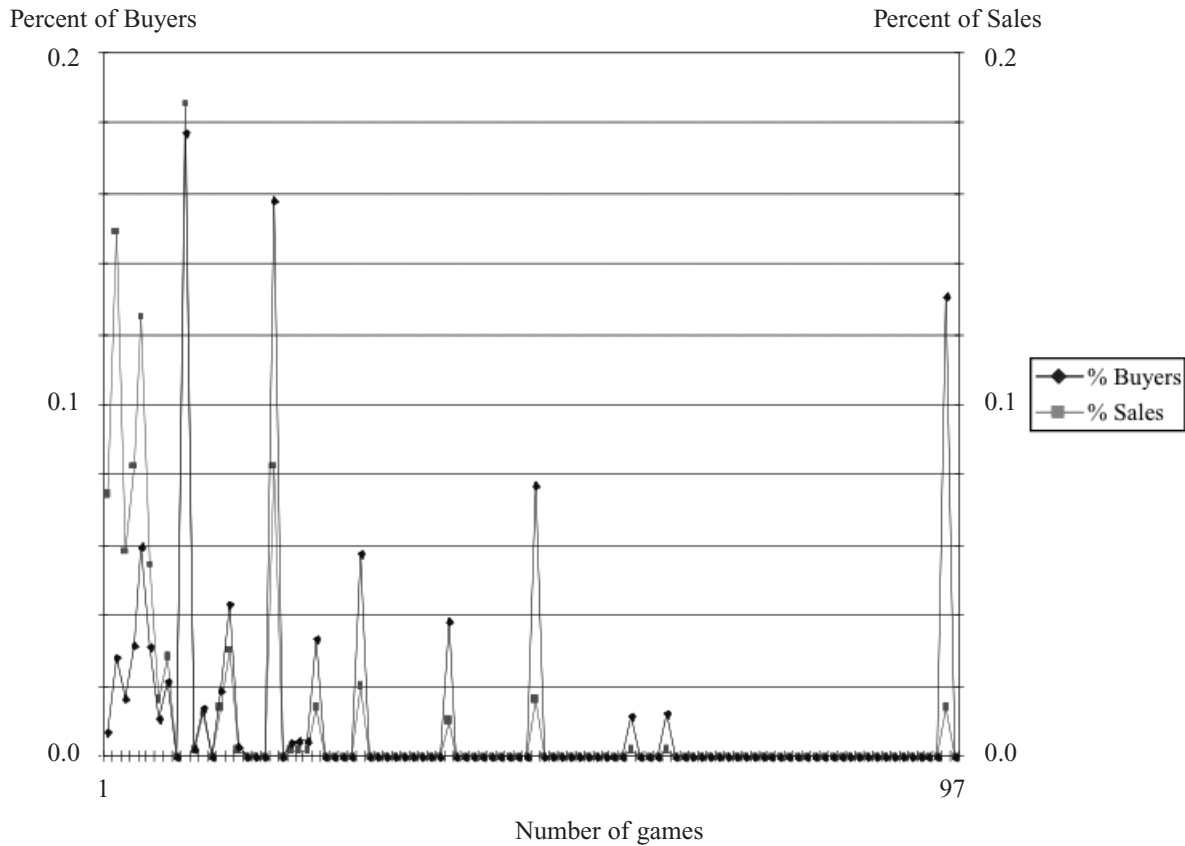


Figure 2: Number of Lotto Games Purchased and Their Proportion of Total Sales



of lotto, but the winning player may immediately collect most levels of winning from the lottery retailer where they purchased the game.

3.3.3 Lotto

Lotto, or “Big” Lotto, is generally the most popular Lottery game, in percent of the population who play (penetration) and in State Lottery sales. Lotto uses the game players’ choice, or a random “machine pick” of 6 numbers, to determine a winner. Variations of the Lotto game tend to involve 60-80% of a state’s population (Roy Morgan Research, 2001; Productivity Commission, 1999).

4. Results

Figure 1 provides a plot of the reported penetration of Lotto, Instant and Cash-3 play over nine surveys of Florida state residents. The first survey began in June 1988, approximately six months from the start of Instant game sales. For all three games, the penetration of purchase in the population had a downward trend during the first 27 months covered by the quarterly surveys.

This trend has largely continued. The Cash-3 game tended to lose share to the Lotto and Instant games from the sixth survey.

Figure 2 is an example of the sample’s reported Lotto purchases in wave four, and is similar to those for the other waves and the other products (Cash 3 and Instant) over those waves. Note that a disproportionate number of respondents tend to report patterns of purchase in multiples of games (10 for this game) over the previous two-week period. This is quite common in self-reports of gambling product purchase. The NBD phenomenon, where a large number of purchasers buy a small number of the product, and a small number of buyers account for most of the sales, appears to be reflected in the data.

4.1 Penetration and Number of Games Purchased

Table 1 provides the data for determining the penetration and ‘frequency’ of the Lotto games for each survey (in this study frequency of purchase is represented by ‘number of tickets purchased’). As an example of the information, note the characteristics of survey one. That

initial survey was the largest of all the surveys with n=1001 final respondents. Of the 1001 individuals in the total sample, 847 provided: (1) a yes or no response to the question that asked if they had purchased a Lotto game in the last 14 days, and (2) reported the number of games they had purchased over that two-week period. Therefore, 688 of those 847 respondents who had purchased Lotto represented 81% of the sample of relevant respondents. The average number of games purchased in the relevant population (n=847) was 13 (see East, 1997 for a discussion of NBD application).

Of the 688 purchasers in survey one, 293 respondents reported buying from one to five games in the last 14 days. These will be labeled the 'light buyers' based on previous research (East, 1997; Mizerski and Mizerski, 2001). The 'heavy buyers' are those who purchase six or more Lotto games over the 14-day period. Six of the nine waves had a median purchase of six games so this break is reasonable. Other partitions of the data (e.g., 1 to 7 and 8+) did not change the findings. Non-purchasers are the 159 respondents who reported not buying a Lotto game over the previous two weeks. A similar procedure was used to determine the penetration and frequency of Cash-3 and Instant game purchases (not displayed).

4.2 Observed vs NBD Expected

For purposes of further explanation, the tests for significant differences between the observed (reported)

purchases and the NBD predicted proportions of buyers and of their proportion of sales are shown in Table 2. The NBD statistic requires three inputs: penetration of use in the potential market, the average frequency of purchase (or number of items/games) by those who purchased, and the time period of behaviour. Although the predicted and actual are not identical, the distributions are similar in this first survey and all the following eight surveys. Using a 3 (user groups) x 2 (reported vs expected) χ^2 statistic on each survey's data, none of the comparisons had statistically significant ($p > .05$) differences between the distribution of observed and NBD predicted proportions of purchases in the two Lotto user and one non-user groups. Figure 3 is an example of the fit of the NBD to the data, and shows the reported and NBD expected profile of purchases for each number of Lotto games bought in wave four using Wright's NBD software (1999). Even with the tendency of the sample to report ten based multiples of games, the NBD provides a very good statistical explanation ($r = .68, p < .001$) of the samples' reported Lotto game play. The stochastic pattern appeared within 24 weeks after the introduction of the game of Lotto. This finding provides support for a strong stochastic element in Lotto play.

4.3 Distribution of Volume by User Group

The percent of games accounted for by the light (one to five) and heavy (six plus) buyers, derived from the NBD

Table 1: Nine Sample Profiles and Lotto Purchase Last 14 Days

Characteristic	Survey Number								
	1	2	3	4	5	6	7	8	9
Total sample	1001	800	800	800	800	800	800	800	800
14 day purchase data ¹	847	703	700	710	746	676	638	637	610
No	159	126	228	213	219	223	232	225	234
Yes	688	577	472	497	527	453	406	412	376
(% Penetration)	81%	82%	67%	70%	71%	67%	64%	65%	62%
Light ²	293	232	208	243	223	206	179	201	182
Heavy ³	395	345	264	254	304	247	227	211	194
Average games purchased	13	14	13	10	12	10	11	11	10

¹ If purchased, gave number of games

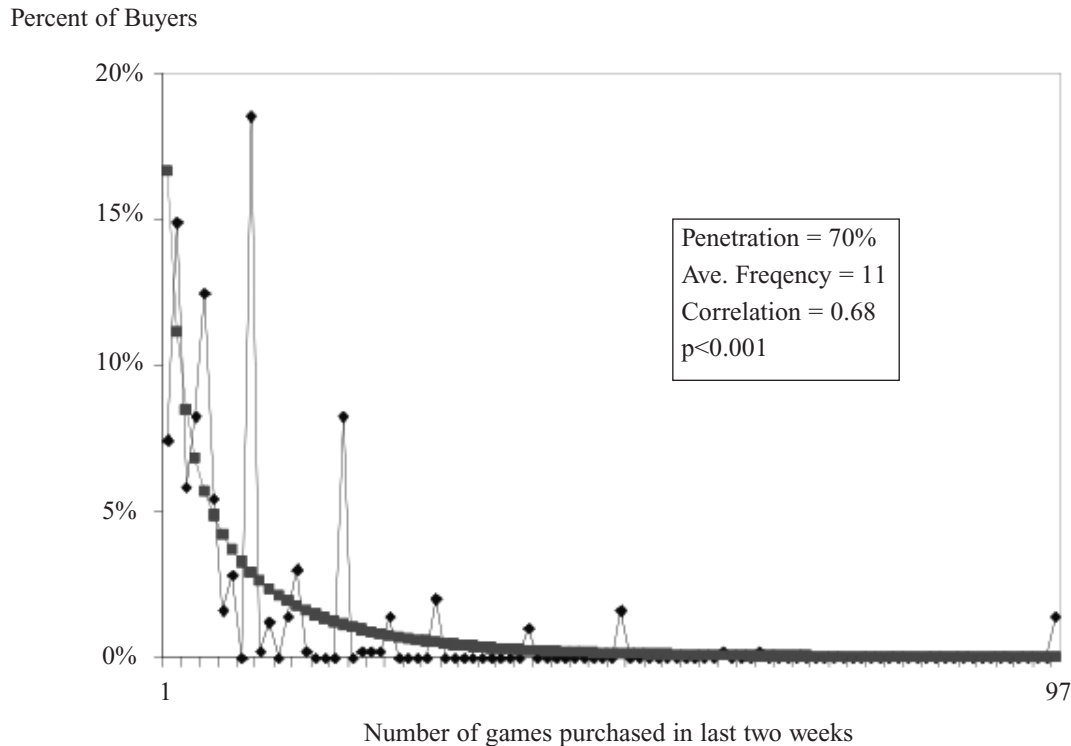
² Light = 1 to 5 games in last 14 days

³ Heavy = 6+ games in last 14 days

Table 2: Observed to NBD Expected Proportions of Lotto Buyers and Games Played

	Survey 1		Survey 2		Survey 3	
	Observed	<i>NBD</i> <i>Expected</i>	Observed	<i>NBD</i> <i>Expected</i>	Observed	<i>NBD</i> <i>Expected</i>
Proportion of Buyers						
Non	19	19	18	18	33	33
Light	35	32	33	32	30	30
Heavy	47	49	49	50	38	37
χ^2	0.33		0.05		0.02	
df	2		2		2	
p	<.85		<.98		<.99	
Proportion of Games						
Light	10	8	9	7	11	9
Heavy	90	92	91	93	89	91
χ^2	0.58		0.67		0.72	
df	1		1		1	
p	<.45		<.41		<.40	
	Survey 4		Survey 5		Survey 6	
	Observed	<i>NBD</i> <i>Expected</i>	Observed	<i>NBD</i> <i>Expected</i>	Observed	<i>NBD</i> <i>Expected</i>
Proportion of Buyers						
Non	30	30	29	29	33	33
Light	34	34	30	32	31	35
Heavy	36	36	41	39	37	32
χ^2	0.003		0.22		1.23	
df	2		2		2	
p	<.99		<.89		<.54	
Proportion of Games						
Light	14	11	11	9	15	13
Heavy	86	89	89	91	85	87
χ^2	1.17		0.40		0.51	
df	1		1		1	
p	<.28		<.53		<.47	
	Survey 7		Survey 8		Survey 9	
	Observed	<i>NBD</i> <i>Expected</i>	Observed	<i>NBD</i> <i>Expected</i>	Observed	<i>NBD</i> <i>Expected</i>
Proportion of Buyers						
Non	36	36	35	35	38	38
Light	28	32	32	33	30	33
Heavy	36	32	33	32	32	29
χ^2	0.89		0.11		0.58	
df	2		2		2	
p	<.64		<.95		<.75	
Proportion of Games						
Light	14	11	16	12	17	13
Heavy	86	89	85	88	83	87
χ^2	0.64		1.18		1.31	
df	1		1		1	
p	<.42		<.28		<.25	

Figure 3: Wave Four NBD Expected and Reported Lotto Game Purchase



and actual data, are also presented in Table 2. Looking again at survey one, the observed data shows that the light buyers account for 10% of sales while the heavy buyers were responsible for 90% of the sales. Non-users obviously account for no purchase so they are not shown.

The NBD statistic predicted that light buyers would purchase 8% of the game, while heavy buyers would account for 92% of the sales. The actual and NBD predicted figures were not significantly different from one another in any of the nine waves of surveys. The closeness of fit for the NBD for both the proportion of buyers and the proportion of games by user group, for all nine surveys (over 27 months) supports the second view that the NBD appears to provide a close approximation for predicting the distribution of Lotto game purchase.

It may help to put the importance of heavy use in Lotto in a form often cited in marketing discussions, the “80-20 rule of thumb”. This “rule” (see Anschutz, 1997) suggests that 80% of a brand’s sales are bought by 20% of its buyers. While the veracity of this guideline is suspect given that the relationship is usually based on the brand’s penetration and frequency in a population, it may help to know that 20% of the buyers accounted for about

57% of the sales of Lotto games. This relationship of the heavy 20% to the sales they generate was quite consistent ($r=.82$) over the nine waves of surveys.

Table 3 provides the same data for the Instant and Cash-3 games except that the specifics of the χ^2 results are not shown to conserve space. As with the Lotto games, there were no significant differences ($p>.05$) between the observed and the NBD expected proportions of buyers that comprised the Light and Heavy buying groups for either game, for any of the nine surveys over the 27 months of data collection. Also, there were no significant differences ($p>.05$) in the proportion of game sales accounted for by Heavy and Light buyers in the observed, as compared to the NBD expected figures over the same surveys. Figures 4 (Cash 3) and 5 (Instant) show the correlation between the NBD expected and reported game play by number of games purchased for one wave (Instant, $r=.83$, $p<.001$; Cash-3, $r=.89$, $p<.001$). These results for these two other games provide additional support for the generalized stochastic explanation of Lottery product game play.

It may be argued that the patterns of purchasing the Instant and Cash-3 lottery games are simply a by-product

Table 3: Observed to NBD Expected Proportions of Instant and Cash-3 Users and Games Played

		Survey Number							
<i>INSTANT</i>		1		2		3		4	
Proportion of Users		Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected
Non		49	49	44	44	54	56	49	49
Light 1-5		30	28	33	30	25	23	32	30
Heavy 6+		21	24	24	26	21	19	19	21
Proportion of Games									
Light 1-5		17	13	18	14	22	15	23	18
Heavy 6+		83	87	82	86	78	85	77	82
		5		6		7		8	
Proportion of Users		Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected
Non		58	58	64	64	57	57	61	61
Light 1-5		27	29	20	21	23	24	21	22
Heavy 6+		15	13	16	15	20	19	18	17
Proportion of Games									
Light 1-5		27	29	21	16	19	14	20	14
Heavy 6+		73	71	79	84	81	86	80	86
<i>CASH-3</i>		1		2		3		4	
Proportion of Users		Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected
Non		45	46	49	49	48	49	50	51
Light 1-5		34	31	30	25	34	28	32	26
Heavy 6+		21	22	22	27	19	23	18	23
Proportion of Games									
Light 1-5		25	17	13	8	20	13	17	12
Heavy 6+		75	83	84	92	80	87	83	88
		5		6		7		8	
Proportion of Users		Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected
Non		58	58	76	77	77	74	68	68
Light 1-5		24	22	10	12	11	14	16	17
Heavy 6+		18	20	14	11	12	12	16	15
Proportion of Games									
Light 1-5		14	11	10	8	11	9	14	11
Heavy 6+		86	89	90	92	89	91	86	89

of Lotto purchase. If most Lotto purchasers also purchase the Instant and Cash-3 games, then Lotto could be largely determining the NBD pattern evident in the purchase data for the other two games. Figure 6 provides plots of the proportion of reported purchasers who also purchased either Instant or Cash-3 games. The Instant game has a higher level of cross-play than the Cash-3 game, but both games show this relationship is going

down over the nine surveys. Although cross-play is significant, the influence of the Lotto pattern of play is not a factor in over 50% of most purchases.

4.4 Relationship between Penetration and Frequency

The gradual decrease in penetration of the Florida population purchasing the three Lotto games over the 27 months of the surveys (Figures 2 and 3) revealed quite

Figure 4: Wave Four NBD Expected and Reported Cash 3 Game Purchase

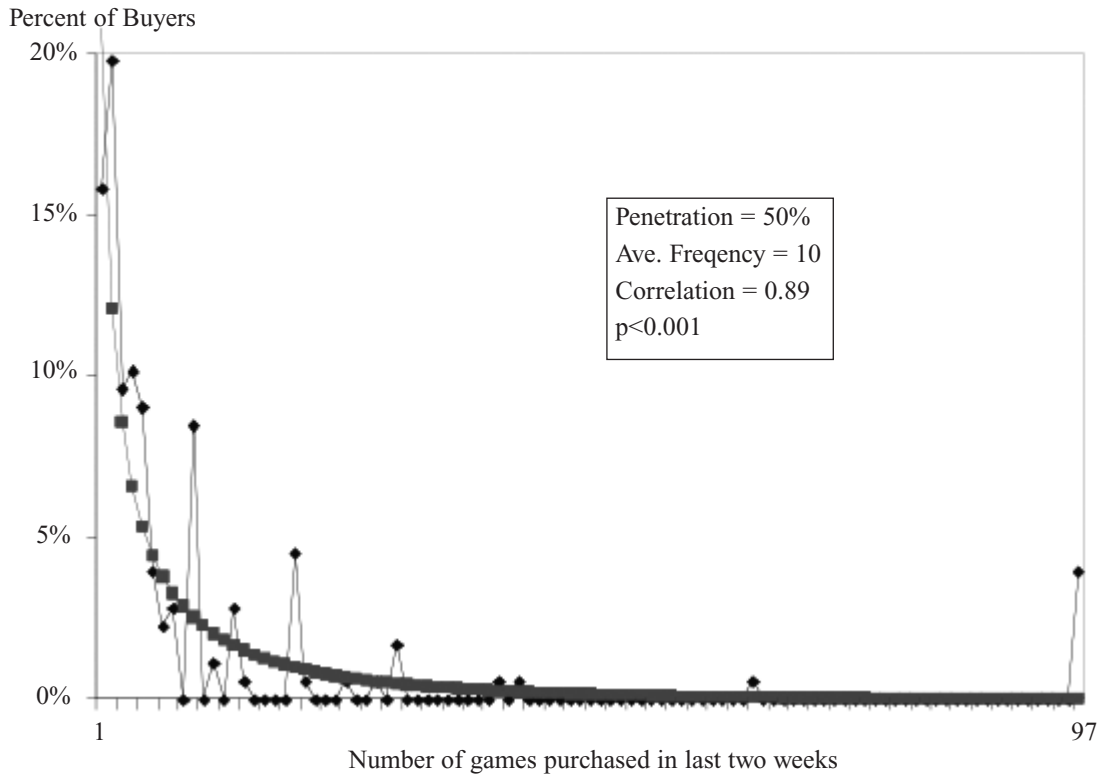


Figure 5: Wave Four NBD Expected and Reported Instant Game Purchase

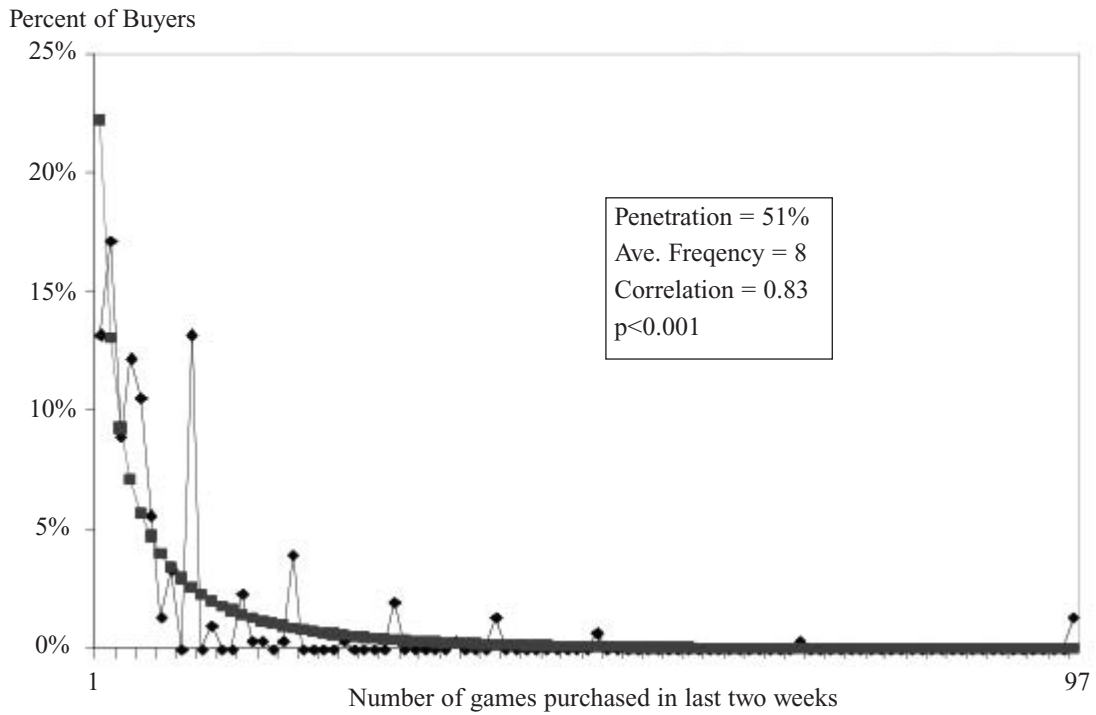
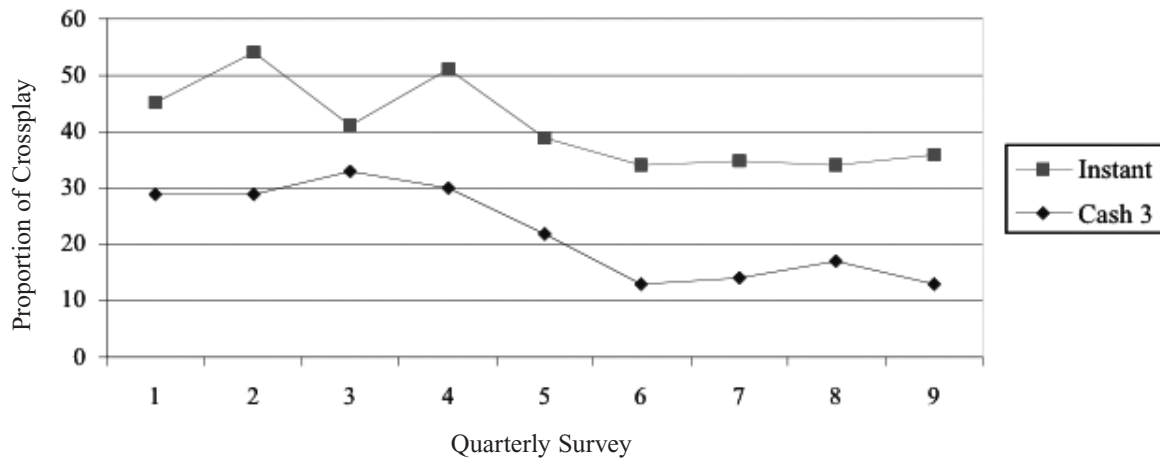


Figure 6: Cash 3 and Instant Game Crossplay with Lotto



different relationships with the average frequency of those purchasing each game form. Lotto went from the initial 81% penetration and an average of 13 games purchased in the last 14 days, to 62% penetration and 10 games in the last survey. The Lotto penetration and average frequency of buyers were highly associated at $r=.81$. The instant game went from a high of 56% penetration and a 10 game average purchase in the last two weeks to 39% penetration and a nine game average purchase. The penetration and frequency of instant games had a weak association of $r=.30$. For both Lotto and to some extent Instant games, fewer buyers were buying fewer games over time.

Cash-3 penetration went from 54% of the population and an average of eight games purchased over the last two weeks, to 27% penetration and an average of 13 games purchased over the last 14 days. The correlation between the two measures was $r=-.73$, a strong negative relationship. As Cash-3 participation / penetration decreased, those that stayed increased their average frequency of purchase by over 60%. This would appear to run counter to the generalization that penetration and frequency are positively related (Ehrenberg et al., 1990). However, this generalisation refers to brands in a category. The prevalence of negative associations between penetration and frequency in other categories, brands or product forms is unclear as little has been reported. That this negative association occurs with a lottery game may be potentially dangerous and will be discussed later.

5. Summary and Conclusions

The results from an application of the NBD statistic to

reported lottery product game purchase supports an expected generalized stochastic pattern of buying the games. Lotto, Cash-3 and Instant game purchases reflected this pattern early in their product life cycle, and failed to deviate from this pattern over the next two and one quarter years of sales. This consistent pattern reflects what some term habit (East, 1997; Ouellette and Wood, 1998) and what would be expected to be an environment of weaker cognitive-based decision-making and purchase prediction. However, a cognitive-based alternative was not tested in this study, so future research needs to test the relationship between planned behaviour and habituation in gambling (Ajzen, 2002).

The observed and expected distributions of lottery game users and usage tested were based on self-reported purchase over the last 14 days. However, the influence of repeated purchase may be projected over a longer period of 365 days. Table 4 shows the predicted minimum and maximum penetration and average number of games purchased by players when extrapolated to one year using NBD predictions (see East, 1997). These types of NBD projections are quite accurate when markets tend to be stable (Morrison and Schmittlein, 1988). The figures differ by survey so the survey number is also provided.

These projections suggest very high penetration rates often unmatched by any other consumer repeat purchase package good including toilet paper (Roy Morgan, 2001; Simmons, 1999). In addition, the average number of games purchased by those who bought that year runs between 100 and 200, depending on the game. This high frequency of purchase behaviour, in turn, would be expected to reinforce the consistency of the habitual response.

Table 4: Predicted Game Penetration and Average Number of Games Over One Year

Game	Penetration of Population				Average Number of Games			
	Minimum		Maximum		Minimum		Maximum	
	Percent	Survey	Percent	Survey	Times	Survey	Times	Survey
Lotto	86	9	97	1	176	9	249	5
Cash 3	39	6	77	1	168	1	225	6
Instant	60	6	82	2	80	5	172	2

Before the implications of these findings are discussed, some limitations of the methodology should be noted. The samples were collected to represent the residents of the State of Florida so extrapolations to other populations and other time periods must be made with caution. Product, marketing and cultural differences in a market may exert strong effects on the choice and frequency of play (see Mizerski et al., 1998).

The validity of predicted game play over a long period like a year with the NBD has not been tested. Moreover, the effect of jackpot size for the Lotto has been reported as strong in the short run (Heiens, 1993), but it is unclear if the surveys used to collect the data were able to capture this effect. Finally, the purchase of lottery games was based on respondent retrospective reports of their behaviour. These reports are known to have relatively consistent biases, where light users tend to overestimate, and heavy users underestimate their purchases (Lee, Hu and Toh, 2000).

6. Implications

For lottery marketers, the implications of stochastic preference primarily influence the relative effect of the marketing mix through the gambling product's Product Life Cycle. Given the high level of habit exhibited in game purchase for the three forms studied, the ability of advertising and promotion to affect the aggregate size of the market is questionable (Barnard and Ehrenberg, 1997) beyond the early stages of the PLC (Borden, 1942). Distribution appears to be the most important of the mix factors (National Gambling Impact Study Commission, 1999; Productivity Commission, 1999), perhaps even more important than jackpot size.

A strong habit-driven consumer franchise presents some public policy challenges. To the extent that cognitive-based information processing is limited, the role of warning information about addiction and its manifested

problems would appear to be of little influence. Efforts to address buyer misconceptions about the random nature of the game would also be compromised by habitual buying. Where distribution may be controlled in land-based operations, cyber-play with online betting has opened up a vast number of new options for the potential consumer. This form of "distribution" is being met by moratoriums and promised bans, but it is not clear it can be controlled.

The area of stochastic models may offer policy makers more appropriate tools to judge when game play deviates from the "normal" purchase patterns expected. Using the NBD as a "baseline" measure needs more validation, but it may offer a more accurate measure than the present instruments, when judging an acceptable level of compulsive play in a population (Mizerski et al., 2000). The strong negative association between penetration and frequency of purchasing the Cash-3 game ($r=-.73$) suggests a shrinking market that is increasing their average purchase. Could this be a sign of compulsive and possibly dangerous buying behaviour? Future research also needs to test for the applicability of a stochastic perspective for other gambling products as its potential contribution to the study of gambling and other habit-driven marketing behaviour could be significant.

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Brand and Advertising Awareness: A Replication and Extension of a Known Empirical Generalisation

Jenni Romaniuk, Byron Sharp, Samantha Paech & Carl Driesener

Abstract

From analysis of over 39 categories Laurent, Kapferer and Roussel (1995) found that top of mind, spontaneous and aided brand awareness measures have the same underlying structure. The difference in scores appears due to the difficulty of the measure. We have successfully replicated this work and extended it to similarly structured advertising awareness measures. However, additional analyses then revealed that while there is a good category level fit, modelling a single brand over time is less successful. Indeed, Laurent et al.'s excellent cross-sectional fit appears due to substantially different levels of salience between larger and smaller brands. This suggests that while the different types of awareness tend to vary with a brand's overall level of salience, this does not mean that the different measures simply reflect a single underlying construct. Further, our finding challenges the previous authors' claim that knowing the score for one measure allows the estimation of the score for another measure. Instead, the model provides useful norms against which to compare actual scores.

Keywords: Brand awareness, Advertising awareness, Empirical generalisation

1. Introduction

Awareness measures are used extensively in research as a gauge of brand performance and marketing effectiveness. The most commonly used are those relating to brand and advertising awareness. Brand awareness is considered one of the key pillars of a brand's consumer-based brand equity (Aaker, 1991). Keller and Davey (2001) describe building brand awareness as the way of ensuring potential customers know the categories in which the brand competes. They see brand awareness as the foundation of their equity model, as all other brand objectives then build on it. Likewise, Rossiter and Percy (1991) claim that brand awareness is the essential first step in building a brand. Yet while many authors support the association between brand awareness and buyer behaviour (e.g., Assael and Day, 1968; Hoyer, 1984; Nedungadi, 1990; Macdonald and Sharp, 2000) they have disagreed over the specific measures that should be used.

There are three widely used measures of brand awareness: top of mind, spontaneous and aided. Top of mind, or the first brand recalled in response to the

product category cue, was one of the first brand awareness measures to receive attention, emerging as one of the best 'predictors' of choice in Axelrod's (1968) longitudinal study comparing different measures. Spontaneous awareness (i.e., unprompted recall of the brand name) and aided awareness (i.e., recognition of the brand name when prompted) are the other two commonly used measures.

Some researchers have argued that particular measures are more appropriate in different situations. For example, Rossiter and Percy (1991) argued that when options are present at the time of purchase (e.g., brands on a supermarket shelf) then aided awareness is relevant, when they are not, spontaneous awareness should be used. Likewise Lynch and Srull (1982) distinguish between memory based, stimulus based and mixed (both) situations where the ability to spontaneously recall or recognise something have differing importance. Dickson and Sawyer (1990) suggested top of mind awareness is more relevant when a choice between competing brands is made quickly; they argued this measure should be applied to low involvement impulse purchases such as most products in supermarket settings (see also Franzen, 1999).

However, despite these convincing theoretical distinctions between the different brand awareness measures, Laurent, Kapferer and Roussel (1995) reported empirical evidence that the three different brand awareness measures tap the same underlying construct, which they refer to as 'salience'. We infer 'salience' to mean the propensity of the brand to come to mind in purchase situations (Romaniuk and Sharp, 2004). Salience measures that vary in their capacity to elicit the brand name might yield different, yet highly correlated results. This is what Laurent et al.'s analysis seemed to show, i.e. that different brand awareness measures are systematically related, making the debate about the appropriateness of specific measures redundant. If all three awareness measures tap into the same underlying construct then building brand awareness is not a choice of spontaneous versus aided recall, but requires an overall improvement in the brand's salience. All three measures will reflect increases in salience; with the changes in actual scores for each measure simply dependent on the relative difficulty of the measure used.

Importantly, this relative difference between measure scores should be predictable for any measure, if the difficulty and score for any other measure is known. If this is true it has important implications and could potentially resolve much of the reported confusion marketing managers have regarding the concept of brand awareness and how it should be measured (Rossiter and Percy, 1987; Macdonald and Sharp, 2003).

Researchers have also debated whether to measure advertising awareness and, if so, whether to use recall (spontaneous) versus recognition (aided) measures (Thorson and Rothschild, 1983; Singh, Rothschild and Churchill, 1988; du Plessis, 1994; Dubow, 1994; Gibson, 1994; Ross, 1994). Advertising awareness measures parallel brand awareness measures, as they have top of mind, spontaneous and aided components. Therefore, if Laurent et al.'s empirical generalisation also holds for advertising awareness, this could mean that at least part of this recall versus recognition argument for advertising awareness is also unnecessary.

An analogy is the relationship between the heights and weights of children reported by Ehrenberg (1994). Taller children tend to be heavier, and Ehrenberg's law successfully models this height weight relationship between groups of children. However, while height and weight are related, they don't perfectly tap the same construct (e.g., age). While at any one point in time older

children tend to be both taller and heavier, knowing a child's height over time does not allow you to accurately predict their weight. This is because there is considerable weight variation between children of the same height. We surmise that this issue may affect the application of Laurent et al.'s empirical generalisation, hence our replication and extension of the original paper.

The first objective of this research is to replicate Laurent et al.'s research comparing different brand awareness measures. The second objective is to test an extension to advertising awareness measures. The third objective is to examine the relationship between the measures for specific brands over time. This last step is an important test of Laurent et al.'s claim that knowing one measure can allow the prediction of other awareness measures. We now discuss the background to the objectives, followed by our analyses and results.

2. Background and Methodology

2.1. The Underlying Structure of Brand Awareness Scores

Given the seemingly valid theoretical assertions of researchers such as Rossiter and Percy (1987; 1991) that awareness measures tap separate constructs, one might wonder why any relationship between the three measures might be expected. However we believe this relationship exists because all three measures require respondents to retrieve information from a common source; their memory (du Plessis 1994). Even Lynch and Srull (1982) acknowledge that while they present three categories of choice situations, in reality, there are no purely stimulus based situations, where nothing is retrieved from memory and only the information present in the situation is used. Consumers rely on their memory to some degree, even when all of the options are there in front of them. For example Dickson and Sawyer (1986) found that supermarket shoppers only took an average of 12 seconds from the time of reaching the category to make a choice. This implies that rather than process all the information in front of them, consumers use their memory to circumvent the evaluation process. If retrieving information from memory is a common factor for all three measures, and the memory structures that underpin the ability to retrieve information are also common, then the measures should only differ if the process of retrieval differs. This is not the case for the three measures under investigation, as it is always the brand name that is retrieved.

While brand name retrieval is typical in commercial brand awareness tracking, Rossiter and Percy (1991) note that brand awareness is not always about the brand name but can be about the colour, shape of the packaging or other associated distinctive brand features. Sensory and semantic memories might be processed very differently (as noted by du Plessis 1994). However, in this research the measures included are not so heterogenous – all three measures, used by both Laurent et al. and this replication, require semantic processing to retrieve a specific word (or words). The key difference is in the cognitive effort for retrieval from long-term memory, and this explains why all brands score less on some measures than on others.

The final reason why a relationship should be expected between the measures is simply based on logic. If there were no relationship, respondents must often mention a brand in response to a top of mind question but fail to mention it in response to an aided awareness question. This is not possible simply because of the typical procedure (also employed by Laurent et al.) to classify a brand that is top of mind also as being ‘spontaneously’ recalled. Likewise a brand that is ‘spontaneously’ recalled is considered to be an aided response. So there must be some association between the measures.¹

Laurent et al. compared the results from the three typical brand awareness measures of top of mind, spontaneous and aided awareness. Drawing an analogy with the Rasch model, Laurent et al. concluded that the awareness score for any brand was due to two factors. The first is the underlying salience of the brand – which is a constant for each brand. The second is the difficulty of the measure – which is linked to the measure and the nature of the cueing information provided. The law they suggest for brand awareness is that the awareness, P_{ij} , of brand i , evaluated by method j is given by:

$$P_{ij} = \frac{\xi_i}{\xi_i + \delta_j}$$

whereby:
 δ_j is the difficulty of the awareness measure j
 ξ_i is the salience of brand i in the category
 Both of these parameters are > 0 .

Laurent et al. found a curvilinear relationship between the different measures, which when transformed to take the difficulty into account, produced very similar scores for all three measures. They concluded that knowledge of the score for one measure allows the prediction of other results, “if over the years one has collected awareness

measures that were sometimes of aided awareness, sometimes of spontaneous awareness, one can, using the law we describe in this paper, estimate a complete series of, say, spontaneous awareness scores” (p. 177). This claim implies that measuring brand awareness is therefore relatively simple and that debates over the most appropriate measure for the situation are no longer needed. However, to directly test the veracity of this claim, the analysis needs to cover a single brand over time rather than across brands and measures at one point in time. This was our approach.

Hubbard and Armstrong (1994) have criticised much of the research undertaken in marketing for lacking replication, which they argue has impeded the development of marketing knowledge. A secondary benefit of replication is that it publicises the original finding, and thus draws attention to something that might otherwise be neglected. Citations of Laurent et al. are few, which suggests that academia has not paid much attention to something that has some very important and practical implications for research and marketing management. The results they report simplify the issue of brand awareness and a successful extension to advertising awareness could provide further clarification and simplification.

We initially replicated Laurent et al.’s research, but with some extension conditions including (a) different researchers, (b) a different country, and (c) looking specifically at data over time for an individual brand.

2.2 Advertising Awareness

In addition to the replication, we also extended the analysis to advertising awareness measures. Historically, awareness of a brand’s advertising has been considered an important first step in achieving effective advertising (Wells, 1964; Leavitt, Waddell and Wells, 1970). Awareness assesses both the reach and the cut-through of the advertising, in that it records the proportion of the market with long term memories of having noticed the brand advertising. This platform of prior exposure is then typically used as a screen for asking more detailed questions about advertising effectiveness, such as message take out or likeability (Dubow, 1994). While a traditional measure of advertising effectiveness at both the pre-testing and post-testing stages, advertising awareness has not been without its detractors. In the Advertising Research Foundation’s (ARF) Copy Testing Study (Haley and Baldinger, 1991), recall did not perform as well as likeability in discriminating between

successful and unsuccessful copy. Other criticisms have noted the narrow ambit of awareness measures and their inability to take into account other possible outcomes of exposure to the advertising, including unconscious processing (e.g. Haley, Richardson and Baldwin, 1984; Berger, 1991; Perfect and Heatherley, 1996; Heath and Howard-Spink, 2000; Heath, 2001). Following the release of the ARF study there was a reported increase in the use of likeability to pre-test advertising (Haley, 1994), but this was most likely an addition to the employed measures rather than a substitution. Millward Brown, one of the leading proponents of likeability as a pre-testing measure, still incorporate an awareness measure in their pre-testing model (see www.millwardbrown.com). Rossiter and Eagleson's (1994) re-analysis of the ARF results rejected only top of mind awareness as a pre-test measure. Despite this, they still advocated all nine measures (including the ones they rejected through their re-analyses) to be included in pre-testing to capture the hierarchy of different effects and provide insight into how different aspects of the advertisement performed.

Most commercial monitors used in post-testing also include advertising awareness measures in some form. Given the many possible ways in which awareness can be measured, researchers have debated the relative merits of the different advertising awareness measures particularly spontaneous and aided measures of recall (for an overview of the history of this debate, see du Plessis, 1994). At the heart of the debate is the contention that aided and spontaneous advertising measures tap into different mental processes. For example, showing someone an advertisement and asking if it is familiar requires visual processing (or right brain as per Krugman, 1977). In contrast, asking for which brands a person recalled seeing advertising requires processing from semantic memory (or left brain as per du Plessis, 1994).

Some researchers have claimed that spontaneous and aided awareness scores do co-vary and that they tap into a "common [memory] content domain" (Singh and Rothschild, 1983; Zinkhan et al., 1986; Singh et al., 1988). However there has been little research comparing the underlying structure of each measure. Du Plessis (1994) cites a low correlation as one source of evidence of the measures being different, but a low correlation is unsurprising if the relationship between the two measures is non-linear, as Laurent et al. show. If the same systematic relationship Laurent et al. documented for brand awareness measures holds for advertising

awareness measures this would do much to resolve the measurement debate.

The three advertising measures tested in this research are similar in structure to the brand awareness measures. They all tap semantic memory and as such our hypothesis is that they should be systematically related to each other. However, this would not necessarily be the hypothesis we would put forward should some of the visual advertising measure tests be incorporated into the study.

2.3 The Data Analysed

The findings are based on the analysis of tracking data collected over three years from 1999 to 2001. The data set consisted of the three brand and advertising awareness scores for Australian financial institutions each month. Our analysis focuses on the five largest brands in the market as these were the heaviest continuous advertisers, as well as all being national brands. The average monthly sample size was 89.

3. Results

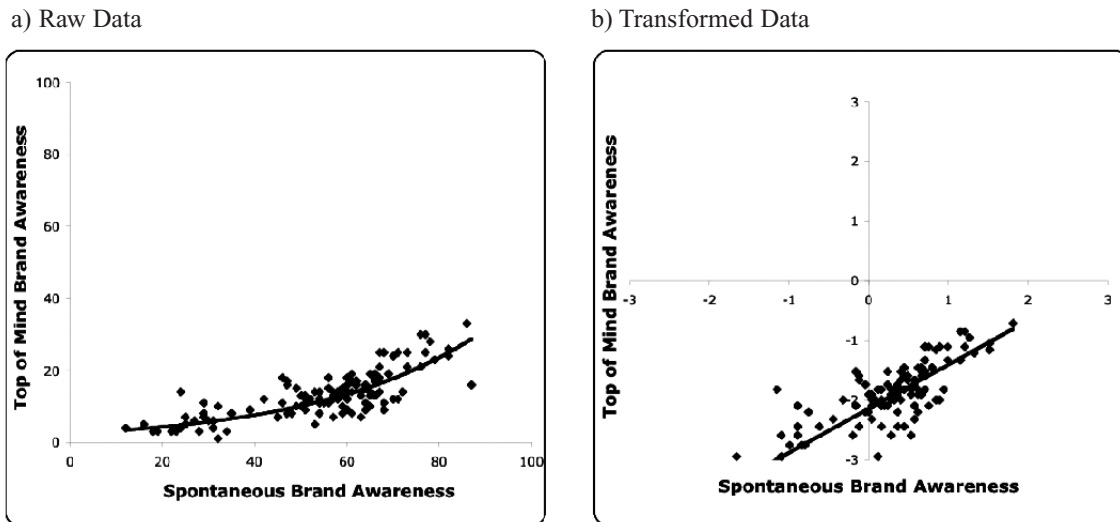
Laurent et al. used data collected over 39 industries, apparently with the data for each industry collected at a single point in time. This allowed generalisability across industries, based upon comparisons of different brands within the same market at one point in time. Our approach was to use data collected over time for the same brands in a single industry.² Our data collection occurred continuously; the data were then aggregated into monthly totals for each measure. This meant we had a similar number of observations within our single category as the previous authors had across categories. We refer readers to the original study for a detailed description of the mathematical transformation, however we will reiterate the key results for the linear regressions of the transformed data. Although 39 markets were analysed, only six are specifically detailed in the original paper.

Key findings of Laurent et al. were:

- 1) the quality of the fit was high – R^2 s above 0.80 and extremely significant Fs (they cite R^2 s ranging from 0.82 to 0.91 in the six examples provided);
- 2) the constant (the ratio of the difficulty of the measures) is strongly and significantly negative (all are around -2 , with t-statistics ranging from -23 to -60);
- 3) the coefficient of the line was close to 1 (figures ranging from 0.85 to 1.13 were provided).

These results are the benchmarks against which to compare our results.

Figure 1: Example of Raw and Transformed Relationship Between Brand Awareness Measures



3.1 Replication Using Brand Awareness Scores

First we examined the raw brand awareness data and found the curvilinear relationship between measures cited by Laurent et al. (Figure 1a). This was then transformed to a linear relationship by using a double logistic transformation (Figure 1b).

The transformed figures were then analysed using linear regression. Table 1 shows the quality of the fit is good. R²s of 0.66 (top of mind versus spontaneous) and 0.89 (spontaneous versus aided) indicate a successful replication. Our figure of 0.66 is lower than the figures reported by Laurent et al., but their six examples were all spontaneous versus aided measure regressions. Given the responses for top of mind are restricted by the fact that only one brand can be top of mind, whereas multiple responses are possible for spontaneous and aided measures, a weaker relationship between top of mind and spontaneous measures might perhaps be expected (Laurent et al. themselves do not report these figures). The coefficient of the line (B) is close to 1 in both cases

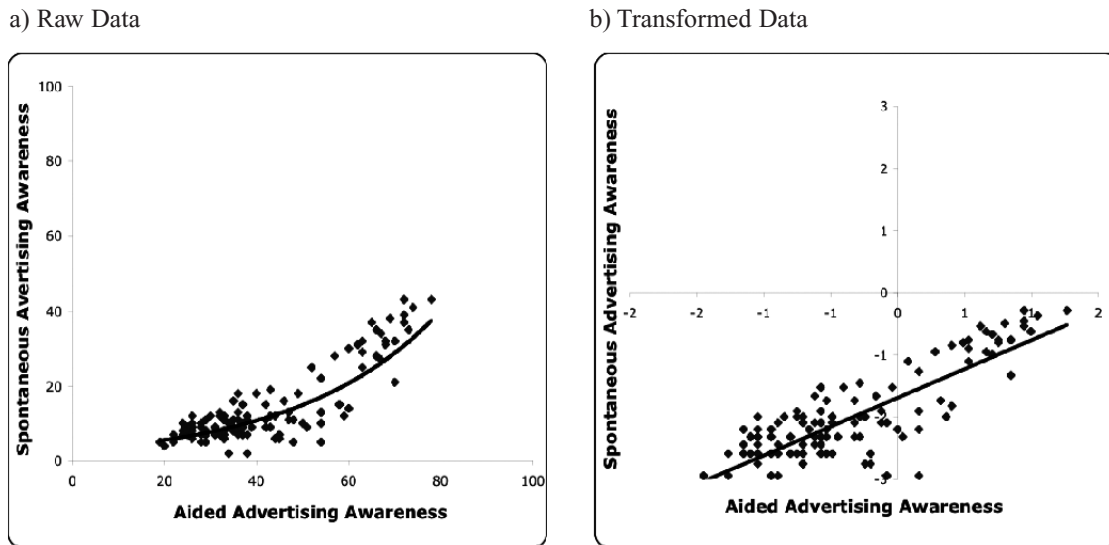
(0.74 and 1.28), and the constant (A) is negative across all measures (around -2 for both analyses).

Laurent et al. developed an estimate of the difficulty of the spontaneous awareness measure as compared to the aided awareness measure. Compared to an aided awareness measure set to one, the values range from 7.02 through 16.64 for their six reported data sets. The two difficulty values obtained in our study are 8.49 and 15.23. These match those of Laurent et al. well and suggest that respondents in France and Australia found the relative difficulties of using the brand awareness measures about the same. These results, while being limited, match commonsense assumptions that top of mind measures are more difficult than spontaneous measures and in turn spontaneous measures are more difficult than aided measures. This suggests that this difficulty may be something inherent in retrieval from human memory, rather than a situation, cultural or even category-based phenomenon.

Table 1: Category Level Brand Awareness Transformed Regression Results

Brand Awareness:	A	B	R²
Top of Mind v Spontaneous	-2.1	0.74	0.66
Spontaneous v Aided	-2.7	1.28	0.89

Figure 2: Example of Raw and Transformed Relationships Between Advertising Awareness Measures



3.2 Extension to Advertising Awareness Scores

The first step was to determine if a similar curvilinear relationship existed in the advertising awareness data. Figure 2 shows the plot of the spontaneous advertising awareness and the aided advertising awareness measures. We conducted the same transformation as for brand awareness, which linearized the data.

The regression results, shown in Table 2, have R²s of 0.73 and 0.65. While these are not quite as high as those reported by Laurent et al., they are indicative of a good fit. The coefficient of the lines (B) is close to one and within the 0.85 - 1.13 range provided in the earlier study. The constant is negative, albeit lower for the ratio of top of mind versus spontaneous advertising awareness (-0.9) than was evident for brand awareness in our replication (2.1) and in Laurent et al. (around -2). This may be due to there being fewer brands recalled for spontaneous advertising awareness measures than for the equivalent brand awareness measure. As a result, all the advertising awareness measures look more similar to each other, thereby reducing the calculated difference in difficulty.

3.3 Brand Level Analysis

Laurent et al. suggest brand managers can use their finding to estimate the score for one measure from the score for another measure. For example, understanding this relationship, the brand manager can calculate the aided awareness score if the spontaneous awareness score is known. To directly test this claim we analysed each of the five brands in the category individually. This analysis was conducted for brand and advertising awareness measures separately using the same approach as for the category. The raw data for each brand was transformed and then a linear regression performed on the transformed data.

Whilst the brand level results for the constant follow a similar pattern to the product category results, the fit of the regression line is much lower, as shown by the R² values in Table 3. Likewise the slope of the lines (B) for brand awareness measures are substantially less than one and more diverse across brands. Generally the fit is better for Brand A (the largest brand) than it is for other brands in the market. An inspection of the scatterplots

Table 2: Category Level Advertising Awareness Transformed Regression Results

Advertising Awareness:	A	B	R ²
Top of Mind v Spontaneous	-0.90	1.10	0.73
Spontaneous v Aided	-1.70	0.93	0.65

Table 3: Brand Level Brand and Advertising Awareness

a) Brand Level Brand Awareness

Brand	Top of Mind v Spontaneous Awareness			Spontaneous v Aided Awareness		
	A	B	R ²	A	B	R ²
A	-1.96	0.72	0.54	-0.18	0.46	0.60
B	-2.10	0.24	0.04	-0.63	0.37	0.36
C	-2.02	0.42	0.21	-0.96	0.47	0.06
D	-2.01	0.26	0.05	-0.40	0.22	0.18
E	-2.45	0.47	0.08	-1.23	0.23	0.02
Average	-2.14	0.42	0.20	-0.68	0.35	0.24

b) Brand Level Advertising Awareness

Brand	Top of Mind v Spontaneous Awareness			Spontaneous v Aided Awareness		
	A	B	R ²	A	B	R ²
A	-1.08	0.73	0.41	-1.25	0.76	0.68
B	-0.65	1.25	0.45	-1.66	0.80	0.40
C	-2.35	0.49	0.12	-1.68	0.80	0.38
D	-0.49	1.30	0.40	-1.77	0.71	0.31
E	-0.98	0.96	0.58	-2.30	1.21	0.52
Average	-1.11	0.95	0.40	-1.73	0.90	0.46

across brands shows that all brands tend to vary considerably on one measure and less so on the other measure (similar to Ehrenberg’s (1994) findings about heights and weights of children). Which measure has the greatest variance depends on brand penetration. Larger brands vary more on more difficult measures, and smaller brands vary more on less difficult measures. Therefore, if we compare top of mind awareness with spontaneous results, the large brand varies more in top of mind, relative to variance in spontaneous awareness. In contrast, a small brand varies less for top of mind awareness, relative to the spontaneous measure. This was consistent for both brand and advertising awareness measures.

These results suggest that much of the fit obtained by Laurent et al. may be due to variance between brands, rather than a close relationship between the measures. Therefore while their model fits at the category level, it is less able to provide brand level estimations.

4. Discussion

Laurent et al. show how performance of a brand on an awareness question is the result of two opposing factors: (1) the brand’s salience in the consumer’s mind, which increases its probability of being named, and (2) the difficulty of the measure, which decreases the probability.

Our results offer further support for these findings, and extend the generalisation from brand awareness measures to advertising awareness measures. Different awareness measures are systematically related, and whether the measures are for brand or advertising awareness, they show similar structural relationships. This strongly supports Laurent et al.’s conclusion that different awareness measures differ in terms of ‘difficulty’ (for retrieval from respondents’ memories) in the same structural way across categories.

However, Laurent et al.'s conclusion that different awareness measures are all tapping a single construct – the brand's salience – seems much more contentious. They relied on the close fit of the model to the overall data across brands to state that one can estimate missing values in a sequence of numbers. They suggest that a brand manager who had sometimes collected aided awareness for a brand and sometimes spontaneous awareness, could, using this empirical generalisation, estimate a complete set of scores for either measure. However, our brand level analyses show that this would produce very different estimates than might have been obtained if the missing data had really been collected.

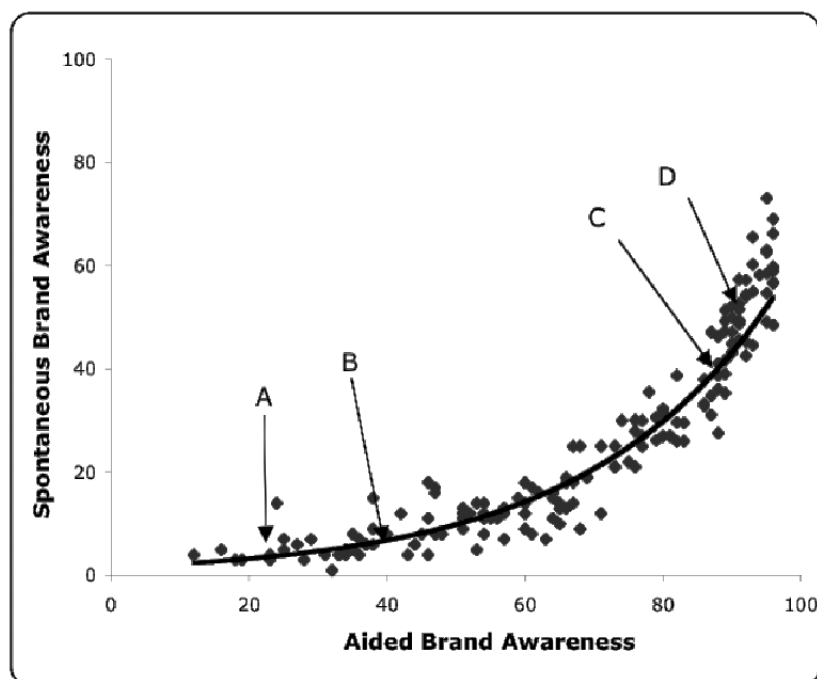
Brands vary substantially in salience and this is what gives the close fit of the model (R^2 generally around 0.9 for Laurent et al). Low salience brands score low on any awareness measure, and high salience brands score high. The nature of the relationship between the two awareness measures is J shaped and since the transformed model accounts for this shape the R^2 is high. However, because of the J-shape of the curve (see Figure 3), two low salience brands with identical spontaneous awareness scores (brands A and B below) can have markedly different aided awareness scores. In addition, two high salience brands (C and D), which will always have

similarly high aided awareness scores, can have markedly different spontaneous awareness scores.

Laurent et al.'s assertion that this law would allow managers to simply collect one awareness measure for their brand and estimate the scores for the other measures do not hold. Instead, the value of the law is that it provides a benchmark so that different awareness scores can be compared with one another, making it easier to identify any deviations.

As mentioned previously, we see parallels with Ehrenberg's empirical generalisation concerning the heights and weights of children (Ehrenberg 1994). Taller children tend to be heavier, and Ehrenberg's law successfully models this height-weight relationship between groups of children. The law acts as a benchmark, allowing children to be identified who are heavy or light for their particular height. Some children might be always overweight as they grow, while others might be overweight while very young and then underweight after a growth spurt. Similarly, and counter to Laurent et al.'s conclusion, the law of awareness does not imply a "mandatory path a brand has to follow from its introduction to leading position in the category...going through all the steps in the curve". If the fit of the model

Figure 3: J Curve in Brand Awareness Scores



were this perfect then different measures of awareness would be redundant, and indeed the empirical generalisation itself would be of little practical application (there is little point in a benchmark that always fits).

Our brand level findings throw considerable doubt on Laurent et al.'s conclusion that different measures of brand awareness simply measure one underlying construct – the brand's salience. While certainly highly salient brands score high on any awareness measure, and low salience brands score low, they do not relate perfectly to one another. Just as Ehrenberg's generalisation shows that height and weight vary together with maturity it would be wrong to consider height and weight as the same construct or simply as reflections of maturity.

As Rossiter and Percy (1987) point out, recognition (aided awareness) requires making the link from brand name to category need, whereas recall (spontaneous awareness) requires making the link the other way round. Recall may always be harder, but there is no reason to believe that the two are always systematically related because, as Rossiter and Percy argue, managers can concentrate their efforts on one or the other. The logical proposition is that brands that are largely brought into consideration by recall (e.g., services) should seek to build a link between category-need and brand name. Whereas those brought to mind by recognition (e.g., groceries) should seek to build a link between the brand name and category-need. While this is a product category level argument the point is that one type of retrieval can be focussed on. And it is conceivable that even within a category some brands will depend more on spontaneous retrieval than others (e.g., hire car companies with no airport presence). So, unfortunately, the potential to simplify both brand and advertising awareness concepts and the measures that underlie them that we posited in the initial discussion is not an outcome of this replication and extension. However, it does suggest there is considerably more work that needs to be done in this area and we think that Laurent et al.'s research has opened up a new and useful approach to the examination of different measures purportedly from the same construct.

In order to use Laurent et al.'s awareness law as a benchmark it is very important to know where the brand or advertising lies on the awareness continuum. Low salience brands can show considerable variation in their

aided awareness scores, while their spontaneous awareness scores are very stable (and low). In contrast, high salience brands can show considerable variation in their spontaneous awareness scores while their aided awareness scores are very stable (and high). And brands in between the two inflection points of the awareness curve can show variation, survey to survey, on both measures.

Laurent et al. argue that managers should use the measure which is most likely to show movement from survey to survey, i.e., aided awareness for minor brands and spontaneous awareness for leading brands. A contrary argument is that managers should not use the score that varies most as this is the least reliable, probably being affected by sampling error or tiny changes in sales growth or decline (an issue worthy of further research). But rather it is changes in the more stable statistic that should grab management attention, because this is unusual. The law is useful in showing which measure this is for any brand.

In conclusion, our results support and extend Laurent et al.'s finding of a generalised law concerning the relationship between awareness scores. Yet, in doing so, we come to quite different conclusions concerning the managerial implications and application of this law. This is another benefit of replication research, where new researchers can bring a fresh interpretation to results.

A limitation of this research is that it was only conducted in one market, therefore more longitudinal replications are encouraged, particularly given that the original study spanned 39 markets (albeit with only the results for six explicitly reported). Another limitation is that the measures were collected in a hierarchy form, with the same person responding to all three measures, as is typically undertaken in brand and advertising tracking. We would recommend that, if possible, future studies employ a split sample approach to avoid any potential contamination from prior questions. Future research could also look at extending this research to see if the same relationship is evident for advertising awareness measures which require remembering the advertisement, rather than remembering the brand as having advertised.

Endnotes

¹This is quite different from the scenario where people are asked to spontaneously recall brands and are then shown pictures of unbranded packaging and asked to identify which ones they knew. In this latter scenario different processing might result in totally unrelated results.

²Serial correlation (correlation of a variable with itself over time or autocorrelation) violates the assumption of independence between the successive values (Berenson and Levine, 1989). Serial correlation was not an issue for the original Laurent et al. paper as the data used consisted of a number of industries at a single point in time. Our data, though affected by serial correlations, were not analysed as a time series. We were not looking at changes over time, simply the relationship between successive pairs of awareness measures. This means the serial correlations are not of importance in this analysis.

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Research Note

Testing Dick and Basu's Customer Loyalty Model

Ron Garland & Philip Gendall

Abstract

A widely cited model of customer loyalty is the typology proposed by Dick and Basu (1994) that depicts loyalty as a two-dimensional construct involving relative attitude and repeat patronage. However, while Dick and Basu conceptualise the loyalty construct, they do not operationalise it or provide empirical evidence of its predictive ability. This paper reports a test of the predictive ability of Dick and Basu's model in personal retail banking. The study is a replication of East, Sinclair and Gendall's (2000) research on loyalty in supermarket shopping, from which these authors concluded there was little support for Dick and Basu's loyalty typology.

Our study found that, in some circumstances relative attitude was a better predictor of bank loyalty than banking behaviour, while in others share of wallet (a proxy measure for repeat patronage) was better. Like East et al. (2000), we found no evidence that the prediction of customer loyalty was enhanced by the inclusion of a term for the interaction between attitude and behaviour. Nevertheless, our findings suggest that Dick and Basu's model may have some validity in subscription-type markets, like banking, where brand portfolios tend to be small and customer churn rates are relatively low.

Keywords: Customer loyalty, Dick and Basu loyalty typology

1. Introduction

According to Uncles, Dowling and Hammond (2003), customer loyalty is commonly conceptualized in three different ways. Loyalty may be conceived in terms of favourable attitudes or beliefs towards a brand, manifested in an emotional attachment to the brand. Or, it may be thought of purely in terms of behaviour, the regular purchasing of a particular brand. Finally, there is what Uncles et al. describe as the contingency approach, which assumes that the relationship between attitudes, behaviour and loyalty is moderated by variables such as an individual's current circumstances or the particular situation, or both.

While some researchers and practitioners propose that loyalty has only a single dimension, it is generally argued that loyalty is a two-dimensional construct, incorporating both attitudes and behaviour. This two-dimensional conceptualisation, integrating behavioural and attitudinal elements, originated with Day (1969). Since then, various modifications of this structure have

been suggested, with some of the best known being those proposed by Jacoby and Kyrer (1973), Jacoby and Chestnut (1978), Backman and Crompton (1991), Pritchard, Havitz and Howard (1992, 1999), and Mahony, Madrigal and Howard (2000). However, the most widely cited model is the loyalty typology developed by Dick and Basu (1994).

Dick and Basu's (1994) customer loyalty model is an elegant conceptualisation of the combined effects of attitude and behaviour. They suggest that loyalty is the result of the interaction between a customer's relative attitude to a brand, or store, and their repeat purchase behaviour for that brand or store. The typology divides customers into four loyalty groups, shown in Figure 1. Customers with high attitudinal and behavioural loyalty are described as 'true loyals', those with high behavioural loyalty but low attitudinal loyalty as 'spurious loyals', those with high attitudinal loyalty but low behavioural loyalty as 'latent loyals', and those with low attitudinal and behavioural loyalty as 'non loyals'.

Figure 1: Dick and Basu's Loyalty Model

		Repeat Patronage	
		High	Low
Relative Attitude	High	True loyalty	Latent loyalty
	Low	Spurious loyalty	No loyalty

Implicit in the Dick and Basu model is the assumption that classification of customers into four loyalty groups on the basis of relative attitude and repeat patronage should then allow the prediction of other loyalty measures such as retention and defection. However, as East et al. (2000), Bennett and Bove (2001), and Bove and Johnson (2002) point out, few attempts have been made to test this predictive ability. Nevertheless, one study that did attempt to do this was conducted by East et al. in 2000. These authors applied the Dick and Basu model to supermarket shopping in both Britain and New Zealand, suggesting that the model would be much more compelling if it could predict other behaviours related to supermarket loyalty, such as advocacy (recommendation of the store), retention and store penetration.

East and his colleagues found that in only one of the six cases (recommendation, retention and number of different supermarkets used in Britain and New Zealand) did the results fit the Dick and Basu typology. In a further test they showed that prediction was not improved by the inclusion of a variable for the interaction between attitude and behaviour (in this case, share-of-category loyalty). East et al. concluded there was little support in their study for Dick and Basu's typology. Nevertheless, because their study was one isolated test, set in a supermarket context, further work was recommended to 'test the effect of attitudinal and behavioural loyalty on other loyalty behaviours in fields such as financial services and automobiles' (p 12). This paper extends the work of East et al. by reporting a test of the Dick and Basu model in personal retail banking.

The present study uses East et al.'s methodology, but in a subscription-type market where brand portfolios tend to be small, where annual fees, transaction fees and front-end fees are common, and where customer defection rates tend to be lower than in packaged goods markets (see Colgate, 1999; Garland, 2002). The paper first describes the methodology of the study, then presents the results of bivariate and regression analyses of the

predictive ability of the Dick and Basu model in this market. We conclude by discussing the generalisability of the model.

2. Methodology

The vehicle for this research was a survey of personal retail banking customers from one bank in one region of New Zealand. At the time, this bank had a penetration of 63% of adults (16 years and over) and was the 'main bank' of 47% of customers in the region; however, all five major New Zealand trading banks and several building societies and investment institutions were represented in the study region. Customers' satisfaction levels with these financial institutions and the study bank were relatively high by international standards (see Colgate, 1999; Garland, 2002), but sufficiently varied to ensure a suitably competitive market in which to operationalise Dick and Basu's relative attitude measure.

A total of 1700 customers from the bank were surveyed by mail. After an initial posting and two reminders to non-respondents, 1096 valid responses were received. Some 32 respondents were ineligible or refused to participate, and 99 questionnaires were returned 'Gone - no address', giving a response rate of $1096 / (1700 - 131) = 70\%$. Comparison of the characteristics of the resulting sample with those of all the bank's customers confirmed that the sample was representative of the population from which it was drawn.

Testing the predictive validity of the Dick and Basu model requires measures of both attitude and behaviour related to customer loyalty. As far as attitude measurement is concerned, Dick and Basu (1994) argued that evaluations of a supplier in comparison to those for competitors were superior to attitude measures in isolation. Bove and Johnson (2002) operationalised this relative attitude by creating an index from four attitude statements that conveyed comparisons with other suppliers. East et al. (2000) used a simple comparative rating of main grocery store. For banking, where

customers are constrained in their choice by the subscription-like characteristics of the market, an advocacy measure can act as a proxy for relative attitude. Hence for our study, Juster's (1966) 11-point probability scale was used to gain estimates of customers' future recommendation of their main bank to anyone who requested such advice. (For a full review of the Juster scale's reliability and validity, see Day, Gan, Gendall, and Esslemont, 1991; Brennan, Esslemont, and Hini, 1995; Parackal and Brennan, 1998; and Danenberg and Sharp, 1999.)

The relative attitude measure used here needed a procedure for converting the Juster scale probabilities into two categories: high and low relative attitude. Danenberg and Sharp (1999) provided such a procedure, stating 'typically, the data collected from a probability scale is analysed at the aggregate level... However, in order to analyse the data at a more disaggregate level, as this analysis does, a method of collapsing the 11 points of the scale into two ... was developed' (p 16). These two researchers observed their scale's distribution of frequencies and set their cut off point where the cumulative frequency of responses most closely matched

the predicted level. In the present study, the 'cut off point' was 76%, thus Juster scale responses from 8 to 10 were coded as high relative attitude and responses from 0 to 7 assigned low relative attitude.

The proxy for Dick and Basu's behavioural measure (repeat patronage) was share loyalty, or share of wallet, measured as the proportion of personal retail banking business devoted to the main bank. The distribution of this variable showed that 75% of customers claimed to have at least 91% of their banking business with one bank, and this condition was denoted as high share loyalty. The remaining 25% of customers were defined as low share loyalty customers.

The loyalty-related behaviour to be predicted involved two measures of retention and a measure of penetration. The first retention measure was propensity to increase banking business at the main bank, the second, propensity to defect from the main bank. Both these variables were measured using the Juster probability scale. The penetration measure was simply number of banks used.

Table 1: Mean Number of Banks Used (Penetration)

A low mean represents a high degree of loyalty

		Share loyalty	
		High (91-100%)	Low (<91%)
Relative Attitude	High	1.43 (n=554)	1.58 (n=127)
	Low	2.27 (n=265)	2.37 (n=150)
Sample size		(n=819)	(n=277)

Table 2: Main Bank Retention: Propensity to Increase Banking, Propensity to Defect

		Retention (increase) Share loyalty		Retention (defection) Share loyalty	
		High	Low	High	Low
Relative Attitude	High	53%	53%	7%	8%
	Low	36%	32%	14%	17%

3. Results and Discussion

The relative attitude and share loyalty measures were used to categorise customers into the Dick and Basu (1994) typology. This allowed for simple, bivariate investigation of the ability of the model to predict the number of banks used (penetration), propensity to increase banking business at the main bank and propensity to defect (retention). Tables 1 and 2 show the results of this process.

The cell figures in each table are percentages of the cell segment, except in Table 1, which shows mean number of banks used. (Output from the Juster scale yields mean percentages, which can be treated as measures of central

tendency.) The numbers in parentheses in Table 1 are the segment cell sizes (sub-sample sizes); these numbers also apply to Table 2. The results in Tables 1 and 2 show that the Dick and Basu (1994) typology of customer loyalty is supported at the bivariate level of analysis. (In the retention section of Table 1 the percentages for 'true loyals' and 'latent loyals' are the same, whereas Dick and Basu's model predicts that the value for 'true loyals' will be higher. However, one anomalous result out of 12 does not obscure the overall pattern or negate the conclusion that the typology is supported at the bivariate level.)

The 'true loyalists' of the top left segment (segment 1: high relative attitude, high share loyalty) have the highest

Table 3: Number of Banks Used

Independent variable	Number of Banks	
	Std Beta	Signif.
Relative Attitude	-.08	.05
Share Loyalty (% of business)	-.62	.00
Product of Relative Attitude & Share Loyalty	.07	.15

Adjusted R²= .36; df = 3; F=203.7

Table 4: Propensity to Increase Business and Propensity to Defect

Independent variable	Retention (increase)		Retention (defection)	
	Std Beta	Signif.	Std Beta	Signif.
Relative Attitude	.35	.00	-.23	.00
Share Loyalty (% of business)	.01	.72	-.07	.10
Product of Relative Attitude & Share Loyalty	-.04	.46	.08	.17

Adjusted R²= .11; df=3; F=42.7 Adjusted R₋²= .04; df=3; F=14.9

propensities to increase business with their main bank, while their mean number of banks (1.43) and average propensity to defect (7%) are lowest. Indeed, the 'true loyalists' of segment 1 are substantially more likely to increase their banking business at their main bank than the 'non-loyal' customers of the bottom right segment. On average, 'non-loyalists' conduct business with an extra bank and are much more likely to defect from their main bank in the next twelve months.

However, hybrid constructs may be additive or interactive and the simple bivariate analysis reported above cannot differentiate between additive and interactive effects. As East et al. (2000) state, 'such a test does not allow for other influences on loyalty behaviours and cannot easily distinguish between additive and interactive effects' (p 9). They recommended regression analysis to overcome these deficiencies. Thus ordinary least squares regression was used to predict future loyalty behaviour from three independent variables that include attitudinal and behavioural loyalty measures. While logistic regression might have been used, Sudman and Blair (1998) state that 'if the purpose of doing an analysis is simply to determine whether a dependent variable relates to the independent variables, or...to compare the relative contributions of various independent variables, logistic regression is not needed. A conventional multiple regression will provide satisfactory results in these circumstances' (p 540).

Tables 3 and 4 show the relationships derived from multiple regression analyses of the three behavioural outcomes – number of banks used, propensity to increase banking business at the main bank in the next 12 months, and propensity to defect from the main bank in the next 12 months – and three predictor variables – relative attitude, share loyalty, and an interaction variable that is the product of relative attitude and share loyalty.

In Table 3, both relative attitude and share loyalty are significant predictors of number of banks used. For the two retention variables (Table 4), relative attitude is a significant predictor of propensity to increase business at the main bank, while share loyalty impacts significantly on (resistance to) defection (though only at the 10% significance level, so the relationship is weak). In no circumstances did the interaction variable have a statistically significant influence on any of the loyalty behaviours, but its introduction did produce one significant shift in R-squared; that for mean number of banks increased from .29 to .36.

4. Conclusions

The results of this study, set in a subscription-type market, provide some support for the Dick and Basu customer loyalty typology. The pattern of responses derived from the bivariate analysis shows the most loyal customers have the fewest banks, the highest likelihood of increasing business with their main bank, and the lowest probability of defection from that bank. Non-loyal customers are just the opposite. Regression analysis revealed that both attitude and behaviour were significant predictors of the number of banks used, the only true behavioural variable tested. Also, rather than being multiplicative (as postulated by East et al.), the interaction between relative attitude and share loyalty in personal retail banking appears to be additive.

Our research was conducted in one area of New Zealand and involved customers from one bank, with high penetration and high 'main bank' share. This, combined with the switching costs and customer inertia that characterise banking in general, raises the possibility that contingency factors may be the strongest determinant of the results we observed. However, while we expect loyalty patterns in banking to be affected by these contingency factors, customers do switch banks and commonly have a portfolio of financial institutions they use. Thus, despite the real inconvenience of switching from one main bank to another, churn does occur in subscription-type markets like banking, and there is no *a priori* reason to suspect that all four of Dick and Basu's loyalty categories will not be found in such markets.

The relative attitude measure we used in our research (the propensity to recommend one's main bank) could be criticised on the grounds that it is closer to a behavioural intention than an attitude. Yet any relative attitude measure, by its very nature, involves comparative value, with the potential for reinforcement effects from past behaviour. Finding, and then operationalising, a 'pure' relative attitude measurement as Dick and Basu (1994) advocated is not easy. Perhaps this partially explains why their model has remained until recently conceptually based without empirical testing.

The research reported here used a slightly different proxy for relative attitude than that of East et al.'s (2000) research and the market context was personal retail banking, not supermarkets. That aside, in the process of confirming Dick and Basu's expected pattern of response, the results of our study are different to East et al.'s. Their findings led them to conclude that it is better

to treat loyalty as a behavioural construct alone, since behaviour is of ultimate concern to marketers. Despite their compelling arguments for a single loyalty measure, our study does not support treating customer loyalty as purely behavioural.

Dick and Basu's loyalty typology is a plausible conceptualisation of an important marketing construct, consistent with what is generally assumed about the determinants of loyalty. Yet like many plausible generalisations in marketing, it has no empirical basis, and the two studies that have tested Dick and Basu's model, East et al.'s and ours, have produced contradictory findings. Nevertheless, our results suggest that Dick and Basu's model may have some validity in subscription-type markets, such as personal retail banking, where brand portfolios tend to be small and customer churn rates relatively low. However, further testing is required before this conclusion could be generalised to other markets or other product categories. As well as applying the model in different circumstances, further research could also use cluster analysis to test whether customers are partitioned into Dick and Basu's four loyalty categories, or path analysis to identify the relationships between relative attitude, repeat patronage and various loyalty-related measures.

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Research Note

The Effect of Corporate Image in the Formation of Customer Loyalty: An Australian Replication

Allison E. Hart & Philip J. Rosenberger III

Abstract

Using a mall-intercept survey of 116 female Grace Bros. customers who had had a shopping experience at the upmarket department store in the previous six months, Andreassen and Lindestad's (1998) model of corporate image and its influence on customer loyalty was evaluated using path analysis. The results are generally consistent with the previous study, with corporate image having a significant impact on core service and customer satisfaction perceptions. Corporate image was found to have only a marginally significant direct influence on customer loyalty, though the total effects of corporate image (both direct and indirect) on customer loyalty are much more substantial.

Keywords: Replication, Corporate image, Loyalty, Department store retailing, Grace Bros.

1. Introduction & Background

This paper replicates the model proposed by Andreassen and Lindestad (1998, hereafter referred to as 'A&L') relating to the effect of corporate image in the formation of customer loyalty. Drawing on the disconfirmation-of-expectations paradigm (e.g. Oliver, 1980), A&L propose that customer loyalty is based on an attribute-performance evaluation path (quality → disconfirmation → satisfaction) and an image path (corporate image → service quality, corporate image → customer satisfaction and corporate image → customer loyalty). This is illustrated in Figure 1. To contrast goods and services for high-involvement products characterised by long-term customer relationships, A&L evaluated their model for regional newspapers and insurance services in Norway.

Replication means the reproducibility or stability of research results (Monroe, 1992). Though replication has an acknowledged role in marketing and the social sciences and its advancement (Monroe, 1992; Bass, 1993; Madden, Easley and Dunn, 1995; Easley, Madden and Dunn, 2000; Hunter, 2001), there has been a reluctance to publish replication studies (Easley and Madden, 2000, Hubbard and Lindsay, 2002), with few strict replication studies having been reported in marketing (Madden, Easley and Dunn, 1995; Easley, Madden and Dunn, 2000). Replication contributes to the establishment of external validity, by enabling the

generalisation of findings to other populations (Easley, Madden and Dunn, 2000), since "A result which does not hold next time is generally of little practical use" (Uncles, Hamond, Ehrenberg and Davis, 1994, p. 376). Replications help to establish boundary conditions (Lynch, 1999) for theories where the generalisation will fail to hold, which leads to 'higher level' understanding (Bass, 1995) and the advancement of science.

The importance of replications for validating results is emphasized by Hunter (2001 p. 155) who admonishes that: "We desperately need replication studies". Only about 3% of published marketing studies consist of replications-with-extensions (Hubbard and Lindsay, 2002), yet Hunter (2001) calculates that, depending on the accuracy desired and the average sample size, ten replication studies are needed even for rough or approximate estimation. To accurately validate the original findings of a given study he suggests upwards of hundreds of replications are needed in large sample domains and thousands of replication studies in small sample domains. Easley et al. (2000) described three different types of replications: duplication, similar and modification, which reflect the extent to which the original study is followed. Monroe (1992) notes that replications can vary according to their timing, the researchers conducting the work and the level of planned similarity; he argues that replications involving

modifications are preferable, such as those by different researchers at different times and locations.

The present study comprised a replication designed to explore the cross-cultural generalisability of the original A&L findings to the Australian storefront-retailing context. Cross-national testing of the applicability of consumer-behaviour theories is needed in the ongoing expansion and integration of the global marketplace (Durvasula, Andrews, Lysonski and Netermeyer, 1993) and is the case for a number of replications (Easley et al., 2000). As the attitudes of consumers might vary across countries, a standardised marketing approach across cultural boundaries may have varying effects, some of which could be negative (Neal, Quester and Hawkins, 2000; de Mooij and Hofstede, 2002). The convergence of technology, income and media promotes homogenous consumption behaviour, though recent empirical research has concluded that cultural differences will lead to more heterogeneous behaviours (e.g., de Mooij and Hofstede, 2002, found that culture has become a more useful explanatory variable than national wealth for predicting and explaining consumer behaviour across a range of European countries - see also Netemeyer, Durvasula and Lichtenstein, 1991). Thus, relationships among constructs in our models must be established in a cross-cultural context in order to identify what, if any, cross-cultural confounds or limitations may exist with respect to the theory or model's generalisability – otherwise the (unrecognised) presence of these confounds could give rise to misleading inferences (Durvasula, Andrews, Lysonski and Netemeyer, 1993). Establishing the cross-cultural bounds of theories such as A&L's also gains currency with more retailers operating the same or similar retail formats and operations internationally (e.g., The Body Shop, IKEA, Toys-R-Us).

This study also extends the original A&L study to the storefront retail context (i.e., department stores in a shopping mall), which provides an alternative 'product category' for testing, in that consumers are likely to process information about and/or respond differently to different types of retail stores and/or product categories (Baker et al., 2002). A&L examined regional newspapers and insurance (acquired through regional salesforces) to represent differences in goods versus services. These were categorised by A&L as offering high-involvement products/services with long-term customer relationships. In the case of the newspaper, the consumer interacts with the product on a daily or weekly basis (by reading), whilst the insurance service is 'consumed' daily,

although actual interaction with the firm will likely only occur if a claim is made or when the policy is renewed (i.e., once or twice a year). In both cases, there is a general lack of storefront retail interaction (i.e., bricks-and-mortar) and an absence of the rest of the nine retail-mix elements (Merrilees and Miller, 1996). Furthermore, the newspaper and insurance product/service experiences are likely to take place in the home for the most part. In contrast, retail storefront environments are extremely complex in practice (Kozinets et al., 2002), with retail storefront consumers experiencing multiple store-environment cues simultaneously that influence their perceptions of the retailer (Baker et al., 2002). Thus, the retail storefront context of this replication study provides a greater range of retail-mix elements designed to impact on the consumer's evaluation process—such as merchandising, store design and customer service—than in the A&L study. The contextual focus on a Grace Bros. department store provides a combined assessment of both tangible elements (e.g., store-design materials and features, and merchandise) and intangible elements (e.g., customer service, and a 'premium' department-store brand) in an alternative location (i.e., the retailer's store located in a shopping mall).

One feature of storefront retailers is that store image (and its perceptions by consumers) is something that they take seriously in its role as a strategic competitive tool (Reardon, Miller and Coe, 1995). Storefront retailers devote considerable energy and resources to plan and build a physical space that creates the retail purchase setting (Baker, Grewal and Levy, 1992; Ward, Barnes and Bitner, 1992; Little and Czech, 2002). The retail store can be seen as "a bundle of cues, messages and suggestions which communicate to shoppers" (Markin, Lillis and Narayana, 1976, p. 43), where the image of a store is a combination of factual and emotional material, and, like a photograph, "...is more than the sum of its parts" (Oxenfeldt, 1974-1975, p. 9). Managers are encouraged to "engineer customer experiences" that establish and maintain customer preference for an institution, much as Disney has done with its theme parks and Barnes & Noble with its bookstores (Carbone and Haeckel, 1994), purposively using store atmospherics and servicescapes in this process. Kotler (1973-1974, p. 50) defined atmospherics as "the effort to design buying environments to produce specific emotional effects in the buyer that enhance his purchase probability," suggesting that one of the most significant features of the product is the place where it is bought or

consumed. In some cases, the place, more specifically the atmosphere of the place, is more influential than the product itself in the purchase decision. In exploring servicescapes, Bitner (1992, p. 65) refers to atmosphere as “a complex mix of environmental features... involving ambient conditions, spatial layout and functionality, and signs, symbols and artefacts”. Ambient conditions include temperature, lighting, noise, music and scents that affect the senses. For example, Kerin, Howard and Jain (1992) demonstrated that store-related stimuli in a retail setting can shape merchandise price and quality perceptions and consumer impressions of store value. More recent work by Baker et al. (2002) found that three types of store-environment factors—social factors (store employee perceptions), design factors (store design perceptions) and ambient factors (store music perceptions)—had significant direct effects on store-choice criteria—interpersonal service quality, shopping experience costs and merchandise value—and significant indirect effects on the resulting store patronage intentions. In sum, through manipulation of the store-environment factors, the retailer seeks to communicate ‘something’ (a certain image) to shoppers, bring about a pleasant shopping experience and, thus, encourage repeat patronage.

The focus of this research is Grace Bros., part of the Coles-Myer retail group. At the time of this research, Grace Bros. was one of Australia’s leading department stores, with a geographical focus on New South Wales and the Australian Capital Territory. Myer stores were located in the remaining five states (Myer/Grace Bros. Fact Sheet, 1993). This distinction persisted until mid-2004 when Grace Bros. stores were re-branded as Myer stores (this change occurred after the date of our study). Grace Bros was a name that was interwoven with Australian history. The brand had been in existence since 1895 – over 100 years – and it had become synonymous with quality, class and service – a premium department store (Myer/Grace Bros Fact Sheet, 1993).

Thus, the purpose of this paper is to replicate the Andreassen and Lindstad (1998) study and determine if their Corporate Image-Customer Loyalty model generalises to the Australian department-store sector through the examination of the Grace Bros department store context. The rest of the paper is structured as follows: first, the methodology is described, followed by the presentation of the results and a comparison with the original study, with the conclusion thereafter.

2. Methodology

A self-administered, mall-intercept survey was used. In this study, the respondents targeted were women aged between 20 and 55 years of age, as this group had been identified as representing the typical or core customers of Grace Bros. and their main target market (Evans, 2001). This was confirmed by store managers. Focusing on core customer groups (i.e., women aged 20-55 in this case) is recommended for gaining more meaningful insights when conducting customer-loyalty research (Reichheld, 1996), and combined with focusing on one company improves the internal validity of the study (Malhotra et al., 2002). The Charlestown Square Mall Grace Bros was used as the focal store. Charlestown Square is a large, regional shopping mall located in a metropolitan suburb of Newcastle, NSW. To ensure that evaluations were based on recent experiences of the Charlestown Grace Bros. store, respondents were disqualified if they had not shopped at the store in the previous six months (Cronin et al., 2000). Interviews were undertaken in Charlestown Square Mall and the Hunter Street Mall in Newcastle, with care taken to randomise the data collection through the strategies of approaching every fourth woman, surveying in multiple locations and surveying at different times of day (Sudman, 1980; Mehta et al., 2000).

116 useable questionnaires were collected. The female respondents were 34 years old on average, ranging from 20 to 50. Some 45 different postcodes and suburbs were represented, with a varied mix of 40 different occupations being reported. Respondents reported shopping at Charlestown Grace Bros. approximately every six weeks on average, with 28% visiting once a month (mode) and 60% of all respondents shopping at Charlestown Grace Bros once a month or more frequently. Thus, respondents were judged to represent a reasonable cross-section of Grace Bros.’ core customer group, have sufficient recent and ongoing experience with shopping at the store and were deemed suitable for analysis.

For this analysis, A&L’s measures were reworded and modified as required to reflect the Grace Bros. department store context, and confirmed through pre-testing. The constructs were represented by summated (mean) scores, excluding Disconfirmation, which was measured by a single item. Construct reliabilities were comparable to A&L’s and are as follows: Core Service (five items, $\alpha = .63$), Customer Satisfaction (two items,

$\alpha = .74$), Corporate Image (three items, $\alpha = .66$) and Customer Loyalty (two items, $\alpha = .77$). Path analysis was used to test the model (shown in Figure 1), as it is more efficient than structural equation modeling (SEM), yields an acceptable variable-to-sample-size ratio and produces comparable results to SEM (Li and Calantone, 1998; Grapentine, 2000). Path analysis has also been used in other marketing studies to validate models and confirm results from other research techniques (e.g. Goldsmith et al., 2000; Chaudhuri, 2002).

3. Results

The path model was tested using the maximum likelihood (ML) method in AMOS 4.0.1. The advantage of using AMOS is that an overall model fit is produced as well as modification indices for suggested model improvements. The fit statistics fall within the recommended ranges indicating a good model fit to the data (Byrne, 2001): $\chi^2 (2) = 2.07$, $p = .355$, $GFI = .993$, $AGFI = .947$, $RMR = .007$, $RMSEA = .017$. A check of the model diagnostics was also positive, showing only two small standardised residual covariances (both less than ± 1), with no suggested modifications greater than four reported. Grapentine (2000) noted the potential for error-term differences in the way structural equation modelling programs (e.g. AMOS) calculate model estimates versus OLS (ordinary least squares), therefore the path model was also estimated using OLS in SPSS. The OLS path coefficients and variance explained were the same as the AMOS results, with no problems indicated in the multicollinearity and residual diagnostics.

The construct correlations are presented in Table 1, and the standardised path coefficients and variance explained are presented in Figure 1. The coefficients were significant ($p < .01$) for the following paths: Customer

Satisfaction \rightarrow Customer Loyalty, Disconfirmation \rightarrow Customer Satisfaction, Corporate Image \rightarrow Disconfirmation, Corporate Image \rightarrow Customer Satisfaction, and Corporate Image \rightarrow Customer Loyalty. The Corporate Image \rightarrow Customer Loyalty path was marginally significant ($p = .07$). Non-significant paths ($p > .34$) were found for Core Service \rightarrow Disconfirmation, and Core Service \rightarrow Satisfaction. The variance (squared multiple correlations) explained for each of the constructs is as follows: Satisfaction (.70), Image (.32), Disconfirmation (.24) and Core Service (.38). The variance for Loyalty was .34.

The results are consistent with A&L (1998) in a number of areas, suggesting the existence of a certain degree of ‘sameness’ across the two studies, which is one goal of replication research in establishing empirical generalisations (Ehrenberg, 1995; Hubbard and Lindsay, 2002). As seen in Table 2, the results from both studies indicate that corporate image has a significant influence on core service and customer satisfaction, and both studies found no direct significant relationship between corporate image and customer loyalty, which was contrary to A&L’s original expectations. However, this study did find a marginally significant influence, which could be explained by the greater importance placed upon store image by retailers, as well as the overall more involved (both cognitive and affective) consumer storefront retail experience (Baker et al., 2002). In contrast, whilst it was found that image directly influenced disconfirmation for Grace Bros. and A&L’s insurance industry, no significant relationship was found for A&L’s newspaper industry

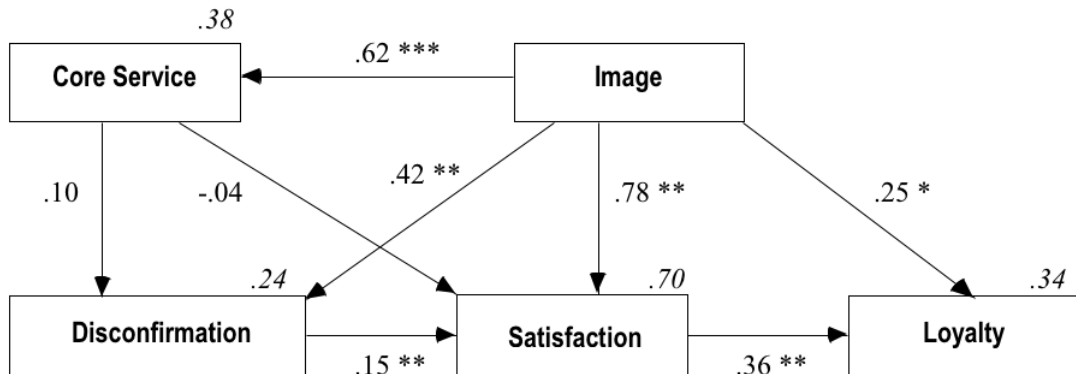
As with the exogenous variable results presented in Table 2, the results of the endogenous variables in the path model (presented in Table 3) were similar between Grace

Table 1: Construct Correlations in the Path Model (Grace Bros.)

	1	2	3	4	5
1. Loyalty	1.00				
2. Image	.55	1.00			
3. Satisfaction	.57	.83	1.00		
4. Disconfirmation	.29	.49	.52	1.00	
5. Core Service	.42	.62	.50	.36	1.00

Note: all correlations significant at $p < .002$

Figure 1: Standardised Path Model Results for the Current Study (Grace Bros.) (ML estimation)



Note: standardised path coefficients are shown without italics, variance explained is shown in italics, significance levels are: * = $p < .10$, ** = $p < .05$, *** = $p < .01$

Table 2: The Effect of the Exogenous Variable (Corporate Image): Comparison of Standardised Path Coefficients for the Current Study and Andreassen and Lindestad’s Study

	Corporate Image		
	Grace Bros.	Newspaper Industry	Insurance Industry
Core Service	.62	.86	.78
Disconfirmation	.42	n/s	.74
Customer Satisfaction	.78	.36	.92
Customer Loyalty	.25 (marginal sig.)	n/s	n/s

Table 3: The Effect of Endogenous Variables (Core Service, Disconfirmation and Customer Satisfaction): Comparison of Standardised Path Coefficients for the Current Study and Andreassen and Lindestad’s Study

	Grace Bros.			Newspaper Industry			Insurance Industry		
	Core Service	Disconfirmation	Customer Satisfaction	Core Service	Disconfirmation	Customer Satisfaction	Core Service	Disconfirmation	Customer Satisfaction
Disconfirmation	n/s			.62			n/s		
Customer Satisfaction	n/s	.15		.49	.22		n/s	n/s	
Customer Loyalty			.36			.73			.84

Table 4: Path Model Standardised Total Effects (Grace Bros.)

	Image	Core Service	Disconfirmation	Satisfaction
Core Service	.62	.00	.00	.00
Disconfirmation	.49	.10	.00	.00
Satisfaction	.83	-.02	.15	.00
Loyalty	.55	-.01	.06	.36

Bros. and A&L's insurance industry. The core service of the newspaper industry directly influenced disconfirmation and customer satisfaction, whereas there were no significant relationships between the variables in the Grace Bros. and insurance industry studies. Disconfirmation in the newspaper industry directly influenced customer satisfaction, but no significant influence was identified for either the insurance industry or Grace Bros. The one distinct similarity among the three industries was the fact that customer satisfaction had a direct influence on customer loyalty. Table 4 presents the path model's overall standardised total effects (the combined direct and indirect effects).

4. Conclusion

This study has found initial support for the Andreassen and Lindestad (1998) model as tested in the Australian department store context (for Grace Bros.). The results support A&L's views on the direct influence of image in the model, as well as the strong indirect influence of image on loyalty. The Grace Bros results also provide further support for A&L's tangible-intangible product difference, reflecting the differing service-merchandise mix of the three retail categories. Grace Bros. tended to follow a similar (though not exactly the same) pattern as the insurance industry, likely reflecting the greater personal-service component in up-market department stores like Grace Bros. Overall, the results suggest that a certain degree of 'sameness' exists across the two studies, acting as an initial first step in travelling down the road to establishing A&L's model as an empirical generalisation.

Potentially, this model is of managerial interest because of the importance of understanding the drivers of customer loyalty – customer satisfaction and corporate image in this case. Though corporate image was found to have only a marginally significant direct influence on

customer loyalty, as seen in Table 4, the total effects of corporate image (both direct and indirect) on customer loyalty are much more substantial, as well the influence that corporate image has on core service and customer satisfaction perceptions. Thus, as with A&L's study, these findings show the importance of building a good corporate image in the retail context, something that should be given due consideration at Myer as they go about re-branding Grace Bros. stores and opening new outlets.

As with all research, this study has limitations and identifies areas that can be explored in future research (and in future replications). A cross-sectional sample was used in this study (and by A&L), and though it does not diminish the general 'sameness' in results that was found across the studies and their contribution to the establishment of empirical generalisation, the reader should keep in mind the usual caveats about inferring and suggesting causality rather than establishing it when using SEM techniques (e.g., Rigdon, 2002; Cliff, 1983). Due to the two different analysis techniques used, the absolute differences in the size of the path coefficients for path analysis versus SEM approaches (Grapentine, 2000) should also be kept in mind for those seeking to make direct path-coefficient comparisons across the studies.

The sample was drawn exclusively from women, these being the core Grace Bros. customer group, however this limits the generalisability of the findings to other customer groups (i.e., men). Future research thus warrants replication in a mixed-gender context with other customer groups. A similar limitation arises from the focus on only one department store in one location. Having established initial support for A&L's model in the Grace Bros context, future research should broaden the focus to include other up-market department stores (e.g., David Jones) as well as other competing retailers and categories, such as general-merchandise retailers identified in department-store price-matching policies

(e.g. Big W, K-Mart, Target). Further, though Newcastle's use as a product test market for Australia suggests that it is a suitably representative single location, further research should investigate different locations with different shopper (socio-economic) profiles. Finally, drawing on Baker et al.'s (2002) findings, future research could extend the A&L model to include the effects of store-environment factors (i.e. social, design and ambient factors) in an antecedent role to core service and image. This could be tested using a nested-model approach to compare A&L's model both with and without the store-environment factors in the model to see which produces the better fit and explanatory power.

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Research Note

The Taiwanese are Just Like Australians in Their Loyalty to Fast Food Outlets

Dag Bennett

Abstract

Despite big differences in culture, types of food, retail environments and the brands on offer, the loyalty of Australian and Taiwanese consumers to fast food outlets is nearly identical. In both countries, a third of buyers purchase from the same branded outlet twice in a row, while two thirds buy from a different outlet, usually of a bigger brand. This was true for all brands, regardless of the type of food on offer or whether the brand was local or global. The analysis also confirmed that partitioning is limited, although there is some partitioning of the Australian market based on functional differences. The management implications are that marketers would be best served by aiming to attract customers rather than aiming to encourage loyalty, and that small sets of survey data can be usefully employed to reveal underlying market structure and brand performance measures. This is especially helpful in data-poor markets and categories.

Keywords: Fast food brands, Consumer loyalty, Taiwanese consumer behaviour, Australian consumer behaviour

1. Introduction

The ongoing academic and industry discussion surrounding the benefits of consumer loyalty has evolved from how to measure and assess loyalty (e.g., Cunningham, 1956; Fader and Schmittlein, 1993; Bhattacharya, 1997) to loyalty building and management (e.g., Reichheld and Teal, 1996; Baldinger and Rubinson, 1996; Aaker, 2002; Aaker and Joachimsthaler, 2002). Hence the development and use of loyalty programs, relationship marketing, CRM and so on.

But one of the most consistent, and some would say contrary, themes in this discussion has been driven by Andrew Ehrenberg and Gerald Goodhardt, whose studies have repeatedly established that simple parameters such as penetration and purchase frequency can accurately predict many other aspects of consumer behaviour, including behavioral brand loyalty. Their work uses the Dirichlet model of consumer purchasing behaviour, which has been applied to a huge variety of categories, market types and countries (Ehrenberg, Uncles and Goodhardt, 2004).

This body of work shows that brand loyalty in established, competitive markets follows predictable norms. Recent work on subscription markets (Sharp,

Wright, and Goodhardt, 2002), European car markets (Ehrenberg and Bound, 1999) and the US car market (Bennett, 2004), shows that Dirichlet patterns are not confined to FMCG markets, but also occur in high involvement categories or those where purchases are infrequent. The patterns have also been shown to occur with frequently-visited retail shops (East, et al., 1995; Brewis-Levie and Harris, 2000; Uncles, Ehrenberg and Hammond, 1995), and petrol stations (Bennett, Ehrenberg, and Goodhardt, 2000).

An understanding of a market's underlying structure and buying patterns is useful because it allows marketers to set realistic and achievable targets. For example, a new product introduction would be more likely to meet its sales and growth objectives if it was based on accurate assessment of repeat buying, purchase frequencies, and switching in the category. Likewise, benchmarks and norms allow marketers to audit existing brands to determine whether they are performing as they should, or whether a marketing effort (advertising, promotion, etc.) is working.

2. The General Patterns

The established brand-buying patterns relate to many different brand performance measures such as how many

people buy a brand, how often they do so, and which other brands they also buy. The primary pattern is that all brand performance measures tend to vary together from one brand to another (Bhattacharya, 1997; Ehrenberg, Uncles and Goodhardt, 2004; Fader and Schmittlein, 1993).

Another major pattern is that repeat-buying and brand-switching are dominated by how big each brand is (its market share), and not by any other particular attributes or values of the different brands. Nor do the patterns vary with customers' attributes; that is, the customers for one brand are much like those for competing brands (Kennedy and Ehrenberg, 2001) and large share brands tend to score high on all measures and small ones score low. Loyalty is therefore not specific to a brand. Instead, brands with the same market share tend to have similar levels of loyalty.

Finally, brand loyalty is usually divided between a number of brands. Brown (1953), Cunningham (1958) and Ehrenberg (1988) have shown that most consumers buy more than one brand in a category over a sequence of purchases, buying one more often than another yet each brand more or less regularly, if infrequently. Most consumers switch back and forth, or alternate irregularly between brands in their portfolio, only occasionally adding a new brand or dropping an old one (Baldinger and Rubinson, 1996; Ehrenberg, Uncles and Goodhardt, 2004; Jones, 1998).

3. Extending the Analysis

Most of the work in the field of behavioural brand loyalty has been undertaken on large sets of panel data. This has necessarily ruled out those markets and categories where panel data is unavailable or unreliable (emerging markets), or too expensive to acquire (subscription markets). Panel data is also cumbersome to use for those instances when a marketer would like a quick look to see whether a particular brand or marketing effort is performing as expected.

Over the past few years, several researchers have shown that survey data can be used to generate well-established brand loyalty patterns (Bennett, 2004; Dall'Olmo Riley, 2000; Roy and Lahiri, 2002) and confirm patterns such as double jeopardy (Bhatia and Bawa, 2002). They have also shown that small data sets can be used (Bennett and Ehrenberg, 2002; Bennett, 2003) and that panel data can be replaced with survey data using measures based on the Juster scale (Wright, Sharp and Sharp, 2002). This

has greatly expanded the opportunities for studying less well-understood markets and categories where panel data do not exist.

This study of fast food purchasing is one in a series of replications designed to test whether the well-known brand buying patterns hold true in dis-similar markets and categories. So far, all the replications in the series show that small sets of survey data reveal well-known market structures and brand performance measures. And while the method tends to have slightly more variability in results compared to analyses of panel data, this is largely because of the small sample sizes. Moreover, the rare deviations from expected patterns are largely explicable and predictable.

4. Quick Service Outlet Purchasing

The data in this analysis was gathered for a commercial market research project in South Australia during February 2001 (n=408). Separately, in June 2002 data were gathered in Taiwan (n=300) to repeat the Australian analysis. Both sets of data are drawn from individual respondents who had bought two or more meals from Quick Service Outlets (QSOs) within the past month and who were asked questions about the last QSO used, and the next to last (i.e., a "two-purchase technique" was used to collect data from survey respondents).

Simple frequency counts (not shown) established that brand shares were stable (+/- 5%) from purchase to purchase and these were verified as much as possible against published share data, which did not always completely agree (e.g. China Times, 2002; Research and Markets, 2002). Both the Australian and Taiwanese markets had a few big brands and many smaller ones, though the top four Taiwanese brands were slightly more dominant, accounting for 72% of purchases, vs. 59% in Australia. McDonalds was the biggest brand in both markets, but most brands had different market shares and different relative positions in each market. Burger King, for example, was 3rd biggest in Australia (13% share), but only 8th biggest in Taiwan (8%). A few brands such as 7-Eleven and MWD were big in only one market.

To make comparing the two markets easier, the brands have been ordered by market share and brand names have been replaced with letters; A is the largest brand in each market, B the second largest, and so on. Table 1 shows that brand loyalty (repeat-purchase) is virtually the same in Australia and Taiwan, averaging about 33%. In other words, only a third of each QSO's customers

Table 1: Percentage of Buyers who Bought the Same Brand on Both Purchase Occasions – Australia and Taiwan Compared

Brands	A	B	C	D	E	F	G	H	I	J	Ave
Australia	38	37	35	31	27	39	38	41	25	21	33
Taiwan	36	34	41	39	33	25	29	32	27	31	33

bought it on two consecutive purchase occasions (in Australia, where three purchases were recorded, 15% bought the same QSO three times in a row). This purchase-to-purchase repeat rate is lower than for many other categories. For example: carbonated soft drinks in the UK, Singapore, and Taiwan average around 50% (Bennett, 2004); make-up brands average about 65% in France (Bennett, 2003); and toothpaste and shampoo average 54% and 60% respectively in India (adapted from Roy and Lahiri, 2002). It may be that most fast food customers value variety and therefore prefer to go to different QSOs from day to day, even though some QSOs have large and diverse menus. In any case, both Australian and Taiwanese consumers are twice as likely to switch than to go to the same QSO twice in a row.

Switching for fast food outlets is probably not a wholesale change of preference, nor permanent. It is more likely that customers have decided to patronize another QSO within their portfolios and that at some future purchase they will buy their original choice again. In fact, in Australia, about 7% of QSO customers bought the same QSO non-consecutively, e.g. first they bought brand A, then a different brand on the second occasion, and then A again on the third purchase.

Overall, both markets seem to have similar structures, and repurchase and switching rates are mostly very close to average, especially for the larger brands. It is also likely that some of the variation in repeat rates for smaller brands is due to the small sample size, where the gain or loss of 1 customer may result in a 5 or 6 point change in repurchase rates.

There is also a small downward trend in repeat rates from the bigger brands on the left to the smaller ones on the right; i.e., the bigger brands are a bit above average, while smaller brands tend to be a bit below average. This is a double jeopardy pattern found in many product categories (Ehrenberg, Uncles and Goodhardt, 2004), though it is usually more pronounced than here.

5. Switching is in Line with Brand Penetration

Table 2 shows penetration for individual branded outlets after two purchases. On average, the number of people buying at each of these brands increases by about half from the first to the second purchase. By the second purchase, large brands have a lot more customers than small brands. This is what distinguishes a large brand from a small one; it has a lot more people buying it.

The penetration and switching levels are in line with the percentage buying the brands at all; i.e., both were higher for A and B than for I and J. This relationship of switching to penetration is an illustration of the “Duplication of Purchase Law” which has been widely established for a large number of categories (Goodhardt 1966; Ehrenberg 1988). For QSOs it reads:

$$\begin{aligned} &\text{The \% of the previous customers of brand P who} \\ &\text{switch to the new brand N} \\ &\cong D \times \text{the penetraion of N} \end{aligned}$$

In other words, when people switch brands they are more likely to switch to a brand with high penetration. The proportionality factor “D” reflects the likelihood of switching from the previous brand P to a new brand N,

Table 2: Market Penetration after Two Purchases - Australia and Taiwan Compared

Brands	A	B	C	D	E	F	G	H	I	J	Ave
Australia	29	24	20	16	14	12	14	13	7	7	16
Taiwan	35	33	29	20	16	16	11	8	5	2	16

relative to how many people bought N at all during the time period.

$$D = \frac{\% \text{ of customers of P who switch from P to N}}{\% \text{ who buy N at all}}$$

Table 3 shows the average switching figures for QSO brands (averaged over 2 purchases) giving an average D-value for all brands of roughly .73 for Australia and .74 for Taiwan. Thus 10% of A's customers switched to B, which is about 73% of B's average penetration of 14%. By and large, switching levels decrease in line with .73 times the brands' penetrations, from high for A on the left to low for J on the right (the correlations for both are $r = 0.90$).

There are, however, some small deviations: Some switching levels are above their penetration norms and this is probably because these brands are perceived by customers to be functionally different than others – a take-away or breakfast specialist perhaps, which means that customers do not consider certain brands equally for all meal occasions (Brand D in Australia, for example, is a lunchtime sandwich specialist, and has a low switching rate). Deviations in switching may also reflect an unusual level of marketing activity during the study period; a new product offering with heavy promotion, for example, drove brand F in Australia to a higher than predicted switching level during the study period.

In any case, the deviations are small and in the main, switching was very much in line with penetration. Indeed it should be because this is partly a statistical selection effect, as was explained by McPhee (1963) when he noted that double jeopardy was due to the sheer size (market share) of the brands and not to any inherent brand strength or equity. In effect, customers of a small brand have relatively high chances of also buying the big brands because they are big. Deviations from the general

pattern therefore stand out and give an indication of something happening in the marketplace – a brand gaining or losing share, or a promotion that drives up sales, and so forth.

6. Partitioning

Overall, the average duplications in the observed switching in Table 3 were in line with those predicted by each branded outlet's penetration. This is essentially the standard Duplication of Purchase Law noted above. Against this, the purchase duplications between pairs of brands may reflect clusters or sub-markets within the QSO marketplace. This was the case in Australia where clusters were derived from the differing likelihoods of switching between pairs of QSOs (assuming a high degree of substitutability), as expressed by their D-values.

Table 4 shows that there is slightly high duplication within the cluster of American-Style chains, higher for Local Specialists, and markedly higher for Take-Home food. In other words, there appears to be a partition between different types of QSOs. The high D value for Take Home shops shows that customers substitute one take-home shop for another, whether a take home pizza or fish and chips – with the substitution based on buying and taking home, and not on the food itself.

On the other hand, there was no apparent clustering in Taiwan. Table 5 shows all the similar type duplications were quite near the average of .7. This is probably a more typical outcome than the Australian case because partitioning itself is generally rare, and when it occurs, it is generally based on a functional difference between product variants such as leaded vs. unleaded petrol (Ehrenberg, Uncles and Goodhardt, 2004). The lack of a Take Home cluster in Taiwan is probably because compared to Australia, Taiwan is more densely urban and

Table 3: Average Switching: Observed and Predicted – Australia and Taiwan Compared

Brands	A	B	C	D	E	F	G	H	I	J	Ave
Average Switch											
Australia (observed)	14	10	10	4	4	9	7	5	7	4	8
.73 x Penetration	12	10	9	7	6	7	7	5	6	4	7
Taiwan (observed)	13	12	12	9	7	6	4	3	4	3	6
.74 X Penetration	14	13	12	8	6	6	4	3	2	1	7

Table 4: Duplication-Coefficients in Australia Show Partitioning

<u>Previous Purchase</u>	<u>Current Purchase</u>		
	American-Style	Local Specialists	Take Home
American-Style Chains	1.2	.6	.6
Local Specialists	.6	1.5	.4
Take-Home	.5	1.0	1.9

Table 5: Duplication-Coefficients in Taiwan Show No Partitioning

<u>Previous Purchase</u>	<u>Current Purchase</u>		
	Western	Chinese	Cosmopolitan
Western Chains	.8	.7	.7
Chinese	.5	.6	.5
Cosmopolitan	.5	.7	.8

people have fewer cars and therefore tend to eat in restaurants rather than to take away. Also, in Taiwan, fast food means really fast - meals may be ordered and consumed within ten minutes, making the take-home option less important.

7. Conclusions

Analysis of a small number of purchase records reveals many brand-buying patterns such as the dominance of market share in determining brand performance measures, double jeopardy, and the duplication of purchase law. It is of course very helpful to have benchmarks to work towards when assessing market structure. These results show that loyalty and switching patterns for QSOs are much like those found in other categories, types of markets and countries.

These results were in line with the expected patterns and accurate with reference to external industry data, especially for larger brands. Moreover, they are remarkably similar, suggesting that the fast food categories in these two markets are broadly the same in terms of buying behaviour. This does not mean that the differences in culture, food types, brands, retail environments, etc. are unimportant, but it does imply that QSO customers have a lot in common and that their

similarities result in brand buying behaviour that is very similar.

The main limitations of this type of analysis are that not all brand performance measures can be calculated (100% loyalty, share of category requirements, etc.) and that smaller brands are more susceptible to sampling error.

This replication result is encouraging and suggests that the two-purchase technique holds promise as a quick, inexpensive and easy-to-use method for assessing brand performance. The technique could make a significant contribution towards the development of analysis techniques for use in markets where data is difficult or expensive to acquire. The next steps in confirming the usefulness of the two-purchase technique will be to gather additional data sets in both well-known FMCG markets and less-well understood markets such as those in developing countries and subscription markets.

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Biography

Dag Bennett is a Senior Lecturer in the Business School at London South Bank University, UK. He completed an MBA with a double concentration in International Business and Marketing at Indiana University, USA, School of Business in 1986. After two years in brand management and marketing research at Procter and Gamble in Cincinnati, Ohio, he moved into marketing consulting with Young & Laramore, where he was director of client services first in Chicago and then London until 1997. In 1992, he joined South Bank

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Meaningful Marketing: 100 Data-Proven Truths and 402 Practical Ideas for Selling More With Less Effort

Brain Brew Books: Ohio

Douglas Hall & Jeffrey Stamp (2003)

It is very rare that I read a pop marketing book worth mentioning to others. But “Meaningful Marketing” by Douglas Hall and Jeffrey Stamp is different. It has the usual hyperbole about transforming your business, and the usual repackaging of traditional ideas, but that shouldn’t obscure the main agenda of the book. And that is to take academic research findings and turn them into marketing principles. It is something academic textbooks say they do, but often don’t. Not that this book does a great job either, but at least it tries.

Meaningful Marketing is a list of principles based on findings from 179 academic articles and from a couple of analyses of brand purchasing (scanner) data completed by the authors’ consulting company. Each principle is described on one page, with an additional page listing several related “practical ideas”. It is a nice presentation formula that others could do well to follow. But the important thing is the distillation of research-based principles or, as they put it, “data-proven truths”. Scott Armstrong at Wharton has done something similar on his web sites for forecasting principles (<http://www.forecastingprinciples.com>) and advertising principles (<http://www.advertisingprinciples.com>). Each “data-proven truth” is an attempt to state an empirical generalisation (or marketing law), something marketing managers need desperately.

There are 100 such principles (plus 402 related “practical ideas” which personally I found added little practical value). All in all it is too many, there is repetition and it is obvious that the authors were struggling to hit the magic 100 number. For example, data-proven truth number 56 says “An Australian research study found that companies that had greater sales growth, profitability, customer satisfaction, and new product/service success rates also had significantly stronger product development abilities”. While data-proven truth number 59 is nearly identical, saying “An Australian research study found that companies that had greater sales

growth, profitability, customer satisfaction, and new product/service success rates also had significantly stronger brand management abilities”.

The technical appendix lists the academic articles that form the basis of each “truth”. The full references are a commendable feature, one missing from most pop marketing books (and even some textbooks). Unfortunately the level of scholarship is not always particularly high. For the near identical truths 56 and 59 “the Australian research study” in question is Vorhies et al. (1999) on “The capabilities and performance advantages of market-driven firms” published in the *European Journal of Marketing*. One other article is cited, but it had nothing to do with brand management or company performance. The EJM article showed that Australian firms that say they have better capabilities on everything that was measured had better profitability and growth in the preceding years. So it is quite possible that managers in companies that have been reporting good financials tend to rate their company’s capabilities a bit higher (“we must be good, we are doing well”). And companies that haven’t been doing so well tend to rate their capabilities (whatever the capability) a bit lower (“we can’t be that great since we aren’t doing so well”). The causal inferences taken by “Meaningful Marketing” are naïve.

This book’s main selling point is that it is based on “hard data”, but, as any philosopher of science will tell you, what we see is theory dependent. And the authors have a particular view on how marketing works which comes through in their selection and interpretation of the academic findings. It is a very traditional “differentiate or die” view of the world, based on the Kotler-ian idea that marketing success is about creating products with substantial functional advantages, selling these at a price premium, and advertising the product’s distinct advantages because advertising only works by changing peoples’ minds. As such, their principles might only

apply to a small portion of the marketing world. Something to which the authors are totally oblivious; they err in massively over-generalising. Each “data-proven truth”, even if it is based on one small survey (e.g., of students), one product category, and in one place/time, if Hall and Stamp “found it convincing” then they present it as a proven principle without any boundary conditions. They make the classic mistake of confusing statistical significance with generalisability. They write, “with statistics, we can quantify the likelihood that what we’re observing is a reproducible and reliable truth versus a coincidental one-time random event” (p. 20). This is a common misunderstanding of statistical significance tests which estimate the chance that a result is due to sampling error but tell us absolutely nothing about whether the result is one-off or would generalise to different conditions (e.g., a different place, time, product category, research team, data collection method, etc.).

So many of the “data-proven truths” may not be reproducible and it is most unlikely that they apply to all product categories and markets.

That said, I was delighted to read of some principles that I know have been reported elsewhere across a wide range of conditions. For example, “to sell a lot you need a lot of customers” (p. 52); this is based on their analysis of almost 10,000 brands in the USA where they found that big brands had 978% more customers who purchased on average 331% more per year. This is the Double Jeopardy pattern observed over time, countries and many categories and made famous by Andrew Ehrenberg and colleagues (Ehrenberg et al., 1990). For many years Andrew has pointed out that competing brands tend to vary little in loyalty compared to the substantial differences in the size of their customer bases. And he has pointed out the managerial implication that loyalty is not a path to substantial growth, or as Hall and Stamp put it “clearly both are important ... however if your resources are limited the data indicate that the first priority should be on increasing your total number of customers”.

Again, we might quibble with their scholarship, as they have drawn implications about how brands grow from cross-sectional analysis. But fortunately for them recent analyses of growing and declining brands have shown that market share growth is largely a function of growth in the size of the customer base (McDonald and Ehrenberg, 2003).

Some of the other interesting principles also come from their own analyses of scanner data; for example, “volume per purchase is 3.4 times more important than frequency of purchase in explaining the total amount that a customer purchases each year” (p. 54), the implication being that there is little hope in increasing how often you are bought, but potential to get customers to buy more each time. This would be an interesting generalisation to test across different conditions.

As I have said, not all the principles are so interesting, many are of questionable reliability, and their generalisability to your product or market is unknown. But as a first effort this book is a good start. There are at least a dozen or so principles worth reading and thinking about. As an added bonus the book comes with an audio CD which focuses on a few of the more important principles and, at one hour, takes less time to listen to than to read the book.

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Business and Management Research: How to Complete Your Research Project Successfully

Westburn Publishers: Helensburgh, Scotland (2003)

Michael J. Baker

What is the positioning of this book? Who is it for? The positioning of this book in its author's words is: "While there is no shortage of textbooks and monographs dealing with all aspects of research...experience in preparing students for project research work has highlighted that few offer a comprehensive overview of the issues and options facing the student embarking on [a major research project] for the first time." Thus, the book is designed for self-study by students who are embarking on a research project. It is not limited to traditional research theses, such as Honours, MPhil/MSc, or PhD, but also covers coursework degree research projects such as MBA projects. However, it is not intended as a textbook for a conventional undergraduate or postgraduate Market Research course.

In terms of research students (as in Honours, Masters, and PhD theses), one of Michael Baker's strong qualifications for this topic is that he has supervised over 50 doctoral candidates to successful completion (!). Additionally, he has been an examiner for many doctoral theses, a journal editor, a head of department, etc. (there is not enough space here to go through his long CV of achievements!). Baker is also a frequent visitor to Australasia as a visiting professor. He not only researches marketing, but also practices marketing as an author/editor of over 30 books, each with its own target audience, such as this one.

The content of the book serves to introduce students to how to do a research project, with an annotated set of Recommendations for Further Reading for pursuing specific topics in more depth. The book's coverage is indicated in its 15 chapters:

1. The Role of Research Projects in Business and Management Studies
2. Philosophical Issues and the Conduct of Research
3. Writing a Research Proposal

4. Writing a Literature Review
5. Using the Internet to Find Information
6. Selecting a Research Methodology
7. Qualitative Research Methods
8. Sampling
9. Questionnaire Design
10. Data Collection – Interviewing
11. Questionnaire Completion
12. Conducting Primary Research Online
13. Data Interpretation
14. Writing Up and Getting Published
15. Making a Presentation

It does not set out to take away from the specific requirements of your institution: "the Golden Rule must be to *get a copy of the [local] requirements and regulations.*"

As Baker notes, there are many books on research methods, so what is distinctive about this book? What I think is particularly distinctive for research students are Chapters 2, 3, 4, and 14. These are not common in research methods textbooks. The other, research methods type chapters are somewhat distinctive also in that they are targeted more to scholarly research projects as opposed to managerial applied research (what Baker calls "Academic Discipline Research" as opposed to "Professional Discipline Research"). For example, the qualitative research methods chapter spends three pages discussing Grounded Theory, which would be unusual for a market research textbook. This is useful for the research project student.

Many of our research students in Australasia are surprisingly unprepared for undertaking a major research

thesis. We argue in the article “Doctoral Coursework is Needed in Australasia” (Alpert and Kamins, 2004) that doctoral coursework with seminars that involve reading and critiquing scholarly articles (possibly with a practice research proposal as a major paper) would help doctoral students internalise as “tacit knowledge” the nature and structure of a scholarly research project. Furthermore, a doctoral level research methods course would assist with understanding the nature and range of research methods. Research students at all levels not benefiting from both such coursework would welcome Baker’s book as an introduction and summary of these points.

Let’s look more closely at a few of the chapters, to get a feel for the book. Chapter 3 Writing a Research Proposal starts off defining “What is a ‘research project’?” in order to know what must go into a research proposal, and then lists seven basic steps in the process of developing the proposal: Formative thinking, Developing a pool of topics, Reflection and screening, First draft proposal, Find a supervisor, Agree the proposal, and Implement. It then goes through these steps, providing advice. For example, for First draft of the proposal a seven part structure for the proposal is suggested: Title, Outline, Overview, Objectives, Research Methods, Research Plan, Bibliography. Advice follows on each part. For Find a supervisor, the classic Phillips and Pugh (1994) statement of what supervisors expect from their students, and of what students expect from their supervisor, is provided.

Chapter 4 Writing a Literature Review starts with the purposes of a literature review. (Which, by the way, is not simply to summarise a thousand articles, which bores the heck out of examiners.) The purpose is to “distinguish what has been done from what needs to be done” on your topic, and to obtain a better answer by building on the best of what is already known. Next is Citation, why and how to do it. Then Getting Started on the literature review, selecting sources, taking notes, and organising your material. Writing Up involves clearly addressing: *description* of what is known; *investigation* or analysis of this work; and *explanation* of what you believe this means. Baker recommends Hart’s (1996) book *Doing a Literature Review* as essential reading.

Chapter 14 Writing Up and Getting Published starts with advice on Getting Started on writing a research project report. “The message is clear – start writing at the earliest opportunity.” It then goes step by step through Outline Structure and Content. The book presents the 5 chapter structure: Introduction, The literature review,

Research methodology, Data analysis and findings, Conclusions and recommendations. Baker provides advice and details on each of the 5 chapters. Here may I point out that in our region it was recognised that many research students would find useful some guidelines for when they were beginning to think about how to structure their thesis, so two guidelines were proposed in a 1998 issue of the *Australasian Marketing Journal*. The article by Perry (1998) proposed a structure similar to the one in this book, except the second chapter is labelled “Research Issues” instead of “Literature Review”. The article states “...literature review *is not an end in itself*, but is a *means to the end* of identifying the worthy research issues” and identifying and building on relevant prior knowledge. Uncles (1998) proposed that rather than the thesis reading as a “murder mystery”, where the findings and conclusions are not revealed until towards the closing stages, it should read as research report presenting the main findings at an early stage (Chapter 2 Summary Findings) and then presenting the full details and justification.

Chapter 14 continues with Baker presenting a “Checklist for Evaluating Dissertations.” This, from the University of Otago, presents a useful set of 28 analytical questions the student can use to evaluate how good the work is in its present form, e.g., “Was the problem clearly stated and defined?”. Assuming the content has now been successfully outlined, Baker has suggestions for Fleshing Out the Outline, such as of course be clear but also don’t be afraid to be unconventional if it communicates the point more strongly. Writing for a Purpose includes being aware of the audience, which means examiners but also journal reviewers (see next). He provides some (qualified) encouragement by noting “It is important to remember that, in general, examiners wish candidates to succeed.” Some tips on Getting Published are presented, including describing the “Action Learning Set Review” whereby your colleagues help with feedback before the paper is submitted for publication. Finally, Baker explains what is Peer Reviewing and gives tips for success. Similar sentiments to those expressed by Polonsky et al. (1998) are presented here.

I especially liked the annotations on the recommended readings at the end of each chapter, which give the reader an expert’s evaluation of those sources.

What would be nice to be added for a second edition of Baker’s book? In my view, perhaps a bit whimsically, it would be great to see a FAQ for research students. Who better to provide answers than someone as experienced

as Baker? The FAQ (Frequently Asked Questions, a section commonly seen on websites) might cover questions like: “How do I know when my topic is the right size, not too big and not too small?”, “If I feel strongly about making a research choice different from that recommended by my supervisor, what should I do?”, and “How many research questions/hypotheses should I have?”

In sum, the book provides a good beginning for research students at the very start of their program, especially for coursework program students undertaking their first and perhaps only research project.

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