

## **Choosing Museums: the application of discrete choice modelling in predicting increased visitor frequency<sup>1</sup>**

### **Abstract**

This research presents the findings on predicting increased museum visitor frequency using an experimental design discrete choice modelling methodology. Previous research investigated factors associated with the decline in visitor numbers to Australian museums and revealed that work pressure and time squeeze had an impact on leisure consumption patterns among traditional museum visitors and there was increasing competition for leisure time and money. How people made choices in relation to cultural and leisure consumption remained unexplored and was the subject of the Choosing Museums project. Choice modelling as a methodology has not been applied to the museum sector in determining how visitors could become more avid cultural consumers and this research acted as a proof of concept for its suitability. The results suggest that choice modelling has much to offer in relation to understanding the benefits people are seeking from a museum experience as well as offering strategic insight into potential collaborative ventures and re-combinations of existing museum products and services.

### **Introduction**

The impetus for this research grew from an enquiry to determine factors associated with museum visitor decline over a ten-year period in Australia. The decline in cultural consumption was widespread but particularly dramatic in relation to museum attendance where visitation fell from 27% in 1991 to 19% in 1999 (Australian Bureau of Statistics, 1999). It also appeared that the decline was not merely associated with decreased frequency of attendance but was a real decline in visitor numbers.

This downward trend has been slightly reversed and may be attributed to the opening of the National Museum of Australia in Canberra in 2001 (Australian Bureau of Statistics, 2003).

Nonetheless, visitor uncertainty is a serious challenge for museums operating in a competitive leisure environment. The history of museums suggests that they are slow to change and some have taken the high ground in presenting themselves as signifiers for the preservation of particular forms of civilization (Conforti, 1995; Hein, 2000; Hood, 1992; Hooper-Greenhill & Dodd, 2002). While this has been successfully critiqued (Clifford, 1997; Crimp, 1985; Griffin & Abraham, 1999, 2000; Rentschler, 2002; Vergo, 1989b) through a re-focus on visitor needs, the core business of museums still resides in collection development, interpretation and display (Weil, 2002).

The focus of the "Choosing Museums" research was to investigate a number of alternative scenarios that would be sufficiently attractive to traditional museums goes to

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<sup>1</sup> The framework and methodology for this project was constructed by Professor Jordan Louviere as a proof of concept application to the cultural sector. The online survey instrument was administered and analysed by Surveyengine/Future and Simple under the guidance of Professor Louviere.

make them more frequent visitors without necessarily jeopardizing the core function of museums or encroaching on more recent policy objectives of social inclusion (Casey, 2002; Evans, 2001).

This paper presents the findings of a 'proof of concept' project in applying discrete choice modelling to the museum sector. The focus on choice and choice modelling is presented within the context of a stream of research which has been undertaken in the past four years between the University of Technology, Sydney and a number of state and national museums within Australia. This research context suggests that museums are operating within a leisure environment (as well as an educational and cultural environment) but that they do not clearly understand the strategic implications of this, particularly where visitor numbers appear to be in decline.

The paper presents first an overview of the theoretical underpinnings of leisure, the place of museums within this and the compounding factors of work pressure and time squeeze on traditional museum visitors. It suggests that museums are operating within a highly competitive leisure environment but are poorly equipped to respond. It then backgrounds the reasons for applying choice modelling as an appropriate methodology in exploring how current visitors could be made more frequent consumers of museum products and services. Finally it outlines the findings from the research and suggests that choice modelling is an appropriate methodology to use in understanding preferred benefits for the museum consumer and proposes further extensive testing.

### **Background to the Research: Museums within the Leisure Sector**

Given that the frequent museum visitor is characterized by higher socio-economic status and high educational attainment (Australian Bureau of Statistics, 1999; Bennett, 1994; Bourdieu, 1984; Griffin, 1978), it was difficult to explain museum visitation decline in an era marked by unprecedented access to higher education and increasing standards of living.

However the competition for visitors' time and money has also increased and is compounded by the growth of new commoditized leisure products and services which offer similar types of benefits to museums which may be fast-tracked, more accessible and less engaged (Oliver, Burton, Lynch, & Scott, 2002).

Museums have had an ambivalent attitude in placing themselves within the field of leisure. They have variously positioned themselves as part of the formal and informal education and learning process, part of scholarship, partly cultural custodians preserving the 'best' part of civilized society to elevate citizens. While this last attitude has gone underground somewhat, it is still not far from what most professional museum workers would see as their mission and is reflected in their professional bodies' missions (International Council Of Museums, 2001; Museums Australia, 2002).

Museums have not always seen themselves as part of the choices available to people as leisure activity. They have resisted competing for leisure time and money on the basis

that what they do is not entertainment or activity or restful but is cultural and ‘improving’ – it is separate from leisure. In a sense this is congruent with what many people believe as well. It would appear that in choosing leisure time activities many people do not even consider a visit to a museum as a viable alternative to another activity – it often does not even register on the leisure landscape (Lynch, Burton, Scott, Wilson, & Smith, 2000).

Leisure itself is a complex concept covering aspects of time, activity, attitudes and is difficult to define as one single notion (Veal & Lynch, 2001, pp.18-23). In a reductionist sense however, a number of elements about leisure emerge which are relevant to a discussion of arts, culture and museums and have an impact on how people make choices. These elements revolve around what Stebbins has defined as ‘serious leisure’ and what Rojek has defined as ‘fast leisure’ or postmodern leisure (Rojek, 1995, 2000; Stebbins, 1999).

The paradigm associated with serious leisure suggests that people make choices about leisure activities based on the opportunities those leisure activities present in relation to career advancement or life chances. This is consonant with recent public policy developments to include museums in a social inclusion agenda. However, Stebbins understands the pursuit of serious leisure has now become marginal in a society that condones and encourages casual leisure pursuits (1999, pp. 72-3) and may not be sustainable to those traditional (and potentially high yield) visitors who are seeking a number of entertainment and educational benefits.

Rojek theorizes that contemporary leisure is marked by the postmodern condition or what he calls the struggle between Modernity 1 and Modernity 2. This manifests itself in distraction, fragmentation, lack of commitment, contingency and fast leisure pursuits in the form of digital technologies and games. In this scenario, the emotionality of life supplants or is seen as equally important as rational aspects of life (Rojek, 1995).

In terms of these two positions, museums may well be caught in a ‘serious leisure’ paradigm offering traditional modes of increasing both cultural and social capital that is important for public policy social inclusion agendas, but may be less palatable for a post-modern, highly educated potential visitor, seeking fast leisure (Gleick, 2000; Rojek, 2000; Stebbins, 1999). The contemporary highly educated visitor may also be less likely to seek only high cultural experiences, but rather as cultural omnivores, seek converged and serial cultural experiences offered by cinema packages, home-based digital entertainment and restaurant going experiences (Bennett, Emison, & Frow, 1999).

### ***Work Pressure, Time Squeeze and Leisure Choice***

Compounding these theoretical positions of notions of serious and fast leisure is the reporting of contemporary time squeeze and work pressures. It appears that demographic trends and work pressures on professionals and managers - traditional museum visitors – may be exacerbating the decline in museum visitation (Australian Bureau of Statistics, 2000a, 2000b; Bittman, 1999b; Bittman & Rice, 1999a; Lynch et al., 2000; Oliver et al., 2002; Yann, Campbell, Hoare, & Wheeler, 1999). While these reports indicate that work

pressure and the pace of work are creating an imbalance between work and family life, some unexplained anomalies also arise in relation to leisure choices.

The effect of work pressure often results in people seeking out superficial and non-committed leisure engagement (Lynch et al., 2000). However, this is also characterized by either a planned investment in time that combines serial leisure activities over a concentrated time period or alternatively spontaneously arranged leisure engagement with friends via SMS or mobile phone. The commonality appears to be that a number of serial activities occur to maximize the time investment (Lynch et al., 2000).

This kind of change in leisure patterns in relation to work pressure and time availability should mean, predictably, that museum visitation would suffer as a result of both the intellectual demands and the time commitment to this one activity. However, other activities which also demand concentration and time commitment are increasingly popular, and none more so than cinema-going (Australian Film Commission, 2002). One explanation of the anomaly of why museums may be in decline while cinema visitation is increasing, lies in the way cinemas have restructured in the past ten years through minimizing risk associated with time and cost by offering a number of packages and flexible ways to pay for film-going (Burton, 2003; Scott, 1999).

While it is improbable that museums can compete with commercial activities of cinemas particularly in relation to distribution of their product and intense marketing through horizontal and vertical integration, the example of bundling and packaging products and services presented an interesting case for further exploration. Understanding risk minimization and flexible packaging and bundling of a leisure activity became an abiding concern in how people may make choices in a harried leisure and work environment and how this could be applied to the museum sector and their visitors (Oliver et al., 2002).

### *Challenges for museums as leisure providers*

How museums respond to challenges imposed by changes in leisure consumption may depend not only on public and private resource priorities but on developing a sense of entrepreneurship which seeks out partnerships with competitor leisure providers and understanding the cultural consumption patterns and preferences of their visitors (Burton, 2003). In doing this, museums need to develop a more sophisticated understanding of how consumers differentiate leisure choices and then identify how to respond in packaging their core purpose of experience, education and social activity to meet these needs either as a single entity or in collaboration with other leisure and cultural providers.

### **The Nature of the Research**

While previous research suggested that museums are operating in a highly competitive leisure environment, it was still unclear how people actually made choices about leisure consumption and about museum visitation within this context. Added to this is that over the past decade, one of the most compelling public policy developments in relation to arts and culture has concentrated on demographically broadening the visitor base and

increasing access to cultural provision (Evans, 2001; Museums Australia, 2002; Parker, Waterston, Michaluk, & Rickard, 2002; Prentice, Davies, & Beeho, 1997; Roberston & Migliorno, 1996; Saatchi, 2000; Sandell, 1998). At the same time that this public policy initiative has been developed there has been a noticeable decrease in the traditional visitor base to most subsidized cultural attractions particularly in Australia, but to some extent mirrored in the United Kingdom (Australian Bureau of Statistics, 1999; MORI, 2001) prior to entry fee elimination. Fighting a battle to convert non-goers to attend cultural attractions while experiencing a decline in the traditional customer base may result in a scattergun approach to marketing and trying to be all things to all people – a course of action that has been identified as ‘stuck in the middle’ strategic suicide (Kotler & Kotler, 2000; Porter, 1985, 1996).

Of the two marketing issues, arresting decline seemed more urgent than attempting to deploy scarce resources on a costly pursuit of non-visitors. The research therefore posed the question of how to make those who are aware of your product and services more frequent consumers by offering a range of benefits from which visitors could choose.

### **How people choose: Choice Modelling and Contingent Valuation as Methodological Approaches**

The decision to use choice modelling as a methodology was not clear-cut. In the arts choice modelling has not been used and there has been a preference for contingent valuation methodology (CVM) or willingness to pay (WTP) pioneered by Throsby and Withers (Throsby & Withers, 1979, 1984).

Research conducted by Throsby and Withers was predicated on the concept of the arts as an example of market failure. The price people were willing to pay to maintain or grow a cultural product or service was seen as a measure of value placed on cultural goods themselves. Throsby has identified some of the drawbacks to this form of methodology (Throsby, 2003). These limitations primarily revolve around the level of information people may or may not have in order to make judgments or decisions; whether art and culture has intrinsic value; whether the value cannot be determined by individuals personally but may be regarded as having external value to a third party, collectively or individually and over time; and whether there is an impossibility of economically valuing art because the products and services can be inherently unstable, lack value consensus and are difficult to measure quantitatively and qualitatively (Throsby, 2003, pp. 278-280).

While Throsby and others (Thompson, Berger, Blomquist, & Allen, 2002) have been primarily engaged in the ‘big picture’ of cultural provision, still others have looked at particular micro-applications of CVM and WTP including covering the costs associated with cleaning cathedrals, maintaining specific museum provision and determining entry fee to cultural venues (Pollicino & Maddison, 2001; Santagata & Signorello, 2000; Willis, 2002).

It has been claimed that CVM can go some way to making opportunity costs transparent and give a more rounded picture of the demand for cultural provision and the intangible benefits that arts and cultural consumption can provide (Noonan, 2003). Some of the identified down-sides of the application of CVM has been associated with less than rigorous application (2003, p. 172). Using choice modelling over methodologies such as CVM for this particular research was preferred because of the nature of the research we had already conducted.

### *The choice to use choice modelling*

Unraveling complex factors, demographics and psychographics associated with how people make choices has been the subject of research in areas as diverse as 'econometrics, transportation, marketing, decision science and biostatistics'(Louviere, Hensher, & Swait, 2000, p. 1). While these areas seemingly have little in common, the search is for a better understanding of how people actually make choices and to predict behaviour on the basis of those stated choices – that is to identify the preferred product or service, or combination of products and services that people state they will consume over others.

The underpinnings of choice modeling rests not so much with understanding the consumption of *things* but rather with understanding what are the *properties* of things that result in additional utility for a consumer. While this approach has been used to determine how consumers will react to changes in price structures for goods and services or changes to the products themselves, choice modeling suggests that products/services can be described in terms of their 'characteristics' and further suggests that the 'attractiveness' of these characteristics singly or in multiple combinations can be tested through an application of random utility theory. The confounding factor in choice is the consumer's perception of personal utility, not whether 'objectively' (or from the supplier's point of view) utility has been created by re-combinations of services or products.

In this way, paradigms of choice can be developed which identify attributes associated with a product/service that can then be refined into additional features, such as add-ons or cross feature functions. How strongly a consumer is prepared to take-up the attribute and/or its feature permutations can be tested through the relative value a consumer places on both the attribute and/or its bundled features. In other words, a consumer may be faced with a multiple set of attributes and features of a product and asked to weigh up the relative benefits they perceive from each mutually exclusive choice set. This way the consumer's marginal utility and marginal rate of substitution between attributes and features can be measured.

Choice processes and decision-making is complex and involves multiple thought and action stages. A consumer may start by identifying a need, seeking out information and identifying a utility function that a number of actions might fulfill and from which some preference may be identified. The consumer can then decide whether they will take up

the action immediately (or over a specified timeframe) through to various stages of delay to never actualizing the choice.

Implied however is a tension between what people say they may do (Stated Preference) and what they actually do (Revealed Preference). A number of researchers have attempted to resolve this dichotomy by separating Stated and Revealed Preference. This then re-connects what consumers say they will choose to do in future with what they have actually chosen to do in the past (Adamowicz, Swait, Boxall, & Louviere, 2003; Riddington, Sinclair, & Milne, 2003). However in these cases, researchers have argued that there is little difference between Stated Preference and Revealed Preference and that the resources required in time, explanation and survey costs to first separate and then re-connect these models is not justifiable. They suggest, as others do, that Stated Preference alone yields valid and reliable data on which to base predictions about behaviour (Louviere et al., 2000, p. 21). Using models derived from random utility theory, the probable relationship between utility and product/service selection can be measured statistically, by translating individual differences into predicting general behavioural type.

The implications of discrete choice modelling research for managers may involve adjustments to strategic planning and product/service offerings, re-positioning the products/services to better fit with consumers' beliefs, evaluating alternative packages and bundles as a utility function and evaluating the resulting demand or market share that might accrue to the organization as a result of reconfiguration of products and services.

Choice modelling has been used in a number of contexts in testing the demand for existing and potential products and services and attributes of those products and services (Auger, Devinney, & Louviere, 1999; Crouch & Louviere, ; Hanley, Shaw, & Wright, 2003). What this research suggests is that choice modelling is sufficiently robust to predict behavioural outcomes on the basis of stated choice.

Choice modelling methodology seemed to offer a better way of understanding the preferences of visitors to cultural attractions and then to develop strategies that would make the traditional visitor a more frequent cultural consumer. While contingent valuation methods may be appropriate for testing demand among both visitors and non-visitors our cases under study required specificity and concentration on visitors only in order to confidently make predictions about what mix of museum products and services would increase cultural consumption.

## **Methodology**

Two major museums operating at the state (SM) and national (NM) level and both located in Sydney were partners in the research. The research consisted of three stages in each museum:

- A qualitative study to determine why people choose to come to museums and what influences their choices. These consisted of 40 face-to-face interviews

divided demographically in order to understand different needs among different life cycle cohorts (Adults with and without dependent children, young people 18-25, couples/singles 25-35). The interviews were from 20-60 minutes in duration and recorded with full transcription to enable all possible choice factors to be identified for subsequent modeling.

- A workshop with the Directors of the two museums to eliminate those identified factors that would be impossible to include as potential choice sets on the basis of government and workplace constraints.
- An online survey instrument for visitors recruited at the two museum sites and museum-goers in Sydney recruited on-line. This resulted in 82 respondents for the NM and 89 for the SM.

Analysis of the depth interviews identified four main factors of choice:

- logistics (time to reach destination, transportation, parking),
- finite time (alternative leisure commitments, a willingness to visit a museum only in a specified pattern, from yearly to once per school holidays, need for more flexible and creative opening hours),
- cost (high value and reasonable cost of museum entry but high cost of associated items such as food, parking and the other activities undertaken to make a “day out”) and
- fulfillment of museums generally and specific attractions within them (educational enrichment, cultural variety, pleasure) as the important factors.

The main components of the first three were considered by museum directors and researchers as suitable for inclusion in the preliminary choice modeling experiment.

The on-line questionnaire consisted of sixteen discrete choice scenarios. Each scenario consisted of two discrete options (Option A and Option B) that the respondent was asked to choose between. They were then asked to indicate whether that option would result in more frequent visits, less frequent visits or no change to visiting pattern. While the concentration required appeared at first laborious, respondents in the pilot project reported a high interest in completing the task. While a free ticket to the museum was offered as recognition of their time investment, another factor promoted as an incentive to complete the task was that it may reveal interesting personal preferences about the respondent him/herself.



Table 1 : One scenario of sixteen

Situation	Option A	Option B
<b>Opening Hours</b> <i>Summer hours</i> <i>Winter Hours</i> <i>Special opening for School holidays and popular exhibitions</i>	9.30am-7pm 10am-6pm Tuesdays till 8pm	9.30am-6pm 10am-5pm 9.30am-5pm
<b>Packages with Attractions</b> <i>Maritime Museum + Powerhouse Museum</i> <i>Maritime Museum +IMAX</i> <i>Maritime Museum + Sydney Aquarium</i> <i>Harbour Cruise +Museum entry</i> <i>Music + Dinner at the Museum</i>	\$40 per person No joint ticket \$50 per person No package available \$70 per person	\$40 per person \$45 per person \$40 per person \$75 per person \$70 per person
<b>Packages with Transport</b> <i>Maritime Museum + Monorail</i> <i>Maritime Museum + Light rail</i> <i>Maritime Museum + Ferry</i> <i>Maritime Museum + 2 hours secure parking</i>	\$25 per person \$25 per person \$30 per person \$30 per person	\$35 per person \$30 per person \$30 per person No joint ticket
<b>Incentives</b> The more visits you make each year, the less you pay Bring a friend – bring your previous ticket – your friend pays Become a member the more you visit – receive free membership after Be a multi-museum member – visit any Sydney museum as often as you like per year Express lane for members Museum entry + special incentives	-10% 2 <sup>nd</sup> visit, -25% thereafter You get a 25% discount 2 visits per year \$250 per person No express lane 1 free coffee + 10% discount on meals and gifts	30% off all subsequent visits You get 50% discount 4 visits in 1 year \$200 per person No express lane 1 free coffee + 10% discount on meals and gifts
<b>Standard Entry Fee</b> General entry fee for museum Can you leave and re-enter on the same pass? 1. The museum can only offer one option at a time, which do you prefer?	Single adult \$20, children/concession \$10, Family \$45 No re-entry allowed <b>Option A</b>	Single adult \$10, children/concession \$6, Family \$25 Yes, in same week <b>Option B</b> Neither Option
2. Suppose the museum could only offer <b>Option A</b> , would you be more likely to	<i>Visit more often</i>	<i>Visit less often</i> <i>Visit as you do now</i>

Somewhat different options were developed for the two museums. The qualitative research showed that while there was considerable commonality of choice factors in some instances the two publics valued different features. Although the scenarios

remained constant: some features changed, but the attributes of opening hours (Summer, Winter, Extended), packages with attractions, packages with transport, incentives and standard entry fees remained the same.

The data from the choice surveys are discrete choices. That is, the respondents to the survey each received 8 scenarios, and for each of the 8 scenarios they stated whether they would prefer museum option A, museum option B or neither option. Because this was a novel application to the museum sector of this approach that was primarily concerned with demonstrating proof of concept, we undertook a relatively simple analysis of the data to begin with. That is, the surveys are designed according to an experimental design in order to allow us to vary the values of each feature independently over the entire set of scenarios. Thus, the choice experiment constitutes a large, incomplete and sparse crosstab table, and so we began our analyses simply by crosstabbing the choice responses against each of the features. This allowed us to visualize the results so that we could anticipate what was likely to be significant, and also if need be, select appropriate statistical specifications with which to model the data.

Following the crosstab analysis, we estimated what are known as multinomial logit (MNL) choice models from the data. As noted by Louviere, Hensher and Swait (2000), MNL models are derived by making certain assumptions about the error components in consumer utility functions (statistical approximations to consumers' decision rules). In the case of the MNL model, the errors are assumed to be distributed as Type 1 Extreme Value random variables with mean zero and constant variance, and it is this assumption that results in the MNL model. In the present case, the MNL model should be viewed only as a reasonable first approximation to what is likely to be a more complex choice process that underlies the data.

Due to resource limitations, the sample sizes obtained in our surveys were relatively small, which in turn discouraged us from trying to estimate more complex statistical model forms that would allow one to capture differences in sensitivity to the features in the population studied. As a proof of concept demonstration, this is not a particularly worrisome limitation, and we have applied for additional funding to permit more sophisticated and complex analyses to be conducted. The next section presents the results of the MNL model analyses.

### **Results and Discussion**

Not all attributes and features were statistically significant although interestingly there appeared some commonality between the two museums. Features that significantly suggested positive or negative choices for the Powerhouse Museum are detailed in the table below.

Table 2: Significant choices for the state museum

Attribute	Feature	Estimated Utility	T-Stat
Summer Hours	9am-5pmduring Xmas holiday	-0.145	-1.823
	9am-6pm throughout January	0.171	2.138
Family Evenings	Pizza, soft drink + special exhibit 5.30pm-8.30pm, Adults \$30; children \$15	0.145	1.813
	Pizza, soft drink + special exhibit + special kids activities 5.30pm-8.30pm (2 adults + 2 kids) \$80	-0.146	-1.825
Chat with Curator	Talk + wine + special exhibition + exhibition catalogue 6.30pm-8.30pm \$55	-0.176	-2.200
After School Programs	No special Programs	-0.304	-3.800
Day ticket on monorail	No joint ticket	-0.129	-1.613
	Monorail + museum entry + entry to special paying exhibitions: adult \$22, child \$12 Family \$59	0.186	2.325
Combined Entry to Imax	Adult \$23, child \$12, Family \$60 (2 adults and 2 children)	0.129	1.613
Joint museum pass	All January Adult \$75, Child \$45, family \$172 (2 adults and 2 children)	0.161	2.013
	No joint pass	-0.299	-3.738
Guided Walking Tour	Walking Tour + museum general admission Adult \$35, Child \$20 Family \$80 (2 adults and 2 children)	0.200	2.500
	No package available	-0.220	-2.750
Re-entry on same pass	Keep admission ticket and return within 3 months for free	0.191	2.388
	Keep admission ticket and return within 6 months for free	0.168	2.100
	Single entry per admission	-0.242	-3.025

While this gives an indication of preferred ways in which a visitor might use the museum and in combination with other activities and benefits it also gives an indication of what is strongly not preferred. For example, although there were no strong preferences for the specific after school activities listed in the scenarios, there was a strong indication that after school activities may be welcome. Similarly there were indicators that no joint tickets, no combined travel tickets with entry and single entry only were all negatively correlated. These strong negative correlations warrant further investigation – what was suggested was not always wanted but not having the feature at all seemed equally unacceptable.

For the national museum (NM) the following features were significant:

- extended Summer opening hours
- joint ticket with the Powerhouse (at \$30); with Imax (at \$35); the Aquarium (at \$40); Harbour Cruise (at \$75); Ferry (\$15)
- Become a member after 3 visits
- Become a multi-museum member at \$200 per annum

- Enjoy the express lane for \$60 membership fee per annum
- Fee options of \$20 per adult, \$6 per child and \$25 per family
- Re-entry in the same month

There was a strong indication that visitors should be rewarded for frequency of visit where the estimated utility of no membership option was -.2500.

### **Conclusion and Future Research**

The implications of this research suggest that there are a number of ways that museums can combine and re-combine their offerings in ways that are attractive to visitors and which involve little or no additional resources. It also indicates that museums may need to seek out strategic alliances with other like attractions within their proximity and to cost joint packaging offers to add value to the customer experience and mutually benefit organizations that are otherwise potentially in competition.

The conclusions that we drew from this research tended to reinforce some of the findings of earlier research. Visitors to museums tend to be cultural omnivores and tend to be actively engaged in social and cultural pursuits. They are often after serial leisure pursuit combining a number of activities within a one-day outing (Burton & Scott, 2003). Those organizations that can cater for these sequential experiences through presenting ready made packages or allowing flexibility in terms of re-entry and extended opening hours at particular times of the year are likely to benefit from increased visitor frequency.

Mixing and matching scenarios and particular features is also likely to have a positive or negative effect, depending on the choices made through the modelling exercise.

We believe that this pilot project has provided proof of concept of the value of discrete choice modelling experimental design methods to the cultural sector. The next stage in this research is to include a number of other national and state museums in undertaking choice modelling to increase visitor frequency and to improve customer service and strategic planning within the cultural sector through an Australian Research Council grant. Partner museums will become independently equipped to use a decision support system to forecast proposed changes to products and services. In this way, complex statistical information will be transformed to user friendly strategic information as an important addition to the tool kit of decision-making processes available to museum managers and marketers. As an outcome of the research museums will also become better equipped to provide evidence of meeting visitor demands and expectations to a range of stakeholders such as government funding bodies, sponsors and philanthropists.

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