

# Which exhibition attributes create repeat visitation for attendees?

## **Abstract**

This study identifies exhibition attributes deemed important by attendees' in determining their attendance at the UK biennial MICROSCIENCE 2008 exhibition using a self-administered internet-based questionnaire. Perceived performance of attributes by attendees is also established. Attendees consider meeting specialists as well as gaining product and technical information to be very important attributes for exhibition selection. Application of an Importance Performance Analysis suggests that resources should be diverted by exhibitors and exhibition organizers to enhance the number and range of new products on display in order to enhance attendance rates. Further analysis based on regression techniques suggests that increases in the number of exhibiting companies, greater networking opportunities and increasing opportunities for obtaining technical advice would enhance the likelihood of repeat visitation.

**Keywords:** UK exhibition sector; exhibition attributes; Importance Performance Analysis; exhibition selection; repeat visitation

## **1. Introduction**

The proliferation and increased competition between exhibitions (also sometimes referred to as trade shows, trade fairs or expositions) has led to greater complexity in attendees' exhibition selection decisions (Breiter and Milman, 2006; Berne and Garcia-Uceda, 2008). It is essential that exhibitors improve their understanding of this complexity and the motivations that underpin decisions to attend exhibitions so that they can ensure they successfully fulfil attendees' objectives whilst ensuring exhibitor-attendee contact, which are principle factors in determining exhibition success (Godor and O'Connor, 2001; Ling-Yee, 2006). By understanding attendee motives exhibitors can develop strategies that engender post-event behavior that generates repeat visitation.

The fundamental premise of any exhibition is to bring together the purveyor of a message with its recipients, thereby making face-to-face contact between the exhibitors and their target audience and creating positive emotions for participants. There are three distinct participants for any exhibition. First, exhibition organizers, who not only establish the event but also undertake marketing to attract those attendees that fit exhibitor's audience demographics in terms of their political, economic and/or socio-cultural attributes (Jung, 2005). Second, exhibitors, who exhibit for a variety of reasons including enhancing sales, improving image/creating positive publicity, differentiating from competitors/gaining competitive advantage, fulfilling corporate social responsibility, networking, providing financial contributions and shaping material based human resources and image (Friedman, 2009). Third, attendees, for whom an exhibition is principally an information source

(Smith *et al.*, 2003). Information (particularly technical data that can guide future purchases) and networking opportunities inform business trends and develop domain awareness (Godor and O'Connor, 2001; Breiter and Milman, 2006). Repeat visitation ensures that attendees are in receipt of contemporary technical information, maintaining both networking opportunities and domain knowledge.

Attendees are the principle customer of both the exhibition organizers and exhibitors (Jung, 2005). However, in spite of this and the necessity to gain an understanding of attendees' *ex ante* evaluation of exhibitions, there is a dearth of relevant research on prospective attendees' exhibition attendance decisions, and instead most literature within this domain focuses on the exhibitor (Berne and Garcia-Uced, 2008; Kozak and Kayar, 2009). To the authors' knowledge, there has been limited published research that simultaneously combines three important elements: i) the identification of those exhibition attributes considered important within the exhibition selection process, ii) the detection of attendees perception of performance against these attributes, and iii) the discovery of exhibition attributes that are considered crucial in the repeat visitation decision making process. To fill this gap in the literature, this paper seeks to answer three research questions:

- Q1– What are the principle exhibition attributes considered by attendees in their participation decision making process?
- Q2 – Which exhibition attributes are most in need of performance improvements?
- Q3 – Which exhibition attributes are more likely to be considered by attendees' repeat visitation decision making processes?

The empirical setting for this paper is focused on the biennial MICROSCIENCE exhibition in 2008 (23<sup>rd</sup> – 26<sup>th</sup> June) hosted in the UK by the Royal Microscopical Society (RMS). It was Europe's largest exhibition dedicated to microscopy and imaging with over 100 exhibiting companies attending the exhibition and over 1000 attendees over a three day period. MICROSCIENCE 2008 included workshops, satellite meetings, a conference and an exhibition.

This paper offers exhibitors and exhibition organizers an insight into the exhibition attendance decision making process by understanding i) which exhibition attributes are deemed important by attendees in determining which exhibitions to attend, ii) the level of performance attendees perceive for each identified attribute and iii) which attributes are important in terms of determining repeat visitation. Knowledge of these facets enables exhibitors and exhibition organizers to redirect resources in order to maximize the likelihood of delegate attendance and subsequent repeat visitation. Furthermore this paper has practical usage as the biennial MICROSCIENCE exhibition could use such knowledge to allocate resources to stimulate repeat visitation in preparation for MICROSCIENCE 2010.

This paper has the following structure. The next section presents a critical review of the literature. Section 3 outlines the data and methods employed in the analysis. Section 4 describes the results and Section 5 summarizes conclusions.

## 2. Literature Review

With the proliferation of exhibitions has come market fragmentation. Progressively more domain specific exhibitions are competing for niche market attendees. Attendees are becoming increasingly dependent upon both information on and their perceptions of fundamental exhibition attributes in order to make their attendance decisions (Berne and Garcia-Uced, 2008). A review of relevant literature identifies the fundamental exhibition attributes as:

- Reputation of exhibition
- Quality of exhibitors
- Quantity of exhibitors
- Presence of competitors
- Access to information
- Networking opportunities

The extent to which they play a role in exhibition selection by attendees is now discussed.

### *2.1 The Reputation of Exhibitions through Quality and Quantity of Exhibitors*

Reputation is used within the exhibition selection process by both exhibitors and attendees in a very similar manner. The exhibition reputation, built through past experience and positive testimony, is fundamental in the attendance decision making process for exhibitors

(Kijewski *et al.*, 1993; Shipley and Wong, 1993; Hanson, 2004). For attendees, where no personal attendance at an exhibition has occurred, it is a combination of positive testimony and the number of attendees at that previous exhibition which influences the individuals' attendance at future instances of an exhibition (Swandby *et al.*, 1990). Personal attendance will engender an individuals' perception of an exhibition's reputation, which in turn directly affects their decision in terms of repeat visitation. This positive reputation for attendees can be created through assuring the quality and quantity of both exhibitors and attendees to exhibitions. For instance, an empirical study of 566 attendees across five exhibitions held at the Orange County Convention Centre, in Orlando, Florida, USA, found that the third most cited reason for attending the current exhibition was to "view the quality of the exhibits (40.2%)" (Breiter and Milman, 2006, p. 1366).

The quality and quantity of exhibition booths is fundamental, as this floor space is the pivotal location for exhibitor-attendee contact. Exhibition booth design can be viewed from two aspects: i) the spatial/ergonomic layout of booths and ii) booth contents. Bitner (1992) argues that the spatial/ergonomic functional layout is essential and that there needs to be sufficient space to permit attendees to move freely about the booth. There also needs to be sufficient room for exhibitors to demonstrate products, perhaps with separate meeting areas away from product demonstration areas to permit further discussion. Exhibitors should focus their booth content (such as signage, product display, sales literature and skill-sets of booth personnel) to reflect both attendees' aims and characteristics in order to serve attendees better (Bello and Lothia, 1993; Chonko *et al.*, 1994); this interaction between exhibitor and attendees facilitates a more informed business partner decision making

process and can, in turn, remove legal and contractual complexities and costs. Rather than finalising purchasing decisions, attending an exhibition, and thus experiencing the exhibitor-attendee interaction, is identified as fundamental in the requirements recognition and vendor analysis stages of the buying cycle (Moriarty and Spekmen, 1984; Rosson and Seringhaus, 1995). Indeed, Munuera and Ruiz (1999), Smith *et al.* (2003) and Kozak and Kayar (2009) provide empirical evidence which indicates that the exhibition attribute receiving the least support in relation to determining attendance was ‘Buying exhibited products’, ‘Place orders for products’ and ‘Shopping’ respectively.

## *2.2 The Presence of Competitors and Access to Information*

The presence of, and gaining knowledge about, competitors is a fundamental consideration for both exhibitors and attendees (Berne and Garcia-Uced, 2008). For exhibitors, the presence of a competitor engenders an obligation to attend in order to preserve or achieve a desired domain status (Godor and O’Connor, 2001). Once present, exhibitors can generate ‘competitive attractiveness’ through comparative booth size and quantity of booth personnel in comparison to competitors (Gopalakrishna and Williams, 1992; Dekimpe *et al.*, 1997). For attendees, the presence of a competitor at an exhibition, particularly if they are exhibiting, provides an opportunity to gain an insight into the competitor’s actions whilst gaining information regarding their products or services (Hansen, 1996).

For attendees, gaining information, not only on competitors, but also on products, companies, industry and technology is a widely cited reason for attending exhibitions

(Kozak and Kayar, 2009). Attendees are able to gather knowledge, evaluate products and identify pricing structures, which makes attendance at an exhibition “an important information tool for new products” (Berne and Garcia-Uced, 2008, p. 569). For attendees of five exhibitions held at the Orange County Convention Centre, the second most cited reason for attending was to “learn about new products in their respective professional areas’ (47.1%)” (Breiter and Milman, 2006, p. 1366). Similarly, research focused on a US-based textile capital equipment exhibition identified that attendees’ principle aim was to gather procurement or technical information (Bello, 1992).

These US-based empirical studies corroborate the findings of UK-based research. For instance, Gramman (1994) identified that the three main reasons for attending The Royal Society for the Prevention of Accidents (RoSPA) Health and Safety Exhibition were ‘To see new products/developments’ (53%), ‘To obtain technical or product information’ (23%) and ‘To get up-to-date information on legislation’ (21%). Such evaluation relates directly to the number and range of products as well as the number and range of exhibitors present at exhibitions: information can be sought on new suppliers, whilst making comparisons with existing suppliers. Attendees can also attend workshops and seminars in pursuit of domain knowledge through contact with specialists (Bello and Lohtia, 1993; Godar and O’Connor, 2001; Hansen, 1996; Munuera and Ruiz, 1999). This information, which can enhance, create or boost an organisations competitive advantage, can be ascertained over a short time period and at a low cost (Sharland and Balgoh, 1996). Attendees evaluate the potential benefits and costs of obtaining information and knowledge on products, companies, industry and technologies when deciding to attend a specific exhibition (Blythe, 2002).

### *2.3 Networking opportunities*

Exhibitions bring together the purveyor of a message with its recipients. These purveyors and recipients are stakeholders and could include purchasers, suppliers, competitors, domain regulators, domain specialists, partners, support service providers, exhibition organisers or be from the wider general public. Indeed an exhibition should be seen as a market microcosm, where stakeholders convene for a limited time period. During this period, the market microcosm becomes “networks of connected exchange relationships between companies” (Johnson and Hallen, 1989, p. xviii) after which stakeholders return to their own domain macrocosms. However, during the microcosm period, attendees are visiting booths, participating in workshops and social events to establish and/or maintain networks (Bello and Lothi, 1993; Rosson and Seringhaus, 1995; Godor and O’Connor, 2001). These networks may identify answers to product specific concerns or attendees’ wider concerns, such as what impact a change in supplier would have on existing business frameworks or the impact of technological innovations on the industry domain or on industry consolidation (Rosson and Seringhaus, 1995). Breiter and Milman (2006, p. 1366) identified the most popular reason for attending an exhibition as ‘the opportunity to network’ (61.1%).

Nevertheless, exhibition networks should not be considered homogeneous, as stakeholders positions within such networks could be either ‘macro’ or ‘micro’ (Mattsson, 1989). A ‘micro’ position would occur when a stakeholder establishes a link with another

stakeholder, whereas a ‘macro’ position occurs when a stakeholder establishes a link with many other stakeholders. Such positions are the product of historical activity between stakeholders, which over time have been reinforced by their behavior, and hence the relationships that together form networks are often stable and difficult to modify (Rosson and Seringhaus, 1995).

#### *2.4 Identifying Exhibition Attributes for the Empirical Study*

A summary of empirical research concerning exhibition selection attribute is shown in Table 1. From this Table it can be seen that there are commonalities between studies, whether European, Asian or American. For five of the six studies, the exhibition attribute ranked first in terms of its importance in the attendance decision making process is directly related to information gathering. Of these five, three relate to gathering information on new products, one relates to actual products and the other relates to the acquisition of market information. The remaining non-information top-ranked attribute relates to ‘networking’, although this is related indirectly to information gathering. It is not until the third, fourth and fifth-ranked attributes are examined that non-information based attributes are witnessed, with the ‘quality of exhibitors’, ‘destination image’, ‘reputation of exhibition’ and ‘make job connections’ all being cited in the decision making process.

**{Insert Table 1 about here}**

Collation of relevant exhibition selection literature with Table 1 reveals a number of established fundamental exhibition attributes, as shown in Table 2. These attributes can be utilized within the construction of targeted questionnaires to configure research and to corroborate (or contradict) prior research results. Table 2 also illustrates that such attributes can be grouped into Products, Networking, Information and Reputation related attributes.

**{Insert Table 2 about here}**

### **3. Data and Methodology**

#### *3.1 Data collection*

The empirical data utilized within this study were collected via online questionnaires sent to 1008 attendees, four days after the completion of the MICROSCIENCE 2008 exhibition. Email addresses were obtained through the registration process giving a high level of confidence that the correct individual received and answered the survey. An email was sent to each delegate with a covering letter (embodied in the email) and a link to a website enabling them to answer the questionnaire. Using a web survey reduces the likelihood of errors in processing the data as respondents' replies are logged and coded by the software (Bryman and Bell, 2007). Respondents were asked to assign a level of importance to each exhibition attribute using a five point Likert scale including answers ranging from 'Not very important' to 'Very important'. Subsequently respondents were asked to evaluate the same attributes' performance using a five point Likert scale with answers ranging from 'Very poor' to 'Excellent'. The data collection period lasted approximately two months during which three reminder emails were sent out a week apart from each other. A total of 248 questionnaires were returned and deemed useable, giving a response rate of 24.6%.

#### *3.2 Importance-Performance Analysis*

Importance-Performance Analysis (IPA), first introduced by Martilla and James (1977), is a framework for analyzing product attributes in order to identify critical performance

attributes for products and/or services.<sup>1</sup> The fundamental premise of this technique is to consider the relationship between importance and performance, whereby performance levels for attributes of a particular product/service should be proportional to the importance of the selected attributes (Slack, 1991). The higher (lower) the importance rating, the more (less) likely the attribute is to play a critical role in affecting attendance decisions (Barsky, 1995). The overall objective is to identify those attributes, or combinations of attributes, that are more and less influential in determining repeat visitation. This information is invaluable in the process of devising successful marketing strategies (Ford *et al.*, 1993) and thus “direct scarce resources to areas where performance improvement is likely to have the most effect on overall customer satisfaction” (Lovelock *et al.*, 1998, p. 150).

After establishing a relevant attribute list, respondents are asked two questions traditionally using a Likert scale that represents customer perceptions via a linguistic measurement (“very satisfied / very important”=5, through to “very unsatisfied / not important”=1). The first question relates to how *important* respondents consider each attribute, and how the service / product is perceived to be *performing* in relation to each attribute. IPA has been employed extensively, including destination image / selection research (see, for example, Goodrich, 1978; Kano *et al.*, 1984; Crompton and Duray, 1985; Chon and Evans, 1989; Chon *et al.*, 1991; Go and Zhang, 1997; Sampson and Showalter, 1999; Weber, 2000; Wu *et al.*, 2004). IPA for conference destination selection can be expressed as:

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<sup>1</sup> This technique is not without its problems. For instance, Madden and Smart (1983) emphasise the central tendency, proximity and halo bias effects associated with ordinal scale formats that will influence this type of analysis. In spite of these inherent problems, IPA analysis remains a powerful method for exploring areas where active policy could generate focused and beneficial effects. Other methods, such as confirmatory factor analysis are very useful if there is *a priori* theoretical justification for the empirical testing of hypotheses; in this case we are employing IPA as an exploratory technique.

$$CDA = \sum_{\alpha=1}^N (I_{\alpha})(P_{\alpha}) \quad (1)$$

where  $CDA$  is the conference destination attractiveness,  $I_{\alpha}$  is the importance of attribute  $\alpha$  and  $P_{\alpha}$  is the performance of the same attribute (see Oppermann (1996) for further information on this technique).

The calculated mean performance and importance scores are subsequently used as coordinates for plotting individual attributes in two-dimensions with attribute importance on the  $x$ -axis and attribute performance on the  $y$ -axis (Sampson and Showalter, 1999). The priorities for improving attributes of the products and/or services can then be inferred from the resultant four quadrants (Bacon, 2003), as shown in Figure 1.

There are a number of main ways of executing this procedure. One is to employ the absolute mean values for each attribute that are then interpreted each value relative to the centring of the Likert scale, which in our case is the somewhat important (=3) category for the importance scale and indifferent (=4) for our performance scale. Following this procedure permits the analysis of the importance and performance of one attribute relative to the Likert scale middle value. An alternative, and which is employed below, is to centre the variables relative to the average value of the different attributes as provided by the respondents. Following this average-attribute-centering procedure permits the analysis of

the importance and performance of one attribute relative to the importance and performance of all other attributes.

Attributes in quadrant I are deemed major strengths and should be sustained and promoted (Lambert and Sharma, 1990). Resources assigned to attributes present in quadrant II should be diverted away as their performance outweighs their importance. No further resources should be directed towards attributes present in quadrant 3, although removing these attributes completely may result in attendees' dissatisfaction. Meanwhile attributes present in quadrant IV should be viewed as major weaknesses, and thus deserve resources devoted to their improvement (Martilla and James, 1977).

**{Insert Figure 1 about here}**

### *3.3 Ordered logistic regression modeling framework*

The second stage of our analysis is to estimate a set of regression analyses where we explicitly assume a direction of causation from satisfaction and importance issues to the intention to attend future RMS events, where the dependent variables is the respondents answer to the question:

*“Will you attend future RMS Events?”*

The responses are categorical and based on an application of a Likert scale with ‘definitely’ (=5), ‘probably’ (=4), ‘may be’ (=3), ‘probably not’ (=2) and ‘definitely not’ (=1) being the possible responses. Here it is appropriate to employ an ordered logistic regression modelling framework of the statistical analysis of the impact of importance and performance parameters on the likelihood of repeat attendance. The ordered logistic regression model is built around a latent regression, where  $y_i^*$  is the unobserved dependent variable,  $x$  is a vector of explanatory variables,  $\beta$  is an unknown parameter and  $\varepsilon$  is the error term:

$$y_i^* = \beta' x_i + \varepsilon_i. \quad (2)$$

In our case  $y_i^*$  is observable, such that:

$$\begin{array}{lll} y = 1 & \text{if} & \mu_0 \leq y^* < \mu_1 \\ y = 2 & \text{if} & \mu_1 \leq y^* < \mu_2 \\ y = 3 & \text{if} & \mu_2 \leq y^* < \mu_3 \\ \dots & \dots & \dots \\ \dots & \dots & \dots \\ y = j & \text{if} & \mu_{j-1} \leq y^* \end{array} \quad (3)$$

where  $y$  is the delegate’s categorical response to the question outlined above. The vector of unknown threshold parameters, coefficients and the error term (assumed to have a standard logistic distribution) are represented by  $\mu$ ,  $\beta$  and  $\varepsilon$  respectively. Consequently:

$$\Pr \{y_i = j\} = \Pr \{y^* \text{ is in the } j\text{th range}\} \quad (4)$$

and hence the probability of observing an outcome can be written as:

$$\Pr \{y_i = j\} = F(\mu_j - \beta' x_i) - F(\mu_{j-1} - \beta' x_i) \quad (5)$$

where  $F(\cdot) = \frac{\exp(\cdot)}{1 + \exp(\cdot)}$ , implying that:

$$\Pr \{y_i = j\} = \frac{1}{1 + e^{-\mu_j + \beta' x_i}} - \frac{1}{1 + e^{-\mu_{j-1} + \beta' x_i}}. \quad (6)$$

The above equation can be used to derive a likelihood function and subsequently maximum likelihood estimates of  $\mu$  and  $\beta$ .

## 4. Results

### 4.1 *Importance and performance exhibition attributes*

As a first look at the data, the survey of attendees at the MICROSCIENCE 2008 exhibition identified that the most significant three attributes, in terms of their importance to exhibition attendees attendance decision are related to information gathering, that of ‘Gaining product information’, ‘Meeting specialists’ and ‘Gaining technical advice’ Conversely, the least important factors are related to ‘Buying / establishing prices’ and ‘Gathering information on competitors’. The mean values for each of the attributes were calculated over the five point Likert scale to identify the perceived importance level, as shown in Table 3. As also indicated in Table 4, the three most important attributes all have a mean above four (satisfied), a further seven attribute have an importance mean of between three (indifferent) and four (satisfied). The three least significant attribute have a mean of between two (dissatisfied) and three (indifferent).

**{Insert Table 3 about here}**

Table 3 also shows the means score attendees assigned to the performance of exhibition attributes. The three attributes having the highest mean score for performance, are the same three attributes for importance, albeit rankings 1 and 2 are reversed for performance. The attributes possessing the lowest mean value for performance were ‘Number of new products on display’, ‘Finding out about competitors’, and the lowest mean score assigned

to ‘Comparing market prices’. As indicated in Table 3, eight attributes all had a performance mean above four (very important), and the resultant five attributes have a mean of over three (somewhat important). No attribute had a mean ranking of less than 3.45.

#### *4.2 Importance Performance Analysis of MICROSCIENCE 2008 Exhibition Attributes*

Table 3 shows the importance and performance mean scores. From this a two-dimensional grid can be plotted, performance values forming the vertical axis, while importance values form the horizontal axis. The resultant Importance Performance Analysis applied to the MICROSCIENCE 2008 exhibition attributes can be seen as Figure 2. The four quadrants distinguish between low and high relative importance and between low and high relative performance, these values being relative to the sample’s mean values for all attributes.

**{Insert Figure 2 about here}**

Results from Figure 2 show that there are seven exhibition attributes that fall within quadrant I (Keep up the good work). These being ‘Gaining product information’, ‘Meeting specialists’, ‘Gaining technical advice’, ‘Finding new products’, ‘Number of exhibiting companies’, ‘Contacting potential suppliers’ and ‘Networking opportunities’. Based upon the attribute grouping identified in Table 2, three of these attributes are information based, two are product based, two are networking based and one is reputation based. All seven of these attributes are deemed important to attendees in their attendance decision making

process and attendees perceive that performance with respect to these attribute is satisfactory or above. Exhibitors should maintain their performance ensuring the consumer remains satisfied.

These findings regarding the importance of MICROSCIENCE 2008 attributes play in the attendees' attendance decision making process widely support the findings of previous research, as shown in Table 1. There are six unique attributes that together form attributes ranked first and second in the six empirical studies shown in Table 1. These six attributes have been fitted against the attributes ranked first to sixth for the current study, and are shown in Table 4. Table 4 clearly identifies the close fit between the current empirical research and existing published research.

**{Insert Table 4 about here}**

With regards to Figure 2, there is one attribute (buying products / products available) that attendees are satisfied with the performance against this attribute, but do not consider it important in their attendance decision process. This attribute therefore lies within quadrant II (possible overkill). Exhibitors at MICROSCIENCE 2008 may be wasting resources attempting to satisfy attendees regarding this attribute, whose importance is deemed low. A further three attributes (comparing market prices, finding out about competitors, attending workshops) have low levels of importance as well as low levels of perceived performance. As such these factors lie within quadrant III (low priority). Exhibitors should refrain from making any improvements to these attributes as their importance is deemed low.

The last quadrant, quadrant IV (concentrate here) contains two attributes (number of new products on display, wide range of products on display). Focusing resources on improving attributes in this quadrant may produce the greatest results, as this is where importance is high but the performance is poor. Improving performance may result in a beneficial effect to the exhibitor as there is a positive and significant relationship between attendees' perception of performance and their willingness to recommend a supplier (Zeithaml *et al.*, 1996), in this case an exhibition. Resources could be diverted away from the attribute in quadrant II to focus on improving attributes in quadrant IV.

#### *4.3 Repeat visitation and regression results*

Attendees were questioned whether they would attend future RMS Events. A total of 218 attendees responded, with a further 22 not providing an answer. Of these 218, 86 (39.4%) attendees stated they would definitively return, while 89 (40.8%) stated they would probably return. These two categories account for over 80% of respondents. A further 38 (17.4%) attendees stated they may return, and 5 (2.3%) attendees stated they would probably not return. No attendee stated they would definitely not return.

As highlighted above, a number of important factors are perceived to be important and to be associated with providing satisfaction for conference attendees (see Table 3). It is important, however, to identify which issues are most important for encouraging repeat visitation and whether the effects of the attributes remain once other attributes have been

taken into account. Ordered logistic regression, as described in section 3.3 above, is appropriate here for the identification of such features and is applied in a structured manner as follows. First we construct a model where the response to the question “*Will you attend future RMS Events?*” is determined by the importance factors only. (Note: due to omitted observations for extra explanatory variables the sample size falls marginally between regression estimates). The results of this model are presented in column I1 in Table 5. We then proceed to reduce the number of variables in the model to only those which are statistically significant at traditional statistical confidence levels; the collective variable exclusion test confirms that the other variables can be safely deleted from the model, thereby leaving two statistically significant importance variables (gaining technical advice and networking opportunities) that positively influence the intention to attend future events, as shown in column I2. Column I2 indicates that, under the fitted importance model and holding all other variables constant, the odds of future attendance are 1.687 times greater for every one category increase in the response to the statement that “Gaining technical advice” was important in their decision to attend the event. Similarly, the odds of future attendance are 1.615 times greater for every one category increase in the response to the statement that “Networking opportunities” was important in their decision to attend the event.

**{Insert Table 5 about here}**

The same estimation strategy is adopted for the variables that correspond to the attendees’ responses concerning how satisfied they are about each attribute. This is a crucial extension

because if attendees perceive an attribute to be important but do not find it provides enough satisfaction then attendees may choose to not attend the conference in the future. Accordingly column S1 in Table 5 presents the estimates of the ordered logistic regression where future attendance is determined by factors which quantify the amount of satisfaction linked with each attribute. We then proceed to reduce the number of variables in the model to only those which are significant at traditional statistical confidence levels; the collective variable exclusion test confirms that the other variables can be safely excluded from the model, thereby leaving three statistically significant satisfaction variables (number of exhibiting companies, finding out about new competitors and networking opportunities) that positively influence the intention to attend future events, as shown in column S2. Column S2 indicates that, under the fitted satisfaction model and holding all other variables constant, the odds of future attendance are 2.026 times greater for every one category increase in the response to the satisfaction statement with the “Number of exhibiting companies” factor and 1.239 times greater for every one category increase in the response to the satisfaction statement with the “Finding out about new products” factor. Similarly the odds of future attendance are 1.322 times greater for every one category increase in the response to the satisfaction statement with the “Networking opportunities” factor.

Having reduced the number of important and satisfaction attributes in Table 5, the next step is to identify whether these results hold once these attributes are pooled into the same regression, that is where the decision to attend future conferences is influenced by both satisfaction and importance factors. These results are presented in Table 6. First we include an extra variable where an attempt is made to identify whether it is important that the

respondent is a scientist. This may be important as a scientist's reason to attend may be more associated with technical aspects of the event. As can be seen in column G1 of Table 6, the coefficient on scientist is statistically insignificant at traditional levels of statistical confidence and therefore we re-estimate a parsimonious model with this variable excluded, as shown in column G2.

**{Insert Table 6 about here}**

The results presented in column G2 of Table 6 indicate that, under the fitted satisfaction and importance model and holding all other variables constant, the odds of future attendance are 2.058 times greater for every one category increase in the response to the satisfaction statement with the "Number of exhibiting companies" factor, 1.169 times greater for every one category increase in the response to the satisfaction statement with the "Finding out about new products" factor, 2.294 times greater for every one category increase in the response to the satisfaction statement with "Networking opportunities". Similarly, the odds of future attendance are 1.469 times greater for every one category increase in the response to the importance statement of the "Gaining technical advice" factor, and 1.749 times greater for every one category increase in the response to the importance statement with the "Networking opportunities" factor. Also, Table 6 suggests that under fitted final model (G2) and holding all other variables constant, the odds of future attendance increase at a decreasing rate, as shown by the importance-satisfaction compound variable, suggesting that it may be easier to increase responses to satisfaction and importance scales at the bottom rather than at the top end of their distributions.

## **5. Conclusion**

Although attendees are the principle customer of both the exhibition organisers and exhibitors there is a dearth of relevant research on prospective attendees' exhibition attendance decisions. There has been limited published research that simultaneously i) identifies exhibition attributes considered important within the exhibition selection process, ii) detects attendees perception of performance against these attributes, and iii) discovers exhibition attributes that are considered crucial in the repeat visitation decision making process. The purpose of this paper was to fill this gap in the literature. Knowledge of these facets enables exhibitors and exhibition organizers to redirect resources in order to maximize the likelihood of delegate attendance and subsequent repeat visitation. This paper has practical usage as the biennial MICROSCIENCE exhibition could use such knowledge to allocate resources to stimulate repeat visitation in preparation for MICROSCIENCE 2010.

Data were collected from the biennial MICROSCIENCE exhibition (23<sup>rd</sup> – 26<sup>th</sup> June, 2008), which was Europe's largest exhibition dedicated to microscopy and imaging. This data was analysed using an Important Performance Analysis and ordered logistic regression analysis.

The results of the Important Performance Analysis highlight that concentrating resources on attempting to enhance the range of and number of new products on display could

stimulate future attendance the most. The exhibition organizers and exhibitors should refocus their efforts away from attempting to enhance the range of products that are available for immediate purchase. This part of the analysis also suggests that attending workshops, finding out about competitors and comparing market prices are of relatively low importance and provides relatively low satisfaction for the average attendee. However it might be the case that managers encourage their workers to attend such conferences in order to obtain such information, that is to say managers of attendees may view them as high priority but the attendees themselves may have a relatively low interest. Hence, stopping the provisions of these attributes may not necessarily be encouraged as managers may no longer send their workers to attend. Further research on this issue may prove fruitful.

The results of the ordered logistic regression analysis suggests that repeat visitation is enhanced by the provision of networking opportunities, which the attendees deem to be both important and a key provider of satisfaction. Moreover, exhibition organizers and exhibitors would be wise to extend the provision of technical advice, further information about new competitors and continue to enhance the number of exhibiting companies, as these factors were identified as significantly enhancing the likelihood of repeat visitation.

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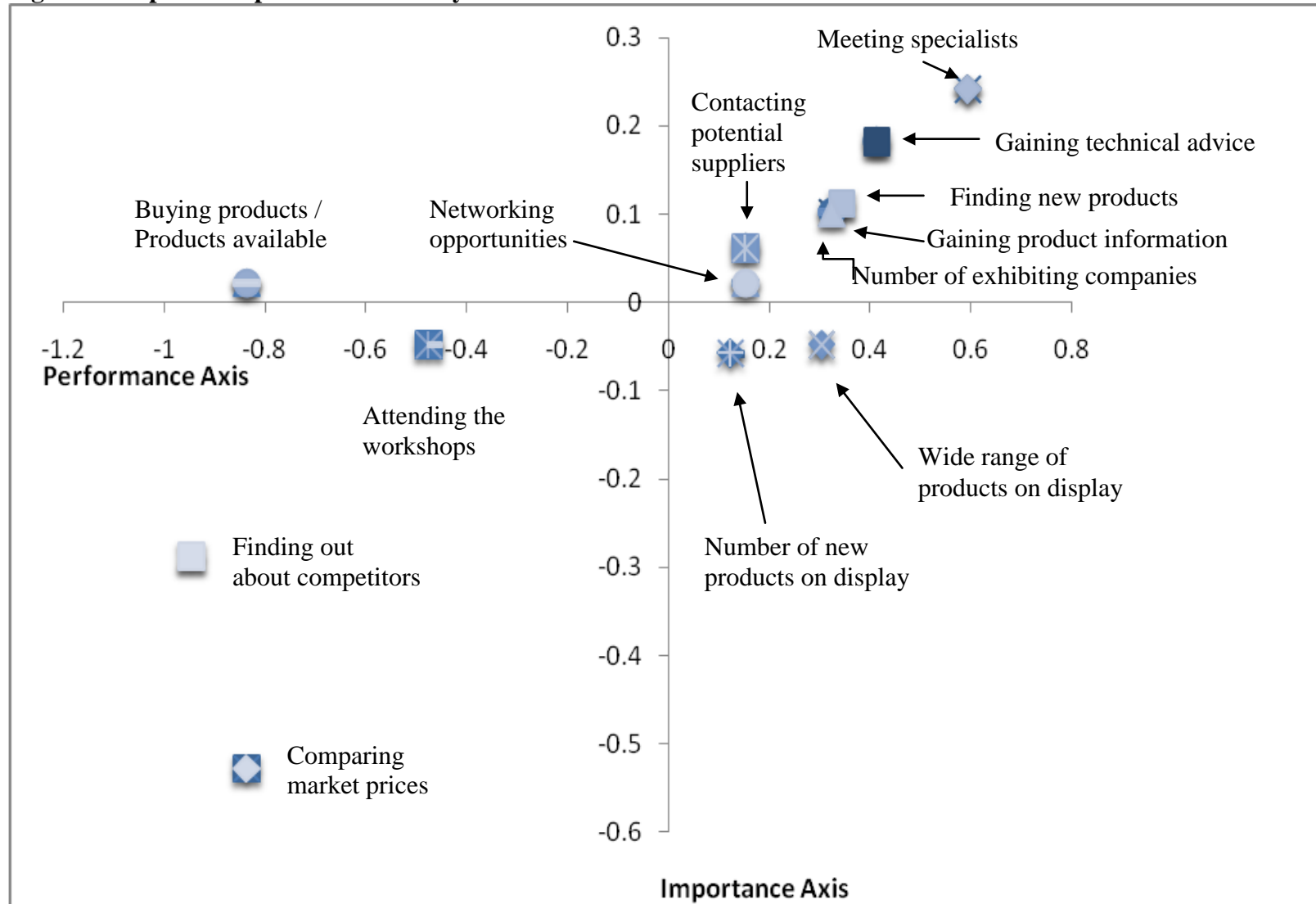
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Figure 1: Importance-Performance Analysis quadrants

Performance	H	“Possible Overkill” Quadrant II	“Keep up the Good Work” Quadrant I
	L	“Low Priority” Quadrant III	“Concentrate Here” Quadrant IV
		L	H
		Importance	

(Source : Deng, 2008, p. 255)

**Figure 2: Importance performance analysis of MICROSCIENCE 2008 exhibition attributes**



**Table 1 – Summary of empirical research (1994 – 2009) concerning exhibition selection attributes**

<b>Authors</b>	<b>Ranked 1</b>	<b>Ranked 2</b>	<b>Ranked 3</b>	<b>Ranked 4</b>	<b>Ranked 5</b>
Kozak and Kayar, 2009 (Turkey)	Info on actual products	Info on new products	Info on the market	Info on specific products	Make job connections
Breiter and Milman, 2006 (US)	Networking	Info on new products	Quality of exhibitors	Destination image	Reputation of exhibition
Smith, Hama and Smith, 2003 (Japan)	Info on new products	Info on the market	Info on actual products	Info for buying	Info on new suppliers
Smith, Hama and Smith, 2003 (US)	Info on the market	Info on new products	Info on actual products	Info for buying	Info on new suppliers
Munuera and Ruiz, 1999 (Spain)	Info on new products	Info on new suppliers	Info on the market	Info on competitors	Info on market prices
Gramann, 1994 (UK)	Info on new products	Technical info	Info on legislation	Try new products	Info on new companies

**Table 2 – Fundamental exhibition attributes utilised within data collection**

<b>Attribute</b>	<b>Grouping</b>
Buying products / Products available	
Finding new products	
Number of new products on display	Products
The wide range of products on display	
Networking opportunities	
Meeting specialists	
Attending the workshops	Networking
Gaining technical advice	
Gaining product information	
Finding out about competitors	
Comparing market prices	Information
Contacting potential suppliers	
Number of exhibiting companies	Reputation

(Source; adapted from Grimwade, 2009)

**Table 3 – Importance performance scores for exhibition attributes**

	<b>Importance</b>		<b>Performance</b>	
	<b>Mean</b>	<b>Rank</b>	<b>Mean</b>	<b>Rank</b>
Gaining product information	4.29	1	4.21	2
Meeting specialists	4.20	2	4.22	1
Gaining technical advice	4.02	3	4.16	3
Finding new products	3.95	4	4.09	4
Number of exhibiting companies	3.93	5	4.08	5
The wide range of products on display	3.91	6	3.93	9
Contacting potential suppliers	3.76	7	4.04	6
Networking opportunities	3.76	8	4.00	7=
Number of new products on display	3.73	9	3.92	11
Attending the workshops	3.13	10	3.93	10
Buying products / Products available	2.77	11	4.00	7=
Comparing market prices	2.77	12	3.45	13
Finding out about competitors	2.66	13	3.69	12

(Source; adapted from Grimwade, 2009)

**Table 4 – Comparison of previous empirical findings 1994 – 2009 with  
MICROSCIENCE 2008 exhibition attribute importance findings**

Previous empirical findings	MICROSCIENCE 2008 exhibition
(Source; Kozak and Kayar, 2009; Breiter and Milman, 2006; Smith, Hama and Smith, 2003; Smith, Hama and Smith, 2003; Munuera and Ruiz, 1999; Gramann, 1994)	attributes ranked by importance (Source; adapted from Grimwade, 2009)
Information on actual products	Gaining product information
Information on the market	Meeting specialists
Technical information	Gaining technical advice
Information on new products	Finding new products
–	Number of exhibiting companies
Information on new suppliers	Contacting potential suppliers
Networking	Networking opportunities

**Table 5: Econometric results: Separate importance and satisfaction models**

	Importance model		Satisfied model	
	I1	I2	S1	S2
<i>N</i>	201	212	190	200
Number of exhibiting companies	0.063 (0.183)	—	<b>0.706*** (0.238)</b>	<b>0.877*** (0.191)</b>
Buying products	0.107 (0.144)	—	0.127 (0.245)	—
Comparing market prices	-0.159 (0.149)	—	-0.161 (0.116)	—
Contacting potential suppliers	-0.093 (0.187)	—	-0.061 (0.177)	—
Finding new products	-0.161 (0.242)	—	0.287 (0.212)	—
Finding out new competitors	0.107 (0.106)	—	<b>0.214** (0.096)</b>	<b>0.138* (0.076)</b>
Gaining product information	-0.143 (0.236)	—	0.430 (0.306)	—
Gaining technical advice	<b>0.523** (0.230)</b>	<b>0.398*** (0.133)</b>	0.035 (0.242)	—
Meeting specialists	-0.166 (0.244)	—	-0.099 (0.240)	—
Attending the workshops	0.104 (0.118)	—	-0.069 (0.085)	—
Number of new products on display	0.043 (0.209)	—	-0.074 (0.206)	—
Networking opportunities	<b>0.480*** (0.145)</b>	<b>0.451*** (0.122)</b>	<b>0.279** (0.127)</b>	<b>0.311*** (0.113)</b>

Wide range of products on display	0.216 (0.244)	—	0.149 (0.199)	—
Scientist	-0.377 (0.291)	—	-0.423 (0.301)	—
/ cut 1	1.563 (0.623)	1.324 (0.379)	2.693 (0.673)	2.408 (0.489)
/ cut 2	3.593 (0.670)	3.349 (0.445)	4.914 (0.740)	4.442 (0.559)
/ cut 3	6.262 (0.841)	5.760 (0.635)	7.848 (0.966)	7.354 (0.830)
Log likelihood	-208.381	-225.020	-187.878	-202.041
Pseudo $R^2$	7.33	5.39	12.20	9.75
LR $\chi^2$	32.99***	25.65***	52.2***	43.67***
Collective variable deletion	8.15		10.38	

Notes: Notes: \*\*\*, \*\* and \* represent statistical significance at the 1%, 5% and 10% level respectively. Standard errors are in parentheses.

**Table 6: Econometric results: Combined satisfaction and importance models**

	G1	G2
<i>N</i>	195	196
(S) Number of exhibiting companies	0.712*** (0.200)	0.722*** (0.198)
(S) Finding out new competitors	0.174** (0.083)	0.156* (0.081)
(S) Networking opportunities	0.818*** (0.311)	0.830*** (0.310)
(I) Gaining technical advice	0.356** (0.149)	0.385*** (0.147)
(I) Networking opportunities	0.571** (0.291)	0.559* (0.289)
(S) Networking opportunities * (I) Networking opportunities	-0.170** (0.084)	-0.172** (0.084)
Scientist	-0.390 (0.293)	—
/ cut 1	4.097 (0.848)	2.653 (0.539)
/ cut 2	6.221 (0.913)	4.716 (0.613)
/ cut 3	9.145 (1.112)	7.586 (0.860)
Log likelihood	-191.089	-192.314
Pseudo $R^2$	12.54	12.33
LR $\chi^2$	54.80***	54.10***

Variable deletion

1.77

Notes: \*\*\*, \*\* and \* represent statistical significance at the 1%, 5% and 10% level respectively. Standard errors are in parentheses.