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## THE ABSORPTIVE CAPACITY OF TOURISM ORGANISATIONS

### Abstract

Absorptive capacity, one of the most prominent constructs in innovation research over recent decades, has advanced theoretically without consideration for the peculiarities of tourism and tourism enterprises. At its core is the notion that an ability to acquire, assimilate, transform and exploit external knowledge generates competitive advantage. Following a review of the literature and a study of absorptive capacity in the international meetings industry, a new theoretical model is proposed. The paper also provides the means by which policy-makers might, for the first time, assess levels of absorptive capacity in destinations.

**Keywords:** innovation; innovation policy; business events; professional conference organisers (PCOs); knowledge; destination competitiveness.

### 1.0 INTRODUCTION

Reviews of the literature on innovation in tourism have highlighted a number of deficiencies. Among these, as others have noted (e.g. Brooker and Joppe, 2014; Hall and Williams, 2008; Hjalager, 2010), is the low incidence of papers on the innovative practices of commercial tourism enterprises. A study of one important dimension of organisational innovation, namely absorptive capacity (or the ability to acquire, assimilate, transform and exploit external knowledge for competitive advantage), is reported in this paper. Absorptive capacity (Cohen and Levinthal, 1990), and its refinements over the past two decades (e.g. Patterson and Ambrosini, 2015; Todorova and Durisin, 2007; Zahra and George, 2002), represents “one of the most important constructs to emerge in organisational research in recent decades” (Lane, Koka and Pathak, 2006, p833), yet remains “a particularly neglected area of research within tourism studies” (Shaw, 2015, p46).

Scholars of innovation now recognise the importance of sectoral context (see Autio, Kenney, Mustar, Siegel and Wright, 2014; Garud, Gehman and Giuliani, 2014; Vega-Jurado, Gutierrez-Garcia, Fernandez-de-Lucio and Manjarres-Henriquez, 2008) and this is reflected in a growing number of contributions that take into account the peculiarities of tourism (e.g. Brooker and Joppe, 2014; Camison and Monfort-Mir, 2011; Decelle, 2004; Hjalager, 2015; Thomas and Wood, 2014; Williams and Shaw, 2011; Zach, 2012). This paper examines absorptive capacity in the meetings industry. This encompasses venues, convention bureaux responsible for promoting destinations to those

staging business events, and agencies that organise conferences (professional conference organisers or PCOs). The relative academic oversight of these organisations is surprising because there has been a sustained growth of research generally on planned events and tourism (e.g. Getz, 2008; Gursoy and Kendall, 2006; Prentice and Anderson, 2003). Moreover, business events have become routine components of tourism policy discourses internationally (Hall, 2009; Rodriguez, Williams and Hall, 2014), as is exemplified by the recent agreement between the Joint Meeting Industry Council (JMIC), the United Nations World Tourism Organisation (UNWTO) and the World Travel and Tourism Council (WTTC) (IMEX, 2014).

The UNWTO, in conjunction with agencies such as Meetings Professional International (MPI) and the International Congress and Convention Association (ICCA), defines a meeting as a gathering of ten or more people in a contracted venue for at least four hours (UNWTO, 2014, p10). These meetings encompass exhibitions, incentive events, corporate or business meetings as well as conferences and conventions. The precision of this international definition belies the challenges involved in gathering accurate data on the supply of, and demand for, meetings (Hodur and Leistritz, 2006; UNWTO, 2014). There are, however, several discernible structural features of the meetings industry which, a priori, make ideas of absorptive capacity developed among manufacturing firms potentially less pertinent.

The first is the high incidence of small and medium sized enterprises (SMEs) (Rogers, 2013). Informality, contrasting access to resources and the personalised manner of management have long been accepted as among the most important conceptual differences between smaller and larger businesses (e.g. Barney, Wright and Ketchen, 2001; Penrose, 1959; Woods and Joyce, 2003). Studies of absorptive capacity conducted among large bureaucratic manufacturing enterprises may, therefore, be of limited value for those interested in the dynamics of the meetings industry. Secondly, the structure and organisation of large international PCOs differs from apparently comparably sized enterprises in manufacturing. Many of the former employ numerous freelance 'associates' (who may or may not be contracted exclusively) on a short-term, and often regularly renewed, basis (McCabe, 2009; Weber and Ladkin, 2009). Arguably, and to borrow from Granovetter (1973), these relatively weak employment ties contribute to their commercial strength by enabling PCOs to successfully manage significant fluctuations in demand over space and time and to deliver bespoke events almost anywhere in the world (Rogers, 2013). Convention bureaus that assemble packages to attract various major peripatetic association or corporate events exhibit similarities in how they are organised. These characteristics may make it more challenging for PCOs

to develop the affective-commitment and trust among employees necessary to enable the effective sharing of information (Hashim and Tan, 2015) and undermine the potential applicability of current models of absorptive capacity to the meetings industry. Finally, the valuing of knowledge in the meetings industry contrasts with that in many manufacturing enterprises. There is an extensive literature on knowledge, knowledge management and knowledge networks in tourism (e.g. Cooper, 2006; Czernek, 2014; Jacob, Florido and Payera, 2014; Reinl and Kelliher, 2010; 2014; Shaw and Williams, 2009) which, collectively, paints a picture of a sector where there is little emphasis on gaining competitive advantage from acquiring or using highly technical formal knowledge. Instead, knowledge is often tacit and transferred informally within familiar and either relatively unsophisticated (Thomas, 2012) or sophisticated knowledge networks (Reinl and Kelliher, 2014). This holds potential implications for conceptualisations of absorptive capacity in tourism.

Although there are occasional suggestions that the role of knowledge as an explanatory variable in firm performance is exaggerated (e.g. Alvesson and Spicer, 2012), the broad consensus within both the tourism and innovation literatures is that an ability to gather and use information is very closely tied with an organisation's ability to innovate (Cooper, 2006;; Fosfuri and Tribo, 2008; Gallego, Rubalcaba and Suarez, 2013; Koostopoulos, Papalexandris, Papachroni and Ioannou, 2011; Scott, Baggio and Cooper, 2008; Shaw and Williams, 2009; Xiao and Smith, 2007). Additionally, knowledge management has been found to contribute to the competitive advantage of small as well as large businesses (Fogg, 2012; Harris, McAdam, Mccausland and Reid, 2013; Tejada and Moreno, 2013), though there is less agreement on how processes of knowledge acquisition and utilisation influence performance among this constituency. Recent investigations of the importance of 'familiarity' within networks (Zheng and Yang, 2015) and the role of 'commitment-trust' (Hashim and Tan, 2015) are potentially valuable considerations when discussing knowledge exchange in this context.

Arguably, external knowledge plays a particularly important role in tourism (King, Breen and Whitelaw, 2014; Williams and Shaw, 2011). This may be explained by noting that many tourism enterprises operate open systems of innovation i.e. they do not spend significantly on in-house research and development (R&D) but rely instead on suppliers, customers and business networks (Laursen and Salter, 2014; Mina, Bascavusoglu-Moreau and Hughes, 2014; West, Salter, Vanhaverbeke and Chesbrough, 2014). Nieves and Segarra-Cipres' (2015) recent contribution suggests that it would be erroneous, however, to assume that the existence of networks inevitably promotes innovation. In the case of technology driven innovation, for example, those with greater

in-house capability are more likely to be able to exploit potentially valuable external knowledge (Vega-Jurado, Gutierrez-Garcia and Fernandez-de-Lucio, 2009).

Albeit in a different context, some commentators have recently emphasised the role of organisational leadership as a means of “encouraging the flow of knowledge among organizational members (which serves to challenge the) status quo in organisations” (Parakevas, Altinay, McLean and Cooper; 2013, p135). It is probable that such concerns are particularly acute in a sector where SMEs dominate but may also resonate with analyses of organisations that are fragmented (Rogers, 2013). This paper builds on existing sector specific studies by examining absorptive capacity in the international meetings industry.

## 2.0 ABSORPTIVE CAPACITY: THEORETICAL CONSIDERATIONS

Studies of absorptive capacity resonate closely with, and should be conceptualised as sitting within, wider notions of open innovation (Chesbrough, 2003). That vein of research, which has attracted an “avalanche of interest” over the past decade (West et al., 2014, p805), suggests that innovative organisations tend to collaborate with external actors in a variety of ways in order, inter alia, to secure new knowledge (Laurson and Salter, 2014). The relational approach which is emphasised involves significant informal as well as formal networking activity, potentially involving reciprocity of value (Ritala, Olander, Michailova and Husted, 2015), and results in outward-looking business strategies. Primarily theorised in the context of manufacturing, ideas of open innovation are, nevertheless, as relevant to service organisations but initial research suggests that they lead to different ways of innovating (Mina et al., 2014).

Absorptive capacity has been largely ignored or has been tangential to research conducted by scholars with an interest in tourism (Carlborg, Kindstrom and Kowalkowski, 2014; Hjalager, 2015; Weidenfeld, Williams and Butler, 2009). Valentina and Passiante (2009) utilised ideas of absorptive capacity for their research on small and medium sized enterprises. They found that external networks were valuable sources of knowledge. However, unless owner-managers were able to share information with employees, innovation was not likely to emerge.

Lane et al. (2006, p833) summarise the essence of absorptive capacity when they note that it:

..... refers to one of a firm's fundamental learning processes: its ability to identify, assimilate, and exploit knowledge from the environment. These three dimensions encompass not only the ability to imitate other firms' products or processes but also the ability to exploit less commercially focused knowledge, such as scientific research. Developing and maintaining absorptive capacity is critical to a firm's long term survival and success because absorptive capacity can reinforce, complement, or refocus the firm's knowledge base.

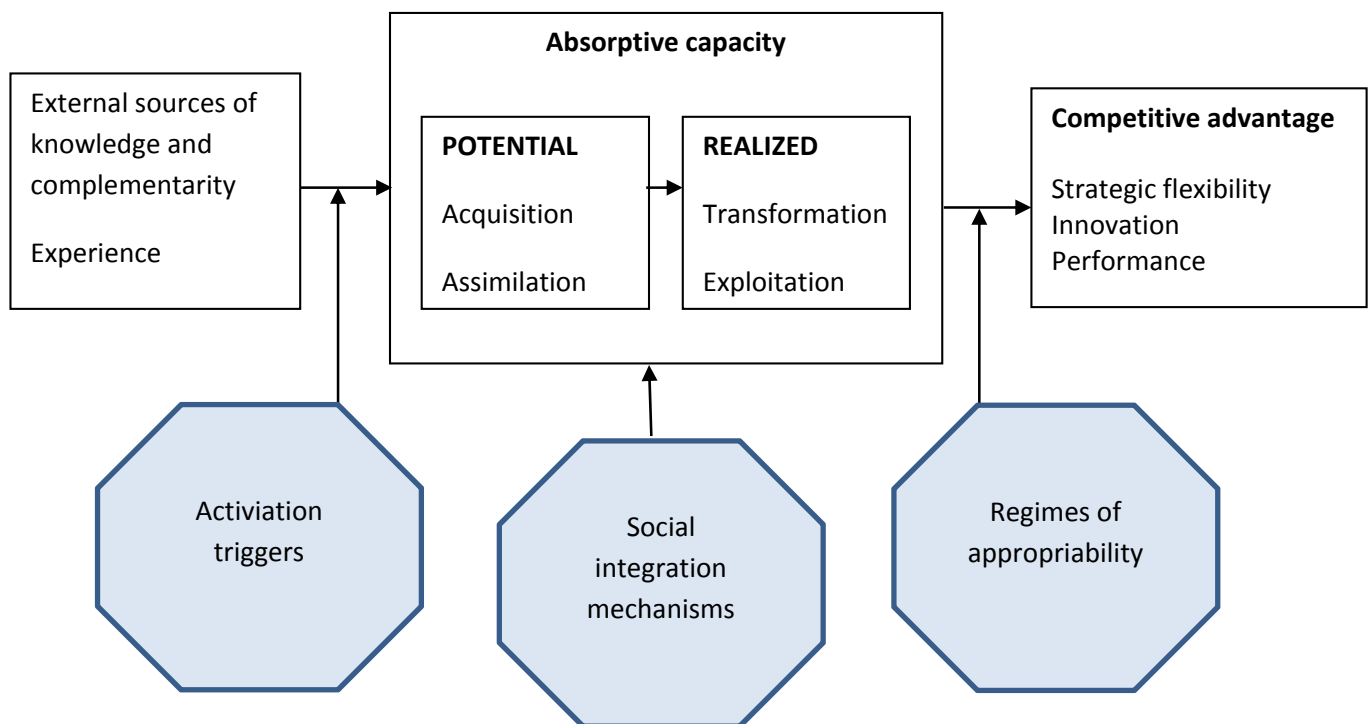
The theoretical antecedents of absorptive capacity are usually attributed to the work of Cohen and Levinthal (1990). However, Zahra and George's (2002) theoretical refinements represent a more convenient starting point for this paper. They conceptualise absorptive capacity as a dynamic capability. That it is a dynamic capability is critical because, as Sun and Anderson (2008, p134) emphasise, "a dynamic capability ... reflects the ability of an organisation to respond to strategic change ... by reconstructing its core capabilities". Zahra and George (2002) suggest four capabilities or dimensions of absorptive capacity: acquisition, assimilation, transformation, and exploitation.

The intensity, speed and scope of activity affects the potential value of knowledge acquisition which is the first capability identified. The second, labelled assimilation, relates to an organisation's ability to interpret, for strategic purposes, the knowledge acquired. Clearly, simply acquiring new knowledge but not recognising its potential importance to the organisation is unlikely to yield progress towards innovation. The third capability, knowledge transformation, involves combining new knowledge with that which exists within the organisation already to enable novel understanding. As Zahra and George (2002, p190) suggest, "the ability of firms to recognize two apparently incongruous sets of information and then combine them to arrive at a new schema represents a transformation capability ... It yields new insights .. (and changes how) .. the firm sees itself and its competitive landscape". The final capability involves establishing procedural mechanisms so that organisations are able to exploit new knowledge enabling them to innovate by altering current practices or beginning new ones (Easterby-Smith, Grace, Antonacopoulou and Ferdinand, 2008).

The four capabilities discussed above are categorised by Zahra and George (2002, p190) as potential (acquisition and assimilation) and realized (transformation and exploitation) absorptive capacity. Together they represent "a coherent dynamic capability that fosters organisational change and evolution". Figure 1 illustrates this conceptualisation and incorporates the other factors that are

held to enable or limit absorptive capacity and its implications for innovation. Prior experience of, and the learning associated with, searching for and using external sources of knowledge are considered to be important antecedents of absorptive capacity.

Figure 1 A model of absorptive capacity



Source: Adapted from Zahra and George (2002, p192); Todorova and Durisin (2007).

The model also highlights the role of activation triggers which are factors that “encourage or compel a firm to respond to specific internal or external stimuli” (Zahra and George, 2002, p193). By way of illustration, uncompetitive business performance or innovation elsewhere may stimulate a management reaction. The nature of the activation trigger will affect the vigour of the reaction and the nature of the search (Van de Ven, Poley, Garud and Venkataraman, 2008).

Social integration mechanisms highlight the need to share knowledge within organisations if potential absorptive capacity is to be realised. As others have noted, potential structural, cognitive,

behavioural and political barriers may limit knowledge sharing to the detriment of mutual understanding. Thus, Todorova and Durisin (2007), for example, argue that power relations within organisations act as an important moderating factor in valuing and exploiting new knowledge. The nuanced evidence provided by Easterby-Smith et al. (2008) suggests that systemic power or seniority plays an important role in knowledge acquisition but that it is episodic power, or that derived from coalitions of interests that emerge in particular circumstances, which is vital for sustaining the exploitation of knowledge.

In spite of widespread recognition in the literature that social relations within organisations are critical to absorptive capacity, “our understanding of how new knowledge is assimilated internally and the role of individual actors and organizational conditions remains incomplete” (Hotho, Becker-Ritterspach and Saka-Helmhout, 2012, p384). Nevertheless, the idea has gained some traction in the tourism (Nieves and Segarra-Cipress, 2015) and management literatures (Chang, Gong, Way and Jia, 2013; Hau, Kim, Lee and Kim, 2012). Zahra and George (2002) use a range of evidence to show that formal means of sharing knowledge are generally more effective than informal ones. The ability to learn from past experience, coupled with a flexible approach to human resource management, appear to go some way to explaining differences in performance between organisations or temporal differences within the same organisation (Chang et al. 2013).

The only dedicated study of absorptive capacity in tourism enterprises was undertaken recently by Thomas and Wood (2014). Their analysis reveals that activation triggers and prior experience (learning) become influential in hotels, their testbed, once knowledge acquisition has taken place. The enterprises they studied tended to acquire knowledge, often via highly personalised channels, but did not utilise it effectively for innovative purposes unless provoked to do so by events (activation triggers). Further, their experience of using – rather than of acquiring – external knowledge represents an integral part of the process of exploiting knowledge.

‘Regimes of appropriability’ represent the final dimension of prominent conceptualisations of absorptive capacity. This element refers to an organisation’s ability to retain the competitive advantage it derives from its absorptive capacity by making it difficult for competitors to imitate its innovation (Laursen and Salter, 2014). The use of various ‘isolating mechanisms’ (such as secrecy), which limit ‘knowledge spillovers’, may be important in this regard but are unlikely to be significant in the meetings industry, or even in tourism generally. Where temporary employment is widespread or there is high labour turnover (Rogers, 2013), the ability of organisations to control knowledge



flows is reduced. Further, as many innovations are easily replicable and often emerge from outside the sector (Hjalager, 2015), creating effective regimes of appropriability is a much more challenging prospect.

### 3.0 RESEARCH DESIGN AND METHODS

Data for this project were collected in two stages. The first involved interviewing the Chief Executive Officer (CEO) or director level staff of four Destination Marketing Organisations (DMOs) responsible for attracting major meetings to particular destinations (three of the four were convention bureaus). This was followed by interviews with similarly senior officers at five professional conference organising companies (PCOs) who worked internationally. At least two of the latter offered marketing and other services in addition to organising meetings. Each of the interviewees was nominated by a director-level member of the International Congress and Convention Association (ICCA). To qualify for inclusion, each individual had to be seen as a leading and innovative practitioner who operated in more than one country. This reputational criterion was demonstrated in a number of ways; they had won awards, were prominent in the trade press or led what was seen by an ICCA director as an iconic organisation. Inevitably, these often overlapped. Interviewees were located in nine countries which were spread between three continents. The availability of these senior personnel was often limited. As a result, most interviews, even those conducted face-to-face (five of the nine), lasted slightly less than an hour.

The purpose of the interviews was twofold. The first was exploratory. Each semi-structured interview examined the approach to innovation of the interviewee's organisation, initially via a series of open questions. These were complemented with probing questions to consider the potential conceptual value of absorptive capacity as currently theorised. This helped inform the development of the research instrument, a questionnaire, for use in the main part of the study. Secondly, the insights gained from the interviews provided perspectives on the meetings industry which informed the interpretation of the findings. These included broader questions about the operations of their business and trends in the sector.

The second stage consisted of a web-based survey of members of ICCA. Many studies of innovation use indicators such as expenditure on research and development as surrogate measures of absorptive capacity. While several of these have confirmed the four factor model empirically

(Camison and Fores, 2010; Daspit and D'Souza, 2013; Flatten, Engelen, Zahra and Brettel, 2011; Jimenez-Barriouevo, Garcia-Morales and Molina, 2011), the research has been undertaken primarily among manufacturing enterprises. Although potentially useful in some circumstances, they are deficient in the context of tourism (Hall and Williams, 2008; Hjalager, 2010; Shaw and Williams, 2009) and are too crude to enable an analysis of the components of absorptive capacity.

Other researchers have more recently developed multi-dimensional scales to interrogate the conceptual dimensions of absorptive capacity (notably Camison and Fores, 2010; Daspit and D'Souza, 2013; Delmas, Hoffman and Kuss, 2011; Flatten, Engelen, Zahra and Brettel, 2011; Jimenez-Barriouevo, Garcia-Morales and Molina, 2011; Jiménez-Castillo and Sánchez-Pérez, 2013; Thomas and Wood, 2014). Even though each of those cited used slightly differing formats, wording and approaches to item development, they all indicated some convergence in the measurement of absorptive capacity as a multi-dimensional construct. Initially, this study also used a scale with a relatively large number of items (adapted from previously validated scales) within each of the four hypothesised factors. This allowed for further validation of the existing items and elimination of 'unhelpful' items. The aim of this was to develop a more parsimonious scale (with no extraneous items and fewer questions) fitting the specificities of the meetings industry.

The survey instrument comprised a number of distinct sections. The first part gathered categorisation data on the respondent (role, length of time in role, length of time in organisation) and the organisation (type, years in operation, size). This allowed for sub-group analysis within the overall sample. The second section contained a simple uni-dimensional measure ("Does your organisation learn from other organisations?" and "If, so, how many does it learn from regularly?") to help ascertain construct validity and to encourage the respondent to begin thinking about absorptive capacity. The survey then moved on to four separate sections on each of the hypothesised sub-constructs (acquisition, assimilation, transformation and exploitation).

Differing slightly in the number of items used, each section included three question banks which asked the respondent to think about one organisation they learn from regularly, to then compare their organisation with others in the industry and, finally, to describe their own organisation's activity. The statements were generated using previously validated scales which were adapted for the meetings industry using the terminology that arose in the pre-survey interviews. A five point response scale was used for each statement. Further statements were then used to assess the overall rating of their potential (acquisition and assimilation) and realized (transformation and

exploitation) absorptive capacity, asked as a comparison with others in the industry. The survey concluded with open questions inviting a description of a recent innovation in the business and an explanation of how it came about, potentially providing examples of absorptive capacity in practice. A final scale question rating the organisation's innovativeness against the sector as a whole allowed for a comparison between the absorptive capacity of those who thought of their organisation as highly innovative with those who thought they were less so.

A pilot test of twenty organisations in the meetings industry gave an estimate of the expected level of non-response (5 out of 20). Follow-up telephone interviews were used to identify the reasons for this and design weaknesses within the questionnaire. Based on the pilot test, changes were made to wording, format and the introductory text. Using the ICCA global membership database, a sampling frame of 1018 was identified, comprising 332 venues, 257 meeting management businesses, 331 destination marketing organisations and around 98 meeting support companies from around the world (85 Africa/Middle East, 212 Asia Pacific, 572 Europe, 77 Latin America and 114 North America). Due to the relatively low response rates encountered in previous studies (Jimenez-Barriouevo et al, 2011; Flatten et al 2011; Daspit and D'Souza, 2013 and Thomas and Wood, 2014), the survey was sent to named individuals in all 1018 organisations.

Emails were sent from a known source (ICCA) explaining the project and including the weblink to the survey. In order to avoid duplication by having more than one member from each organisation, emails were sent to the most senior member of the subscribing organisation only. Although other studies have gathered data from employees (Flatten et al, 2011), it was felt that those in more senior positions would provide better informed responses given the role they play in influencing the organisational culture within which innovation takes place (DeGroot, Kiker and Cross, 2009; Elenkov, Judge and Wright, 2005). In addition to the initial invitation, two reminders were sent. This resulted in 322 replies which represents an initial response rate of 31.6%. After data cleaning and removal of those with substantial missing data, there were 208 full responses, giving a final response rate of 20.4%. This is typical of similar surveys and higher than many. Some level of non-response was expected because of the complexity of the questions and the time constraints on those in senior positions being surveyed.

Non-response bias using Armstrong and Overton's (1977) extrapolation method (comparing early and late responders) revealed no significant differences between the two groups (the assumption being that non-responders are similar to late responders). A further investigation of the reasons for

non-response showed that most were related to changes in position, leave/holiday period or the survey being undertaken during a busy period. Given the relative homogeneity of the target population (i.e. a well-defined sector) albeit with hypothesised differences on the topic being researched, the level of confidence (95%) and the accuracy required, suggested a final sample of over 200 was deemed acceptable for the analysis to be undertaken (Blunch, 2013), including some sub-group analysis where numbers were sufficient.

Inevitably, the study has limitations. Principal among these is the uncertainty about the extent to which the sampling frame is representative of the meetings industry. It is possible to argue that the leading international representative association from which the sample was derived will contain the most innovative of organisations in that sector. Yet, this is equally difficult to substantiate. It is possible, that by relying on the kind of formal network used in this study, important characteristics of organisations that choose not to belong, the majority, remain unearthed.

The second limitation relates to the reliance on only one respondent from each organisation. Though not unusual in this kind of research, a more reliable picture would emerge from multiple perspectives on each organisation. Additional insights would also emerge from knowing more about the kinds of knowledge utilised by organisations in the meetings industry and its perceived relative value.

## 4.0 ABSORPTIVE CAPACITY IN THE MEETINGS INDUSTRY

### *4.1 Survey sample characteristics*

The survey resulted in 39% of responses from destination marketing organisations, 35% from venues, 20% from PCOs and 6% from meetings support companies. This represented a similar proportional breakdown to that found in the overall population (based on ICCA membership). The majority of respondents within these organisations held senior positions with 39% reporting themselves as CEOs, directors or owners, 11% as general managers and 23% as other senior managers. A further 28% were heads of department or middle managers. The length of time these respondents had held their post ranged from two months to twenty years and their time with the organisation also showed a wide spread from less than a year to more than forty years with a similar range for the age of the organisation.

Organisational size was measured using the number of full time equivalent employees. Predictably, the majority of companies could be categorised as small to medium sized but with a number of micro-businesses/sole traders and a small proportion of large companies (3.8% with more than 500 employees). This again gives a useful range of sample characteristics which can be used to explore levels of absorptive capacity within the sector.

The final sample characteristic of interest was the number of organisations from whom respondents regularly acquire knowledge, as this is theorised to be an important element of absorptive capacity. In this case, almost a quarter (24%) reported learning from between one and three organisations regularly, almost half (49%) between four and six, eight per cent between seven and nine, and eighteen percent claimed to learn from ten or more organisations.

#### *4.2 Scale refinement*

Before analysing the data to explore absorptive capacity within the meetings industry it was necessary to conduct a preliminary analysis of each of the items within the scale. Several items were found to have very high means and/or a low variance. These were excluded from the scale as they were likely to be affected by positive response bias and contribute little to differentiating between respondents. These were AQ3 “There is mutual respect between us”; AQ6 “We collect information through informal means”; AQ9 “We expect employees to use information from within our industry”; and EX6 “Our business supports the development of new service ideas”. It is reasonable to infer from this that there is agreement in the sector on these points and, therefore, they are unlikely to offer any significant competitive advantage.

In order to test the reliability of the scale made up of the remaining 50 items, Cronbach’s alpha test was applied. The results gave a Cronbach’s alpha statistic of 0.926 suggesting reliability (Cronbach’s  $\alpha > 0.9$ ) (though scales with a large number of items tend to have higher alpha scores). It also indicates that the deletion of any one item would not improve the reliability of the scale. A preliminary analysis of the inter-item correlations suggested that there are groupings of items within the overall sample. This was, therefore, explored further.

Factor analysis using principal components (suitable for ordinal data) was undertaken to investigate the fit of each scale item. The resulting table of communalities from extracting one component

showed that most items share variance with the extracted component but that ten share less than 10%. These include six items from the bank that were used to assess acquisition (AQ), three from assimilation (AS) and one from exploitation (EX). One interpretation is that the items measuring acquisition and, to some extent assimilation, contribute less to absorptive capacity than transformation and exploitation within the meetings industry. The ten items were removed from the scale in order to create a more parsimonious measure and to aid further analysis. A scree plot (after removing these items) also suggested that there is more than one component, with no elbow clearly identifiable until the third component.

#### *4.3 Dimensionality in the scale*

As the results indicate two possible components, a principal components analysis restricted to two components using varimax rotation was performed. The resulting rotated component matrix showed that the items were clearly related to each of the two components but the distinction between those that load on factor 1 and those that load on factor 2 was not clear and did not appear to be related to the four components of absorptive capacity. As the items related to each factor did not share any obvious characteristics, a single factor model was retained.

The fact that the four previously theorised factors of absorptive capacity did not emerge does not mean that these are not present or important within the sector or within the overall construct. Indeed, it could be that they are so interrelated that they do not separate out into individual components. They exist but operate simultaneously to create an environment where innovation can occur through absorptive capacity. Each element is, therefore, needed within any scale which attempts to measure absorptive capacity as a single concept.

Before investigating the characteristics of absorptive capacity and any sub-group differences within the meetings industry, structural equation modelling was applied in order to identify a better fitting model than that found in previous studies. This involved trialling two factor and single factor models until the best fit was achieved. Table 1 summarises the process undertaken to identify the best-fitting model.

Table 1 Summary of model fitting results

Model	No. Items	Measures of Fit: CFI and RMSEA	Items to exclude
1	17 Factor 1 24 Factor 2	0.682 0.094	Exclude all items with standardised coefficients less than 0.5
2	13 Factor 1 11 Factor 2	0.816 0.098	Improving – remove further items (<0.5)
3	13 Factor 1 9 Factor 2	0.844 0.095	Recognise covariance
4	22 items one factor (abcap)	0.74 0.121	Poor fit – remove items with low regression weights
5	15 items	0.838 0.115	Improving Remove remaining two items from 'Factor 2' as regression weights <0.5
6	13 items	0.873 0.113	Although two factors identified better fitting model based on one factor. Remove AS7 (RW<0.5)
7	12 items	0.88 0.117	Improving. Remove items AQ7 EX13 high covariance and low regression weights
8	10 items	0.92 0.100	Best fitting model – 1 factor (Ab Cap) 10 items.

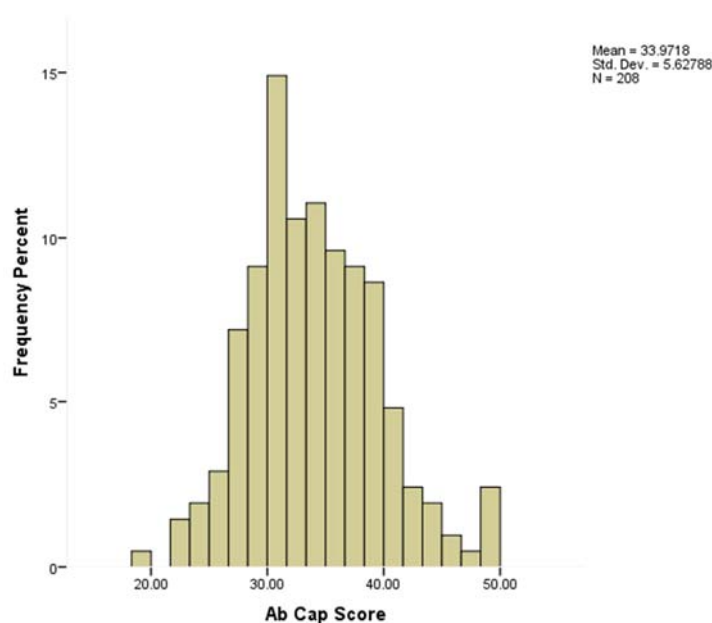
The best fitting model is a reduced item single factor model containing a combination of items originally classified as acquisition (1 item), assimilation (3 items), transformation (4 items) and exploitation (2 items). Even though the RMSEA (Steiger-Lind root mean square error of approximation) measure is not below the desired 0.05, at 0.1 it is acceptable and does not improve with further item reduction. The CFI (Bentler comparative fit index) shows a very good fit at 0.924 and, therefore, model 8 was selected to measure absorptive capacity in the meetings industry.

Structural equation modelling revealed that the four factor model theorised extensively in the innovation literature and confirmed empirically in studies relating to manufacturing, does not fit with absorptive capacity as it manifests itself in the meetings industry. Within this predominantly business-to-business service sector, absorptive capacity is less pronounced than has been found elsewhere; outward facing knowledge acquisition activities are prominent and are clearly related to internal practices. There is far greater emphasis on acquisition, however, rather than its subsequent use. The sampling frame may explain some of this as all respondents had chosen to be members of an industry association. However, the data from the qualitative interviews also lead to the tentative suggestion that even the organisations that were seen as amongst the most innovative, paid less attention to mechanisms required for knowledge sharing. Exploring the data further in terms of sub-group analysis sheds light on the particular characteristics of the industry and how they impact upon absorptive capacity.

#### 4.4 *The absorptive capacity of organisations in the meetings industry*

The items identified through structural equation modelling were combined to create a single measure of absorptive capacity which could then be correlated with sub-sample characteristics and the self-reported single measures of potential absorptive capacity, realised absorptive capacity and relative innovativeness. The distribution of this measure of absorptive capacity is shown in Figure 2.

Figure 2 Absorptive capacity score distribution





With ten items and a five point likert scale, the maximum score that could be achieved was fifty and the minimum was five. There is generally a normal spread but there are also a significant number of organisations (2.4%) who show extremely high levels of absorptive capacity. Correlations were performed to ascertain whether the characteristics of the organisations and respondents were related to the absorptive capacity score. Table 2 shows the results of this analysis as well as the correlations with the three single item questions which assessed organisations' ability to acquire and assimilate knowledge, an ability to transform and exploit knowledge and the level of innovativeness relative to others in the sector.

Table 2 Correlations with organisation characteristics

Characteristic		ACQUIRE and ASSIMILATE	APPLY and EXPLOIT	Relative Innovativeness	Ab Cap Score
<b>Number of employees</b>	Pearson Correlation	.071	.098	.078	.045
	Sig. (2-tailed)	.327	.179	.296	.516
	N	190	189	182	208
<b>Years in operation</b>	Pearson Correlation	.110	.014	.074	.118
	Sig. (2-tailed)	.130	.846	.319	.088
	N	190	189	182	208
<b>Years in position</b>	Pearson Correlation	.109	.077	.171 <sup>*</sup>	.182 <sup>**</sup>
	Sig. (2-tailed)	.135	.293	.021	.008
	N	190	189	182	208
<b>Years with organisation</b>	Pearson Correlation	.112	.071	.107	.173 <sup>*</sup>
	Sig. (2-tailed)	.123	.335	.152	.012
	N	190	189	182	208
<b>No of businesses learnt from</b>	Pearson Correlation	.110	.083	.172 <sup>*</sup>	.104
	Sig. (2-tailed)	.131	.255	.020	.133
	N	190	189	182	208
<b>Business type</b>	Pearson Correlation	-.007	-.066	-.045	-.030
	Sig. (2-tailed)	.922	.367	.549	.662
	N	190	189	182	208
ACQUIRE and ASSIMILATE	Pearson Correlation	1	.736 <sup>**</sup>	.530 <sup>**</sup>	.697 <sup>**</sup>
	Sig. (2-tailed)		.000	.000	.000
	N	190	188	181	190
APPLY and EXPLOIT	Pearson Correlation	.736 <sup>**</sup>	1	.597 <sup>**</sup>	.727 <sup>**</sup>
	Sig. (2-tailed)	.000		.000	.000
	N	188	189	180	189

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\*. Correlation is significant at the 0.01 level (2-tailed).

There is a very strong positive relationship between self-reported levels of innovativeness and absorptive capacity, clearly connecting the two concepts as expected. Similarly, the simpler measures of “How would you rate your ability acquire and assimilate information?” and “How would you rate your ability to transform and exploit information?” are both positively correlated with the absorptive capacity score, the rating of innovativeness and with each other. These correlations help confirm the concept validity of the refined absorptive capacity scale and also indicate that there is a level of awareness of what constitutes absorptive capacity within the sector. The number of organisations learnt from is also correlated with their assessment of their organisation’s innovativeness in that those who learn regularly from a larger number of organisations assess themselves as more innovative than others in the sector.

Absorptive capacity shows no significant correlation with the firm characteristics of size, type or length of time established. However, levels of absorptive capacity do appear to relate to the orientation and capacity of individual managers; positive absorptive capacity scores are correlated with individual respondents’ duration of employment in that company and their period of tenure in their current position. Arguably, organisations with longer serving senior staff are better equipped to develop that dimension of absorptive capacity that relates to acquisition of knowledge because of the time it takes to establish networks within and outside the industry. Moreover, it also suggests confirmation of the role of experience in major accounts of absorptive capacity (Lane et al., 2006).

Further analysis considered the higher scoring respondents only (all those with an absorptive capacity score of forty or more). No correlations were found that suggested their characteristics differed from the remainder of the sample (except in the role and length of service of the respondent). However, though far from conclusive, an analysis of the comments provided to justify their answers revealed a greater awareness of the role of experience in interpretation of external knowledge and moderating factors relating to absorptive capacity. An analysis of the comments provided by those with low absorptive capacity hinted at the low dynamic capabilities of these organisations (Breznik and Hisrich, 2014; Sun and Anderson, 2008). By way of illustration, respondents emphasised a variety of perceived organisational deficiencies that ranged from ‘incompetent and detached managers’, ‘centralised decision making (which) hampers the quick implementation at the departmental level’ and an inability to engage with external networks for

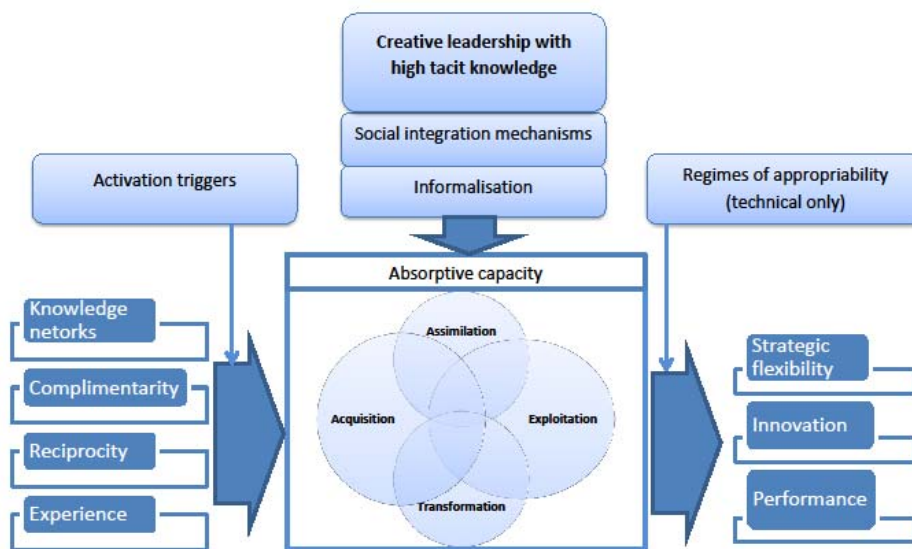
innovative purposes. These statements must be read with caution and highlight the need for additional qualitative enquiry (Hotho et al., 2012).

Respondents, in answer to open questions in the survey or when interviewed during the initial stage of the project, described their networks in a manner which resonated with theoretically emerging notions of 'reciprocity' (Ritala et al., 2015), 'commitment-trust' (Hashim and Tan, 2015) and 'familiarity' (Zheng and Yang, 2015). By way of illustration, information about past events that had been secured by competitive tendering processes was shared freely by convention bureaus and PCOs in the knowledge that they would not be awarded them again, with the confident expectation that they would benefit from similar behaviour by others in their networks. Such confidence emerges only from a familiarity with their network and trust in those with whom knowledge is being shared.

## 5.0 CONCLUSION

The research reported in this paper advances our theoretical understanding of absorptive capacity as well as making a potentially valuable contribution to policy and practice. By failing to identify an empirical distinction between potential and realised absorptive capacity, or the four dimensions of absorptive capacity discussed in the literature, it appears that, as anticipated, different dynamics are at play within the meetings industry than in other, largely manufacturing, sectors. As a result, a modified model of absorptive capacity is proposed (Figure 3).

Figure 3 A model of absorptive capacity in tourism



Following earlier conceptualisations, the importance of external sources of knowledge complemented by the possession of experience and business attributes that enable it to use the external knowledge are retained. The relational nature of knowledge, which is emphasised in the tourism literature and confirmed by the empirical findings, is acknowledged and the notion of reciprocity introduced as factors that act as antecedents to absorptive capacity in the meetings industry.

The survey evidence reported in this paper also suggests that leadership is critical and is most effective when accompanied by high levels of tacit knowledge gained from experience in the sector. In other words, much of the firms' organisational knowledge (Vega –Jurado, Gutierrez-Garcia and Fernandez-de-Lucio, 2008) relies on a small number of 'core' employees. The more personalised nature of management suggests that creativity among leaders should also be accentuated in the new model. What Amabile, Conti, Coon, Lazenby and Herron (1996) identified some time ago as one of three vital elements of a creative organisation, namely its management practices, is likely to be pivotal in the meetings industry. A more recent review (Anderson, Potocnik and Zhou, 2014) has highlighted the need for additional research on the contribution of individual leadership to creativity and innovation, some of which could usefully be pursued in the meetings industry.

From what has been revealed by previous research and confirmed by the interviews conducted for this study, a culture of sharing knowledge within the enterprise represents an important dimension of absorptive capacity. Vega-Jurado, Gutierrez-Garcia, Fernandez-de-Lucio and Manjarres-Henriquez (2008) draw an important conceptual distinction between social integration mechanisms (those practices that enable knowledge exchange within the enterprise) and the complementary notion of formalisation (the extent to which rules and procedures govern employee behaviour). The level of formalisation, they argue, may improve the efficiency of knowledge acquisition by creating policies and systems. It is the social integration mechanisms, however, that are vital not only to its distribution but particularly for its transformation and exploitation, where high level cognitive skills are required. Both play an important role in the meetings industry but probably in a different manner from other sectors. The data suggest that managers influence and participate directly and informally in the iterative processes of acquiring, assimilating, transforming and exploiting knowledge for organisational gain. To reflect this, knowledge acquisition, assimilation, transformation and exploitation are represented as overlapping in the Venn diagram. The proximity of leaders to their 'core' employees and to the market, even in larger businesses, suggests that they play a more active role in bridging connections between acquired knowledge and generating innovation and competitive advantage than in other, notably manufacturing, sectors.

The interviews conducted for this project suggest that innovations are difficult to protect in the meetings industry, an observation confirmed in other tourism contexts (Decelle, 2004; Hall and Williams, 2008). Thus, the competitive advantage gained from innovation tends to be relatively short lived. The creation of strong regimes of appropriability (the mechanism to protect the innovation such as secrecy, specialist knowledge, or the high cost of replication) is extremely difficult and not worthy of significant investment of effort. Some of the structural characteristics of the labour market discussed earlier in the paper, notably the high circulation of temporary and freelance staff, suggests that knowledge leakages are likely to be widespread (though, ironically, these have been identified in some circumstances as contributing to knowledge acquisition). Interviews with key informants confirm this analysis with the possible exception of innovation that contains a significant technical element. Even in those cases, however, appropriation regimes are likely to be weak because the suppliers who lead technical innovations tend not to work exclusively for one organisation in the sector.

The paper also contributes to the literature by showing, for the first time, that it is possible to estimate the absorptive capacity of enterprises in the meetings industry. In principle, this might extend to leisure tourism providers such as attractions, hotels and transport. This enables researchers to trace the absorptive capacity of organisations in the sector over time and to undertake comparative studies at the level of the destination.

Finally, in spite of the voluminous literature and the insights provided by this research, absorptive capacity remains inside something of a 'black box'. Perhaps the most immediate research challenge, therefore, is the need to interrogate the concept in organisational contexts via detailed qualitative enquiry. This should encompass an examination of the social relations within organisations as they influence absorptive capacity. Without knowing more about the social processes at play, and their consequences, theoretical understanding of absorptive capacity and its implications for innovation and competitive advantage will be circumscribed, offering the ability to make relatively constrained practical recommendations.

### *5.1 Implications for policy and practice*

Several commentators have emphasised the role of public policy-makers in strengthening innovation and destination competitiveness by facilitating knowledge flows. Pyo (2011) proposed a systematic approach to creating connections between knowledge produced by universities and the knowledge needs of destination stakeholders. The resulting co-constructed research agendas are held to increase the opportunities for innovation (see also Hoarau and Kline, 2014; Jacob et al., 2014). Weidenfeld (2013) examined flows of knowledge as part of an analysis of cross border innovation systems concluding that specific measures to increase knowledge transfer across borders would likely yield greater destination competitiveness. In a related vein, Kelliher and Reinl (2011) and Reinl and Kelliher (2014) have illustrated the potential value of public sector intervention in creating knowledge (learning) networks that enhance the competitiveness of small enterprises in tourism.

This paper complements existing approaches and introduces novel issues for policy-makers in relation to the development of the meetings industry. The analysis provided opens up the possibility of policy-makers identifying and working with enterprises that are most likely to be able to benefit from the provision of external knowledge and to identify those from whom others may learn. The ability to measure changes in levels of absorptive capacity presents opportunities for effective

monitoring and evaluation of policy actions. This adds a new dimension to the nascent tourism innovation policy literature (e.g. Hall, 2009; Rodriguez et al., 2014).

The research findings also have implications for practitioners. They suggest that progressive managers might now monitor the absorptive capacity of the enterprises they lead and reflect upon the various dimensions of the model to improve organisational innovation. For many, this should probably result in a re-orientation of emphasis to include how they use the knowledge they gain from their networks. Developing imaginative ways of developing bonds with otherwise transient labour, with the intention of harnessing their tacit knowledge and creativity, might also prove a fruitful avenue for consideration.

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