APPLYING BUSINESS STUDIES METHODS TO TRANSPORT RESEARCH

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Abstract

As transport planning and policy diversify from infrastructure development to demand management and Smarter Choices, there is also a need to diversify the research methods for transport studies. With the development of behaviour change as a fundamental part of the Smarter Choices programme, the use of psychology and behaviour change models has been accepted. It should therefore follow that where transport planning involves businesses, such as workplace travel planning, an approach that involves business studies is also needed. A project using aspects of Roger's *Diffusion of Innovations*, including the attributes of an innovation and the process of an innovation in an organisation will be used as an example to illustrate this. It shows how a business studies theoretical framework can be used as a structure to analyse qualitative data from case studies.

The aim of the project was to understand how workplace travel plans had developed and embedded into an organisation's processes and culture. To understand this requires an appreciation of the culture and structure of an organisation and how the travel plan fits within them. To help explain this relationship another aspect of business studies, Mintzberg's *Structure in Fives* was used. The Mintzberg model describes different types of organisations, such as a professional or machine bureaucracy or a divisionalised form. These forms are then divided into five different parts, which group together the different functions of an organisation and show their interrelationship. This framework was used to help understand the impact of the position of the travel planner on the embedding of a travel plan.

This paper will discuss how appropriate the use of business studies methods was for the analysis of the qualitative data for this project. It will then move on to discuss the relevance of business studies techniques as a method in transport studies in general.

1 Introduction

This paper is based on a research project that investigated how workplace travel plans have matured and the extent to which they have become organisationally embedded. The project concentrated on businesses within the private sector, beginning with a telephone survey to determine how the motivations for a travel plan change as it matures. Results of this survey can be found in (Roby, 2008). The focus of this paper is to explore the suitability of the business studies methods used as a framework to analyse the qualitative case study data, and the appropriateness of business studies methods in other transport studies.

Previous research into travel planning has centred on five main approaches.

Quantitative

I. Surveys, usually as part of a scoping exercise
II. Analysis of travel survey data
III. Cost-benefit analysis

Qualitative

IV. Case study research to explore information from the scoping exercise in more depth
V. Action research to develop behaviour change models

However, research into travel planning is still a relatively new area. The purpose has been to improve the process of implementation and give practical guidance to practitioners, concentrating on the initiation or early stages of adoption. This paper will focus on the 'in use' phase where a travel plan needs to relate to an organisations day to day business operations. It will show how business studies methods have been used to explore this phase of the adoption process of a process innovation such as a workplace travel plan.

The paper will begin by briefly explaining how the case studies were identified, then move on to explore the use of aspects of Rogers's *Diffusion of Innovations* (Rogers, 2003) as an analysis framework. Mintzberg's organisational design, *Structure in Fives* (Mintzberg, 1993) will then be used to show how the importance of the position and role the travel planner within the organisation, using case studies as illustrations.

2 Multiple case studies

A multiple case study method was chosen for the in depth qualitative part of the project. This approach was chosen to help improve the credibility of the research, but also to ensure that a complete picture of maturing travel plans could be investigated. Yin suggests several reasons for the use of multiple case studies, credibility through replication being one. His work also suggests the idea of a 'two-tail' design and the wish to explore a range of conditions across different sub-groups (Yin, 2009).

Travel plans range from those that are closely aligned to the goals and targets set by the local authority, as an outcome of a planning consent, through those that are beginning to make links into organisational goals such as recruitment, retention and business growth. At the other extreme are organisations that have changed their working practices to the extent that work becomes an activity rather than a time or place, which also impacts on transport, though it was not the primary aim. A single case study approach would not be able to cover this spectrum of travel plans. The other issue is that travel plans tend to be unique to the organisation, with no one travel plan exhibiting a full range of characteristics. The use of a multiple case study approach allowed for a complete picture of maturing travel plans to be developed.

The multiple case study approach involved firstly identifying travel plans at either end of the range, (the 'two tail' approach), and then travel plans that fitted between the two extremes. The aim was to develop a complete spectrum between the 'two-tails', with case studies partly overlapping in characteristics to improve validity through replication, but accepting that they would also offer uniqueness to the research as Figure 1 represents.

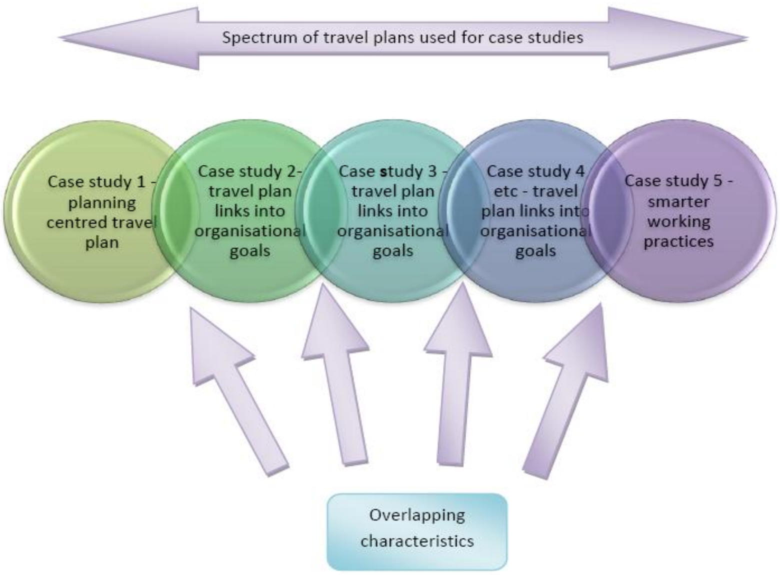

Figure 1: Multiple case studies overlapping spectrum

3 Rogers's *Diffusion of Innovations*

Workplace travel plans can be considered process innovations, which suggests the use of aspects of the *Diffusion of Innovations*. Most work on diffusion has concentrated on the diffusion of an innovation among individuals, but organisations also adopt innovations, either as hard technologies or as processes, such as travel plans. Rogers suggests that innovations within organisations are harder to implement than for an individual, partly due to the potential for a large number of individuals to be involved in the implementation process (Rogers, 2003). The individuals who need to change their travel behaviour, generally, are not going to be those who make the decision to implement a travel plan. This leads to a two stage adoption process in organisations; firstly adoption of the innovation by the organisation and then adoption by the individual. This two stage approach to adoption of an innovation within an organisation means that the process is more complicated than for the individual. As well as concentrating on the individual, previous innovation studies have concentrated solely on the adoption phase of an innovation, but Zaltman realised that for an innovation to successfully diffuse into an organisation through user adoption, an important part of the process was the implementation or in-use phase (Zaltman et al., 1973).

3.1.1 The innovation process within an organisation

In response to this Rogers developed a five stage process to outline the stages that the adoption of an innovation should pass through within an organisation. The first two, the adoption or initiation stage and the last three, the implementation or usage stage, Figure 2.

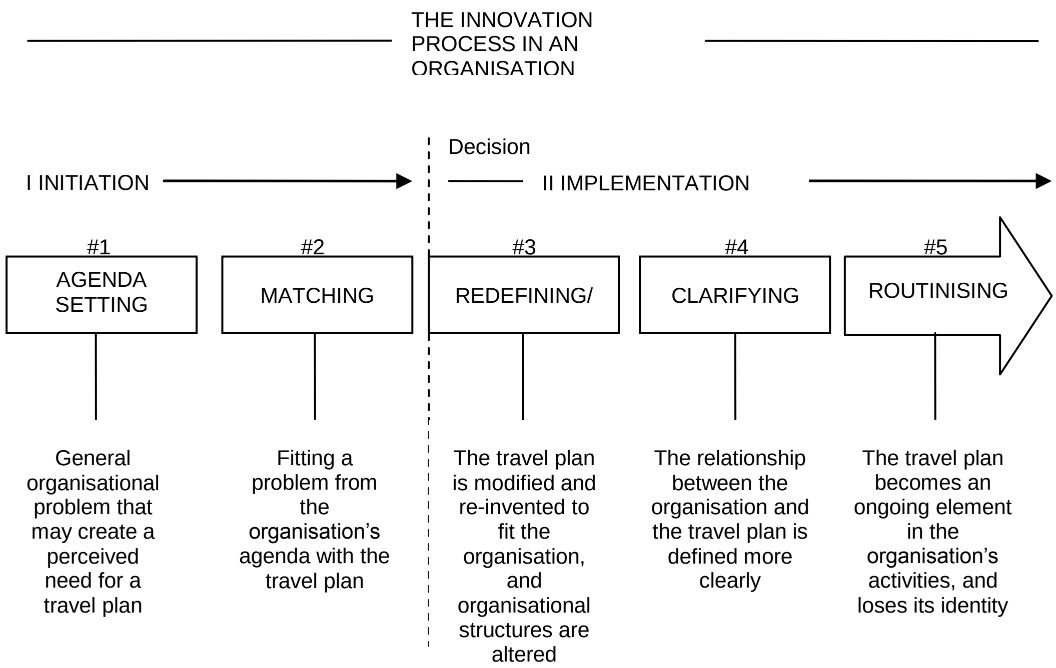

Figure 2: Five stages of innovations in organisations, adapted to apply to travel plans from (Rogers, 2003 Figure 10-3, p 421)

3.1.2 The attributes of an innovation

This process of an innovation within an organisation shows how an innovation is adopted, but does not consider why some innovations are adopted more quickly or successfully than others. The rate at which an innovation is adopted and moves through this process is dependent on a range of variables. These can include the structure of the organisation; for example the level of centralisation, formalisation, and organisational complexity; the number of people involved in the innovation-decision process and the *attributes of an innovation*.

Rogers suggests five attributes that can affect the rate of adoption of an innovation primarily for individuals, but which could also be applied to organisations.

I. *Relative advantage* is the degree to which an innovation is *perceived* to be better than what it supersedes or other competing innovations.
II. *Compatibility* is the degree to which an innovation is *perceived* to match existing needs and values of the adopters.

III. *Complexity* is the degree to which an innovation is *perceived* to be relatively difficult to understand. This is negatively related to the rate of adoption, in that the more complex the innovation the slower the rate of adoption.
IV. *Trialability* is the degree to which potential adopters are able to experiment with the innovation before adoption. This may be done either directly by the adopters or through the experience of others. Innovations that can be implemented in instalments are more likely to be adopted than those that are indivisible.
V. *Observability* is the degree to which an innovation is visible to others, either as a product or the results of the innovation (Rogers, 2003).

Rogers suggests that relative advantage and compatibility are the two attributes that can have the greatest impact on the rate of adoption of an innovation.

4 The Attributes of an Innovation as an analysis framework

The *'Attributes of an Innovation'* (Rogers, 2003) were used as a framework to collect and analyse case study data for this project, where the interview data was disaggregated into the five attributes. However, it is unlikely the attributes were conceived as a framework to analyse case study data in this way. This lead to doubts about the appropriateness of such a framework, particularly whether it would successfully unpack the wealth of information collected into a coherent narrative. It was also a concern whether the use of the framework would be subtle enough not to lose the essence of the interview data.

Using the attributes as categories to disaggregate the data helped to break the data down, but only to a fairly broad level. This still left a lot of data from which meaning had to be derived, and so still needed to be disaggregated into smaller units. Generally the attributes were a useful tool to disaggregate the data and to develop a narrative. They made it possible to explore the issues from different perspectives, taking account of the views of a range of people within the organisations. The framework was useful in highlighting where the holes in the information occurred, most pointedly the lack of data showing the real business benefits of a travel plan and the extent to which the advantages were recognised by the wider organisation. The use of the attributes was particularly effective in illustrating the complexity of the relationships between the different aspects of the travel plan and the diversity of areas into which it linked. However, there were some issues that the use of the attributes as a framework did not manage as well, which the use of additional attributes may have helped to overcome.

4.1 Additional attributes

It has been suggested that other attributes could be added to the five that Rogers uses. The two most often quoted are perceived *risk* and *financial and social cost*. Perceived risk was proposed by Ostlund in 1974 as the 'degree to which risks are perceived as associated with the innovation' (Ostlund, 1974, page 24). This is an attribute that could have been used to disaggregate the data. However, risk was not an issue that was raised during the interviews. It could be argued that the issue of risk is inherently present within some of Roger's attributes, particularly *trialability*. Here the process of trialling reduces the risk to both the organisation and the individual. What also needs to be considered when talking about risk, is that risk to a business may not mean the same as to an individual. Zaltman suggests that risk is actually a state an organisation would choose to adopt in preference to uncertainty. Zaltman outlines three conditions under which decision makers may operate.

1. Certainty – rarely occurs
2. Risk – which occurs when they have accurate knowledge of the probability distribution of the consequences of each alternative
3. Uncertainty – most common. Unable to assign probabilities for the occurrence of particular consequences (Zaltman et al., 1973, page 54).

Certainty would be the optimal condition, but a position of knowing the risks is preferable to a state of uncertainty. The concept of risk may therefore not be considered a barrier to adoption, as issues of uncertainty can be reduced to risk by the process of trialling.

The other possible attribute suggested by Zeithaml is that of *financial and social cost* (Zeithaml, 1981). Financial cost was largely covered through the disaggregation of data into the attribute *relative advantage.* However, what did become clear from the analysis was that the evidence from the case studies of cost savings from a travel plan is vague, but the additional analysis of the data with a different attribute would not have produced any more evidence. The social cost, or in the case of travel plans, benefits, came through largely in the discussions about the benefits of a travel plan to corporate social responsibility (CSR). The area of CSR could be considered as the way organisations internalise, manage or account for externalities, such as carbon emissions or the social impacts generated by the operations of the organisation. In some cases business is beginning to accept that their responsibilities do not end at the 'factory gate', but extends to include the work-life balance, particularly with a blurring of the boundaries of the workplace through teleworking, so social cost is an area that could become increasingly important to organisations. In the analysis, the area of social cost was covered through the *relative advantages* of CSR and the *compatibility* with organisational goals, but conceivably if this area increases, this could be a useful separate attribute to include.

However, there is possibly another attribute that does not appear to have been previously suggested, although it is a topic raised by Rogers. This is the idea of re-invention or adaptability of an innovation. The need to re-invent and adapt the travel plan to the changing needs of an organisation was an important element of the innovation process within an organisation, where all the travel planners interviewed saw the process of an innovation, shown in Figure 2, as cyclical rather than linear. All of the case studies considered they had reached stage 5 in the past, two felt that they were heading back from stage 5 to stage 3, while the other three considered they had already been back to stage 3 from stage 5 and were now heading to stage 4.

Rogers describes re-invention as the 'degree to which an innovation is changed or modified by the user in the process of adoption and implementation' (Rogers, 2003, page 180). He suggests that an innovation that is re-invented will have both a faster rate of adoption and a higher degree of sustainability. He goes on to outline a number of reasons why re-invention occurs. Below are those most pertinent to this paper,

I. An innovation that is a general concept or tool with many possible applications (eg the computer or the internet), is more likely to be re-invented. If the innovation is loosely bundled together it is easier to adapt to an individual use.

This could apply to travel plans or working practices, where the basic model is taken and developed to be compatible with the different working practices, sites or divisions within an organisation.

II. An innovation that is implemented in order to solve a wide range of user's problems is more likely to be re-invented.

As the motivations for the travel plan develop and expand, it is plausible that a travel plan or working practices would need to be re-invented to meet the needs of a new range of problems. This could involve where the motivations move from those associated with managing car parking demand, to broader issues of recruitment and retention or the environment.

III. Local pride of ownership may be a cause for re-invention. The product tends to be modified in minor or aesthetic ways to appear to be a local product.

This research showed that where a travel plan has been implemented at a number of sites or for different divisions, the travel plan has been re-invented to meet the needs of the individual sites and divisions and appears to have become more organisationally embedded.

IV. Re-invention occurs when an innovation must be adapted to the structure of the organisation that is adopting it.

This is particularly true for travel plans as a result of the planning process. A criticism of some transport consultant produced travel plans for developers, has been that too many of them are 'cut and pasted', rather than being specific to the site or the organisation.

V. Re-invention may be more frequent later in the diffusion process, as later adopters learn from the earlier adopters (Rogers, 2003, pages 186-187).

Organisations supporting travel planning such as the National Business Travel Network (NBTN, 2009) or the Association of Commuter Transport and Travelwise (ACT/TW) (ACT/Travelwise, 2008) offer best practice guidance, networking opportunities and training, so that late adopters can learn from the experience of early adopters.

It may have been helpful to use adaptability or re-invention as an additional attribute, particularly where issues such as travel planners learning from the experience of others was categorised within *trialability*. It may also have been helpful to use adaptability when exploring how a travel plan matches the company culture. Adaptability or re-invention of a travel plan, from the comments made about the process of an innovation, and the impact of adapting to different sites or divisions on embedding, (which will be discussed in more detail in Section 5), suggest that adaptability or re-invention appears to be an important aspect of the maturing travel plan and therefore, in future research should be considered for inclusion.

4.2 Subdividing compatibility

The main problem that did occur with the use of the attributes as a framework for analysis was that *compatibility* became a very large category, and to an extent lost some of the subtlety of the data. The use of an additional attribute such as *adaptability* may have helped to overcome this problem. Topics covered in the attribute *compatibility* such as the need to adapt to organisational change, diverse cultures, or to different office locations, divisions or working practices, could possibly have been analysed differently under another attribute. The attribute *compatibility* covered such a wide spectrum of information that perhaps the different levels of compatibility were lost as a result. There are possibly three main levels of compatibility.

- Policy level
- Corporate level
- Individual level

The policy level began to emerge through discussions about external stakeholders. This and the individual level were quite clearly defined and small. However, the corporate level was not as clearly defined. It emerged through a number of topics including organisational goals, working practices, corporate image and so on, which are all part of an organisations culture. Exactly what the culture of an organisation is can be hard to define, as it is the essence of the organisation; where it draws on a broad range of features such as the organisational values, working practices, management practices, even what the organisation produces. In *Research Methods for Business Students*, Smircich's objectivist point of view of the definition of an organisation's culture is described as "something that the organisation 'has'" (Smircich. L, 1983, page 109). However, a subjectivist views culture as "something that the organisation 'is' as a result of a process of continuing social enactment" (Saunders et al., 2007). In defining the culture of an organisation Saunders et al discuss that management theory leans towards the idea that the culture of an organisation is something that it 'has', that can be manipulated and changed to match a management ideal. However, they go onto discuss that a subjectivist viewpoint would consider this definition to be too simplistic. Organisational culture is described as being,

"...created and re-created through a complex array of phenomena which include social interactions and physical factors such as office layout to which individuals attach certain meanings, rituals and myths" (Saunders et al., 2007, page 109).

This research project supports the subjectivist definition of a complex array of phenomena in relation to a travel plan. The compatibility of the travel plan with the organisation's culture is far from simplistic. It is dependent on a range of issues from strategic decisions about the location of the office, working practices to the values and demographic range of the employees and even something as fundamental as the image of transport. The cultural aspects of an organisation also influence the individual level of compatibility. Here issues of personal values and lifestyles play an important part.

The large volume of data at the corporate level could be a reflection of the way the interviews were structured to concentrate on this level. However, due to the complexity of the culture of an organisation, it may have been unrealistic to expect this attribute to have been any smaller or less complex.

5 Structure of the organisation

A criticism of the use of the attributes to disaggregate the data was that the context of the case studies was lost, and it was not possible to understand the case studies as a whole, nor the effect of the structure of the organisation and position of the travel planner on the embedding of a travel plan.

This section will consider the structure of the organisation, before moving on to explore the effect that the position of the travel plan has on its successful adoption and embedding

Mintzberg's *'Structure in Fives'*, outlines five organisational forms,

1. **Simple structure** – an organic structure typical of smaller organisations, with a loose division of labour, small management structure and little formalisation of behaviour.
2. **Machine bureaucracy** – typical of larger organisations, with highly formalised, specialised routine tasks. Reliant on a rules and regulations and formalised communication and supported by a large administrative structure. Tends to be functional in structure.
3. **Professional bureaucracy** – typical of universities, schools, hospitals, craft and production firms. Reliant on professional training to standardise skills. These professionals have considerable control over their work and work relatively independently of their colleagues, but closely with their clients.
4. **Adhocracy** – highly organic structure typical of innovative firms. Staff usually work on projects in small teams. Requires both specialists and a large management team working to ensure liaison between the project teams.
5. **Divisionalised form** – typical of private sector in the industrialised world, particularly large organisations with differentiated products or markets. Similar to a project form but on a larger scale. Tends to lean towards a machine bureaucracy, but can be superimposed onto machine or professional bureaucracy or an adhocracy (Mintzberg, 1993).

By the virtue of the size and nature of the case studies in this project they would all be considered to be divisionalised forms, apart from one which is a university and so a professional bureaucracy. However, the extent to which the travel plan covers all the divisions varies between the organisations. Case study A, (which developed 'smarter working practices' rather than a travel plan), has had to develop strategies for all the divisions of the organisation. In case study B the travel plan had to be adapted to the needs of different sites and in case study E the strategies had to be adapted to be compatible with all the businesses on the site. This adaption to meet the requirements of the different divisions, sites and businesses, resulted in a need to constantly refresh and update the travel plan offer. In contrast case studies C and D have concentrated on one site where the extent of division is more limited, so that need to refresh and update the offer is less critical.

Case study F was different again. It had a number of problems of compatibility when the travel plan was introduced. This may have been in part because it was a professional bureaucracy. Mintzberg describes how authority of a professional nature is exercised through the power of expertise, where the supporting roles such as estates departments are seen to be there to maintain the professional body. In a professional bureaucracy, the professionals control their own work and seek collective control of administrative decisions such as hiring and promotions. Mintzberg describes the emergence of parallel administrative hierarchies, where one is democratic and bottom-up for the professionals and a second that is a machine bureaucracy for the support staff which is top-down (Mintzberg, 1993). To try to introduce or impose a policy in a top-down manner into the professional body is very likely to encounter some of the issues of compatibility seen in case study F, where the introduction of a travel plan was poorly accepted. However, a top-down approach could be more readily accepted within the support staff.

5.1 Position of the travel plan

Another way to examine a travel plan in relation to the structure of the organisation is to look at the position of the travel planner within an organisations structure. Mintzberg developed a design of an organisation again in five parts, Figure 3.

- **The Operating core** is the largest area and contains those who actually perform the tasks that relate directly to the production of the products and services.
- **The middle line** is where the strategic apex is joined to the operating core by the chain of middle line managers with formal authority.
- **The technostructure** is where the certain forms of standardisation in the organisation are controlled. For example, standardisation through training or the development of strategy or policy.
- **The support staff** are specialist units of staff who are there to offer support to the organisation outside the operating work flow. This area includes departments such as FM, payroll, catering and other ancillary services.
- **The strategic apex** is charged with ensuring that the organisation serve its mission in an effective way, and also that is serve the needs of those who control or otherwise have power over the organisation. This is basically the board of directors.

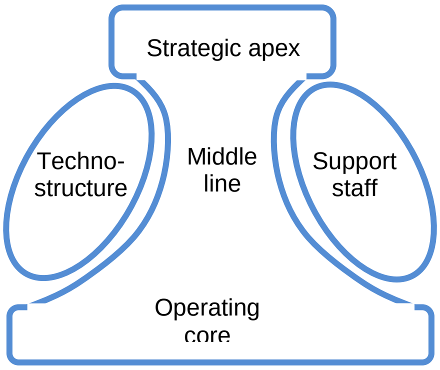

Figure 3: Mintzberg's five basic parts of an organisation (Mintzberg, 1993, page 11)

The role of a travel planner has to fit into these structures. The actual part of the structure that the travel planners is positioned in varies between the case studies, as illustrated in Table 1.

Case Study	Position of travel planner	Links to other areas
Case study A	Present in all departments	Linked to all departments
Case study E	Technostructure	Middle line Operating core
Case study B	Technostructure	Middle line Operating core
Case study C	Technostructure Support staff	Middle line Operating core
Case study D	Technostructure Support staff	No real links
Case study F	Support staff	Operating core

Table 1: Position of travel planner within organisational structure

Case study A is slightly different from the other case studies in that there is no longer a specific person in the role of managing a change in working practices, but this is interesting in itself. The fact that it is present and linked to all departments shows that it is fully embedded into the functioning of the organisation.

Case studies B & E have travel planners located within the technostructure, which means they are able to set certain forms of standardisation within the organisation. Case study E the travel planner is known as the Access Strategy Manager and so is setting the standards for access across the site. Case study B the travel planner is within Workplace Improvement and one of their roles is the monitoring of non-operational carbon emissions. Both of these case studies have strategic links to middle line management and the operating core.

Interestingly, there are also links with where the case studies map onto the spectrum shown in Figure 1 and the position of the travel planner in Figure 3. Figure 4 shows how the case studies mapped onto the spectrum. To the left are the travel plans most closely related to a planning requirement. To the right of the spectrum, are the case studies which appear to have become more organisationally embedded, with stronger links to core operations. On the far right sits Case study A, where the smarter working practices are fully embedded smarter.

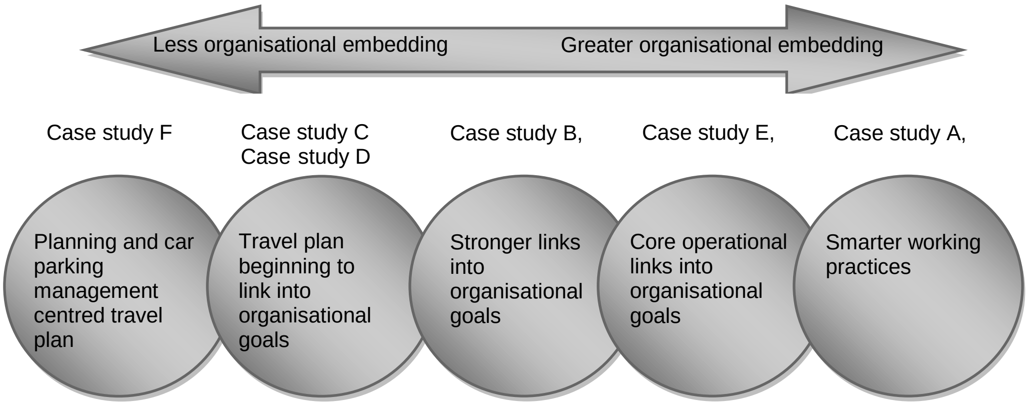

Figure 4: Mapping case studies onto the spectrum

What is interesting is that case studies with travel planners in the technostructure that are positioned at the right hand end of Figure 4, are the case studies where travel planning appears to have become more linked into the core organisational operations and goals. It is notable that the two case studies (C&D) where the travel plan is owned by two departments, one in the technostructure and one in the support staff, appear to be less well linked into the organisation's goals and more driven by local authority goals. The big difference between these two case studies, is that case study C has good links into the middle line and the operating core, so should the planned changes in working practices occur, there is a greater likelihood that the travel plan will be part of the process. However, Case study D does not appear to have these strategic links and so is more likely to be marginalised when strategic decisions occur. Case study F, the most local authority centred travel plan, has remained within the support staff area, so the role has little strategic influence within the organisation. Perhaps because of this, and the poor image that the travel plan seems to have developed, it is not surprising that the links to other areas are poor.

5.2 Motivational Patterns

What became evident from the discussions with case study A was that to implement smarter working practices it was essential to change the way the organisation communicated, and the motivational patterns used. Katz and Khan's theory on motivational patterns claims there are two extremes of control in an organisation; imposed control and self-control. The theory goes on to outline the motivational patterns used to achieve these forms of compliance or control.

i. The use of legal instruments or rules, where the employees comply as they accept the rules and directives as legitimate job demands or through a fear of sanctions.

ii. The use of rewards such as pay and promotion as an incentive to bring about greater compliance
iii. Internalising patterns of self-determination. The job is sufficiently challenging and interesting to bring about satisfaction and a sense of achievement for the employee.
iv. Internalising the company's values and goals, so that the company's goals become the individual's goals (Dessler, 1980).

The motivational patterns i & ii are those used to impose control and tend to be used in mechanistic organisations. Notably, there are similarities with these methods of control and what would be considered the 'harder' measures used in travel plans such as car parking management; or financial incentives or disincentives such as car parking charges and cash out schemes.

The motivational patterns iii & iv are used to encourage self-control and are characteristic of organic organisations. Again there is a similarity between these methods of control and those used in a travel plan, though this time it is to the 'softer' measures of awareness campaigns, communication of alternatives and sustained initiatives to change behaviour.

Case study A, patterns iii & iv are likely to be the prevalent models, but in organisations with more structured working practices, models i & ii are more likely to found. If this is then considered with Mintzberg's organisational structure, what you would expect to see is that an organisation with a large technostructure is likely to use the motivational patterns i & ii, and organisations with smaller technostructures, are more likely to use motivations patterns iii & iv. Organisations with large technostructures that use motivational patterns i & ii are likely to be better suited to the more formal and structured travel plan measures such as car sharing or works buses. Those organisations that have smaller technostructures that use motivational patterns iii & iv, need a more flexible approach to changing travel behaviour, possibly through the implementation of smarter working practices.

What this illustrates is that the culture of an organisation has many elements and to successfully implement and embed an organisational change, such as a travel plan, requires adapting it to a wide range of factors including organisational goals, working practices, communication methods and individual values, as well as the more obvious physical specifics of the site.

6 Champions

The position of the travel planner is an organisational decision and is a reflection of the importance placed on the travel plan by the organisation and organisational culture. However, the personal qualities of the individual can also play an important part. Rogers recognised the importance of champions in the successful adoption of a travel plan, suggesting that a champion should be a 'charismatic individual who throws his or her weight behind the innovation' (Rogers, 2003, page 414). He also suggested that a good champion would possess the following qualities,

i. Occupied a key linking position in their organisation
ii. Possessed analytical and intuitive skills in understanding various individual's aspirations
iii. Demonstrated well-honed interpersonal and negotiating skills in working with other people in their organisation (Rogers, 2003, page 515).

It was certainly the case that the travel planners in case studies B & E matched these criteria for a good champion. Both were positioned in the technostructure with strategic influence. The travel planner in case study B came from a sales and marketing background so was particularly used to the negotiating role. This is in contrast to case studies C & D, where both had people within strategic positions and both appeared to have good interpersonal skills, but they seemed to lack the real charisma and enthusiasm to drive the travel plan forward. Case study F was different again, where the travel planner was an enthusiastic champion of the travel plan, but was not in that key linking position, so lacked the position of authority to influence. The case studies would therefore appear to support Roger's assertions of the importance of the characteristics of a champion.

7 Conclusions

There appears to be a pattern emerging from the case studies through analysing the contextual factors of the organisation. Trends have emerged in the case studies between the position of the travel plan on the case study spectrum, the position of the travel planner, the degree of dispersal across the divisions and the degree to which the travel planner is a champion.

Those case studies that are further to the right of the spectrum in Figure 4 seem to be more embedded. One of the reasons for this could be the extent to which the travel plan has been adapted to meet the needs of a range of divisions, with the result that it is constantly refreshed and re-invented to sell the idea to each division. Case study A is probably the best example of this at the furthest end of the spectrum, where the smarter working practices are now fully embedded across the whole organisation. To do this they have had to adapt and develop the working practices to be compatible with all the different divisions and working groups. Case studies B & E have achieved this to a lesser extent. Case study B has adapted the basic travel plan to match the needs of the different sites, while case study E, which is similar to a large business park or retail unit, has had to adapt its offer to match the needs of the various businesses on the site. The other point to note is that in the case of both B & E the travel planners are charismatic champions and positioned within the technostructure, so are in a more strategic position that involves the process of setting standards for the organisation.

Those organisations that have concentrated on one site or division are further to the left of Figure 4. These case studies have not had to re-adapt to the same extent and as a result may have stagnated. Links across to other parts of the organisation are not as strong, and interestingly the role of support staff within the travel plan is greater. These case studies to the left of Figure 4 also have less charismatic champions.

Unfortunately, what is hard to glean from the case studies, is the extent to which it is the organisation or the individual that is the driving factor. Is the most important factor the organisational decision to employ a certain calibre of staff and place the role into a certain part of the organisational structure, or is it because a certain calibre of staff are less likely to promote themselves and the travel plan to be in that more strategic position? Possibly it is a mixture of both.

These contextual trends would seem to support the assertions made by Rogers that innovations, in this case which are re-invented are more enduring, and rather than adopted at a faster rate, adopted more extensively. It would appear those travel plans that have been re-invented and adapted to fit a range of divisions or locations have become more embedded and diffused across the organisation more readily.

8 Which way forward for travel plan research?

So what does this mean for the research of travel planning in the future?

There are three aspects that have been unique about the research methods used in this project.

- The interviews carried out with individuals in a range of positions, not just the travel planner.
- The use of Roger’s *Diffusion of Innovations* as an analysis framework.
- Exploring the organisations contextual factors using an element of organisational theory, Mintzberg’s *Structure in Fives*.

The use of these elements has highlighted the importance of ensuring a travel plan is relevant to an organisation and is compatible with the culture and existing systems within the organisation. At the contextual level it has explored what the travel plan means to the organisation as a whole. The case study work that has been done in the past has not considered this element in such detail.

Under the current methods of implementing a travel plan, either through the planning process or on the voluntary basis, there is a need to have a better understanding of the business perspective of a travel plan. Travel plans developed as a result of a planning consent that is required to be in existence for a number of years, will need to develop and mature, so that when the requirement expires the travel plan remains. By developing a better understanding of how a travel plan is adopted and embedded, the impact of organisational structures and the position of the travel planner can help to enable this process. This is also true of voluntary travel plans that are developed to address a particular need in the organisation. As long as that need exists, the travel plan will most likely continue. But there is still a need to support this process of adoption.

Ultimately, how travel plans are researched will depend on what the aim is perceived to be. If it is perceived to be a car parking and congestion management tool, then it will continue to be researched in a transport studies frame. If the emphasis shifts to one of managing carbon emissions, then the targets and measurements of success will be reductions in carbon emissions. The research will then concentrate on developing better tools to measure these emissions. However, if the importance of a travel plan centres on the wider benefits to business then the emphasis of the research will be more business studies orientated, as this research project has begun to do. What this research has shown is that the original simple concept of a travel plan, in some cases, has begun to develop into a much more complex business management tool. If travel plans continue on this route a more sophisticated method of analysis, perhaps more closely aligned to business studies, will be needed to fully understand the complex relationships across the organisation.

This area of using business studies methods for research into workplace travel plans is an area that could developed in further research. One possibility would be to explore the business studies or management techniques that bring about organisational and structural change and explore how they could be applied to the introduction of a travel plan. With the journey to work and business travel accounting for 39% of all miles travelled by car in Britain in 2005 (Department for Transport, 2006), a better understanding of why and how business makes these journeys is essential for all transport studies to make more efficient use of the existing network.

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