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ABSTRACT

This paper examines the relative importance that people attach to various instrumental and affective journey attributes when travelling either for work or for a leisure day trip and presents how journeys by various travel modes score on these attributes. Although not a comparative paper, data are presented for two studies which used some identical measurements: one on commuter journeys and one on leisure journeys. The results show that for work journeys, respondents tend to attach more importance to instrumental aspects, and especially to convenience than to affective factors. For leisure journeys, however, respondents appear to attach almost equal importance to instrumental and affective aspects, particularly flexibility, convenience, relaxation, a sense of freedom and 'no stress'. Each study also examines (i) how regular users' evaluate their own mode and (ii) how car users perceive the performance of alternative modes compared to their importance ratings. This 'gap' analysis reveals on which modes and for which attributes the greatest deficiencies in performance lie. The data for both the work and leisure studies shows that for car users, alternative transport modes are inferior on the salient attributes such as convenience and flexibility even though car users rate modes such as walking and cycling as performing well, if not better, on less important attributes such as the environment, health and even excitement. Nevertheless, for those who cycle and walk regularly, satisfaction with their own travel mode as measured by the gap between importance and performance on salient attributes is better than for those who mostly use the car. Conclusions are made as to how greater attention to affective factors may improve our understanding of mode choice.

INTRODUCTION

To date, the majority of studies on travel mode choice appear to be based on the assumption that travel is a cost to be minimised and decisions are based on weighing the instrumental costs and benefits of various travel options. However, Mokhtarian and Salomon (2001) suggest that travel may have a positive utility of its own which is not necessarily related to reaching a destination. The phenomenon of 'taking the car out for a spin' is one of the best examples of this. Even when travel is related to a destination (i.e., directed travel), people do not necessarily minimise their travel time or always choose the most cost efficient mode or route (in terms of time, money and effort) to travel to certain destinations. Other aspects related to the actual driving experience (e.g., the thrill of driving) or to experiences en route (e.g., enjoying the scenery, listening to music) may also play an important role (see the contribution of Steg in this issue or Steg, Vlek and Slotegraaf, 2001; Stradling *et al*., 2000; Gärling 1998).

As a consequence, very little is known about the non-instrumental aspects that are important for travel. Moreover, studies of travel behaviour often concentrate on car travel and limit any comparisons to those between cars and public transport. Very few comparisons have been made with walking and cycling. This paper examines the relative importance and experience of instrumental as well as non-instrumental factors (related to affect and control) for work and leisure journeys by different travel modes. For each journey type, we examine the relative weights of instrumental and affective factors for different modes. Due to sample and context differences between the data available for the two journey types, it is not possible to make specific comparisons between them. However, as will be shown, the findings of the studies point to some potential directions for further research.

Instrumental factors, such as costs and flexibility are related to the general practical aspects of travelling. In this paper we distinguish factors related to short-term individual instrumental costs and benefits of a particular journey such as convenience, predictability, flexibility and monetary costs, as well as longer term collective factors such as health and fitness and the environment. In previous research, such elements have been studied in order to assess the extent to which they impact upon the overall travel experience, and therefore encourage peoples' use of the car, public transport, cycling or walking (Schwanen, Dijst and Dieleman, 2002; Hensher and Reyes, 2000; Cleary and McClintock, 2000; Pooley and Turnbull, 2000; Kingham, Dickinson & Copesy, 2001; Hopkinson and Wardman, 1996). These studies typically suggest that people often choose a car rather than another travel mode for short term individual reasons such as costs, flexibility, convenience, travel time and protection against the weather (Bamberg and Schmidt, 2001; Van Lange, Van Vugt, Meertens and Ruiter, 1998). On the other hand, people indicate that they walk or cycle for reasons such as health, the environment and value for money (Hopkinson and Wardman, 1996).

Affective factors refer to the feelings evoked by travelling, such as stress, excitement, pleasure, boredom and control as formulated in theories on affect (e.g, Russell and Lanius, 1984). The majority of the studies conducted examining the affective experience of travel have been focused on the negative experience of stress, and with regard to commuter travel, the effects of that stress on work performance (Koslowsky, 1997; Lough, 1995; Koslowsky & Krausz, 1993; Gulian *et al*., 1990). It is well documented that commuting stress has detrimental effects on individual and organisational behaviour (Schaeffer *et al*., 1988; Evans and Carrère, 1991).

In this paper, we will refer to affect rather than emotions. By doing this we relate to the theory of affect as proposed by Russell and Snodgrass (1987) who refer to extreme moods

brought on by specific places, objects or events as emotional episodes. A persons' stable long term tendency to respond consistently to emotionally arousing situations is known as emotional disposition and an affective appraisal consists of attributing an affective quality to a thing, event or place. In our studies, respondents were asked to give affective appraisals of work or leisure travel by different travel modes. Mehabrian and Russell (Mehabrian and Russell, 1974; Russell and Mehabrian, 1977; Mehabrian, 1980) distinguish three dimensions on which all emotional states, emotional dispositions or affective appraisals can be plotted: pleasure/displeasure, arousal/non-arousal and dominance/submissiveness. The pleasure/displeasure dimension reflects the degree to which a person feels happy or satisfied. The arousal/non-arousal dimension is a combination of activity (excited versus calm) and alertness (awake versus sleepy). The dominance/submissive dimension reflects the extent to which a person feels in control, free and unrestricted. In the studies described here, respondents were asked to evaluate their journeys to work or a leisure destination on a set of affective appraisals which draw upon this theory.

It has been suggested that people not only use a travel mode because it provides them with the quickest, easiest and cheapest way to get to their destination, they also make a choice of mode based on feelings of excitement and pleasure (Ellaway, Macintyre, Hiscock and Kearns, 2003; Stradling, Meadows and Beatty, 1999; Sandqvist, 1997; Stokes and Hallett, 1992; Steg, Vlek and Slotegraaf, 2001). The mere travelling experience is pleasant for many people. Previous research on travel behaviour has suggested that control might be an important variable in travel experiences and travel mode choice. For instance, studies on commuter stress have typically shown that an important mediator of commuter stress is a sense of control (Evans and Carrère, 1991). Moreover, Stradling, Meadows and Beatty (1999) examined the underlying attitudes relevant to transport mode choices and found that feelings of freedom, independence and being in control were important to over 80% of respondents,

and that a large percentage felt that the car provided that freedom (90%) and a sense of self-confidence and control (45%). Public transport however, was not perceived to provoke in people a sense of control, freedom or independence.

Most of the research described above focuses on car use. One of the main reasons for this is the large number of people habitually using and relying on their private cars for almost all journey purposes. However, it is generally agreed that private cars are the cause of many environmental and social problems which need to be mitigated. According to the UK National Travel Survey and census data (Pooley and Turnbull, 2000), the percentage of journeys made by car and motorbike in the UK has increased from around 47% during the 1970's to 71% in 2001 (DTLR, 2001a). Whilst the majority of that increase was in the 1970's and 1980's, journeys via these travel modes are still continuing to increase, with the percentage of journeys made by car rising from 69% in 1992 to 71% in 2001. Conversely during this time, the percentage of journeys made by public transport per person per year has fallen from 9% in 1992 to 8% in 2001. Journeys by foot have declined from 29% to 26%, and those made by bicycle have fallen from 1.7% to 1.5% (DTRL, 2001). The number of households with no car has fallen from 33% in 1989/1991 to 27% in 2000, whilst the number of households with second cars has risen from 23% to 28%.

This paper investigates the role of instrumental and affective factors in travel experiences for different travel modes within leisure and work journey types. Whereas studies to date have suggested that both instrumental and non-instrumental factors may be important for car journeys, very little is known about the relative importance of instrumental and affective factors for journeys by public transport and by bike or on foot. Specific characteristics of leisure travel are synonymous with the association of leisure itself with notions such as freedom of choice, freedom from obligation, enjoyment and relaxation (Anable 2002). Given

that leisure is a voluntary activity and is seen to be beneficial in terms of well being and quality of life (Horna 1994), travel to leisure destinations is often assumed to take on a more positive role in affective terms. On the basis of this one would expect that the relative importance of affective factors might be greater for leisure journeys than for work journeys.

The two studies on work and leisure travel discussed in this paper both address the following questions: (i) How *important* are instrumental and affective aspects according to respondents when making a journey for either work or for a day trip to a countryside leisure destination? (ii) How do regular users of a particular mode evaluate this mode in terms of the instrumental and affective factors and how do these evaluations vary according to the travel mode used? (iii) How do regular users' evaluations for each mode compare to their importance ratings and on which attributes do the greatest discrepancies lie? (iv) How do car users evaluate modes other than the car in terms of instrumental and affective attributes? The final question concentrates on car users only as the practical relevance of papers such as these is mainly to inform policy makers on the reasons why people use private cars and the methods that can be adopted to reduce this car dependency.

The latter two questions relate to the SERVQUAL approach, in which service quality is defined as the result of the comparison that customers make between their expectations about a service and their perceptions of the way in which the service performs (Parasuraman, Zeithaml, and Berry, 1988). Service quality is seen as an antecedent of customer satisfaction (see Brady *et al.*, 2002 for a discussion). Examining the difference between the desired level of a service (usually by measuring expectation, but 'importance is often used as a proxy) and the extent to which people believe these services are actually delivered, reveals where improvements in the service mix are required.

This tool has undergone a number of revisions and refinements and is not without its critics (Babakus and Boller, 1992; Cronin and Taylor, 1992). In the original SERVQUAL instrument, 'expectations' referred to what customers could anticipate from 'excellent' service. Subsequent studies have reassessed the expectations side of the model and have respecified expectations as 'desired wants' and the extent to which customers believe a particular attribute is 'essential'. Consequently, the expectations side of SERVQUAL continues to be the subject of considerable debate. Some authors, however, recommended focussing on perceptions of 'performance' weighted according to 'importance' of the measured attributes (Teas, 1993 and 1994). This corresponds to the concept of attitude 'salience' used in theories of attitude-behaviour relations (Fishbein and Ajzen, 1975; Ajzen, 1991), where attitudes towards an object or behaviour are believed to be a result of a combination of people's beliefs about the consequences of that behaviour or object and the value they attach to these consequences. This suggests that knowing, for instance, that fitness is an acknowledged benefit of walking and cycling does not mean much if people do not attach much importance to fitness. In other words, the relationship between belief based (indirect) and more direct measures of attitude will only stand if these beliefs are *salient* to the individual at the time (Axelrod and Lehman 1993; Ajzen, 1991). Although a person may hold many beliefs about a given behaviour, only a subset of these are accessible at any one time. Fishbein and Ajzen therefore also recommend that beliefs should be assessed by a two-part scale: the first part to assess the respondent's evaluation of that belief (e.g. importance) and the second to assess whether or not the respondent holds that belief in relation to the behaviour in question (in this case, perceived or experienced 'performance' in respect of the aspect of transport service). This two-part measurement instrument using importance and experience/performance ratings was used in both of the studies reported in this paper.

METHODOLOGY

Study 1: Work Travel

Questionnaire participants were invited to complete an on-line travel to work survey. These potential respondents comprised approximately two thousand staff, academics and postgraduate students from the University of Surrey and circa 210 employees from local councils. Two hundred and eighty-six questionnaires were completed. Of those returned, only 235 were used for analysis since the others were either incomplete or duplicated. Despite this low return rate of 10.6%, the subject sample was equally proportioned in terms of gender and occupation level, and well varied in age (ranging from 20-67 years). However, the sample was not representative of the general population. On average, respondents were more highly educated. In addition, the use of travel modes other than a car was slightly higher than the national average. With regards to the transport mode 'usually' used for the work journey, 117 respondents (51%) reported travelling to work by car (either as a driver or passenger), 49 (22%) by public transport, 26 respondents indicated they usually walk (11%) and 35 (15%) said they usually cycle.

Respondents were asked how they usually travel to work and how this journey rated on 31 instrumental and non-instrumental factors. Nine of the 31 items measured instrumental elements of travel experience (e.g., environmentally friendly, cost, direct), a further 16 items were devised to measure affective experiences of travel (e.g., relaxing, restful, feeling free and in control) and the remaining items (which were not relevant for this paper) measured social items (e.g., feeling powerful and superior).

For this paper, we mainly analysed the respondents' evaluations of their own 'usual' travel mode (the mode they used most of the time to travel the longest distance). However, to answer the fourth research question on car users' evaluations of other modes, it was

necessary to use the car users' answers to the questions asking them what their 'most likely' and 'least likely' alternative travel mode would be and how they would rate a journey by each of these modes. Hence, these scores were only for a subset of the sample (car users) and not all car users evaluated *every* mode. Public transport was evaluated as an alternative for 76% of the (118) car users, the bicycle was perceived to be an alternative for 19% of the car users and walking was only perceived to be an alternative by 6% of the car users. The scores represented car users' evaluations of travel modes other than the car.

Participants stated their level of agreement on a five-point Likert scale ranging from '1' (Totally disagree) to '5' (Totally agree). Once all negatively worded items were reversed, high rating scores all indicated a positive journey experience. Journey importance ratings were measured, using the same 31 factors. Ratings were again made on a five-point Likert scale, with '1' being 'Not at all important' and '5' 'Extremely important'. The questionnaire also included various questions, not relevant for this paper such as questions on general attitudes, norms and behavioural intentions and questions about the journeys of a typical cyclist or public transport user.

Study 2: Leisure Travel

The second study applied to day-trips to countryside leisure attractions, specifically to National Trust properties. The National Trust is a heritage charity that own and maintain large stretches of countryside, coastline and historical properties in the UK, which are open to the public, usually at a charge. The majority of visitors (ca. 97%) travel to these properties by car and the Trust would like to encourage less car dominated visitor travel patterns (Anable 2002).

A self-completion questionnaire was administered randomly using a short face-to-face introductory intercept survey of visitors leaving two attractions near Manchester in the northwest of the UK. Of the 1450 people initially approached, 1196 (82%) agreed to fill in a short intercept survey, and of these people, 967 (81%) agreed to take a questionnaire home with them, of which 70% were returned. Of the 679 questionnaires returned, 666 were deemed usable. The response rate from the first point of contact (including refusals to complete an intercept survey in the first instance) was therefore 46%. This was a satisfactory response rate due in part to the initial face to face contact, loyalty to the National Trust and a prize draw incentive with the top prize a bicycle at each property. The composition of the sample was an accurate reflection of the National Trust visitor population in terms of the main socio-demographic characteristics. However, just over 6% of respondents arrived by a transport mode other than the car on the survey days, suggesting that the survey captured an above average number of non-car users given that it is typical for around 97% of visitors to arrive by car at these properties.

Respondents rated 22 attributes overall. Of these attributes, half measured non-instrumental factors (e.g., excitement, control, energising) and half instrumental (e.g., convenience, environmental benefits, cost) outcomes of travelling on a day trip for leisure. Respondents were repeatedly asked to answer all questions on the survey in relation to a 'day trip for leisure'. The rubric at the beginning of the questionnaire explained: *'[day trips/ trips to leisure attractions] By this we mean trips which you do as a half or whole day out which involve travel to an area or an attraction. We do not mean trips that you may do more regularly in your local area such as to the cinema, theatre, pub, shopping or to a sports centre'.* Respondents were firstly asked to rate how important each aspect is for them personally when travelling on a day/ afternoon out for leisure (ranging from '1' (very important) to '5' (not at all important)) and secondly how each mode (car (as driver or

passenger), public transport, bicycle and organised coach/ bus tour) is perceived to 'perform' on each attribute when travelling on a day trip, regardless of whether they used this mode themselves. This latter evaluation scale was done using five point agreement (ranging from '1' (totally agree) to '5' (totally disagree)) scales. In addition to these items, respondents were asked to record their 'usual' travel modes for leisure day trips as well as indicators of general travel behaviour such as distance travelled and journey frequency etc. Their mode of transport on the survey day was also recorded.

STATISTICAL ANALYSIS

Whilst the questionnaires used in the studies described above were different, there was significant overlap. In particular, both studies asked respondents to evaluate different transport modes with respect to various affective and instrumental attributes. In both cases, 5 point Likert type scales were used asking respondents to agree or disagree with a statement. The anchors for these scales were identical and in both cases the importance rating of each attribute and the corresponding experience rating of each attribute for each mode were scored in a unipolar fashion so that a 5 indicated the most positive evaluation (or higher subjective probability) and 1 indicated the most negative evaluation. For 'negative items' such as stress the items were reverse scored as it was assumed that less of them is a good thing.

This paper will draw upon data relating to those attributes that were measured using exactly the same wording in both studies. The following table shows the 11 variables that are used and allocates them to instrumental and affective categories consistent with the theories on affect noted above.

Insert Table 1 about here

It should be noted that the list of attributes in the table is by no means comprehensive. There are a variety of other instrumental and affective factors that could be measured and taken into account and indeed many were measured in the individual surveys described above. For example, listening to music, seeing the scenery, novelty and adventure as well as social/ normative motives such as feelings of identity and status were measured in the individual studies. Such variables were not analyzed for the purposes of this paper as measurements were not compatible between the studies and therefore, in the interests of brevity and clarity, only common variables were used.

Specific comparisons could not be made between the two samples as the data collection techniques were not the same in both studies. Moreover, the data sets were not comparable in terms of sample demographics. The data set for work journeys typically focussed on an economically active population, whereas 38% of the respondents who participated in the leisure study were classed as 'not working'. Moreover, the average age of the respondents in the work was much lower (37) than that of the leisure survey (50). Secondly, the travel modes that were distinguished in both data sets varied slightly. The survey of work journeys measured both walking and cycle journeys. However, the leisure study only measured bicycle journeys as, unlike for work journeys, the number of people walking to National Trust properties is extremely low and was therefore not perceived to be distinguishable.

The sections below will first describe the results for the work survey and then the results for the leisure survey. Some comparative observations are made in the concluding discussions.

RESULTS

Study 1 – Work Travel

Figure 1 shows how important affective and instrumental aspects are according to the respondents when making a journey to work. As can be seen, instrumental factors such as flexibility, convenience, cost and predictability were perceived to be most important. This corroborates previous research which has found reliability and convenience to be most important alongside time and cost factors (Ortuzar and Williamson 1994; Golob and Supernak 1998, DTLR 2001b). Nevertheless, affective factors, particularly a sense of control, freedom and a lack of stress, are still relevant considerations for the work journey. The overall mean scores of instrumental and affective attributes[1] appear to suggest that the instrumental factors are perceived to be slightly more important for work journeys than the affective aspects.

- Insert Figure 1 about here -

Table 2 shows how different mode users evaluate their daily commute to work on the various instrumental and affective attributes. The differences between mode users were analysed by means of a multivariate analysis of variance (MANOVA). Table 2 shows that work journeys are experienced very differently depending on the mode used. Generally, it appears that car and especially non-motorised journeys are evaluated most positively and journeys by public transport most negatively. In comparison to the other modes, journeys by public transport score especially poorly on affective aspects such as excitement and control and on instrumental factors such as costs and predictability. However, the results show that the car is not dominant in all cases. In comparison to the car and especially journeys by public transport, journeys by bike or on foot score high on affective aspects such as no stress,

[1] The overall mean scores should be treated with some caution as the sets of instrumental and affective attributes cannot be treated as unidimensional scales. Hence, the mean scores merely represent a composite score for a set of variables which have sufficient in common conceptually to warrant comparison in this way.

relaxation and freedom. Journeys by bicycle score highest on excitement, whereas journeys on foot score highest on relaxation. Both also score highly on the more collective long term instrumental factors such as health and environmental quality as well as instrumental factors such as predictability and cost.

- Insert Table 2 about here -

Figure 2 shows the results of the 'gap analysis' in which importance ratings of the instrumental and affective aspects (in Figure 1) are compared with the scores each mode received from its users (in Table 2). Taking a mean of the attribute scores for each of the 4 modes given by users together with an overall mean of the 'importance' scores for each attribute, allows a graphic profile to be plotted. The plot is a visual representation of how a user of a mode rates its performance in the context of what is important to them. This allows comparisons to be made. By examining the profiles on each mode, specific 'divergences' between importance attached to certain journey characteristics when on a work journey (grouped according to instrumental and affective and ordered from the highest to lowest importance) and actual perceived state of each mode according to their users and aggregated across the sample as a whole can be identified. The peaks and troughs show the relative strengths and weaknesses of each mode to its users and, therefore, on which attributes and for which mode the greatest discrepancies lie.

The graphic profile in Figure 2 presents the journey attributes in order of importance. Instrumental attributes are shown on the left side of the graph and affective attributes on the right. The figure shows that, on two of the most important instrumental attributes, convenience and flexibility, all users rate their own mode of transport quite well, except for users of public transport. For less important instrumental attributes, walking and cycling

actually score very well whereas both car and public transport score lower. The only attribute which public transport users are 'satisfied' with in relation to the importance they attach to it is the environmental effects of their mode. However, once again this is one of the least important factors. As may be expected, the environmental effects of cycling and walking is regarded by users of these modes as performing even better than the importance they attach to it. Health is the only attribute for which car users are the least satisfied out of all the mode users, but again public transport does not match importance on this characteristic, whereas cyclists and walkers claim to be more than satisfied in this respect.

For affective aspects a slightly different pattern emerges. As for instrumental aspects, cyclists and walkers appear to rate their modes consistently high and these modes have profiles which mirror or improve upon the mean importance profile, whereas journeys by public transport users appear to score consistently low. However, both car journeys and journeys by public transport are given lower scores by their users than cyclists or walkers on the most important affective factor, 'no stress'. Moreover, few differences appear for the two least important aspects, relaxation and excitement. Journeys by bike appear slightly more exciting and journeys on foot slightly more relaxing to their users than other modes do to their users.

- Insert Figure 2 here -

Figure 3 uses the same method, but illustrates how car users evaluate their own mode in comparison to other transport modes which they have less, if any, experience of actually using. As explained above, to do this, data were created on the basis of evaluations by the car users of their potential alternative mode choices. Public transport was evaluated as an alternative for 76% of the (118) car users, the bicycle was perceived to be an alternative for 19% of the car users and walking was only perceived to be an alternative by 6% of the car

users. The data in Figure 3, especially those for walking, are therefore based on only a small number of respondents. Figure 3 shows that in relation to two of the most important instrumental factors, flexibility and especially convenience, car users evaluate their own mode much more positively than other modes. However, all other modes score more positively than the car on the least important attributes: environment and health. There are other examples where car users evaluate other modes more favourably than their own. For example, cycling is seen to be relatively favourable both compared to the car and relative to mean importance in terms of cost and predictability. Indeed, walking is deemed to perform better on the latter attribute. Nevertheless, public transport is a distinct 'poor performer' relative to the car and relative to performance on all attributes apart from the environment. For affective attributes it can be seen that the car is perceived to score consistently higher than all the other alternatives and appears to largely match the values attached to importance on all but the 'no stress' factor. This provides some empirical clarification, therefore, of why car users may find it difficult to be persuaded to use alternative modes which they believe to largely fail to match the priority they attach to the most salient journey attributes.

-Insert Figure 3 here -

Study 2: Leisure travel

As with the work study, the leisure study respondents were asked to record how important certain attributes are to them when travelling on a day trip for leisure. The relative importance of each attribute across the sample as a whole, independent of the mode used can be seen in Figure 4 which compares and contrasts the mean scores across the sample for the individual instrumental and affective factors. In addition, as for the work study, an overall mean score has been calculated for each construct by way of an approximation of their relative

cumulative importance. It can be seen that there is little difference overall between instrumental and affective attributes in terms of the importance attributed to them. Nevertheless, attributes that could be readily associated with leisure travel such as relaxation, a sense of freedom and 'no stress' are rated among the highest among the group of constructs measured, although not significantly more so than the conventionally measured instrumental motives such as flexibility, convenience and cost. It is notable, that aspects such the environment and health are apparently less relevant than other factors, as is the desire for 'excitement' when travelling on a day trip for leisure. However, it should be noted that the demographic composition of this sample (older than the national average) may have an effect on these mean importance levels. For example, the importance attached to excitement is significantly greater for the younger cohorts and thus these results may be less generalisable to the general population than a more representative sample.

- Insert Figure 4 here –

Using the same attribute list, each mode was scored according to its perceived 'performance' on each aspect. In the leisure study, each respondent evaluated each mode regardless of whether they used it regularly or not. However, Table 3 displays evaluations only for the mode used 'most regularly' for day trips and also concentrates on car users and public transport users only. Albeit a true reflection of the mode split for day trip travel, this is because cyclists and coach users were present in very small numbers in the study sample and the data could not reasonably be used in statistical procedures which compared them to car and public transport users. The differences between car and public transport users were evaluated by means of a multivariate analysis of variance (MANOVA) and overall, Table 3 clarifies whether day trip journeys are experienced differently depending on whether the car or public transport is used. The mean scores in Table 3 suggest that the different travel modes

are in fact evaluated differently by their users– particularly with respect to the more practical, instrumental motives. All the instrumental motives show significant differences with car users rating the car more favourably than public transport users on all but environmental and health attributes. Conversely, the modes are deemed to offer relatively similar journey experiences in relation to affective factors with the exception of control and freedom for which the car is superior. Interestingly, car users and public transport users evaluate their modes very similarly in terms of how relaxing, stressful or exciting the journey experience can be.

- Insert Table 3 here -

Figure 5 combines the importance and performance ratings for the mode 'most used' and offers a 'gap analysis' profile[2]. Most significant is the finding that none of the mode users rate their own mode as matching the importance they attach to the various journey characteristics for all of the attributes measured, even car users. However, the bicycle comes closest to the most 'satisfactory' mode as evaluated by cyclists themselves. In other words, cyclists appear to be the most satisfied with their chosen mode according to this measure. This is consistent across instrumental and affective motives. The same cannot be said for public transport users for whom all factors other than the environment are judged to perform lower than the importance rating. The car performs well in relation to the first two or three most important instrumental motives, but is only exceptional in relation to control on the affective factors.

- Insert figure 5 here -

[2] It should be noted that, as this graph uses no statistical analysis, cyclists and coach users are included in this plot even thought their numbers are small (PT = 14; Coach = 4).

Figure 6 gives some indication as to why the car is seen as the preferred mode by car users on a day trip for leisure. The analysis demonstrates that, despite the fact that car users rate their mode as underperforming in relation to the importance attached to many journey aspects, they still perceive it to perform better than public transport, cycling and walking in most cases – outperforming or essentially matching their performance on 9 out of the 11 attributes. With respect to instrumental variables, they see the car as clearly outperforming importance *and* other modes in terms of flexibility and convenience. With respect to affective motives, it is interesting that no single mode stands out as performing above mean importance ratings. However, the car is still seen to perform the best or at least equal to other modes on all aspects.

These results are not surprising given that the car is the main mode of travel which we can assume has been chosen voluntarily for the majority of journeys. What is perhaps more interesting is the poor performance of public transport in relation to the bicycle as the 'next best' alternative mode to satisfy the attributes measured in this study. Public transport only matches up to importance on one item (environment) and otherwise shows some of the largest gaps between performance and importance – particularly on cost and stress factors. Indeed, although cycling is still outperformed by the car on many of the important attributes, it is still valued more positively than public transport and coach travel on most aspects. Cycling, therefore, may be the next best alternative to satisfy this set of attributes. Car users perceive the bike to perform better than the car and importance on two instrumental aspects and match it on two others (cost and excitement). It is also clear that the bicycle may be the next best alternative with respect to flexibility, freedom and control. Freedom and control are affective constructs which are open to influence by 'soft' initiatives which aim to alter the attitudes and image of alternative modes. In other words, manipulation of the perception

together with the actual performance of affective journey characteristics may be the key to improving the relative attractiveness of alternatives to the car.

- Insert Figure 6 here -

CONCLUSIONS

This paper examined the relative importance people attach to various instrumental and affective journey attributes when travelling either for work or for a leisure day trip and it examined how journeys by various travel modes score on these attributes. Although not a comparative paper, data were presented for two studies - one on commuter journeys and one on leisure journeys in order to establish an empirical basis for the topic and methodology used. The results showed that for work journeys respondents tend to attach more importance to instrumental aspects, and especially to convenience than to affective factors. For leisure journeys, however, respondents appeared to attach almost equal importance to instrumental and affective aspect and therefore flexibility, convenience, cost as well as relaxation, freedom and no stress were all important.

All but the first research question attempted to gauge how the different journeys are actually experienced or are perceived to perform. Respondents evaluated their own 'usual' mode of travel and car users were asked to evaluate alternative modes of transport. The analysis confirmed that travel experiences differed between respondents depending on the travel mode that they used themselves. In particular, when comparing different mode users, both studies revealed some interesting findings in relation to the evaluation of the car *vis a vis* alternative modes. In both cases there is some paradox between how well the car is deemed to perform on various attributes and the extent to which it is the dominant mode for the respective

journey types. In other words, although most respondents are car users for both work and leisure, cars do not always appear to score best on all the instrumental or affective factors.

For example, for work journeys, the users of non motorised modes appear to rate these modes as performing the *best* overall for the journey to work because there are many attributes measured in this study for which they score very highly. When evaluating one's own mode, walking and cycling are perceived by respondents to satisfy both instrumental and affective requirements equally well if not better than the car. The scores reveal that the non-motorised modes are perceived to score highly on factors such as flexibility, cost and freedom. By comparison, car users only rate their mode marginally higher on one of the most important instrumental attributes, 'flexibility', but it scores lower on the most important affective attribute, 'no stress'. Likewise, even when car users are asked to evaluate alternative travel modes they do not always evaluate their own mode most positively. Once again, walking and cycling often score equally good if not better. However, it is significant that the only exception is for the *most* important instrumental attribute, 'convenience'. The 'gap analysis' illustrated the utility of measuring and comparing both ratings for importance and evaluations in order to identify where discrepancies lie on the most important factors. Car users clearly find their own mode to be the most convenient mode. It would appear from this analysis, therefore, that convenience and flexibility may override the more emotional, and less important affective factors such as stress when commuters are deciding which mode to use on the journey to work.

The value of measuring importance alongside performance was also noted in the leisure study. When asked to evaluate one's most frequently used mode, car users, which are by far the dominant mode users for day trips, deem their mode to perform the best on the two most important instrumental aspects, flexibility and convenience and on some of the affective

aspects such as freedom and control. Likewise, when car users are asked to evaluate alternative modes it appears that they evaluate their car much more positively on the most important instrumental aspects as well as all affective aspects. Significantly, however, the exception to this is 'no stress'. This corroborates other evidence which suggests that car travel is becoming less and less pleasant as traffic conditions on the road deteriorate (DTLR, 2001b). On the other hand, as with work journeys, cyclists appear to evaluate a leisure day trip by bicycle positively on all aspects. The only exception here was predictability for which all modes scored poorly. As this was the least important instrumental aspect, however, this is less of a problem. Like work journeys, public transport passengers evaluate their journeys worse than all other mode users for day trip travel. This was also the case for coach passengers although the coach did score highly on one of the most important instrumental factors, convenience, as well as the most important affective factor, relaxation.

Overall, therefore, the analysis revealed the value of identifying mode users' evaluations of performance on those aspects most important to them. Although the relationship between these attributes and the formation of behavioural intentions requires more research, it can be expected that these attributes will have the greatest influence on mode choice. Attempts to develop sustainable transport policies need to be based on a diagnosis of the main motives for car use and the factors discouraging the uptake of alternative modes. For any non-car mode to increase its competitiveness, it must be able to adapt to meet traveller's ever rising requirements. This paper has shown how the competition between modes can be measured empirically by assessing what level of service different modes provides and how this matches up to the priority attached to the various characteristics. In this case, affective journey attributes have been found to be measurable, relevant constructs worthy of inclusion alongside the more practical, instrumental factors. By using this approach, policy makers are

then better informed to make targeted choices about where to make physical improvements as well as on which characteristics to attempt to influence perceptions of alternative modes.

Although the findings of these two studies appear to show some consistencies and some differences in the way people think about the instrumental and affective aspects of work and leisure journeys, it is difficult to make specific comparisons. Interpretation of the results must consider that sample specific characteristics may account for some of the differences found. For example, participants in the work study were younger and more economically active. This could account for differences in the importance attached to certain factors such as control or predictability. Indeed, correlations conducted on the data sets revealed that younger people attached slightly more importance to excitement, feeling relaxed and health and fitness whereas older respondents attached slightly more importance to predictability.

In addition, the differences found cannot be exclusively attributed to the differences in the journey purpose *per se* as these trips differ contextually in a variety of respects which will have an impact on the evaluations made. This would be the case in any comparison of work and leisure journeys, not just when comparing the results presented here. Without taking any contextual factors into account, this analysis suggests that the same mode can be experienced differently according to the reason for which it is being used. This raises the question as to why a car driver, a public transport passenger or a cyclist should experience a journey differently in terms of affective and instrumental attributes 'just because' the journey purpose has changed. Certainly, if a person enjoys driving, for example, why should the purpose for which he or she is driving matter? The answer to this probably lies in a range of factors that are beyond the scope of the surveys used for this paper and can only be speculated upon. For example, public transport for weekend leisure trips may be less frequent than for week-day commuter work trips, congestion may be worse during weekday work journeys, distances

tend to be longer for day trip travel and people tend to travel alone for work but with family members for leisure. These will all have an effect on the evaluations made. A further issue is to what extent the evaluation of a journey is influenced by the attractiveness of the activities at the destination (halo effect) (see the discussion in Mokhtarian & Salomon (2001)).

Therefore, whilst the lessons learnt from the methodology used in these studies (i.e. the measurement of affective attributes and the inclusion of both 'importance and performance') are generalisable, and the individual study results are generalisable once the demographic make up of the samples are considered, any comparative speculations between work and leisure should be treated with caution. Instead, an appropriate comparative study of affective and instrumental motives for work and leisure trips would at the very least involve the same group of people being asked to evaluate their work and leisure journeys using the same attributes. This would remove at least one set of confounding factors (demographic differences). Contextual differences in journey type could then be explored in the same study by presenting various scenarios to be evaluated which specify and therefore control for the availability of alternatives, distances travelled and other circumstances. However, it is precisely this set of 'confounding factors' such as travelling with family members or having different time constraints which may necessarily account for the differences in importance and experience ratings between the journey purposes and thus needs to be explored and understood. In addition, the activity at the destination may also account for differences in evaluations made (although not so much to the importance attached to various attributes) by, for example, contributing to a different 'mind-set' of the traveller. These latter issues may be better explored through qualitative research in the first instance in order to assess the relevance and implications of these contextual factors. Finally, the fact that the options available for choosing between a variety of modes for the journey to work are likely to be much greater than for leisure day trips which often take the form of 'one off', 'off peak'

journeys to relatively inaccessible destinations, may render any comparisons less meaningful in policy terms.

Nevertheless, despite any differences between samples used for the studies in this paper, it is useful to speculate that the distinction between affective and instrumental factors may serve to shed some light on the way in which the journey element of an activity is evaluated and experienced. It is therefore worth discussing whether or not these differences can illuminate our understanding of the decision making processes used to choose travel modes for work and leisure journeys and to what extent the differences between affective and instrumental factors could be exploited to influence these choices for different journey purposes and modes.

The information presented in this paper on the relative importance attached to instrumental and affective factors has a number of applications. Firstly, these findings are important for travel research where it is often suggested that instrumental motives are much more important than the more elusive, affective elements. This appears to be supported by our data, but less dramatically than perhaps might have been expected. Instrumental and affective motives are of similar importance to each other for leisure and whilst instrumental factors are more important than affective ones for work as would have been predicted, the absolute importance of affective attributes for work is still noteworthy. That is, even for the most mandatory of journeys, the commute to work, affective factors such as lack of stress, control, and freedom are rated as scoring more than the middle importance rating, on average.

Such empirical clarification of what may be important for a journey is necessary in the context of policies that aim to influence mode choice. Furthermore, empirical evidence which tailors that information to particular journey purposes or segments of the population will

enable more targeted and effective policy interventions to be designed. In this case, a greater understanding of the 'states of mind' that need to be created by each type of travel mode under different circumstances over and above more 'conventional' variables such as time and cost factors may inform awareness and advertising campaigns which attempt to persuade greater use of alternative modes. These studies have shown that persuasive messages and policy interventions aimed at the leisure sector should focus on factors such as relaxation and excitement as well as more functional, instrumental aspects, whereas these may be less important (although still not unimportant) for work travel. However, the fact that attributes such as control, freedom and flexibility consistently appear as important, even for work journeys, demonstrates yet again the challenge of exploiting the relative strengths of the modes which are competing with the car, whether or not those strengths are instrumental or affective.

Secondly, this analysis has hinted that the journey may not be an incidental, neutral element of an activity for which a journey has been undertaken. This has relevance for the debate relating to the extent to which, under certain circumstances, travel is an activity in its own right, consumed for its own sake rather than a derived demand or merely a means to an end. Whilst this paper has merely served to assess the relative importance of various attributes and cannot claim to prove or disprove the proposition that travel is or is not a derived demand, it has demonstrated that the journey itself is a considered activity based on certain functions and affective states that the traveller wishes to satisfy. Given that certain journey characteristics, including the mode used and potentially the route and length of the journey (not looked at in these studies) will have an impact on the degree to which these instrumental and affective conditions are satisfied, it is reasonable to suggest that the journey itself may have a positive utility of its own. If this utility is not satisfied it could, at a minimum, affect the utility of the activity itself, and at the extreme could even mean that the activity may not be carried out.

For example, if feeling relaxed and excited are important characteristics of a leisure day trip as suggested by this paper, the choice of travel mode and route may not only impact upon on how but whether a journey can be carried out and by implication could determine the choice of the destination itself. In other words, in this case, the choice of leisure destination may become a secondary one *vis a vis* mode choice (Anable 2002). However, to draw definitive conclusions on this proposition requires a purposeful study along these lines.

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Table 1. Affective and Instrumental variables measured in both data sets.

Affective	**Instrumental**
Relaxation	Environment
No Stress	Cost
Excitement	Health and Fitness
Control	Convenience
Freedom	Predictability
	Flexibility

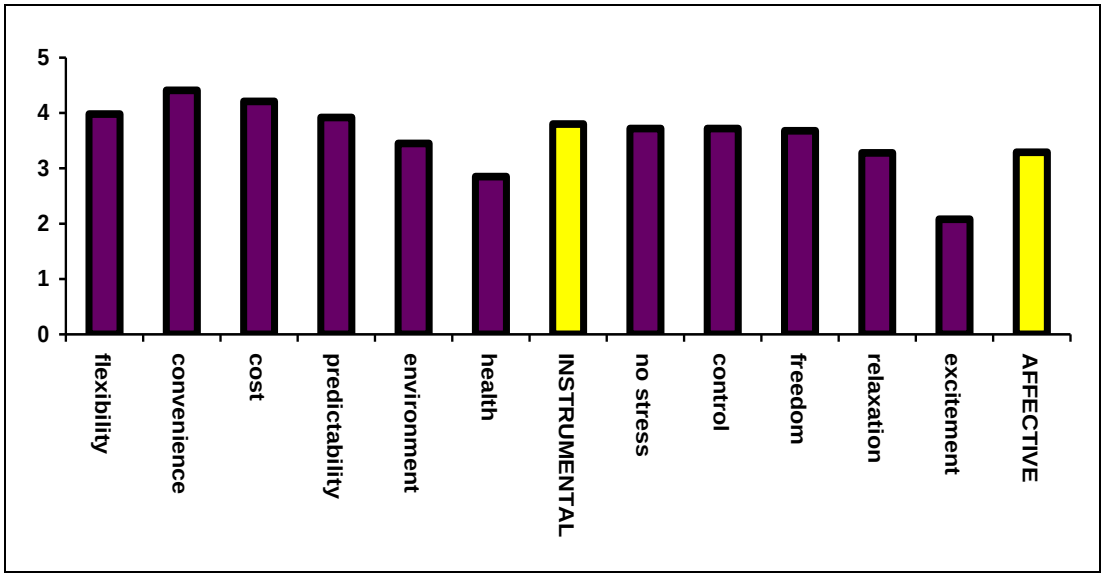

Figure 1. Importance of instrumental and affective factors for a journey to work.

Table 2. Affective and instrumental experiences on a work trip by car, public transport, bike or walking.

	CAR N=117	PT N=49	Bike N=26	Walk N=35	F (3,222)
Instrumental					
Flexibility	4.50	2.58	4.23	3.97	48.48***
Convenience	4.46	3.25	4.31	4.26	15.41***
Cost	3.60	2.85	4.96	4.89	38.79***
Predictability	3.38	2.37	3.92	4.00	14.38***
Environment	2.24	3.62	4.96	4.97	131.31***
Health	1.83	2.10	4.46	3.77	82.82***
Affective					
No stress	3.17	2.92	4.04	4.31	16.88***
Control	3.94	2.21	4.00	3.83	34.37***
Freedom	3.79	2.42	4.23	3.97	23.23***
Relaxation	3.13	3.12	3.35	3.89	5.19**
Excitement	2.51	1.94	3.15	2.51	8.09***

Note, * $p < .05$, ** $p < .01$, *** $p < .001$

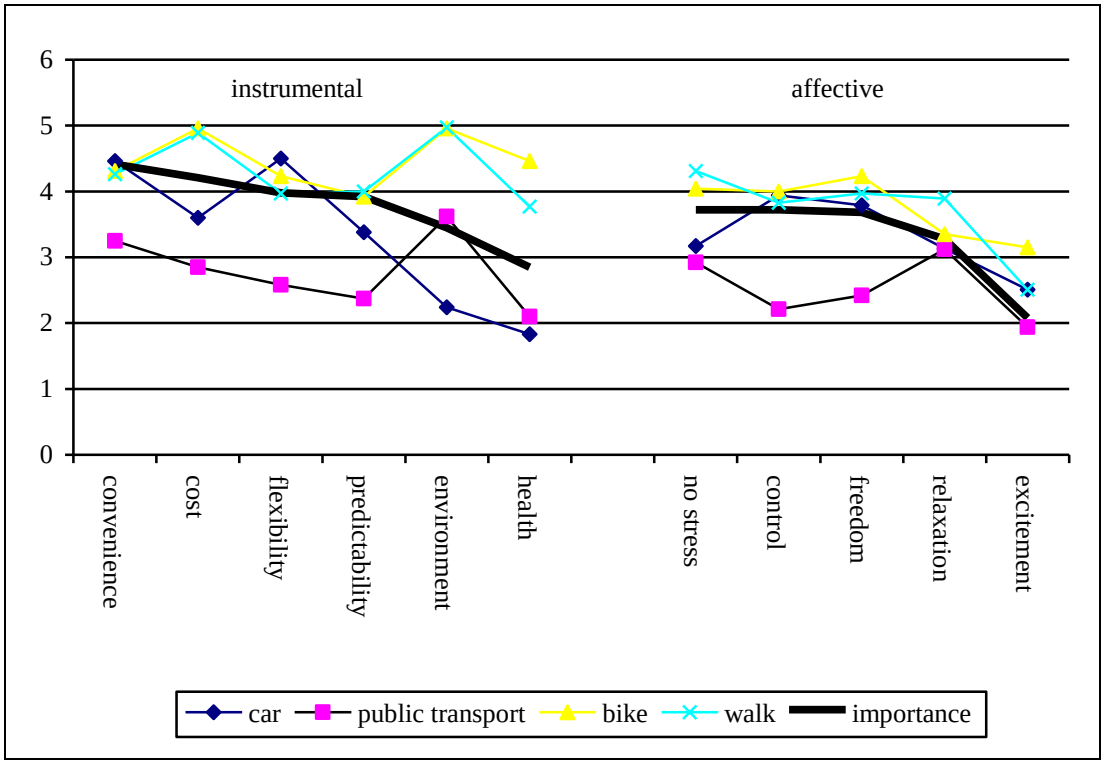

Figure 2. Importance and evaluations of one's own mode on a work trip

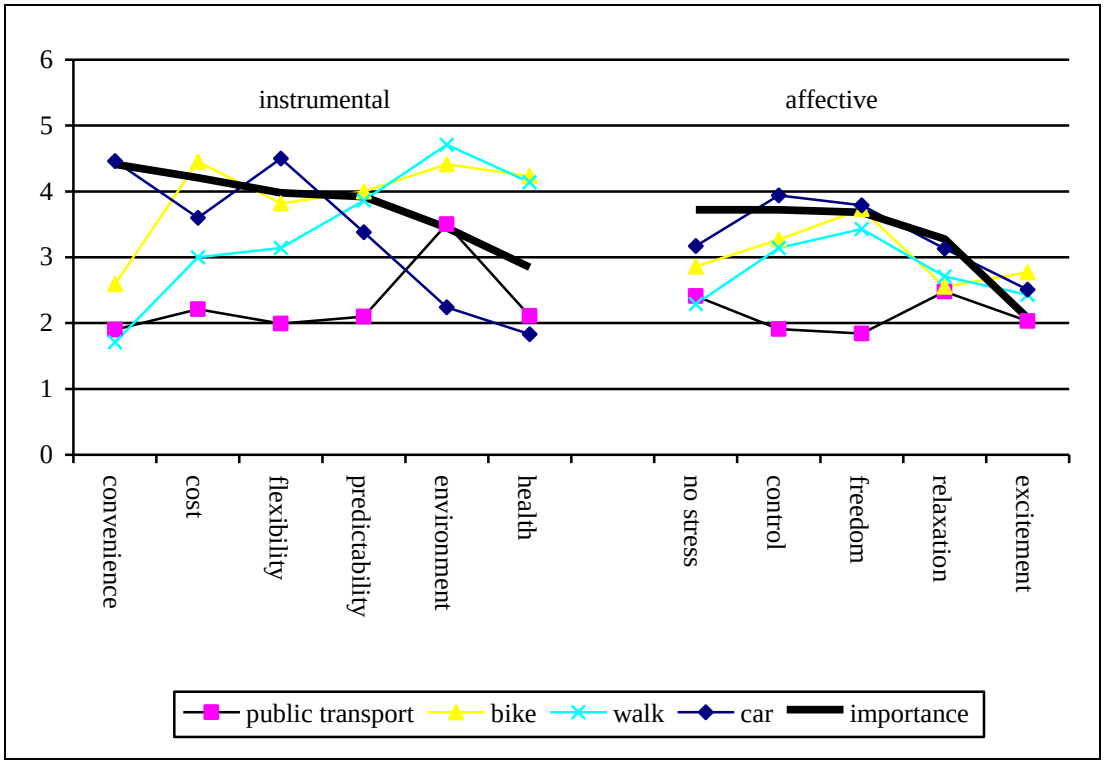

Figure 3. Car users' importance ratings of instrumental and affective attributes for the daily commute and their evaluations of public transport, walking and cycling on these attributes.

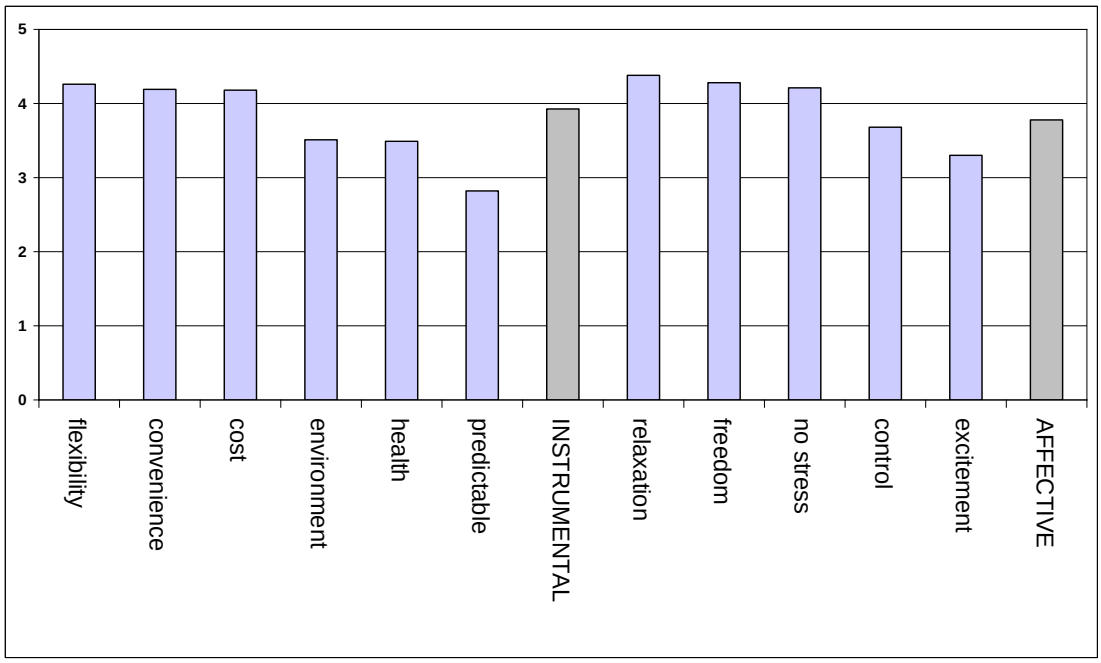

Figure 4. Importance of instrumental and affective factors on a day trip for leisure

Table 3. Affective and instrumental experiences on a day trip by car and public transport

	CAR N=548	PT N=36	F (1,584)
Instrumental			
Flexible	4.71	2.67	404.58***
Convenient	4.85	3.56	248.54***
Cost	3.89	3.33	11.62**
Predictable	3.37	2.72	11.52**
Environment	2.05	4.11	173.68***
Health	1.86	3.08	60.17***
Affective			
No stress	3.14	3.33	1.36
Control	4.48	2.88	174.57***
Free	4.38	3.28	63.94***
Relaxing	3.88	3.61	3.11
Exciting	3.16	3.17	0.00

Note, * $p < .05$, ** $p < .01$, *** $p < .001$

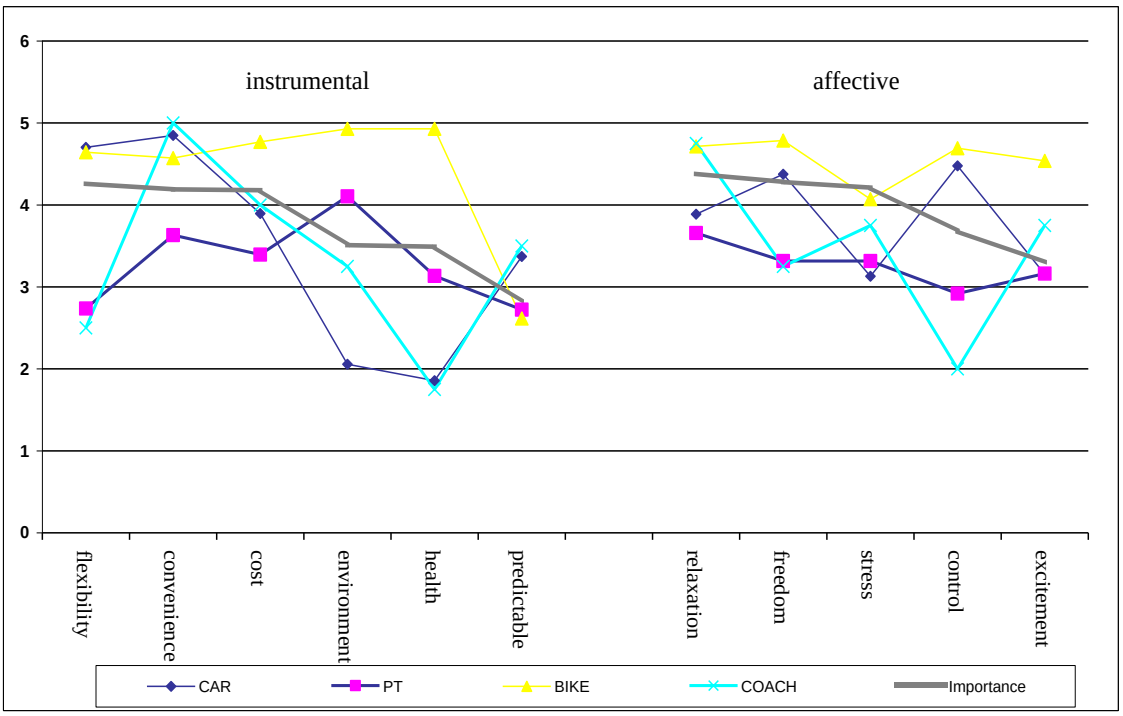

Figure 5. Importance and evaluations of one's own mode on a day trip for leisure

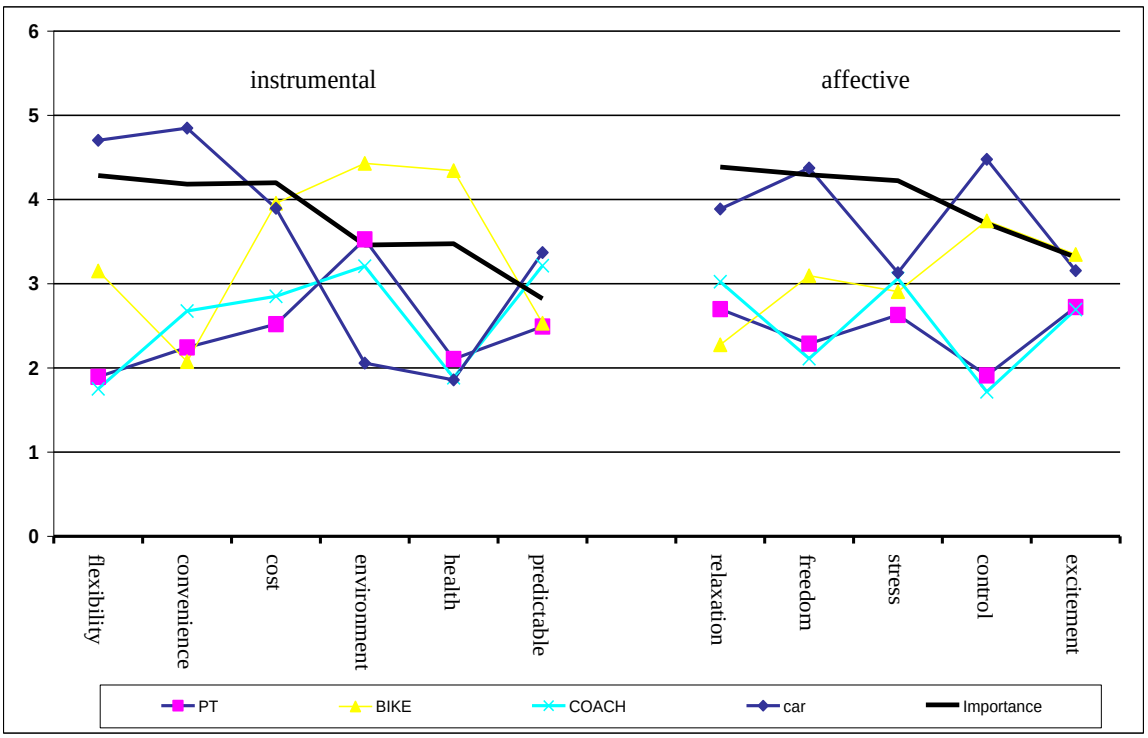

Figure 6. Car users' importance ratings of instrumental and affective attributes for day trips and their evaluations of public transport, cycling and coach travel on these attributes.