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Implementing smartphone enabled collaborative travel: Routes to success in the tourism domain

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ABSTRACT

Smartphone technology can help identify current and anticipate future patterns of behaviour and, with its social networking capabilities, allow users to imagine and organise collaborative travel opportunities, such as lift share. This has led to the development of collaborative apps designed to enable activities like lift sharing. Such apps require new norms of behaviour to establish a user base and research has yet to address the socio-cultural barriers to both the use of this technology to organise travel and the sharing of personal space that collaborative travel entails. This paper reports the findings of a study which designed, built and tested a collaborative travel app in the tourism domain. Data derived from exploratory interviews, post-trial interviews and a questionnaire reveal that user age and extent of mobile engagement play a less significant role than expected, while other aspects of the social exchange, notably social tie strength, trust and obligations play a more marked role. A conceptual framework and discussion of strategies to address these barriers provides insight into appropriate contexts and routes for implementation of collaborative travel apps.

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1. Introduction

The widespread adoption of smartphones (Mintel, 2015) has co-evolved new ways for people to go about everyday activities. Meanwhile, social media have forged new opportunities to connect leading to a growing sharing economy, while GPS tracking on mobile devices, given the right platform, can spontaneously reveal opportunities to facilitate forms of social exchange. One such opportunity is travel collaboration, such as lift share. This has been recognised by app developers and resulted in a number of collaborative travel apps reflecting interest in collaborative travel from the public sector and large commercial organisations keen to manage traffic congestion and environmental impacts, including greenhouse gas emissions. Collaborative travel apps shift the responsibility for action to the individuals involved and fit well with the UK government's localism agenda (Localism Act, 2011) at a time of public sector funding cuts. While there is rapid growth in use of various location based services like Google maps, little is known about public acceptance of collaborative travel apps. The impetus for the research reported here was the ongoing policy agenda to address a range of

externalities of car use (see for example, HM Government, 2011). Collaborative travel has scope to make more efficient use of car space and reduce overall vehicle mileage. For example, the current aim of public sector lift share initiatives is reduced traffic congestion and emissions (see for example, Dorset County Council, 2014). In addition, though not a focus of the current study, cost savings are often promoted as a benefit for users. This paper reports on a study which explored the potential for user uptake of collaborative travel apps, identifies factors most likely to influence adoption and suggests routes to success.

The interest in collaborative travel arises due to two factors: the underutilisation of vehicle capacity (car occupancy averages 1.58 in the UK (Parliament UK, 2010)); and the socially embedded and habitual nature of car use (Schwanen et al., 2012) which suggests it is worth focusing on the car as a preferred mode of transport. However, accessing this underutilised resource has been fraught with problems related to coordinating potential collaborators, an aspect which smartphone technology can aid, and socio-cultural barriers related to the sharing of personal space. The latter is similar to the challenge of shifting people from personal cars to public transport where the presence of others can detract from the journey experience (Gardner and Abraham, 2007). While recent research has focused on demographics, vehicle access and the motivational factors for lift share (Delhomme and Gheorghiu,

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2016), less attention has been paid to the socio-cultural barriers. This paper sets out to extend the existing knowledge of trust and reciprocity in online exchanges that facilitate offline activity. It also explores the role of social ties, what has been termed 'fleeting ties' (Dickinson et al., 2015) and the role of community. A conceptual framework is developed which lends insight into contexts where it might be best for policy makers to intervene.

The study context is tourism as this is a key domain for smartphone use (Mintel, 2014) as people are on the move, seek out information and use travel services. It is a field where travel collaboration has been deployed, for example, in long-distance lift share to festivals (see, for example, Greener Festival, 2012), and tourists share travel routines (Dickinson et al., 2013).

2. Sharing economy and collaborative travel

The emergence of web 2.0 has led to a rapid growth in online sharing and a growing sharing economy operating online, offline and in-between (Harvey et al., 2013). Communities of interest have found new ways to connect and relational communities have thrived even when geographically distant (Wellman, 2001), though place related communities have arguably declined (Putnam, 1995). This dispersal of social networks poses some barriers to sharing economies where online activities initiate offline sharing of resources, however, there have been a number of successful moves to re-localise sharing, such as Freecycle (Nelson and Rademacher, 2009) and Streetlife (streetlife.com), where new localised connections have been forged online. The advent of smartphones has made it even easier to share through social networking apps and systems such as Facebook have thrived in a mobile environment. Mobile technology brings more immediate opportunities to share information, experiences and location based data, the latter being especially relevant to travel.

Lift share has an established heritage often based around routine journeys like the trip to work. This has largely been organised in reciprocal dyads where lift giving is alternated or costs shared. Various forms of shared car arrangements have also emerged from short term car hire to car clubs (see for example, Kent and Dowling, 2013) as an alternative means of accessing cars without vehicle ownership or standardised hire options. The interest of this paper lies in collaborative travel where spare vehicle capacity is utilised by others either for lifts or for transport of goods. The focus is on private car owners collaborating with each other to reduce car trips or with non-car owners to improve transport access. Recent research indicates women, those with children and younger people are more likely to lift share (Delhomme and Gheorghiu, 2016).

Until recently, most collaborative travel of this form required a degree of prior organisation to arrange pick up times and locations and therefore suited long-term arrangements of a routine nature or long distance travel where high costs were involved. A variety of Internet based systems have been designed to enable people to find both regular and occasional lift share partners (see for example, carsharedorset.com (Dorset County Council, 2014) and gocarshare.com). The widespread uptake of mobile technology affords new opportunities to extend these systems to more opportunistically organise collaborative travel as mobile systems can identify potential lift matches based on location data and alert users to opportunities that are timely and spatially relevant.

Collaborative travel is a material form of social support (Carrasco and Cid-Aguayo, 2012). It arises through social capital, that is the relationships between people (Coleman, 1988), and the benefits individuals gain from fulfilling mutual obligations (Currie and Stanley, 2008). Typically lift-share depends on existing social ties or establishing new social ties often through institutionally organised activities such as work based travel plans.

Theory has identified a range of social ties: strong, weak, negligible (Granovetter, 1973) and fleeting (Dickinson et al., 2015). All have a

potential role in collaborative travel and we tap into weak-tie relationships, with more informal acquaintances, when we need access to vehicles that are otherwise not available (Lovejoy and Handy, 2011). Dickinson et al. (2015) describe fleeting ties which are temporary and impermanent relationships that can provide significant resources, but then disappear once the need for support has passed with no ongoing commitment. Fleeting ties generally provide sources of information, predominantly online, but may also be utilised for more physical support, for example in ad-hoc lift share arrangements through apps such as GoCarShare.

Social capital is built on trust which exists in generalised and personalized forms. For instance, there is generalised trust in a community and personalized trust in known individuals. In the context of smartphone enabled travel collaboration initially trust is generalised to the community of users until trust is built up through individualized relationships. Trust is a multi-dimensional concept that has been categorised into honesty, benevolence, competence and predictability (Mcknight et al., 1998). Honesty and benevolence can be applied in a generalised form to the community of users engaged in smartphone enabled travel collaboration, however, competence is task specific (Flavián et al., 2006) and predictability is based on a specific trustee's actions (Vidotto et al., 2012), therefore the latter concepts cannot be generalised across a community but would apply once ties are established between individuals.

Collaborative travel can be categorised as a negotiated, reciprocal or generalised exchange. In a negotiated exchange there is an economic reward. For example, using the Bringbee app, a user can be paid to collect shopping for another user (Bringbee, 2014). In reciprocal exchange, on the other hand, there is not normally any recompense for lifts as people typically take it in turns with another person or persons in their social network. For example, parents taking it in turns to take their children to sport training or users of carsharedorset.com who take it in turns to give lifts. Typically we seek to benefit others more than ourselves in these arrangements. Gouldner (1960) saw this as a mechanism to avoid powerful individuals exploiting others and a contributor to stability in society. To reinforce this, a state of indebtedness is felt as a threat to an individual's status and power, thus people seek to avoid this (Greenburg and Shapiro, 1971; Lampinen et al., 2013). For example, people accepting lifts may offer a small financial contribution to cover the driver's costs, especially if they are not immediately able to reciprocate. To this end, negotiated and reciprocal exchange can be somewhat blurred.

Previous research has shown that people often turn to the market to avoid indebtedness, the sense of loss of freedom and sense of humiliation (Harvey et al., 2013; Marcous, 2009). For instance, someone might choose to pay for a taxi rather than take a lift and Marcous (2009) suggests there may be some preference to seek help from more distant ties to avoid tensions in closer social networks. This suggests fleeting ties (Dickinson et al., 2015) might be an important resource in collaborative travel. Early research on reciprocity recognised that some people do not have the ability to reciprocate (for example, children, the elderly and people with certain disabilities) (Gouldner, 1960), Uehara (1995) and Marcous (2009) identified that even where such people are in need of help they are inclined to reject assistance. In these instances, when people receive help but are unable to offer tokens of thanks, Uehara (1995, p. 498) describes help as "'morally unavailable' to people" and identifies this is a significant area for research. On the other hand, people offering help also have concerns about exploitation (Lampinen et al., 2013) making the balance of giving and receiving a critical issue.

With the advent of social networking systems, there has been a shift from reciprocal exchange in dyads to more communal sharing or generalised exchange. Collaborative systems where there is no economic reward represent this form of exchange which may be asymmetric as a user broadcasts a request to a wide network of other users and, should she receive help, she may never repay that debt of help directly to the user who helped. While there is growing interest in this form of