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Qualitative interpretive mobile ethnography

Abstract

A growing number of studies use mobile ethnography and mobile devices to collect data, yet studies reveal a lack of coherent definition and inconsistencies in validity criteria. We draw on relevant literature from tourism, health and retail, and connect research designs utilizing mobile ethnographic methods. We show how these existing studies capture mobilities and social phenomena in boundaryless dynamic settings, allowing researchers to co-create knowledge with their participants. As a result, we offer a framework for mobile ethnography, consisting of four explanatory dimensions: the role of the researcher; focus of research; data collection and tools; and data analysis. Our methodological contribution specifies validity criteria and derives concrete implications for research practices in qualitative interpretive mobile ethnography.

Keywords

mobile ethnography; interpretive research; qualitative research method; validity criteria

Introduction

The **purpose of this study** is to develop a research framework for qualitative interpretive mobile ethnography. We consolidate existing definitions, improve current methodological inconsistencies, and enhance assessment of validity criteria. The aim is to make a methodological contribution and advance theory to improve the credibility of research outputs for qualitative interpretive mobile ethnography. The necessity to do so comes with the growing overall interest in qualitative interpretive methods and the "paradigmatic shift or re-envisioning of qualitative and ethnographic research […] critiquing the ways, in which data can and should be generated, analysed and portrayed" (Bagley, 2009, p. 251).

Mobile ethnography allows to capture and to explore mobilities and interpret boundaryless dynamic settings (Büscher & Urry, 2009; Hall, 2015; Urry, 2002; Watts & Urry, 2008). Mobile ethnography uses technology-based devices, e.g. smartphones, instead of traditional ethnographic face-to-face inquiry. As mobile devices have become omnipresent (Kesselring, 2015), they provide easy access to capture, create, store and share data. Mobile devices support explorations of relational situations, social phenomena within relationships, and social structures in unbounded settings (Mkono & Markwell, 2014) and assist ethnographers "to observe the forms in which people do things together in repeated ways" (Van Maanen, 1979, p. 102).

However, existing studies using mobile ethnography have been criticised for being inconsistent when reporting validity criteria, and subsequently reducing their contribution to theory (Gobo, 2008). This gap in methodological inconsistency has led to criticism in validity and credibility of research outputs (Berger, 2015; Gobo, 2008; Holstein & Gubrium, 2011; O'Gorman, MacLaren, & Bryce, 2014). For example, it is unclear, how these qualitative interpretive ethnographic approaches align with more traditional positivist, realistic ethnographic methodology (Lincoln, 1995). Hein, O'Donohoe, & Ryan (2011) argue that there needs to be a better understanding of the role of the researcher in interpretive ethnography, since the role of the researcher has shifted towards engagement and interaction with participants and has moved away from the initial aim of ethnographers to collect data without participants' interference in order to present objective reality.

This study discusses these inconsistencies. We show a lack of coherent definition of mobile ethnography, as well as underdeveloped validity criteria, and highlight there has been insufficient understanding of an epistemology or the theoretical base. In response to this gap, the aim of this study is to develop a research framework for mobile qualitative interpretive ethnographic methods. In order to achieve this, we proceed with a narrative literature review, synthesising tourism, health and retail studies. As a result, we offer a guiding framework for researchers, clarifying the role of the researcher, foci of research, data collection and analysis. The study concludes with limitations, implications, and offers ideas for future research.

Literature review

Ethnography has been practised in various disciplines with the objective of learning about social structures in groups and cultures (Hammersley, 1990; Van Maanen, 1979), and traditional ethnography was designed for realistic observation in bounded settings (Lincoln, 1995; Van Maanen, 1979). Ethnography can be both methodology and method; both are strongly intertwined and often difficult to differentiate (Konu, 2015). In this paper, we refer to mobile ethnography as a qualitative interpretive approach while acknowledging that researchers might include triangulated data or even utilize mobile, portable devices for big data collection (George, Haas, & Pentland, 2014).

Mobile ethnography research uses mobile devices for data collection (Axup & Viller, 2005; Connelly, Faber, Rogers, Siek, & Toscos, 2006; Kourouthanassis, Giaglis, & Vrechopoulos, 2007; Muskat, Muskat, Zehrer, & Johns, 2013; Patrick, Griswold, Raab, & Intille, 2008; Toye, Sharp, Madhavapeddy, & Scott, 2005). Above all, the modern hardware or the application aspects of the devices used in these studies is distinctive. Mobile ethnography has developed hand-in-hand with the progress of the technical capabilities of smart phones and other mobile devices to process and display mobile applications (Díaz, Merino, & Rivas, 2010; Patrick et al., 2008). Crabtree and Rodden (2008) refer in this context to 'hybrid ecologies' a mixing of real environments with computing environments to bridge the physical-digital divide, and often to explore how user groups learn in those technological ecologies.

Approaches related to mobile ethnography include multi-sited ethnography and netnography. Multi-sited ethnography has its origins in anthropology and has been applied to topics such as globalization and cultural studies (Hage, 2005; Marcus, 1995). Multi-cited

ethnography, is often chosen to observe social behaviour across different sites, e.g. the movement of people between villages, cities, and countries (Saidi, 2013), using a combination of online and offline techniques for data collection (Orgad, Bakardjieva, & Gajjala, 2008). Netnography explores online communities (Kozinets, 1998, 2002). Netnography applies traditional techniques to interpret digital conversational data from the Internet. “The "data" collected during a netnography, as in other types of ethnography, consists of the researcher’s fieldnotes about her cybercultural field experiences, combined with the "artifacts" of the culture or community” (Kozinet, 1998, p. 367). Mobile ethnography, instead, concentrates on acquiring, interpreting data collected in non-digital unbounded environments, applying a mobile device.

Dimanche and Gibbs (2016, n. p.) note that “benefits of this method are that we can collect data on the service delivery site, at the time of service delivery, and in an unobtrusive way.” Mobile ethnography makes it possible to get direct in-time user information, following the principal ideas of user-centred design (Constantine & Lockwood, 2001). Thus, knowledge is constructed in and through cultures of social groups by means of mobile technologies. Consequently, co-creation of knowledge can occur, as both the researcher and the user generate knowledge. Cresswell (2012, p. 647) summarises that “ethnography has moved from a deep engagement with a single site to analysis of several sites at once (multisite ethnography), to ethnography that moves along with, or besides, the object of research (mobile ethnography).” As a result, the role of the researcher has changed, particularly their level of engagement and participation. For this reason, the resultant ‘knowledge’ cannot be considered objective knowledge anymore, and instead co-created by the researcher and participants.

Application of mobile ethnography

The paper now turns to applications of mobile ethnography. The aim is to synthesize key characteristics of studies that have used mobile ethnography, through consideration of the phenomena under investigation, types of data, duration of data collection, tools used for data collection, and data analysis software.

In tourism, researchers increasingly harness mobile ethnography to explore tourist and visitor experiences (Dimanche & Prayag, 2016; Stickdorn, Frischhut, & Schmid, 2014). Examples include an exploration of the ways backpackers share information using mobile phones (Axup & Viller, 2005); a mapping of customer journeys in tourist destinations (Bosio,

Rainer, & Stickdorn, 2017); and an exploration of Generation Y's museum experiences (Muskat et al., 2013). Recently, Dimanche and Gibbs (2016) also used mobile ethnography and summarised that it is best suited to explore visitor experiences to improve tourism destination competitiveness.

In health, a growing number of studies use mobile devices for data collection to monitor progress and behaviour of patients (Anhøj & Møldrup, 2004; Rich & Miah, 2017; Spinney, 2011). Connelly et al. (2006) describe the case of patients monitoring their personal health using a mobile device. These researchers explore improvements of quality of life of patients and self-efficacy through mobile devices, and highlight that compliance and acceptance is necessary to support the use of such technologies' (Connelly et al., 2006; Mattila, 2011). Logan et al. (2007) concentrate on patient monitoring and improvement over time, while Mattila (2011) describes a self-monitoring device within healthcare as a mobile phone diary for personal health management. Bull's (2010) case study analyses the effectiveness of health promotion. In summary, in health research, most researchers are using mobile ethnography concentrating on tracking and monitoring patients' health over a longer period of time, where patients use mobile devices for data entry and thus serve as co-creators of data (Anhøj & Møldrup, 2004; Dennison, Morrison, Convey, & Yardley, 2013)

In retail, an increasing number of studies uses mobile devices attached to supermarket carts, receiving the shoppers' feedback on their shopping experience (Kourouthanassis et al., 2007). Varnali and Toker (2010) studied trust, satisfaction, and loyalty in mobile marketing and consumer behaviour. Harwood and Jones (2014) argue that the competitive environment in retail with an increase in online offers highlight the need to better understand consumer behaviour in stores. Their mixed methods qualitative research design explores customers' movement in stores, considering the entire space of the store. They use audio-visual technologies such as 'first-person perspective' eye-tracking technology to capture and interpret critical incidents in shoppers' behaviour.

The growing number of published studies reflects the increased interest in using mobile ethnography in various scholarly domains. Nonetheless, we found little discussion about epistemology and a gap in understanding the methodological underpinnings for mobile ethnography. This gap has led to criticism on validity and questions on requirements for good research practice (Gobo, 2008). Considering epistemological underpinnings, Denzin (1997) explains that ethnography had traditionally been approached from a positivist, realist

epistemological stance. Yet, contemporary ethnography, such as mobile ethnography embraces the researcher's higher level of engagement and participation in knowledge creation. Thus, the distance between participant and researcher during data collection has been reduced. With this form of knowledge creation, "the classic realist ethnographic text is now under attack" (Denzin, 1997, p. xiii). This is particularly the case as "interpretive researchers generally aim to present multiple perspectives on realities rather than aiming for the 'true' or 'closest' representation of reality" (Hein et al., 2011, p. 262).

The problem, however, prevails that the validity criteria for interpretive methods remain vague and undefined. Manuscripts applying interpretive research have been identified as to poorly explain validity practices (Berger, 2015; Holstein & Gubrium, 2011). The literature review has demonstrated that the extant literature does not include detailed descriptions of the method, methodology and validity criteria, failing to address self-reflexivity criteria, and the role of the researcher. We showed for most studies it remains unclear how data collection refers to the traditional ethnographic principles of direct contact, interaction, participation and learning between ethnographer and researcher, or to the researchers' reflective practices.

Methodology

The aim of this study is to develop a research framework for mobile ethnography. We develop this framework through a synthesis of the literature. Previous sections included a narrative literature review, which sought to summarise the existing knowledge within this area to support the development of the research framework including the key terms 'mobile ethnography', and 'qualitative interpretive ethnography'. We focused on the research domains of tourism, health and retail studies, as these customer-centred disciplines have shown a rising interest in practicing mobile ethnography. The primary goal of the narrative literature review was to respond to the research aim, the development of a research framework (Cronin, Ryan, & Coughlan, 2008), and to present "the state of knowledge on a particular topic" (Baumeister & Leary 1997, p. 312). Now, we proceed to analyse these findings, discussing both theoretical aspects, and implications for concrete research practices.

Results

The results section of this paper develops the research framework for mobile ethnography, consisting of four explanatory dimensions: the role of the researcher, focus of research, data collection and tools as well as data analysis. As a synthesis of the results section, we then present the research framework (Table 1) to offer guidance to academics and practitioners applying mobile ethnography.

Role of the researcher in mobile ethnography

Ethnographic researchers can either take an objective, realist epistemological stance or participate and engage with their participants in order to co-create knowledge. Traditional ethnography focused on the objectivity of knowledge (Denzin, 1997; Lincoln, 1995), and within this, the role of researchers included data collection through realistic observation in bounded settings (Hein et al., 2011). However, within mobile ethnography, researchers usually adopt interpretive research epistemology, and become more involved. Whilst practising interpretive qualitative mobile ethnography, the researcher may include own reflections and interpretations of situations, relationships, and structures – and how these unfold in mobile unbounded settings (Mkono & Markwell, 2014; Van Maanen, 1979). Instead of an objective realistic depiction of reality, researchers advance theory and "theoretical contributions are made by adding to the diversity of interpretations, offering new angles or perspectives, and communicating the sense of 'being there'" (Hein et al., 2011, p. 262).

Further, traditionally emic and etic standpoints have been frequently used to validate ethnographic research (Geertz, 1983; O'Reilly, 2009). In traditional ethnography, the emic-insider standpoint has been part of the situation being analysed, whereas the etic-outsider view has not been immersed in the situation (Pike, 1954). For mobile interpretive ethnography, it might be questioned thought, if the traditional emic and etic standpoints are still providing value as valid quality criteria; since knowledge is acquired through participation and immersion of data collection processes or activities (Coleman & von Hellermann, 2011; O'Gorman et al., 2014). This view is supported by Yanow's comment that "the old formulations, ranging from admonitions about 'going native' to injunctions to join 'emic' with 'etic' and 'insider' with 'outsider' positions, are outdated […]" (2009, p. 195).

Most importantly, it needs to be highlighted that in mobile ethnography, it is often the participant who collects data. The 'co-presence' (Neyland, 2008) of the researcher during the

research process refers to the fact the ethnographers can interpret the data, generated through the mobile device—with the data gathered by the participant. With the aid of modern communication technology, the researcher does not need to be mobile, as the mobile device achieves this for them. Consequently, researchers might rather maintain an outsider/etic view. Hence, presumably in mobile ethnography, there is less an emphasis on emic standpoints as a validity criteria for the quality of research, when compared to traditional methods.

Focus of research in mobile ethnography

Mobile ethnography is well suited to capture dynamic phenomena and developments in multi-spaces, such as change and development processes, pathways, transnational spaces, and other forms of mobilities and mobile lives (Büscher & Urry, 2009; Cresswell, 2012; Hall, 2015; Urry, 2002). Gottschalk and Salvaggio (2015, p. 11) posit that mobile ethnographic observation includes capturing everyday life within the mobile society, where the "mobile moment is characterized by transience, impermanence, and movement". Research questions for tourism and services researcher that fit with mobile ethnography include aims to understand mobilities, changes, development, transformations and experiences, of social phenomena in boundaryless dynamic settings.

For the tourism and other consumer-centred services sectors, this suggests applicability to research in areas such as behavioural changes, development, transformation and experiences over time, of customer groups. For example, evaluating the service experiences of tourists and visitors over time in various places—or evaluating behavioural changes in sustainable tourist behaviour and identification of sequences of moments/touchpoints that define tourist behaviour and decision-making. Beyond that, the present focus might be extended to also encapsulate workplace experiences—adding employee's perspectives. Foci of research of the employee workforce might include developments of international careers, development of group decision-making behaviour, or progress in organisational service design projects.

Data collection and tools in mobile ethnography

We showed how mobile ethnographic data collection places an emphasis on participating in patterns of movements. Subsequently, various kinds of mobile devices—smartphones, smartwatches, tablets, laptops, and other similar mobile appliances—and mobile services—forums, personal webpages, video blogs, webcams, voice calls, social networks,

communication logs, communication diaries, emails—will be useful for mobile ethnographers. Studies have shown, that data collection is usually conducted directly through the participant, with the advantage to provide an unobtrusive interference. In each case, the researcher has to decide which channels to use in order to involve the respondent. We posit this choice will be related to the degree of public confidence the channel enjoys, and could involve a multi-channel research design.

Data analysis in mobile ethnography

Our literature review showed that studies increasingly use computer-assisted qualitative data analysis (CAQDAS) such as NVivo, MaxQDA, Atlas ti, HyperResearch, QUALRUS, and Leximancer, for analysing ethnographic data. One key advantage of CAQDAS lies in its enhancement of the validity of the research. Clear articulation of validity is necessary, and interpretative ethnographic research requires different criteria to replace positivist objective, measurable validity criteria (Denzin, 1997). CAQDAS adds to the consistency of qualitative research, as it is said to be more rigorous, robust, transparent, and credible than manual data analysis (Davidson and Skinner, 2010; Gilbert, 2002; Hwang, 2008; Weitzman, 1999). Training on the software is yet recommended to harness its potential for managing online data (Fielding & Lee, 2002; Lofland & Lofland 1995).

Another validity criterion enhancing the quality of qualitative interpretive mobile ethnography is the researcher's own reflexivity. Self-reflexivity encompasses the researcher's reflections of the data's multiple meanings and consideration of multi-faceted perspectives to improve data analysis (Wijngaarden, 2016). Generated data need to be reflected in the broader context of society, their actions, and culture (Hall, 2004). To "focus on self-knowledge and sensitivity; better understand the role of the self in the creation of knowledge; carefully self-monitor the impact of their biases, beliefs, and personal experiences related to their research; and maintain the balance between the personal and the universal" (Berger, 2015, p. 220). In essence, Berger (2015) proposes the researchers explicitly articulate their position, relationships, and viewpoints in reference to the participants; including a transparent report of decisions and their rationale. As a result of the synthesis of the literature and the discussion above, Table 1 summarizes the explanatory dimensions of the proposed research framework for mobile ethnography.

Table 1. Research framework for mobile ethnography

Research dimensions	Description
Role of the researcher	Co-creation of data between researcher and participant(s) Can be emic and etic, both outsider and insider views are possible Researcher does not need to be physically mobile, as mobile devices are Researcher and participant need to be 'technologized' Participant often collects data, guided by the researcher Self-reflexivity becomes a key validity criteria for quality of interpretive research
Focus of research	Lies in observation of physical and unbounded settings, capture all forms of everyday life, mobilities and developments of social phenomena, captures astatic, dynamic, and movement-related social behaviour Examples: tourist behaviours in international settings, service experiences, series of critical incidents, development of collaboration, networks and decision making processes simultaneously in multiple settings, development of learning and knowledge in virtual settings, comparative studies on relational developments in international settings, changes in meeting behaviour and developments of social relationships through dissolved spaces change
Data collection and tools	Types of data: textual data (e.g., diaries, app entries, SMS), visual data (e.g., videos, photography), audio (e.g., podcasts, interview, diary recordings) Mobile generated data can be complement with offline or online data collection on social group interaction (e.g., site participant observation, informal social contact, interviewing, physical mapping, personal informal conversations, audio and visual methods) Real-time and synchronous data collection including participation and co-creation of researcher and participant Duration of data collection: short and long-term periods, from one-day studies, to periods of several days, weeks, months, and years Tools are modern-technology based portable devices (e.g., mobile phones, smart phones, tablets, voice and video recording devices) that capture mobilities and movements
Data analysis	Data is gathered via mobile devices, and analyzed in computer aided analysis systems such as NVivo, MaxQDA, Atlas ti, HyperResearch, QUALRUS, Leximancer, etc. Use of CAQDAS enhances rigor, robustness, transparency, and credibility

Conclusion and implications

The ***purpose of this study*** was to develop a framework for mobile ethnography as methodological foundations in this research domain are limited. We present various examples of mobile ethnography from research in tourism, health and retail, and show how studies apply this methodology for rethinking the ideas of bounded social groups, places and spaces, and acknowledging increasingly unpredictable trajectories. The synthesis of the literature indicates that there is confusion of terminology, an un-reflected, unclear role of the researcher, and unconsolidated foci of research. As a result, we offer a research framework for mobile ethnography, aiming to provide guidance for research practises. Four explanatory dimensions are distilled as 1) the role of the researcher; 2) focus of research; 3) data collection and tools; and 4) data analysis.

The ***main implication*** for future research practice is the enhancement and improved articulation of validity. This is relevant as interpretative ethnographic research requires different criteria to replace positivist objective, measurable validity criteria (Denzin, 1997). We showed that previous studies (e.g. Gobo, 2008; O'Gorman et al., 2014) criticised mobile ethnography and qualitative interpretive ethnographic methods for its unclear validity of data, the undefined and unreflect role of the researcher and the missing accuracy of information collected. These inconsistencies had reduced the value of research outputs. Hence, we firstly suggest to make use of CAQDAS to advance rigour and transparency. Secondly, we propose to add reports of self-reflexivity to the methodology section of manuscripts in order to specify the role of the researcher in the co-created process of data collection. These would supplement other evaluation criteria for qualitative research, such as temporal generalizability, confirmability and transferability of the results, and credibility of the researcher (Onwuegbuzie & Leech, 2007; Patton, 1999).

Limitations of data collection via mobile apps are often related to their practicality. Mobile apps need to be more user-friendly, for both researchers and participants, to raise acceptance and advance mobile technology for data collection. Health researchers, for example demonstrated that participation is usually high in the first periods of data collection, but mostly declines later on (Mattila, 2011). As a way of strengthening the relationship between researcher and participants, Chaudhri et al. (2012) have proposed the addition of sensorial techniques. These 'open data kit sensors' could, for example, be integrated into smartphones or tablets and connect external sensors such as wired (USB) and wireless (Bluetooth) channels.

Future research in this area should be undertaken, for example in relation to technological advancement of mobile applications and their user-friendliness and acceptance. Research can further capture transformation and changes in perception of experiences over time, ideally in unbounded settings. Examples of studies could include comparative real-time approaches, with data collection occurring in different international settings simultaneously, to explore the same social phenomena. We also recommend that future research should be undertaken to better understand the processes of co-creation of data collection knowledge with their participants, e.g. how participants can be engaged over the period of data collection.

Concrete ideas and research questions for might include: How do tourist destinations transfer knowledge on sustainability issues over time? How do tourist groups evaluate service experiences in different locations? What are traveler groups' behavioural changes within hybrid ecologies? How do these groups experience augmented realities? In addition to explorations on the tourism demand side, further studies could be undertaken to strengthen knowledge in the under-researched enabler side (Zehrer, Muskat, & Muskat, 2014). Research questions might include: How do tourism managers and staff, in different places, cope with changes of digitalization; how does context influence learning, innovation and change over time—or better understand their development of careers and workplace experiences.

The contribution of this study is that it extends the growing body of literature on qualitative interpretive research and ethnographic methodologies. In summary, we conclude that mobile ethnography is a valuable addition to ethnographic methods portfolio. However, we have also shown that in the extant literature on mobile ethnography, there has been confusion in terminology, an unclear, and un-reflected role of the researcher, and unconsolidated foci of research. We have addressed this methodological gap, and offer a theoretical research framework. Thus, we contribute to the literature on methodology and offer concrete suggestions as to how to apply mobile ethnography as an interpretive qualitative approach to better capture changes, development, transformation and experiences, mobilities of social phenomena in boundaryless dynamic settings.

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