Factors Affecting Indigenous Household ICT Adoption in a Rural Context

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ABSTRACT

This paper examines the factors affecting adoption of Information and Communication Technologies (computers and the internet) in Australian Indigenous households in a rural context. Drawing on the sociological notion of structure and agency, it is argued that being engaged in external fields influences Indigenous household ICT adoption. This paper develops a conceptual schema by drawing on Bourdieu’s theory of habitus to explain the low uptake of ICTs in Indigenous households.

INTRODUCTION

Quality, coverage and usage of ICTs is now regarded as a critical issue for Australian society. This is likely to increase in scale and importance as ICTs form the basis of much economic and social activity, and not having access to ICTs has a clear detrimental economic and social impact. It is clear that some individuals, because of geographic location, education, economic position or culture, may be excluded from ICT access (Australian Bureau of Statistics 2001; Australian Bureau of Statistics 2006). This exclusion is framed around the concept of the digital divide which separates society between the have-nots (Trachtenberg 2000; Attewell 2001; Davis, McMaster et al. 2002; Gurstein 2004).

Literature demonstrates that ICTs have positive impacts on an individual’s life; including increase in income (Green, Felstead et al. 2007; Pietro 2007), access to both educational institutions and government services, and better civic engagement (Allyn and Yun 2005). There has been much research on the concept of a digital divide (Kvasny 2006).

Venkatesh and Brown (2001) argue that household adoption of ICTs has been largely overlooked and that the phenomenon requires a new approach as current adoption theories are poor predictors of household ICT adoption (Venkatesh and Brown 2001).

The use of ICT is quite low for Indigenous Australians compared with non-Indigenous Australians. The 2006 Australian Bureau of Statistics (ABS) Census demonstrated that 43% of Indigenous households had access to the internet, compared with 64% of those from other households (Australian Bureau of Statistics 2006). The 2006 Census also demonstrated that the household ICT adoption rate for Indigenous households reduces with remoteness, while non-Indigenous household ICT adoption rates remain relatively consistent across all localities (see Figure 1).
This paper examines a novel approach to understanding Indigenous household ICT adoption.

**BOURDIEU’S HABITUS**

Bourdieu proposes a theory of habitus to explain the relationship between society and the individual, or as he terms ‘structures’ and ‘agency’ (Bourdieu 2007). Structure is used by Bourdieu to refer to aspects of an individual’s environment such as social class, socioeconomic status and religion. Agency is referred to by Bourdieu as the level of free will that an individual is able to exert in a particular situation (Bourdieu 2007). Habitus is defined as ‘the system of dispositions that mediate between inert structures and the practices through which social life is sustained and structures are reproduced or transformed’ (Brubaker 2004, p.43).

Bourdieu’s theory has been used to explain human practices across social groups or ‘fields’ where norms within a particular field determine a particular practice in a particular situation (Levina and Vaast 2005). A field is defined by Bourdieu as the structure of an individual’s social setting in which their habitus is both formed and operates (Bourdieu and Wacquant 1992). Each field has a boundary that distinguishes it from other fields through objectification or the naming of the objects, for example job titles, salutations, and so on. At the same time embodiment, or the reliance of interpersonal relationships between individuals, also plays a role in explaining human practice within a field (Levina and Vaast 2006).

The influence of practices and the use of ICTs have emerged from previous research where Limayem and Hirt (2003) argue that one of the key factors in ICT use is the forming of habits (Limayem and Hirt 2003).
INDIGENOUS AGENT AND INDIGENOUS FIELD

Bourdieu’s theory of habitus argues that any practice involves varying degrees of both embodiment and objectification (Levina and Vaast 2006). These concepts are used by Bourdieu to refer to habitus which regulates modes of practice and the subsequent production of practice (Bourdieu 2007, pp.78-95).

The production of practices with respect to embodiment relies quite heavily on a number of elements including community norms, community ties, as well as reciprocity (Levina and Vaast 2006). Each agent or individual draws on ‘memories of their interpersonal interactions and mimics acceptable behaviors, appearances and manners to reproduce existing relations’ (Levina and Vaast 2006, p.16). Therefore, the production and reproduction of practices are undertaken or achieved ‘without overt explication among agents; often agents simply play along’ (Levina and Vaast 2006, p.16).

At the same time, objectification or the naming of objects is vital to the habitus as Bourdieu argues that objectification needs to be present for interpersonal relationships to exist beyond a given interaction. These objects can be both tangible and intangible and are representations of relations through practice. Objects can take many forms including markets, institutions, procedures, roles and terms (Levina and Vaast 2006; Bourdieu 2007). All objects are created in a particular field and these objects can, in fact, become a commodity within a field providing both a method or a way of gauging membership of a field (Levina and Vaast 2006; Bourdieu 2007).

I contend that there exists an ‘Indigenous agent’ who is constructed through both objectification and embodiment. The Indigenous agent is created through objectification by the legal and administrative systems, which occurs through an identity test where for Indigenous Australians to be officially considered Indigenous they must fulfill three criteria. These three criteria are: a) must be a member of the Aboriginal race; b) identifies as an Aboriginal and c) is accepted by the Aboriginal community in which they live 1. This identity test is universally accepted across all jurisdictions and government departments within Australia as the ‘test of Aboriginality’ (Gardiner-Garden 2000).

The embodiment aspect of the creation of the Indigenous agent is in the third criteria of the identity test in that other Indigenous people have to either accept or reject the person as being Indigenous. Therefore, it is not just the naming of objects that creates the Indigenous agent, it is also the way Indigenous agents interact and identify with each other.

I also contend that there exists an ‘Indigenous field’ which is where Indigenous agents develop their habitus and where production and reproduction of Indigenous practices are undertaken. This notion is supported by Keen (1994) where he argues that the ‘Aboriginal domain’ or field is where Aboriginal people or agents reproduce ‘a similar habitus’ (Keen 1994, p.13). The Indigenous field is also created through intangible structures such as Indigenous education, employment and health policies (Schwab 1995; Australian

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1 The Aboriginal community is made up of other Aboriginal people in the local area. An Aboriginal organisation produces a Certificate of Aboriginality endorsed by the Aboriginal organisation’s board which is made up of members of the local Aboriginal community.
Government 2008), and through tangible structures such as Aboriginal schools, Aboriginal Land Councils and Aboriginal Medical Services (Martin 2003; Sutherland 2003).

Now that both the Indigenous agent and Indigenous field have been defined we can conclude that within this Indigenous field there exists Indigenous practices.

**TRANSFORMATION OF THE HABITUS AND THE ROLE OF THE FIELD**

The habitus of an agent can be difficult to change. This is because, as Bourdieu explains, agents have ‘durable dispositions’ (Bourdieu 2007). It is argued that when agents come in contact with external fields from their own, their habitus is transposed to fit within that field. But because agents hold ‘durable dispositions’ the habitus is not always transposed immediately, nor are their practices. However, when their habitus is transposed and their practices transformed, these additional practices then become an emergent property of the social system from which their habitus was originally created (Pickel 2005). An emergent property of a system is the forming of more complex practices (Bourdieu 2007).

These external fields provide exposure to practices that may not be recognised by an agent’s habitus but provides the opportunity for their habitus to transpose and hence transform practices. This concept has been confirmed by Levina and Vaast (2005) where they found that practices can be changed even when there are formally designed roles of an agent. That is, even when there are strongly defined roles and position titles within organisations, which are created through objectification, the practices of agents are changed as they immerse themselves in external fields to undertake a particular set of tasks (Levina and Vaast 2005, p.350).

Before the theoretical insights of habitus can be used, we need to understand the socioeconomic and demographic context of the geographic area in this study.

**CASE DESCRIPTION**

The Indigenous community in this case study was specifically chosen in accordance with Eisenhardt (1989) as it presents a rich source of data and provides an opportunity to extend the principles of adoption theory.

The number of households with internet connection, labour force status, mean household income, and level of education are important in understanding the socioeconomic status of this community. Selected data on the socioeconomic status of this community is outlined below (see Tables 1, 2, 3 and 4) (Australian Bureau of Statistics 2006)
Table 1: Number of Households and Percentage with Internet Connection in this Rural Area (Source: ABS 2006)

<table>
<thead>
<tr>
<th>Total number of households</th>
<th>Indigenous</th>
<th>451</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-Indigenous</td>
<td>6,319</td>
</tr>
<tr>
<td>Total number of households with Internet connection</td>
<td>Indigenous</td>
<td>140</td>
</tr>
<tr>
<td></td>
<td>Non-Indigenous</td>
<td>2,906</td>
</tr>
<tr>
<td>% with Internet connection</td>
<td>Indigenous</td>
<td>31.2</td>
</tr>
<tr>
<td></td>
<td>Non-Indigenous</td>
<td>46.0</td>
</tr>
</tbody>
</table>

Table 2. Employment status as a percentage

<table>
<thead>
<tr>
<th>Labour Force Status</th>
<th>Indigenous</th>
<th>Non-Indigenous</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Employment of population (a)</td>
<td>26.7</td>
<td>45.9</td>
</tr>
<tr>
<td>% Labour force participation (b)</td>
<td>40.9</td>
<td>51.0</td>
</tr>
<tr>
<td>% Unemployment (c)</td>
<td>34.8</td>
<td>10.1</td>
</tr>
</tbody>
</table>

a – Number of persons employed as a percentage of those 15 years and over
b – Number of persons in labour force as a percentage of those 15 years and over
c – Number of persons unemployed as a percentage of those 15 years and over

Table 3. Mean weekly income in dollars (Source: ABS 2006)

<table>
<thead>
<tr>
<th>Mean household income</th>
<th>Indigenous</th>
<th>$697.55</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-Indigenous</td>
<td>$827.77</td>
</tr>
</tbody>
</table>
Table 4. Education completion rate as a percentage (Source: ABS 2006)

<table>
<thead>
<tr>
<th>Highest Year of School Completed</th>
<th>Indigenous</th>
<th>Non-Indigenous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 12 or equivalent</td>
<td>12.5</td>
<td>25.4</td>
</tr>
<tr>
<td>Year 11 or equivalent</td>
<td>8.4</td>
<td>6.6</td>
</tr>
<tr>
<td>Year 10 or equivalent</td>
<td>29.2</td>
<td>39.4</td>
</tr>
<tr>
<td>Year 9 or equivalent</td>
<td>27.8</td>
<td>14.7</td>
</tr>
<tr>
<td>Year 8 or below</td>
<td>20.9</td>
<td>13.4</td>
</tr>
<tr>
<td>Did not go to school</td>
<td>1.1</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Number of persons as a percentage of those 15 years and over

RESEARCH METHODOLOGY AND METHODS

This research undertakes a Glaserian Grounded Theory approach, starting with a topic of interest and entering the field with little knowledge of what to expect. The only background information that was held was the assumption that there was an ICT adoption gap between Indigenous and non-Indigenous households.

Interviewees were chosen incidental to the opportunities presented in the community. Interviewees were aged between 18 and 72 and included both males and females. All self-nominated as being in decision-making positions within their respective households. There were twelve interviewees.

FINDINGS

During coding of the interviews six factors emerged. These factors fell into two emergent domains, namely ‘Motivators’ and ‘Inhibitors’. The concepts of motivators and inhibitors represent the influence that the categories have on Indigenous household ICT adoption and are an attempt to reflect the dynamics of Indigenous practices regarding household ICT adoption.

During analysis three primary inhibiting factors emerged. These are substance abuse, problem gambling, and racism in the labour market. Each factor plays a role in non-adoption to a varying degree.

Furthermore, during the analysis three motivating factors emerged. Motivators include education, employment, and family and friends with ICTs in the home.
DEVELOPING A PRACTICE MODEL OF ICT ADOPTION

It has been discussed that the habitus is not only durable, but adaptive, and that when the habitus of an agent encounters a new field, new practices can be formed. These new practices then become an emergent property of the social system from where the habitus was originally created. Therefore, it is postulated that an Indigenous agent’s habitus is transposed by the external substantive fields that they are immersed in. That is, there exists factors that motivate Indigenous agents to adopt ICTs in the household that are emergent properties of their interactions with external fields that they are engaged in. The two most influential external fields that emerged from the analysis are the employment field and the education field (see Figure 2).

**Figure 2. Most Influential Fields**

When the Indigenous field and employment field and/or education field intersect, the habitus of an Indigenous agent is transformed and new practices become emergent properties of the Indigenous agent’s habitus. This is only true when an Indigenous person uses ICTs within their normal everyday education and/or employment activities (see Figure 3).
Figure 3: Employment and Indigenous Field Intersection

The effect of education and employment on ICT adoption is that the practice of using ICTs in the workplace and/or in education provides the exposure in the environment that transforms practices that leads to Indigenous household ICT adoption. This is conceptually the same for the other motivating factors. By providing access to the motivating factors and allowing the fields to intersect, the habitus of the Indigenous agent is transposed and the practices are also transformed. These new practices then become an emergent property of the Indigenous agent’s habitus (see Figure 4).

Figure 4: Effects of Field Intersection
- \( I \) represents Indigenous agents from the Indigenous field
- \( C \) represents Indigenous school aged children from the Indigenous field
- \( t \) represents ICT tasks in employment and education fields
- \( I_t \) and \( C_t \) represent result of using ICTs in the employment and/or education fields. ICT practices are added to the Indigenous agent's habitus. Indigenous agent adds ICT practices to the Indigenous field.

**Figure 5: Successful Indigenous Household ICT Adoption Process**
INHIBITORS OF ICT ADOPTION

At the same time, there are factors that inhibit the adoption of ICTs in the household that are embodied in the Indigenous habitus. These factors tend to be associated with Indigenous agents not engaging in, or being excluded from, fields external to the Indigenous field. Thus their habitus is not transposed and their practices not transformed. Substance abuse was found to be the strongest inhibitor of Indigenous household ICT adoption. Substance abuse is a salient aspect of some Indigenous agents’ habitus. Some forms of substance abuse are considered by some as an ‘Aboriginal value’ which can lead to poor performance, absenteeism and job loss (Saggers and Gray 1998; Gray and Saggers 2002). This in turn prevents the Indigenous field and the employment field from intersecting, which then prevents an Indigenous agent from being exposed to ICT practices in the workplace and their habitus cannot be transformed. Without the forming of new practices via field intersection Indigenous household ICT adoption will not occur.

Substance abuse exerts great pressure on the household finances and limits the purchase of items such as ICTs. Even when an Indigenous agent has ICT skills that have been acquired from field intersections, because of the ‘durable dispositions’, their practice of substance abuse creates a barrier that overrides the Indigenous household ICT adoption process which results in non-adoption (see Figure 6). Moreover, excessive alcohol consumption can lead to workplace issues that may also affect the intersection of the Indigenous field and the employment field. These findings are further strengthened by the Australian Government’s Overcoming Indigenous Disadvantage Report (2009) where it states ‘Excessive alcohol consumption contributes to workplace problems, child abuse and neglect, financial problems...’ (2009, p.10.14)

Problem gambling has the potential to severely impact the Indigenous household ICT adoption process in the same way that substance abuse does. That is, problem gambling can cause the household finances to be directed towards the practice of gambling. These findings are supported by the National Aboriginal and Torres Strait Islander Social Survey 2002 which found that gambling problems were a stressor on the Indigenous household for a large number of households (McMillen and Donnelly 2008).

Both substance abuse and problem gambling are salient aspects of some Indigenous people’s habitus and as such can prevent the intersection with external fields and can prevent the Indigenous household from adopting ICTs.
Racial discrimination in the labour market plays a vital role in the process of Indigenous household ICT adoption. Racial discrimination in the labour market falls under the concept of social exclusion. There is no one single definition of social exclusion. This is because it is a multi-dimensional aspect of society (Hunter 2008). Saunders et al. (2007) state that ‘unlike the focus of poverty on a single dimension (lack of resources), exclusion is a multi-dimensional concept, designed to highlight the role of institutional structures and community attitudes in creating the barriers that lead to exclusion’ (Saunders, Naidoo et al. 2007, p.12). Saunders, Naidoo et al. (2007) argue here that institutional structures are a part of what creates social exclusion. This could mean that social exclusion in the labour market could be related to the habitus of the employers. However, this is outside the scope of this paper but nevertheless should be kept in mind. Hunter (2008) provides the necessary precondition for addressing social exclusion; ‘Ensuring the marginalised and those living in poverty have greater participation in decision making which affects their lives allowing them to improve their living standards and their overall well-being’ (Hunter 2008, p.5).
Racial discrimination in this paper is associated with how Indigenous people are viewed in the labour market. Indigenous people have been victims of racism when seeking employment. There is strong evidence from the extant literature that demonstrates a link between racial discrimination and exclusion from the labour market (Reynold 1996; Hunter, Kennedy et al. 2002; Gallie, Paugam et al. 2003; Hunter 2003; Hunter and Gray 2004; Hooker 2005; Hunter 2005; Fernandez and Fernandez–Mateo 2006).

![Diagram](image)

**Figure 7: The Effect of Social Exclusion in the Labour Market on Field Intersection**

It is recognised that the habitus of some agents is more difficult to change than others. There are a number of reasons for this. One reason is that an agent could be ‘caught in a social situation that severely constrains the room for change’ (Pickel 2005, p.444). While another reason could include the agent not being aware ‘of a particular habitus and its actual consequences’ (Pickel 2005, p.444). Bourdieu (1990) argues that there is a ranked mode of skill acquisition which could explain why some practices are more entrenched and less susceptible to influence (Bourdieu 1990). This aspect of habitus can explain why some Indigenous agents resist engaging in external fields and why ICT adoption is lower in Indigenous households.

**CONCLUSION**

This practice-based view of Indigenous household ICT adoption has drawn on Bourdieu’s theory of habitus to demonstrate that habitus has the ability to be transformed and with it, the practices of individuals within a field. The contribution to the literature is that practices that motivate or inhibit Indigenous household ICT adoption are distinct practices which are not simply polar opposites. The emergent model demonstrates that the practice of using ICTs in everyday activities outside the Indigenous field creates new practices where individuals can take those new practices into the Indigenous field and adopt ICTs in the household.
REFERENCES


