FACTORS INFLUENCING THE DECISION TO ADOPT MACHINE LEARNING TECHNOLOGY: A CASE OF AUTOMATIC NUMBER PLATE RECOGNITION SYSTEMS

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Factors Influencing the Decision to Adopt Machine Learning Technology: A Case of Automatic Number Plate Recognition Systems

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Abstract
This research investigates the factors influencing the decision to adopt Automatic Number Plate Recognition (ANPR) technology in New Zealand organizations. We interviewed participants from six New Zealand organizations. The findings suggest that the key reason for adopting ANPR was the ability of the technology to solve an operational problem and achieve a specific organizational goal. The perceived costs of the technology and level of use associated with using ANPR were also contributing factors. Organizations that had identified a cost effective business case for adopting ANPR had either adopted or were in the process of adopting ANPR technology. The adoption by international organizations and the effect on social systems further explain the reluctance of organizations to adopt ANPR as a new technology. Other factors that were not identified prior to this research include legal concerns over privacy and using ANPR results as enforceable evidence, the limited availability of slack resources and concerns that ANPR could inadvertently change the way the organization operates.

Keywords: ANPR; Technology adoption; Diffusion

1. Introduction
Government agencies in New Zealand are increasingly using machine learning algorithms to streamline processes and improve efficiency (StatsNZ, 2018). Automatic Number Plate Recognition (ANPR) Systems, also known as automatic vehicle recognition systems or license plate recognition systems, are a smart technology embedded with a machine learning algorithms. ANPR technology uses OCR and machine learning algorithms on images of vehicle number plates to recognize and match them against a registration database. ANPR was initially designed for a number of applications such as accessing control to parking lots (to record the time a vehicle entered) and to identify vehicles on toll roads. However, other applications for ANPR technology have been found and now include border control monitoring, identification of vehicles on the go, “geofencing” (constructing virtual boundaries of a geographic area), traffic enforcement (e.g. monitoring red-light running) and drone-based systems (Park et al., 2018). ANPR vendors have typically marketed systems specifically to law enforcement and transport organizations.

ANPR has been widely adopted in cities in Europe, China, Japan and the United States for law enforcement, tolls & parking and journey duration activities (Andersson & Nääsén, 2016;
Daganzo & Lehe, 2016; Saskia Bayerl et al., 2013). However, the previously described use of ANPR in New Zealand is low in comparison. The aim of this qualitative research is to determine the key drivers and inhibitors influencing the decision to adopt ANPR systems by organizations in New Zealand. It will be useful to explore why organizations have not yet applied this new technology widely, consider key reasons to adopt the technology and what will enable organizations to adopt such a potentially efficient vehicle identification technology.

There is little research available about the introduction of ANPR, the environment in which it can be applied to regulate vehicles and enforce rules by organizations in New Zealand, or even where it has been in place for some time. However, Rogers’ (Rogers, 1995) diffusion of innovations theory, its subsequent improvements and technology adoption models and theories can be applied to the situation in an attempt to explain the slow rate of adoption.

This research is an initial attempt to study the adoption of ANPR in New Zealand by investigating the factors contributing to the decision making process. The next section of this paper outlines the literature review of the study. The subsequent section provides the methodology, which is followed by findings and discussion, and lastly limitations and conclusions.

2. Literature Review
2.1 Diffusion of Innovations Theory
The Diffusion of Innovations theory (DOI) can be applied to determine technology characteristics of trialability, observability, relative advantage, complexity, and compatibility (Rogers, 1995). It is used to explore the rate of adoption of an innovation. However, technology characteristics alone can only partially explain industry differences; therefore this research goes beyond the technology to also look at organizational and environmental factors.

The DOI can be applied to explain the spread of an innovation by individuals and organizations over time by describing adopter characteristics. These include the size of the organization, scope of the application, technology leadership, technology competency, technology and organization readiness and potential benefits (Rogers, 1995). An organization’s information processing capacity has also been identified as a strong determinant of an organization’s timeliness in adopting or rejecting a new technology (Jensen, 1982; McCardle, 1985; Melville & Ramirez, 2008).

Looking beyond the organization and innovation characteristics, the external environment – fueled by competition and industry standards – can contribute to technology diffusion and adoption. External organizations such as policy makers and suppliers exert a significant influence on the communication and diffusion of an innovation (Frambach, 1993; Geroski, 2000; Rogers, 1995; Stoneman & Ireland, 1983).

2.2 Conceptual Framework
The DOI theory (Rogers, 1995) was integrated with the Technology-Organization-Environment (TOE) framework (Tornatzky & Fleischer, 1990) to use as a theoretical lens to identify and analyze factors that affect ANPR adoption. Kuan and Chau’s (2001) EDI adoption model also provides a broad identification of perception-based factors affecting technology adoption. The proposed framework aims to provide a broad understanding and ranking of the drivers and inhibitors of ANPR adoption in New Zealand.
According to Mustonen-Ollila and Lyytinen's (2003) classification of technological innovations, ANPR systems can be classified as an innovation because they consist of intelligent platforms including application programming languages, database management systems, middleware components and smart camera systems. Environmental and innovation factors have been identified as the most important in the technology category (Mustonen-Ollila & Lyytinen, 2003). Environmental and innovation factors are both a focus of this research.

Figure 1 outlines the framework which we applied to identify the effect of innovation, organization and environmental factors affecting ANPR adoption in New Zealand as perceived by organizations whose staff we interviewed. These factors were derived from an extensive literature review which is not fully presented here due to space limitations.

### Drivers and inhibitors of ANPR adoption

<table>
<thead>
<tr>
<th>Technology</th>
<th>Organization</th>
<th>Environment</th>
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<tbody>
<tr>
<td><strong>Relative advantage</strong></td>
<td>• The degree to which ANPR provides advantages over current technology.</td>
<td></td>
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<tr>
<td><strong>Trialability</strong></td>
<td>• The degree to which ANPR can be easily trialed.</td>
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<tr>
<td><strong>Ease of Use</strong></td>
<td>• The degree to which ANPR is easy to use.</td>
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<tr>
<td><strong>Price</strong></td>
<td>• The cost of ANPR.</td>
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<tr>
<td><strong>Problem Solver</strong></td>
<td>• The degree to which ANPR solves an organization’s problem.</td>
<td></td>
</tr>
<tr>
<td><strong>Standards</strong></td>
<td>• The degree to which standards have been set for ANPR technology.</td>
<td></td>
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<tr>
<td><strong>Past technological experiences</strong></td>
<td>• The degree to which past experiences of adopting innovative or new technology may have affected views and decisions on adopting ANPR.</td>
<td></td>
</tr>
<tr>
<td><strong>Management hierarchy</strong></td>
<td>• The impact of top management’s view on adoption of ANPR.</td>
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<tr>
<td><strong>Peer networks</strong></td>
<td>• The impact of peer organizations’ actions and decisions.</td>
<td></td>
</tr>
<tr>
<td><strong>Slack resources</strong></td>
<td>• The degree to which the availability of slack resources may affect the organization’s willingness to trial and implement ANPR.</td>
<td></td>
</tr>
<tr>
<td><strong>Innovation knowledge</strong></td>
<td>• The amount of knowledge the organization has acquired about ANPR</td>
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**Adoption type**
- The adoption characteristics of the organization.

**Opinion leaders and change agents**
- The actions of other leading organizations regarding adoption of ANPR.

**Economic conditions**
- The effect of situational economic conditions

**Policies**
- The effect of government policies.

**Political conditions**
- The effect of political conditions such as industry and government pressure.

Fig 1: Conceptual framework

### 3. Method
#### 3.1 Qualitative research
Little research is available on the specific adoption of ANPR systems in New Zealand; thus, a qualitative approach is more appropriate to subjectively identify and analyze currently unknown issues. For the purposes of this research a qualitative approach provided a way to articulate technology adoption as it is a diverse social phenomenon. Such an approach allows this research to outline ANPR adoption and investigate the adoption of ANPR within a defined complex social context of six New Zealand organizations (Punch, 2013).
Other studies on the adoption of innovative technology have also taken a qualitative approach (Kuan & Chau, 2001; Zhou, 2008). Due to limited resources being available – in particular time, travel costs and difficult access to the sample population – a qualitative approach accommodated the small sample size of this exploratory research (Punch, 2013).

3.2 The Sampling
Six respondents representing their organizations accepted invitations to be interviewed as part of our study. Each respondent agreed to their interview data being used for this study and that it would be kept confidential. The organizations were a mix of local and public agencies. These organizations were approached as they had been identified as having an interest in adopting ANPR for operations such as parking control and billing, identifying stolen or illegal vehicles, implementation of toll boundaries, traffic enforcement and other related activities. The respondents were senior staff with decision making authority for their organization’s purchasing of information technology systems and policies.

3.3 Interviews
The interview questions were designed to identify organizational decision making factors of ANPR adoption as outlined in the conceptual framework, explain their significance and rank the factors by the level of significance in the organization’s decision to adopt or reject ANPR technology.

Semi-structured face-to-face interviews with each manager were conducted and recorded. A qualitative approach using semi-structured interviews allowed for flexibility in asking ad hoc questions in situations where new factors arose that had not been identified in the conceptual framework (Punch, 2013). Due to cost and travel constraints some respondents replied through a written survey after which some follow up questions were required to elaborate on limited responses.

4. Findings
Out of the six organizations interviewed only one could be classified as being in the implementation phase. One organization was in the trial phase and had a pilot implementation planned, two organizations were in the awareness phase having carried out little research into how ANPR could benefit their organization but being aware of ANPR, and the remaining two organizations were in the interest phase where they were seeking more information on ANPR. The four organizations in the interest and awareness stage indicated that they did not intend to adopt ANPR in the near future.

4.1 Technology Factors
Organizations between the interest and implementation stages of adoption that had carried out research into adopting ANPR identified characteristics of ANPR such as security, privacy, image quality and operational concerns.

Relative Advantage
All respondents identified that ANPR technology has an advantage over their current technology by increasing efficiencies and effective automation of processes. Respondent 1 stated the key benefit offered by ANPR is that it provides a means to automatically identify the number plate of a
vehicle. This would provide benefits such as increased safety, reduced overheads, broader coverage and better access to remote locations. Respondent 1 went into further detail to explain how their organization’s ANPR implementation was a success when compared to other technologies, without needing to incur the additional expense associated with the purchase, distribution and maintenance of tags. Respondent 4 identified that ANPR would be an improved parking solution over their current system. It can be used to identify frequent priority users of the car parks. This will replace the standard card access system.

**Operational Concerns**
Some respondents raised concerns over how ANPR would be implemented and how this would affect organizational processes. Respondent 2 identified database integrity as a major operational issue and noted that making sure the database contained clean and up to date information would be crucial to operational success, in particular ensuring that staff were responding to, collecting, analyzing and using correct data to inform ongoing decision making. In addition respondent 2 raised concerns that using ANPR could inadvertently change the way their organization operates. Operational concerns link back to the importance of establishing a well-defined implementation plan supported by an organization’s business case in order to successfully implement ANPR and end user acceptance.

**Internal Adoption and Acceptance**
A factor related to operational concerns seldom identified in previous studies but which should be given consideration is the subsequent adoption or acceptance of ANPR by individuals and divisions within the organization. Respondent 2 raised the concern that end users of the organization may not accept using ANPR because it may create extra or more complex work and change the way the organization operates.

**Trialability of potential applications**
Pilot projects to help determine the effectiveness of most appropriate use of ANPR was a key driver for organization 2 who were about to implement a pilot with the intention of fully adopting ANPR in the future. To gain funding for new technology, organization 2 needs to demonstrate there is value for money from the technology and demonstrate how it can be beneficially deployed.

**Security and Privacy**
Respondent 2 identified backend database security as a major issue in their ANPR adoption process. Using wireless communications between ANPR systems and databases can cause security concerns. So there are issues concerning system information. When data captured is combined with specific time and/or location information, the issue arises of whether the privacy of individuals is being invaded.

**Image Quality**
Respondent 1 also identified the limited ability of ANPR systems to effectively capture high quality images in New Zealand conditions as a barrier to adoption, in particular the costs associated with capturing good quality images of vehicles traveling on a state highway, without restricting their speed or movement.

**4.2 Organizational factors**
**Business Case/Problem Solver**
A key driving factor for adopting ANPR is the presence of a strong business case where the technology fits a specific organizational need and can generate a positive return on investment. Respondents whose organizations had not yet adopted ANPR all lacked a key business driver for adopting ANPR.

**Costs and Funding / Cost vs. level of usage**

For many respondents the development and signoff of a strong business case were strongly influenced by the financial benefit for the organization. This had been clearly a key driver before a budget was approved to implement ANPR. Respondent 4 identified that without a profitable business case their organization would not receive any funding. Respondent 3 identified the size of their organization and its activities as a barrier to adoption in that the full scope and benefits of ANPR capabilities would not be fully utilized. Respondent 2 identified economic conditions primarily and funding priorities as a factor in their slow adoption of ANPR. For this organization, financial constraints, particularly due to implementing other higher prioritized technologies, created what was considered a delayed adoption of ANPR. Respondent 2 identified that a factor in their approach to technology adoption was the long distances created by the narrow and mountainous geography of New Zealand and the fact that the organization was nationwide. Therefore, their slow adoption could also be explained by external geographic factors. Respondent three identified a cost factor being the limited choice of suppliers within New Zealand that has created somewhat of a monopoly.

**Slack Resources**

For organizations that identified a strong task-technology fit, a barrier to adoption was the availability of slack resources. Organization 2 which was in the process of implementing an ANPR pilot identified that the availability of slack resources would be a key factor in their decision to adopt ANPR and how it would be used. Respondent 2 outlined the resources required to operate and support the system as a factor in their adoption process. Respondent 2 also identified staff training and user technology acceptance as another organizational factor. It seemed that the availability of slack resources was a major concern for organization 2 because they had not scoped or defined how to use ANPR to best benefit the organization. Whereas for the other organizations that had not yet researched adopting ANPR or had decided not to adopt ANPR, the availability of slack resources hasn’t yet appear to be an issue.

**Internal issues**

Respondent 3 identified communication difficulties between planning and operations departments as a barrier to ANPR adoption. Often planning has been done and approved without consulting operations. Operations want to do it (adopt ANPR, or other technology) but planners do not see it as an option.

**4.3 Environmental and External Factors**

Respondents with knowledge of ANPR identified environmental factors such as homogeneity of New Zealand vehicles’ number plates, New Zealand laws, weather conditions and the actions of industry peers as drivers for and barriers to their organization’s ANPR adoption decision.

**Homogeneity of New Zealand number plates**

Respondent 1, whose organization had adopted ANPR, stated that a key driver for their adoption was due to the homogeneity of New Zealand vehicle number plates and the capabilities of ANPR. The lack of diversity in New Zealand number plates meant that ANPR was the most cost effective
solution for the organization to achieve its goals. The consistency of New Zealand vehicle number plates is a driver for ANPR adoption in New Zealand. It allows for simple scanning of number plates compared to other countries where number plate designs can vary from state to state, forcing ANPR systems to be more adaptable.

Legal considerations
Respondents intending to use ANPR for law enforcement applications cited the difficulty in using digital photos captured by automated technology as legal evidence. Respondent 2 noted that ensuring the overall solution provides legally enforceable results would be highly important in their intended application of ANPR. Respondent 2 raised the concern that to use ANPR to enforce the law would require additional resources to ensure the overall integrity of the system.

Opinion Leaders
It seemed that the willingness of some organizations to go ahead and be one of the first to adopt a new innovation was a factor in their decision to adopt ANPR. Respondent 1 cited the willingness of the organization as an innovator to adopt new technology where a strong business need was identified. Other organizations seemed to be more conservative in their adoption of new technology and preferred to learn from the lessons of first movers before they considered adopting ANPR.

Change Agents
Some respondents identified discussions with organizations that had successfully adopted ANPR as a driver towards their own adoption. Respondent 1 discussed ANPR solutions with a number of local and international organizations to share their concerns and learn from their experiences to date. These discussions were a leading driver for deciding to adopt a full ANPR solution. Respondent 3 also noted that their organization would be more willing to adopt ANPR technology if they could examine successful applications of other local organizations.

5. Discussion
Overall the findings show the slow adoption of ANPR in New Zealand compared with other countries reflects the common adoption rate of innovations as explained by the S-shaped curve (Jensen, 1982; Norton & Bass, 1987; Silverberg, Dosi, & Orsenigo, 1988; Swanson, 1994) and Rogers' (1995) five adoption phases. According to the S-shaped curve, as the innovation is first introduced the rate of adoption is slow.

Early stages of adoption
Organizations adopting ANPR in the early stages of the technology being diffused in New Zealand such as organizations 1 and 2 can be called ‘innovators’ (Rogers, 1995). As more information about ANPR and positive experiences of innovators are shared, the rate of adoption is expected to increase. Rogers (1995) labels adopters in this increased period of adoption as ‘early adopters’ and ‘early majority’. It seems that ANPR adoption in New Zealand is still at the early stages of adoption with only one organization having fully implemented ANPR and another organization at the stage of trialing ANPR. Given organizations are mostly at the early stages of adoption, a future comparative study could be beneficial to investigate the progress of further adoption and compare this to the S-shaped curve and Rogers’ five phases of adoption.

Profitability of ANPR
It seemed that the ability of ANPR to directly solve an organizational problem combined with a strong business case were the major factors bearing on an organization’s decision to adopt ANPR. These two factors are effectively linked to the financial benefit and profitability of adopting ANPR.
for an organization. The two organizations at the trial and implementation stages of adoption had both identified how ANPR could improve systems and solve vehicle issues for their organization, and thus built viable business cases demonstrating a profitable implementation. The four organizations who had not adopted ANPR had either not identified an organizational problem ANPR could solve and/or had not built a viable business case.

The percieved benefit of adopting ANPR identified by respondents is the ability to automate large-scale vehicle identification tasks. To get a positive return on investment through automation there needs to be high use of ANPR. However, in a small country or small city, as there is not a large volume of vehicles there are fewer instances where number plates can be captured. Many organizations identified that their use of ANPR would be on a small scale due to the limited scale of their organization’s activities or the limited population of the area the organization operates in.

The characteristics of ANPR as a technology which can be trialed in a limited implementation with results that can be clearly demonstrated and observed are conducive to developing a clear demonstrable business case for adopting ANPR. The pilot project being implemented by organization two is proof of this. Therefore, this would suggest that identifying a goal for ANPR and how to achieve this goal is the underlying issue.

Organizations at the awareness and interest stages of the diffusion process had not identified a business need for ANPR and cited a number of reasons such as the small size of the organization and its activities, costs outweighing benefits, not enough knowledge of ANPR, unwillingness to adopt new technology or not deciding to evaluate ANPR. It seemed that small organizations that would not generate any increased efficiencies from automating their current vehicle management operations did not have much knowledge about the capabilities of ANPR and had little interest in adopting ANPR. This may be due to being content with the solution they currently have and seeing little room for improvement. It may also be explained by these organizations not absorbing new information well and therefore being less receptive to information on new technology (Frambach, 1993).

Organizations that had identified an organizational goal that ANPR could directly solve but had no serious intentions to adopt ANPR in the near future were held back by a business case that lacked funding viability and profitability. It seems that the lack of funding available to adopt ANPR systems could be due to unwillingness to be amongst the first organizations in New Zealand to adopt ANPR. The slow rate of adoption of ANPR in organizations where a business need has been identified could be explained by the natural time line of innovation adoption as explained by Geroski (2000). Geroski’s (2000) model of technology diffusion identified that when innovations are first introduced, the benefits are often hard to gauge with certainty and often perceived to be risky. However as time goes by, adoption by other organizations increases and more information becomes available organizations may review the expected returns of investment and risks and generate a different view on adopting ANPR.

**Small Organizational Size**

It seems that the small size of many organizations and their operations are a major barrier to the adoption of ANPR as a profitable solution. One organization noted that it would be researching the adoption of ANPR further once it had completed a planned merger of regional units into one single unit. This would enable them to access more funding and larger scale operations activities whereby the efficiency benefits of using ANPR would be justified and profitable. It may seem that as information on the benefits of ANPR becomes more widespread the intention to adopt may also
increase; however, due to the small population of New Zealand, many organizations may still face the barrier of being a small organization with small scale operations. Abrahamson (1991) states that technologies diffuse if they are able to reduce performance gaps; it seems that at present ANPR is not able to reduce a large enough performance gap for small organizations. A solution to this problem could be the merger of organizations or more realistically, sharing ANPR resources between organizations.

**International Diffusion**

The extent to which innovative technology is diffused around the world seemed to be an influencing factor for the two respondents who had adopted or were in the process of adopting ANPR. Keller (2004) suggests that interaction with foreign organizations and consumers seems to be a process of knowledge discovery for organizations that cannot gain enough knowledge from interacting only with domestic organizations. As ANPR adoption within New Zealand is very low these organizations have had to research offshore for information on relevant ANPR implementations.

**Risk averse organizations**

The aversion to risk of organizations stalled in the awareness and interest phases could partly be explained by these organizations increasing their information processing needs to eliminate uncertainty surrounding ANPR adoption. Once these organizations have acquired enough information about adopting ANPR they may become closer to adopting (Jensen, 1982; McCardle, 1985; Melville & Ramirez, 2008). Risk aversion and the high level of information needed to adopt a new technology by the majority of the respondents may be largely due to the strict funding environment and procurement processes that they must go through as state owned entities.

**External Pressure**

No organization had pressure placed on them by political forces to adopt ANPR. A couple of organizations noted that the government would be willing to fund the adoption of innovative technology where a strong business case is present. As these two organizations hold significant influence in New Zealand’s society, government funding could provide encouragement to adopt and/or further adopt ANPR technology which would in turn influence the position of other organizations to consider or reevaluate whether to adopt ANPR technology (Rogers, 1995).

**Intra-organizational adoption**

End user acceptance was a factor raised by respondent 2 that had not received much attention in previous organization adoption studies. End user acceptance and operational concerns over how ANPR is implemented by an organization have a distinct connection. Although this connection was only identified by respondent 2, it would seem to be an issue of attention in organizations where ANPR will affect a large majority of the workforce. When an organization adopts a new technology, it is intended that individuals within the organization will accept the technology; therefore adopting new technologies can be risky if end users refuse to use them (Zhou, 2008). Attention should be given to implementing ANPR technology in a way that will best benefit the organization as well as being conducive to end user acceptance (Wells, 2015).

The findings of this research identified technological factors of ANPR as having the most influence on adoption decisions. This supports Mustonen-Ollila and Lyytinen's (2003) classification of ANPR systems as an innovation akin to the externally developed technical platforms category which is influenced most by environmental and innovation factors in the adoption process. This could be explained by the infancy of ANPR diffusion throughout New Zealand which means organizations are still learning about ANPR as a new technology. Within
this learning process many risk-averse organizations are seeking information on ANPR from peer organizations locally and overseas so that they can extensively evaluate the organizational benefits of adopting ANPR before making a large investment in the technology (Jensen, 1982; McCardle, 1985; Melville & Ramirez, 2008; Rogers, 1995).

Role of suppliers
The role of ANPR vendors and suppliers in influencing adoption decisions seems non-existent in New Zealand as respondents have not mentioned any direct contact from suppliers and current IT vendors do not offer ANPR technology. Strategies could be put in place by IT vendors to offer ANPR services or for the government to encourage vendors within New Zealand to diversify into ANPR technology. This could increase the diffusion of ANPR and information on ANPR because organizations are likely to trust and be more willing to adopt products from their current vendors or other trusted vendors (Frambach, 1993).

6. Conclusions and Limitations
This study built on previous research to develop a conceptual framework to study the adoption of ANPR technology by New Zealand organizations. Complementing previous research on technology diffusion which showed that adopter and technology characteristics affect the degree to which organizations adopt technological innovations, the current study identified the most important factors were the ability of ANPR to solve a problem and provide relative advantage over competing technologies, the cost of the technology and the size of the organization and its operations. These four key factors contributed to financial profitability as the key driver for adopting ANPR. While we did not illustrate them thoroughly due to space limitations, this study also identified a number of factors specific to New Zealand including local weather conditions, geographic spread, homogeneity of New Zealand number plates and legislation related to using automated digital images as legal evidence as potential barriers to the effectiveness of adopting and applying ANPR technology.

Due to the limited sample size of this research and 5 of the 6 organizations being located in the same city, there are limitations to the results and findings of this paper. As only 6 organizations’ staff were interviewed this cannot be considered a true representation of the views of the majority of organizations in New Zealand regarding the barriers to and drivers for ANPR adoption.

A larger sample size could provide more rigorous results, as it would allow for a greater representation of small and large organizations. This could help further articulate how small organizational size is a deterrent to ANPR adoption in New Zealand. As most sampled organizations were located in the same city, external factors such as the small size of a city may have affected ANPR adoption decisions. A representative sample of organizations located throughout the country may have provided further indicators of the impact of external and environmental factors on ANPR adoption decisions.

As only one person from each organization was interviewed, their responses may not truly represent the organization. This could be due to the respondent being misinformed or responding with personal views. Interviewing more than one person from each organization would better represent the views of the organization.

References


