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Consumer Propensity to Pay Mobile Service Fees

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Abstract
Numerous studies have explored consumer adoption of mobile payments from a variety of perspectives – security, convenience, and perceived ease of use and usefulness. A few studies have concluded that cost contributes to consumer adoption of m-payments, but not explored this factor in any detail. This study (a) offers exploratory research on specific reasons why consumers do or don't use mobile payments and (b) examines the propensity of consumers to pay mobile service fees under a variety of realistic scenarios. The study finds that the top reason why consumers don't use mobile payments is dislike for paying service fees. Research results also show that consumers are quite price sensitive to making mobile payments when a service fee is charged, except when urgent or when no alternative payment method exists.

Keywords
mobile payments, mobile service fees, mobile business, mobile commerce, ARPU

1. Introduction
A number of factors are contributing to the increasing use of mobile payments. From a consumer perspective, the value proposition of mobile payments is derived from the availability of the mobile phone – everyone has one and carries it everywhere – and the convenience of making a cash-like payment and having a record of the transaction. From a business perspective, a key value proposition for mobile payments is derived from the potential for micropayments. Mobile network operators (MNO) already have billing systems that track micropayments (e.g., a 20 cent text message) so mobile phones are especially well placed when billing small amounts (e.g., a parking meter, a vending machine) at low transaction costs (Hinds, 2004).

Mobile network operators usually charge for the convenience of mobile payments by adding a service fee to each transaction. This increases ARPU (average revenue per user), a key measure of profitability in the mobile phone industry. MNOs are eager to increase ARPU in this way, especially since global mobile payment transactions are estimated to grow rapidly to be worth £20 billion (US$39 billion) by 2008 ("M-payments predicted", 2004).

What are the circumstances in which consumers are willing to pay mobile service fees? What is their propensity to pay these fees? How much are they willing to pay? This study addresses these questions in a small country context.

1.1 Purpose of the Study
The principal purpose of this study is to assess the propensity of consumers to pay mobile service fees. The study examines this question from two perspectives. First, what are the external factors why consumers do and don't use mobile payments? Second, how much are consumers willing to pay for the ability to make m-payments?

In this study, a mobile service fee is defined as the extra surcharge a mobile network operator adds to a mobile payment transaction. The surcharge is usually justified as provision of the service for the convenience of the consumer. This is highlighted by the fact that in many instances the consumer can pay cash without incurring a service fee, but for various reasons (e.g., no coins available, need a transactional record) the consumer elects to make the payment via their mobile phone. From an MNO perspective, the service fee also partly covers the risk from consumer fraud or nonpayment. The MNO usually pays the third party (e.g., the vending machine owner, the parking authority) the payment shortly after it has been paid by the consumer, but in a few cases the consumer may default on the payment to the MNO. A service fee helps recover these financial losses.

This study examines cellular m-payment – the use of a mobile telephone and associated services, especially text messaging, to make a consumer purchase (Dewan & Chen, 2005). Other forms of mobile payment exist, either using other devices (e.g., proximity contact cards, RFID tag, laptop computer on wireless network) or for other purposes (e.g., person-to-person mobile banking, bill payment by mobile phone), but these are not considered in the current study.

1.2 Mobile Services Fees in New Zealand

The mobile network industry in New Zealand is a duopoly. Two mobile network operators – Vodafone New Zealand and Telecom New Zealand – have approximately equal shares of the market. Currently the Vodafone network is based on GSM (Global System for Mobile Communication) and the Telecom network utilizes CDMA (Code Division Multiple Access), but in May 2007 Telecom announced that it will move to a GSM-based network within five years. Additionally, in December 2007 NZ Communications announced it will launch New Zealand's third MNO in late 2008.

In this context, the following paragraphs describe the fees that Vodafone and Telecom customers pay for mobile services. Consumers also can purchase mobile minutes (Vodafone) and download ring tones and songs (Telecom and Vodafone) through mobile payment schemes, but no fees are charged for these services.

TXT-a-Park allows a consumer to use their mobile phone to pay for permission to park a vehicle in an on-street location for an allotted period of time (i.e., a parking meter payment). Briefly, a parking meter code and desired payment is texted to the parking authority and a parking receipt is printed for placement on the vehicle's dashboard. The payment and a 50-cent service fee is deducted from the prepaid balance or charged to the user's mobile phone account. Txt-a-Park is available in both Wellington and Auckland on both the Vodafone NZ and Telecom NZ networks.

mTicket sells ticket to certain events over the Vodafone network. After initiating the purchase via a text message (e.g., "text this event number to 858") and confirming it with a "buy" text message, a reply text message contains a booking number that is shown at the venue to gain entry. The cost of the ticket and a $2-2.50 per ticket service fee is charged to the user's Vodafone account or prepay balance. (Note: most ticket sellers in NZ charge a similar service fee.)

This paper is organized as follows. An introduction to the topic, the purpose of the study, and the mobile service fees that New Zealand mobile phone users currently pay have been summarized in this initial section. A brief literature review is presented in the next section,

followed by the research methodology. The rest of the paper provides a comprehensive description of the results, followed by concluding thoughts.

2. Previous Research in Mobile Payments

Mobile payments is emerging as a popular research topic. Previous studies in the area of consumer acceptance and adoption have focused on security (Antovski & Gusev, 2003; Dewan & Chen, 2005; Kreyer, Pousttchi & Turowski, 2003; Lee, Kou & Hu, 2005; Pousttchi & Zenker, 2003), convenience (Dewan & Chen, 2005; Kreyer, Pousttchi & Turowski, 2003; Pousttchi & Zenker, 2003; Teo, Fraunholz & Unnithan, 2005), and perceived ease of use and usefulness (Antovski & Gusev, 2003; Dewan & Chen, 2005; Teo, Fraunholz & Unnithan, 2005; Zmijewska, 2005). The findings of most of these studies can be summarized by saying that in order for mobile payments to succeed, they must be secure (both in reality and consumer perception), convenient, and easy to use. A few studies have examined cost as a contributing factor to adoption of mobile payments (Antovski & Gusev, 2003; Kreyer, Pousttchi & Turowski, 2003; Zmijewska, 2005; van der Kar & van der Duin, 2004; Pousttchi & Zenker, 2003), but none of these studies have examined the propensity of consumers to pay mobile service fees under a variety of realistic scenarios, as is done in this study.

3. Research Methodology

An electronic, self-administered questionnaire was used in this study. The survey method is appropriate for this study as it provides a quantitative description of attitudes, experiences, and opinions of the sample population (Creswell, 2003). It is an efficient way of gathering data using a standard set of questions.

The target population was all mobile phone users in New Zealand. The Web-based survey was available during October and November 2006 and was widely advertised in the local student and academic communities and at the popular Web site Textvouchers.com, which includes subscribers from throughout New Zealand. In the end, 132 usable responses were received and are the basis for the results presented in the next section.

4. Results

4.1 Consumer Willingness to Use Mobile Payments

For the first time in any study we are aware of, this study conducted exploratory research on the underlying reasons why consumers do or don't use mobile payments and the ranked results are shown in Tables 1 and 2.

No coins available	59.6%
Convenience of buying goods and services	37.5%
Easier than cash	36.0%
Trying new technologies	31.6%
Novelty of using m-payments	28.7%
Easy to learn and simple to use	24.3%
Better quality obtained	17.6%

Table 1: Reasons for using mobile payments

Not unexpectedly, convenience is a key reason why many consumers would chose to use mobile payments – convenience is included in some aspects of the top three reasons that consumers will use mobile payments. By far, the largest proportion (60%) use mobile phones

for the most convenient reason of all – they have no other option. Another reason, supported by anecdotal evidence, is that NZ consumers like to "give it a go" and try any new payment option at least once (32%). However, mobile service operators need to realize that if the service does not live up to expectations, it is unlikely that the consumer will repeat the process, something that is essential to maintaining and growing ARPU.

Dislike paying for service fees	61.0%
Proper security is probably lacking	30.2%
Easier to pay with cash	30.2%
Service is easy to use, but registration is too troublesome	29.4%
Try new technology later	14.7%
Don't want to change how things are usually done	11.0%
Do not like sending text messages	5.2%
Do not know how to send text messages	2.9%
Can't be bothered trying new things	2.2%

Table 2: Reasons for not using mobile payments

Table 2 explores the reasons why people would not use mobile payments. A large majority (61%) of respondents are opposed to paying service fees (this will be explored in more depth in the next section). Approximately equal percentages (30%) cite security, the convenience of using cash, and burdensome registration processes as problems.

4.2 Consumer Propensity to Pay for Mobile Service Fees

A key question for both the authors of this study and the mobile phone operators who support these m-payment services is the willingness of the consumer to pay service fees usually associated with m-payments. Tables 3 and 4 show the maximum service fee respondents are willing to pay for selected goods and services.

	NZ$4.00 parking display ticket	NZ$2.00 drink from a vending machine
No fee	41.2%	50.0%
20 cents	33.1%	28.7%
50 cents	12.5%	5.9%
70 cents	0.7%	0.0%
$1.00	12.5%	15.4%

Table 3: Maximum amount of service fee a consumer is willing to pay for a…

Table 3 includes two small purchases – typical prices for one hour of parking (NZ$4) and a juice or soda drink (NZ$2). Currently in New Zealand, consumers pay a $0.50 fee for a parking ticket and mobile payments for vending machines are currently not offered.

For a $4.00 parking ticket, 13% of respondents would pay the current service fee of 50c and 33% would be willing to pay the lesser charge of 20c charge. The largest proportion (41%) would not pay any service fee. A similar pattern is evident for the $2 drink except that a surprising percentage (15%) are willing to pay a maximum of $1.00, which is fifty percent of the price of the drink. In economic terms, these individuals are quite price insensitive to the service fee and/or they may have visualized an urgent situation in which they are willing to pay a high service fee to be able to quench their thirst.

	Utilities bill (water, electricity)	Concert ticket bought in advance	Concert ticket bought on the day of the event
No fee	41.9%	32.4%	27.2%
50 cents	27.9%	25.0%	14.0%
$1.00	10.3%	15.4%	18.4%
$1.50	2.9%	6.6%	3.7%
$2.00	8.1%	10.3%	13.2%
$2.50	0.0%	1.5%	2.2%
$3.00	8.8%	8.8%	21.3%

Table 4: Maximum amount of service fee the consumer is willing to pay for a…

The products and services in Table 4 are substantially more costly and more variable than in Table 3 – concert tickets can cost $30-150. Accordingly, a higher set of service fees has been applied (NZ consumers currently pay $2-2.50 to use Vodafone's mTicket service and all major ticket sellers charge a similar fee, usually $2). Table 4 also introduces the variable of time sensitivity in regard to the purchase of a concert ticket.

Consumers are quite price sensitive in regard to payment of utility bills – only 20% are willing to pay more than $1 – at least in part because there are a large variety of payment options, including automatic deduction from a bank account. A larger number of mobile phone owners (27%) are willing to pay more than $1 for a concert ticket bought more than one day in advance and 40% are willing to more than $1 for a concert ticket purchased on the same day, so as to get one of the best remaining seats. As expected, consumers are time sensitive in their willingness to pay service fees for mobile payments.

5. Conclusion

The first contribution of this study is exploration of a variety of factors that explain why consumers use or don't use mobile payments (Tables 1 and 2). Further research to refine and better qualify these factors is needed.

A second contribution is assessing consumer propensity to pay service fees when making a mobile payment. Specifically, consumers are quite price sensitive to making mobile payments when a service fee is charged, except when urgent (e.g., on the day of the concert, in Table 4) or there is no alternative (e.g., no coins available, in Table 2).

The findings of this study will be especially useful for MNOs interested in increasing ARPU through mobile payments and merchants who wish to provide mobile payment systems to their customers.

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