

**Examining Financial Transaction  
Technology Related Issues and Attitudes  
of People with Disabilities:  
A Summary of Survey Results**

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# Introduction

The following report summarizes the findings of a survey conducted by the Neil Squire Society. The survey collected baseline data on the banking habits and attitudes of people with disabilities, but primarily was focused on identifying accessibility issues related to technology that Canadians with disabilities use to complete banking and payment transactions. The survey focused on collecting data from the 4 main disability groups: mobility, vision, hearing and cognitive impairments. The survey respondents were solicited through posters and newsletters so the respondents voluntarily self-selected whether they would complete the survey.

The survey was broken into 3 major sections:

- 1) Basic personal information
- 2) Financial Habits and Attitudes
- 3) Technology Related Issues

The survey can be seen at:

English Language Version: <http://www.neilsquire.ca/survey/en/survey.php>

French Language Version: <http://www.neilsquire.ca/survey/fr/survey.php>

## **NOTE:**

Some participants self-identified themselves as having multiple disabilities. As participants are self-identifying their disabilities and self-evaluating their level of disability it is not possible to determine their primary disability based on the answers to the questions. For the purposes of the analysis of the survey results the researchers will categorize the responses of these participants in all the categories that they have self-identified as having a disability in. So if a participant states that they have a vision and mobility impairment then those responses will be counted in the results of both the vision and mobility impaired groups of participants.

Where the participant has provided an open ended answer and the nature of the answer cannot be categorized explicitly due to the lack of details, those answers will not show up in the tabulated results.

The frequency that specific answers appear should help the reader determine the relative relevance of the answers for a specific category of participants. For simplicity the percentages derived from the data are expressed in terms of whole numbers. Where there were open ended questions, the researchers have gone through and categorized the individual responses into broader categories to simplify the analysis. Where the exact nature

of the response could not be categorized due to the lack of specific details the responses were categorized as “Other”.

Only 2 of the surveys were done as phone interviews as opposed to through on-line surveys. No participant requested a Microsoft Word version of the survey or a printed copy of the survey.

For the simplicity of the analysis, values expressed in percentages have been rounded up or rounded down to the nearest percentage point. The percentages have been adjusted so that the total will be 100% in each category. This rounding will have no significant impact on the interpretation of the results as the nature of the data is to highlight directional trends as opposed to providing absolute valuation information.

## Limitations of the Study

This study was intended to collect base line data on how people with disabilities interact with technologies that facilitate financial transactions and the attitudes that people with disabilities have about that technology as no information currently exists. This study was not intended to be a comprehensive study with a high level of statistical confidence and a low margin of error. It is prohibitive expensive and time consuming to survey the number of participants necessary to achieve a high confidence level with a low margin of error. While studies with large numbers of participants are effective at helping to determine the prevalence of observations, studies with small numbers of participants have been shown to be effective in identifying usability problems with a technology. Not having a large number of participants does not reduce the validity of an observation.

## Basic Personal Information

### *Distribution of Disabilities*

Overall there were 392 participants that responded to the survey. Of these responses 34% were from people with mobility related impairments, 43% were from people with vision related impairments, 9% had hearing related impairment and 14% had cognitive related impairments.

<b>Nature of Disability</b>	<b>Number of Responses</b>	<b>Percentage</b>
Mobility	133	34%
Vision	170	43%
Hearing	34	9%
Cognitive	55	14%
<b>TOTALS</b>	<b>392</b>	<b>100%</b>

## *Distribution of the geographic location of respondents*

When evaluating all the participants regardless of disability a large percentage of participants came from British Columbia, Manitoba, Ontario and Quebec. This may be partly due to the fact that the organizations who were partners in this study and who were actively helping to promote the study have strong presence in each of these provinces. The researchers note that in previous studies participants have commented that they are reluctant to complete unsolicited surveys as they often received unwanted solicitations after the fact. A lot of participants mentioned that they only participate if they are contacted specifically by a person or organization they have a direct relationship with.

### Cumulative Results

<b>Province</b>	<b>Percentage of Responses (n= 402)</b>
BC	32%
Alberta	2%
Saskatchewan	4%
Manitoba	7%
Ontario	20%
Quebec	16%
Prince Edward Island	1%
New Brunswick	7%
Nova Scotia	6%
Newfoundland	2%
Yukon	1%
Nunavut	1%
Northwest Territories	1%
TOTAL	100%



## Mobility

<b>Province</b>	<b>Percentage of Responses (N=133)</b>
BC	40
Alberta	1
Saskatchewan	4
Manitoba	6
Ontario	21
Quebec	17
Prince Edward Island	1
New Brunswick	4
Nova Scotia	2
Newfoundland	2
Yukon	0
Nunavut	1
Northwest Territories	1
TOTAL	100%

## Vision

<b>Province</b>	<b>Percentage (N= 170)</b>
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<b>Province</b>	<b>Percentage (N= 170)</b>
BC	28
Alberta	5
Saskatchewan	3
Manitoba	4
Ontario	28
Quebec	16
Prince Edward Island	1
New Brunswick	11
Nova Scotia	2
Newfoundland	0
Yukon	1
Nunavut	0
Northwest Territories	1
TOTAL	100%

## Hearing

<b>Province</b>	<b>Percentage (N=34)</b>
BC	21
Alberta	0
Saskatchewan	9

<b>Province</b>	<b>Percentage (N=34)</b>
Manitoba	18
Ontario	21
Quebec	9
Prince Edward Island	3
New Brunswick	9
Nova Scotia	0
Newfoundland	9
Yukon	0
Nunavut	0
Northwest Territories	3
<b>TOTAL</b>	<b>100%</b>

## Cognitive

<b>Province</b>	<b>Percentage (N=55)</b>
BC	33
Alberta	2
Saskatchewan	4
Manitoba	11
Ontario	9

<b>Province</b>	<b>Percentage (N=55)</b>
Quebec	13
Prince Edward Island	2
New Brunswick	4
Nova Scotia	13
Newfoundland	7
Yukon	0
Nunavut	0
Northwest Territories	4
<b>TOTAL</b>	<b>100%</b>

### *Distribution of Male and Female Participants*

The distributions of male to female participants were fairly evenly distributed between the two genders for mobility, vision and hearing. Only those participants that self identified as having a cognitive impairment had a higher percentage of females as opposed to males (62% female and 38% male).

### Cumulative Results

<b>Gender</b>	<b>Percentages (N=385)</b>
Female	56%
Male	44%
<b>TOTAL</b>	<b>100%</b>

### Mobility

<b>Gender</b>	<b>Percentages (N = 131)</b>
Female	58%
Male	42%
TOTAL	100

## Vision

<b>Gender</b>	<b>Percentage (N = 167)</b>
Female	52%
Male	48%
TOTAL	100%

## Hearing

<b>Gender</b>	<b>Percentage (N = 33)</b>
Female	55
Male	45
TOTAL	100%

## Cognitive

<b>Gender</b>	<b>Percentage (N = 55)</b>
Female	62
Male	38
TOTAL	100%

## *Distribution of the level of disability of participants – mild, moderate and severe*

The distributions within each of the disability groups in regards to the level of disability was predominantly made up of participants who had moderate to severe levels of impairment in 3 of the 4 disability groups. The participants within the mobility impairment group had a higher number of participants with moderate (52%) and severe (38%) levels of impairment. Those participants who declared that they had a vision impairment also predominantly had a moderate (35%) or a severe (55%) level of disability. Of those who declared they had a

hearing impairment 45% had a moderate level and 38% had a severe level of impairment. Those participants who declared that they had a cognitive impairment predominantly declared they had a moderate level of impairment (50%) with the remainder of the participants equally divided between the mild and severe levels of impairment at 25%.

## Mobility

Level of Disability	Percentage (N = 132)
Mild	10
Moderate	52
Severe	38
TOTAL	100%

## Vision

Level of Disability	Percentage (N = 161)
Mild	10
Moderate	35
Severe	55
TOTAL	100%

## Hearing

Level of Disability	Percentage (N =29)
Mild	17
Moderate	45
Severe	38
TOTAL	100%

## Cognitive

Level of Disability	Percentage (N = 55)
Mild	25
Moderate	50
Severe	25
TOTAL	100%

## Financial Habits and Attitudes

### *Self-Declared Level of Financial Knowledge*

In general across all the disability groups approximately 50% of the participants in each group stated that they had a good or very good level of financial knowledge. Approximately 20% to 30% in most of the disability groups stated that their level of financial knowledge is “Alright” except for the participants who said they had cognitive impairments where only 7% said their financial knowledge was “Alright”. Participants who declared they had cognitive impairments had a higher percentage of participants (21%) who said they had a “Very Poor” level of financial knowledge versus the other groups where the numbers were in the middle to high single digits.

### Cumulative Results

Rating	Percentage (N = 394)
No Response	6%
Very Poor	9%
Poor	12%
Alright	23%
Good	28%
Very Good	22%
TOTAL	100%

## Mobility

<b>Rating</b>	<b>Percentage (N = 133)</b>
No Response	2%
Very Poor	10%
Poor	11%
Alright	28%
Good	29%
Very Good	20%
TOTAL	100%

## Vision

<b>Rating</b>	<b>Percentage (N = 171)</b>
No Response	8%
Very Poor	4%
Poor	11%
Alright	26%
Good	30%
Very Good	22%



<b>Rating</b>	<b>Percentage (N = 171)</b>
TOTAL	100%

## Hearing

<b>Rating</b>	<b>Percentage (N = 34)</b>
No Response	9%
Very Poor	6%
Poor	18%
Alright	21%
Good	35%
Very Good	12%
TOTAL	100%

## Cognitive

<b>Rating</b>	<b>Percentage (N = 56)</b>
No Response	5%
Very Poor	21%
Poor	11%
Alright	7%

<b>Rating</b>	<b>Percentage (N = 56)</b>
Good	18%
Very Good	38%
TOTAL	100%

### *Bank Account Ownerships*

Individuals that are under-banked or un-banked have proven difficult to engage. Through anecdotal in nature some of the organizations that provide services to individuals who have cognitive impairments have consistently stated that being able to qualify to open a bank account is one of the prominent challenges for this community of users.

Across all responses in this survey unbanked participants only represented 2% of people that filled out the survey. This number is at the low end of estimates among the general Canadian consumer population for unbanked or under banked individuals shown in previous studies done by other researchers. Given that only 2 surveys were filled out by phone as opposed to the online survey that requires internet access, the method of collecting data may have been a barrier to participants who were unbanked or under banked. Not having direct access to the appropriate contact lists nor having the staff to directly engage people that might be unbanked and under banked who might not be reach through the methods used to recruit participants for this study, it is difficult to determine what percentage of the disability community is unbanked or under banked.

### **Cumulative Results**

<b>Question 10: Do you have a bank account?</b>	<b>Percentage (N = 351)</b>
No	2
Yes	98
TOTAL	100%

## Mobility

<b>Question 10: Do you have a bank account?</b>	<b>Percentage (N = 132)</b>
No	1
Yes	99
TOTAL	100%

## Vision

<b>Question 10: Do you have a bank account?</b>	<b>Percentage (N = 169)</b>
No	1
Yes	99
TOTAL	100%

## Hearing

<b>Question 10: Do you have a bank account?</b>	<b>Percentage (N = 33)</b>
No	0
Yes	100
TOTAL	100%

## Cognitive

<b>Question 10: Do you have a bank account?</b>	<b>Percentage (N = 55)</b>
No	2
Yes	98
TOTAL	100%

## *Reasons For Not Having a Bank Account*

The absolute number of responses to why individuals might have no bank account was low enough that it is difficult to extrapolate strong trends from the data. The lack of proper identification to open a bank account and the cost of the monthly fees relative to the value of the bank transactions performed monthly have been identified in other studies. Participants give similar reasons here though even though the number of responses is small. Lack of proper identification, the cost of maintaining a bank account and a trusted representative or an appointed representative doing the banking on their behalf are the principle reasons put forward in the responses to this survey.

### Mobility

<b>Question 11: If you do not have a bank account please tell us why?</b>	<b>Number of Responses</b>
I lost my ID	1
My parents do my banking on my behalf	2
I am concerned about the cost – I have a chequing account. It cost \$5 per month plus \$1 for each withdrawal or debit over 5 per month	1

### Vision

<b>Question 11: If you do not have a bank account please tell us why?</b>	<b>Number of Responses</b>
* No responses *	0

### Hearing

<b>Question 11: If you do not have a bank account please tell us why?</b>	<b>Number of Responses</b>
* No responses *	0

## Cognitive

<b>Question 11: If you do not have a bank account please tell us why?</b>	<b>Number of Responses</b>
I am concerned about the cost – I have a chequing account. It cost \$5 per month plus \$1 for each withdrawal or debit over 5 per month.	1
I lost my ID	1
My father does the banking on my behalf	1

### *Problems Opening a Bank Account on Their Own*

For each of the major disability groups only a portion of the participants chose to respond to this question. For the participant that did respond a high percentage indicated that they did not have problems opening a bank account on their own [mobility (87%), vision (92%), and hearing (88%)]. Among the participants that self-declared as having a cognitive impairment 56% declared that they have no problems opening a bank account on their own. Though the number of participants with cognitive impairment answering this question was low in comparison to the total number of participants with cognitive impairment, the overall trend would support the anecdotal comments the researcher have received from organizations that provide support services to people with cognitive impairments.

## Cumulative Results

<b>Question 12: Have you had a problem opening a bank account on your own?</b>	<b>Percentage (N = 106)</b>
No, I have not had problems opening a bank account on my own.	85%
Yes, I have had a problem opening a bank account on my own.	15%
TOTAL (N = 106)	100%

## Mobility

<b>Question 12: Have you had a problem opening a bank account on your own?</b>	<b>Percentage (N = 31)</b>
No, I have not had problems opening a bank account on my own.	87
Yes, I have had a problem opening a bank account on my own.	13
<b>TOTAL (N = 31)</b>	<b>100%</b>

## Vision

<b>Question 12: Have you had a problem opening a bank account on your own?</b>	<b>Percentage (N = 51)</b>
No, I have not had problems opening a bank account on my own.	92
Yes, I have had a problem opening a bank account on my own.	8
<b>TOTAL</b>	<b>100%</b>

## Hearing

<b>Question 12: Have you had a problem opening a bank account on your own?</b>	<b>Percentage (N = 8)</b>
No, I have not had problems opening a bank account on my own.	88
Yes, I have had a problem opening a bank account on my own.	13
<b>TOTAL</b>	<b>100%</b>

## Cognitive

<b>Question 12: Have you had a problem opening a bank account on your own?</b>	<b>Percentage (N = 16)</b>
No, I have not had problems opening a bank account on my own.	56
Yes, I have had a problem opening a bank account on my own.	44
<b>TOTAL</b>	<b>100%</b>

### *No Bank Account Categorized by Level of Impairment*

Analyzing the results by level of disability across all disability groups there seem to be no defined relationship between the level of the disability and the ownership of a bank account..

## Mobility

<b>Disability Level</b>	<b>No, I don't have a bank account.</b>	<b>Yes, I have a bank account</b>
Mild	0%	10%
Moderate	0%	52%
Severe	1%	37%
<b>TOTAL</b>	<b>1%</b>	<b>99%</b>

## Vision

<b>Disability Level</b>	<b>No, I don't have a bank account.</b>	<b>Yes I have a bank account.</b>
Mild	0%	10%
Moderate	1%	34%
Severe	1%	54%
<b>TOTAL</b>	<b>2%</b>	<b>98%</b>

## Hearing

Disability Level	No, I don't have a bank account.	Yes I have a bank account.
Mild	0%	18%
Moderate	0%	43%
Severe	0%	39%
TOTAL	0%	100%

## Cognitive

Disability Level	No, I don't have a bank account.	Yes I have a bank account.
Mild	0.00%	26.00%
Moderate	2.00%	46.00%
Severe	0.00%	26.00%
TOTAL	2%	98%

## *Reason for not having a bank account categorized by level of impairment*

Among the participants that did not currently have a bank account there was no defined trend that correlated their level of disability to their likelihood of having a bank account.

## Mobility

Reason	Mild	Moderate	Severer	Total
I do not have a bank account. I have a credit union account which is probably what you mean but there is a difference.	1	0	0	1
I have a chequing account. My monthly fee is \$5, plus \$1 for	0	1	0	1



Reason	Mild	Moderate	Severer	Total
each withdrawal or debit over 5 per month. I have opened a RDSP recently and just signed and sent the paperwork back today. I put \$25 in and am applying for a grant from the Vancouver Foundation for \$75.				
I have no bank account because I do not trust banking institutions. I am on social assistance. When I did have a bank account, they used to put a hold on my funds constantly. I could never access my money for groceries or anything. I would have to phone the bank every month to get the hold released on my money. I would never	0	0	1	1

Reason	Mild	Moderate	Severer	Total
get any notice that this would happen. I would be in line trying to purchase groceries at the grocery store right after getting paid, only to be told that I had insufficient funds. I would have to phone the bank and ask them to release my money. This is an illegal practice, I know. But banks are not accountable to anyone. Now, I get my welfare cheque and I cash it and I only deal in cash now. I can be secure that I can use my money when and how I want reliably and if possible, I will never use an institution again.				
I just recently opened a bank account	1	0	0	1

Reason	Mild	Moderate	Severer	Total
but just for the sake of seeking my accessibility logo in which it is need to determine the location of my residency. At this moment am not using it yet since don't have any thing to put in it but if I have a job I will start using and save some.				
TOTAL # RESPONSES	2	1	1	4

## Vision

Reason	Mild	Moderate	Severe	Total
I do not trust banking institutions. I am on social assistance. When I did have a bank account, they used to put a hold on my funds constantly. I could never access my money for groceries or anything. I would have to	0	0	1	1

Reason	Mild	Moderate	Severe	Total
phone the bank every month to get the hold released on my money. I would never get any notice that this would happen. I would be in line trying to purchase groceries at the grocery store right after getting paid, only to be told that I had insufficient funds. I would have to phone the bank and ask them to release my money. This is an illegal practice, I know. But banks are not accountable to anyone. Now, I get my welfare cheque and I cash it and I only deal in cash now. I can be secure that I can use my money when and how I want reliably and if possible, I will never use an institution again.				
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>

Hearing

Reason	Mild	Moderate	Severer	Total
None	0	0	0	0
TOTAL	0	0	0	0

## Cognitive

Reason	Mild	Moderate	Severer	Total
I have a chequing account. My monthly fee is \$5, plus \$1 for each withdrawal or debit over 5 per month. I have opened a RDSP recently and just signed and sent the paperwork back today. I put \$25 in and am applying for a grant from the Vancouver Foundation for \$75.	0	1	0	1
I lost my ID and I have problems getting it	0	1	0	1
Mon père travaille dans une banque et il supervise mon compte avec moi - My father works in a bank and supervises my	1	0	0	1

Reason	Mild	Moderate	Severer	Total
account with me				
TOTAL	1	3	0	3

### *How many have a credit card?*

It is notable that 98% of respondents who have cognitive impairments do not have a credit card. Correspondingly a high number of respondents with vision (87%) and hearing impairment (82%) own credit cards. Interesting only 66% of participants who declared they had a mobility impairment and responded to this question had a credit card. Based on the responses to other questions in the survey there was no apparent reason for the lower credit card ownership among participants with mobility impairments. Being able to demonstrate “capacity” to handle their own finances in addition to having the credit history to qualify for a bank account may be reasons for the low number of participants with cognitive impairments not having credit cards (98%).

### Cumulative Results

Question 21: Do you have a credit card?	Percentages (N = 388)
No, I do not have a credit card.	33%
Yes, I have a credit card.	67%
TOTAL	100%

### Mobility

Question 21: Do you have a credit card?	Percentages (N =132)
No, I do not have a credit card.	34%
Yes, I have a credit card.	66%
TOTAL	100%

## Vision

<b>Question 21: Do you have a credit card?</b>	<b>Percentages (N = 167)</b>
No, I do not have a credit card.	13%
Yes, I have a credit card.	87%
TOTAL	100%

## Hearing

<b>Question 21: Do you have a credit card?</b>	<b>Percentages (N = 33)</b>
No, I do not have a credit card.	18%
Yes, I have a credit card.	82%
TOTAL	100%

## Cognitive

<b>Question 21: Do you have a credit card?</b>	<b>Percentages (N = 56)</b>
No, I do not have a credit card.	98%
Yes, I have a credit card.	2%
TOTAL	100%

## *Credit Card Ownership Categorized by Disability Level*

There does not seem to be a defined trend that correlates credit card ownership with the level of disability that the participant has. Only the hearing impaired participants showed a relationship between having a moderate level of disability and the lack of credit card ownership. Of those that do not own a credit cards 80% of those participants also had a moderate level of disability. Given the small number of participants that did not have a credit card among the participants with hearing impairment, the researchers believe that this result may be an outlier and is not indicative of a well-defined trend. A larger sample of participants would be required to determine the accuracy of this finding.

## Mobility

<b>Question 21: Do you have a credit card?</b>	<b>Mild</b>	<b>Moderate</b>	<b>Severe</b>	<b>Total</b>
No, I do not have a credit card	8	22	15	45
Percentage %	18%	49%	33%	100%
Yes, I have a credit card	5	46	35	86
Percentage %	6%	53%	41%	100%
<b>TOTAL</b>	13	68	50	131

## Vision

<b>Question 21: Do you have a credit card?</b>	<b>Mild</b>	<b>Moderate</b>	<b>Severe</b>	<b>Total</b>
No, I do not have a credit card	3	7	11	21
Percentage %	15%	33%	52%	
Yes, I have a credit card	13	50	73	136
Percentage %	10%	37%	53%	100%
<b>TOTAL</b>	16	57	84	157



## Hearing

Reason for Question 21: Do you have a credit card?	Mild	Moderate	Severe	Total
No, I do not have a credit card	0	4	1	5
Percentage %	0%	80%	20%	100%
Yes, I have a credit card	5	9	9	23
Percentage %	22%	39%	39%	100%
<b>TOTAL</b>	5	13	10	28

## Cognitive

Question 21: Do you have a credit card?	Mild	Moderate	Severe	Total
No, I do not have a credit card	9	16	8	33
Percentage %	27%	48%	25%	100%
Yes, I have a credit card	4	11	6	21
Percentage %	19%	52%	29%	100%
<b>TOTAL</b>	13	27	14	54

## *Reasons for Not Owning a Credit Card*

The reasons for not owning a credit card among a large percentage of the participants across all disability groups was “Not Seeing The Need For One” (35%), “Not Qualifying Due to Bad Credit” (28%), “Not Having A Secure Income” (16%) and “Not Wanting To Be In Debt” (12%). Smaller percentages of participants “Did Not Qualify due to Lack of A Credit History” (3%), “Not Wanting To be A Victim of Identity Theft” (3%) and “It Being Too Complicated” (3%). Similar trends existed within each of the individual disability groups though there were slight variations in the exact percentages for specific responds. It would be interesting to see if similar reasons and rankings exist among the general Canadian consumer population, but no data was found on this topic at the time this study was done.

## Cumulative

<b>Question 22: If you do not have a credit card why not?</b>	<b>Percentage (N = 61)</b>
I do not want one or I do not see a need for one	35%
I do not qualify due to lack of secure income	16%
I do not qualify due to bad credit	28%
I do not qualify due to lack of credit history	3%
I do not want to be in debt	12%
I was a victim of identity theft	3%
It is too complicated.	3%
<b>TOTAL (N = 61)</b>	<b>100%</b>

## Mobility

<b>Question 22: If you do not have a credit card why not?</b>	<b>Percentage (N = 27)</b>
I do not want one or I do not see a need for one.	33%
I do not qualify due to lack of secure income	19%

<b>Question 22: If you do not have a credit card why not?</b>	<b>Percentage (N = 27)</b>
I do not qualify due to bad credit	37%
I do not want to be in debt	11%
<b>TOTAL (N = 27)</b>	<b>100%</b>

## Vision

<b>Question 22: If you do not have a credit card why not?</b>	<b>Percentage (N = 15)</b>
I do not want one or I do not see a need for one	53.00%
I do not qualify due to lack of secure income	7.00%
I do not qualify due to bad credit	26%
I do not qualify due to lack of credit history	0.00%
I do not want to be in debt	7%
I was a victim of identity theft	7.00%
<b>TOTAL</b>	<b>100.00%</b>

## Hearing

<b>Question 22: If you do not have a credit card why not?</b>	<b>Percentage (N = 4)</b>
I do not want one or I do	0

<b>Question 22: If you do not have a credit card why not?</b>	<b>Percentage (N = 4)</b>
not see a need for one	
I do not qualify due to lack of secure income	25%
I do not qualify due to bad credit	25%
I do not qualify due to lack of credit history	25%
I do not want to be in debt	25%
I was a victim of identity theft	
<b>TOTAL</b>	100.00%

### Cognitive

<b>Question 22: If you do not have a credit card why not?</b>	<b>Percentage (N = 15)</b>
I do not want one or I do not see a need for one	27.00%
I do not qualify due to lack of secure income	20.00%
I do not qualify due to bad credit	13.00%
I do not qualify due to lack of credit history	7.00%
I do not want to be in debt	13.00%
I was a victim of identity theft	7.00%
It is too complicated	13.00%
<b>TOTAL</b>	100.00%

*Reason for not owning a credit card categorized by disability level?*

There is no strong defined trend that appears when you analyze the lack of credit card ownership and the level of disability across each of the disability groups.

## Mobility

Reason	Mild	Moderate	Severe	TOTAL
I do not want one or I do not see a need for one	1	5	2	8
I do not qualify due to lack of secure income	1	3	2	6
I do not qualify due to bad credit	1	3	2	6
I do not qualify due to lack of credit history	0	3	1	4
I do not want to be in debt	1	2	2	5
I was a victim of identity theft	0	0	0	0
It is too complicated	0	0	0	0
<b>TOTAL</b>	4	16	9	29

## Vision

Reason	Mild	Moderate	Severe	TOTAL
I do not want one or I do not see a need for one	1	1	6	8
I do not qualify due to lack of secure income	0	0	1	1
I do not qualify due to bad	0	2	2	4

Reason	Mild	Moderate	Severe	TOTAL
credit				
I do not qualify due to lack of credit history	0	0	0	0
I do not want to be in debt	0	1	0	1
I was a victim of identity theft	0	0	1	1
It is too complicated	0	0	0	0
<b>TOTAL</b>	1	4	10	15

## Hearing

Reason	Mild	Moderate	Severe	TOTAL
I do not want one or I do not see a need for one	0	0	0	0
I do not qualify due to lack of secure income	0	0	0	0
I do not qualify due to bad credit	0	2	0	2
I do not qualify due to lack of credit history	0	1	0	1
I do not want to be in debt	0	0	0	0
I was a victim of identity theft	0	0	0	0
It is too complicated	0	0	0	0
<b>TOTAL</b>	0	3	0	3

## Cognitive

Reason	Mild	Moderate	Severe	TOTAL
I do not want one or I do not see a need for one	1	3	0	4
I do not qualify due to lack of secure income	1	0	2	3
I do not qualify due to bad credit	0	3	0	3
I do not qualify due to lack of credit history	0	0	0	0
I do not want to be in debt	1	3	1	5
I was a victim of identity theft	0	0	1	1
It is too complicated	0	0	0	0
<b>TOTAL</b>	3	9	4	16

## Technology Related Issues

### *Types of Problems Using Credit Card/Bank card for Payment Transaction*

The responses have been categorized into major classes of problems to make the analysis easier.

### Mobility

Of the participants that had mobility impairments and had problems using their card with automatic banking machines or point of sale terminals 29% had problems reaching the terminals due to its positioning or the cable not being long enough for them to position the terminal appropriately for them to use. 23% had difficulty seeing the screen due to its position, the font style and type or the lighting. 11% had difficulty accessing the keyboard due to the presence of the privacy guard, not being able to see the keyboard due to its positioning or had problems activating the touch screen. 8% had concerns about their

privacy while using the terminal because they needed to disclose their PIN to a third party in order to have them activate the terminal on their behalf or were concern with someone looking over their shoulder and seeing their PIN as it was entered. 5% had problems inserting their card in the card slot or taking the card out of the card slot. An additional 5% had issues with the system timing out before they were able to complete their transaction. 3% had issues with remembering their PIN or found the process too complex. 2% had problems targeting the keys, had problems due to the size of the keys or had problems with the stiffness of the keys. 2% of participants had issues with physical access to the built-environment around the terminal. Those issues include lack of automated doors to facilitate access to the space, lack of ramps or finding suitable parking. An additional 2% had issues with dealing with the physical handling of cheques or cash. In addition 1% of participants also reported problems in each of the following categories: the weight of the point of sale terminal, the lack of fault tolerance in the design of the systems - i.e. can't deal with mistakes by the user well, lack of counter space to accommodate canes or to sign cheques, reading the printed receipts due to the faintness of the fonts, problems with the card reader failing and retailers not accepting cheques as a form of payment if the point of sale system does not work.

<b>Question 26: If you have had problems using a bank card, debit card, value card, pre-paid credit card, gift credit card or credit card due to your disability, tell us what problems you have encountered?</b>	<b>Percentage (N = 134)</b>
<b>REACH ISSUES</b>	<b>29.00%</b>
I can't reach the terminal	
I cannot move the terminal closer to me.	
The cord for the remote terminal is too short- I cannot hold the terminal easily the coiled cable pulls it away.	
<b>SCREEN VISIBILITY</b>	<b>22.00%</b>
I can't read the screen because of the position of the terminal – height, glare, and angle.	
I have problems reading the instructions on the screen.	
The font is hard to read.	
<b>KEYBOARD/TOUCH SCREEN ACCESS</b>	<b>11.00%</b>



<b>Question 26: If you have had problems using a bank card, debit card, value card, pre-paid credit card, gift credit card or credit card due to your disability, tell us what problems you have encountered?</b>	<b>Percentage (N = 134)</b>
<b>ISSUES</b>	
I can't access the keyboard because of the privacy guard.	
I cannot see the keypad.	
Activating the touch screen is difficult	
<b>KEYBOARD ACTIVATION ISSUES</b>	<b>2.00%</b>
The buttons are too small for me to activate.	
Keys are very stiff	
I have problems targeting the keys.	
<b>CARD SLOT ACCESS ISSUES</b>	<b>5.00%</b>
I have a hard time putting the card in the slot or swiping the card.	
I have problems taking my card out of the reader on terminal	
<b>PRIVACY ISSUES</b>	<b>8.00%</b>
There is no privacy as someone care look over my shoulder.	
I have privacy concerns because I have to disclose my PIN to someone else.	
I need to rely on another person to enter my PIN.	
<b>TERMINAL WEIGHT</b>	<b>1.00%</b>
Terminal is hard to handle due to its weight.	
<b>LACK OF FAULT</b>	<b>1.00%</b>

<b>Question 26: If you have had problems using a bank card, debit card, value card, pre-paid credit card, gift credit card or credit card due to your disability, tell us what problems you have encountered?</b>	<b>Percentage (N = 134)</b>
<b>TOLERANCE ISSUES</b>	
The system does not tolerate multiple mistakes easily. I got locked out.	
<b>PHYSICAL SPACE ACCESS ISSUES</b>	<b>3.00%</b>
I have problems access the physical space that contained the terminal.	
I cannot access the physical space - use the ramp when it is icy.	
No automatic door to provide access.	
I can't always find accessible parking.	
<b>MEMORY ISSUES</b>	<b>3%</b>
I have problems remembering my PIN.	
The process is too complicated to use.	
I forgot my card at the ATM. When I replaced the card I had to use a new PIN and it was a challenge to remember.	
Also sometimes I forget stuff and lose my train of thought.	
<b>TRANSACTION TIME ISSUES</b>	<b>5.00%</b>
I need extra time to complete my transaction – the terminal times out	
It takes a long time for me to enter my PIN.	
<b>DEALING WITH</b>	<b>2.00%</b>

<b>Question 26: If you have had problems using a bank card, debit card, value card, pre-paid credit card, gift credit card or credit card due to your disability, tell us what problems you have encountered?</b>	<b>Percentage (N = 134)</b>
<b>PHYSICAL CASH OR CHEQUE ISSUES</b>	
I have problems dealing with the deposit envelopes.	
I have trouble putting my money away in my purse.	
I have difficulty putting my deposit in the envelope.	
<b>LACK OF COUNTER SPACE ISSUES</b>	<b>1.00%</b>
There is not convenient counter space accessible if I need to sign a receipt.	
No counter space to put things on if you are using a cane or crutch. - pull out shelf	
<b>LEGAL ACCESS ISSUES</b>	<b>1%</b>
<b>PRINTED RECEIPT ISSUES</b>	<b>1.00%</b>
The print on the receipt is too very faint and hard to read.	
<b>CHEQUE CASHING ISSUES</b>	<b>1.00%</b>
The retailer does not accept cheques as an alternative method of payment if I cannot use the terminal.	
<b>CARD READER PROBLEMS</b>	<b>1.00%</b>
The terminal does not read the chip properly sometimes.	
<b>Other</b>	<b><u>3.00%</u></b>

<b>Question 26: If you have had problems using a bank card, debit card, value card, pre-paid credit card, gift credit card or credit card due to your disability, tell us what problems you have encountered?</b>	<b>Percentage (N = 134)</b>
I prefer the NFC or contact-less payment method.	
Pre-paid cards are good because you do not need a PIN.	
I cannot have just anyone help me due to restricted power of attorney.	
<b>TOTAL</b>	<b>100.00%</b>

## Vision

Among those participants who declared they had a vision impairment and reported having a problem with using a bank card or credit card to complete a payment the problems with the most frequent responses were: lack of screen visibility issues (29%), keyboard or touchscreen activation issues (22.5%). concern about privacy issues (14.5%), the lack of standardized layout of the terminals (11%) and the lack of audio feedback (8%). As expected all these issues correspond with not being able to see the information on the display and the keypad or touch screen.

<b>Question 26: If you have had problems using a bank card, debit card, value card, pre-paid credit card, gift credit card or credit card due to your disability, tell us what problems you have encountered?</b>	<b>Percentage (N = 187)</b>
<b>REACH ISSUES</b>	2.00%
<b>SCREEN VISIBILITY</b>	29.00%
<b>KEYBOARD/TOUCH SCREEN ACCESS ISSUES</b>	0.00%
<b>PROBLEMS DISCERNING BETWEEN CARDS</b>	0.50%
<b>KEYBOARD /TOUCH ACTIVATION ISSUES</b>	22.50%
<b>CARD SLOT ACCESS ISSUES</b>	1.00%
<b>PRIVACY ISSUES</b>	14.50%
<b>TERMINAL WEIGHT</b>	0.00%
<b>LACK OF FAULT TOLERANCE ISSUES</b>	0.50%
<b>PHYSICAL SPACE ACCESS ISSUES</b>	0.00%
<b>MEMORY ISSUES</b>	1.50%
<b>TRANSACTION TIME ISSUES</b>	2.50%
<b>CONTACT-LESS PAYMENT ISSUES</b>	1.00%
<b>DEALING WITH PHYSICAL CASH ISSUES</b>	0.00%
<b>PRE-PAID CARD ISSUES</b>	0.00%
<b>LACK OF COUNTER SPACE ISSUES</b>	0.00%
<b>LEGAL ACCESS ISSUES</b>	0.00%
<b>PRINTED RECEIPT ISSUES</b>	0.00%
<b>CHEQUE CASHING ISSUES</b>	0.00%

<b>Question 26: If you have had problems using a bank card, debit card, value card, pre-paid credit card, gift credit card or credit card due to your disability, tell us what problems you have encountered?</b>	<b>Percentage (N = 187)</b>
<b>CARD READER PROBLEMS</b>	0.50%
<b>LANGUAGE PROBLEMS</b>	0.50%
<b>LACK OF STANDARDIZED PROCESS</b>	2.50%
<b>PROBLEMS LOCATING THE CARD SLOT</b>	0.50%
<b>NO AUDIO FEEDBACK</b>	8.00%
<b>LACK OF STANDARDIZE LAYOUT OF THE TERMINAL</b>	11.00%
<b>ISSUES WITH THE PHYSICAL CARD</b>	0.50%
<b>PEOPLE NOT COOPERATIVE I N DEALING WITH ACCESSIBILITY ISSUES</b>	1.50%
<b>TOTAL</b>	100.00%

## Hearing

In analyzing the result of the participants who had some form of hearing impairment and had problems using a bank card or credit card with a payment terminal, it appears their particular issues were not directly tied to limitations placed on them by their disability. Some of this may be due to the fact that some of the participants in this group had multiple disabilities. 33.5% of participants had problems seeing the screen or some element on the screen. 17% had issues with not being able to recover when they had made a mistake - Lack of Fault Tolerance in the Design of the System. An additional 11% of participants had issues in each of the following categories: Getting Access to the Keyboard or Touch Screen, Having Sufficient Time To Complete Their Transaction and Having Concerns with Privacy. In addition

5.5% of participants had issues in each of these categories: Issues Reaching the Terminal, Memory Issues (remembering their PIN or with the complexity of the system) or had issues with the Lack OF TTY/Video Relay Support when they did run into a problem completing a transaction.

<b>Question 26: If you have had problems using a bank card, debit card, value card, pre-paid credit card, gift credit card or credit card due to your disability, tell us what problems you have encountered?</b>	<b>Percentage (N = 18)</b>
<b>REACH ISSUES</b>	5.50%
<b>SCREEN VISIBILITY</b>	33.50%
<b>KEYBOARD/TOUCH SCREEN ACCESS ISSUES</b>	11.00%
<b>PROBLEMS DISCERNING BETWEEN CARDS</b>	0.00%
<b>KEYBOARD /TOUCH ACTIVATION ISSUES</b>	0.00%
<b>CARD SLOT ACCESS ISSUES</b>	0.00%
<b>PRIVACY ISSUES</b>	11.00%
<b>TERMINAL WEIGHT</b>	0.00%
<b>LACK OF FAULT TOLERANCE ISSUES</b>	17.00%
<b>PHYSICAL SPACE ACCESS ISSUES</b>	0.00%
<b>MEMORY ISSUES</b>	5.50%
<b>TRANSACTION TIME ISSUES</b>	11.00%
<b>CONTACT-LESS PAYMENT ISSUES</b>	0.00%
<b>DEALING WITH PHYSICAL CASH ISSUES</b>	0.00%
<b>PRE-PAID CARD ISSUES</b>	0.00%
<b>LACK OF COUNTER SPACE ISSUES</b>	0.00%
<b>LEGAL ACCESS ISSUES</b>	0.00%

<b>Question 26: If you have had problems using a bank card, debit card, value card, pre-paid credit card, gift credit card or credit card due to your disability, tell us what problems you have encountered?</b>	<b>Percentage (N = 18)</b>
<b>PRINTED RECEIPT ISSUES</b>	0.00%
<b>CHEQUE CASHING ISSUES</b>	0.00%
<b>CARD READER PROBLEMS</b>	0.00%
<b>LANGUAGE PROBLEMS</b>	0.00%
<b>LACK OF STANDARDIZED PROCESS</b>	0.00%
<b>PROBLEMS LOCATING THE CARD SLOT</b>	0.00%
<b>NO AUDIO FEEDBACK</b>	0.00%
<b>LACK OF STANDARDIZE LAYOUT OF THE TERMINAL</b>	0.00%
<b>ISSUES WITH THE PHYSICAL CARD</b>	0.00%
<b>PEOPLE NOT COOPERATIVE I N DEALING WITH ACCESSIBILITY ISSUES</b>	0.00%
<b>LACK OF TTY/VIDEO RELAY SUPPORT</b>	5.50%
<b>TOTAL</b>	<b>100.00%</b>

## Cognitive

Of the participants who had cognitive impairments and reported having problems with completing a payment using a bank card or credit card at a terminal 39% reported having memory related issues such as remembering their PIN number or having difficulties due to the complexity of the payment process. 13% had concerns about the privacy and security of



the transactions. Interestingly 8% had concerns about reaching the payment terminal, this result may be due to the fact that those particular participants had multiple disabilities. 4.5% also had problems with each of the following issues: activating the keyboard or touch screen, the lack of ability of the systems to deal with mistakes (in some cases there was no way to recover), there not being enough time to complete the transaction before the system timed out, the lack of standardized terminal layouts, the lack of audio feedback to guide them through the process and the lack of support from customer service staff (they were not allowed to provide assistance).

<b>Question 26: If you have had problems using a bank card, debit card, value card, pre-paid credit card, gift credit card or credit card due to your disability, tell us what problems you have encountered?</b>	<b>Percentage (N = 23)</b>
<b>REACH ISSUES</b>	8.00%
<b>SCREEN VISIBILITY</b>	13.00%
<b>KEYBOARD/TOUCH SCREEN ACCESS ISSUES</b>	4.50%
<b>PROBLEMS DISCERNING BETWEEN CARDS</b>	0.00%
<b>KEYBOARD /TOUCH ACTIVATION ISSUES</b>	0.00%
<b>CARD SLOT ACCESS ISSUES</b>	0.00%
<b>PRIVACY ISSUES</b>	13.00%
<b>TERMINAL WEIGHT</b>	0.00%
<b>LACK OF FAULT TOLERANCE ISSUES</b>	4.50%
<b>PHYSICAL SPACE ACCESS ISSUES</b>	0.00%
<b>MEMORY ISSUES</b>	39.00%

<b>Question 26: If you have had problems using a bank card, debit card, value card, pre-paid credit card, gift credit card or credit card due to your disability, tell us what problems you have encountered?</b>	<b>Percentage (N = 23)</b>
<b>TRANSACTION TIME ISSUES</b>	4.50%
<b>CONTACT-LESS PAYMENT ISSUES</b>	0.00%
<b>DEALING WITH PHYSICAL CASH ISSUES</b>	0.00%
<b>PRE-PAID CARD ISSUES</b>	0.00%
<b>LACK OF COUNTER SPACE ISSUES</b>	0.00%
<b>LEGAL ACCESS ISSUES</b>	0.00%
<b>PRINTED RECEIPT ISSUES</b>	0.00%
<b>CHEQUE CASHING ISSUES</b>	0.00%
<b>CARD READER PROBLEMS</b>	0.00%
<b>LANGUAGE PROBLEMS</b>	0.00%
<b>LACK OF STANDARDIZED PROCESS PROBLEMS</b>	0.00%
<b>LOCATING THE CARD SLOT</b>	0.00%
<b>NO AUDIO FEEDBACK</b>	4.50%
<b>LACK OF</b>	4.50%

<b>Question 26: If you have had problems using a bank card, debit card, value card, pre-paid credit card, gift credit card or credit card due to your disability, tell us what problems you have encountered?</b>	<b>Percentage (N = 23)</b>
<b>STANDARDIZE LAYOUT OF THE TERMINAL ISSUES WITH THE PHYSICAL CARD PEOPLE NOT COOPERATIVE I N DEALING WITH ACCESSIBILITY ISSUES</b>	0.00%
<b>TOTAL</b>	<b>100.00%</b>

*How often does someone need to help you complete a credit card or bank card transaction?*

Interestingly appropriate 98% of participants did not answer this question regardless of what category of disability they identified themselves as being in. Interestingly approximate 98% of participants did not answer this question regardless of what category of disability they identified themselves as being in. This might be because they do not remember the frequency with which they need help or that they do not receive help when they run into an issue.

Mobility

<b>Question 28: How often does someone need to help you complete a payment or banking activity using a terminal because you cannot do it on your own?</b>	<b>Percentage (N = 131)</b>
Never	0%
Once In A While	1%
Quite Often	0%
Always	0%
Other: If I cannot complete a transaction, I go shop somewhere else. I do not give my PIN to anyone.	0%
No response	99%
<b>TOTAL</b>	<b>100%</b>

## Vision

<b>Question 28: How often does someone need to help you complete a payment or banking activity using a terminal because you cannot do it on your own?</b>	<b>Percentage (N = 0)</b>
Never	0%
Once In A While	0%
Quite Often	0%
Always	1%
<b>Other:</b> I do not use a debit card for this reason. I pay using a signature credit card.	0%
<b>Other:</b> Not any longer as noted above. If I can't pay for it independently, I will go elsewhere to purchase it.	0%
No response	99%
<b>TOTAL</b>	<b>100%</b>

## Hearing

<b>Question 28: How often does someone need to help you complete a payment or banking activity using a terminal because you cannot do it on your own?</b>	<b>Percentage (N = 34)</b>
Never	0%
Once In A While	0%
Quite Often	0%
Always	0%
<b>Other:</b>	0%
No response	100%
<b>TOTAL</b>	<b>100%</b>

## Cognitive

<b>Question 28: How often does someone need to help you complete a payment or banking activity using a terminal because you cannot do it on your own?</b>	<b>Percentage (N= 56)</b>
Never	0%
Once In A While	0%
Quite Often	0%
Always	0%
<b>Other:</b> Not any longer as noted above. If I can't pay for it independently, I will go elsewhere to purchase it.	2%
No response	98%
<b>TOTAL</b>	<b>100%</b>

## *Experience Using a Contact-less Payment Systems*

Across all the disability groups the number of participants having experience in using a contact-less payment system was low. Approximately 66% of participants that identified themselves as having a mobility related, a hearing related or a vision related impairment stated that they had not used a contact-less payment system in the past. 80% of participants with cognitive impairments stated they had not used a contact-less payment system. This last result might be explained by the low ownership of credit cards among this group of participants and the modest proliferation of contact-less technology to date in Canada.

### Cumulative Results

<b>Question 29: Have you used one of the payment methods where you just wave your credit card, bank card, key fob or mobile phone near a payment terminal but don't have to touch the terminal?</b>	<b>Percentages (N = 347)</b>
No	68%
Yes	32%
<b>Total</b>	<b>100%</b>

### Mobility

<b>Question 29: Have you used one of the payment methods where you just wave your credit card, bank card, key fob or mobile phone near a payment terminal but don't have to touch the terminal?</b>	<b>Percentages (N = 125)</b>
No	66%
Yes	34%
<b>Total</b>	<b>100%</b>

### Vision

<b>Question 29: Have you used one of the payment methods where you just wave your credit card, bank card, key fob or mobile phone near a payment terminal but don't have to touch the terminal?</b>	<b>Percentages (N = 141)</b>
No	66%
Yes	34%
Total	100%

## Hearing

<b>Question 29: Have you used one of the payment methods where you just wave your credit card, bank card, key fob or mobile phone near a payment terminal but don't have to touch the terminal?</b>	<b>Percentages (N = 20)</b>
No	67%
Yes	33%
<b>Total</b>	<b>100%</b>

## Cognitive

<b>Question 29: Have you used one of the payment methods where you just wave your credit card, bank card, key fob or mobile phone near a payment terminal but don't have to touch the terminal?</b>	<b>Percentages (N = 51)</b>
No	80%
Yes	20%
<b>Total</b>	<b>100%</b>

### *Problems with Contact-less Payment System*

In interpreting these results it is important to keep in mind that only less than one third of participants in this survey had previous experience with contact-less payment systems. Though not a new technology it appears to be slow to be deployed broadly by retailers. In addition the researchers note that there may still be a high level of distrust of the systems in regards to privacy and security on the part of all consumers.

### **Mobility**

For those participants with mobility impairments, issues involving positioning relative to the terminal had the most responses with 43% stating that they have problems reaching the terminal in order to use it and 25% having issues with seeing the display or the keypad due to the position of the terminal relative to their eye level. 14% were concerned about their privacy either because they were afraid someone would look over their shoulder and see them entering their PIN or because they need to rely on someone else to enter the PIN for them. 11% said they were totally dependent on staff to handle the transaction for them as they were not able to do it for themselves. 3.5% had issues with the technology failing to accept their transaction due to a problem with the system. 3.5% liked the technology but had issues with the limit of each transaction they could perform.



<b>Question 30: If you have used one of the payment methods where you don't have to touch the terminal directly did you have any problems using the system that are related to your disability?</b>	<b>Percentage (N = 28)</b>
ISSUES REACHING THE TERMINAL	43%
ISSUES SEEING THE TERMINAL DISPLAY OR KEYS	25%
TOTALLY DEPENDENT ON STAFF TO DO IT	11%
PRIVACY ISSUES	14%
PAYMENT LIMIT ISSUES	3.5%
TECHNOLOGY FAILURE	3.5%
<b>TOTAL</b>	<b>100%</b>

## Vision

52% of participants with vision impairments had problems seeing the terminal display and interacting with the keypad or touch screen. 14% were concerned about the lack of security as they could not see the amount being entered for them to pay, were concerned about people seeing them enter their PIN or were dependent on others to complete the transaction for them and as such they had to disclose their pass word. 9% had a problem locating a terminal that they could use and was accessible to them. 5% of participants had problems with the following issues: they were concerned about the lack of confirmation about the amount they paid as they could not see the display and no audio feedback was provided, had no idea how to use the terminal as no appropriate information was provided, did not know the option was available when they went to pay and no one told them it was available and were concerned that they need to have the cashier complete the transaction for them and therefore had to disclose information that should be secure.

<b>Question 30: If you have used one of the payment methods where you don't have to touch the terminal directly did you have any problems using the system that are related to your disability?</b>	<b>Percentage (N = 21)</b>
ISSUES REACHING THE TERMINAL	5%
ISSUES SEEING THE TERMINAL DISPLAY OR KEYS	52%
TOTAL DEPENDENT ON STAFF TO DO IT	0%
PRIVACY ISSUES	0%
PAYMENT LIMIT ISSUES	0%
TECHNOLOGY FAILURE	0%
NO STANDARD LOCATION TO WAVE THE CARD	0%
NO CONFIRMATION OF THE TRANSACTION	5%
LACK OF INFORMATION ON HOW TO USE IT	5%
LACK OF SECURITY	14%
PROBLEM LOCATING THE TERMINAL	9%
THE CASHIER NEEDS TO HELP ME	5%
I DO NOT KNOW THE SERVICE IS AVAILABLE AT THE STORE	5%
<b>TOTAL</b>	<b>100%</b>

Hearing

There was only a small number of participants who had hearing impairments and had problems using payment terminals. One third of these participants had problems seeing the terminal display or keypad, one third were unsure where they needed to wave their card in order to complete the transaction and one third had problems using the keypad or touch screen. These issues are not specifically related to the specific functional limitations of the principal disability of this group of participants. The researchers believe the discrepancy is due to the fact that some of the participants in this group have multiple disabilities.

<b>Question 30: If you have used one of the payment methods where you don't have to touch the terminal directly did you have any problems using the system that are related to your disability?</b>	<b>Percentage (N = 3)</b>
ISSUES REACHING THE TERMINAL	0%
ISSUES SEEING THE TERMINAL DISPLAY OR KEYS	33.3%
TOTAL DEPENDENT ON STAFF TO DO IT	0%
PRIVACY ISSUES	0%
PAYMENT LIMIT ISSUES	0%
TECHNOLOGY FAILURE	0%
NO STANDARD LOCATION TO WAVE THE CARD	33.3%
NO CONFIRMATION OF THE TRANSACTION	0%
LACK OF INFORMATION ON HOW TO USE IT	0%
LACK OF SECURITY	0%
PROBLEM LOCATION THE TERMINAL	0%
THE CASHIER NEEDS TO HELP ME	0%
I DO NOT KNOW THE	0%

<b>Question 30: If you have used one of the payment methods where you don't have to touch the terminal directly did you have any problems using the system that are related to your disability?</b>	<b>Percentage (N = 3)</b>
SERVICE IS AVAILABLE AT THE STORE	
PROBLEM USING KEYPAD/TOUCH SCREEN	33.3%
<b>TOTAL</b>	<b>100%</b>

## Cognitive Impairment

The participants in the cognitive impairment group that had problems with contact-less payment had similar results as those with hearing impairment. There was only a small number of participants who had cognitive impairments that had problems using payment terminals. One third of these participants had problems seeing the terminal display or keypad, one third were unsure where they needed to wave their card in order to complete the transaction and one third had problems using the keypad or touch screen. These issues are not specifically related to the specific functional limitations of the principal disability of this groups of participants. The researchers believe the discrepancy is due to the fact that some of the participants in this group have multiple disabilities

<b>Question 30: If you have used one of the payment methods where you don't have to touch the terminal directly did you have any problems using the system that are related to your disability?</b>	<b>Percentage (N = 3)</b>
ISSUES REACHING THE TERMINAL	0%
ISSUES SEEING THE TERMINAL DISPLAY OR KEYS	33.3%

<b>Question 30: If you have used one of the payment methods where you don't have to touch the terminal directly did you have any problems using the system that are related to your disability?</b>	<b>Percentage (N = 3)</b>
TOTAL DEPENDENT ON STAFF TO DO IT	0%
PRIVACY ISSUES	0%
PAYMENT LIMIT ISSUES	0%
TECHNOLOGY FAILURE	0%
NO STANDARD LOCATION TO WAVE THE CARD	33.3%
NO CONFIRMATION OF THE TRANSACTION	0%
LACK OF INFORMATION ON HOW TO USE IT	0%
LACK OF SECURITY	0%
PROBLEM LOCATION THE TERMINAL	0%
THE CASHIER NEEDS TO HELP ME	0%
I DO NOT KNOW THE SERVICE IS AVAILABLE AT THE STORE	0%
PROBLEM USING KEYPAD/TOUCH SCREEN	33.3%
TOTAL	100%

*How often does someone help you when you have a problem with contact-less cards?*

Across all disability categories over 98% of participants did not answer this question. Of the participants that did answer, a number of participants mentioned that they did not know what a contact-less payment terminal was, did not trust it as a form of payment, that they could not locate the terminal on their own due to their vision impairment or found that it was not fully accessible as it did not provide audio feedback of the process. Though the number of

responses is small in regards to needing help and why that participant needs help it is important to point out that these issues need further research to determine the rationale behind the issues.

## Cumulative Results

<b>Question 32: How often does someone need to help you complete a payment or banking activity using a contact-less card because you are not able to do it on your own?</b>	<b>Percentages (N = 393)</b>
Never	0%
Once in a while	0%
Quite often	0%
Always	0%
Never	0%
NO ANSWER	98%
Others	2%
<b>TOTAL</b>	<b>100%</b>

## Mobility Impairment

<b>Question 32: How often does someone need to help you complete a payment or banking activity using a contact-less card because you are not able to do it on your own?</b>	<b>Percentage (N = 133)</b>
Never	0%
Once in a while	0%
Quite often	0%
Always	0%
Never	0%
NO ANSWER	98%
Other: I don't trust this	1%
Other: have never seen one yet	1%

<b>Question 32: How often does someone need to help you complete a payment or banking activity using a contact-less card because you are not able to do it on your own?</b>	<b>Percentage (N = 133)</b>
<b>TOTAL</b>	<b>100%</b>

## Vision Impairment

<b>Question 32: How often does someone need to help you complete a payment or banking activity using a contact-less card because you are not able to do it on your own?</b>	<b>Percentage (N = 170)</b>
Never	0%
Once in a while	0%
Quite often	0%
Always	0%
Never	0%
NO ANSWER	98%
Other: Again, they are not fully accessible with audio or lle.	0.5%
Other: Have never used it.	0.5%
Other: I don't know what you mean by contact-less	0.5%
Other: I need assistance to locate the terminal.	0.5%
<b>TOTAL</b>	<b>100%</b>

## Hearing Impairment

<b>Question 32: How often does someone need to help you complete a payment or banking activity using a contact-less card because you are not able to do it on your own?</b>	<b>Percentage (N = 34)</b>
Never	0%
Once in a while	0%
Quite often	0%
Always	0%
Never	0%
NO ANSWER	100%
Other:	0%
<b>TOTAL</b>	<b>100%</b>

#### Cognitive Impairment

<b>Question 32: How often does someone need to help you complete a payment or banking activity using a contact-less card because you are not able to do it on your own?</b>	<b>Percentage (N = 56)</b>
Never	0%
Once in a while	0%
Quite often	0%
Always	0%
Never	0%
NO ANSWER	98%
Other: Again, they are not fully accessible with audio or lle.	2%
<b>TOTAL</b>	<b>100%</b>



## *Frequency of Credit Card or Bank Card Usage*

The most frequent answer to how often the participants used their bank card or credit card to complete a payment transaction was “I use my card a few times per week”. Approximately 50% of all participants across all disability groups provided that answer. The majority of other participants used their card “once a day” or “once a week”. This indicates a high level of frequency of use of credit cards and bank cards and given that frequency the need to ensure accessibility of existing technology is highlighted by this finding.

### Cumulative Results

<b>Question 33: How often do you use a bank card, debit card, value card, pre-paid credit card, gift card or credit card? Choose one from the list below?</b>	<b>Percentage (N = 365)</b>
I use my card everyday	17%
I use my card a few times a week	54%
I use my card once a week	13%
I use my card once a month	7%
I use my card once every few months	3%
I seldom use my card.	4%
Other:	2%
<b>TOTAL</b>	<b>100%</b>

### Mobility Impairment

<b>Question 33: How often do you use a bank card, debit card, value card, pre-paid credit card, gift card or credit card? Choose one from the list below?</b>	<b>Percentage (N = 130)</b>
I use my card everyday	15%

<b>Question 33: How often do you use a bank card, debit card, value card, pre-paid credit card, gift card or credit card? Choose one from the list below?</b>	<b>Percentage (N = 130)</b>
I use my card a few times a week	49%
I use my card once a week	14%
I use my card once a month	7%
I use my card once every few months	6%
I seldom use my card.	5%
Other: Coins quickly become heavy and hard to carry, and it's also hard for me to get to and use bank machines so I use my cards far more than I'm comfortable with. It makes it hard to keep track of my budget.	4%
<b>TOTAL</b>	<b>100%</b>

## Vision Impairment

<b>Question 33: How often do you use a bank card, debit card, value card, pre-paid credit card, gift card or credit card? Choose one from the list below?</b>	<b>Percentages (N = 162)</b>
I use my card everyday	20%
I use my card a few times a week	59%
I use my card once a week	14%

<b>Question 33: How often do you use a bank card, debit card, value card, pre-paid credit card, gift card or credit card? Choose one from the list below?</b>	<b>Percentages (N = 162)</b>
I use my card once a month	4%
I use my card once every few months	1%
I seldom use my card.	2%
Other: When I get the opportunity to get out due to the lack of transportation where I live.	1%
<b>TOTAL</b>	<b>100%</b>

## Hearing Impairment

<b>Question 33: How often do you use a bank card, debit card, value card, pre-paid credit card, gift card or credit card? Choose one from the list below?</b>	<b>Percentage (N = 23)</b>
I use my card everyday	39%
I use my card a few times a week	44%
I use my card once a week	0%
I use my card once a month	17%
I use my card once every few months	0%
I seldom use my card.	0%
Other:	0%

<b>Question 33: How often do you use a bank card, debit card, value card, pre-paid credit card, gift card or credit card? Choose one from the list below?</b>	<b>Percentage (N = 23)</b>
TOTAL	100%

### Cognitive Impairment

<b>Question 33: How often do you use a bank card, debit card, value card, pre-paid credit card, gift card or credit card? Choose one from the list below?</b>	<b>Percentage (N = 54)</b>
I use my card everyday	5.5%
I use my card a few times a week	52%
I use my card once a week	13%
I use my card once a month	11%
I use my card once every few months	2%
I seldom use my card.	5.5%
Other:	11%
TOTAL	100%

### *Other Concerns about Payment Terminals*

## Mobility Impairment

For participants with mobility impairments “security issues” represented 33.5% of the responses. These issues ranged from concerns over others being able to see them enter their PIN, the perception that it is easy to “hack” the system, the fear that the contact-less systems are not secure as there is no PIN to enter to illegal cloning of their card information. 13.5% of responses concerned issues on being able to reach the terminal to operate it. There were a number of comments about the terminals being bolted down or the cord not being long enough to accommodate the range of reach of the participant. 9% had issues seeing the font on the terminal display because it was too small or the keyboard was above the height that it could be easily viewed making completing the transaction difficult. 7% had problems with the built-environments (clearance around the counter etc ...) around the terminals. Problems ranged from not having enough space to manoeuvre to properly orient themselves to the terminal and not being able to get close enough to the terminal because they were in a wheelchair to not having chairs available to sit down while they wait for a free terminal because they cannot stand very long. The following issues represented 1.5% of the responses each: the keyboards on the terminal being difficult to use because the keys were not large enough, the terminal not allotting sufficient time for the participant to complete the transaction before they process timed-out, the lack of audio feedback, the transaction fee cost of completing a transaction at a payment terminal, the lack of standardization around the design of terminals which lead to an inconsistent experience in regards to accessibility at different stores, issues with not being able to deal with mistakes in transactions easily and being forced to rely on a third party to complete a transaction. 25% of the responses to the question involved issues that were not technology related accessibility issues and therefore they were categorized as “Other”.

<b>Question 34: Do you have any other concerns about using payment terminals?</b>	<b>Percentage (N = 60)</b>
REACH ISSUES	13.5%
KEYBOARD/TOUCH SCREEN ISSUES	1.50%
VISIBILITY ISSUES	9%
SECURITY ISSUES	33.5%
INSUFFICIENT TIME ISSUES	1.5%
LACK OF AUDIO FEEDBACK ISSUES	1.5%
COST OF USING THE CARD TO PERFORM A TRANSACTION	1.5%
LACK OF STANDARDIZED TERMINAL ISSUES	1.5%
LACK OF RE-COURSE WHEN THE ELECTRONIC	1.5%

<b>Question 34: Do you have any other concerns about using payment terminals?</b>	<b>Percentage (N = 60)</b>
TRANSACTION MALFUNCTIONS	
PROBLEMS WITH THE BUILT ENVIRONMENT	7.0%
I NEED TO RELY OF SOMEONE TO PERFORM THE TRANSACTION FOR ME	1.5%
AUDIO FEEDBACK WORKS WELL	1.5%
OTHER	25%
<b>TOTAL</b>	<b>100%</b>

## Vision Impairment

Among participants with vision impairments the “Lack of Standardized Layouts of the Terminals” received the most responses at 21.5%. Issues identified include the lack of standardized designs making it difficult to learn the layout of the terminals, not having a standard audio prompts to indicate when to move on to the next step or to remove the card, not knowing which way to insert the card or where, not being able to locate the headphone jack on audio response enabled terminals, trouble orienting themselves to the terminal if there are additional function buttons, trouble seeing the display and keyboard due to lack of standardized large font size and style with high contrast, not being confident the transaction has occurred correctly, not being able to follow the instructions properly as they could not remember the steps that they were supposed to complete or what step they just did and the machines not having arrows that go back a step. “Security Related Issues” got the second most number of responses at 19%. The issues identified were a lack of trust in contact-less terminals due to lack of PIN meaning that anyone can use the card if it is lost, the lack of privacy as a result of the touch screen not being able to be read by participants with vision impairments and therefore having to disclose their PIN to a third party or having to rely on the cashier to enter the right amount and concern about the security of the wireless technology in contact-less terminals.

13% of responses from participants had concerns about the lack of audio feedback on the terminals because they could not see the terminal display very well or at all. Issues included: not always being able to hear the beeps when a pin number was enter so that the user was not sure if the activation keys had been pressed hard enough, not being able to tell what amount was being charged and therefore not detecting mistakes, a lack of audio jacks and issues with the default volume of audio prompts.

“Issues Accessing the Keyboard or Touch Screen” received 12% of the responses. The issues identified by participants were: having issues with the touch screens as they could not tell where to press to complete a transaction as there are no registration points,

correspondingly there is a concern that touch screens are becoming more prevalent and therefore more payment terminals are being made inaccessible, electronic signature pads are very difficult as users have to use their fingers as a place holder when writing, the lack of standardized keypad layouts making it impossible to learn how to use various payment systems, terminal keypads not have the raised registration or the registration not being prominent , they keypad buttons should be bigger and numbers darker and the buttons are positioned differently on every different make and model and some don't allow you to enter a PIN by means of tactile buttons.

11.5% of responses from participants identified issues related to the “Visibility of the Display”. These concerns included: some device screens not being easy to read, especially older models with LCD screen though more recent models offer better contrast and are easier to read, difficulty reading the information when using a terminal when the print is so tiny, a requirement for bigger displays as the users cannot read them well therefore often having to ask the clerk to tell them what it says, having difficulty reading the screens if they are not backlit, having problems reading the terminals if the buttons are too small and the labelling on the buttons have low contrast, touch screens being simply impossible to use without sight, electronic signature pads being very difficult to use, as the user’s finger needs to be used as a place holder in writing, screens often being too busy so that it is hard to focus on one task at a time, no illuminated numbers, with respect to the Pay Pass transactions, the user not being able to read the terminal to verify the price that I’m being charged with Pay Pass, touch screens being a nightmare and impossible to use as they are not labelled with Braille, the lack of provisions for Braille and large print with appropriate background contrast and the lack of proper lighting making it impossible for to read for some low vision users,

88.5 percent of the responses identified concerns over “Having to Rely on Other People to Complete the Transaction” and the “Lack of Fault Tolerance of the System” to easily recover from mistakes. The following concerns received 1.5% of the responses correspondingly: “The Card Reader Not Working Properly” and the “Lack of a Regulatory Requirement” that would ensure that there are standardized and accessible terminals. These concerns received 1% of the responses:” Insufficient Time to Complete the Transaction before the Terminal Timed Out” and the “Lack of Fault Tolerance of the Systems” making it difficult to recover from mistakes made by the user. 6.5% of responses contained concerns that were not technology related.

<b>Question 34: Do you have any other concerns about using payment terminals?</b>	<b>Percentage (N = 167)</b>
REACH ISSUES	0%
KEYBOARD/TOUCH SCREEN ISSUES	12%
VISIBILITY ISSUES	11.5%
SECURITY ISSUES	19%
INSUFFICIENT TIME ISSUES	1%
LACK OF AUDIO	13%

<b>Question 34: Do you have any other concerns about using payment terminals?</b>	<b>Percentage (N = 167)</b>
FEEDBACK ISSUES	
COST OF USING THE CARD TO PERFORM A TRANSACTION	0%
LACK OF STANDARDIZED TERMINAL ISSUES	21.5%
LACK OF RE-COURSE WHEN THE ELECTRONIC TRANSACTION MALFUNCTIONS	0.5%
PROBLEMS WITH THE BUILT ENVIRONMENT	0%
I NEED TO RELY OF SOMEONE TO PERFORM THE TRANSACTION FOR ME	8.5%
AUDIO FEEDBACK WORKS WELL	0%
THE PROCESS IS NOT FAULT TOLERANT	1%
CONTACT-LESS CARD TERMINALS ARE NOT AVAILABLE	0.5%
THE PROCESS IS TOO COMPLICATED	2%
CARD READER DOES NOT WORK	1.5%
LACK OF REGULATION ISSUES	1.5%
OTHER	6.5%
<b>TOTAL</b>	<b>100%</b>

## Hearing Impairment

“Security Related Issues” and the “Lack of Standardization around Terminal Design” received the most responses among participants with hearing impairments with 15.5%. Issues related to security included: concerns over how easy it would be for someone else to use their card if they lost it since contact-less payments do not require any form of identification, concern over untrustworthy employees skimming card information and not being confident the transaction has occurred correctly. Lack of Standardization around Terminal Design issues included: the lack of appropriate audio prompts to confirm a step in the transaction process has been completed, the lack of a standardized audio prompt as



opposed to many different sounds and the lack of standardization of the default volume of the prompts.

15.5% of the responses also identified the lack of appropriate audio responses on the terminals as issues. The issues ranged from not being able to hear the existing audio prompts due to the lack of consistent tone and volume and the lack of an appropriate default volume if no volume control exists on the terminal.

10.5% of responses concerned “Visibility Related Issues”. The issues identified were specifically addressed at the size of the fonts. They could not be easily seen by the participants.

The following issues received 5.5% of the responses accordingly: “I Need To Rely on Someone to Help Me Complete the Transaction”, “The Process Is Not Fault Tolerant of User Mistakes” and “The Process Is Too Complicated”. In cases where the users have not been able to complete the transaction on their own and having to rely on someone else they had to wait for someone from customer service to help them and the wait was identified as frustrating. When the participants made mistakes the participants pointed out it was due to not knowing if they had completed a transaction step due to the lack of appropriate audio feedback so that they could not always recover from the mistake. In regards to the process being too complicated the specific problems identified were: not being confident the transaction had occurred correctly, not being able to follow the instructions properly as they could not remember the steps they were just supposed to complete or what they just did and the machines not have arrows that go back a step unlike competitor's machines. The majority of the audio issues affected participants with mild and moderate hearing impairments as these issues have no relevance for participants with total hearing loss..

<b>Question 34: Do you have any other concerns about using payment terminals?</b>	<b>Percentage (N = 19)</b>
REACH ISSUES	0%
KEYBOARD/TOUCH SCREEN ISSUES	0%
VISIBILITY ISSUES	10.5%
SECURITY ISSUES	15.5%
INSUFFICIENT TIME ISSUES	0%
LACK OF AUDIO FEEDBACK ISSUES	15.5%
COST OF USING THE CARD TO PERFORM A TRANSACTION	0%
LACK OF STANDARDIZED TERMINAL ISSUES	15.5%
LACK OF RE-COURSE WHEN THE ELECTRONIC	0%

<b>Question 34: Do you have any other concerns about using payment terminals?</b>	<b>Percentage (N = 19)</b>
TRANSACTION MALFUNCTIONS	
PROBLEMS WITH THE BUILT ENVIRONMENT	0%
I NEED TO RELY OF SOMEONE TO PERFORM THE TRANSACTION FOR ME	5.5%
AUDIO FEEDBACK WORKS WELL	0%
THE PROCESS IS NOT FAULT TOLERANT	5.5%
CONTACT-LESS CARD TERMINALS ARE NOT AVAILABLE	0%
THE PROCESS IS TOO COMPLICATED	5.5%
CARD READER DOES NOT WORK	0%
LACK OF REGULATION ISSUES	0%
OTHER	26.5%
<b>TOTAL</b>	<b>100%</b>

## Cognitive Impairment

Of the participants with cognitive related impairments 29% of the responses identified “Security Related Issues” as a problem. Specifics included a general mistrust of the “tap” method as they have no way for controlling access if the card is lost, hacking of the card data, having to disclose their PIN in order to complete a transaction because they cannot do it on their own, concerns about people seeing their PIN number as it is entered at the terminal, a general concern about identity theft and card skimming scams.

8.5% of the responses identified “Visibility Related Issues”. These issues included: the keys and fonts being too small to read or press. An additional 8.5% of responses identified the “Process Is Too Complicated”. The problems were: not comprehending the specific terminal so they could use them, not remembering the next step or the step they just completed and just general comments on the complexity of the process.

2.5% of participants had the following issues: “Keyboard and Touch Screen Related Issues”, “Insufficient Time Issues”, “Lack of Audio Feedback Issues”, “Cost of Using the Card To Perform A Transaction”, “Lack Of Standardized Terminal Design”,

“Problems With The Built Environment”, “Having To Rely On Others To Complete A Transaction”, “The Process Not Being Fault Tolerant”, “Lack of Regulation”, “Literacy Issues” and “Problems Remembering their PIN”.

<b>Question 34: Do you have any other concerns about using payment terminals?</b>	<b>Percentage (N = 38)</b>
REACH ISSUES	0%
KEYBOARD/TOUCH SCREEN ISSUES	2.5%
VISIBILITY ISSUES	8.5%
SECURITY ISSUES	29%
INSUFFICIENT TIME ISSUES	2.5%
LACK OF AUDIO FEEDBACK ISSUES	2.5%
COST OF USING THE CARD TO PERFORM A TRANSACTION	2.5%
LACK OF STANDARDIZED TERMINAL ISSUES	2.5%
LACK OF RE-COURSE WHEN THE ELECTRONIC TRANSACTION MALFUNCTIONS	0%
PROBLEMS WITH THE BUILT ENVIRONMENT	2.5%
I NEED TO RELY OF SOMEONE TO PERFORM THE TRANSACTION FOR ME	2.5%
AUDIO FEEDBACK WORKS WELL	0%
THE PROCESS IS NOT FAULT TOLERANT	2.5%
CONTACT-LESS CARD TERMINALS ARE NOT AVAILABLE	0%
THE PROCESS IS TOO COMPLICATED	8.5%
CARD READER DOES NOT WORK	0%
LACK OF REGULATION ISSUES	2.5%
LITERACY ISSUES	2.5%
REMEMBERING THE PIN ISSUES	2.5%

<b>Question 34: Do you have any other concerns about using payment terminals?</b>	<b>Percentage (N = 38)</b>
OTHER	26.5%
<b>TOTAL</b>	<b>100%</b>

## *Problems with Automatic Banking Machines*

### Cumulative Results

Across all the disability groups 48% of participants had a problem using automatic banking machines. This results indicates that there are still significant issues with the design of automatic banking machines. The only group that had a high percentage of individuals that did not have problems with automatic banking machines were those with hearing impairments. 65% of these individual did not have a problem using automatic banking machines.

<b>Question 35: Have you ever had problems using an automated banking machine (ABM)?</b>	<b>Percentages (N = 394)</b>
No answer	6%
YES	48%
NO	46%
<b>TOTAL (N = 394)</b>	<b>100%</b>

### Mobility

50% of participants with mobility impairments have had problems using an automatic banking machines (ABMs), 47% have not and 3% of participants did not answer. The percentage of participants that reported having problems indicates that using ABMs is still a significant issue for people with mobility impairments. The composition of the participants with mobility impairments were 10% mild, 52% moderate and 38% severe.

<b>Question 35: Have you ever had problems using an automated banking machine (ABM)?</b>	<b>Percentages (N = 133)</b>
No answer	3%
YES	50%
NO	47%
<b>TOTAL</b>	<b>100%</b>

## Vision

Participants with vision impairments also reported a high rate of problems with ABMs. 52% reported having problems with ABMs. 40 percent did not have problems and 8% did not answer. The levels of disabilities of the participants were 10% mild, 35% moderate and 55% severe.

<b>Question 35: Have you ever had problems using an automated banking machine (ABM)?</b>	<b>Percentage (N – 171)</b>
No Answer	8%
YES	52%
NO	40%
<b>TOTAL</b>	<b>100%</b>

## Hearing

Participants with hearing impairments report the least amount of issues with using ABMs with 65% reporting no issues and 29% reporting issues and 6% not responding to the question. The makeup of the hearing impaired group of participants is 17% mild, 45% moderate and 38% severe.

<b>Question 35: Have you ever had problems using an automated banking machine (ABM)?</b>	<b>Percentage (N – 34)</b>
No Answer	6%
YES	29%
NO	65%
<b>TOTAL</b>	<b>100%</b>

## Cognitive

The distribution of responses for those with cognitive impairments is slightly different than the first two disability groups also. 53% had no problems accessing ABMs, 38% did and 9% did not answer. Though the number of participants who reported having problems was slightly lower than the mobility and vision impairment groups the percent of participants reporting problems is still high.

<b>Question 35: Have you ever had problems using an automated banking machine (ABM)?</b>	<b>Percentages (N = 56)</b>
No Answer	9%
YES	38%
NO	53%
<b>TOTAL</b>	<b>100%</b>

## *Types of Problems in Using Automatic Banking Machines*

### Mobility Impairment

When asked to give specifics about their problems with ABM's 15% reported issues with "Reaching the Terminal". The issues identified include not being at the right height to reach the buttons on the terminal, not being able to manoeuvre their wheelchair close enough

or at the right angle to reach the buttons and having to get into a painful position to reach the terminal buttons.

8.5% of the responses identified issues seeing the screen or the keyboard due to not having the dexterity to use the terminal, weakness in the fingers, wrist and arms and the privacy shield on the keypad preventing the user from using their fist to activate the keys on the keypad.

7.5% highlighted issues with the built environments. These issues included: it's hard to keep hold of my bags and use the machine, the space requires that I be able to stand and walk to access it, not being able to stand a long time and not accommodation being provided, stairs preventing them from accessing the space, not enough room to position myself properly in front of the ABM, no knee space under the terminal to allow me to get close enough, the ramps to the building not being properly cleared and no shelves if they need to put something like a cane or crutch down.

4.5% of responses dealt with keyboard or touch screen related issues due to restricted dexterity preventing consistent and accurate activation of the keys on the keypad.

4% dealt with problems with the terminals not dealing with mistakes on the part of the user easily - poor fault tolerance, and 4% also had concerns about relying on other people to complete the task for them because they could not do it themselves.

3% of responses dealt with security related issues. These issues included: people looking over their shoulder while they were entering their PIN due to their lower height while sitting in a wheelchair, fear of someone compromising their bank information, having to give out their PIN to a third party to complete the transaction because they cannot complete the transaction process independently on their own and concerns about the location in which the terminal is located.

An additional 3% had issues with having enough time to complete the transaction. Multiple participants had problems because the machine confiscated their card because they took too long to put the envelope in the machine to complete a deposit. Some required extra time because their fingers and wrist were weak and they could not activate the keys easily in the time allotted.

Additionally 2.5% had issues handling the cash to make a deposit or a withdrawal, 2% had issues taking the money out of the slot due to the lack of dexterity, 1% of responses identified issues with the lack of appropriate audio prompts due their lack of ability to see the screen due to the angle of placement relative to the position of their body, 0.5% had issues with the complexity of the transaction process, 0.5% experienced problems due to network errors and 0.5 experienced a lack of availability of accessible machines in their area.

<b>Question 36: If you have had a problem or problems with an automated banking machine please tell us in more detail what the problem actually was and how it was fixed for you if it was fixed?</b>	<b>Percentage (N = 173)</b>
REACHING THE TERMINAL ISSUES	15%
KEYBOARD / TOUCH SCREEN ISSUES	4.5%
VISIBILITY ISSUES	8.5%
SECURITY ISSUES	3%
LACK OF AUDIO FEEDBACK	1%
TERMINAL IS NOT FAULT TOLERANT ISSUES	4%
PROCESS IS TOO COMPLEX	0.5%
INSUFFICIENT TIME ISSUES	3%
BUILT ENVIRONMENT ISSUES	7.5%
RETRIEVING THE CARD ISSUES	5%
NETWORK ERROR	0.5%
I NEED TO RELY ON SOMEONE ELSE TO OPERATE IT FOR ME	4%
PROBLEM HANDLING THE CASH/ENVELOPES/RECEIPTS	2.5%
TAKING MONEY OUT OF THE SLOT ISSUES.	2%
LACK OF AVAILABILITY OF MACHINES	0.5%
OTHER	5.0%
NO TEXT ENTERED	33.5%
<b>TOTAL</b>	<b>100%</b>

## Vision Impairment

The issues having the largest percentage of responses among participants who had vision impairments were “I Need To Rely On Someone Else To Operate It For Me” (31%), “Visibility Related Issues - problems seeing or interacting with the display screen” (19%) , “Lack of



Audio Feedback or Not Sufficient Audio Feedback” (13%) and “Lack of Standardization of The Terminal” (13%). Many of these issues are related. As the lack of standardization of terminals and the lack of audio feedback and issues seeing and interacting with the display screen means that the individuals must rely on other people to operate the automatic banking machine on their behalf. Many of these participants cannot see the keypad and the display screen due to their disability so the lack of standardization has a large impact. In addition without prior experience and time to practice with a specific automatic banking machine’s physical layout it is often difficult for users with vision impairments to interact with the machine.

<b>Question 36: If you have had a problem or problems with an automated banking machine please tell us in more detail what the problem actually was and how it was fixed for you if it was fixed?</b>	<b>Percentage (N = 234)</b>
REACHING THE TERMINAL ISSUES	0.5%
KEYBOARD / TOUCH SCREEN ISSUES	5%
VISIBILITY ISSUES	19%
SECURITY ISSUES	1%
LACK OF AUDIO FEEDBACK OR NOT SUFFICIENT AUDIO FEEDBACK	13%
TERMINAL IS NOT FAULT TOLERANT ISSUES	3.5%
PROCESS IS TOO COMPLEX	1.0%
INSUFFICIENT TIME ISSUES	4%
BUILT ENVIRONMENT ISSUES	1.0%
RETRIEVING THE CARD ISSUES	0%
NETWORK ERROR	.5%
I NEED TO RELY ON SOMEONE ELSE TO OPERATE IT FOR ME	31%
PROBLEM HANDLING THE CASH/ENVELOPES/RECEIPTS	0%
TAKING MONEY OUT OF THE SLOT ISSUES.	0%
LACK OF AVAILABILITY OF MACHINES	0%
LACK OF STANDARDIZATION OF THE TERMINAL	13%

<b>Question 36: If you have had a problem or problems with an automated banking machine please tell us in more detail what the problem actually was and how it was fixed for you if it was fixed?</b>	<b>Percentage (N = 234)</b>
ACCESSIBILITY FEATURES ON TERMINALS DO NOT WORK	2.5%
MEMORY RELATED ISSUES	0.5%
I DO NOT LIKE TECHNOLOGY ISSUES	0.5%
I FORGET MY HEADSET FOR THE AUDIO FEEDBACK	1.0%
OTHER	2.5%
NO TEXT ENTERED	0.5%
<b>TOTALS</b>	<b>100%</b>

## Hearing Impairment

58% of participants with hearing related disabilities did not report any issues with using automated banking machines. Other issues identified by participants as causing a problem had percentages in the single digits and were evenly distributed across a range of issues. 8% had "Visibility Issues - seeing and interacting with the display screen". Comments about angle of the screen and size of the font used in the display were included in this category of responses. Interestingly 5.5% of the responses related to the "Lack of Audio Feedback". Since the study included participant with different levels of hearing impairment this finding is not counter intuitive. All other responses were in the low single digits with approximately 1% to 2% of the responses.

<b>Survey Question 36: Mobility: If you have had a problem or problems with an automated banking machine please tell us in more detail what the problem actually was and how it was fixed for you if it was fixed?</b>	<b>Percentages (N = 38)</b>
REACHING THE TERMINAL ISSUES	0%

<b>Survey Question 36: Mobility: If you have had a problem or problems with an automated banking machine please tell us in more detail what the problem actually was and how it was fixed for you if it was fixed?</b>	<b>Percentages (N = 38)</b>
KEYBOARD / TOUCH SCREEN ISSUES	2.5%
VISIBILITY ISSUES	8%
SECURITY ISSUES	2.5%
LACK OF AUDIO FEEDBACK	5.5%
TERMINAL IS NOT FAULT TOLERANT ISSUES	2.5%
PROCESS IS TOO COMPLEX	
INSUFFICIENT TIME ISSUES	5.5%
BUILT ENVIRONMENT ISSUES	0%
RETRIEVING THE CARD ISSUES	0%
NETWORK ERROR	0%
I NEED TO RELY ON SOMEONE ELSE TO OPERATE IT FOR ME	2.5%
PROBLEM HANDLING THE CASH/ENVELOPES/RECEIPTS	0%
TAKING MONEY OUT OF THE SLOT ISSUES.	0%
LACK OF AVAILABILITY OF MACHINES	2.5%
LACK OF STANDARDIZATION OF THE TERMINAL	2.5%
ACCESSIBILITY FEATURES ON TERMINALS DO NOT WORK	2.5%
MEMORY RELATED ISSUES	0%
I DO NOT LIKE TECHNOLOGY	0%
I FORGET ME AUDIO HEADSETS SO I CAN NOT USE THE AUDIO OUTPUT	0%
OTHER	5.5%
NO TEXT ENTERED	58%
<b>TOTAL</b>	<b>100%</b>

## Cognitive Impairment

46% of participants with cognitive impairments did not report any issues with using automated banking machines. The remaining issues identified had percentages in the low single digits which were fairly even distributed across multiple issues. 6% each identified issues with “Not Having Enough Time” to complete the transaction while another 6% reported issues related to the lack of standardize interfaces on the machine causing them issues. 4.5% had problems with “Needing to Rely on Someone Else to Operate It for Me”, “Accessibility Features on Terminals Do Not Work”, “Keyboard / Touch Screen Accessibility Issues” and “Issues Related to Reaching the Terminal”. The last two issues may be due to the fact that some participants had multiple disabilities as these issues are not specifically related to cognitive related barriers.

<b>Survey Question 36: Mobility: If you have had a problem or problems with an automated banking machine please tell us in more detail what the problem actually was and how it was fixed for you if it was fixed?</b>	<b>Percentage (N = 67)</b>
REACHING THE TERMINAL ISSUES	4.5%
KEYBOARD / TOUCH SCREEN ISSUES	4.5%
VISIBILITY ISSUES	3%
SECURITY ISSUES	1.5%
LACK OF AUDIO FEEDBACK	3%
TERMINAL IS NOT FAULT TOLERANT ISSUES	1.5%
PROCESS IS TOO COMPLEX	1.5%
INSUFFICIENT TIME ISSUES	6%
BUILT ENVIRONMENT ISSUES	0%
RETRIEVING THE CARD ISSUES	1.5%
NETWORK ERROR	1.5%
I NEED TO RELY ON SOMEONE ELSE TO OPERATE IT FOR ME	4.5%
PROBLEM HANDLING THE CASH/ENVELOPES/RECEIPTS	1.5%
TAKING MONEY OUT OF THE SLOT ISSUES.	0%
LACK OF AVAILABILITY OF MACHINES	1.5%
LACK OF STANDARDIZATION	6%

<b>Survey Question 36: Mobility: If you have had a problem or problems with an automated banking machine please tell us in more detail what the problem actually was and how it was fixed for you if it was fixed?</b>	<b>Percentage (N = 67)</b>
OF THE TERMINAL	
ACCESSIBILITY FEATURES ON TERMINALS DO NOT WORK	4.5%
MEMORY RELATED ISSUES	0%
I DO NOT LIKE TECHNOLOGY	0%
I FORGET MY AUDIO HEADSETS SO I CAN NOT USE THE AUDIO OUTPUT	0%
I CAN NOT READ THE TEXT ON THE DISPLAY	1.5%
OTHER	6%
NO TEXT ENTERED	46%
<b>TOTAL</b>	<b>100%</b>

### *Mobile Phone Ownership*

Mobile phone ownership was high across all disability groups with a high of 62% and a low of 55% within specific disability groups. Mobile phone ownership is high across all disability groups though not as high as rates in the general consumer population (73%) <sup>1</sup>

### Cumulative Results

<b>Question 37: Do you own a cellphone or Smartphone?</b>	<b>Percentage (N = 394)</b>
No answer	15%
YES	58%
NO	27%
<b>TOTALS</b>	<b>100%</b>

<sup>1</sup> J.D. Power & Associates, Canadian Wireless Total Ownership Experience Study, 2014. <http://cwta.ca/facts-figures/>

## Mobility

**Question 37: Do you own a cellphone or Smartphone?**

**Percentage (N = 133)**

No answer	13%
YES	62%
NO	25%
<b>Total Result</b>	<b>100%</b>

## Vision

**Question 37: Do you own a cellphone or smartphone?**

**Percentage (N = 171)**

No answer	18%
YES	61%
NO	21%
<b>Total Result</b>	<b>100%</b>

## Hearing

**Question 37: Do you own a cellphone or smartphone?**

**Percentage (N = 56)**

No answer	15%
YES	62%
NO	24%
<b>Total Result</b>	<b>100%</b>

## Cognitive

**Question 37: Do you own a cellphone or smartphone?**

**Percentage (N = 56)**

No answer	7%
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**Question 37: Do you own a cellphone or smartphone? Percentage (N = 56)**

YES	55%
NO	38%
<b>Total Result</b>	<b>100%</b>

*What is the reason for not owning a mobile phone?*

**Cumulative Result**

Across all the disability groups the main reason for not owning a mobile phone or Smartphone are “cost related issues” (34%), “not being able to operate the phone on their own” (27%), “not being interested” (17%) and “it is too complicated” (8%). Looking at the breakdown of the results by disability “not being able to use the phone on their own” was rated as the number 1 barrier for people with mobility impairments and people with cognitive impairments. For the other two groups cost was marginally rated the number one issues over “the ability to use the phone on their own”.

<b>Question 38: Tell us why you do not own a cellphone or Smartphone?</b>	<b>Percent Across Only Those Participants Not Owning A Mobile Phone (N = 109)</b>
COST ISSUES	34%
I CAN NOT OPERATE THE PHONE ON MY OWN	27%
I AM NOT INTERESTED	17%
IT IS TOO COMPLICATED	8%
LACK OF STANDARDIZATION	1%
I DO NOT KNOW ENOUGH ABOUT THE FEATURES ON THE DEVICES	1%
CUSTOMER SUPPORT IS POOR	1%
OTHER	11%
<b>TOTAL</b>	<b>100%</b>

**Mobility**

Within the group of participants who have mobility impairment related impairments “not being able to operate the phone on their own” was the primary barrier (39%) with “cost related issues” (35%) being the second highest rated issue.

<b>Question 38: Tell us why you do not own a cellphone or Smartphone?</b>	<b>Percent Across Only Those Participants Not Owning A Mobile Phone (N = 34)</b>
COST ISSUES	35%
I CAN NOT OPERATE THE PHONE ON MY OWN	39%
I AM NOT INTERESTED	9%
IT IS TOO COMPLICATED	3%
OTHER	14%
<b>TOTAL</b>	<b>100%</b>

## Vision

Interestingly among participants with vision impairments “cost issues” rated the highest as a reason for not owning a mobile phone or smart phone (31%) with 19% stating that they “were not interested”, 17% having concerns that “they cannot operate the phone on their own” and 14% having concerns “they are too complicated”.

<b>Question 38: Tell us why you do not own a cellphone or Smartphone?</b>	<b>Percent Across Those Participants Not Owning A Mobile Phone (N = 36)</b>
COST ISSUES	31%
I CAN NOT OPERATE THE PHONE ON MY OWN	17%
I AM NOT INTERESTED	19%
IT IS TOO COMPLICATED	14%
LACK OF STANDARDIZATION	3%
I DO NOT KNOW ENOUGH ABOUT THE FEATURES ON THE DEVICES	3%
CUSTOMER SUPPORT IS POOR	3%
OTHER	10%
<b>TOTAL</b>	<b>100%</b>

## Hearing



Among the survey participants who have hearing impairments 37% had issues “operating the phone on their own”, 24% said “they were not interested” and 13% said: it was too complicated and 13% had problems “with the cost”. It should be noted that this group of participants had a small sample size and that 62% of users with hearing impairment own a mobile phone or smart phone.

<b>Question 38: Tell us why you do not own a cellphone or Smartphone?</b>	<b>Percent Across Only Those Participants Not Owning A Mobile Phone (N = 8)</b>
COST ISSUES	13%
I CAN NOT OPERATE THE PHONE ON MY OWN	37%
I AM NOT INTERESTED	24%
IT IS TOO COMPLICATED	13%
LACK OF STANDARDIZATION	0%
I DO NOT KNOW ENOUGH ABOUT THE FEATURES ON THE DEVICES	0%
CUSTOMER SUPPORT IS POOR	0%
OTHER	13%
<b>TOTAL</b>	<b>100%</b>

## Cognitive

Among survey participants with cognitive impairments “cost issues” rated the highest at 42% as a reason for not owning a cellphone or smartphone. “Note being interested” and “not being able to operate the phone on their own” rated second highest at 22.5%.

<b>Question 38: Tell us why you do not own a cellphone or Smartphone?</b>	<b>Percent Across Only Those Participants Not Owning A Mobile Phone (N = 31)</b>
COST ISSUES	42.00%
I CAN NOT OPERATE THE PHONE ON MY OWN	22.5

<b>Question 38: Tell us why you do not own a cellphone or Smartphone?</b>	<b>Percent Across Only Those Participants Not Owning A Mobile Phone (N = 31)</b>
I AM NOT INTERESTED	22.50%
IT IS TOO COMPLICATED	6.50%
LACK OF STANDARDIZATION	0.00%
I DO NOT KNOW ENOUGH ABOUT THE FEATURES ON THE DEVICES	0.00%
CUSTOMER SUPPORT IS POOR	0.00%
OTHER	6.50%
<b>TOTAL</b>	<b>100.00%</b>

### *How many people use a mobile phone for banking and payment?*

#### Cumulative Results

Overall there is a low usage of mobile phones for banking and payment. Only 18% of all participants used mobile phones in this manner while 62% stated that they did not use mobile phones for banking and payment and 20% did not answer the question. These trends were mirrored across all the disability groups with similar ranks and percentages with only slight variations. Using mobile phones for banking and payment transactions is a relatively new technology and the penetration rates are still modest among the general Canadian population and this seems to be reflected in the disability community. 31 per cent of Canadians reported using mobile banking during the last year, up from five per cent in 2010.<sup>2</sup> These survey results would suggest the participation rates are lower in the disability community than in the general Canadian consumer population.

<b>Question 39: Do you use your cellphone or Smartphone for banking or to pay for things?</b>	<b>Percentage (N = 394)</b>

<sup>2</sup> “How Canadians Bank”. <http://www.cba.ca/en/media-room/50-backgrounders-on-banking-issues/125-technology-and-banking>

<b>Question 39: Do you use your cellphone or Smartphone for banking or to pay for things?</b>	<b>Percentage (N = 394)</b>
No Answer	20%
NO	62%
YES	18%
<b>TOTAL</b>	<b>100%</b>

## Mobility

The cumulative usage rates of mobile phones for banking and payments were similar for the participants with mobility impairments with 20% using their mobile phone for these transactions. 64% did not use their mobile phone for these types of transactions and 16% did not reply to the question.

<b>Question 39: Do you use your cellphone or Smartphone for banking or to pay for things?</b>	<b>Percentage (N = 133)</b>
No Answer	16%
NO	64%
YES	20%
<b>TOTAL</b>	<b>100%</b>

## Vision

Similarly among the participants with vision related impairments 60% did not use their mobile phone for banking and payments and only 18% did use their mobile phone for these types of transactions. The remaining 23% of participants did not answer this question

<b>Question 39: Do you use your cellphone or Smartphone for banking or to pay for things?</b>	<b>Percentage (N = 171)</b>

<b>Question 39: Do you use your cellphone or Smartphone for banking or to pay for things?</b>	<b>Percentage (N = 171)</b>
No Answer	23%
NO	60%
YES	18%
<b>TOTAL</b>	<b>100%</b>

## Hearing

Participants with hearing impairments had similar numbers to the cumulative results but had a slightly lower usage rate of mobile phones for banking and payments with only 12% using their mobile phone for banking and payment transactions. 65% did not use their mobile phones for these types of transactions and 24% of participants did not answer this question.

<b>Question 39: Do you use your cellphone or Smartphone for banking or to pay for things?</b>	<b>Percentage (N =34)</b>
No Answer	24%
NO	65%
YES	12%
<b>TOTAL</b>	<b>100%</b>

## Cognitive

Participants with cognitive impairments followed the trend of the cumulative results with minor variations in the percentages. 16% used their mobile phones for banking and payment transactions. 66% did not use their mobile phone for these types of transactions and 18% of participants did not answer this question.

<b>Question 39: Do you use your cellphone or Smartphone for banking or to pay for things?</b>	<b>Percentage (N = 56)</b>
No Answer	18%
NO	66%
YES	16%
<b>TOTAL</b>	<b>100%</b>

## *Frequency of Mobile Phone Usage for Banking and Payment*

### Cumulative Results

Across all disability groups the majority of participants only used their mobile phones for banking and payment transactions “seldomly” (63%). Smaller percentages of users use their phones “a few times per month” (11%), “once a month” (8%), “once a week” (7%), “several times a week” (5%), “every few months” (3%) and “everyday” (3%). The survey did not ask questions about what the primary method of banking and payment were for the participants. It would be interesting to see their preferences and compare their attitudes towards mobile phone transactions against their frequency of use of that technology. Given the low percentage of participants using their mobile phone for banking and payment (18% for the cumulative results) that fact that the highest ranked frequency of usage is “seldomly” is not unexpected..

<b>Question 41: How often do you use your mobile phone for banking or to pay for something in a store?</b>	<b>Percentage (N = 178)</b>
Everyday	3%
Several times a week	5%
Once a week	7%
A few times per month	11%
Once a month	8%
Every few month	3%
Seldom	63%
<b>TOTAL RESPONSES</b>	<b>100%</b>

### Mobility

Participants with mobility impairment reflected the trend in the cumulative results. 66% of participants used their mobile phone for banking and payment only on a “seldom” basis. 15% using their phone for transaction “a few times per month”, 7% “once a month”, 5% “once a week”, 5% “several times per week” and only 1% used it “every few months” and “everyday”.

<b>Question 41: How often do you use your mobile phone for banking or to pay for something in a store?</b>	<b>Percentage (N = 61)</b>
Everyday	.1%.
Several times a week	5%.
Once a week	5%
A few times per month	15%
Once a month	7%
Every few month	1%
Seldom	66%
<b>TOTAL RESPONSES</b>	<b>100%</b>

## Vision

The results of the participants with vision impairments also follow the trends in the cumulative results: 60% use their mobile phone for banking and payment transactions on a “seldom basis, 11% “a few times per month”, 9% “once a week”, 7% “once a month”, 5% “several times a week”, 4% “everyday” and 4% “every few months”.

<b>Question 41: How often do you use your mobile phone for banking or to pay for something in a store?</b>	<b>Percentage (N = 81)</b>
Everyday	4%
Several times a week	5%
Once a week	9%
A few times per month	11%
Once a month	7%
Every few month	4%
Seldom	60%
<b>TOTAL RESPONSES</b>	<b>100%</b>

## Hearing

*The results of participants with hearing impairments showed a slight higher percentage (79%) of users that used their phones for banking and payment transactions on a “seldom”*

*basis, but the underlying trend of the cumulative results was still apparent. Additionally 14% used the phone for transactions “every day: and 7% used their phone for transactions “once per month”.*

<b>Question 41: How often do you use your mobile phone for banking or to pay for something in a store?</b>	<b>Percentages (N = 14)</b>
Everyday	14%
Several times a week	0%
Once a week	0%
A few times per month	0%
Once a month	7%
Every few month	0%
Seldom	79%
<b>TOTAL RESPONSES</b>	<b>100%</b>

## Cognitive

Similarly 58% of participants with cognitive impairments use their phone for banking and payment transactions on a seldom basis. While 17% use it “once a month”, 10% “once a week”, and 5% respectively use it “every few months:”, “a few times a month” and “several times per week”.

<b>Question 41: How often do you use your mobile phone for banking or to pay for something in a store?</b>	<b>Percentage (N = 22)</b>
Everyday	0%
Several times a week	5%
Once a week	10%
A few times per month	5%
Once a month	17%
Every few month	5%
Seldom	58%
<b>TOTAL RESPONSES</b>	<b>100%</b>

## *How many have problems using a mobile phone for banking and payment?*

There was a low response rate for this question by all participants: Mobility (35%), Vision (39%), Hearing (21%) and Cognitive (38%). This may be a reflection of the low rates of banking through mobile phones given that it is a relatively recent innovation. Individuals with vision impairments reported having the most problems with 52% of participants that answered the question reporting that they had a problem using a mobile phone to do banking. 22% of persons with mobility impairments, 14% of persons with hearing impairments and 19% of those with cognitive impairments reported having problems with mobile phone based banking. Though the total number of responses were low, the rates at which problems were reported indicates that mobile phone banking technology is not without accessibility issues that need to be explored further.

### Mobility

<b>Question 42: Do you have any problems using your mobile phone for banking?</b>	<b>Percentages (N = 46)</b>
NO	78%
YES	22%
<b>TOTAL</b>	<b>100%</b>

### Vision

<b>Question 42: Do you have any problems using your mobile phone for banking?</b>	<b>Percentages (N = 67)</b>
NO	48%
YES	52%
<b>TOTAL</b>	<b>100%</b>

### Hearing



<b>Question 42: Do you have any problems using your mobile phone for banking?</b>	<b>Percentages (N = 7)</b>
NO	86%
YES	14%
<b>TOTAL</b>	<b>100%</b>

### Cognitive

<b>Question 42: Do you have any problems using your mobile phone for banking?</b>	<b>Percentages (N = 21)</b>
NO	81%
YES	19%
<b>TOTAL</b>	<b>100%</b>

### *How often does someone have to help you use your mobile phone for banking and payment?*

There was a high number of participants that did not answer this question (51%). Given the low usage of mobile phones for banking and payment transactions (18%) this is not unexpected. Of those that did answer this question 64% “never” required help using their mobile phone to complete financial transactions. 12% used their mobile phone for financial transactions “Once In A While”, 10% “Always” and 4% “Quite Often”.

### Cumulative Results

<b>Question 45: How often does someone need to help you to complete a payment or banking activity using a mobile phone? Choose one from the list below</b>	<b>Percentages (N = 194)</b>
Never	64%

<b>Question 45: How often does someone need to help you to complete a payment or banking activity using a mobile phone? Choose one from the list below</b>	<b>Percentages (N = 194)</b>
Once In A While	12%
Quite Often	4%
Always	10%
Other	10%
<b>TOTAL</b>	<b>100%</b>

## Mobility

*The trend among participants with mobility impairments followed the cumulative trend with 77% “never” using their mobile phones for banking and payment transactions. In addition 9% used their phones “always”, 7% “once in a while”, and 2% “quite often” for financial transactions.*

<b>Question 45: How often does someone need to help you to complete a payment or banking activity using a mobile phone? Choose one from the list below</b>	<b>Percentages (N = 65)</b>
Never	77%
Once In A While	7%
Quite Often	2%
Always	9%
Other	5%
<b>TOTAL</b>	<b>100%</b>

## Vision

Among participants with vision impairments 59% “never” use their mobile for banking and payments. 12% use it “Once In A While”, 10% “Always” and 4% “Quite Often”.

<b>Question 45: How often does someone need to help you to complete a payment or banking activity using a mobile phone? Choose one from the list below</b>	<b>Percentages (N = 81)</b>
Never	59%
Once In A While	12%
Quite Often	4%
Always	10%
Other	15%
<b>TOTAL</b>	<b>100%</b>

## Hearing

Among participants with hearing impairments 61% “Never” use their mobile phones for banking and payment transactions. Additionally 17% used their phones for transactions “Once In A While”, 10% “Always” and 6% “Quite Often”.

<b>Question 45: How often does someone need to help you to complete a payment or banking activity using a mobile phone? Choose one from the list below</b>	<b>Percentages (N = 18)</b>
Never	61%
Once In A While	17%
Quite Often	6%
Always	10%
Other	6%
<b>TOTAL</b>	<b>100%</b>

## Cognitive

Among participants with cognitive impairments 50% “Never” use their mobile phone for banking and payment transactions. While 20% use it “Once In A While, 10% “Always” and 7% “Quite Often”.

<b>Question 45: How often does someone need to help you to complete a payment or banking activity using a mobile phone? Choose one from the list below</b>	<b>Percentages (N = 30)</b>
Never	50%
Once In A While	20%
Quite Often	7%
Always	10%
Other	13%
<b>TOTAL</b>	<b>100%</b>

### *How do you track your transactions?*

The cumulative results across all disability groups showed a strong preference (27%) for on line statements as the means of keeping track of their transactions. Though there were a wide range of other means that include paper statements, third party software and going to the bank, all the other means were distributed across a broad range of responses. No other means had a double digit rate of usage. This particular trend follows the trend among the general Canadian consumer population that shows 55 per cent of Canadians now use the Internet as their main means of banking.<sup>3</sup> The actual usage rate among people with disabilities shown in this survey is lower, but that may be due to the barriers noted previously in this survey in regards to accessing specific financial transaction methods. Using “Printed Bank Statements” and “Keeping Paper Receipts” ranked as the second most used method at 8%. “Someone Doing It for Me” ranked number three at 6%. The other methods of tracking transactions were distributed over a large range of choices with low single digit percentages. Those method ranged from third party software to telephone banking. These trend were essentially reflected across all disability groups. The only variation was among participants with cognitive impairments where “Someone Doing It for Me” ranked number two among this group.

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<sup>3</sup> “How Canadians Bank”. <http://www.cba.ca/en/media-room/50-backgrounders-on-banking-issues/125-technology-and-banking>

## Cumulative Results

<b>Question 46: How do you keep track of your banking and payment transactions?</b>	<b>Percentage (N = 447)</b>
<b>ON LINE STATEMENT</b>	27%
<b>EMAIL STATEMENTS</b>	2%
<b>PRINTED BANK STATEMENT</b>	8%
<b>CHEQUE BOOK</b>	0%
<b>KEEP PAPER RECEIPTS</b>	8%
<b>I KEEP A WORD DOCUMENT</b>	3%
<b>I USE A PROGRAM PROVIDED BY THE BANK</b>	1%
<b>TELEPHONE BANKING</b>	5%
<b>I USE A PHONE APPLICATION</b>	2%
<b>I GO TO THE BANK</b>	1%
<b>EXCEL</b>	4%
<b>QUICKEN</b>	1%
<b>QUICKBOOKS</b>	0%
<b>SOMEONE DOES IT FOR ME</b>	6%
<b>ELECTRONIC COPIES OF THE RECEIPTS</b>	1%
<b>I HAVE A BANK BOOK OR MY OWN LEDGER</b>	2%
<b>I USE A NON-BANK ON-LINE WEB SERVICE</b>	0%
<b>I REMEMBER IT AND TRACK IT IN MY HEAD</b>	1%
<b>I DO NOT KEEP TRACK OF IT</b>	1%
<b>I USE THIRD PARTY SOFTWARE</b>	0%
<b>I GET AN UPDATE AT THE AUTOMATIC BANKING MACHINE</b>	0%
<b>NOT APPLICABLE</b>	1%
<b>OTHER</b>	8%

<b>Question 46: How do you keep track of your banking and payment transactions?</b>	<b>Percentage (N = 447)</b>
<b>NO RESPONSE</b>	16%
<b>TOTAL RESPONSES (N=447)</b>	<b>100%</b>

## Mobility

<b>Question 46: How do you keep track of your banking and payment transactions?</b>	<b>Percentage (N = 136)</b>
<b>ON LINE STATEMENT</b>	29%
<b>EMAIL STATEMENTS</b>	1%
<b>PRINTED BANK STATEMENT</b>	10%
<b>CHEQUE BOOK</b>	0%
<b>KEEP PAPER RECEIPTS</b>	13%
<b>I KEEP A WORD DOCUMENT</b>	1%
<b>I USE A PROGRAM PROVIDED BY THE BANK</b>	1%
<b>TELEPHONE BANKING</b>	2%
<b>I USE A PHONE APPLICATION</b>	1%
<b>I GO TO THE BANK</b>	1%
<b>EXCEL</b>	2%
<b>QUICKEN</b>	1%
<b>QUICKBOOKS</b>	1%
<b>SOMEONE DOES IT FOR ME</b>	1%
<b>ELECTRONIC COPIES OF THE RECEIPTS</b>	0%
<b>I HAVE A BANK BOOK OR MY OWN LEDGER</b>	0%
<b>I USE A NON-BANK ON-LINE WEB SERVICE</b>	0%
<b>I REMEMBER IT AND TRACK IT IN MY HEAD</b>	0%

<b>Question 46: How do you keep track of your banking and payment transactions?</b>	<b>Percentage (N = 136)</b>
<b>I DO NOT KEEP TRACK OF IT</b>	0%
<b>I USE THIRD PARTY SOFTWARE</b>	0%
<b>I GET AN UPDATE AT THE AUTOMATIC BANKING MACHINE</b>	0%
<b>NOT APPLICABLE</b>	2%
<b>OTHER</b>	12%
<b>NO RESPONSE</b>	23%
<b>TOTAL RESPONSES (N=136)</b>	<b>100%</b>

## Vision

<b>Question 46: How do you keep track of your banking and payment transactions?</b>	<b>Percentage (N = 200)</b>
<b>ON LINE STATEMENT</b>	27%
<b>EMAIL STATEMENTS</b>	2%
<b>PRINTED BANK STATEMENT</b>	7%
<b>CHEQUE BOOK</b>	1%
<b>KEEP PAPER RECEIPTS</b>	4%
<b>I KEEP A WORD DOCUMENT</b>	5%
<b>I USE A PROGRAM PROVIDED BY THE BANK</b>	1%
<b>TELEPHONE BANKING</b>	9%
<b>I USE A PHONE APPLICATION</b>	3%
<b>I GO TO THE BANK</b>	2%
<b>EXCEL</b>	7%
<b>QUICKEN</b>	2%
<b>QUICKBOOKS</b>	1%
<b>SOMEONE DOES IT FOR ME</b>	5%

<b>Question 46: How do you keep track of your banking and payment transactions?</b>	<b>Percentage (N = 200)</b>
<b>ELECTRONIC COPIES OF THE RECEIPTS</b>	2%
<b>I HAVE A BANK BOOK OR MY OWN LEDGER</b>	2%
<b>I USE A NON-BANK ON-LINE WEB SERVICE</b>	1%
<b>I REMEMBER IT AND TRACK IT IN MY HEAD</b>	2%
<b>I DO NOT KEEP TRACK OF IT</b>	2%
<b>I USE THIRD PARTY SOFTWARE</b>	1%
<b>I GET AN UPDATE AT THE AUTOMATIC BANKING MACHINE</b>	0%
<b>NOT APPLICABLE</b>	1%
<b>OTHER</b>	6%
<b>NO RESPONSE</b>	13%
<b>TOTAL RESPONSES (N=200)</b>	<b>100%</b>

## Hearing

<b>Question 46: How do you keep track of your banking and payment transactions?</b>	<b>Percentage (N = 40)</b>
<b>ON LINE STATEMENT</b>	20%
<b>EMAIL STATEMENTS</b>	0%
<b>PRINTED BANK STATEMENT</b>	8%
<b>CHEQUE BOOK</b>	3%
<b>KEEP PAPER RECEIPTS</b>	8%
<b>I KEEP A WORD DOCUMENT</b>	5%
<b>I USE A PROGRAM PROVIDED BY THE BANK</b>	3%
<b>TELEPHONE BANKING</b>	0%
<b>I USE A PHONE</b>	3%



<b>Question 46: How do you keep track of your banking and payment transactions?</b>	<b>Percentage (N = 40)</b>
<b>APPLICATION</b>	
<b>I GO TO THE BANK</b>	3%
<b>EXCEL</b>	3%
<b>QUICKEN</b>	3%
<b>QUICKBOOKS</b>	0%
<b>SOMEONE DOES IT FOR ME</b>	8%
<b>ELECTRONIC COPIES OF THE RECEIPTS</b>	0%
<b>I HAVE A BANK BOOK OR MY OWN LEDGER</b>	0%
<b>I USE A NON-BANK ON-LINE WEB SERVICE</b>	0%
<b>I REMEMBER IT AND TRACK IT IN MY HEAD</b>	3%
<b>I DO NOT KEEP TRACK OF IT</b>	3%
<b>I USE THIRD PARTY SOFTWARE</b>	3%
<b>I GET AN UPDATE AT THE AUTOMATIC BANKING MACHINE</b>	3%
<b>NOT APPLICABLE</b>	3%
<b>OTHER</b>	10%
<b>NO RESPONSE</b>	15%
<b>TOTAL RESPONSES (N=40)</b>	<b>100%</b>

### Cognitive

<b>Question 46: How do you keep track of your banking and payment transactions?</b>	<b>Percentage (N = 40)</b>
<b>ON LINE STATEMENT</b>	24%
<b>EMAIL STATEMENTS</b>	7%

<b>Question 46: How do you keep track of your banking and payment transactions?</b>	<b>Percentage (N = 40)</b>
<b>PRINTED BANK STATEMENT</b>	8%
<b>CHEQUE BOOK</b>	0%
<b>KEEP PAPER RECEIPTS</b>	11%
<b>I KEEP A WORD DOCUMENT</b>	0%
<b>I USE A PROGRAM PROVIDED BY THE BANK</b>	0%
<b>TELEPHONE BANKING</b>	4%
<b>I USE A PHONE APPLICATION</b>	0%
<b>I GO TO THE BANK</b>	1%
<b>EXCEL</b>	3%
<b>QUICKEN</b>	0%
<b>QUICKBOOKS</b>	0%
<b>SOMEONE DOES IT FOR ME</b>	14%
<b>ELECTRONIC COPIES OF THE RECEIPTS</b>	0%
<b>I HAVE A BANK BOOK OR MY OWN LEDGER</b>	7%
<b>I USE A NON-BANK ON-LINE WEB SERVICE</b>	0%
<b>I REMEMBER IT AND TRACK IT IN MY HEAD</b>	1%
<b>I DO NOT KEEP TRACK OF IT</b>	0%
<b>I USE THIRD PARTY SOFTWARE</b>	0%
<b>I GET AN UPDATE AT THE AUTOMATIC BANKING MACHINE</b>	0%
<b>NOT APPLICABLE</b>	0%
<b>OTHER</b>	6%
<b>NO RESPONSE</b>	13%
<b>TOTAL RESPONSES (N=71)</b>	<b>100%</b>

## *Positive Comments and Experiences With Bank Card And Credit Card Transactions*

Across all disability groups the highest ranked comments in regards to positive experiences with banks are “I like the Convenience of Having a Bank Card” (6%) and the “Supportive Customer Service” (9%). The first result mirror finding among the general Canadian consumer population where 90 per cent of Canadians said banking at a time that is convenient was important to them.<sup>4</sup> There were a range of other responses in regards to positive experiences but they varied quite widely and were less than 3% in value each and the comments did not follow any defined theme.

### Cumulative Results

<b>Q47: Are there any other good things you have experienced in regards to banking and credit card or bank card payment activities that you would like to comment on?</b>	<b>Percentage</b>
<b>I LIKE THE CONVENIENCE OF HAVING A BANK CARD</b>	6%
<b>THE PROCESS IS EASY</b>	1%
<b>THE PROCESS IS SIMPLY</b>	0 %
<b>I LIKE THE INCREASED SERVICES I CAN ACCESS</b>	1%
<b>TERMINALS HAVE AUDIO OUTPUT</b>	2%
<b>I LIKE THE CONTACT-LESS PAYMENT</b>	1%
<b>TELEPHONE BANK IS CONVENIENT AND PROVIDES APPROPRIATE SUPPORT</b>	3%
<b>BUILT ENVIRONMENTS</b>	0%

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<sup>4</sup> **“How Canadians Bank”** <http://www.cba.ca/en/media-room/50-backgrounders-on-banking-issues/125-technology-and-banking>

<b>ARE SUPPORTIVE AND ACCESSIBLE</b>		<b>Mobility</b>
<b>ELECTRONIC PAYMENT AND TRANSFERS ARE CONVENIENT</b>	3%	
<b>INCREASED PRIVACY IS GOOD</b>	0%	
<b>INCREASED INDEPENDENCE IS GOOD</b>	0%	
<b>PRE-PAID CARDS ARE EASY TO USE AND DO NOT REQUIRE MUCH INPUT FROM THE USER</b>	0%	
<b>CUSTOMER SERVICE IS SUPPORTIVE</b>	9%	
<b>BANKS RESOLVE ISSUES QUICKLY</b>	0%	
<b>THEIR WEBSITES ARE ACCESSIBLE</b>	3%	
<b>THEIR APPLICATIONS ARE ACCESSIBLE</b>	1%	
<b>MORE INFORMATION IS IN ACCESSIBLE FORMAT</b>	1%	
<b>TERMINALS HAVE BRAILLE</b>	0%	
<b>I LIKE THE REWARDS</b>	0%	
<b>OTHER</b>	6%	
<b>No Responses</b>	43%	
<b>NO NEGATIVE COMMENTS</b>	0%	
<b>THE BANKS ARE NOT DOING ANYTHING WELL</b>	17%	
<b>TOTAL</b>	100.00%	
<b>Q47: Are there any other good things you have experienced in regards to banking and credit card or bank card payment activities that you would like to comment on?</b>	<b>Percentage (N = 135)</b>	

<b>Q47: Are there any other good things you have experienced in regards to banking and credit card or bank card payment activities that you would like to comment on?</b>	<b>Percentage (N = 135)</b>
<b>I LIKE THE CONVENIENCE OF HAVING A BANK CARD</b>	7%
<b>THE PROCESS IS EASY</b>	3%
<b>THE PROCESS IS SIMPLY</b>	1 %
<b>I LIKE THE INCREASED SERVICES I CAN ACCESS</b>	1%
<b>TERMINALS HAVE AUDIO OUTPUT</b>	1%
<b>I LIKE THE CONTACT-LESS PAYMENT</b>	2%
<b>TELEPHONE BANK IS CONVENIENT AND PROVIDES APPROPRIATE SUPPORT</b>	1%
<b>BUILT ENVIRONMENTS ARE SUPPORTIVE AND ACCESSIBLE</b>	1%
<b>ELECTRONIC PAYMENT AND TRANSFERS ARE CONVENIENT</b>	1%
<b>INCREASED PRIVACY IS GOOD</b>	1%
<b>INCREASED INDEPENDENCE IS GOOD</b>	1%
<b>PRE-PAID CARDS ARE EASY TO USE AND DO NOT REQUIRE MUCH INPUT FROM THE USER</b>	1%
<b>CUSTOMER SERVICE IS SUPPORTIVE</b>	8%
<b>BANKS RESOLVE ISSUES QUICKLY</b>	1%
<b>THEIR WEBSITES ARE</b>	0%

<b>Q47: Are there any other good things you have experienced in regards to banking and credit card or bank card payment activities that you would like to comment on?</b>	<b>Percentage (N = 135)</b>
<b>ACCESSIBLE</b>	
<b>THEIR APPLICATIONS ARE ACCESSIBLE</b>	0%
<b>MORE INFORMATION IS IN ACCESSIBLE FORMAT</b>	0%
<b>TERMINALS HAVE BRAILLE</b>	0%
<b>I LIKE THE REWARDS</b>	0%
<b>OTHER</b>	4%
<b>No Responses</b>	58%
as a opposite have had overdraft problems cause of id and computer malware	
Bank statements should be for a full month not from half the month to the next half of the month. This makes it confusing.	
I'm not sure if this is relevant but once I went to a bank and they were just closing. There were people inside, and the lady shut the door and said sorry we are closing now. It was closing at 3:00pm and I got there 3:00pm. It was tough to get there as I needed someone to assist me with the chair. I waited for my friend as my mother was not available that day. I also work in a client based organization and even if its our closing time, we still try to serve the client esp if there is a visible mobility issue and its hard for	

<p><b>Q47: Are there any other good things you have experienced in regards to banking and credit card or bank card payment activities that you would like to comment on?</b></p>	<p><b>Percentage (N = 135)</b></p>
<p>the client. I was surprised the bank didn't listen to my request. I asked if it is possible because its a little hard to come again and again. I didn't want to beg so I understood her point and left.</p>	
<p>e me déplace en fauteuil roulant motorisé. J'ai le dos ataxique, ce qui fait que je ne peux pas me bouger aussi facilement que je le voudrais. C'est pourquoi il est important que les guichet automatisé et TOUS les TPV soient accessibles et amovibls dans le cas des TPV. Que la personne en fauteuil roulant et/ou de petite taille soit en mesure de prendre l'appareil dans ses mains pour faire de son corps un écran, afin de composer ses données en toute confidentialité. Les comptoirs-caisses se doivent alors d'âûtre abaissés en tout ou en partie. - I travel by motorized wheelchair.I have ataxia, so that I can not move as easily as I would like. That is why it is important that automated window and ALL POS amovibls accessible and in the case of TPV. The wheelchair and / or small to be able to take the camera in his hands to her body a screen to compose his data confidentially. The cash</p>	

<b>Q47: Are there any other good things you have experienced in regards to banking and credit card or bank card payment activities that you would like to comment on?</b>	<b>Percentage (N = 135)</b>
counters will then have the other lowered in whole or in part.	
Numbers on cell phone need to be larger for touching. Sometimes they are so very small. Rogers has set my phone up using a larger font to help me.	
When I don't have enough money, I use the credit card which I don't have to pay right away. I have a habit of loosing cash. bank card or credit card are good for not loosing cash again.	
<b>NO NEGATIVE COMMENTS</b>	1%
<b>THE BANKS ARE NOT DOING ANYTHING WELL</b>	8%
<b>TOTAL ( N = 135)</b>	100%

## Vision

<b>Q47: Are there any other good things you have experienced in regards to banking and credit card or bank card payment activities that you would like to comment on?</b>	<b>Percentage (N = 192)</b>
<b>I LIKE THE CONVENIENCE</b>	6%



<b>Q47: Are there any other good things you have experienced in regards to banking and credit card or bank card payment activities that you would like to comment on?</b>	<b>Percentage (N = 192)</b>
<b>OF HAVING A BANK CARD</b>	
<b>THE PROCESS IS EASY</b>	<b>1%</b>
<b>THE PROCESS IS SIMPLY</b>	<b>0 %</b>
<b>I LIKE THE INCREASED SERVICES I CAN ACCESS</b>	<b>1%</b>
<b>TERMINALS HAVE AUDIO OUTPUT</b>	<b>2%</b>
<b>I LIKE THE CONTACT-LESS PAYMENT</b>	<b>1%</b>
<b>TELEPHONE BANK IS CONVENIENT AND PROVIDES APPROPRIATE SUPPORT</b>	<b>3%</b>
<b>BUILT ENVIRONMENTS ARE SUPPORTIVE AND ACCESSIBLE</b>	<b>0%</b>
<b>ELECTRONIC PAYMENT AND TRANSFERS ARE CONVENIENT</b>	<b>3%</b>
<b>INCREASED PRIVACY IS GOOD</b>	<b>0%</b>
<b>INCREASED INDEPENDENCE IS GOOD</b>	<b>0%</b>
<b>PRE-PAID CARDS ARE EASY TO USE AND DO NOT REQUIRE MUCH INPUT FROM THE USER</b>	<b>0%</b>
<b>CUSTOMER SERVICE IS SUPPORTIVE</b>	<b>9%</b>
<b>BANKS RESOLVE ISSUES QUICKLY</b>	<b>0%</b>
<b>THEIR WEBSITES ARE ACCESSIBLE</b>	<b>3%</b>
<b>THEIR APPLICATIONS ARE</b>	<b>1%</b>

<b>Q47: Are there any other good things you have experienced in regards to banking and credit card or bank card payment activities that you would like to comment on?</b>	<b>Percentage (N = 192)</b>
<b>ACCESSIBLE</b>	
<b>MORE INFORMATION IS IN ACCESSIBLE FORMAT</b>	<b>1%</b>
<b>TERMINALS HAVE BRAILLE</b>	<b>0%</b>
<b>I LIKE THE REWARDS</b>	<b>0%</b>
<b>OTHER</b>	<b>6%</b>
<b>No Responses</b>	<b>43.00%</b>
<b>NO NEGATIVE COMMENTS</b>	<b>0%</b>
<b>THE BANKS ARE NOT DOING ANYTHING WELL</b>	<b>17%</b>
<b>TOTAL (N = 192)</b>	<b>100.00%</b>

## Hearing

<b>Q47: Are there any other good things you have experienced in regards to banking and credit card or bank card payment activities that you would like to comment on?</b>	<b>Percentage (N = 34)</b>
<b>I LIKE THE CONVENIENCE OF HAVING A BANK CARD</b>	<b>6%</b>
<b>THE PROCESS IS EASY</b>	<b>0%</b>
<b>THE PROCESS IS SIMPLY</b>	<b>0 %</b>
<b>I LIKE THE INCREASED SERVICES I CAN ACCESS</b>	<b>0%</b>
<b>TERMINALS HAVE AUDIO OUTPUT</b>	<b>0%</b>
<b>I LIKE THE CONTACT-LESS</b>	<b>0%</b>

<b>Q47: Are there any other good things you have experienced in regards to banking and credit card or bank card payment activities that you would like to comment on?</b>	<b>Percentage (N = 34)</b>
<b>PAYMENT</b>	
<b>TELEPHONE BANK IS CONVENIENT AND PROVIDES APPROPRIATE SUPPORT</b>	<b>0%</b>
<b>BUILT ENVIRONMENTS ARE SUPPORTIVE AND ACCESSIBLE</b>	<b>0%</b>
<b>ELECTRONIC PAYMENT AND TRANSFERS ARE CONVENIENT</b>	<b>9%</b>
<b>INCREASED PRIVACY IS GOOD</b>	<b>0%</b>
<b>INCREASED INDEPENDENCE IS GOOD</b>	<b>3%</b>
<b>PRE-PAID CARDS ARE EASY TO USE AND DO NOT REQUIRE MUCH INPUT FROM THE USER</b>	<b>0%</b>
<b>CUSTOMER SERVICE IS SUPPORTIVE</b>	<b>15%</b>
<b>BANKS RESOLVE ISSUES QUICKLY</b>	<b>0%</b>
<b>THEIR WEBSITES ARE ACCESSIBLE</b>	<b>3%</b>
<b>THEIR APPLICATIONS ARE ACCESSIBLE</b>	<b>0%</b>
<b>MORE INFORMATION IS IN ACCESSIBLE FORMAT</b>	<b>0%</b>
<b>TERMINALS HAVE BRAILLE</b>	<b>0%</b>
<b>I LIKE THE REWARDS</b>	<b>0%</b>
<b>OTHER</b>	<b>0%</b>
<b>No Responses</b>	<b>41.00%</b>

<b>Q47: Are there any other good things you have experienced in regards to banking and credit card or bank card payment activities that you would like to comment on?</b>	<b>Percentage (N = 34)</b>
<b>NO NEGATIVE COMMENTS</b>	<b>0%</b>
<b>THE BANKS ARE NOT DOING ANYTHING WELL</b>	<b>24%</b>
<b>TOTAL (N = 34)</b>	<b>100%</b>

## Cognitive

<b>Q47: Are there any other good things you have experienced in regards to banking and credit card or bank card payment activities that you would like to comment on?</b>	<b>Percentage (N = 57)</b>
<b>I LIKE THE CONVENIENCE OF HAVING A BANK CARD</b>	<b>12%</b>
<b>THE PROCESS IS EASY</b>	<b>0%</b>
<b>THE PROCESS IS SIMPLY</b>	<b>0 %</b>
<b>I LIKE THE INCREASED SERVICES I CAN ACCESS</b>	<b>0%</b>
<b>TERMINALS HAVE AUDIO OUTPUT</b>	<b>0%</b>
<b>I LIKE THE CONTACT-LESS PAYMENT</b>	<b>0%</b>
<b>TELEPHONE BANK IS CONVENIENT AND PROVIDES APPROPRIATE SUPPORT</b>	<b>2%</b>
<b>BUILT ENVIRONMENTS ARE SUPPORTIVE AND</b>	<b>0%</b>

<b>Q47: Are there any other good things you have experienced in regards to banking and credit card or bank card payment activities that you would like to comment on?</b>	<b>Percentage (N = 57)</b>
<b>ACCESSIBLE</b>	
<b>ELECTRONIC PAYMENT AND TRANSFERS ARE CONVENIENT</b>	2%
<b>INCREASED PRIVACY IS GOOD</b>	0%
<b>INCREASED INDEPENDENCE IS GOOD</b>	0%
<b>PRE-PAID CARDS ARE EASY TO USE AND DO NOT REQUIRE MUCH INPUT FROM THE USER</b>	0%
<b>CUSTOMER SERVICE IS SUPPORTIVE</b>	12%
<b>BANKS RESOLVE ISSUES QUICKLY</b>	0%
<b>THEIR WEBSITES ARE ACCESSIBLE</b>	2%
<b>THEIR APPLICATIONS ARE ACCESSIBLE</b>	0%
<b>MORE INFORMATION IS IN ACCESSIBLE FORMAT</b>	0%
<b>TERMINALS HAVE BRAILLE</b>	0%
<b>I LIKE THE REWARDS</b>	2%
<b>OTHER</b>	2%
<b>No Responses</b>	0%
<b>NO NEGATIVE COMMENTS</b>	2%
<b>THE BANKS ARE NOT DOING ANYTHING WELL</b>	65%
<b>TOTAL (N = 57)</b>	100%

## *Negative Comments and Experiences with Electronic Financial Transactions*

When asked what other negative experiences participants had in regards to the use of bank cards and credit cards there was no consistent and well defined trend in the responses. Approximately 50% of participants did not respond to the question. Of the participants that did respond individual observations received no more than a low single digit percentage of participants giving the same response. In many cases the observations just reiterated comments made in responses to previous questions asking users to identify issues encountered in using credit and bank cards. The intention of this question was to capture issues that were not identified by previous questions in the survey.

### Mobility

<b>Question 48: Are there any other bad things that you have experienced in regards to banking and credit card or bank card payment activities that you have a problem with and you would like to comment on?</b>	<b>Percentage (N = 136)</b>
<b>Problems Reaching The Terminal</b>	<b>3.00%</b>
<b>I Can Not Operate the Terminal With My Hands</b>	<b>0.50%</b>
<b>Built Environments Are Not Accessible</b>	<b>1.50%</b>
<b>Problem With The Touchscreens</b>	<b>0.50%</b>
<b>The Technology Does Not Always Work</b>	<b>1.50%</b>
<b>No Waiting Space In the Environment</b>	<b>0.50%</b>

<b>Question 48: Are there any other bad things that you have experienced in regards to banking and credit card or bank card payment activities that you have a problem with and you would like to comment on?</b>	<b>Percentage (N = 136)</b>
<b>Opening and Closing Bank Account Take Too Long</b>	<b>0.50%</b>
<b>Privacy Issues and Security Issues</b>	<b>3.00%</b>
<b>Difficult To Replace PIN</b>	<b>0.50%</b>
<b>Staff Not Responsive to My Needs</b>	<b>0.50%</b>
<b>No Problems With The Banks</b>	<b>10.00%</b>
<b>I Rely On Others To Help Me Complete The Transaction</b>	<b>2.00%</b>
<b>The Systems Are No Fault Tolerant</b>	<b>0.50%</b>
<b>Problems With Erroneous Transactions</b>	<b>0.50%</b>
<b>Poor Customer Service</b>	<b>1.50%</b>
<b>Other</b>	<b>3.50%</b>
Not able to put my pin number in	0.50%
the inaccessibility of the point of purchase machines at the stores and as I mentioned earlier the bank machines.	0.50%
There is a lot of paperwork to do for me to get help banking.	0.50%
i just hate atms that's all.	0.50%
sometimes I didn't track my	0.50%

<b>Question 48: Are there any other bad things that you have experienced in regards to banking and credit card or bank card payment activities that you have a problem with and you would like to comment on?</b>	<b>Percentage (N = 136)</b>
spending and I went 500 dollars over draft. Happened two times.	
<b>The Fees Are A Barrier</b>	<b>2.00%</b>
<b>Too Many Advertisements/Cross Selling While Using Services</b>	<b>0.50%</b>
<b>No Response</b>	<b>64.50%</b>
<b>TOTAL (N = 136)</b>	<b>100%</b>

## Vision

<b>Question 48: Are there any other bad things that you have experienced in regards to banking and credit card or bank card payment activities that you have a problem with and you would like to comment on?</b>	<b>Percentage (N = 196)</b>
<b>Problems Reaching The Terminal</b>	<b>0.00%</b>
<b>I Can Not Operate the Terminal With My Hands</b>	<b>0.00%</b>
<b>Built Environments Are Not Accessible</b>	<b>0.50%</b>



<b>Question 48: Are there any other bad things that you have experienced in regards to banking and credit card or bank card payment activities that you have a problem with and you would like to comment on?</b>	<b>Percentage (N = 196)</b>
<b>LACK OF AUDIO FEEDBACK ON THE TERMINALS</b>	<b>5.00%</b>
<b>Problem With The Touchscreens</b>	<b>2.00%</b>
<b>LACK OF TACTILE FEEDBACK ON THE KEYPADS</b>	<b>0.50%</b>
<b>Maybe the buttons could be labeled with brail like the elevator buttons</b>	<b>0.50%</b>
<b>Websites Are Not Accessible/Usable</b>	<b>3.50%</b>
<b>The Technology Does Not Always Work</b>	<b>1.00%</b>
<b>No Waiting Space In the Environment</b>	<b>0.00%</b>
<b>Opening and Closing Bank Account Take Too Long</b>	<b>0.00%</b>
<b>Privacy Issues and Security Issues</b>	<b>2.00%</b>
<b>Difficult To Replace PIN</b>	<b>0.00%</b>
<b>Staff Not Responsive to My Needs</b>	<b>0.00%</b>
<b>I Rely On Others To Help Me Complete The</b>	<b>1.50%</b>

<b>Question 48: Are there any other bad things that you have experienced in regards to banking and credit card or bank card payment activities that you have a problem with and you would like to comment on?</b>	<b>Percentage (N = 196)</b>
<b>Transaction</b>	
<b>The Systems Are Not Fault Tolerant</b>	<b>2.00%</b>
<b>Problems With Erroneous Transactions</b>	<b>0.00%</b>
<b>Poor Customer Service</b>	<b>7.00%</b>
<b>Lack of Standardization</b>	<b>3.00%</b>
<b>Lack of Audio Feedback</b>	<b>0.50%</b>
<b>Just the ABMs - now some talk but not interested</b>	<b>0.50%</b>
<b>Lack of Appropriate Electronic Statements</b>	<b>1.00%</b>
<b>BRILLE STATMENTS DAMAGED IN THE MAIL</b>	<b>0.50%</b>
<b>LACK OF ALTERNATIVE APPROPRIATE FORMATS FOR STATEMENTS</b>	<b>2.50%</b>
<b>LOCATING AN ABM IS A PROBLEM</b>	<b>1.00%</b>
<b>I CAN'T READ THE SECURITY CODE ON THE BACK OF THE CARD</b>	<b>0.50%</b>
<b>No Problems With The Banks</b>	<b>4.50%</b>
<b>Other</b>	<b>5.00%</b>
<b>LACK OF ENFORCEMENT OF EXISTING ACCESSIBILITY STANDARDS</b>	<b>0.50%</b>
<b>The Fees Are A Barrier</b>	<b>1.00%</b>

<b>Question 48: Are there any other bad things that you have experienced in regards to banking and credit card or bank card payment activities that you have a problem with and you would like to comment on?</b>	<b>Percentage (N = 196)</b>
<b>Too Many Advertisements/Cross Selling While Using Services</b>	<b>0.50%</b>
<b>No Response</b>	<b>51.00%</b>
<b>TOTAL (N = 196)</b>	<b>100.00%</b>

## Hearing

<b>Question 48: Are there any other bad things that you have experienced in regards to banking and credit card or bank card payment activities that you have a problem with and you would like to comment on? Please type your answer in the space below.</b>	<b>Percentage (N = 35)</b>
<b>Problems Reaching The Terminal</b>	<b>0.00%</b>
<b>I Can Not Operate the Terminal With My Hands</b>	<b>0.00%</b>
<b>Built Environments Are Not Accessible</b>	<b>0.00%</b>
<b>I can not see the screen</b>	<b>0.00%</b>
<b>LACK OF AUDIO FEEDBACK ON THE TERMINALS</b>	<b>0.00%</b>

<b>Question 48: Are there any other bad things that you have experienced in regards to banking and credit card or bank card payment activities that you have a problem with and you would like to comment on? Please type your answer in the space below.</b>	<b>Percentage (N = 35)</b>
<b>Problem With The Touchscreens</b>	<b>0.00%</b>
<b>LACK OF TACTILE FEEDBACK ON THE KEYPADS</b>	<b>3.00%</b>
<b>Websites Are Not Accessible/Usable</b>	<b>0.00%</b>
<b>The Technology Does Not Always Work</b>	<b>0.00%</b>
<b>No Waiting Space In the Environment</b>	<b>0.00%</b>
<b>Opening and Closing Bank Account Take Too Long</b>	<b>0.00%</b>
<b>Privacy Issues and Security Issues</b>	<b>3.00%</b>
<b>Difficult To Replace PIN</b>	<b>0.00%</b>
<b>Staff Not Responsive to My Needs</b>	<b>0.00%</b>
<b>I Rely On Others To Help Me Complete The Transaction</b>	<b>0.00%</b>
<b>The Systems Are Not Fault Tolerant</b>	<b>0.00%</b>
<b>Problems With Erroneous Transactions</b>	<b>0.00%</b>
<b>Poor Customer Service</b>	<b>3.00%</b>
<b>Lack of Standardization</b>	<b>0.00%</b>

<b>Question 48: Are there any other bad things that you have experienced in regards to banking and credit card or bank card payment activities that you have a problem with and you would like to comment on? Please type your answer in the space below.</b>	<b>Percentage (N = 35)</b>
<b>Lack of Audio Feedback</b>	<b>0.00%</b>
<b>Lack of Appropriate Electronic Statements</b>	<b>0.00%</b>
<b>BRILLE STATMENTS DAMAGED IN THE MAIL</b>	<b>0.00%</b>
<b>LACK OF ALTERNATIVE APPROPRIATE FORMATS FOR STATEMENTS</b>	<b>3.00%</b>
<b>LOCATING AN ABM IS A PROBLEM</b>	<b>0.00%</b>
<b>I CAN'T READ THE SECURITY CODE ON THE BACK OF THE CARD</b>	<b>0.00%</b>
<b>No Problems With The Banks</b>	<b>8.00%</b>
<b>Other</b>	<b>11.00%</b>
<b>LACK OF ENFORCEMENT OF EXISTING ACCESSIBILITY STANDARDS</b>	
<b>The Fees Are A Barrier</b>	<b>3.00%</b>
<b>Too Many Advertisements/Cross Selling While Using Services</b>	<b>3.00%</b>
<b>LACK OF ACCESSIBLE CUSTOMER SUPPPORT</b>	<b>6.00%</b>
<b>LACK OF PROPER DISCLOSURE OF POLICIES</b>	<b>3.00%</b>
<b>No Response</b>	<b>54.00%</b>
<b>TOTAL</b>	<b>100.00%</b>

## Cognitive

<b>Question 48: Are there any other bad things that you have experienced in regards to banking and credit card or bank card payment activities that you have a problem with and you would like to comment on? Please type your answer in the space below.</b>	<b>Percentage (N = 59)</b>
<b>Problems Reaching The Terminal</b>	0.00%
<b>I Can Not Operate the Terminal With My Hands</b>	0.00%
<b>Built Environments Are Not Accessible</b>	0.00%
<b>I can not see the screen</b>	0.00%
<b>LACK OF AUDIO FEEDBACK ON THE TERMINALS</b>	0.00%
<b>Problem With The Touchscreens</b>	0.00%
<b>LACK OF TACTILE FEEDBACK ON THE KEYPADS</b>	0.00%
<b>Websites Are Not Accessible/Usable</b>	0.00%
<b>The Technology Does Not Always Work</b>	0.00%
<b>No Waiting Space In the Environment</b>	0.00%
<b>Opening and Closing Bank Account Take Too Long</b>	1.50%

<b>Question 48: Are there any other bad things that you have experienced in regards to banking and credit card or bank card payment activities that you have a problem with and you would like to comment on? Please type your answer in the space below.</b>	<b>Percentage (N = 59)</b>
<b>Privacy Issues and Security Issues</b>	1.50%
<b>My credit is not always secure on line.</b>	1.50%
<b>Difficult To Replace PIN</b>	0.00%
<b>Staff Not Responsive to My Needs</b>	0.00%
<b>I Rely On Others To Help Me Complete The Transaction</b>	0.00%
<b>The Systems Are Not Fault Tolerant</b>	1.50%
<b>Problems With Erroneous Transactions</b>	1.50%
<b>Poor Customer Service</b>	5.50%
<b>Lack of Standardization</b>	0.00%
<b>Lack of Audio Feedback</b>	0.00%
<b>Lack of Appropriate Electronic Statements</b>	0.00%
<b>BRILLE STATMENTS DAMAGED IN THE MAIL</b>	0.00%
<b>LACK OF ALTERNATIVE APPROPRIATE FORMATS FOR STATEMENTS</b>	0.00%
<b>LOCATING AN ABM IS A PROBLEM</b>	0.00%
<b>I CAN'T READ THE SECURITY CODE ON THE</b>	0.00%

<b>Question 48: Are there any other bad things that you have experienced in regards to banking and credit card or bank card payment activities that you have a problem with and you would like to comment on? Please type your answer in the space below.</b>	<b>Percentage (N = 59)</b>
<b>BACK OF THE CARD</b>	
<b>No Problems With The Banks</b>	10.00%
<b>Other</b>	3.50%
<b>LACK OF ENFORCEMENT OF EXISTING ACCESSIBILITY STANDARDS</b>	1.50%
<b>The Fees Are A Barrier</b>	3.50%
<b>Too Many Advertisements/Cross Selling While Using Services</b>	1.50%
<b>LACK OF ACCESSIBLE CUSTOMER SUPPPORT</b>	5.50%
<b>LACK OF PROPER DISCLOSURE OF POLICIES</b>	1.50%
<b>No Response</b>	60.00%
<b>TOTAL (N = 59)</b>	<b>100.00%</b>

## Conclusions

The distributions within each of the disabilities groups in regards to the level of disability was predominantly made up of participants who had moderate to severe levels of impairment in 3 of the 4 disability groups.. The participants within the mobility impairment group had a higher number of participants with moderate (52%) and severe (38%) levels of impairment. Those participants who declared that they had a vision impairment also predominantly had a moderate (35%) or a severe (55%) level of disability as did those who declared they had a hearing impairment - moderate (45%) and severe (38%). Those



participants who declared that they had a cognitive impairment predominantly declared they had a moderate level of impairment (50%) with the remainder of the participants equally divided between the mild and severe level of impairments at 25%.

There was a high level of bank account ownership across all disability groups with over 98% ownership in all disability groups. Opening a bank account was a prominent issue for the participants with cognitive impairment with 44% reporting having an issue. It is also notable that 98% of respondents who have cognitive impairments do not have a credit card. Correspondingly a high number of respondents with vision (87%) and hearing impairment (82%) own credit cards. Interestingly only 66% of participants who declared they had mobility impairment and responding to this question had a credit card.

Being able to demonstrate “capacity” to handle their own finances in addition to having the credit history to qualify for a bank account may be reasons for the low number of participants with cognitive impairments having credit cards. The reasons for not owning a credit card among a large percentage of the participants across all disability groups was “Not Seeing the Need for One” or “Not Qualifying Due to Bad Credit”. A smaller percentage did not qualify due to lack of a qualified income.

Across all the disability groups the number of participants having experience in using a contact-less payment system was low. Approximately 66% of participants that identified themselves as having a mobility related, a hearing related or vision related impairment stated that they had not used a contact-less payment system in the past. 80% of participants with cognitive impairments stated they had not used a contact-less payment system. This result might be explained by the low ownership of credit cards among this last group of participants and the modest proliferation of contact-less technology to date in Canada.

Mobile phone ownership was high across all disability groups with a high of 62% and a low of 55%. Interestingly there was no specific trend identified for why they did not own a mobile phone. Mobile phone usage for banking and payment was below 20% across all disability groups.

In general, across all the disability groups approximately 50% of the participants in each group stated that they had a good or a very good level of financial knowledge. Approximately 20% to 30% in most of the groups stated that their level of financial knowledge is “Alright” except for the participants who stated they had cognitive impairments where only 7% said their financial knowledge was alright. Participants who declared they had cognitive impairments had a higher percentage of participants (21%) who said they had a Very Poor level of financial knowledge versus the other groups where the numbers were in the mid to high single digits.

Despite the attempts to address the accessibility of established financial transaction technology a high percentage of people with disabilities are still reporting problems using the technology. There were issues identified with automatic banking machines and point of sales terminals. In regards to newer technologies like contact-less payment there still a portion of the participants that had not heard of the technology, had heard of the technology but never used it or had heard of the technology in a negative way and did not trust the technology enough to use it.

Outside of the technology related issues there were no clearly defined trends that the bulk of participants identified in a negative manner in regards to financial transactions. Similarly there was no strongly defined trend of things mentioned in a positive way in regards to financial transaction methods though the convenience of financial transaction technology and supportive customer support were mentioned in the comments.

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## Appendix A: Methodology

The Neil Squire Society conducted a nationwide study during 2014. The study was intended to collect information on how people with disabilities interact with electronic and payment technologies and their attitudes towards that technology. The study also collected basic information on the nature of their disability and their usage patterns of electronic financial transaction and payment technologies.

The study used a survey to collect data. The survey was available to participants on the web as an electronic survey, as a printed survey or the participants had the option to complete the survey with the help of a researcher over the phone. Participants were not approached or recruited directly. The Neil Squire Society circulated information on the survey through a network of disability organizations and their publications. Participants self selected themselves to participate in the study. In addition participants were asked to self identify the nature of their disability/disabilities (mobility, hearing, vision or cognitive) and the degree of their impairment (mild, moderate or severe) and if they had multiple disabilities their responses were included in all categories that they declared themselves as having a disability in.

**Sample size:** The total sample size of the study was 392. This was not evenly distributed over the 4 disability groups. As participants self-selected themselves for this study and the study was time limited in regards to collecting the data it was not possible to have an even distribution across all disability groups.

**Canadian focus.** Though other countries may have similar disability rates the level of experience of individuals with specific technologies and attitudes towards that technology may vary by region. Chip and PIN (personal identification numbers) enabled cards, for example, have been the standard in Canada, Europe and other parts of the world for several years now, but they're not as widely used in the U.S. <sup>5</sup> Studies have shown that experience has an effect on attitudes towards technology. <sup>6 7</sup>

**Weighting the data.** The data from the surveys have not be weighted in anyway. The results represent a summary of the raw data collected during the study.

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5 <http://money.usnews.com/money/personal-finance/articles/2014/10/28/coming-next-fall-more-chip-and-pin-cards-in-the-us>

6 Heikki Karjaluoto, Minna Mattila, Tapio Pentto, (2002) "Factors underlying attitude formation towards online banking in Finland", International Journal of Bank Marketing, Vol. 20 Iss: 6, pp.261 - 272

7 Sangjo Oha, Joongho Ahnb & Beomsoo Kim. "Adoption of broadband Internet in Korea: the role of experience in building attitudes". Journal of Information Technology Volume 18, Issue 4, 2003. pages 267-280.