Influence of ATMs on Spending Pattern: Situation at Technical Academic Institutions in India

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Abstract

The use of ATMs in technical institutions is very interesting, and for many reasons for there are many questions that tend to pop up once the use of ATMs is called into question vis-à-vis the youth. Do students intermingle, influence each other and spend more? Does technical education make students more tech-savvy? Does the location of ATMs influence the withdrawal of cash- and more pressingly, do students withdraw more frequently when an ATM is placed near their hostel or near the college shopping areas? Does the availability of a 24 hour cash source make them spend more, eat out more, and skimp less? Does the ease of transaction make parents supply more money to student (albeit lesser amounts with greater frequency)? Does the introduction of more services than just the withdrawal of money make technically aware and e-comfortable students use these services? Do more ATMs in a limited area mean more cash withdrawn? All these questions have been deeply probed, and answered in this paper based on an exhaustive questionnaire survey conducted amongst the students of one of India's premier technical academic colleges -National Institute of Technology, Trichy (NITT). This survey has also thrown up some interesting results. Most students feel they spend more due to the presence of ATMs in the campus. The popularity of ATMs seems to be on the rise-for there is a strong pitch for the inclusion of more features to the ATMs. However, and quite worryingly for ATM manufacturers, there is a high incidence of technical glitches occurring. On the whole, the survey seems to conclude that while the introduction of the latest technologies in e-governance is indeed a welcome trend, to sustain the technology and adapt it to a dynamic market environment, the technology must be subjected to relentless innovation and adaptation to local requirements.

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Keywords: *ATM, SBI, Spending Pattern, Students*

INTRODUCTION

The relentless, and tempered, pursuit of money is one of the only constants of any civilization. And if the tale of the progress of man were to be told with examples, an apt case study would be that of money-and the sprint for more. The world as a whole witnessed a change in the way things were done at the start of the Industrial Revolution. The quickening pace of technology in the 18th and 19th centuries brought about marked changes in almost all corners of the world. Banks (as financial institutions) became centers for managing money, storehouses of wealth and credible sources to borrow from and transact with.

These tectonic changes that took place had effects far and wide. Trade and commerce was dealt with everywhere, and India, as an old historical civilization had been no stranger to progress. The vaishyas traders embraced any innovative method to make transactions simpler. And the modern replacement to the money lender banks were no different. Established since the late 18th century as storehouses of public and private wealth, banks today cater to a large segment of the Indian populace. And with technology and rising popular expectation, banks too have changed vast amounts of red tape has been cut with the introduction of 'e-services'; computers are now found in remote bank outlets and more recently, Automated Teller Machines (ATMs) have captured public imagination as a quick, fast, easy, and more importantly, transparent way to manage money.

The introduction of ATMs by the bank next to its office in 1998 saw a huge demand for more ATMs to accommodate the using patterns of the majority students. By 2008, there were 3 ATMs-two next to each other in the Shopping complex, and one next to the lecture hall and in close proximity to the Boys Hostel areas. As with any major self-contained and far from city campus, students explore the local area a lot. Besides shopping and purchasing essential items and eatables. Students lead a relatively care-free life, with a very large majority being funded by the parents during their four years in campus. The extent of student spending can be safely concluded as self-monitored and any significant changes in spending patterns, be attributed to the influence and impact of college/ hostel life on the youth concerned.

It can also be inferred that due to the exposure to technology both inside the classroom and outside (at internet labs, data/net cards, TV, newspapers, mobiles, etc) students are aware of major advancements and trends in the world and are influenced by them in some fashion. Thus the community we are set to analyze here can be summed up as: relatively free-thinking, independent, technologically-savvy, incredibly diverse youth who have bright prospects of a career from then on.

LITERATURE REVIEW

The advent of ATM technology is a breakthrough in the ease of financial transactions. And as with any invention aimed at making the process of transaction simpler, ATM technology was embraced by the world of commerce enthusiastically. Since first introduced in the 1970s (Mauklin et. al. 1978) ATM usage has caught on. Today the ATM has come to resemble the "more in one" machine. Various technologies are offered: cash withdrawal, checking balance, cash transfer, donation to charities and other in-house facilities like transfer to a common account by a large number of people (as in the case of paying fees). There have also been various proposals at further simplifying the ATM: introduction of wireless technology into the ATMs so as to provide bandwidth for other multimedia products (Tom Leskinen, Markku Niemi, Wireless ATM Multimedia Service Platform) is just one amongst the several ideas. Thus, while the multi-facet of ATMs is not in question, various queries have been thrown up on the diverseness of its users.

The type of people who use ATMs is of interest for many reasons. Primarily, it is an indication of the progress a society has made. Are the ATMs used only in communities where time is scarce and business aplenty, or is the use spread even? The infiltration of ATMs to the weakest and most deprived sections is indicative of knowledge and technological advent to these areas a symbolic statement, if nothing else in any context. It gives the poor, the disenfranchised, the semi and illiterate a sense of technology, and manipulative software that allows simple transactions without any signatures, etc gives them an idea of the world and the progress being made. In such a seemingly simple way, thus, the analysis of ATM usage gives a broad perspective of the society being dealt with and the hierarchies, stratifications and class and demographic differences and distinctions therein (Choong et. al., 1998, Lightner et. al., 2002, El-Shynnawy and Vinze, 1997, Hofstede, 2001, Yeo et. al., 1998, & Rogers et. al. 1996). Secondly it helps manufacturers to improve the product-

to cater a product to local needs, tune it to demographic and cultural specifications and catering design to the customers' needs. (Carey, 1998). ATM user study is thus important for the manufacturer and the researcher. Let us look at the ATM usage in the Indian technical institution context. India is a land with searing class and caste distinctions, where 350 million people live on a dollar or less a day. Backward castes vary from 30 to 50% of the population. Access to quality education is difficult and admission to some of the top colleges in the country is viewed as a passport to economic success (Varma R. et al, 2009).

DATA ANALYSIS

At the outset, let us gain a thorough insight into the campus where the study is being done and why this is a good location for such a survey. The survey was conducted in the form of a questionnaire. Data was collected from 546 students, belonging to various academic departments. The data analysis was done with the help of scale value index (SVI), standard deviation (SD) and t-test. Scale Value Index (SVI) of a factor has been calculated as follows:

Scale Value Index = å Li Fi / N, Where, Li is the response score on the scale, Fi is the frequency of respondents responding to Li level and N is the total number of respondents responding to that question.

Table 1: Student Response on the Satisfaction Level of ATMs on a 5-Point Scale

Different Features/Services	SVI	SD	P
Convenience	3.9	1.1	9.5
Different features	3.1	1.0	1.2
Location of ATMs on campus	3.2	1.1	2.4
Service offered by campus bank	3.0	1.1	0.1
User-friendliness	3.4	1.1	4.4
Safety of ATMs on campus	3.7	1.0	8.3
Extent of time saved (when compared with manual banking)	4.2	1.0	14.8
Promptness of ATM card delivery	2.8	1.2	-2.4

SVI: Scale value index, SD: Standard deviation, P:t-test values

Tables 1 show number of interesting trends, but the main feature to be noted is that on the whole, ATMs seems to have struck a positive

chord. With the exception of a low rating on the promptness of ATM card delivery and service offered by the bank, all other parameters find mediocre to animated responses. We notice that ATMs have phenomenally high satisfaction ratings, when their convenience is questioned. Thus, the primary purpose of an ATM to be a convenient, simplistic, easy to handle method of money transfer seems to have been served. However, the same optimism does not hold forth when the number of features that an ATM can offer is questioned. With an overall rating of 3.1 on 5, it seems that more can be done.

The low rating for overall number of features is interesting, primarily because in an Indian technical institution, it shows that there are great expectations of students from world class technology. With exposure to modern gadgets and gizmos that offer varied and many features packed in, it can be surmised that people expect the same from ATM technology too- to be more than a one purpose device. The location of ATMs on campus seems to have received a warm response neither too enthusiastic nor too cold. This is not very surprising considering that there are now three ATMs catering to the student populace, but perhaps students also kept in mind the fact that since this is one of India's largest campuses, there is plenty of walking/cycling ground to cover before an ATM is reached.

From the results of the survey, ATMs can be judged, on the whole, user friendly. Not completely, but on the right track! The safety and security of the ATMs on the campus receives a good response with a rating of 3.5 on 5 as the lowest it can safely be concluded that students are reasonably confident that ATM-care is entrusted in good hands.

Table 2: Satisfaction Level of the Banking Methods on a 5-Point Scale

Banking Methods	SVI	SD	P
Manual banking	2.3	1.1	-7.7
e-banking	3.6	1.0	7.0
Mobile banking	2.9	1.2	-1.5
On-site ATM operation	3.9	1.0	11.4

SVI: Scale value index, SD: Standard deviation, P:t-test values

The extent of time saved by using an ATM receives (and quite expectedly) the highest rating of 4.2 as the overall mean. This enthusiasm is not shared however, when it comes to the promptness of ATM card delivery: with a mere 2.8 overall mean, it shows that while technology does simplify things, manpower and bureaucratic handling and lack of

proper timing in delivery is still judged harshly by a tech savvy, young audience with high expectations. It may also be true that there is nothing similar between two people in a department that they are influenced by friends outside the department, by way of their perspective which maybe singular and unrelated to their class, etc., but it must also be conceded that as students sitting in a class, experiencing the same process of education for four years, department-wise division is a convenient method of segregating students. The variation in response by the student community of the various departments, with respect to the highest mean, is more or less within the 80-90% range, which indicates a high level of convergence in their view about the ATM technology. But overall, the ATMs have positive reply from the students 'side.

From Table 2, we can easily deduce that the ease level/satisfaction of the banking methods seem concomitant with their popularity. While ATM money withdrawal and banking operations are by far the most popular on campus (and they receive a SVI of 3.9 among the UG students), mobile banking which takes time and demands internet (GPRS) connectivity receives a SVI of 2.9. Manual banking while being tedious, time- consuming and permissible with fixed timings only is still popular (perhaps because of habit or due to interaction with bank officers where doubts can be cleared and transactions made) receives a rating of 2.3 The wide gap of almost 1.6 illustrate that ATMs are very much preferred over other forms of banking.

Table 3: Students Response on Increased Spending of Money After ATMs Arrival

Money spending increased after introduction of ATMs?	Total (546)
Yes (%) (Respondents = 497)	91.02
No (%) (Respondents = 49)	8.98

While e-banking also depends on internet connectivity, internet use is more frequented by students (e.g.: for booking railway tickets) and the internet connection is faster than mobile phones, and this explains why e-banking is preferred over mobile banking. Table 4, follows an expected pattern as well. A very large majority of students use ATMs for withdrawing cash. Checking balance is the next most important activity of the students but it must be noted that there seems to be a significant gap between the weight-age given to withdrawing cash and checking the balance. Another trend observed is that hardly any of the students

use ATMs for donation to charities; but this is very expected. A fact that must be mentioned along with this tabular column is that paying fees was possible at the NIT campus via ATMs till recently when this practice was disallowed. However while the practice was in force it was observed that a large majority of the students preferred to pay the fees by ATMs than manually, and perhaps that is why paying fees enjoys an overall mean of 2.7.

Table 4: Students Response on Various Spending Options on a 5-Point Scale

Various spending options	SVI	SD	P
Shopping essential items (basic needs)	3.5	1.1	5.2
Shopping un-essential items (luxury)	2.5	1.1	-5.4
Eating out	3.8	1.2	7.8
Mobile recharge	2.9	1.3	-0.9
Movies	2.5	1.3	-4.8
Tour/Travel etc.	3.1	1.3	0.9

SVI: Scale value index, SD: Standard deviation, P:t-test values

Table 4 is very interesting as the following conclusion can comfortably be made from it: For the overwhelming majority of under graduate students in college, spending patterns are influenced by the introduction of ATMs, and a significant majority of them report an increase in spending after the introduction of an easy-to-access ATM machine in their vicinity. Perhaps it is that with an easily available source of quickly transferable funds in their campus, and living independently, young and influenced by the thrills of shopping, hanging out with friends, and the availability of eateries catering to various segments of customers in close distance of the campus, students feel the urge to go out more often than not.

As the ATM is a 24 hour money withdrawal facility, and the prospect of long queues, tedious cash withdrawal procedures (as with banks), etc not present, students lured by easily available cash tend to withdraw more often than usual. This conclusion is something found across all departments without major deviations. From the tables 6 and 7, it can be inferred that most of the money students spend is on eating out. This is on expected lines given the profusion of eateries both in college, outside college and in Trichy city. Also given that all the students are hostelites, it follows that much money is spent on essential items. All the NITs are famous for their diversity while keeping a 50% quota for people from the state where the institution is located. What is of considerable surprise

however is that the frequency of technical glitches encountered while using ATMs is uniformly high. With an average rating of 2.6, this is of some concern to SBI/ATM manufacturers as this is not a desirable trend.

Table 5: Students Response on the Usage of ATMs on a 5-Point Scale

Various Services	SVI	SD	P
Withdrawing cash	4.5	1.0	18.6
Checking balance	3.3	1.3	3.1
Cash transfer	2.2	1.2	-8.2
Mini statement	2.8	1.4	-1.8
Donations for charities	1.5	0.9	-19.6
Paying fees	2.7	1.4	-2.7

SVI: Scale value index, SD: Standard deviation, P:t-test values

This rule is followed for NIT, Trichy as well, and with half the populace coming from Tamil Nadu (mainly Chennai) it can be expected that many students travel home (with frequency ranging from once a week to the reabouts of once in two months). With both bus and train fares substantial it is thus sequential that money spent on travelling is third on the list of parameters on which students spend their money on.

Table 6: Students Response on the Frequency of Following, on a 5-Point Scale

General Frequency Parameters	SVI	SD	P
Use of ATMs inside campus per month	3.8	1.5	10.3
Use of ATMs outside campus per month	1.8	1.5	-5.5
Usage of Debit / Credit cards for shopping (per month)	1.3	1.4	-10.7
Frequency of technical glitches encountered on campus ATMs per month	2.6	1.7	0.7

SVI: Scale value index, SD: Standard deviation, P:t-test values

However a very interesting pattern emerging from this survey is the significantly low number of students using ATMs outside college. Perhaps this is because college students tend to plan in advance and rarely withdraw from ATMs in the city, or perhaps with the campus striving to become more self-sufficient the frequency of city visits is diminishing. There is no major difference in their usage of ATMs inside and outside the campus. Also most of them rate the occurrence of technical glitches as moderately frequent. Perhaps the consistency in results is because the

questions deal more with the ATM machines, and the general behavioral patterns of going to the city and spending which on a broad note tend to be similar across the student community.

Table 7: Money Spent by the Student Per Month

Money Spent per month (Rs.)	<500	500-1000	1000-1500	1500-2000	2000+
Percentage of Students (N=546)	6.2	19.2	26.0	21.9	26.7

From table 7, we find that the spending pattern of the students is homogenous. Most students seem to spend around 1000 1500 Rs per month.

The main demand from the students seems to be for the use of ATMs to pay fees. But given the long queues during the fee payment time (when payment is only via manual banking) and the harrowing wait, this is perhaps expected. What is somewhat surprising is the demand for more ATMs being 2nd highest in the list of demands, but this only goes on to illustrate the growing popularity and acceptance of the ATMs as a viable method of quick and easy money transfer.

CONCLUSIONS

This survey gives an exhaustive account of the spending patterns of students from Indian technical institutions and their view on ATM technology. By and large, this survey firmly establishes ATMs as a viable, feasible, convenient means of cash management. With a majority of the students favour the introduction of ATMs in campus, it can be inferred that the introduction of new technological tools that aim to simplify the way we live and conduct our lives has found popular support among well educated, (relatively more) tech savvy students. However, though the survey gives big thumbs up to e governance and its making advantage of technology to achieve breakthroughs, areas where physical labor, bureaucratic procedures and red tape intersect find little popular support. Students consistently rate the promptness of ATM card delivery, and service of staff at banks with low approval ratings.

On the whole, the approval ratings for banking can be summed up (in the eyes of the students surveyed) as ATM technology > e banking > mobile banking > on site banking. This is interesting in that students are willing to shed the more habitual mode of on site banking in favor of any other mode that allows them to complete transactions on the spot.

Perhaps the most important conclusion of this survey is that students (and quite overwhelmingly at that) say they spend more due to the presence of ATMs in the campus. This result is very interesting as it shows that when students have an easy to access to steady source of quickly transferable funds near them they spend more freely.

Most of the money that college students withdraw from ATMs is spent on eating out. Shopping for essential commodities, tours and travels, mobile re charge, movies and shopping for unessential commodities follow in that order. This is revealing in that it shows students care more about eating good food than they do about (say) luxury items. This sheds the general perception of students being lavish spenders. The survey also shows that the most frequent use of ATMs is to withdraw cash. The next major use is to check the balance remaining in their account (but the lead between the former and account balance is gaping 4.5 on 5 to 3.3 on 5). This also highlights the fact there can be more features added to the ATMs to make them appeal to make them more than just a tool for withdrawing balance. Features like checking mini statement and donation to charities are rarely used (though the lack of use of the latter is understandable given a college setting). Most of the students use ATMs only within the campus (in a self contained one). This also implies that when students go out they plan the money they will spend as otherwise the rate of student withdrawal from ATMs outside their campus will be quite high. However, one worrying factor for ATM manufacturers and bank officials is the rather high frequency of technical glitches reported (2.6 on 5).

Finally, in a technical institute, the ultimate demand from technology is, well, more technology and thus more features for the ATMs. Surprisingly, one of the main purposes the ATMs can be used for (as suggested by the students) seems to be for paying the fees. Mobile recharge (in an area of high mobile density) seems to be the second most sought after feature. Reducing the number of technical glitches that occur and having a greater say in the denomination of the notes received are other add ons that students would like to have as brought out in this survey. Thus, this survey has provided an insight into the student perception of the ATMs and the uses to which the machine is put to. Also it brings out the fact that bringing out a new machine isn't enough the device must be subject to relentless innovation and modifications so as to increase the number of features and reduces the frequency of technical glitches.

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